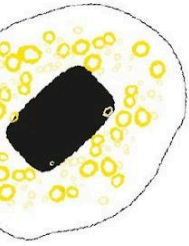


UNIVERSITY OF TWENTE.



**Beyond the Screen: Unveiling the Dynamics of Leadership in Fully Remote Work
Environments**

Master Thesis

Kadarosi Defa Widia (s3115887)

University of Twente

Faculty of Behaviour Management and Social Sciences

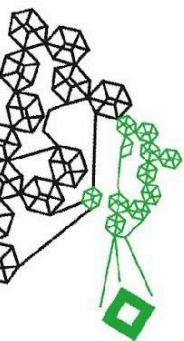
MSc. Communication Science

Examination Committee

Dr. H.A. van Vuuren

Dr. E. van Laar

Enschede, The Netherlands



Abstract

Purpose : This study empirically examines the practical aspects of virtual leadership by investigating the experiences of leaders in managing fully virtual teams. It further compares these findings with existing scholarly discourse on virtual leadership in academic literature, shedding light on advantages, disadvantages, and strategies. The focused approach involves meticulous analysis and combination of experience data, resulting in an in-depth comprehension of successful leadership in virtual teams.

Method : A qualitative study using semi-structured interviews was conducted to explore the dynamics of leading in fully virtual teams. Interviews were carried out with 20 leaders from virtual teams managing purely remote working companies. For data analysis, interview transcripts were inductively coded using thematic analysis.

Result : The findings indicate that the advantages and challenges of virtual teams align with prior research studies and are applicable not only in hybrid organisations but also in fully virtual work settings. However, the strategies employed in tackling these challenges differ from those identified in prior research. Implementing agile leadership and create an innovative online events becomes a key role in successfully tackle challenges in fully virtual settings.

Conclusion : The primary contribution of this research lies in enhancing understanding of virtual leadership through a critical assessment of existing literature and uncovering practical insights. The results of this study can also serve as practical recommendations for virtual organisations to improve virtual team performance and address potential challenges.

Keywords: Leadership, virtual team, e-leadership challenges, e-leadership strategies.

INDEX

1. Introduction.....	4
1.1 Research Objective.....	5
1.2 Research Question.....	6
1.3 Thesis Structure.....	7
2. Theoretical Framework.....	8
2.1 Defining Virtual Teams.....	8
2.2 Virtual Team Versus Traditional Team.....	9
2.3 Advantages, Challenges and Strategies of Managing Virtual Team.....	10
2.4 Virtual Leaders.....	15
2.5 Implications for Leadership in Virtual Team.....	16
3. Research Methodology.....	19
3.1 Research Design.....	19
3.2 Data Collection.....	20
3.3 Participants.....	21
3.4 Data Analysis.....	23
4. Results.....	29
4.1 Advantages of Leading in Pure Virtual Team.....	29
4.1.1 Privilege of Time Saving.....	29
4.1.2 Able to Hire Top Talent.....	30
4.1.3 Absence of Hierarchy (Flat and Open Organisations).....	31
4.1.4 Cut Off the Budget.....	32
4.2 Leadership Challenges in Virtual Teams.....	33
4.2.1 Creating Team Engagement.....	34
4.2.2 Isolation and Burnout.....	35
4.2.3 Dealing with Miscommunications.....	36
4.2.4 Dealing with Different Time and Schedule.....	36

4.2.5 Struggling in Decision Making Process.....	37
4.2.6 Technology Issues.....	38
4.2.7 Dealing with Trust Issues.....	38
4.3 Leadership Strategies in Pure Virtual Teams.....	39
4.3.2 Managing Expectations.....	41
4.3.3 Communications Skills.....	41
4.3.4 Create Personal Engagement.....	42
4.3.5 Frequently Used Informal Communications.....	43
4.3.6 Ensuring Organisational Culture Fit in Hiring.....	44
4.3.7 Importance of Delegation.....	44
4.3.8 Balancing Trust.....	45
4.3.9 Minimise the Micromanaging.....	46
4.3.10 Understanding Team's Personalities.....	46
5. Discussion.....	48
5.1 Findings and Theoretical Implications.....	48
5.2 Practical Implications.....	51
5.3 Limitation.....	52
5.4 Suggestion for Future Research.....	53
5.5 Conclusion.....	54
References.....	55
Appendix 1 : Questions for interview with Leaders :.....	66

1. Introduction

In today's era, technology facilitates virtual work arrangements, such as videoconferencing, ushering in new work paradigms—anytime, anywhere within an organisation. This shift has given rise to the concept of virtual teams, defined as groups structured using a blend of telecommunications and information technologies to accomplish organisational tasks (Malhotra et al., 2007). As organisations increasingly embrace remote work options, studies have emerged examining specific types of remote work arrangements. Companies that fully adopt remote work throughout the week are termed "pure remote workers," characterised by a staff operating exclusively in remote capacities (Fiol & O'Connor, 2005).

The adoption of remote working teams presents several advantages, including reduced office-related costs, enhanced flexibility for employees, and access to a broader pool of talent from diverse geographical locations. Prior research indicates that virtual teams were established either to streamline organisational processes or to achieve cost savings on time and travel (Cascio & Shurygailo, 2008). Maruping and Agarwal (2004) suggest that both employees and employers stand to benefit from virtual teams. The flexibility to work in various environments, from employer offices to the comfort of homes or hotel rooms, offers significant advantages for employees, potentially improving job satisfaction and work-life balance (Zhu & Smith, 2019).

However, the fully remote nature of these teams can also engender feelings of detachment or isolation among employees, notwithstanding the elimination of commute times and associated expenses (Fiol & O'Connor, 2005). Pure virtual work environments, characterised by reduced face-to-face interactions, present challenges for organisations compared to traditional teams. Delegating substantial tasks to remote teams complicates leadership roles, making it challenging for leaders to maintain control and monitor progress effectively (Cascio &

Shurygailo, 2008). Consequently, effective leadership becomes pivotal in navigating such complex environments and achieving organisational success (Liao, 2017).

Leaders must guide their teams with clarity, empathy, and understanding to overcome challenges and foster innovation (Effing & Spil, 2016). Virtual leaders require nuanced strategies, leveraging current technological capabilities, to compensate for the absence of physical context and nonverbal cues (Avolio et al., 2014). At the team level, virtual leaders are tasked not only with developing team processes but also with managing team performance, a challenge exacerbated by the physical separation of team members (Bell & Kozlowski, 2002; Liao, 2017). Effective remote leadership demands strategies that underscore the importance of virtual teams, especially for those unfamiliar with this mode of work (Lee-Kelley, 2002).

1.1 Research Objective

This study empirically examine the practical aspects of virtual leadership through a comprehensive investigation into the practical experiences of leaders managing virtual teams. The study aims to delve into the complexities of how leaders effectively navigate challenges and capitalise on opportunities within the virtual team setting, thereby providing a nuanced understanding of their practical encounters. Additionally, the study systematically investigates the strategies employed by virtual leaders to address challenges specific to virtual team dynamics. Furthermore, this inquiry seeks to compare and contrast these empirical insights with the scholarly discourse on the advantages, disadvantages and strategies of virtual leadership, as outlined in the existing academic literature. The refined focus not only sheds light on practical realities but also involves a meticulous analysis and synthesis of experiential data, contributing to a comprehensive perspective that enhances the broader understanding of effective leadership within virtual team contexts. Through this approach, the research enriches the academic

discourse on virtual leadership and presents actionable recommendations for leaders aspiring to foster success within virtual organisations, thereby yielding positive outcomes in the ever-evolving landscape of remote work.

To achieve these objectives, this research employs semi-structured interviews to gain comprehensive insights into the dynamics of leadership within virtual environments, encompassing both the advantages and challenges associated with virtual leadership. The use of semi-structured interviews as a data collection method is particularly apt for ensuring response comparability while also allowing for the exploration of emerging themes through follow-up questions. Given the subject matter of this study, a semi-structured interview approach is deemed more appropriate, as it fosters a conversational atmosphere compared to traditional structured interviews (Brinkman, 2014). It is worth noting that much of the existing research on virtual leadership has been conducted during the context of pandemics, potentially influencing respondents' perspectives. Consequently, findings from such studies may not fully reflect post-pandemic scenarios. Moreover, some prior research has utilised student samples in controlled laboratory settings; while advantageous for controlling variables, such approaches may not capture the nuanced interactions inherent in real-world virtual teams (Hambley et al., 2007; Martins et al., 2004; Liao, 2017).

1.2 Research Question

A specific research question derived from this aim is:

"How do leaders experience the dynamics of leading fully virtual teams, and what particular strategies do they employ to effectively manage challenges and leverage advantages in leading virtual teams?"

1.3 Thesis Structure

To achieve the objectives, a comprehensive literature review was conducted in Chapter Two, focusing on a carefully selected body of research. This review examines the challenges and implications faced by leaders in virtual teams, as identified in prior studies. The current research commences with an exhaustive review of existing literature pertaining to virtual teams, highlighting both their advantages and challenges, and subsequently delves into the implications for leadership within such teams. For this study, a semi-structured interview approach was adopted to gather insights from 20 leaders managing remote work settings. Utilising semi-structured interviews offered a flexible inquiry method, enabling exploration of both theoretical concepts and practical applications. Chapter Four presents the findings derived from the conducted interviews, commencing with an examination of current virtual leadership practices, followed by an exploration of the diverse experiences encountered while leading virtual teams. Additionally, the chapter delves into the strategic approaches employed to effectively manage virtual teams. Chapter Five of the study delineates the research implications, limitations, and potential avenues for future research.

2. Theoretical Framework

The primary aim of this theoretical framework is to examine virtual teams and explore the implications of leadership on these teams. The first focus of this theoretical framework will be on the analysis of virtual teams. Subsequently, drawing upon prior research, a comprehensive review will be undertaken to explore leadership in a virtual team including the advantages, challenges and strategies in leading virtually.

2.1 Defining Virtual Teams

The advancement of technology introduces new changes in daily work routines (Bresciani et al., 2021). Thus have enabled new forms of new work arrangements and virtual collaboration (L. Gilson et al., 2021) which led to the concept of virtual teams. Previous research examined that organisations in the digital age are continuing to apply virtual teams as a primary way to structure work (Harris, 2016; Palvalin & Vuolle, 2016). It is not surprising that researchers nowadays are getting more attracted to virtual teams (Gilson et al., 2014 ; Dulebohn & Hoch, 2017).

The term “virtual teams” describes geographically dispersed partnerships that rely on technology for coordination and communication (Morrison-Smith & Ruiz, 2020). A virtual team can be defined as a collective of individuals that collaborate in an interdependent style, with a common objective, while being physically separated and operating under different organisational structures (Karunathilaka, 2022). One of the most crucial and significant attributes of virtual teams is their ability to negotiate through geographical barriers. Virtual teams, comparable to co-located teams, engage in diverse collaborative projects, including both formal and informal meetings facilitated by technological tools such as video conferencing platforms (e.g., Zoom, Skype, and Microsoft Teams), file transfer mechanisms, and application sharing features

(Morrison-Smith & Ruiz, 2020). The adoption of virtual teams leads to a decrease in the amount of time and financial resources that are used for relocation, as well as a reduction in expenses related to travel (Piccoli et al., 2004).

