

Psychological safety in Virtual teams

with a focus on information technology

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Abstract

The recent COVID-19 pandemic has caused a huge disruption in workplaces. Many organizations have been forced to enable remote work for their employees. This has provoked a culture change in many organizations. There are signs this shift will continue even beyond the current Covid situation.

Prior studies have shown the value and necessity of psychological safety in teams. Teams with a higher level of psychological safety are not hesitant to express, raise challenges and voice their opinions (Edmondson, 2018). Such teams are more productive and deliver high performance with continuous learning. Companies are coping everyday with the new challenges arising out of the recent COVID-19 changes. This study aims to get a deeper understanding of the challenges and opportunities on how to foster a safe culture in virtual teams. The goal of this study is to scrutinize the perception of psychological safety in virtual teams and provide managers with toolkits and best practices to nurture and improve psychological safety in their virtual environments. This research has striven to address the question: *How to foster psychological safety in virtual teams?*

A case study with the semi-structured interview questions was used to gather data from twenty-one team members and managers working in virtual team environments. This study has exclusively focused on two types of virtual teams:

1. Teams traditionally working as face to face but were forced to work remote (virtual) due to Covid19.
2. New Teams / Joiners who joined during the COVID-19 measures as part of virtual teams but were originally intended to work as traditional teams.

This research has followed Paul Aertsen's (Aertsen, 2011) framework "Doing research in your own organizations" in the form of ego-contract. Where the researcher focuses on a perspective, issue, or problem as if external to himself without any further engagement.

The data collected from interviews and observations show that psychological safety is increasingly more important in virtual teams than in traditional teams. This research also indicates that psychological safety in forced virtual teams differ in many ways from the teams which are planned and designed to work virtually. The forced virtual teams have been moved into that mode of working without any preparation and proper change management, while planned virtual teams are designed that way. The research also indicates that both managers and team members find it challenging to cope with this forced move. This is even more true for new joiners in such scenarios.

Overall, the findings of this study are in line with the toolkits and best practices provided by previous studies, however, differs in nuances while fostering and nurturing psychological safety in virtual teams. This research has provided a set of toolkits and best practices for managers and team members to nurture psychological safety in their virtual environments. The toolkits and best practices presented in this study are gathered from the interviews and observations.

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Contents

| | |
|--|----|
| | 1 |
| Abstract | 2 |
| Acknowledgements | 3 |
| 1 Introduction..... | 6 |
| 1.1 Research gap | 7 |
| 1.2 Objectives..... | 8 |
| 2 Literature Review | 8 |
| 2.1 Psychological safety..... | 8 |
| 2.2 Unlock psychological safety in Teams..... | 10 |
| 2.3 Recipe and toolkits for a safe culture..... | 11 |
| 2.4 Trust..... | 12 |
| 2.5 Psychological safety and trust..... | 13 |
| 2.5.1 Level of analyses:..... | 13 |
| 2.5.2 Immediate experience:..... | 13 |
| 2.5.3 Self-versus other:..... | 14 |
| 2.6 Virtual teams | 14 |
| 2.7 Trust in virtual Teams..... | 15 |
| 2.8 Technology in virtual teams | 15 |
| 2.9 Psychological safety, trust, and technology in virtual teams | 16 |
| 2.10 Theoretical framework..... | 16 |
| 3 Research Methodology | 17 |
| 3.1 Research design..... | 17 |
| 3.2 Research Site and selection of case studies | 18 |
| 3.3 Data Collection | 19 |
| 3.4 Data analysis..... | 20 |
| 3.5 Credibility, dependability, and transferability..... | 21 |
| 3.6 Ethics | 22 |
| 4 Findings..... | 22 |
| 4.1 Definitions of Psychological Safety..... | 23 |
| 4.2 Going remote due to pandemic | 24 |
| 4.3 Trust..... | 26 |
| 4.4 Psychological Safety in virtual teams | 28 |
| 4.5 Culture and psychological safety..... | 31 |
| 4.6 Technology and Psychological safety | 31 |
| 4.7 Toolkits for fostering psychological safety. | 33 |

| | | |
|-------|---|----|
| 4.7.1 | Technological toolkits..... | 34 |
| 4.7.2 | Social tools..... | 36 |
| 4.7.3 | Reflective tools..... | 39 |
| 4.8 | Analysis..... | 40 |
| 5 | Discussions..... | 41 |
| 5.1 | Theoretical implications..... | 41 |
| 5.1.1 | Psychological Safety..... | 41 |
| 5.1.2 | Forced to virtual way of working due to COVID-19..... | 42 |
| 5.1.3 | Trust..... | 43 |
| 5.1.4 | Psychological Safety in virtual teams..... | 43 |
| 5.1.5 | Technology and Psychological safety..... | 44 |
| 5.2 | Practical implications..... | 45 |
| 5.2.1 | Set the stage..... | 45 |
| 5.2.2 | Invite participation..... | 45 |
| 5.2.3 | Respond productively..... | 46 |
| 6 | Conclusion..... | 46 |
| 7 | Limitations and Future Research..... | 47 |
| 8 | References..... | 49 |

1 Introduction

In today's fast paced economy, businesses have realized that they cannot cope with the current challenges merely with leaders and a few experts in the organization. They need all resources in their organization to contribute to and support their business. Engaged employees are the ears and eyes of the business and can usually sense opportunities and challenges before they might be visible to management. Engaged employees also benefit their business by suggesting innovative ideas, collaborating with other members of the organization, and experimenting with new ways of doing things (Edmondson, 1999; Nembhard & Edmondson, 2012). Hence, it is essential for organizations to build a culture which nurtures employee engagement and inclusiveness in the workplace. Edmondson (1999) describes such a culture as a psychologically safe culture.

Psychological safety has been studied from different perspectives including individual, group and organizational. Kahn (1990, p. 708) has attributed psychological safety as to individual's perceptions where he defines psychological safety as a feeling by which individuals can demonstrate and employ themselves without fear of adverse consequences to their self-image, status, or career. On the other hand, Edmondson (1999) argues that psychological safety is better treated as a team-level climate and has defined it as the *"shared belief held by members of a team that the team is safe for interpersonal risk taking"* (p. 350).

The recent Covid-19 pandemic has changed how organizations work at a rapid tempo. The lockdowns around the world and government regulations have forced companies to introduce remote work for their non-essential and office jobs. Teams which were working closely together have become virtual teams. The pandemic has pushed organizations into a huge experiment of remote working. The recent Gartner (2020) survey research on 127 company leaders, HR (Human Resource) representatives and the legal reveals that 82% of the companies intend to permit remote work post COVID-19 pandemic. In addition, the technological developments especially within the field of information and communications are rapidly increasing. The internet has become indispensable and has reached around the globe. The Eurostat (2021) database shows that almost 89% of all EU households have access to broadband internet. This all indicates that going virtual is more obvious than ever and that such trends will continue.

Virtual teams are not uncommon in many organizations. The history of virtual teams goes back to 20th century. Miles and Snow (1986) have defined virtual teams as an evolutionary form of a networked organization, enabled by advances in information and communication technology. In a more recent research Friedrich (2017) defines virtual teams as teams in which people from diverse cultures, time zones, and organizational frontiers, work together without constantly moving from their workplace. Despite the technological innovations, there are certain challenges while going remote. Friedrich (2017) states in his research on virtual team maturity model that team performance can be deteriorated by the lack of non-verbal communication in virtual environments. In addition, the virtual environment may also decrease team engagement, lower trust, reduce the degree of shared responsibilities, inhibit leadership, and increase levels of social isolation, which makes virtual teams, according to

most scholars, more difficult to manage than co-located teams (Davis & Bryant, 2003). Psychological safety and trust are essential in virtual teams, as working remote means being apart from other team members. The lack of social belonging and trust among team members can affect their team productivity (Varty et al., 2017).

1.1 Research gap

Psychological safety has been a trending research topic in recent years. There have been many research studies conducted on psychological safety in traditional team forms, however, not widely studied in the context of virtual teams. Edmondson and Lei (2014) denote in their research on psychological safety that the role of psychological safety in multinational, distributed, and the virtual teams might be very different than in the more bounded and local team forms (p. 38). And recommend future research to explore the role of psychological safety in distributed and virtual teams. Furthermore Janine et al. (2019) recommend in their systematic research on virtual teams for a future research on trust and a safety culture in virtual teams.

Given this premise, there is a strong need for trust, harmony, and psychological safety in virtual teams, especially during the Covid-19 pandemic where virtual teamwork has become the norm within many organizations. This research focuses on building and preserving psychosocial safety and trust within virtual teams by answering the following research question:

- *How to foster psychological safety within virtual teams.*

The following themes/sub-questions will be addressed in this research paper:

1. What is a virtual team and how is it formed within organizations?
2. What is trust and how does it relate to virtual teams?
3. What is psychological safety and how does it relate to virtual teams?
4. How does technology influence psychological safety within virtual teams?

Virtual teams are not uncommon in multinationals and enterprises. Many are already utilizing virtual teams in one or other formats. This study distinguishes three kinds of virtual teams.

1. Teams traditionally working face to face but were forced to work remotely (virtual) due to Covid19.
2. New Teams / Joiners who joined during the COVID-19 measures as part of virtual teams but were originally intended to work as traditional teams.
3. Virtual teams already formed in organizations before the COVID-19 measures.

This study focuses on the first two types of virtual teams by examining how psychological safety is perceived and can be fostered in such teams.

1.2 Objectives

Covid-19 has drastically changed work environments and the way we work within organizations. Many organizations have fostered the new reality of virtual working and consider making certain roles permanently remote. Even though this may not be suitable for every organization, there are several advantages with this move. A recent peer-reviewed article of Lee D. Parker (2020) denotes a positive shift to teleworking, restructure of office designs, and re-engineering of office protocols due to the Covid-19 measures.

On the contrary, even though the promises are laudable, there is also a dark side to this new reality (virtual work). Many scholars agree that managing virtual teams is more burdensome and challenging than managing traditional teams (Davis & Bryant, 2003; Hoch & Kozlowski, 2014). Teambuilding, trust, and psychological safety which are the fundamentals for productive and cohesive teams are among the biggest challenges within virtual teams. Pearlson et al. (2016) suggest three types of challenges for managing virtual teams. One of which is team diversity which makes it harder to establish a group identity, build trust and develop a shared meaning.

This paper has a dichotomic contribution to the current literature. Firstly, this paper contributes to the current research by exploring the psychological safety challenges within virtual teams. As stated above, recent research has revealed many organizations will pursue remote work even after the pandemic. This research will also open the doors for new research on trust and psychological safety matters in remote workplaces.

Secondly, this paper provides guidelines and help for organizations on how to foster psychological safety within virtual teams by utilizing information technology, management tools and guidelines. This research paper expands on the psychological safety guidelines in traditional teams (Edmondson, 2018) with psychosocial safety within virtual teams. The result of this research will be valuable during the current Covid-19 pandemic and the future of remote work.

2 Literature Review

2.1 Psychological safety

The concept psychological safety has a long history in the research literature. The antecedent of psychological safety goes back to the seminal work on organizational change, conducted by Schein and Bennis (1965). They describe psychological safety as the extent to which individuals feel secure and confident to manage and execute changes within the organization. Kahn (1990, P.708) defines psychological safety as a feeling that enables an individual to show and employ themselves without being concerned about, how such actions will affect their self-image, career status, or developments. The concept of psychological safety has received more attention after Edmondson's (1999) research in health care systems. In contrast to Kahn's definition where psychological safety emanates from individual, the concept is defined by

Edmondson (1999) *“a shared belief held by members of a team that the team is safe for interpersonal risk taking”*

Psychological safety has been a trending research topic in recent years and has been studied from different perspectives including individual, teams and organization (Edmondson & Lei, 2014). Schein and Bennis (1965) have explored psychological safety from the perspective of organizational change, while Kahn (1990) has focused on psychological safety from individual's perception in which he argues that people feel more psychologically safe when they have trusting and supportive relationships with their work colleagues. On the other hand, Baer and Frese (2003) and Carmeli (2007) measured employee perceptions of psychological safety within the organizational context. Edmondson (1999) argues that psychological safety is better treated as a team-level climate and defined it as the *“shared belief held by members of a team that the team is safe for interpersonal risk taking”* (p. 350). Psychological safety is not merely limited to the lower levels of organizations but is applicable to every level. Edmondson (1999) revealed in her research that psychological safety in teams leads to confidence, mutual trust, and respect among the individuals in the teams. Teams with a higher level of psychological safety are not hesitant to express, raise challenges and voice their opinions (Edmondson, 2018). Such teams are more productive and experiences the benefits of high performance and continuous learning (Cauwelier, 2019). In teams with high psychological safety there are no elephants in the room as every individual feels safe to recognize and mark the elephants.

In today's volatile, uncertain, complex, and ambiguous (VUCA) world, routine, modular and predictable work are in decline. In the most recent research David (2015) predicts 80% of customer related tasks currently carried out by managers and professionals will be fully automated and taken over by AI (Artificial Intelligence). Managers and professionals' focus should address creative and strategical alignments which increasingly depended on human judgment, collaboration, coordination, and communication with others. Psychological safety forms the fundamentals for such culture and behavior within workplaces. A multi-year study of teams at google named Project Aristotle found that psychological safety was the critical factor in explaining high performance in teams (Edmondson, 2018, p. 40). Another study conducted by Liang et al. (2012) express how psychological safety boosts employee's willingness to share ideas and suggestions for company improvements.