2.2 Virtual Team Versus Traditional Team

Some researchers argue that managing virtual teams poses a greater challenge compared to managing traditional teams (Davis and Bryant, 2003 ; Hoch and Kozlowski, 2014). In contrast to traditional teams, virtual teams consist of people who are physically separated from one another, frequently spanning significant distances, including several miles or even continents (Bell & Kozlowski, 2002). However, virtual teams eliminate the problems that traditional teams have in terms of time, place, and organisational affiliation. Virtual teams also increase the development of creativity and innovation among team members due to the various and diversified personalities; these teams possess more potency and efficacy in comparison to traditional team structures (Zaccaro & Bader, 2003 ; (Bell & Kozlowski, 2002). Virtual teams enable organisations to enhance their flexibility and responsiveness by facilitating the transcendence of geographical barriers. Virtual teams may be strategically composed to include individuals who have the most suitable skills and expertise for a certain project. This is facilitated by the elimination of traditional concerns related to geographical proximity and associated costs (Bell & Kozlowski, 2002).

Virtual teams possess unique characteristics that set them apart from traditional teams. One of these characteristics is their significant reliance on information technology, which enables them to develop internal connections and support their work. This reliance can be seen via the use of technologies such as videoconferencing and e-mail (Gallenkamp, Korsgaard, Assmann, Welpe, & Picot, 2011). In traditional team structures, the use of complex connection

technologies is often seen as unnecessary due to the main way of communication among team members being face-to-face interaction. Additionally, trust between members becomes more difficult in virtual teams compared to physical teams (Greenberg et al., 2007). These are mostly caused by a variety of unpredictable interruptions and changes in time, location, organisation, and culture within such teams (Watson-Manheim et al., 2011). Thus have negative consequences for cooperation, which might result in delays or complete cessation of project advancement.

2.3 Advantages, Challenges and Strategies of Managing Virtual Team

Diversity emerges as a significant concern in virtual teams, given that virtual work settings often comprise individuals from diverse cultural backgrounds, hailing from different countries, organisations, and professions. The concept of diversity is frequently linked with the expectation of "synergistic" outcomes, grounded in the belief that varied knowledge and perspectives bolster a team's effectiveness. While virtual teams offer numerous advantages, as corroborated by empirical research, herein table 1 provide several advantages of employing virtual team settings are elucidated, drawing upon findings from prior research studies.

Table 1

Advantages of virtual work settings

Category	Sub category	Advantages of virtual work settings	Scholars
Flexibility (In this context, flexibility contribute to the establishment of a work environment that is more adaptable, flexible,	Flexibility of work schedules within team member.	Team members are allowed to work based on their preferred times, and this allowing them to align their work with their most productive times, which lead to higher quality output.	(Cascio & Shurygailo, 2003; Hunsaker & Hunsaker 2008)

and conducive to employee satisfaction.)	Dynamic team membership structure.	Facilitates a smooth transition of individuals from one project to another.	(Cascio & Shurygailo, 2003)
	Flexibility in hiring team members.	This provide the opportunity of organisations to attracts highly skilled members.	(Gheni et al, 2016 ; Pinjani, Palvia, 2013)
	Promotion of Work-Life Balance.	A more balanced work-life dynamic, and easy to accommodate various schedules.	(Precup et al., 2006)
Productivity (Emphasising the potential productivity improvements in virtual work settings.)	Enhance productivity within team members.	Team members may allocate a greater focus to their jobs and reduce the amount of time spent on commuting.	(Orlikows ki, 2002), (Gheni et al, 2016)
Performance Monitoring (Emphasises the benefits of virtual monitoring.)	Effectively monitoring progress of the project.	Project managers have the ability to oversee the advancement of a project, detect any challenges, and promptly make necessary modifications to ensure the project stays on schedule.	(DeRosa et al., 2004)
Diverse communications channel (Highlights the advantages of using a diverse array of communication tools.)	Quick decision making process and enhance collaborations.	The ability to communicate through various channel facilitates rapid decision making process, team members can accelerate the flow of information and ensuring the project progresses without any needless delays.	(Gibson & Cohen, 2003; Cummings & Haas, 2012).

Nevertheless, it remains crucial to recognize that physical interactions, such as spontaneous coffee breaks or hallway conversations, persist as reliable and efficient means for assessing and refining creative ideas (Gassmann & Von Zedtwitz, 2003a). Conversely, one of the primary challenges in navigating the intricacies of leadership within virtual teams lies in the complexities of establishing direct authority when team members and supervisors are geographically dispersed. This geographical separation necessitates adaptations from traditional management paradigms, prompting a reevaluation of delegative management principles. The subsequent section on table 2 outlines several challenges inherent to virtual team settings, drawing from previous research studies.

Table 2

Challenges of virtual work settings

Category	Sub category	Challenges of virtual work settings	Scholars
Communications challenges (Challenges and barriers associated with sharing of information, and communications)	Coordination burdens.	Insufficient task coordination may result in project or assignment delays.	(Avolio et al., 2000)
	Loss of contextual information.	Leading to a possible misinterpretation of social interactions.	(Bell and Kozlowski, 2002)
Team cohesion (Challenges that arise due to lack of face to face interaction.)	Distrust among team members .	Lack of trust could hinder efficient collaboration, interaction, and the general operation of the team, possibly impacting productivity and the quality of work.	(Rosen et al., 2007)

	Reduced social support.	Lowered social support might result in a sense of isolation, and have negative impact on teamwork and cooperation.	(Zaccaro & Bader, 2003).
Performance monitoring difficulties (Challenges with significant time lag)	Delayed feedback.	Lack of timely feedback might impede team members' ability to enhance their performance, hence risking the overall success of the team.	(Kirkman et al., 2002; Martins et al., 2004).
Technology-Related Problems (Challenges that occur with the use of technology)	Reliant on technology.	Technological issues may result in delays, disruptions in communication, and reduced productivity among virtual teams.	(Bell & Kozlowski, 2002).

In the ever-changing realm of virtual work environments, the implementation of effective leadership strategies is crucial in order to foster collaboration among team members and oversee the accomplishment of organisational objectives. Adapting traditional leadership models to the distinct requirements of virtual environments, where direct control mechanisms are complicated by physical separation, presents a formidable challenge. Several elucidations of leadership strategies in virtual team environments are presented on table 3, grounded in antecedent scholarly investigations.

Table 3*Strategies in managing virtual teams*

Category	Sub category	Strategies in managing virtual team	Scholars
Communications strategies (The ability of leaders to effectively utilise communication technology.)	Leverage communications technology	Facilitates smooth collaboration, minimising barriers to effective communication and easy to achieve a higher level of successful virtual team.	(Hambley et al., 2007)
Creating team cohesion (Strategies to establish a cohesive and collaborative virtual team)	Familiarising leader with members Fair distribution of time management	Team members have a sense of connection and motivation, resulting in improved enthusiasm. Regularly rotate the scheduling of meetings on a monthly basis to guarantee equal allocation of both convenient and demanding meeting times among team members located in various places.	(Hertel et al., 2005). (Cascio & Shurygailo, 2003)
Adopting transformational leadership style (Motivate team members by effectively conveying a vision)	Inspirational communications	A transformational leader possesses a capacity to create positive effects on team members' belief regarding their talents, honesty, and trust, resulting of a successful virtual work environment.	(Avolio et al., 2000)

2.4 Virtual Leaders

The literature of leadership in virtual environments is still in its early stages (Purvanova & Bono, 2009), and e-leadership is a relatively recent phenomena (Savolainen, 2013). Studying leadership in a virtual context is essential as leaders in such a setting face unique leadership problems (Zaccaro & Bader, 2003). Previous researchers examined the definition of virtual leaders or e-leadership. Thus often viewed as an organisational strategy and response to the worldwide transformations caused by advancements in technology (Avolio et al., 2000). The existing organisation's environment offers different challenges for e-leaders, which vary from those experienced in traditional leadership roles. Consequently, e-leadership may be seen as an emerging and expanding area within the context of leadership, reflecting the transformative effects of the digital age (Savolainen, 2013). Similarly, e-leadership might be considered as an outcome of technical advancements and the significant transformation in the global economy (Lilian, 2014).

According to Kerfoot (2010), the concept of e-leadership refers to the act of managing an organisation that exists in a non-physical form. Specifically, it involves managing remote work teams whose primary means of communication and coordination is through digital platforms. E-leaders are often described as "boundary managers" since they effectively motivate others remotely, encouraging the development of their self-management talents (Avolio et al., 2000). Van Wart et al. (2019) proposed an alternative conceptualization of virtual leadership, defining it as a social process that uses the combination between technology and traditional methods of communication effectively. This statement suggests that individuals and organisations possess knowledge about contemporary information and communication technologies (ICTs), and make deliberate choices about which new ICTs to embrace. Furthermore, it emphasises the need of

having technical proficiency in using the chosen ICTs. The general view is that electronic leaders, or e-leaders, face unique challenges due to their reliance on information technology for communication and coordination within virtual teams (Gallenkamp, Korsgaard, Assmann, Welpe, & Picot, 2011). E-leaders encounter a wide range of challenges related to communication, coordination, and the dissemination of information (Lilian, 2014).

2.5 Implications for Leadership in Virtual Team

Researchers agree that managing virtual teams is challenging (Davis & Bryant, 2003). Establishing and maintaining trust in geographically dispersed collaborations poses significant challenges (McDonough et al., 2001). These challenges arise from several factors, including the absence of strong relationships typically found in co-located teams (Cheng et al., 2016), the limited ability to engage in in-depth personal interactions due to the absence of nonverbal cues, and the difficulties associated with inferring the intentions of others (Eisenberg & Krishnan, 2018). The uses of informal communication are absent in most virtual teams (Kahai et al., 2012). This condition creates the possibility of misunderstanding communication between team members. Additionally, communications mediated by technology within team members caused misunderstandings, information diffusion, and knowledge management issues. (Gallenkamp, Korsgaard, Assmann, Welpe, & Picot, 2011). Team dynamics may be affected and members may be less aware of the team's status and progress towards predetermined goals as a result of a lack of in-person communication (Dulebohn and Hoch 2017; Zaccaro and Bader 2003; Zigurs 2003).

The limited presence of face-to-face interaction within teams significantly constraints leaders' capacity to effectively monitor team member performance and address work-related challenges (Cascio & Shurygailo, 2003). Virtual team leaders often encounter challenges when it comes to carrying out routine tasks (Bell and Kozlowski, 2002). In virtual team situations, team

members are geographically dispersed and operate across several organisational boundaries. Consequently, the spreading of knowledge by leaders will experience a temporary delay (Cascio & Shurygailo, 2003). Leaders should provide more resources to formally structure performance management initiatives. The primary responsibility of virtual team leaders is to foster the development of team members into a cohesive group and to consistently manage and supervise the team's continuing performances (Bell and Kozlowski, 2002). Despite the use of information technology, leaders must establish interpersonal connections in order to fulfil their leadership responsibilities. It is important for virtual team leaders to prioritise conducting evaluations and maintaining interactions with remote team members, as highlighted by Chinowsky and Rojas (2003). It is essential for managers to prioritise the establishment of a specific and clear description of the virtual team's role within the overarching objectives of the organisation. This includes defining the team's scope and the corresponding responsibilities it carries (Carter et al., 2015).

The successful implementation of virtual leadership requires an abundance of essential skills that are similar to those found in traditional leadership (Avolio et al., 2000). These qualities include the ability to effectively solve problems, exhibit strong social skills, and maintain an in-depth awareness of professional practices, as outlined by Mumford et al. (2000) in their skills model. According to Savolainen (2013), it is important for leaders to demonstrate adaptability in delegating tasks, demonstrate faith in their followers, and display confidence and a sense of comfort in the belief that their followers will achieve the intended outcomes. Additionally, leaders in virtual teams must be aware of when and how to use communications technology as well as the need to properly inform members about its use (Cascio and Shurygailo, 2003).

Leaders need to be able to listen and comprehend things that are invisible (Cortellazo et al, 2019).