Psychological safety is not about being nice and pleasing everybody at the workplace. Nor is it about agreeing to each other for the sake of friendship and kindness. In the contrary psychological safety is about candor, and respect which fuels productive disagreement and free exchange of ideas (Edmondson, 2018, p. 16). Misunderstandings, closed-mindedness, and task conflicts are inevitable in the workplace. Team's level psychological safety enables team members to resolve their interpersonal conflicts and discuss openly what bothers them. Kostopoulos and Bozionelos (2011) found in their research on team exploratory and exploitative learning that task conflicts moderate the relation between team psychological safety and opens the doors for exploitative learning.

We live in a knowledge economy where business innovations and market values are not only a matter for experts and leaders but can be achieved by any engaged individual in the organization. In the contemporary knowledge era, organizations increasingly require their

employees to contribute and support their business irrespective of their positions. Hiring talented employees is no longer enough, they need to bundle their strengths and knowledge by voicing their innovative ideas, collaboration, teamwork, and experimentations (Edmondson, 1999; Nembhard & Edmondson, 2012). This behavior needs a fearless mindset and culture to thrive. Edmondson (2018) defines fearless organizations as ones in which interpersonal fear is eliminated so that team's performance can be maximized.

This study focuses on psychological safety in virtual teams which commensurate with Edmondson (2018) where psychological safety is treated as a team-level climate and the shared believe among team members. Such teams believe they are not rejected for being themselves.

2.2 Unlock psychological safety in Teams.

Neuroscience has revealed that the human brain is wired for both social and physical safety. There is a fundamental overlap in the regions of the human brain that control survival and social needs. Humans experience social pain in the same manner they feel physical pain. The parts of brain implicated in physical pain are the same ones that are implicated in social pain (Rock, 2008). Rocks' SCARF model also emphasizes and compares physical safety with social safety. He reveals that the human brain reacts to social threats the same way that it reacts to physical threats by which the fight or flight modus is activated. During this period of fight or flight, the brain's higher centers (analytical reasoning) are hijacked and limited to life and death decisions. While this may save us from life-or-death situations it cripples learning and collaboration needed in today's workplace (Delizonna, 2017). Teams with a low level of psychological safety suffer from the culture of silence. Being silent is instinctive and is always safe. Edmondson (2018, p. 34) describes the culture of silence as a culture in which the prevailing winds favor going along rather than offering one's concerns. A culture of silence not only inhibits speaking up but also negatively affects listening, especially when it brings unpleasant news. On the contrary, teams with higher psychological safety are not hindered (crippled with fight or flight) by fear and dare to speak up (Edmondson, 2018).

Unfortunately, there are still leaders and managers who believe in the power of fear as a weapon for motivation and productivity. It has been taken for granted that if people are afraid, they will work hard to avoid any unpleasant outcomes. Albeit this might be true in standardized workplaces, but it does not comply with the current volatile, uncertain, complex, and ambiguous (VUCA) workplaces. On the contrary side for the jobs where collaboration, learning and innovations are required, fear has an adverse and negative effect (Edmondson, 2018, p. 15).

Silence and fear not only inhibit learning and innovations within the organization boundaries, but it can also damage company's reputations and its competitive advantages. One of the recent examples is the Volkswagen group diesel scandal in the US. During the 2008 to 2015 Volkswagen group had every reason to shine and be proud thanks to its low emission diesel engines both in the US and European markets (Parloff, 2018). Volkswagen were even credited with its invention which helped the country from the 2008 financial crisis. However, in September 2015 Volkswagen group faced one of the largest unimaginable scandals in its

history. The supposedly clean and green VW's diesel engine turned out to be a hoax. At the end of 2015, the company lost one third of its market value. The CEO (Chief Executive Officer) Martin Winterkorn resigned taking full responsibility while denying any wrongdoing. Nine other senior managers were dismissed. But how could have this happened? Analysts have found that fear and silence were the fundamental roots of the issue (Parloff, 2018). The former CEO Martin Winterkorn had created an authoritarian culture. He was known as a perfectionist, arrogant and was obsessed with detail. Employees were forced to deliver while there was no room for discussions (Parloff, 2018). This all created an environment where such scandals can be born. Martin Winterkorn (former CEO of VW) asserted repeatedly that he was never involved or promoted such wrongdoing. However, he created an environment where such scandals were inevitable. Managers and leaders can play an active role in building a psychologically safe culture within their teams. Specific leadership behaviors can foster and nurture such a culture in teams.

2.3 Recipe and toolkits for a safe culture

Leadership behaviors have both direct and indirect influences on the safety culture of organizations and the psychological safety of their teams. Leaders can foster psychological safety within teams by providing the right mindset, behaviors, climate, and environment within their teams. Edmondson (2018) reveals that a positive team climate in which members can share ideas, can take interpersonal risks, care about one another's wellbeing, drive for a higher psychological safety in teams. In a recent study Walumbwa and Schaubroeck (2009) has explored different management styles. They have found out that both supportive and consultative leadership to varying degrees can help create positive team climate. A positive team climate has a direct interrelation with psychological safety of the team (Edmondson, 1999). In a most recent study Edmondson (2018) has introduced a three-step leadership approach for building psychological safety in teams, these are:

- a. Setting the stage.
- b. Inviting participation.
- c. Responding productively.

The first step focuses on creating common goals, shared expectation, and appreciation in teams by framing the work and emphasizing on the purpose. Failure and uncertainty are the key indicators of a low psychologically safe environment. It is vital for leaders to frame the fear of failure and uncertainty in a reasonable fashion. In environments with a low psychological safety people automatically avoid failures which inhibits learning. To stay with the same example (Volkswagen group), it was the culture of fear of failure (failure of not delivering low emission diesel engines) which provoked the scandal. This does not mean failures should not be avoided, in fact failures are contingent and vary in various kinds of work. For example, a failure should be avoided in any sense in a nuclear power plant, however any mistake or tiny failures should be noticed and reported without fear which will prevent disasters. On the other spectrum lies the research and developments which are built on trial and error where failures are an integral part of its journey to success.

The second crucial step in the leadership toolkit is Inviting participation. This is about creating a climate where speaking up is welcomed and endorsed. This is accomplished through creating forums for discussions, acknowledging gaps, and intense listening in the groups. An all-knowing boss attitude prevents group discussions. No one in the team dares to take interpersonal risk if the boss thinks he or she is all knowing. However, a learning, humble and curious mind mitigates such risks. Inclusive and humble leaders are easily accessible and promote input from team members which enhances psychological safety (Edmondson, 2018).

The third and last step is about orientation towards continuous learning. This can be accomplished by expressing appreciation, discussions, support, and brainstorming for the risks team members take (Edmondson, 2018). Psychological safety is very fragile (not a one-time set and forget) concept, it needs continuous renewal. It is a living culture which needs nurture, support, and maintenance. Team leaders should be able to hear the sounds of silence and drive the fear out (Edmondson, 2018). They should sense the signs of psychologically unsafe workplaces and react. The most common signs of psychologically unsafe workplaces are:

- Increased conflict levels in teams
- Stress and pressure within teams
- Increased misunderstandings and miscommunication within the teams
- Silence in meetings and workplaces and failing to speak up.

It is the task of team members and team leaders to cultivate a psychological safe workspace to thrive and innovate. In the contemporary high-pressured workspaces, a low psychological safety workspace provokes anxiousness, inhibits learning and innovations (Edmondson, 2018).

2.4 Trust

Trust is defined in the Cambridge dictionary as a belief that *“someone is good and honest and will not harm you, or that something is safe and reliable”* (Cambridge Dictionary, 2021). The word trust has been vague in the literature history and has been used synonymously with confidence, cooperation, and predictability. Johnson-George and Swap (1982) came to the conclusion that the most common definition of trust is the willingness of individuals while taking interpersonal risks. Trust forms one of the key pillars of interpersonal work in organizations. Trust in the context of the organizations has been a trending theme for research for many years. Researchers have defined trust in many ways. The most widely used definition of trust goes back to Mayer et al. (1995) where he has defined trust as *“the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”* (pg. 712). Mayer’s definition of trustworthiness consists of the following three factors. The first factor explores the interpersonal abilities one has, to influence others. The next factor refers to benignity, where a trustee can rely on trustor to capitalize on her/his best interests. The final factor is the integrity in which the trustor and trustee adhere to a set of principles accepted by both parties. Lencioni (2002) in his book *The Five Dysfunctions of a team* has built a pyramid shaped model which explains the cohesiveness and dysfunctions in teams. He constituted trust and safety as the underlying bases for

the cohesive and high-performance teams. Conflicts are inevitable in teams, especially in the early days of team formation. Trust and safety enable teams to resolve conflicts robustly and to help teams to flourish.

Edmondson (2018) defines trust as interaction between two parties or individuals in which trust exists in the mindset of one individual towards a specific individual or an organization. For instance, one can trust a certain colleague or authority but not the other.

2.5 Psychological safety and trust

The definitions above highlight that the concepts of psychological safety and trust are two different flowers from the same garden. The two concepts have much in common. Both concepts describe the perception of risks, candor vulnerability and interpersonal risks. Edmondson (2018) asserts that psychological safety is rooted and fueled in relationships by trust. Jones and George (1998, p. 532) assert that *“trust leads to a set of behavioral expectations among people, allowing them to manage the uncertainty or risk associated with their interactions so that they can jointly optimize the gains that will result from cooperative behavior”* this suggests trust minimizes the interpersonal risks and concerns which in turn promotes psychological safety between individual and teams (Edmondson, 2018). Mayfield et al. (2016) asserts that both trust and psychological safety are interrelated and have an intertwined impact on team effectiveness.

Section below explores the distinctions, similarities, and interrelations between the two concepts. Edmondson (2018) has zoomed both concepts and connected them in the sense that both trust and psychological safety involve interpersonal risks and decision-making processes to minimize the negative impact and allow productivity and a positive climate to thrive in teams. She has also contrasted the following three elements of psychological safety with trust to describe the differences and similarities between the concepts.

2.5.1 Level of analyses:

The first element refers to the level of analysis in trust and psychological safety. Trust pertains to the interaction between two or more individuals. It is a dyadic relationship even if the dyad consists of larger entities. In contrast, psychological safety is commonly experienced at the group level. It is the interpersonal interaction among coworkers. Group members tend to have similar perceptions on workspace climate and whether to feel psychological safe in the group (Edmondson, 2018). As the definition of psychological safety implies, it is the shared belief of the interpersonal interaction within the team rather than individuals.

2.5.2 Immediate experience:

Psychological safety deals with a snapshot of a moment. It is a temporal and immediate experience that one can expect from a short-term interpersonal engagement in a specific situation (Edmondson, 2018). To stay with the same example as above, an engineer in Volkswagen Group who might have seen the faulty code, facing the decision whether to ask or raise concerns inhibited by the immediate consequences of being scolded or humiliated that he or she may have temporarily kept quiet. In contrast, trust covers a wider temporal

range and describes the long-term expectation one can have from another whether he or she can be counted to do what they promise to do.

2.5.3 Self-versus other:

Trust is equated as a belief that one can have on others *“giving others the benefit of the doubt”*. The focus is perspicuously on others while psychological safety is whether others accept, trust, and admire you *“giving you the benefits of the doubt”* if you have made a mistake (Edmondson, 2007, P. 7).

This reveals that there are perceptible differences between the two concepts however the highlights reveal trust to form the prerequisite for the psychological safety. The main differences between the two concepts are the level of analysis. Psychological safety represents the safety climate/culture and is experienced at the group and organization level, while trust pertains to the interaction between two or more individuals.

2.6 Virtual teams

The notion of virtual teams is not new and has been around for many decades. The history of virtual teams goes back to 20th century. Miles and Snow (1986) defined virtual teams as an evolutionary form of a networked organization. Technological developments have boosted the notion of virtual teams by eliminating the impediments by means of telecommunications and collaboration tools. While earlier research focused on comparing traditional with virtual teams (Warkentin et al., 1997) latest trends show that the lines between conventional and virtual teams are fading away quickly.

Virtual teams have been defined differently by different authors. Gassmann (2003) has defined virtual teams as a group of people working together by means of information technology to achieve a common goal. Another definition suggests virtual teams as a kind of organization by which the composition of teams is constituted based on its member's expertise and experience without the limitations of space and time (Schweitzer & Duxbury, 2010).

The most widely accepted definition of virtual teams goes back to Powell et al. (2004) in which he defines virtual teams *“as groups of geographically, organizationally and or time dispersed workers brought together by information technologies to accomplish one or more organization tasks”* which is very in line with the findings of Schweitzer and Duxbury (2010). The authors also assert that the name virtual is very vague and misleading. It suggests fiction and an unreality. On the contrary virtual teams are about real people, real teams working from different or geographically dispersed workspaces, having all the properties, requirements, and challenges of traditional teams.

Summarily based on the different definitions above: a virtual team is a group of geographically dispersed knowledge workers who coordinate, collaborate, manage, and accomplish their tasks through the use of information and communication technologies (Powell et al., 2004; Schweitzer & Duxbury, 2010). However, COVID-19 has put this definition into question. Gibson et al. (2014) refutes the definition of geographically dispersed groups. He defines virtual teams

as teams with high reliance and dependency on information and communication technologies regardless of their geographical location, which is in line with this research study. As not only geographically dispersed teams are remote (virtual) but also traditional teams even from same locations have been forced to virtual due to COVID-19 measures.

2.7 Trust in virtual Teams

Trust is the foundation of any relationship, including that of organizations and teams. The organizational history of the concept goes back as early as the middle ages where information could take months to reach partners and businesses relied on the promises and reputations of their partners for trades (Aubert & Kelsey, 2003). Similarly, in the contemporary era, trust forms the foundation of any business to thrive. Coppola et al. (2004) reveal in their study that successful teams need to build and foster their relationship carefully and intentionally.

Trust in the context of virtual teams has been a trending topic in recent years. Cascio (2000) asserts that building trust is more challenging in virtual teams due to lack of traditional social controls and personal contact among the teams. People build trust traditionally by their social contacts and connections which is a major challenge in dispersed teams (Zucker, 1986). Which is in line with this study in the context of virtual teams. Trust is more than ever important in virtual organizations. Virtual teams in contrast to traditional team's lag in team building and team commitments. Virtual teams also face particular challenges involving trust which is crucial for building relations and overcoming selfish interests (Malhotra et al., 2007). Several studies have acknowledged, trust as the prerequisite for the individual and team's performance (Edmondson, 2018; Malhotra et al., 2007).

2.8 Technology in virtual teams

Information technology is indispensable for today's workplaces. It has changed the way we access information, communicate, and collaborate in our private and work life. In addition, information technology also enables geographical teams, flexible work structures, fast decision making and artificial intelligence driven automations. Communication and collaboration tools increasingly facilitate working from home and are getting more user friendly (Dube & Robey, 2009).

In today's world the physical and the virtual spheres are no longer dispersed. In contrary there can become fully integrated and connected to one another using information technology. The information technology has rapidly evolved during the last two decades and has been boosted during the COVID-19 pandemics. Many enterprises have adopted new collaboration tools and communications tools. The recent research studies (David, 2015) reveal that majority of company leaders plan to allow remote work in future including the giants Apple, Facebook, and Google. However, there are also darker sides to this pervasive use of information technology on human behavior. Think of digital security and privacy invasions which might have a negative impact on trust and psychological safety (Edmondson, 1999)

2.9 Psychological safety, trust, and technology in virtual teams

The COVID-19 pandemic has drastically changed organization's workplaces. Many organizations around the world are forced to rapidly adopt digital transformation and remote working. Albeit remote working is not a new concept for many enterprises, Covid19 has introduced new challenges into workplaces. Projects and teams who were intentionally built for face-to-face communication are forced to go virtual. In addition to interpersonal challenges, this new shift has also introduced many organizational and structural challenges for managers and leaders.

On the other hand, tech giants have responded to the market with many new features and tools to facilitate remote work (Mehta et al., 2020). Companies like Google, Microsoft and Zoom are competing in the online collaboration tooling space and have introduced many new features and enhancements in their products to foster virtual online teams. Despite the technological enhancements there are certain human behavioral aspects to consider while going virtual. Morgan (2018) describes the five most recurring and common issues of virtual teams with five L's e.g., *"lack of feedback, empathy, control, emotion, connection and commitment"* where he particularly highlighted the fragilities and vulnerabilities in of psychological safety and trust in virtual teams due to lack of direct communication and interactions within teams. Even though information technology allows collaborations and communications, communicating through electronic media has its own challenges including lack of emotions, body language and nonverbal communications. However, in a most groundbreaking study Gibson and Manuel (2003) from university of Western Australia found that psychological safety paves the way of virtual teams and helps them to navigate through the challenges of dispersion.

Virtual teams are more prone to miscommunications and misunderstandings due to lack of physical interactions than traditional teams (Morgan, 2018). Teams working together benefit from verity of management tools, cultural aspects, and proven best practices to build trust and psychological safety which is a challenge in virtual teams. With this research I aim to come with best practices and guidelines to help managers and team members to overcome remote work challenges and nurture a psychological safe work climate.

2.10 Theoretical framework

This study focuses on psychological safety in virtual teams which commensurate with Edmondson (2018) where psychological safety is treated as a team-level climate and the shared believe among team members. Such teams believe they are not rejected for being themselves. Teams with high psychological safety care, respect and have positive intentions for one another as stated by Edmondson (2018) *"psychological safety emerges as a property of a group, and that groups in organizations tend to have very interpersonal climates"* (P. 8).

3 Research Methodology

This chapter provides an outline of the research methodology used to answer the research question for this study.

3.1 Research design

As stated in the introduction, a gap exists in the literature. The phenomenon psychological safety has been extensively studied in traditional teams (Edmondson, 1999, 2018). Previous research has also provided tools, governance, and guidelines to nurture and build psychological safety in such environments. However, there is a lack of research studies on how psychological safety is perceived in virtual teams and how it can be fostered in such teams. This research study focuses on the psychological safety in teams which have been forced to virtual due to COVID-19 measures. Since the focus of this study is to explore how the phenomenon is perceived and how it can be nurtured. This research falls in line with the social constructive approach and rely on qualitative analysis. In fact, the topics, psychological safety, and virtual teams are overly complex and need knowledge immersion. Hence a qualitative research method best suits to immerse this perception. On the other side, many of the previous research studies for psychological safety have utilized the quantitative research methodology developed by Edmondson (1999) while a small portion have used qualitative interview methodologies (Newman et al., 2017). They also have expressed in their systematic literature review on psychological safety that more qualitative research on the subject should be considered to generate a detailed explanation of how and why psychological safety effects learning and team effectivity (Newman et al., 2017).

Qualitative research has a long history in social science. There are ten qualitative research approaches one can consider when opting for a qualitative research approach (Eriksson et al., 2008). The most knowingly used qualitative research approaches are the action research, grounded theory, ethnography, and the case studies. Qualitative research is not merely a set of techniques or guidelines but an approach to identify the nature of the phenomenon (Morgan & Smircich, 1980). It attempts to consider the meaning people attach to a phenomenon (Alvesson, & Kaj, 2009). In line with this research intention, which focuses on psychological safety, thoughts, trust, and behaviors of individuals in virtual teams and how information technology influences them.

A case study method is utilized for this research study. Case studies are preferred method when research is focused on a contemporary phenomenon within the real-life context and where how questions are scrutinized (Yin, 2003). There are two main types of case studies, the single and multiple case study designs (Yin, 2014, p. 51). Since psychological safety has a direct relation to organizational and departmental culture, it would be exceedingly difficult to conduct multiple case studies as the underling relation to culture and organizational differences would hinder the cross-case analysis. Therefor a single case approach is used which represents a unique circumstance and allows to dive deeper in details and application of a certain circumstance, enabling a comprehensive theory building (Yin, 2003). He defines a

case study as *“an empirical inquiry that investigates a contemporary phenomenon within the real-life context, especially when the boundaries between phenomenon and context are not clearly evident”* (Yin, 2003). Case studies are often criticized for their low generalizability's, Yin (2003) advises triangulation by involving multiple data sources, reassuring robustness of the research claims.

Stake (1995) and Yin (2003) distinguish two types of case studies methodology both based on the constructive paradigm. This study follows the case study methodology used by Yin (2003) which allows to study social construction of reality, which falls in line with the perception of psychological safety in virtual teams. This research paper follows a single case study approach with semi-structured interviews.

3.2 Research Site and selection of case studies

This study aims to explore psychological safety feelings in virtual teams and how to foster it in such compositions. It defines the safety feelings team members have during virtual teams. As discussed in the literature review, analyses show that remote work tends to persevere even after the COVID-19. Many organizations are planning for remote work even after the Covid pandemic. Hence it is vital to describe the details of such research to allow future replication in similar organizations

The research is conducted in a multinational industrial organization. The name of the company including the interviewees is kept disguised for privacy reasons. The history of the company dates to 1700 and is active in 200 countries. The company is established around 1720. At the time of this study the company counts 40000 employees worldwide and generates a turnover of approximately 15 billion a year. The company is operating worldwide and is active in over 150 countries including Asia, Africa, Europe, and United states of America which I will refer as Seetap.

As the company operates worldwide, virtual teams and remote work is not new to its employees. However, COVID-19 has changed the workspace for the many countries especially in the European countries (e.g., Netherlands, Germany, and the UK). This group have always worked from the office locations, however, have been forced to remote working during the COVID-19 pandemic. As the outlook is not promising and COVID-19 situation does not seem to change soon, it is expected that the current workspace remains unchanged in the upcoming months. To get a better understanding of psychological safety in virtual teams, collecting data through interviews is the best method. Interviews give direct access to the interviewee's knowledge and insight into their thoughts (Rowley, 2012).

To guarantee anonymity and to test the interview protocols, a pilot interview was conducted with three participants. Based on the findings, the wording and interview designs have been adjusted to ensure comprehensive and clear communication with interviewees. As this research has focused on psychological safety in virtual teams it falls under common problem research. Hence this research has followed Aertsen's (2011) framework *“Doing research in your own organization”* in the form of ego-contract. Where the researcher focuses on a

perspective, issue, or problem as if external to hem self without further engagement. This has been agreed with the Seetap's legal and communication department.

This research focuses on the construct's psychological safety, virtual teams and how technology can help organizations build trusted and psychologically safe virtual team environments. The research findings together with the literature reviews will provide handouts and guidelines for organizations to enhance psychological safety in their virtual teams.

3.3 Data Collection

This study draws on data collected with a semi structured interview conducted in April 2021. There is a significant reliance on quantitative research approach in psychological safety in the past few years (Newman et al., 2017) hence I rely on qualitative approach for this research. A qualitative interview method facilitates openness and transparency (Kvale, 2007) and gives direct access to interviewees knowledge and insights (Rowley, 2012). A semi-structured interview was used to achieve a better understanding of the feelings, thoughts, and behaviors of team members in virtual teams. A semi-structured interview in this study context has helped to achieve a consistent process of data collection while keeping the interviews open and flexible. According to Adams (2015) a semi-structured interview method enables interviewees to explain their point of view, thoughts, feelings and allows the interviewers to delve deeper and understand the topic in a new light.

During the data collection the world was still struggling with COVID-19 pandemic and lockdown measures, and the respondents were predominately working from home. Data is collected within the virtual teams in the European countries including the Nederland's, Germany, France, and the United Kingdom. In this single case study, participants included of virtual teams from different departments and locations which were traditional (face to face teams) but have been forced to remote due to the COVID-19 measures. This research study focuses on two types of virtual teams.

1. Teams traditionally working as face to face but were forced to work remote (virtual) due to the Covid19.
2. New Teams/ Joiners who joined during the COVID-19 measures as part of virtual teams but were originally intended to work as traditional teams.

As the purpose of this research is to develop theory within a case study, a theoretical sampling is more appropriate than a random or stratified sampling (Eisenhardt & Graebner, 2007). Hence the respondents were chosen based on quota sampling method to ensure above characteristics and virtual team types are met. An email surveys was sent out to 30 colleagues in order to get a list of respondents with above characteristics, from which I only received 8 responses back. The respondents were contacted early in the process and interviews were organized. Snowballing was used later to extend further the participants while adhering and ensuring the research criteria.

To guarantee variations in the data collections, respondents were chosen from cross functional domains. As Seetap functions multinationally, virtual teams were not new for most of the respondents. However, I aimed to focus solely on teams which have been forced to virtual due to COVID-19 measures. To avoid overrepresenting with a small number of sample group, respondents were chosen from different teams and departments (Alvesson, 2011). It is vital to have variation among respondents who are willing to share their experiences to cover the specified topic in a profound way (Alvesson, 2011).

An approximate of 13 teams from both virtual team types was interviewed. The studied virtual teams consisted of a minimum of five including the manager of the team. A total of twenty interviewees were contacted of which three were pilot interviews, eight with managers, and nine with team members. The interviews had an average duration of 40 minutes.

Due to the COVID-19 measures interviews are conducted by digital means such as MS teams and Skype for business. Although face to face interviews provide greater in-depth data collection and comprehensive understanding, there are also several advantages to virtual interviews. Virtual interviews are not limited to geographical boundaries and allows to widen the range of participants all over the world. A contemporary benefit of virtual interviews is that it allows adhering to COVID-19 pandemic measures while conducting in-dept interviews.

In agreement with participants, all interviews were recorded and transcribed later which allowed for greater focus and participation during the interviews. It is decided to transcribe the full interview to assure accuracy for the rigidity of the interviews (Tracy, 2010).

3.4 Data analysis

All interview recordings are transcribed right after the interview events resulting in approximately 430 pages of raw data. Interview recordings have helped to transcribe not only the interviews but also communication nuances and subtilities. The notes, discussions and transcriptions have provided the input for the data analysis. To get a structured view on the data, ATLAS software was used for interview coding. A mixture of both deductive based on the literature findings and deductive (heuristic) coding was used (Langley, 1999).