Leaders in virtual teams are urged to improve their communication strategies in order to establish socialising activities and a sense of togetherness that promote the inclusion of all team members due to the absence of physical contact in a virtual team. (Avolio et al., 2014 ; Roman et al., 2018). Thus they comprise the actions of identifying the most effective resources to meet specific challenges in virtual teams and developing appropriate methods of communicating information (Roman et al., 2018). Previous research examined that leaders with a strong understanding of communication technologies are more likely to achieve a higher level of virtual team success (Hambley et al., 2007). Furthermore, prior studies have investigated the characteristics of good leaders and have shown that their ability to be actively engaged and involved within virtual teams is highly valued (MacLean, 2008). Simple words such as saying “hi” at the beginning of communications in virtual teams had a positive impact on organisations (Walther and Bunz,2005). Discussing hobbies as the introductions of communicating projects in team members have a strong bond to establish the final stages of projects (Greenberg et al., 2007). In addition to fulfilling their managerial responsibilities, leaders in virtual teams are required to address various challenges related to individual team members. These challenges include addressing feelings of isolation and reduced interpersonal contact, managing the potential for misunderstandings and escalating conflicts, and navigating situations where role ambiguity and goal conflicts arise due to commitments to different work units (Hertel et al., 2005). This might be challenging for leaders in virtual teams to manage the teams, due to distance, time, and cultural differences (Berry, 2011). Further specific explanations will elaborate more upon this research.

3. Research Methodology

The method section provides a comprehensive explanation of the research design and the data collection method. In a qualitative study, the procedures employed for data collection are the most important factors that influenced the quality and credibility of the research, as highlighted by Kitto et al. (2008). For this particular study, researchers used the semi-structured interview method to produce good qualitative results. The key advantages of the semi-structured interview method include its ability to facilitate openness between the interviewer and participant, as demonstrated by Galletta (2020).

3.1 Research Design

The adoption of semi-structured interviews as a data collection method is most suitable for this study due to this method allows the interviewer to spontaneously generate follow-up questions based on the participant's responses (Galletta & Cross, 2020). The semi-structured interview method was deemed suitable for exploring intricate or emotionally charged matters, as well as people's perceptions and opinions regarding such topics (Barriball & While, 1994). The semi-structured interview approach offers researchers a framework that enables a combination of standardised questions and the freedom to investigate emerging topics (Baumbusch, 2010). This approach enables individuals to articulate their thoughts using their own language, enhancing comprehension of their viewpoints and personal experiences (Galletta & Cross, 2020). The semi-structured interview approach promotes openness, which is in line with the principles of qualitative research. Qualitative research emphasises the investigation of participants' subjective experiences and meanings as the primary focus (Creswell & Creswell, 2017). Consequently, by

gathering detailed responses during the interview process, it is possible to provide answers to research questions as well as accomplish research objectives.

The technique used in this study entails the careful selection of a varied group of leaders coming from different remote working organisations. Interviews are conducted to gather data, whereby participants are encouraged to explain real-life situations that exemplify their experiences. Thematic analysis and categorization are used to discern recurrent patterns and categorise instances into some classifications. Additionally, ethical principles were given utmost importance, ensuring the protection of participant anonymity and obtaining informed permission. The ethical review procedure for this thesis was completed in September 2023. Prior to the interview, all participants were required to provide their official assent by signing a consent letter. This letter served to confirm their involvement in the research. Prior to commencing the interview, verbal permission was obtained from each participant.

3.2 Data Collection

This research received ethical approval from the Ethics Committee of the faculty of Behavioural Management and Social Sciences at the University of Twente on September 28, 2023, with approval number 230505. Data was collected using one-on-one interviews via Microsoft teams. The interviews were conducted in an online platform in a private setting, involving just the participant and researchers attending. Prior to commencing each interview, the participant is required to provide their informed consent form from the University, indicating their willingness to serve as a research subject and to have the session recorded using Microsoft Teams. Within this agreement, it will explicitly declare that the data will be handled anonymously. Interviews with 20 leaders were held with an average interview time of 45 minutes. At the beginning of the interview, the interviewee asked about the demographic

questions including their age and positions, and continued to the open questions. (Appendix 1). Several follow-up questions were asked to systematically explore the dynamics of leading in fully virtual settings.

3.3 Participants

The selection of participants was based on a combination of personal connections established by the researcher and professional relationships on the LinkedIn platform. The leaders who were interviewed had possessed prior expertise in fully remote work and had represented a variety of industries within contemporary digital and transparent organisational settings. Out of 30 leaders that were contacted, 20 agreed to participate. 20 participants that has willingness to interview are consist of leaders from different companies such as telecommunications, financial, agricultural sectors, and software companies which employed fully remote working even after the pandemics. While the majority of these leaders were based in Indonesia, there were five participants who worked remotely from Indonesia while their companies were headquartered in locations such as Singapore and India. In the early stages, it was challenging to secure their commitment to sharing their experiences and insights with the researcher, therefore to encourage their willingness, the researcher proposed a comprehensive management summary of challenges and strategies for leaders in virtual work environments upon the completion of the research. After briefing them via LinkedIn, they were asked about their availability time. It became apparent that, due to their demanding leadership roles, the interviews had to be scheduled during the evening hours according to Indonesian time (GMT+7). A link of invitations of Microsoft Teams calendar were sent to all 20 participants a week before starting the interview. 12 leaders preferred using Bahasa during the interview and 8 leaders used English. An overview of the demographics of participants is given in the table below.

Table 4*Demographics of participants*

Participants	Gender	Job Title	Leading experience	Team member
1	M	Vice President	5 years	50 members
2	M	Public Relations Manager	5 years	10 members
3	F	Public Relations Lead	3 years	12 members
4	M	Head of People engagement	5 years	15 members
5	F	Head of Communications	5 years	30 members
6	F	Lead of Digital Marketing	3 years	8 members
7	F	Creative Project Manager Lead	2 years	10 members
8	M	Head of Creative project	5 years	15 members
9	M	Head of Marketing	5 years	20 members
10	M	Head of People	5 years	25 members
11	M	Lead Operations Trainers	2 years	10 members
12	M	Head of Referral & Business Analyst	5 years	15 members
13	F	Head of Risk & Data Analytics	5 years	12 members
14	M	Associate Vice President	5 years	45 members
15	M	Lead of B2B support	2 years	10 members
16	M	Human Resources Manager	5 years	12 members
17	F	Head of Products	3 years	15 members
18	M	Program Management Manager	5 years	10 members
19	F	Market Research Manager	3 years	10 members
20	F	Lead Product Marketing	3 years	12 members

3.4 Data Analysis

Analysing data was done in several steps. Before analysing data, the interviews were transcribed and translated in English manually. Even Though it is a time-consuming process, it offers the best data set for analysis and helps researchers familiarise with the transcript (McLellan et al,2003). To address personal assumptions and biases that may have arisen during the transcription and translation process, researchers acknowledged and actively confronted these biases through peer discussions, thereby safeguarding the integrity and objectivity of the study. In order to assess the data, transcript interviews were coded inductively using thematic analysis as outlined by Braun and Clarke (2006). Thematic analysis is defined as a "method for identifying, analysing, and reporting patterns (themes) within data" that captures stories that have correlations to research questions and represent some pattern within the data (Braun & Clarke, 2006).

The first step of the inductive coding process was familiarising with the data. Secondly, similar codes were grouped into a theme. These categorizations enable us to understand the pattern and make it more clear. These codes captured the challenges, advantages and strategies of leading remote working settings. Table 5 and 6 offers a structured and organised view of the leaders' experiences that were identified within the dataset. This also provides a comprehensive visual representation of the main themes which derived from the research questions. The third step was to look for the best quotes based on transcriptions.

An overview of the results is given in the table below.

Table 5

Themes advantages and challenges in virtual team

Category	Definition	Sample comments
1. Advantages of leading in pure virtual team		
1.1 Privilege of time saving (20 comments)	These experiences highlight the primary advantage of working remotely is the ability to manage their time better.	<i>".....the advantage that I feel the most from working remotely is the ability to manage my time. I mean we all have 24 hours, right? But with virtual settings I get to spend more time with my significant other, with my husband, with my family, with my cats (P9)</i>
1.2 Able to hire top talent (12 comments)	This statement reflects the fact that leaders in remote working companies have the ability to attract and hire highly skilled people without being limited by geographical constraints.	<i>"...when we talk about remote working companies, I experienced back then to be able to find a good talent is hard because our office is in Jakarta and maybe the good talent live in other city, but now by applying full remote working companies, we can recruit good talent whenever they lived" (P17)</i>
1.3 Absence of Hierarchy (flat and open organisations) (8 comments)	This reflects to the fact that remote working company are mostly become flat organisations since the absence of hierarchy	<i>"..... in my opinion, working remotely is effective because somehow we can communicate easily, when we runned offline meeting its hard to communicate with CEO, you know right we have to ask the secretary first, waiting outside their room, but now we can catch with them easily cause we are in a same tools"</i>
1.4 Cut off the budget (17 comments)	This reflect to the fact that leaders experienced the reducing budget allocation for unimportant things	<i>" I experienced that leading in fully remote working enables me to cut of unimportant budget especially for commute to work"</i>

Category	Definition	Sample comments
2. Challenges in managing virtual team		
2.1 Creating team engagement (20 comments)	This statement reflects the challenge of building meaningful relationships and emphasising the need of a virtual team as warm as traditional teams since the human touch is missing.	<i>"... all communications in pure remote working are happened in chat or video conferences but we its not mandatory to turn on the camera, so we cannot understand their moods, whether they are in a rush or in a good mood, we do not knowing every movement of our teams, so we tend to speak directly to the point and its totally different compared to traditional teams which we can really talk what their activities, their habit and we cannot do that in online settings, and I feel like the engagement between members is sometimes missing" (P13)</i>
2.2 Isolation and burnout (16 comments)	This highlights the negative impacts of back-to-back online meetings without breaks, this might disturb the well-being.	<i>".... I feel like I get bored with virtual working environment and I wanna have a real conversation with real person sometimes, and that is makes me sometimes not following my corporate activity such as lunch together via zoom or etc" (P11)</i>
2.3 Dealing with Miscommunications (20 comments)	This statement highlights that virtual teams encounter common challenge of miscommunication	<i>"...I have a story. It was in 2022, I conveyed a message with my teams, and they just replied 'okay' . But turns out, their task did not meet with my expectations and I did not know that actually they did not understand what I mean, and misunderstanding happened which contributed to the delayed task." (P5)</i>
2.4 Dealing with different time and schedule (9 comments)	This statement refers to a challenge in virtual teams in managing members which are located in different locations.	<i>".....It was in the beginning of 2023, I have urgent projects that needs to communicate with Asian coordinator which is he lived in India, we have different time zones and awaiting his feedback back then makes me anxiety cause its urgent and they were unreachable" (P11)</i>
2.5 Struggling in decision making process (12 comments)	These occurrences begin with a communication and coordination issue that the team mainly confronts; since they frequently receive delayed responses from one another.	<i>".....Okay, I have a story. I have urgent offline meetings that are sudden. And at that time, my team was in Padang and I was in Solo. So we finally found who still stays in Jakarta and we briefed them. That's truly challenging when you have to decide in very urgent situations, but that's the thing that actually makes my brain keep working every single time." (P12)</i>

Category	Definition	Sample comments
2.6 Technology Issues (7 comments)	These occurrences underlines the importance of selecting workers who have the same vision as the organisation's culture in a remote working environment when the transitions from traditional to virtual teams and shifting from offline to online tools happened.	".....there is a lot of adjustment, we struggle to seek tools and communications to be able to continue our project. We use zoom at the beginning and try to develop other technologies to boost our job. And the pandemic is end, now we decide to still working remotely" (P5)
2.7 Trust Issues (15 comments)	This incident begins when leaders experienced trust issues within team members	"I have experience putting trust in one of my members, I trust her until she crosses my boundaries and right after that incident makes me deal with trust issues to the other members."