Due to the qualitative character of the study, the quest on people's view, opinions, knowledge, and their experience a thematic analysis was most appropriate (Alvesson, 2011). Thematic analysis is one of the widely used qualitative analysis technics. Daly et al. (1997) has defined thematic analysis as *"a search for themes that emerge as being important to the description of the phenomenon"*. Psychological safety within virtual teams is perceived and is experienced distinctly by different individuals. The thematic analysis supports finding common patterns across interviewees and the events they report (Catherine & Lee, 2005). The themes of the prepared interview consisted of psychological safety, trust, Covid and virtual teams. During the interviews additional themes have come into the light which has enriched the interviews and the research.

The first three pilot interviews were coded with descriptive coding which shed light into the emerging themes about the concepts. The time between the pilot interviews were used to

reflect and make improvements for the subsequent interviews (Alvesson, 2011). Both open and vivo coding was used to code the transcribes. The open coding was based on the thematic framework discussed in the literature review of this thesis. The first order codes provided 110 different codes which were reduced to 70 codes following the Lichtman (2012) by combining similar and duplicate codes. This was then organized in distinct categories resulting ten themes. This process was accompanied by detailed notes and comments, tracking the emerging patterns and themes relations. The list of codes for the third-round coding is shown in Appendix 3

3.5 Credibility, dependability, and transferability

Credibility and dependability in qualitative research are often very cumbersome due to lack of commonly agreed criteria's (Noble & Smith, 2015). Credibility in qualitative research refers to the appropriateness of the tools, process, peer debriefing and trustworthiness of the data, on the other hand dependability refers to persistence and consistency of the applied procedures (Erlandson, 1993) Peer debriefing ensures credibility by allowing a professional peer, to support, analyze and listen to researcher's ideas (Erlandson, 1993). To ensure and increase such credibility, the research questions were aligned with the central topics of the thesis, furthermore the interview questions were discussed, reviewed, and aligned with the supervisor before conducting the interviews. In additions the paper as a whole has been reviewed by the supervisor and Seetap's communication department. Member checking in qualitative research provide credibility by cross verification of researcher's interpretation and conclusions with members of stake holders groups (Erlandson, 1993). To facilitate interpretive credibility, interview findings and transcripts were shared with the respondents, modifications and comments were made to represent their true meanings and ways of thinking. Triangulation is another technique used in qualitative research to increase credibility. This is achieved through the convergence of data from various sources or by using different methods (Erlandson, 1993). Focus group analysis was utilized to triangulate data and methods (Caillaud et al., 2017). To triangulate, the last five interviews were conducted with managers to verify and discuss the themes and insights of the interviews. In additions the final codes and themes were aligned and overseen by the supervisor to ensure theoretical validity.

To ensure and increase dependability, all the interviews were collected and analyzed in the same manner and same set of interview questions were asked by all participants. In addition, the specified methodology and approach was scrutiny elaborated using the coding structure (Shenton, 2004).

Transferability, also called the external validity refers to the degree specific research findings are transferable into other contexts. This is ensured by using the so-called thick description (Tracy, 2010). Tracy elucidates thick description as providing contextual insights of various findings while presenting the data. To ensure thick description, findings are compiled in descriptive manner, including nuances, comments and notes taken during the interviews. This is achieved by describing how findings are analyzed and interpreted while keeping the empirical findings as open as possible for readers to make their own conclusions.

Bias which is commonly known as prejudice or any other influence which might affect the research outcome should be taken into consideration during any research (Tracy, 2010). Interview based qualitative research are very prone to different biases one of which is the interviewer biases. To avoid the interviewer bias, interviews questions were piloted upfront with the supervisor along with indirect questions. On the other hand, the researcher confirmation bias is detoured both during the transcripts and findings. Transcripts have been shared with the interviewees for a sign off before the analysis and the findings are presented by following the thick description analogy.

3.6 Ethics

Qualitative research, in particular in-depth interview deals with sensitive information and intimate details of participants (Brinkmann & Kvale, 2005). Hence, special attention should go to the well-being of research participants and the ethical issues (Brinkmann & Kvale, 2005). The research participation should be voluntary, consented by the respondents (Tracy, 2010).

To fulfill this, interviewees were first reached via email for their participation and were with all the necessary information needed for their initial consent. Informed consent was obtained verbally during the introductory phase of the interview. Before starting the interviews, participants were assured for their anonymity and how their input was beneficial for the specified research. All the information provided by the participants were anonymized and handled confidentially. Interview recordings were started after receiving the consent and interview transcripts were shared with participants in order to reassure their anonymity consent and to eliminate any misunderstandings.

This chapter provides an outline of the research methodology used to answer the research question for this study.

4 Findings

This section outlines the empirical findings collected through interviews, insights, and reflections of participants from different virtual teams. This chapter has utilized thematic analysis described in previous chapter for presentation, structure, and compilation of data. Seven overarching themes have been identified to describe how psychological safety is perceived and how this is fostered within virtual teams. The headings presented below are used to structure and present these major themes.

To preserve anonymity, interviewees are named and presented as Participants followed by a number. The numbers used for interviewees reflect interviewee's transcripts name in Atlas software. For this research, twenty-one participants from different virtual teams have been interviewed from which 5 were managers. The managers are identified and presented as Participant followed by a number plus manager designation in brackets for example "Participant 05 (manager) "

The first six headings describe psychological safety and its correlation with teams forced to virtual due to Covid pandemic, trust, culture, and technology. The last heading describes and presents the toolkits and best practices used to foster and nurture psychological safety in virtual teams.

4.1 Definitions of Psychological Safety

One of the central questions discussed during the interviews, was how participants perceive and define psychological safety in their teamwork environments. This was to comprehend participant's knowledge and understandings of the concept and to explore how similar or different the concept is perceived in different layers of the organization. The answers received, varied from no understanding to an incredibly detailed and deep knowledge of the concept.

Take for example the fieldnote passage from participants 01 and 11 with who did not have any prior understanding of the concept. They described the concept in the following way.

"This is the first time that I have heard the concept. Can you please explain what you mean with psychological safety?"

"Psychological safety? I had no idea to be honest. When you reached me, I thought this was kind of psychological analysis of something like that."

On the other hand, others had in-dept knowledge of the concept and described psychological safety, as one being open and confident to express his/her voice regardless of the situation and the circumstances. Participant 18 and 07 described psychological safety in the following way.

"Psychological safety is the confidence team members have to speak up, challenge and raise their concerns. I think it is absolutely pivotal to have a level of trust where all team members feel confident to share their point of view."

One of the participants (18) who was a manager of four different teams, was remarkably familiar and involved with the concept. He was actively working to promote and foster psychological safety within his teams. He called it a safe culture within the team environments. He was positively surprised during the interview for the literature's definition of psychological safety and was glad to hear there was a name for it. He knew the concept from experience and felt the need for a certain safe culture in his teams. As he cited during the interview.

"To be honest I knew this topic from experience. I am glad that there is a name for it, and even happier someone is working on the topic. I strongly belief there is an immediate need for the concept especially due to the COVID-19 virtual setups."

Interestingly enough some referred psychological safety as a personality trait, with no connection to the culture or team climate. They have referenced speaking up to individual's personality trait, being extrovert or introvert. Take for example the fieldnote passage from participants 07 and 08 expressing the matter as.

“Joining new teams has always been a challenge for me. E.g. I was recently part of a team and I felt very intimidated as the only non-Dutch in the team. However, no one cared that I was not Dutch, and they did not care that I was a woman, and they did not even care that I was young. But in my head, that is all I could hear, so that was my own personal, let us say insecurities that led me to be quiet and not speak up.”

“To me psychological safety is a personality trait and is connected to common communication skills, I think. It's the same that you communicate with the people in your private life and there's no one size fits all.”

On the other hand, some correlated psychological safety to trust. In fact, trust and psychological safety were often interchangeably used during the interviews. The fact that trust creates and forms the fundament for psychological safety was common between all the participants which is also in line with the literature as Amanda Edmondson (2018, p. 190) states, increasing trust between individuals creates a safety culture where people can raise their voices. As participant 09 described psychological safety as.

“Psychological safety, for me is the trust within team and work environment. Some people are naturally trusting individuals. They start off trusting, till that trust is broken. However, some start off not trusting until one proves him or herself to be trusted.”

During the first few interviews, I got the impression that psychological safety was an unknown term for the participants. However, later in the process I realized that many defined and connected psychological safety to trust, raising voice and culture which commensurate with Edmondson (2018) where psychological safety is treated as a team-level climate and the shared believe among team members by the virtue of *“a shared belief held by members of a team that the team is safe for interpersonal risk taking”* (Edmondson, 1999, p. 354) even though not using precise words.

4.2 Going remote due to pandemic

Seetap is a multinational company and is active in more than eighty countries around the world, hence remote and virtual teams were not new to many of the Participants. Some were working in remote teams for decades. In fact, there were some participants who had never met other team members in person and worked remote for years. However, managers indicated to strive in person meeting at least once in two months for their teams.

As the focus of this study was on teams who have been forced into virtual due to the Covid19 measures. The respondents chosen for this study, were all working face to face and were forced to virtual due to the COVID-19 pandemic. The reactions received for this move, varied from incredibly positive to distractive team atmosphere. All participants shared the same experiences for the first weeks of the Covid pandemic. Participant 14, 11 and 16 described the situation as.

“To be honest I was quite stressed at the beginning. Not only work related but the general uncertainty, like how the world will be after the pandemic. You didn't know

what was happening around you and nobody knew how to handle the whole pandemic.”

“I didn’t know what’s going on, how my colleagues were doing and if the work would continue and how to establish new ways of communication. It was a totally strange situation.”

Covid pandemic has been one of most threatening challenges, our generation has faced. In the first few weeks of the pandemic, the world looked very gloomy and dark. People faced many uncertainties in both their personal and professional lives. The focus of people was more on their primary needs and wellbeing. On the other hand, many claimed COVID-19 to be a revelation for them and had to become very caring and indulgent. They stated that the pandemic has transformed their connection with society, nature, and the environment. As participant 11 and 17 commented in their interview as

“I think for our little team Covid has brought us together and stronger as a team. We work closer together than we did before.”

“Actually, being forced into this virtual environment and working from home all the time. I feel like we have taken more time to spend together, which might sound a bit strange, but because we are forced into this situation where we are all working in silos or working on our own, behind our own screens. Hence we tend to take more time to pick up the phone or do a team’s call.”

Similarly, participant 16 commented.

“We do more video calls than ever before and actually in my opinion; it has made us more productive. As we now a days pick up the phone instead of sending emails back and forth and to wait for someone to reply.”

Many claimed trust to have become increasingly important during the COVID-19 pandemic which has forced many in to virtual. Employees seem to expect more steering from their supervisors and managers claimed to face challenges tracking and managing their subordinates. Participant 14, 17 and 16 comments as following.

“Remote work has brought new challenges in teams. For example, in our team, working from home was not really encouraged. Our manager was very old fashioned, and his motto was “rather see your face because I’m not sure what you are doing while you are home.””

Another mostly cited issue related to this forced virtual move was the challenges of work life balance. As people are forced working from home, some feel obligated being 24 by 7 online. Especially due to COVID-19 lock down measures, people tend to spend more time behind their computers which negatively impacts their work life balance. Participant 11 defined the situation as.

“I am afraid that working from home will affect people 's mental health in long run, I personally prefer doing something productive, then watching TV but I also see this trend with other colleagues.”

“One of the downsides of this virtual move is the mental health challenges. It seems, people expect you to be available 24 by 7, as they know there is no life outside of work.”

This trend was even intensified for the participants who were living alone. Take as example the fieldnote passage expressing the issue by participants 16.

“Covid is already a period where there is a lot of isolation. I am by myself. I do not have a partner to support me. Someone who drags me from the computer

I found this overly concerning. This aspect should get high in the agenda for people managers as this group seems extremely vulnerable for the overwork, impaired sleep and even burn outs. This group represented forty percent of the total population of this study which is extremely high in number and is very concerning.

On the other side, as the famous saying goes there is always a good thing in every tough situation. COVID-19 has proven the maturity level of the information technology. It has shown that employees can be as productive when working from home as they were in the offices. Many argue that working from home is not as bad as it sounded. While many claimed to be more productive with this move virtual. The trend seems to be followed up and more companies seem to investigate possibilities to allow more remote work even after the Covid pandemic. Participant 11 commented on the matter as followed.

“I personally, find it more productive to work from home. My alarm is still set to the same time as before Covid however, I do not have to travel to work. So, I get up. I walk directly to my desk and start working. To be honest I tend to work longer, as I am not restricted with time. For example, I do not need to stop at 5:00 to catch the train.”

Interestingly enough many argued that the forced virtual teams are distinct in many ways from the traditional virtual teams. Virtual teams formed during the pandemic have been forced into remote while traditionally, virtual team have been conscious decisions. Hence the toolkits defined in the literature for the virtual teams does not seamlessly apply to virtual teams formed due to COVID-19 pandemic. Virtual teams might be very known to many managers and leaders. However, during the interviews, we found out that many managers who have been familiar with virtual teams are facing novel issues and challenges with the COVID-19 virtual teams.