Table 6*Strategies in leading virtual team*

Category	Definition	Sample comments
1. Strategies in leading pure virtual team		
1.1 Agile leadership (13 comments)	These occurrences underlines the importance of selecting workers who have the same vision as the organisation's culture in a remote working environment and emphasises the importance of agile leadership in overcoming challenges.	" I consider Agile leadership as one of strategy to be able to successfully manage the remote working teams, based on my experiences, I empower them with a clear vision, at the end, they are able to make very outstandings and do the projects successfully."

Category	Definition	Sample comments
1.2 Managing expectations (7 comments)	These occurrences highlight the importance of leaders' ability to effectively manage expectations in order to prevent challenges.	<i>"... yes we are not meeting each other, yes we are don't know exactly what our teams do because we are not with them like what traditional teams do, so I think we have to manage expectations" (P4)</i>
1.3 Communications skills (19 comments)	These instances underline the importance of effective communication skills in addressing issues.	<i>"... miscommunications are frequently happened in virtual work environment, that is why as a leader we need to sometimes over communicate to make them truly understand or I can say that communication skills is one of the most important skills that leaders in virtual team must have" (P12)</i>
1.4 Create personal engagement (20 comments)	These occurrences emphasises that establishing a personal connection with team members is essential for fostering productive collaboration in virtual team settings	<i>"..... I always spare once in a week to do the working from cafe things, and during that moment I also say to my time like hey, you can ask me anything or I can ask you anything so we can be, you know, not just not being friends, but I I think it's more on how we can be closer " (P9)</i>
1.5 Frequently used informal communications (20 comments)	These occurrences highlight the importance of leaders in giving a small talk and warm greetings before starting the meeting	<i>"... based on my experience, I really recommend starting activity in virtual meetings with warm greetings such as 'hey how are you? Is your son good? Etc, makes us comfortable to work together"</i>
1.6 Ensuring organisational culture fit in hiring (4 comments)	These occurrences underlines the importance of selecting workers who have the same vision as the organisation's culture in a remote working environment	<i>".....as a leader we need to try to hire people and also team members that might fit virtual remote working culture,I mean so the people that we have to be cultured fit first with these remote cultures such as high integrity."</i>

Category	Definition	Sample comments
1.7 Importance of Delegation (11 comments)	These occurrences highlight the significance skills that leaders must have in a virtual team is the capacity to delegate tasks and responsibilities.	<i>"..how can we let go somewhere so that our team member can handle it, we also need to have that kind eye of detail to ensure that okay the standard is there right if the standard is not that, then we need to tell them okay you are doing good but actually this is not optimise startup because bla bla bla, so we need to ensure that, even though we delegate, delegating or maybe testing, doesn't really mean that okay we just go we just leave it to 100%, NO, we need to have a check and balance process especially as a leader right that hold the standard of our team"</i>
1.8 Balancing trust (20 comments)	These occurrences described that leaders in fully virtual settings must be able to balance trust to avoid trust issues.	<i>" I have a story from another division, we are 100 percent virtually right? As a leader we need to put trust in our team, however this team, the leader has 'trust issue' so he insist their members to standby during working hours like he is doing micromanaging things, and somehow it gives much pressure to the employee, that is why as a leader in fully virtual environment I personally highly recommend to balancing trust, and create a method that can makes virtual working environment enjoyable but still effective" (P13)</i>
1.9 Minimise the micromanaging (16 comments)	These occurrences sheds light on the leadership style adopted in virtual teams	<i>"..... so basically the most important thing how can we let go somewhere so that our team member can handle it basically delegate it well only that but we also need to have that kind eye of detail so that we can scrutinise the result of our team member to for what to ensure that okay the standard is there""</i>
1.10 Understanding team's personalities (20 comments)	These occurrences demonstrate the need for the virtual team to maintain a sense of connection.	<i>" as a leader in fully virtual teams we need to customise or accommodate the way our teams works, for example I have a team member who need a clearly example while doing tasks or I also experienced having a member that need clearly and detail feedback for me, or the opposite, so basically all we need as a virtual leaders is customise each team characteristics."</i>

4. Results

Within a fully virtual work environment, leaders encounter numerous situations that can profoundly influence organisational success. This chapter aims to offer a comprehensive analysis of these situations, drawing on the experiences and narratives shared by 20 leaders operating within such environments. The gathered data were categorised into three overarching themes: the advantages of leading in a completely virtual team, challenges faced by leaders, and strategies employed to navigate these challenges. In essence, this chapter presents an in-depth exploration of the multifaceted experiences encountered by virtual leaders in fully virtual work settings.

4.1 Advantages of Leading in Pure Virtual Team

Despite the inherent challenges, managing a fully virtual setting presents distinct advantages. All participants concurred that leading within such settings affords them ample time and obviates the need for commuting, thereby minimising time wastage. Furthermore, 17 out of 20 leaders acknowledged that embracing flexible work arrangements, such as remote or entirely virtual setups, results in cost savings for both individuals and organisations. Leading in a fully virtual context also empowers leaders to recruit exceptional talent irrespective of geographical constraints. Additionally, eight out of 20 leaders reported that leading in such environments facilitates seamless communication with the CEO.

4.1.1 Privilege of Time Saving

Among the 20 leaders surveyed, many noted that their time in traditional teams was often consumed by unproductive conversations with colleagues, leading to inefficiencies. Additionally, leaders concurred that traditional workplaces frequently squander time through commuting.

Particularly in Jakarta, individuals grapple with severe traffic congestion, resulting in daily commutes that can extend from 3 to 5 hours. Leaders highlighted that working entirely remotely significantly bolsters their productivity and offers a stark contrast to traditional work settings.

Leading within fully virtual environments grants them the privilege of time-saving, affording greater freedom and flexibility in managing their schedules, ultimately enhancing efficiency and productivity.

Participant 19 elaborated: "The most significant advantage I've experienced from working remotely is the ability to manage my time better. We all have the same 24 hours, right? However, in virtual settings, I can allocate more time to my significant other, family, and even my cats. Given the lengthy commutes in Jakarta, which can total around 3 hours daily, I consider it a privilege to reclaim those hours for personal pursuits like spending time with loved ones, cooking, and pursuing hobbies."

This underscores the evolving nature of work relationships and encourages companies to reevaluate traditional models, recognizing the potential benefits of remote work. Understanding that physical distance can positively impact overall productivity is crucial. Moreover, the privilege of time-saving also enhances employee well-being. Virtual leadership acknowledges the potential for an improved work-life balance, as workers are no longer burdened by daily commutes. This alleviates stress and fosters increased job satisfaction.

4.1.2 Able to Hire Top Talent

Leading fully remote working companies allows organisations to attract and recruit highly skilled people without being restricted by geographical limitations. By implementing fully virtual settings it also influences the recruiting approach, companies which run fully virtually may

effectively attract in and hire incredibly talented people from various locations. Accessing this broader pool of talent enables organisations to create teams which consist of great people, irrespective of their geographical location. 12 of 20 leaders stated that they had effectively recruited highly skilled workers.

Participant 17 : "...when we talk about remote working companies, I experienced back then to be able to find a good talent is hard because our office is in Jakarta and maybe the good talent live in other city, but now by applying full remote working companies, we can recruit good talent whenever they lived"

Leaders stated that removing geographical constraints improves their ability to form excellent teams. The ability to source people from any place is a strategic advantage since it allows organisations to access a larger range of talents, experiences, and perspectives. The geographical flexibility provided by fully remote working settings provides opportunities to people from many backgrounds and places to offer their skills. Compared to traditional recruitment practises, it may prefer candidates who reside close to the office, thereby limiting the diversity of the talent pool. Fully virtual settings, on the other hand, eliminates these constraints, allowing companies to prioritise ability, skills, and qualifications above region.

4.1.3 Absence of Hierarchy (Flat and Open Organisations)

A number of leaders have reported that managing virtual teams is advantageous for them, particularly in terms of their communication within teams and CEO. Virtual working environment adopted a flat organisational structure due to its fostering more direct and transparent channels of communication, thereby encouraging the implementation of prompt decision-making procedures.

Participant 11 : "..... in my opinion, working remotely is effective because somehow we can communicate easily, when we runned offline meeting its hard to communicate with CEO, you know right we have to ask the secretary first, waiting outside their room, but now we can catch with them easily cause we are in a same tools and no border between us"

Flat organisational structures not only empower individual contributors but also cultivate a sense of ownership and accountability among team members. Flat organisational structures place a greater emphasis on the distribution of authority and the decentralisation of decision-making. Remote team environments foster an atmosphere of trust and independence by obviating the need for an inflexible hierarchical framework imposed by the geographical separation of team members.

4.1.4 Cut Off the Budget

Leading in entirely virtual settings provides huge cost-saving options for organisations, due to the absence of commute and renting facility expenses, since there is no need for a physical office. Leaders also indicated that the funds allocated for office rent may be reallocated towards other things that would contribute to increased operational efficiency and resource optimization. This reallocation might take numerous forms, including investments in staff development programmes, technological improvements, or improved benefits for workers.

Participant 3 : ".....I also experienced that working remotely also cut cost for transportations in employee side, and also for the company it self, we can use our money to another things, we do not need to rent a building for our office, and we can use that budget for supporting employees like give them laptop, cause we know rent a building in Jakarta is super expensive" (P3)

Organisations may develop a more supportive and stimulating work environment for their virtual teams by carefully reinvesting the funds they have saved by removing the requirement for real office space.

4.2 Leadership Challenges in Virtual Teams

According to the interview with 20 leaders, leading in fully virtual work settings face significant challenges due to the absence of face-to-face meetings. Thus lead to miscommunication and difficulties in managing teams within geographically dispersed. A primary challenge encountered by virtual leaders is creating engagement and maintenance of team involvement. Based on an interview with 20 leaders, all leaders explained that establishing a feeling of togetherness and cooperation among team members becomes the first challenge in pure virtual settings due to lack of real interactions within team members. In comparison to traditional teams, spontaneous meets and communications happen frequently, however in fully remote working situations it is difficult to create similar experiences. Additionally, leaders in pure virtual work settings often encounter substantial challenges due to miscommunications. 20 leaders mentioned that leading in a pure virtual team is often associated with misunderstanding and communication failures. Communication between leader and team member in fully virtual work settings mostly depends on electronic mail, video conferencing and textreport which may introduce misunderstandings and communication disruptions. Furthermore, leading in completely virtual work settings might introduce the feeling of isolations and burn out for both supervisors and team members. According to 16 leaders, the issue of dealing with isolation and burnout is a significant challenge for leaders in pure virtual settings. Virtual leaders also have unique challenges when it comes to making decisions. 12 of 20 leaders reported that due to different work time preferences, they often encounter significant challenges while making decisions especially when it comes to urgent

decisions. In virtual work environments, leaders may have difficulties in immediately establishing communication with team members or effectively gathering their responses, resulting in a slower decision-making process. Thus in line with several studies which determined that teams that are geographically dispersed are more sensitive with some conflicts related to interpersonal relationships and task-based matters (Hinds & Mortensen, 2005). 18 out of 20 leaders who were questioned, one ongoing challenge in pure virtual teams is having trust issues within members.

4.2.1 Creating Team Engagement

Existing study emphasises that employee engagement is crucial for organisational performance and gaining a competitive advantage (Saks & Gruman, 2014). When members are engaged with each other, they will demonstrate their full cognitive and emotional skills which leads to performance. On the other hand, disengaged employees will detach themselves from their work responsibility and physically disengage throughout their work roles (Khan, 1990, pp. 694).