4.3 Trust

Trust has been the mostly used and recurring term during all the interviews. It has been identified as the main driver for the psychological safety in virtual teams. Twelve out of the twenty interviewees have referred trust as the main fundamental for psychological safety. Some promoted trust to be the main driver of safety culture in teams. Take, for example, below fieldnote passage quoted by participant 20 expressing trust as the main enabler of psychological safety.

“Psychological safety in virtual teams, I would say is trust, once that trust is created in the team, the open culture arises automatically. In other words, it all starts with a culture of creating trust.”

Trust has always been counted as one of the salient fundamentals for psychological safety however, this has become more crucial in the virtual world. It is the core building block for psychological safety and is built through human connections, relations, and empathy for one another. However, this is also one of the main challenges of the virtual setups. Percipient number 11 excerpts the situation as.

“In face-to-face meeting, it is much easier to establish a connection of trust. However, in virtual session, you need to put a lot more effort into getting to know each other.”

Next to the interpersonal challenges, virtual teams has introduced a new challenge for trust in virtual environment. In the traditional face-to-face teams, trust is built between two or more individuals. However, in the virtual environment, there is one more element added to the matter which can influence the establishment of trust between team members. This is the intermediate technology used to establish the communications. Hence, one next to his or her interpersonal trust should also trust the medium used for communication especially when the meetings are recorded. Participant 17 and 02 described the situation as continuously being conscious of utterances as one does not know how the information is used.

“I am conscious of my expressions now a days as I am not sure who is using and who else has access to that information.”

“The fact that we are in virtual meetings, people tend to play it safe. And that is OK, because look, I can make screen-prints right away with a click of a button, you will not even realize. But then I've captured this image”

Another challenge which has come along with this forced remote work, is the relation between the team members and trust within teams. Especially trusting each other's professionalism and competency without micromanaging. Percipient number 11 excerpts the situation as,

“People work in all diverse ways. I mean when we are in the office you come in at 9:00 and leave at 5:00, people see that you are there and see that you are working. However, Covid has forced us into this virtual environment where you must trust others. E.g., as a manager you must trust your employees that they are home, working not being settled and watching TV instead.”

This all shows that building trust in virtual environments is much harder and requires more attention compared to traditional teams. It requires a separate set of competency and management abilities and takes longer to build trust in virtual teams in contrast to traditional teams. As participant 16 asserted the matter as followed during the interview.

“People are a bit more guarded in virtual environments. I think that's natural human behavior. However, it is getting back to that trust level and familiarity level. It did take some time. In my view you reach that point quicker in physical teams.”

Building a culture of trust and safety is much harder in virtual setups than the traditional work teams. This may be due to the fact, that it takes much longer to build such a culture virtually as you do not see each other. Humans are social creatures and build social ties by seeing, communicating, and interacting each other's instinct. Hence managers need to facilitate a

trusting environment for their subordinates. They need to create an atmosphere where team members feel that they can really trust each other.

4.4 Psychological Safety in virtual teams

As the focus of this study is on psychological safety in virtual teams, this aspect has been overly emphasized during the data collection and the interviews. During the course of the interviews, participants expressed their views, experiences, and findings of psychological safety in virtual teams. Some compared psychological safety in virtual teams with traditional teams while others related psychological safety with trust and team's composition. Interviewees who compared virtual team's psychological safety with traditional teams, brought new nuances in the study.

One of the prevalent challenges expressed during the interviews refers to the absence of body language in virtual meeting. According to most of the interviewees the body language determines and sets the basis for the psychological safety in teams. Participant 09 defined the body language as.

"Communication is much more than what we express with words. It is also what we express with our face and our eyes."

Participant 21 added the following.

"In face-to-face teams, I am much comfortable as I can see where the crowd is looking at. The discussions are far better because one can see how it happens. In my view the human interaction level depends on the body language of the people."

Body language including facial expressions, gestures, and the other nonverbal expressions determines the tone and the way of communications. Some use these to express themselves and even cannot communicate without them. One of the participants (12) excerpted to be extremely nervous during the virtual meetings, as she misses the body language and often cannot express herself.

"I need to be clearer and more direct to express what I want to say in virtual setups. Because when you can see people, you also talk with your body language, and you get gesture response which I miss in virtual meetings. I really feel nervous and even avoid confrontation in virtual meetings."

Participant 18 quotes as.

"During the virtual setups I am a bit shy to step in the discussion with my broken English. You must express yourself more concisely to convey your message. This never happened in a face-to-face meeting. I feel much more comfortable in face-to-face meetings to speak up with my broken English and to be the French around the table compared to virtual meetings."

Another common issue discussed during the interviews was, judgment of the situation. Many interviewees claimed that not seeing teammates in person during meetings affects the psychological safety as one cannot, see and judge the situation. Body language and the

nonverbal communication can invoke safety feelings. However, this aspect is missed while working remotely. Participant 20, 12, 09 and 08 expressed on the lack of nonverbal communication side of communications in virtual environments.

“Body language and the nonverbal communication are the essential during communications. For example, if you see a worried look on someone's face you adjust yourself based on the situation. However, that is missed in virtual environments.”

Another common challenge discussed during the interviews was about informal meetings and the lack of the coffee corner chats the during the Covid times. Many described this as very precious. These informal gathering and meetings were interlinked as accelerators for trust and the psychological safety among individuals and groups. The online equivalent of the informal chats and the coffee corners is the one-on-one chats between team members. However, this seems very regimented and has lost its spontaneity especially in larger teams. Participant 02 commented the issue as.

“I miss the casual discussion about the projects, since we have gone virtual, it has become extremely hard to find free spots in calendars. It feels like a formal meeting.”

Similarly, participant 16 describes the situation as,

“Informal chats are missing. I think, whereas normally you would do that in an informal way by just walking into someone's office. It is now a formal meeting in your agenda, and you formally have to accept and start the meeting. This is such a distinct experience than just walking into someone for example during break times. It seems now so formal which inhibits people from having such informal chats.”

Many of interviewees compared their psychological safety in virtual teams with their traditional teams. Seven out of the twenty participants claimed psychological safety to be much higher in traditional face-to-face teams than in virtual teams. This was also brought in relation with the body language, nonverbal communication, and the work environments. As participant 02 excerpted during the interview,

“I felt much safer in traditional teams. I could express myself easier and dared to speak up. For me at least I can explain better by drawing something or by explaining something in face-to-face teams rather than virtual.”

Many of the general communication rules which might seem obvious in the traditional face to face teams are particularly challenging in virtual teams. Take speech intonation as an example; As interactions and relations within virtual teams merely depend on voice, one should be very vigilant to avoid misunderstandings. Take for example the fieldnote passage expressing the issue by participant 02,

“While talking to screen during virtual meetings. Some may have to raise their voice due to technical issues however, this might be taken as discourtesy by the others in a virtual setup. Likewise, if the line is disconnected due to a technical issue one might interpret this as hanging up on him/her.”

Likewise, Participant 12 and 20 claimed that face-to-face setups help to build inclusiveness and connectedness. This was associated with the culture and human nature. As fieldnote passage below expresses the issue as.

"I do not feel threatened if I am in the same room with my teammates. I think when you are in the same room, people instinctively try to comfort and make you feel included."

Although many might feel safer in virtual setups as they are home in their trusted environments, some participants have argued that losing the body language and other clues make them feel less secure. Participant 03 stated that communication is an art. There are certain rules individuals need to follow in dialogs and discussions. This is distorted in virtual setups, e.g.

"I have a tough time speaking up in virtual meetings, since it is not natural. Mostly you must wait for others to stop talking before you want talk. You obviously do not want to interrupt people. However, when you miss a moment where you should have talked than it is hard to bring that back again."

One of the most remarkable findings during the interviews was the fact that ten out of twenty interviewees, indicated to feel safer in virtual setups. This was associated to anonymity and being remote. The participants claimed to feel safer to express their voices if they are behind the screen as one does not see their counterparts. A few quotes from participants 11, 03,12,1

"As you do not see people in virtual team, it feels you are in a cage, and you can talk to them without being intimidated. "

"People feel safer to express themselves in setups, especially in larger group, as some feel nervous speaking to a larger group and now, one is in their own environment, speaking to people who are remote seem much easier.

"You might get intimidated when you meet people, but if you have not met them. Then you can imagine anything of them."

"I am slightly less intimidated now being behind the screen. Maybe because I can hide my insecurities a bit more."

This was also confirmed by three managers, that the virtual move has helped some of their subordinates to express themselves more freely and raise their voices in meetings. Participant 15 who manages a small team of 5 stated as,

"I see some team members who were very hesitant during the traditional meetings are now more open to discuss. Maybe not seeing people in person allows them to be more open and say things they would not have said if they were physically facing others."

This seems to relate to human psychology and the communication rules. Effective and good communication depend both on sender and receiver. Receiver's gestures, behavior and responses are determinative during a good communication. However, it seems if one is not

seeing others there is no benchmark to compare, which might explain why some feel safer to express themselves behind the screen.

4.5 Culture and psychological safety

Culture is a broad term which encompasses human behavior, manner, habits, norms & values. Culture is anchored in human behavior and determines how people behave and perform in their societies. It is a way of thinking which has been passed through generations and is anchored in their behavior and norms. Culture has been a hot topic for some decades for the researchers. Faure and Rubin (1993) define culture as *"a set of shared and enduring meanings, values, and beliefs that characterize national, ethnic, and other groups and orient their behavior"* (P. 3). According to interviewees there is an innate relation between culture and the psychological safety. This notion determines how people expresses themselves and raise their voice. There are certain cultures where people are naturally very assertive and always dare to raise their voices however, on the other spectrum there are cultures where people are very reticent. Participant 14 eluded on the matter as,

"I have noticed that some of our Asian colleagues especially from China, are incredibly careful and usually avoid confrontations. On the other hand, there is the Anglo-Saxon culture. Like Dutch, they tend to be more vocal and more prominent, and sometimes even do not give the space for others to talk."

Despite being virtual the culture aspect is similar to the traditional teams. And even though behind screen, in one's safe environment like home, one's behavior is always rooted in their culture and is always salient. It determines how one engages and reacts in the team's discussion and the remote workforce. Participant 03 excerpted the matter as,

"I think culture differences does also apply to virtual teams. It is something that is innates to the individual, so it will not go away. You cannot sort of, eliminate, or harmonize that, just because it is a virtual setup."

In some cases, it might even worsen in virtual setups, as one does not know how the information is used and even if it is used against them, which might trigger the natural tendency for some to hold back and lurk. The culture differences have a dichotomic impact on the psychological safety of the team members, both positive and negative. In the positive manner it could encourage team members to raise their voice as everyone else does in the team. It could initiate open discussions and disseminate the open culture in the team. On the contrary it may also erode psychological safety as one might feel bypassed and avoid getting into discussions. Culture differences should always be high in the agenda for managers and team leaders. They should make sure everybody feels safe to speak up and to raise their voices.

4.6 Technology and Psychological safety

Technology has become part of our lives. It has made our lives easier, better, fast and fun. Technological changes are skyrocketing and is advancing exponentially. Thanks to

technological advances, companies have been able to cope with the devastating COVID-19 pandemic. The COVID-19 which reached Europe in March 2020 was followed by a series of different lockdowns. Many companies were forced to work from remote in noticeably short time. Albeit remote work was not new to many companies, this rapid shift was a huge challenge. Satya Nadella CEO (Chief Executive Officer) of Microsoft which is one of the largest workplace technologies describes the pace in his recent interview as *“We have seen two years’ worth of digital transformation in two months. From remote teamwork and learning to sales and customer service, to critical cloud infrastructure and security”* (Spataro, 2020). This was also expressed during this field research. Participant 11 expressed the advancement as.

“I think Covid has shown and proved that the technology we have is amazing. To be able to do our daily work without any issues, is quite remarkable.”

As the focus of this research was on psychological safety in virtual teams, this aspect was scrutinized in detail. Fifteen out of the twenty interviewees have confirmed that technology can have a positive impact on the psychological safety of the team. Technology has evolved and has proven, it can provide a platform which facilitates communications, video calls and inclusion. Participant 09 defined the enhancements marvelous as,

“The technology has made an enormous difference. A couple of years ago, you and I would be picking up a phone to have this conversation. We can now have video calls, chats, screen sharing, whiteboard, remote assistance, and name it. It is marvelous, you know couple of years back and we only had phones.”

It is a fact that chats, video calls and other online functionalities still cannot compete against the traditional face to face work environments. However, technological enhancements do not stop, and the new innovations and advancements are promising. The recent advancements like, holograms, virtual reality and 3D which promises real life presentations of people and looks very promising.

Humans are social creatures and need their social bonds and ties. The social aspect plays a very ground role in the psychological safety and trust of people. Even now, thanks to technological advancements, the psychological safety lays ahead in virtual teams than before. As is clear in the excerpt from participant 04 where she shares her experience with Mural application during brainstorming sessions.

“Mural is an enormous success in virtual teams. We never thought we could gather people from different units virtually together and still feel connected and included. It is a remarkable success, even better than traditional setups. This because in virtual setups you do not have the barrier as traditional face to face sessions where one or two vocal people hijack the session and not give room to others.”

On the other side some have expressed their concerns about technological enhancements. Some pointed out, that the technological advancements might even deteriorate the trust and psychological safety of people. This was linked by some, as the beginning of panopticon theory. As one does not know who and how his/her information is used or even might be used against him or her. In virtual setups the notions of time, anonymity, security, and privacy seems to be faded. Participant 15 expressed his concerns as,

“In the virtual configuration one can be monitored without even noticing it or moreover being recorded, right? That might restrict one from raising his or her voice and inhibit their safety feelings.”

“There is no such anonymity in virtual world. Take survey online as an example, your computer name, you IP address which links back to your address is shared, so where is the anonymity.”

Video calls were praised as one of the enablers of psychological safety in virtual meetings as stated before. However, some claimed to feel extremely uncomfortable during the video calls. It was very peculiar that the group had no objection in face-to-face meetings but felt extremely uncomfortable if they had to turn on their camera during meetings. This group of participants 14, 17, 11, 21 especially females expressed their feeling as,

“To be honest I feel extremely uncomfortable behind the camera, it decreases my psychological safety. On the other side, seeing in person increases my safety. It is funny. I cannot explain this because opening the camera is actually seeing this person face to face.”

“I hate the camera and I do not turn it on, I feel very intimidated by camera. I really hate it. I do not, know why, When I am forced to turn on the camera that really lowers my psychological safety in the sense somebody is coming in my personal space.”

Participant 17 had an explained the issue as,

“I find it very distracting as I can see myself too. I am not used to seeing my own self all the time. It wants to look into the mirror all the time which distracts and lowers my self-confidence.”

Considering above findings, it is obvious that technology can have both positive and negative impact on psychological safety of teams. It is vital to choose the appropriate tools for the certain set ups taking participants needs, requirements and concerns into account.

4.7 Toolkits for fostering psychological safety.

Almost all the participants interviewed confirmed there are certain toolkits, instructions, tips, and tricks needed for building psychological safety in virtual teams. Seetap already provides certain training, tips, and tricks to cope with this forced workplace change. The trainings provided consisted of mental health, safety, mindfulness, inclusiveness etc. Psychological safety although recognized as crucial was not promoted as such. All participants interviewed have expressed their interests in the outcome of this study to know more about the toolkits, tips, and tricks to foster and nurture a trusted culture in their virtual environments. Take for example the fieldnote passage expressing the interest to such study from participant 18.

“Most of the toolkits we currently use are built for traditional face to face team setups, take feedback as an example which is promoted now adays by HR, however, this new virtual setup is not taken into consideration, which is very divergent than the traditional team set ups.”

All the participants interviewed confirmed that creating and fostering a safety culture is not merely a task of managers. It is a joint effort that every member in the team should contribute to. After all psychological safety is it is not merely for the sake of management and productivity, as it also promotes and contributes to learning and performance of team members (Edmondson, 1999).

Many of the participants already used tools and best practices for creating trust and psychological safety in their teams. Even though virtual team setups differ in many ways from the traditional teams, many traditional toolkits tips and best practices still applies to virtual. These have been summarized and categorized in three groups.

4.7.1 Technological toolkits

| Tool | Description/aim of tool | Relation to psychological safety in virtual teams (Quotes from interviewees) | Quoted by |
|-----------------|--|--|----------------------------|
| Mural | Enables design thinking and Collaborations. | <ul style="list-style-type: none"> • <i>“Brainstorms collaborate and co-create solutions the same way as traditional setups.</i> • <i>Supports anonymity.”</i> | Participant 1, 4,12.14,19 |
| Jack box | Party game studio for team building activities. | <ul style="list-style-type: none"> • Fun team building activity for virtual happy hours <i>“It is a gaming technology application where teams can play fun games, “We have spent some time playing those games and believe me people really say wow this seems as if you are in the same room playing.”</i> | Participant 4,11,12.17, 19 |
| Microsoft Teams | Collaboration app which helps teams stay organized and have conversations including chats, video, whiteboards, and screen sharing's. | <ul style="list-style-type: none"> • <i>It is much easier to start new meetings and conversations with MS teams”. It supports video calling, collaborations, whiteboards.</i> • <i>I genuinely like this breakout rooms that you can have your own small team and discuss things.”</i> • <i>I strongly feel technology can help and we should look at more innovative ideas for technology to work better.”</i> | Participant 1, 8, 15,12.21 |

| | | | |
|-------------------------------|--|--|------------------------|
| Video calls | Video conferencing in MS Teams | <ul style="list-style-type: none"> • <i>“Having a regular video call rather than the voice only helps build trust in the team.</i> • <i>It is a no brainer that video calls help to build trust and psychological safety as you can see each other (body language). However, some feel very comfortable while talking on the camera while others do not.</i> • <i>It feels much more personal. You can see the way a person reacts to what you are saying. This also removes misunderstandings which form the key issues during virtual.”</i> | Participant 10, 18, 12 |
| Parallel chat during meetings | MS Team's parallel chat allows groups to communicate flexibly without interrupting the main conversations. | <ul style="list-style-type: none"> • Managers are responsible for their team health e.g. <i>“If I see individuals are very calm and not participating, I usually use individual chats to bring people in the meeting and raise psychological safety.”</i> | Participant 18, 12 |
| emojis | Emoji, animated GIFs, and stickers in MS teams are a great way to add some fun and express yourself in communications. | <ul style="list-style-type: none"> • <i>“You can express thousands of words with an emoji.</i> • <i>MS Teams emoji's increases the engagement levels. “People now a days interact using emojis and encourage each other with a jiffy or something like that, I should say it really helps.”</i> | Participant 21 |
| Trello | A collaboration tool which supports project management and collaborations? | <ul style="list-style-type: none"> • We are we using it for project management in virtual environments as it supports collaboration as if you are in the same room. • It also supports learning together which enables inclusiveness. | Participant 17,12 |

4.7.2 Social tools

| Tool | Description/aim of tool | Relation to psychological safety in virtual teams (Quotes from interviewees) | Quoted by |
|---|---|--|---------------------------|
| One to One meeting | Get to know each other in an informal way which contributes to trust and psychological safety. It also supports and facilitates conflict resolutions. | <ul style="list-style-type: none"> • <i>Sometimes your need one-to-one chats rather than in a group chat. "We have weekly team meetings; however, the one-to-one video call is a greater help to build trust and psychological safety."</i> • <i>"It is vital to pick the right pairing in the one-to-one meeting. You can never make everybody the same."</i> • <i>The one-to-one meeting does not substitute however, supplements the coffee corners.</i> • <i>One to one meeting improves psychological safety and trust between team members."</i> | Participant 1, 4,12.14,19 |
| Plan face to face meetings if possible. | Face to face meetings | <ul style="list-style-type: none"> • <i>"Meet at least once, if possible, face to face, as this improves psychological safety and trust when you meet people in person you know what their beliefs are and how do they feel themselves."</i> • <i>"It is extremely hard to feel connected virtually, and especially if you have not met someone before, so you do not really understand them."</i> | Participant 2, 3,17.15 |
| Regular check-ins | Regular check-ins improve team bonding and prevents misunderstandings. | <ul style="list-style-type: none"> • <i>"Regular check-ins improve connectedness in the virtual team."</i> • <i>"It fosters bonding specially during this COVID-19 pandemic "we have a weekly check in for half an hour, these check-ins are open formats without any agenda where everyone can participate and speak up."</i> | Participant 5, 6,16.19 |

| | | | |
|--|---|--|--|
| | | <ul style="list-style-type: none"> • <i>“This should be very genuine check-ins not a customary speech.”</i> | |
| Present yourself vulnerable as manager | Helps to discover challenges in the team and supports building relations and trust within the team. | <ul style="list-style-type: none"> • <i>“Lead by example as manager. If you start personal stuff as a manager, it fosters psychological safety as others will follow along as a mutual commitment. This improves the psychological safety in the team. For example, “I last said in the team, that I was making eggs and I burned both the eggs and toast. Making a joke of it. Emphasizing we are all humans, and we make mistakes.”</i> | Participant 5, 6,16.19 |
| casual calls or casual catchups | Share personal feelings/experiences. | <ul style="list-style-type: none"> • <i>“Helps bonding and trust in the team knowing people outside of work relation helps to build bonds of friendship that might allow people to cross certain borders.”</i> • It creates social ties and psychological safe culture <i>“you cannot build relation with the machine you talk to but the person behind. So, make it personal, bring emotions and feelings.”</i> | Participant 5, 6,16.19 |
| Encourage active participation. | Set the rules of engagement e.g., give each other the space and opportunity to talk. | <ul style="list-style-type: none"> • Ask team members to present, share their expertise and ideas, invite them in discussion <i>“as a manager if you don't hear someone speak, offer and courage them to speak.”</i> | Participant 5, 8 |
| Build a safe culture. | Build a safety culture in the team so everybody feels psychologically safe. | <ul style="list-style-type: none"> • Every little team has its own little culture. <i>“It is vital to create a common ground, a safe culture between team members.”</i> • <i>“Institutionalize a psychological safe culture by making it part of the yearly review meetings.”</i> | Participant 1,2,3,4,5,6, 8,11,12,14, 16.19 |

| | | | |
|--|--|---|--------------------------|
| Organize virtual team events. | Organize open and social after work events. | <ul style="list-style-type: none"> • <i>“Team building activities like virtual escape rooms, online quizzes etc.”</i> • <i>“Have spontaneous virtual events without full agenda.”</i> | Participant 6, 9, |
| Throw in some icebreakers. | Make virtual teams feel comfortable by facilitating social interactions. | <ul style="list-style-type: none"> • <i>“Make virtual meetings more fun, be available for check-ins and ideations.</i> • <i>Share personal feeling or experience rather than directly jumping on the agenda, that kind of sets the stage and gets everybody relaxed.”</i> • <i>“Do not start meetings with merely business topics. Create a safe environment first.”</i> • <i>“Use Ice breaker questions to start the meetings.”</i> | Participant 2,16.19 |
| Show empathy and ask the right question. | Get emotionally attached and involved with your team members. | <ul style="list-style-type: none"> • Try to ask the right question. <i>“It’s much powerful to ask a team member about his/her day and how he is feeling than by simply asking is everything OK?”</i> | Participant 6,21 |
| Introduction of new team members virtually | Improve the psychological safety of new team members. | <ul style="list-style-type: none"> • <i>“Manager should facilitate the introduction in a ceremonial way.”</i> • <i>“Other team members should also take initiatives and reach out to the new joiner in more informal one-to-one chats “Rather than wait for the manager to do.”</i> • <i>“New team members always struggle with lack of connection others in the team which can inhibit psychological safety. This should be signaled and solved in the early team building phases.”</i> | Participant 1, 4,9.13,18 |

4.7.3 Reflective tools

| Tool | Description/aim of tool | Relation to virtual psychological safety (Quotes from interviewees) | Quoted by |
|---|---|--|-----------------------|
| Soft Skill trainings e.g., mindfulness, | Aims to improve teamwork and self-awareness. | <ul style="list-style-type: none"> • <i>“Build self-awareness and self-confidence within the teams.”</i> • <i>“Improve team’s communication skills on how to react, respond and how feedback.”</i> | Participant 2,3,14,17 |
| Bilateral meeting with manager | To improve mutual understandings in the team, discuss personal and professional roadblocks and issues. | <ul style="list-style-type: none"> • <i>“Bila’s should be dealt confidentially.”</i> • <i>“There should be a bridge where the manager should step in and ensure team members feel comfortable by having bilateral and one to one meeting.”</i> • <i>“Add virtual theme in to the Bila’s.”</i> | Participant 2,7,9,16 |
| Feedback | Information or criticism about individual or team performance. It aims to improve one’s performance or the situation in the team and provides improved relations in the teams | <ul style="list-style-type: none"> • <i>“Feedback should be in a friendly manner.”</i> • <i>“It should not be from one directional. Managers should have a hearing ear for the operations layers especially in this turmoil times.”</i> | Participant 2,4,11,19 |
| Mentorship programs | Mentorship programs for people who need or want the same skills. | <ul style="list-style-type: none"> • <i>“If the psychological safety is low within a certain team, team managers should address the issue and assign mentors to those individuals.”</i> | Participant 1,20 |

Many of the tools presented above have been transferred and adjusted from physical teams to virtual teams. Only a minimum number of new tools have been introduced for the virtual environment. Many interviewees have agreed and stated that the essence and fundamentals of teamwork, psychological safety, and trust should be the same in both physical and virtual teams. As one of the managers quoted.

"I don't see many differences. People express themselves with their words, not with their faces. I think it's what you tell that makes a difference, there are of course some limitations while being virtual, but the essence of teamwork has been the same."

Human behavior is fundamentally led and rooted by their values and beliefs. This rule applies for both virtual and physical environments. Hence toolkits that support and lead human behavior are basically the same, however, differ in nuances. As an example, feedback which was one of the mostly cited toolkits during the interviews which applies to both physical and virtual environments, however, it is more emphasized during the virtual meetings.

Hence due to limitations and the new challenges which come with virtual environments, it is vital to use the right communication tools, best practices, and rules to facilitate and nurture psychological safety in such environments.