However when it comes to pure virtual work settings, the level of physical interaction among members is limited which leads to the disengagement between team members. Participants indicated that communicating through video conference or online message generates barriers that lead to lack of connections between members, however they indicated that despite its challenges, the engagement between members contribute to the successful of projects:

Participant 19 : ".....So, I've got this story where I never actually met one of my team members, and it's been a totally different experience engaging with them. They live in Japan and America, and we never meet. Turns out it's a different deal compared to the team I can hang out with in person, like once a month. I can't crack jokes with

someone I've never met, even if they're on my team. I can't really vibe with their personality, to be honest"

Among 20 participants, they believed that creating team engagement in a pure remote working environment is challenging, emphasising the need of a virtual team as warm as traditional teams is challenging since the human touch is missing.

In addition, participants identified a difference between traditional and entirely virtual teams. Leaders have stated that it is more difficult to deliver jokes in virtual environments because they do not engage in each other as warmly as traditional teams do.

4.2.2 Isolation and Burnout

Participants also asked about their feelings while leading in pure virtual work settings. Even though leading in fully virtual work settings has a lot of benefits for them, they also indicated that sometimes they feel stress and burnout due to back-to-back online meetings without breaks and the absence of physical interactions with colleagues and these might disturb their well-being. Additionally, there is meta-analytic research that examines workplace demands, such as excessive workload, conflicting and unclear roles, and emotional pressures, which may have a negative influence on employee health, well-being, and performance (Albrecht & Anglim, 2018; Alarcon, 2011). Leaders in pure virtual teams are having complex situations which makes them have a non-stop online meeting and manage things, resulting in limited time of rest and completing other responsibilities which lead them into tiredness and burnout.

Participant 4 : ".....and then, another problem might be, you know, some exhausting meetings, you know, back-to-back meetings and without any rest in between that cause you are a leader and you have to connect the dots and non-stop doing the online coordination."

Some leaders also mentioned that leading in pure virtual teams settings makes them feel isolated. In a traditional work environment, employees are physically gathered which lead them to engage directly with each other, however this does not happen in virtual teams. Lack of face to face social interactions encounter the feeling of isolations and detachment among members.

4.2.3 Dealing with Miscommunications

Previous research identified that communications is one of the fundamental challenges that happened in virtual environments (Alsharo et al., 2017). Thus also inline with statements of leaders in a pure virtual working environment. Among 20 leaders they believed that miscommunications is the most challenging part of leading virtually. This often happened due to lack of physical interactions. However, each characteristic of members in virtual members also contributes to miscommunications, the participant said :

Participant 16 : ".....In my company we tried to write based on communications first. The culture that we build is that everything communicates by written text first. But I realised somehow we experienced miss communications. Each person has different acceptance in receiving text communications, for example one of my team members really wants to use emoji in every conversation, and somehow that makes miscommunications if I do not put emoji while communicating with her.

Leaders also mentioned that addressing issues in miscommunication is closely linked to team engagement. When teams are actively engaged with each other, communication will run smoothly.

4.2.4 Dealing with Different Time and Schedule

9 out of 20 leaders stated that coordinating with members in pure virtual teams is challenging due to the fact that they live in different time zones and sometimes it's hard to set up the meeting.

Participant 16 : *".....I experienced working with european based peers, we have very different time zones, and sometimes in Indonesia I have the urgent things but they are out of working hours, but when the things are very urgent, I think that the most challenging part of working remotely"*

Scheduling meetings or discussions in a remote environment can be difficult because team members may have conflicting priorities and are not always available. Leaders have additionally noticed that team members may have varying preferences for working hours, which may lead to challenges in organisations, such as difficulties in scheduling meetings due to diverse work schedules among members.

4.2.5 Struggling in Decision Making Process

Leading in pure virtual teams encounter greater challenges in the decision making process, due its required a high amount of interactions and negotiations within members. 12 leaders expressed the necessity for strong coordination with team members throughout the decision-making process. However, this becomes challenging in pure virtual teams settings since they are not working at the same time, they often get delayed responses from each other.

Participant 12 : *".....Okay, I have a story. I have urgent offline meetings that are sudden. And at that time, my team was in Padang and I was in Solo. So we finally found who still stays in Jakarta and we briefed them. That's truly challenging when you have to decide in very urgent situations, but that's the thing that actually makes my brain keep working every single time and I realised that we have to trust each other. That makes it easier during the decision making process."*

Leaders also argued that the decision making process in virtual teams required a high ability to trust each other due to the absence of physical communications and connections. As it also inline

with previous research, trust is becoming a crucial factor that contributes to the decision making process, particularly when team members are geographically dispersed. In such cases, trust serves as the bonding element that replaces direct supervision or a shared work environment (O'Hara- Deveraux & Johansen, 1994).

4.2.6 Technology Issues

Companies are required to deploy new technologies in order to maintain competitiveness in the digital age (Warner & Wäger, 2019). Moreover, completely remote working organisations rely heavily on technology to manage their projects and communicate with team members. 7 out of 20 leaders which adopted fully remote working experienced the struggle to use the technology as their main tools.

Participant 5 : ".....there is a lot of adjustment, we struggle to seek a tools and communications way to be able to continue our project. We use zoom at the beginning and try to develop other technologies to boost our job. And the pandemics is end, now we decide to still working remotely"

Leaders stated that the difficulties posed during the pandemic encouraged them to adjust with technology and create new approaches in projects undertaking. At first, leaders used tools such as zoom and teams to communicate within members, and are currently adopting other technologies to improve their work. Leaders had difficulties in seeking technologies that facilitate seamless communication among team members and boost projects successfully in fully virtual settings.

4.2.7 Dealing with Trust Issues

All of the leaders explain that trust becomes the crucial thing in pure virtual settings. These are in line with Weibel et al. (2016), which stated that trust plays a critical role in organisations due to

the high level of trust influencing the commitment towards organisations. In contrast, inability to trust in each other in a virtual work environment could negatively affect learning and productivity in organisations. Credibility, respect, and fair treatment are very important in developing trust in organisations (Lyman, 2003). However, 18 leaders in fully virtual settings stated that the absence of physical interactions in pure virtual settings creates barriers such as lack of respect among members that might impact trustworthiness.

Participant 1 : "... I think trust is the most important things in virtual team, because we cannot see each other in person and at some point we do not want to do the micromanaging things and spend our time just to control one by one of our members, however is not that easy to be honest to trust our members, "

Some leaders also expressed that they experienced bad situations in the past, when the trust they had put in their team members was undermined and resulted in negative outcomes. These experiences create unwillingness to trust members easily.

4.3 Leadership Strategies in Pure Virtual Teams

In order to overcome some challenges in fully virtual teams, each leader proposes different strategies to effectively handle difficult situations. Among 20 leaders, 13 leaders stated that adopting agile leadership is an essential way in managing successful virtual companies. 7 out of 20 leaders considered that managing expectations towards employees is also becoming strategies of leaders in order to achieve successful projects. Additionally, 19 leaders believed that the most crucial strategies of managing a fully virtual team is having great communication skills, since face-to-face interactions are missing, therefore leaders are encouraged to have communication skills to make virtual interactions as real as traditional teams. Furthermore, all leaders believed that some strategies such as creating personal engagement, frequently using informal

communication, balancing trust and understanding team's personalities are the strategies that leaders must adopt in fully virtual settings.

4.3.1 Adopting Agile Leadership

Among 13 leaders stated that one of key strategies to overcome challenges in fully virtual work settings is by implementing agile leadership concepts and empowering teams with clear visions. Implementing agile leadership in completely virtual work settings encourages team members to respond quickly to changing conditions. Adopting agile leadership entails leaders consistently motivating team members and actively developing a culture of encouragement and support. This involves recognising and valuing the efforts and achievements of team members, which may significantly boost team morale and build a sense of unity. In addition, adopting agile leadership in fully virtual work settings reduces the complexity and enables faster problem-solving.

Participant 1 : " I consider Agile leadership as one of strategy to be able to successfully manage the remote working teams, based on my experiences, I empower them with a clear vision, at the end, they are able to made decisions very outstandings and do the projects successfully."

By providing teams with authority to make decisions, take ownership projects and contribute in solving problems, leaders foster a work environment that promotes creativity and high-performing results. Adopting agile leadership means leaders keep encouraging team members and actively foster culture encouragement and support, appreciating the effort and accomplishments of their members which can positively enhance team morale and strengthen a feeling of togetherness. By creating an environment where team members feel valued and supported, leaders enhance team cohesion and resilience in the face of challenges.

4.3.2 Managing Expectations

According to 7 leaders, managing expectations becoming strategies that leaders in a fully remote working environment must employ, due to having a high expectation towards employees in a virtual team will lead to the other problem. Leaders must be aware of the challenges their workers face due to the absence of face-to-face meetings, which might make them not able to achieve their standard. According to 7 leaders, managing in fully remote settings encourages leaders' ability to control the expectations. Leaders in a fully virtual team must be able to balance between guiding members and avoiding micromanagement. Therefore leaders must recognize the capability of letting go and avoid imposing high standards on members.

Participant 16 : ".....the most important things that leaders in virtual team must do is capability to let go, capability to manage our expectations is important in virtual teams, and I think it's the hardest part of virtual leaders, I will not force my team to do the things that I want them to do by our standard, cause that's the part of micromanaging things and that's bad "

Establishing practical expectations is crucial for effective virtual leadership, necessitating a careful and thoughtful approach. Leaders in fully virtual teams are also urged to create a collaborative environment to effectively manage the interplay between providing direction and delegating tasks to members.

4.3.3 Communications Skills

In contrast to traditional in-person communication, all computer-mediated communication systems encounter an identical problem as a result of the lack of verbal and nonverbal cues (Bell & Kozlowski, 2002). However, non-verbal cues (including facial expression, body language, and emotion) and verbal cues (including volume, tone of voice, and verbal hesitation) are significant

sources for processing task-related information from team members. 19 out of 20 leaders suggested improving their communication skills as a way to deal with obstacles in pure virtual work settings.

Participant 12 : "... miscommunications are frequently happened in virtual work environment, that is why as a leader we need to sometimes over communicate to make them truly understand or I can say that communication skills is one of the most important skills that leaders in virtual team must have"

Leaders in fully virtual team settings are urged to create situations and communication in virtual environments as clear as face to face interaction.

4.3.4 Create Personal Engagement

Since face-to-face interactions are cues in fully remote working settings. All 20 leaders proposed that creating personal engagement within members is necessary to accomplish a successful project. Given the absence of face-to-face interactions, leaders are urged to develop creativity as a means to enhance personal connection. There are several strategies to increase personal engagement. Some leaders stated that by creating one-on-one meetings programs between leaders and members could boost the engagement. During one-on-one programs the leader and member could share anything including personal life. Leaders also proposed some strategies such as 'work from cafe' together once in a week, and 'breakfast meeting' effectively enhance personal engagement.

Participant 3 : "... So I have, let's say one day in two weeks to catch up with some of my colleagues, some of my team in my office and was like, okay let's have a coffee date today. Or let's have a breakfast meeting. And we spend like two or three hours in the same place working at the same place together. They work their own things. I am

working with my own stuff, but we're in the same place. Like but we just do as I told you once in two weeks, maybe or we can catch up every weekend."

In summary, leaders believe that the significant impact from establishing engagement and bonding experience among members is a successful project. During bonding moments in the villa, leaders had moments of friendship and warm social interactions with team members. Bonding with team members facilitated the dismantling of obstacles, nurturing a collective spirit of solidarity and companionship. Creating engagement within members also played a big role in facilitating deeper connections among members.

4.3.5 Frequently Used Informal Communications

One of the strategies that leaders in fully virtual settings must adopt is frequently used informal communications such as saying “ hi, are you good?” in the beginning of the meeting, and creating informal interactions before and after the meeting. Ultimately, engaging in informal communications at the beginning of virtual interactions, generally referred to as "small talk," proves to be a good practice.