4.8 Analysis

In this chapter the field research findings outlined in chapter 4 are correlated and examined in detail. The interviews started with a general inquiry to explore the participants perspective and understanding of psychological safety. Three of the participants (participant 1, 6 and 11) had no prior understanding of the concept however, once explained they recognized and acknowledged the need of the concept both in virtual and traditional teams. On the other side all other participants in particular participant 07 and 16, who were managers of different virtual teams had in-depth knowledge of the concept. Hearing different perspectives on what psychological safety meant for each one of the respondents was quite interesting. Even though the expressions were different, all were very connected to the mindset of being open, non-judgmental, and free to express and raise voices.

Participants 07,08 and 20 related psychological safety to personality traits as being extrovert or introvert with no connection to team safety culture. Remarkably all three of them were deeply knowledgeable in behavioral concepts and stated to see no difference in psychological safety between traditional and virtual environments. On the contrary all the other participants expressed that there was a decline of psychological safety in virtual teams when compared to traditional teams. This group also expressed a laggard trust forming in virtual teams as expressed in detail in headings 4.6.

On the other side all the participants including 11,14 and 16 defined the virtual move due to COVID-19 as very disturbing and stressful situation. Specially in the first few weeks of the pandemic, when the world looked very gloomy and dark. People faced many uncertainties both in their personal and professional lives however the same participants namely 11,14,16 shared their experience of noticing a positive change in their teams as well. They expressed many team members to have developed empathy and become very caring and indulgent. In addition, they also saw their teams become more productive and experienced a higher level of psychological safety with this shift to working virtually.

Participant 08, 17 and 21 shared that they see a degradation of psychological safety in their teams since they went virtual. They related this decline to lack of body language and other nonverbal communications in virtual environments. On the other side these participants also

expressed their lack of trust with technology in virtual teams. This raises the question that where does this degradation precisely relate to?

Another remarkable finding was the usage of video calls during virtual meetings. All the participants except 17,11 and 21 stated video calls improve psychological safety in virtual teams. However, the latter participants, all females expressed their discomfort with video callings and even deterioration of their psychological safety. This group including participants 03,12, 08, 17 and 21 claimed to feel safer while working in traditional groups however feel less intimidated in virtual setups.

5 Discussions

This chapter underlines the inferences and compares the available theory with the observations made during the interviews. This research has focused on how to foster psychological safety in teams which have been forced in to work virtually due to COVID-19. This research has followed a qualitative research method based on a case study approach by conducting in-dept interviews with forced virtual team members and managers. The findings in the previous chapter show how the respondents perceived psychological safety in their virtual workspace environments and how it can be fostered. However, this section discusses and infers the findings by referring to existing literature on the subject.

The findings indicate that there is an even stronger need for psychological safety in virtual environments. The results also suggest that in general, the theories and best practices provided by the literature for traditional teams also apply to virtual teams. However, the applications, methods and sequence differ in nuances between the two setups. In contrast to traditional teams, psychological safety in virtual environments also has a strong dependency on technology and trustworthiness of the technology. Next to the interpersonal trust, one should also trust the technology to feel safe in virtual environments.

5.1 Theoretical implications

Following the discussions in the previous chapter, this chapter examines the observations made during the field research in comparison with the theory and builds on the themes discussed in the previous chapter.

5.1.1 Psychological Safety

Considering the results from previous chapter on the definition of psychological safety, it is noticeable that there are different definitions for the psychological safety. Most of the respondents described and correlated psychological safety to personality traits rather than a safe culture within groups. This links why some do not speak up and indicate lack of confidence or shy feelings within the teams. This is in line with Morrison (2014) where speaking up is linked to individual personality traits and motivations. However, research has concluded that psychological safety is not merely related to introversion or extroversion of individuals (Edmondson, 2018). On the contrary, a psychological safe culture facilitates and stimulates

people to offer their ideas and raise their voice regardless of their personality trait being introvert or extrovert (Edmondson, 2018).

Another aspect noticed during the interviews was the definition of psychological safety as the interpersonal trust within team members. Although this is supported in the literature that trust forms the basis and has much in common with psychological safety, the concept of psychological safety is much broader than trust alone. The key difference of psychological safety with trust is that trust refers to the interactions between two individuals while psychological safety is experienced at the group level. In addition, psychological safety refers to a temporary and immediate interaction while trust refers to an interpersonal reliance one can have on their counter partners to stand for them in the future (Edmondson, 2018). In general, although explained in different words the definitions provided by participants were very in line with the literature's definition of psychological safety. All of them were very connected to the feeling of being open, non-judgmental, and free to express and speak up.

5.1.2 Forced to virtual way of working due to COVID-19

In the contemporary digital era virtual teams are quite common to many companies. The results from the previous chapter show that almost all the respondents have been involved in one or more virtual teams before. However, the recently forced move to a virtual way of working due to COVID-19 measures was an unexpected change to all the respondents. There is a lot of research on resistance to such unexpected changes; however, all claim awareness and communication to smoothen the change transition curves. This stage is called unfreezing in Schein's (1999) change curve model and provides tools and best practices to facilitate and smoothen this phase. However, COVID-19 was an immediate and unexceptional change to the world. Even though people could see the need for change, the acceptance was not easy for many. Many countries deemed COVID-19 as a life-threatening pandemic and introduced lockdown measures in the early phases of the pandemic. Working from home (virtually) was the result of lockdowns for many companies including Seetap. It is plausible to assume that people had other challenges in the early phase of the Covid than adapting to the change.

One aspect noticed during the interviews was the increased empathy and trust between individuals during the pandemic lockdowns. Empathy is defined as the ability of experiencing and understanding of what others feel and perceive and plays a fundamental role in the interpersonal interactions (Decety & Lamm, 2006). As trust and empathy are the main building blocks for psychological safety (Edmondson, 2018), such a trend has a positive effect on the overall safety culture within team climates.

Another thing noticed during the interviews, was the life cycle and management of the forced virtual team. Many managers pointed towards facing novel issues and challenges with the forced COVID-19 virtual teams' setup. Although the virtual teams were not new to many of the interviewed managers, some expressed they have faced challenges while managing this new setup. The virtual teams working traditionally that way make conscious decisions and organize themselves in a pragmatic way where teams follow certain steps and process to achieve their goal. Such teams are mentally and physically prepared for remote work which was skipped for those teams who were forced into this virtual mode of working due to Covid. The most commonly used tool is the Hertel et al. (2005) five-phase life cycle for the

management of virtual teams. These best practices and phases were skipped due to forced virtual move which have formed a challenge for many managers. On the other side, the tools and best practices defined in the literature for the virtual teams does not seamlessly apply to virtual teams formed due to COVID-19 pandemic.

5.1.3 Trust

As stated above, a remarkable observation from the interviews was the entwined and confound connection between trust and psychological safety. Interview findings claim trust to be much harder to build and maintain in virtual environments than in the traditional face-to-face teams. The Literature also argues that trust is more vital and important in virtual teams since these teams lack traditional social control systems (Cascio, 2000). And yet difficult to develop due to visual isolation and lesser personal contact between team members (Handy, 1995). Coppola et al. (2004) identified trust as the key ingredients and prerequisites of virtual teams' effectiveness. On the other hand, trust seem to be more fragile in virtual teams than in traditional face-to-face teams. A simple misunderstanding can break the trust while this can be obviated in the traditional teams. Panteli and Duncan (2004) describe trust in the virtual environment as swift, fragile, and interdependent to communication skills and behaviors of virtual team members.

Another challenge which was brought up during this research is the employees trust on division of labor among themselves and manager's trust on employee's performance in remote teams. The results show to be much harder to manage employee performance and labor trust between team members. Some argued to work much harder to prove themselves. This is in line with Edmondson (2018) findings on trust as she stated that lacking trust in teams can lead to negative impact on team's effectiveness. This is also acknowledged by several other research where trust is defined as the key pillar for successful team interactions and overcoming selfish interests within virtual teams (Malhotra et al., 2007).

The third aspect which was denoted during the interviews was the technology as a new challenge for trust in virtual teams. Trust in the literature is defined as an interaction between two parties or individuals in which trust exists in the mindset of one individual towards a specific individual or an organization (Edmondson, 2018) with the emphasis on individuals, as trust is built between people not technology (Friedman et al., 2000, p. 36). To foster a safety culture in virtual teams, there is a need for interpersonal and technology trust

5.1.4 Psychological Safety in virtual teams

It is evident from previous chapters that psychological safety in virtual teams is subjected to different and new challenges. Many of these challenges are coherent to the common virtual team challenges including, body language, nonverbal communications, informal chats, and other communication skills. The literature also argues that computer driven communications prevalent in virtual teams may hamper the cues, gestures and the other nonverbal communication which conveys affability, trust, and other interpersonal affections (Henttonen & Blomqvist, 2005)

Virtual communications are prone to misunderstandings and misinterpretations which is also coherent to common virtual team challenges. Findings from the previous chapter relate the

fragility of psychological safety to misunderstandings and misinterpretations during the virtual meetings. The literature also argues that the salient barriers for trust are the misunderstandings, failures to convey the message, interpretation of the context and other behavioral incidents (Henttonen & Blomqvist, 2005).

One of the remarkable observations from the interviews was the psychological safety feelings in virtual setups. The results and findings from pervious chapter suggest that some feel safer behind their screens and feel less intimidated and likewise, their anonymity in virtual setups seem also increase the psychological safety. This contradicts the literature on psychological safety where interpersonal trust and safety culture is built during the interactions with team buildings. This observation was specific to the group respondents with a high context culture.

Culture is one of the key pillars for the psychological safety in every work environment. In some cases, culture even determines climate within organizations. Diversity is advocated and good however, cultural differences remain a key challenge in the business environments (Hofstede et al., 2010), and managers around the world are discovering that national culture impacts how people communicate and interact with each other. There are many research studies conducted in relation to psychological safety and culture, however mostly on western low context culture. Newman et al. (2017) denote in their systematic review of psychological safety that further research in both high and low culture context is needed to investigate the influence of culture on employee and team responses to psychological safety.

5.1.5 Technology and Psychological safety

Remote work is inspired and made possible by information technology. The findings suggest that information technology both support and facilitate psychological safety in the virtual environments. Technological enhancements and innovation which has risen during the lockdowns are immersive. New tools and technologies have been introduced to support virtual teams. The literature also confirms information technology will further support and facilitate remote work in future. Dube and Robey (2009) state in their study on surviving the paradoxes of virtual teams that the new generation workers will be very comfortable to work in virtual environments and will have already formed relationships and friends in the cyber world. On the other hand, the findings also denote technology as a barrier for psychological safety. This was compared to Panopticon theory which is in line with Edmondson (1999) where she states that digital security and privacy invasions might have a negative impact on trust and psychological safety.

One of the remarkable observations from the interviews was around the usage of video callings during virtual teams. The findings were very contradictory. Some advocated video calls and related the behavior to higher psychological safety while others blamed video callings as contrary for their safety feeling. The specific group, predominately females, felt extremely uncomfortable using the camera during meetings. The literature around the topic is very limited however in-line with Edmondson (1999) on the negative impact of digital security and privacy invasions on psychological safety.

5.2 Practical implications

To answer the main research question, this research has first focused on the definition of virtual teams. The literature defines virtual teams as a group of geographically and/or time dispersed individuals working together remotely to accomplish a certain organizational goal (Powell et al., 2004). However, this research has shown that teams forced to work virtually due to Covid are not necessarily geographically or time dispersed. Hence this research supports Gibson et al. (2014) definition of virtual teams as group of people with high reliance and dependency on information and communication technologies regardless of their geographical locations which refutes the definition of geographically dispersed groups.

In additions this study sheds light into several practical toolkits and best practices for organizations on how to foster psychological safety in their virtual teams. The findings, toolkits and best practices are introduced in line with Edmondson's (2018) three-step leadership approach for building psychological safety in teams, these are:

- d. Setting the stage.
- e. Inviting participation.
- f. Responding productively.

5.2.1 Set the stage

The first phase is all about establishing common goals, shared expectations, and meaning among team members (Edmondson, 2018). The findings suggest that managers tend to adhere to such best practices. Some traditional teams which were forced into virtual due to Covid-19 had benefited and practiced this stage. However, the new joiners and teams created during the Covid as virtual have missed this activity. This is mainly due to the limitations of the virtual environment. Several empirical studies also emphasize on challenges of building trust in virtual environments specially with new joiners (Zolin et al., 2004). The toolkits provided in the findings can support this stage by facilitating a climate for discussions and alignments. The evident once are mural, video callings and one-on-one chats. Mural and video calls support collaboration and co-creation in virtual environment. Managers need to spend more time using the one-on-one chats with new joiners to create and foster a trust relationship and should set the fear of failure and uncertainty in a reasonable fashion. Mentorship programs also facilitate this stage by providing and sharing knowledge between members in the team.