Participant 1 : "..... I always look at like the first five or ten minutes just to do some chit chat, like “how are you”, “what's happening”, “where are you now right”, okay “what's happening with your life” because we always have the time "okay let's wait for five minutes for other people to join in those kind of things" I saw those five minutes what I did is actually just to talk with them like talking personally or are you talking no I think it's more like small talks,"

Allocating the first five to ten minutes for personal conversations, discussing many topics such as health, social-life, and recent experiences, fosters a favourable connection among members. This casual interaction not only promotes a feeling of connection but also enhances a casual and

all-encompassing online atmosphere. By using these first moments for personal interaction, people may establish relationships that extend beyond work-related duties, improving overall team cohesiveness .

4.3.6 Ensuring Organisational Culture Fit in Hiring

Leading entirely virtual teams might be frequently disrupted by many challenges. To mitigate the challenges, leaders must ensure that the corporate culture aligns with the recruitment process. Leaders need to pay attention during the recruitment process and select employees who align with the organisational culture. Leaders should actively recruit team members who readily accept the autonomy and responsibility that naturally come with virtual environments.

Participant 7 : ".....as a leader we need to try to hire people and also team members that might fit virtual or remote working culture, I mean so the people that we have to be cultured fit first with these remote cultures such as high integrity."

The deliberate process of selecting team members not only promotes a unified and reliable team, but also enhances the effectiveness of remote work efforts. Leaders establish a strong and flexible workforce that can succeed in remote work environments by ensuring that the team's values are in line with the requirements of virtual collaboration.

4.3.7 Importance of Delegation

The essential strategy for leaders in a fully virtual team setting is ability to delegate tasks and responsibilities. Among 11 leaders stated that delegating tasks does not mean completely disconnecting, it requires a sophisticated strategy that blends trust with a commitment to quality projects.

Participant 1 : ".....how can we let go somewhere so that our team member can handle it, delegating doesn't really mean that okay we just go we just leave it to 100%, NO,

we need to have a check and balance process especially as a leader right that hold the standard of our team"

Leaders in fully virtual settings must demonstrate the attention to detail tasks, ensuring that assigned tasks align with the standards. Hence, leaders are urged to give constructive feedback since it recognises good efforts and offers ideas for improvement. The delegation process, when supported by accountability, serves as a means to foster development and uphold the team's values with integrity.

4.3.8 Balancing Trust

Trust has been identified as a crucial factor in influencing the effectiveness of virtual teams (Bergiel et al., 2008; Sarker and Sahay, 2003). All interviewed leaders believed that trust is the fundamental factor which influences the success of fully virtual team settings. The stability of a virtual team depends mostly on the commitment and trust among team members, which might gradually decline without face-to-face or co-located social interaction. Therefore, in fully virtual settings, leaders are encouraged to balance the trust among members.

Participant 18 : "... to be able to maintain trust, we have one-on -one meeting between manager with members, so we not only discuss about work, but we also discuss about personal things, and we also share about aspiration , so basically we try to create a positive discussion that could increase trust "

In conclusion, fostering trust among members in fully virtual teams required collaborations on a personal and professional level. Weekly office and monthly bonding seasons are needed to strengthen interpersonal relationships and acknowledge the critical role of fostering trust. Leaders in fully virtual settings also explained that using the Objectives and Key Results (OKR) with the organisation will promote transparency, thereby cultivating confidence in an entirely

remote work environment. It is also important to note that leaders in fully virtual settings are urged to foster an organisational culture that not only preserves but flourishes trust, which is the foundation of effective remote collaboration.

4.3.9 Minimise the Micromanaging

16 leaders agree that micromanaging teams hinder their potential growth as leaders, as it diverts their time and energy away from more impactful tasks and projects. It is crucial that leaders need to learn to delegate effectively, allowing team members to handle responsibilities. However, leaders also urge to maintain a keen eye for detail to scrutinise their results and ensure that the required standards are met.

Participant 1 : "..... micromanaging teams is limiting our room to growth as a leader, because actually we can spend our time for more impactful things or for more impactful project rather than micromaging our members "

In summary, avoiding micromanagement is crucial for leaders' development on both professional and personal level. Micromanagement reduces growth opportunities for leaders.

By adopting a leadership style that prioritises trust and delegation, an environment conducive to innovation and efficiency is established, which grants access to a universe of opportunities that extend beyond the limitations imposed by micromanagement. This enables the exploration of a wide range of prospects that go beyond the constraints imposed by excessive control and supervision.

4.3.10 Understanding Team's Personalities

All leaders agree that understanding team's personalities can successfully tackle the challenges and influence the successful projects. Leaders are urged to understand each personality in fully virtual settings to minimise the conflicts. Since fully virtual work settings are composed from

various backgrounds, leaders are encouraged to have enough awareness about the team member's cultural and national background aids in the development of stronger interpersonal relationships.

Participant 2 : " as a leader in fully virtual teams we need to customise or accommodate the way our teams works, for example I have a team member who need a clearly example while doing tasks or I also experienced having a member that need clearly and detail feedback for me, or the opposite, so basically all we need as a virtual leaders is customise each team characteristics."

To summarise, successful leadership in completely virtual teams requires an ability to understand team's personalities to address the unique needs of every team member. It is crucial to acknowledge and adapt to various working styles, such as offering clear illustrations for one person and detailed feedback for another. As a virtual leader, the capacity to adapt leadership strategies to specific circumstances improves team unity and effectiveness. Adopting this strategy cultivates an atmosphere in which every team member experiences assistance and appreciation, thereby enhancing the overall achievement of the remote team.

5. Discussion

The chapter described the findings of the research and delves into theoretical implications that were derived from this research. Additionally, this chapter not only meticulously outlines the research findings, but also fostering a transparent discussion through study's limitations. Moreover, it serves a guiding principle for subsequent investigations, suggesting avenues for future research.

5.1 Findings and Theoretical Implications

This research makes a significant contribution by not only illuminating the advantages, challenges, and strategies of virtual leadership as outlined in academic literature but also conducting a meticulous analysis of practical experiences of leaders in managing virtual teams. This approach provides direction to comprehensive perspectives that enhance a broader understanding of effective leadership in virtual teams. By investigating the complexities of leaders' experiences in managing virtual teams and comparing them with scholarly discourse, this research enriches the academic discourse on virtual leadership.

The findings of this study highlight the advantages of adopting fully virtual work settings, including the flexibility for teams to choose their preferred work hours and the reduction of travel-related expenses. Interestingly, these findings align with previous research conducted by Cascio and Shurygailo (2003), emphasising the continued significance of flexible work schedules in virtual team settings. While Cascio and Shurygailo (2003) research is applicable to fully virtual settings, there are notable distinctions from the current study. Cascio and Shurygailo (2003) research underscores the importance of managing travel commitments and implementing

a "share-the-pain" strategy to promote engagement among team members. This involves ensuring a fair distribution of travel responsibilities and rotating meeting times monthly to prevent team members at one location from consistently shouldering the burden of calls during their own time. In contrast, this research introduces an innovative perspective that highlights the deliberate use of technology as an effective tool for managing and engaging virtual teams. This signifies a noticeable shift in strategy within the evolving realm of digital work settings, emphasising an intricate approach that leverages digital technologies. Rather than solely addressing logistical obstacles, the emphasis is on strategically using platforms like Zoom or Teams to coordinate virtual events. Innovative online programs, such as 'one-on-one sharing meetings' or 'virtual café collaborations,' can facilitate personal connections among leaders and team members, fostering a sense of companionship within the professional setting. Similarly, the concept of a "breakfast meeting" is promoted as an effective strategy for enhancing professional interactions with a touch of intimacy. Actively seeking opportunities for interpersonal connections allows leaders to address the challenges associated with fully virtual work, creating a cohesive and supportive working environment. This strategy effectively fosters team collaborations and promotes personal engagement among team members.

This finding highlights that, despite having advanced technology at their disposal, the absence of physical interactions poses challenges for virtual teams. These challenges include difficulties in decision-making processes, feelings of isolation and burnout, and the need to enhance team engagement. Furthermore, the flexibility for individuals to choose their preferred work hours and the geographical dispersion of team members present additional hurdles. Many leaders mentioned not having met their team members in person, making it challenging to establish familiarity and recognition.

These findings align with prior research by Avolio et al. (2000), which emphasises that the lack of face-to-face interactions and overlapping work hours in virtual teams can lead to coordination challenges. Avolio et al. (2000) also underscores the crucial role of leadership in virtual teams and suggests that a transformational leader can positively influence team members' perception of skills, integrity, and trust, thereby creating a successful virtual work environment. However, contrary to earlier research, this study suggests that adopting agile leadership may be the most effective approach to addressing challenges in fully virtual settings. Agile leadership is characterised by empowering team members with decision-making authority, fostering a sense of ownership over projects, and encouraging active participation in problem-solving. The adoption of agile leadership in fully virtual work settings prioritises collaboration and rapid decision-making. Decentralised decision-making is often employed, as fully virtual settings require adaptability to various situations, prompting teams to make prompt decisions. Agile leaders trust their teams' capacity to make informed decisions. The unexpected finding of implementing agile leadership in addressing challenges within virtual work settings adds a significant layer of novelty and practical insight to this research.

This research reveals another noteworthy finding, emphasising the importance of aligning company culture with the recruiting process to minimise challenges in virtual work settings. During the recruitment process, leaders are advised to meticulously select individuals who resonate with the organisational culture and share the same values as the remote working culture. This strategic approach not only fosters a cohesive and dependable team but also enhances the overall efficiency of remote working settings. Implementing this strategic recruiting model is identified as a key factor in mitigating challenges faced by virtual leaders and in cultivating a cohesive and supportive working environment.

5.2 Practical Implications

The findings and recommendations from this research provide valuable insights for leaders operating in remote environments. This study contributes significantly to the ongoing discussion about effective leadership in the digital age by bridging academic knowledge with practical application. The study shows that adopting agile leadership is a crucial strategy for successfully managing entirely virtual settings. Leaders embracing agile leadership and steering clear of micromanagement effectively address challenges in fully virtual settings, including difficulties in the decision-making process. Leaders in fully virtual settings need to exhibit high creativity to foster a warm working atmosphere. Participating leaders in this study emphasised the importance of avoiding micromanagement policies and promoting leadership styles that cultivate trust and independence in fully virtual settings. Transparent communication within virtual settings was also highlighted as a key aspect. The research underscores the significance of virtual organisations fostering a culture that values innovation and creative thinking among leaders, potentially leading to a flexible and dynamic identity. The recommendation to adopt agile leadership aligns with the current trend of leaders being adaptable and quick to react, especially in the ever-changing landscape of remote work. Additionally, the emphasis on building team engagement underscores the critical need for establishing an integrated and cooperative online workplace, acknowledging the unique challenges associated with fostering a sense of connection among geographically separated team members.

5.3 Limitation

This research focused specifically on examining leadership dynamics within completely virtual teams in Asia, recognizing that these dynamics may differ compared to other organisations worldwide due to cultural variations and specific traits. Additionally, the majority of leaders were based in Indonesia, and this geographical concentration may limit the generalizability of the results to a broader, global context. The challenges of different time zones during interviews conducted at unexpected times might lead to participant fatigue, potentially impacting their ability to express ideas coherently and actively engage in conversations.

Another limitation of this study is evident during the interviews, where leaders are asked to recall their experiences in their organisations. However, there is a potential for participants to demonstrate bias. When leaders are prompted to recall their experiences while leading remotely, most tend to emphasise challenges rather than the advantages of leading a virtual team. To address the potential bias of participants focusing predominantly on negative experiences, the interview questions were carefully crafted to encompass a wide variety of experiences, including both positive and negative ones. Leaders were encouraged to share examples of successful experiences in response to questions such as, "Would you mind sharing an example of a successful project or initiative led by one of your virtual teams?". This approach aimed to ensure a balanced representation of leaders' experiences in the study.

5.4 Suggestion for Future Research

In this research, semi-structured interviews were utilised to delineate the advantages and challenges of virtual leadership. Potential distinctions may emerge when comparing leadership in traditional teams with fully virtual teams. This creates an opportunity for future research to undertake a comparative analysis of the adaptive skills essential for virtual leadership and those required in traditional, co-located leadership. Identifying similarities, differences, and potential transferable skills would contribute valuable insights. Moreover, the research findings underscore the prevalent adoption of flat organisational structures among virtual organisations, a deliberate strategy aimed at reducing complexities. To contribute to the advancing knowledge in this field, future research could delve into unravelling the intricacies and dynamics fundamental to flat organisations concerning virtual teams. A significant challenge identified in this study is the issue of trust within fully virtual organisations. Considering the growing prevalence of virtual work arrangements, establishing trust among members is crucial as trust acts as the glue in organisations. Future research could dedicate efforts to investigating the dynamics of trust in entirely virtual environments, with a specific focus on the relationship between leaders and employees. By actively engaging employees, researchers can gain significant insights into the elements fostering trust formation and the obstacles that could impede its progression in a virtual setting.

5.5 Conclusion

The findings of this study illuminate the comparison between previous research and the practical implications regarding the advantages and challenges of virtual teams. Challenges, particularly in communication, team cohesiveness, and performance measurement, align with those identified in earlier research. Similarly, the advantages of flexible scheduling, leading to increased leadership productivity and reduced costs, align with previous study findings. Significantly, this research unveils several disparities not addressed in earlier studies concerning the practical implications of leadership in virtual teams. An important discovery is the adoption of agile leadership to overcome these challenges, enhancing our understanding of leadership dynamics in virtual teams and providing valuable insights absent in previous studies. Finally, this research delves into an in-depth analysis of leadership strategies within fully virtual settings, offering academic insights and practical recommendations for organisations grappling with the challenges of remote work. Given the increasing prevalence of virtual collaboration, there is a growing importance in studies aimed at enhancing the formation of robust and effective virtual organisations. This study equips leaders with efficient resources to navigate the complexity of managing remote teams. These strategies are not only theoretically grounded but also reflect a practical understanding of the evolving demands placed on leaders in the digital age.

References

- Alsharo, M., Gregg, D. G., & Ramírez, R. (2017). Virtual team effectiveness: The role of knowledge sharing and trust. *Information & Management, 54*(4), 479–490.
<https://doi.org/10.1016/j.im.2016.10.005>
- Avolio, B. J., Kahai, S. S., & Dodge, G. E. (2000). E-leadership. *Leadership Quarterly, 11*(4), 615–668. [https://doi.org/10.1016/s1048-9843\(00\)00062-x](https://doi.org/10.1016/s1048-9843(00)00062-x)
- Avolio, B. J., Sosik, J. J., Kahai, S. S., & Baker, B. (2014). E-leadership: Re-examining transformations in leadership source and transmission. *Leadership, 25*(1), 105–131.
<https://doi.org/10.1016/j.leaqua.2013.11.003>
- Baumbusch, J. (2010). Semi-Structured interviewing in Practice-Close research. *Journal for Specialists in Pediatric Nursing, 15*(3), 255–258.
<https://doi.org/10.1111/j.1744-6155.2010.00243.x>
- Barriball, L., & While, A. (1994). Collecting data using a semi-structured interview: a discussion paper. *Journal of Advanced Nursing, 19*(2), 328–335.
<https://doi.org/10.1111/j.1365-2648.1994.tb01088.x>
- Bell, B. S., & Kozlowski, S. W. J. (2002). A Typology of Virtual Teams. *Organisations and management, 27*(1), 14–49. <https://doi.org/10.1177/1059601102027001003>
- Berry, G. J. (2011). Enhancing Effectiveness on Virtual Teams: Understanding Why Traditional Team Skills Are Insufficient. *Journal of Business Communication, 48*(2), 186–206.
<https://doi.org/10.1177/0021943610397270>

- Bloom, N., Liang, J., Roberts, J. L., & Ying, Z. J. (2014). Does Working from Home Work? Evidence from a Chinese Experiment *. *Quarterly Journal of Economics*, *130*(1), 165–218. <https://doi.org/10.1093/qje/qju032>
- Bresciani, S., Ferraris, A., Romano, M., & Santoro, G. (2021). Human Resource Management and Digitalisation. In *Emerald Publishing Limited eBooks* (pp. 117–138). <https://doi.org/10.1108/978-1-80043-171-320211007>
- Brinkmann, S. (2014). Doing Without Data. *Qualitative Inquiry*, *20*(6), 720–725. <https://doi.org/10.1177/1077800414530254>
- Breuer, C., Hüffmeier, J., & Hertel, G. (2016). Does trust matter more in virtual teams? A meta-analysis of trust and team effectiveness considering virtuality and documentation as moderators. *Journal of Applied Psychology*, *101*(8), 1151–1177. <https://doi.org/10.1037/apl0000113>
- Cascio, W. F., & Shurygailo, S. (2008). E-Leadership and virtual teams. *IEEE Engineering Management Review*, *36*(1), 79. <https://doi.org/10.1109/emr.2008.4490142>
- Cascio, W. F., & Shurygailo, D. S. (2003). E-Leadership and virtual teams. *Organisational Dynamics*, *31*(4), 362–376. [https://doi.org/10.1016/s0090-2616\(02\)00130-4](https://doi.org/10.1016/s0090-2616(02)00130-4)
- Choi, O., & Cho, E. (2019). The mechanism of trust affecting collaboration in virtual teams and the moderating roles of the culture of autonomy and task complexity. *Computers in Human Behavior*, *91*, 305–315. <https://doi.org/10.1016/j.chb.2018.09.032>
- Cheng, X., Fu, S., & Druckenmiller, D. A. (2016). Trust development in globally distributed collaboration: a case of U.S. and Chinese mixed teams. *Journal of Management Information Systems*, *33*(4), 978–1007. <https://doi.org/10.1080/07421222.2016.1267521>

- Crisp, C. B., & Jarvenpaa, S. L. (2013). Swift Trust in Global Virtual Teams. *Journal of Personnel Psychology, 12*(1), 45–56. <https://doi.org/10.1027/1866-5888/a000075>
- Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The Role of Leadership in a Digitalized World: A Review. *Frontiers in Psychology, 10*. <https://doi.org/10.3389/fpsyg.2019.01938>
- Cummings, J. N., & Haas, M. R. (2011). So many teams, so little time: Time allocation matters in geographically dispersed teams. *Journal of Organisational Behaviour, 33*(3), 316–341. <https://doi.org/10.1002/job.777>
- Davis, D. R., & Bryant, J. C. (2003). Influence at a distance: Leadership in global virtual teams. In *Emerald (MCB UP) eBooks* (pp. 303–340). [https://doi.org/10.1016/s1535-1203\(02\)03015-0](https://doi.org/10.1016/s1535-1203(02)03015-0)
- De Jong, B., Dirks, K. T., & Gillespie, N. (2016). Trust and team performance: A meta-analysis of main effects, moderators, and covariates. *Journal of Applied Psychology, 101*(8), 1134–1150. <https://doi.org/10.1037/apl0000110>
- DeRosa, D., Hantula, D. A., Kock, N., & D'Arcy, J. (2004). Trust and leadership in virtual teamwork: A media naturalness perspective. *Human Resource Management, 43*(2–3), 219–232. <https://doi.org/10.1002/hrm.20016>
- Dulebohn, J. H., & Hoch, J. E. (2017). Virtual teams in organisations. *Human Resource Management Review, 27*(4), 569–574. <https://doi.org/10.1016/j.hrmr.2016.12.004>
- Effing, R., & Spil, T. a. M. (2016). The social strategy cone: Towards a framework for evaluating social media strategies. *International Journal of Information Management, 36*(1), 1–8. <https://doi.org/10.1016/j.ijinfomgt.2015.07.009>
- Espedal, G., & Synnes, O. (2022). A narrative approach to exploring values in organisations. In *Springer eBooks* (pp. 189–204). https://doi.org/10.1007/978-3-030-90769-3_11

- Eisenberg, J., & Krishnan, A. (2018). Addressing virtual work challenges: learning from the field. *Organization Management Journal*, 15(2), 78–94.
<https://doi.org/10.1080/15416518.2018.1471976>
- Fiol, C. M., & O’Connor, E. J. (2005). Identification in Face-to-Face, hybrid, and pure virtual teams: untangling the contradictions. *Organization Science*, 16(1), 19–32.
<https://doi.org/10.1287/orsc.1040.0101>
- Galletta, A., & Cross, W. E. (2020). Mastering the Semi-Structured interview and beyond. In *New York University Press eBooks*.
<https://doi.org/10.18574/nyu/9780814732939.001.0001>
- Gilson, L., Maynard, M. T., Young, N. A., Vartiainen, M., & Hakonen, M. (2014). Virtual teams research. *Journal of Management*, 41(5), 1313–1337.
<https://doi.org/10.1177/0149206314559946>
- Gilson, L., Costa, P., O’Neill, T. W., & Maynard, M. T. (2021). Putting the “team” back into virtual teams. *Organisational Dynamics*, vol. 50, no. 1, pp. 1-10.
<https://doi.org/10.1016/j.orgdyn.2021.100847>
- Greenberg, P. S., Greenberg, R., & Antonucci, Y. L. (2007). Creating and sustaining trust in virtual teams. *Business Horizons*, 50(4), 325–333.
<https://doi.org/10.1016/j.bushor.2007.02.005>
- Gheni, Ali & Yusmadi, Yah & Jusoh, Yusmadi & A. Jabar, Marzanah & Mohd Ali, Norhayati. (2016). Factors affecting global virtual teams’ performance in software projects. *Journal of Theoretical and Applied Information Technology*, 92(1), 90-97.
https://www.researchgate.net/publication/309159489_Factors_affecting_global_virtual_teams%27_performance_in_software_projects

- Hinds, P., & Mortensen, M. (2005). Understanding conflict in geographically distributed teams: the moderating effects of shared identity, shared context, and spontaneous communication. *Organization Science*, *16*(3), 290–307.
<https://doi.org/10.1287/orsc.1050.0122>
- Hambley, L., O'Neill, T. A., & Kline, T. J. B. (2007). Virtual team leadership: The effects of leadership style and communication medium on team interaction styles and outcomes. *Organisational Behaviour and Human Decision Processes*, *103*(1), 1–20.
<https://doi.org/10.1016/j.obhdp.2006.09.004>
- Hertel, G., Geister, S., & Konradt, U. (2005). Managing virtual teams: A review of current empirical research. *Human Resource Management Review*, *15*(1), 69–95.
<https://doi.org/10.1016/j.hrmr.2005.01.002>
- Hoch, J. E., & Kozlowski, S. W. J. (2014). Leading virtual teams: Hierarchical leadership, structural supports, and shared team leadership. *Journal of Applied Psychology*, *99*(3), 390–403. <https://doi.org/10.1037/a0030264>
- Hunsaker, P. L., & Hunsaker, J. S. (2008). Virtual teams: a leader's guide. *Team Performance Management*, *14*(1/2), 86–101. <https://doi.org/10.1108/13527590810860221>
- Kahai, S. S., Huang, R., & Jestice, R. (2012). Interaction effect of leadership and communication media on feedback positivity in virtual teams. *Group & Organization Management*, *37*(6), 716–751. <https://doi.org/10.1177/1059601112462061>
- Kitto, S., Chesters, J. E., & Grbich, C. (2008). Quality in qualitative research. *The Medical Journal of Australia*, *188*(4), 243–246.
<https://doi.org/10.5694/j.1326-5377.2008.tb01595>

- Karunathilaka, G. S. (2022). Virtual Team adaptation: Management perspective on individual differences. *Businesses*, 2(2), 118–128. <https://doi.org/10.3390/businesses2020008>
- Kowalski, G., & Ślebarska, K. (2022). Remote working and work effectiveness: a leader perspective. *International Journal of Environmental Research and Public Health*, 19(22), 15326. <https://doi.org/10.3390/ijerph192215326>
- Lee-Kelley, L. (2002b). Situational leadership : Managing virtual team projects. *Journal of Management Development*. <https://doi.org/10.1108/02621710210430623>
- Liao, C. (2017). Leadership in virtual teams: A multilevel perspective. *Human Resource Management Review*, 27(4), 648–659. <https://doi.org/10.1016/j.hrmr.2016.12.010>
- Liu, C., Ready, D., Roman, A. V., Van Wart, M., Wang, X., McCarthy, A., & Kim, S. (2018). E-leadership: an empirical study of organisational leaders' virtual communication adoption. *Leadership & Organization Development Journal*, 39(7), 826–843. <https://doi.org/10.1108/lodj-10-2017-0297>
- Lin, C., Standing, C., & Liu, Y. (2008). A model to develop effective virtual teams. *Decision Support Systems*, 45(4), 1031–1045. <https://doi.org/10.1016/j.dss.2008.04.002>
- Lilian, S. C. (2014). Virtual Teams: Opportunities and Challenges for e-Leaders. *Procedia - Social and Behavioral Sciences*, 110, 1251–1261. <https://doi.org/10.1016/j.sbspro.2013.12.972>
- Lurey, J. S., & Raisinghani, M. S. (2001). An empirical study of best practices in virtual teams. *Information and Management*, 38(8), 523–544. [https://doi.org/10.1016/s0378-7206\(01\)00074-x](https://doi.org/10.1016/s0378-7206(01)00074-x)
- Maduka, N., Edwards, H., Greenwood, D., Osborne, A. G., & Babatunde, S. O. (2018). Analysis of competencies for effective virtual team leadership in building successful

- organisations. *Benchmarking: An International Journal*, 25(2), 696–712.
<https://doi.org/10.1108/bij-08-2016-0124>
- Maruping, L. M., & Agarwal, R. (2004). Managing team interpersonal processes through technology: A task-technology fit perspective. *Journal of Applied Psychology*, 89(6), 975–990. <https://doi.org/10.1037/0021-9010.89.6.975>
- Martins, L. D. L., Gilson, L. L., & Maynard, M. (2004). Virtual teams: What do we know and where do we go from here? *Journal of Management*, 30(6), 805–835.
<https://doi.org/10.1016/j.jm.2004.05.002>
- Malhotra, A., Majchrzak, A., & Rosen, B. (2007). Leading virtual teams. *Academy of Management Perspectives*, 21(1), 60–70. <https://doi.org/10.5465/amp.2007.24286164>
- Mathieu, J. E., Maynard, M. T., Rapp, T. L., & Gilson, L. (2008). Team effectiveness 1997-2007: A review of recent advancements and a glimpse into the future. *Journal of Management*, 34(3), 410–476. <https://doi.org/10.1177/0149206308316061>
- Mason, J. (2004). Book Review: Ethics in Qualitative Research. *Sociology*, 38(5), 1070–1071.
<https://doi.org/10.1177/003803850403800518>
- Miller, B. H., & Morris, R. (2016). Virtual peer effects in social learning theory. *Crime & Delinquency*, 62(12), 1543–1569. <https://doi.org/10.1177/0011128714526499>
- McLellan, E., MacQueen, K. M., & Neidig, J. L. (2003). Beyond the qualitative interview: Data Preparation and Transcription. *Field Methods*, 15(1), 63–84.
<https://doi.org/10.1177/1525822x02239573>
- McDonough, E. F., Kahn, K. B., & Barczaka, G. (2001). An investigation of the use of global, virtual, and colocated new product development teams. *Journal of Product Innovation Management*, 18(2), 110–120. <https://doi.org/10.1111/1540-5885.1820110>

- Morrison-Smith, S., & Ruiz, J. (2020). Challenges and barriers in virtual teams: a literature review. *SN Applied Sciences*, 2(6). <https://doi.org/10.1007/s42452-020-2801-5>
- Nandhakumar, J., & Baskerville, R. (2006). Durability of online teamworking: patterns of trust. *Information Technology & People*, 19(4), 371–389. <https://doi.org/10.1108/09593840610718045>
- Orlikowski, W. J. (2002). Knowing in Practice: Enacting a collective capability in distributed Organizing. *Organization Science*, 13(3), 249–273. <https://doi.org/10.1287/orsc.13.3.249.2776>
- O’Leary, M., & Mortensen, M. (2010). Go (Con)figure: Subgroups, Imbalance, and Isolates in Geographically Dispersed Teams. *Organization Science*, 21(1), 115–131. <https://doi.org/10.1287/orsc.1090.0434>
- Palvalin, M., & Vuolle, M. (2016). Methods for identifying and measuring the performance impacts of work environment changes. *Journal of Corporate Real Estate*, 18(3), 164–179. <https://doi.org/10.1108/jcre-11-2015-0035>
- Pinjani, P., & Palvia, P. (2013). Trust and knowledge sharing in diverse global virtual teams. *Information & Management*, 50(4), 144–153. <https://doi.org/10.1016/j.im.2012.10.002>
- Piccoli, G., Powell, A., & Ives, B. (2004). Virtual teams: team control structure, work processes, and team effectiveness. *Information Technology & People*, 17(4), 359–379. <https://doi.org/10.1108/09593840410570258>
- Precup, L., O’Sullivan, D., Cormican, K., & Dooley, L. (2006). Virtual team environment for collaborative research projects. *International Journal of Innovation and Learning*, 3(1), 77. <https://doi.org/10.1504/ijil.2006.008181>

- Rau, B. L., & Hyland, M. a. M. (2002). Role conflict and flexible work arrangements : The effects on applicant attraction. *Personnel Psychology*, 55(1), 111–136.
<https://doi.org/10.1111/j.1744-6570.2002.tb00105.x>
- Roman, A. V., Van Wart, M., Wang, X., Liu, C., Kim, S., & McCarthy, A. (2018). Defining e-leadership as competence in ICT-mediated communications: An Exploratory Assessment. *Public Administration Review*, 79(6), 853–866.
<https://doi.org/10.1111/puar.12980>
- Robert, L., Denis, A., & Hung, Y. C. (2009). Individual swift trust and Knowledge-Based trust in Face-to-Face and virtual team members. *Journal of Management Information Systems*, 26(2), 241–279. <https://doi.org/10.2753/mis0742-1222260210>
- Savolainen, T. I. (2014). Trust-Building in e-Leadership: A case study of leaders' challenges and skills in technology-mediated. . . *ResearchGate*.
https://www.researchgate.net/publication/328216132_Trust-Building_in_e-Leadership_A_Case_Study_of_Leaders%27_Challenges_and_Skills_in_Technology-Mediated_Interaction
- Van Wart, M., Roman, A. V., Wang, X., & Liu, C. (2017). Operationalizing the definition of e-leadership: identifying the elements of e-leadership. *International Review of Administrative Sciences*, 85(1), 80–97. <https://doi.org/10.1177/0020852316681446>
- Van Wart, M., Roman, A. V., Wang, X., & Liu, C. (2019). Operationalizing the definition of e-leadership: identifying the elements of e-leadership. *International Review of Administrative Sciences*, 85(1), 80–97. <https://doi.org/10.1177/0020852316681446>
- Vidhyaa, B., & Ravichandran, M. (2022). A literature review on hybrid work models. *Int. J. Res. Publ. Rev. J*, 3, 292-295.

- Watson-Manheim, M. B., Chudoba, K. M., & Crowston, K. (2011). Perceived discontinuities and constructed continuities in virtual work. *Information Systems Journal*, 22(1), 29–52.
<https://doi.org/10.1111/j.1365-2575.2011.00371.x>
- Warner, K., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349.
<https://doi.org/10.1016/j.lrp.2018.12.001>
- Weibel, A., Hartog, D. N. D., Gillespie, N., Searle, R., Six, F., & Skinner, D. (2016). How Do Controls Impact Employee Trust in the Employer? *Human Resource Management*, 55(3), 437–462. <https://doi.org/10.1002/hrm.21733>
- Zaccaro, S. J., & Bader, P. (2003). E-Leadership and the Challenges of Leading E-Teams: *Organisational Dynamics*, 31(4), 377–387.
[https://doi.org/10.1016/s0090-2616\(02\)00129-8](https://doi.org/10.1016/s0090-2616(02)00129-8)
- Zhu, Y., & Smith, S. A. (2019). Information and communication technology support for contextualization, polychronic values, and job satisfaction: evidence from virtual teams. *International Journal of Business Communication*, 232948841983207.
<https://doi.org/10.1177/2329488419832075>
- Zolin, R., Hinds, P., Fruchter, R., & Levitt, R. E. (2004). Interpersonal trust in cross-functional, geographically distributed work: A longitudinal study. *Information and Organization*, 14(1), 1–26. <https://doi.org/10.1016/j.infoandorg.2003.09.002>

Appendix 1 : Questions for interview with Leaders :

<i>Themes</i>	<i>Semi-structured interview</i>
<i>Introduction</i>	<p>Thank you so much for participating in this study. The research is about leadership challenges and strategies in managing virtual teams. We would like to know your experience while leading virtually and how you deal with the challenges. Please answer honestly, and if there is a question you don't want to answer, do not hesitate to tell us. Also, if there is anything you want to add to a previous question, feel free to do so.</p> <p>There are three things we need to discuss before the interview starts:</p> <ol style="list-style-type: none"> 1) You can withdraw from participating in this research at any time, without having to explain yourself. 2) Are you okay with being recorded? The recording will only be used for making a transcript of the interview and will be deleted immediately after the research is completed. 3) The information you provide, will only be used for educational purposes, will be handled anonymously, and will not be shared outside of the research team. <p>Do you agree with these things?</p>
<i>Background informations</i>	<p>How long have you worked here and how long have you been in your positions?</p>
<i>Introductory</i>	<p>Q1. What is the meaning of effective leadership to you and how is this reflected in virtual leadership?</p> <p>Q2. As a leader who managed fully remote working, have you met your group in person or have you just met online?</p> <p>Q3. Have you ever managed a traditional team before? What was the difference between having real conversations with your team and communicating with them virtually? How do you feel about it?</p>

(Challenges and strategies in pure virtual teams)

Q4. Would you mind sharing your experiences while leading a virtual team? What are the common circumstances that virtual teams often encounter so far?

Q5. Could you be more specific to explain what happened there at that time? How did you react to those situations?

Q6. Take me through those incidents step by step, who were involved? What were the circumstances that led to those situations?

Q7. How do you establish and maintain trust among team members in a fully virtual environment, especially when face-to-face interactions are limited?

Q8. Given that there is a lack of physical presence, what innovative strategies or methods do you adopt to encourage a feeling of connection and cooperation among virtual teams?

Q9. What technologies and tools do you find most valuable for leading virtual teams, and how do you stay updated on emerging technologies that can enhance team collaboration?

Q10. How do you handle performance management and evaluation in a fully virtual team setting?

Q11. Would you mind sharing an example of a successful project or initiative led by one of your virtual teams? What leadership strategies contributed to its success?

Q12. In your opinion, what are the unique qualities or skills that set apart effective virtual leaders from traditional, co-located team leaders?

Concluding the interview and taking care of ethical issues

Any remarks or things that you would like to say?

I thank you so much for sharing your experiences as a leader in these conversations. I wish you a bright future for your career path.