5.2.2 Invite participation

This is about creating a safe climate by facilitating forums discussions, acknowledging gaps and intense listening in the groups (Edmondson, 2018). The findings suggest managers in Seetap are very humble and easily accessible which enhances psychological safety. The toolkits provided in the findings support this stage by facilitating an open climate. The evident once are setting the rules for engagements, promoting casual calls and regular check-ins. Humble management is the key pillar in the stage. Edmondson (2018) describes the matter as, no one in the team dares to take interpersonal risk if the boss thinks he or she is all knowing however, a learning, humble and curious mind mitigates such risks. The provided toolkit "Present yourself vulnerable as manager" also emphasizes this stage by leading by example

5.2.3 Respond productively

This step is connected towards continues learning by expressing appreciation, discussions, support, and brainstorming for the risks team members take (Edmondson, 2018). The reflective toolkits provided in the findings support this stage by nurturing an open culture within the virtual environments. Active bi-directional feedback is the key success factor for this stage. Managers we spoke had this step high in their agenda but faced some guidance and limitations during the virtual environments.

6 Conclusion

To conclude, Covid-19 has drastically changed work environments. Working virtually has become salient and has formed a new reality. Many organizations have followed this new reality and consider making certain roles permanently remote. However, the findings in this research suggest a hybrid trend in future, where many organisations might use offices as a social hub and allow more remote work. This research suggests and emphasizes the need for trust and psychological safety in this new work culture.

This study aimed to get a deeper understanding of challenges and opportunities to foster a safe culture in virtual teams. The goal of this study was to scrutinize the perception of psychological safety in virtual teams and provide managers with toolkits and best practices to nurture and improve psychological safety in their virtual environments. This research has focused on the research question on how to foster psychological safety in virtual teams with the below sub-questions.

1. What is a virtual team and how is it formed within organizations?
2. What is trust and how does it relate to virtual teams?
3. What is psychological safety and how does it relate to virtual teams?
4. How does technology influence psychological safety within virtual teams?

Sub question one focused on the definition of virtual teams. As per scope of this research, the focus was on teams forced into remote working due to the COVID-19 pandemic. This research refutes the prior definition of virtual teams as geographically dispersed groups and supports Gibson et al. (2014) definition of virtual teams as teams with high reliance and dependency on information and communication technologies.

Sub question two has focused on trust and its relationship with virtual teams. This question has been answered in paragraph 5.13 of this research paper. This research has explored the necessity and importance of trust in remote environments. It has emphasized and denoted technology as a new challenge for trust in virtual teams and recommends future research to explore the issues and challenges of technology on interpersonal trust.

Question three has focused on psychological safety in virtual teams. This question has been answered in paragraph 5.1.4 of this research. It has shown the coherence of psychological safety with trust, technology, and culture in virtual teams.

Finally, this research has provided a set of toolkits, including technological and best practices for managers and team members to nurture psychological safety in their virtual environments. The toolkits and best practices presented in this study are gathered from the interviews and observations and presented in chapter 4.7.1 of this research.

To conclude, Covid-19 has drastically changed the work environments for many organizations where remote work has become a new reality. Organizations have become more dependent on remote workforces and virtual teams. Such teams need psychological safety culture to flourish and thrive in this volatile, uncertain, complex, and ambiguous (VUCA) world.

7 Limitations and Future Research

There are some limitations in this study which need to be acknowledged. One of the limitations was the limited variety of samples during the interviews. This study has followed a single case study within a manufacturing industry and has focused only on teams which have been forced into virtual working due to COVID-19 measures. However, the findings show remote workspace trends seem to continue and even become the new reality for many organizations. Future study with larger sample groups and multiple case studies should provide more insights on the challenges of psychological safety in virtual setups and how to cope and nurture a safety culture within such teams.

A second limitation in this study may refer to convenient sampling bias. For data collection, an email invite was sent out to 30 participants. However, this resulted to only 8 respondents for the interviews. Snowballing was used later to further increase the number of participants, while adhering and ensuring the research criteria. This may have resulted in convenience sample bias in this study.

Thirdly, this study has shown that virtual teams that were forced to work remotely during the pandemic are different from the virtual teams which were planned as virtual teams. Planned virtual teams usually follow a certain process step and the best practices for team building. Future study should explore how COVID-19 has affected the productivity, effectivity, and human behaviors in such teams.

Another interesting area to investigate in future research would be the gender specific psychological safety in virtual teams. The findings in this research have shown a declination of psychological safety in the female gender. However, this might also allude to limitations of this research, as only one-fourth of the respondents of this research was represented by the gender group. This specific gender group has also expressed to feel less comfortable and experience low psychological safety by using video calls during virtual meetings. While the literature reviews and findings of this research show adverse outcomes in relation people experiences remote work and video calls. Future research is necessary to further explore these relationships.

Finally, another remarkable area to investigate in future research is the cultural aspects in virtual environments. The findings in this research has shown an inclination of psychological safety in a specific group from high context culture. There are many research studies

conducted on psychological safety and culture, however mostly on western low context culture. Newman et al. (2017) also denote in their systematic review of psychological safety literature that further research in both high and low culture context is needed to investigate the influence of culture on employee and team responses to psychological safety.

8 References

- Adams, W. C. (2015). Conducting Semi-Structured Interviews. In: Wholey, J.S., Harty, H.P. and Newcomer, K.E., Eds., *Handbook of Practical Program Evaluation*, Jossey-Bass, San Francisco, 492-505.
- Aertsen, P. (2011). *Onderzoek doen binnen de eigen organisatie*. Promanad.
- Alvesson, M. (2011). *Doing interviews*. London: SAGE Publications
- Alvesson, M., & Sköldböck Kaj. (2009). *Reflexive methodology : new vistas for qualitative research* (2nd ed.). SAGE.
- Aubert, B., & Kelsey, B. (2003). Further understanding of trust and performance in virtual teams. *Small Group Research*, 34(5), 575–618. doi:10.1177/1046496403256011
- Bandow, D. (2001). Time to create sound teamwork. *Journal for Quality and Participation*, 24(2), 41.
- Baer, M., & Frese, M. (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovations, and firm performance. *Journal of Organizational Behavior*, 24, 45–68.
- Brinkmann, S., & Kvale, S. (2005). Confronting the ethics of qualitative research. *Journal of Constructivist Psychology*, 18(2), 157-181.
- Caillaud, S., Flick, U., & Barbour, Rosaline S. (2017). A new era in focus group research : challenges, innovation and practice. In *Focus groups in triangulation contexts* (pp. 155–177). essay, London : Palgrave Macmillan UK : Palgrave Macmillan. https://doi-org.eur.idm.oclc.org/10.1057/978-1-137-58614-8_8
- Cambridge Dictionary. (2021, June 30). trust definition: 1. to believe that someone is good and honest and will not harm you, or that something is safe and. . . Learn more. <https://dictionary.cambridge.org/dictionary/english/trust>
- Carmeli, A. (2007). Social capital, psychological safety, and learning behaviours from failure in organisations. *Long Range Planning: International Journal of Strategic Management*, 40(1), 30–44. <https://doi.org/10.1016/j.lrp.2006.12.002>
- Cascio, W. F. (2000). Managing a virtual workplace. *The Academy of Management Executive* (1993-2005), 14(3), 81–90.
- Catherine, K. R., & Lee, Q. (2005). Narrative in social work : a critical review. *Qualitative Social Work*, 4(4), 391–412. <https://doi-org.eur.idm.oclc.org/10.1177/1473325005058643>
- Cauwelier, P. (2019). Building high-performance teams through action learning, *Action Learning: Research and Practice*, vol. 16, no. 1, pp. 68-76.
- Coppola, N. W., Hiltz, S. R., & Rotter, N. G. (2004). Building trust in virtual teams. *IEEE Transactions on Professional Communication*, 47(2). <https://doi-org.eur.idm.oclc.org/10.1109/TPC.2004.828203>
- Daly, J., Kellehear, A., & Gliksman, M. (1997). *The public health researcher : a methodological guide*. Oxford University Press.
- David, H. J. J. O. E. P. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of economic perspectives*, 29(3), 3-30.
- Davis, D. D., & Bryant, J. L. (2003). INFLUENCE AT A DISTANCE: LEADERSHIP IN GLOBAL VIRTUAL TEAMS.
- Decety, J., & Lamm, C. (2006). Human empathy through the lens of social neuroscience. *The Scientific World Journal*, 6, 1146–1163. <https://doi-org.eur.idm.oclc.org/10.1100/tsw.2006.221>
- Delizonna, L. (2017, August 24). High-Performing Teams Need Psychological Safety. Here's How to Create It. *Harvard Business Review*. <https://hbr.org/2017/08/high-performing-teams-need-psychological-safety-heres-how-to-create-it>
- Dube, L., & Robey, D. (2009). Surviving the paradoxes of virtual teamwork. *Information Systems Journal*, 19, 3–30. doi:10.1111/j.1365-2575.2008.00313.x
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350–383.
- Edmondson, A. (2018). *The Fearless Organization: Creating Psychological Safety in the Workplace for Learning, Innovation and Growth*. New Jersey: Hoboken, John Wiley & Sons.

- Edmondson, A. C. (2007). Psychological safety, trust, and learning in organizations : a group-level lens. *Trust and Distrust in Organizations : Dilemmas and Approaches*, S. 239-272.
- Edmondson, A. C., & Lei, Z. (2014). Psychological safety: the history, renaissance, and future of an interpersonal construct. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 23–43. <https://doi-org.eur.idm.oclc.org/10.1146/annurev-orgpsych-031413-091305>
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: opportunities and challenges. *The Academy of Management Journal*, 50(1), 25–32. *Academy of Management Journal*, 50(1), pp. 25–32.
- Eriksson Päivi, & Kovalainen, A. (2008). *Qualitative methods in business research*. SAGE.
- Erlanson, D. A. (1993). *Doing naturalistic inquiry: A guide to methods*. Newbury Park, Calif: Sage.
- Eurostat. (2021, January 1). Households with broadband access - Products Datasets. The Eurostat. <https://ec.europa.eu/eurostat/en/web/products-datasets/-/TIN00073>
- Faure, G. O., & Rubin, J. Z. (1993). *Culture and negotiation : the resolution of water disputes*. Sage.
- Friedman, B., Kahn Jr, P. H., & Howe, D. C. (2000). Trusting technology - trust online. *Communications of the Acm*, 43(12), 34.
- Friedrich, R. (2017). Virtual Team Maturity Model (VTMM®). In: *The Virtual Team Maturity Model*. Springer, Wiesbaden. https://doi.org/10.1007/978-3-658-19771-1_6
- Gartner. (2020, 14 July). ARLINGTON, V. Survey Reveals 82% of Company Leaders Plan to Allow Employees. Gartner. <https://www.gartner.com/en/newsroom/press-releases/2020-07-14-gartner-survey-reveals-82-percent-of-company-leaders-plan-to-allow-employees-to-work-remotely-some-of-the-time>
- Gassmann, O. (2003). Trends and determinants of managing virtual r&d teams. *R & D Management*, 33(3), 243-262.
- Gibson, C. B., & Manuel, J. (2003). Building trust: Effective multi-cultural communication processes in virtual teams. In C. B. Gibson & S. G. Cohen (Eds.), *Virtual teams that work: Creating conditions for virtual team effectiveness*. San Francisco, CA: Jossey-Bass
- Gibson, C., Huang, L., Kirkman, B., & Shapiro, D. (2014). Where Global and Virtual Meet: The Value of Examining the Intersection of These Elements in Twenty-First-Century Teams
- Handy, C. (1995). Trust and the virtual organization. *Harvard Business Review*, 73(3), 40–50.
- Henttonen, K., & Blomqvist, K. (2005). Managing distance in a global virtual team: The evolution of trust through technology-mediated relational communication. *Strategic Change*, 14(2), 107–119. doi:10.1002/jsc.714
- 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.eur.idm.oclc.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.(report)(author abstract). *Journal of Applied Psychology*, 99(3), 390.
- Hofstede, G. H., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations : software of the mind (3rd ed.)*. McGraw-Hill.
- Janine, V. H., Michael, J., Carol, S., & Amanda, L. T. (2019). Trust in virtual teams: a multidisciplinary review and integration. *Australasian Journal of Information Systems*, 23. <https://doi-org.eur.idm.oclc.org/10.3127/ajis.v23i0.1757>
- Johnson-George, C., & Swap, W. C. (1982). Measurement of specific interpersonal trust: Construction and validation of a scale to assess trust in a specific other
- Jones, G. R., & George, J. M. (1998). The experience and evolution of trust: implications for cooperation and team work. *Academy of management review*, 23(3), 531-546.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33, 692–724.
- Kostopoulos, K. S., & Bozionelos, N. (2011). Team exploratory and exploitative learning: Psychological safety, task conflict, and team performance. *Group & Organization Management*, 36, 385–415.

- Kvale, S. (2007). *Doing interviews*. London: SAGE Publications Ltd.
- Langley, A. (1999). Strategies for theorizing from process data. *Academy of Management*. the
- Lencioni, P. (2002). *The five dysfunctions of a team : a leadership fable (First)*. Jossey-Bass, a Wiley imprint
- Liang, J., Farh, C. I. C., & Farh, J. L. (2012). Psychological antecedents of promotive
- Lichtman, M. (2012). *Qualitative research in education : a user's guide (3rd [upd.])*. SAGE Publications.
- Malhotra, A., Majchrzak, A., & Rosen, B. (2007). Leading virtual teams. *Academy of Management Perspectives*, 21(1), 60–70.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An Integrated Model of Organizational Trust. *Academy of Management Review*, vol. 20, no. 3, pp. 709-734.
- Mayfield, C. O., Tombaugh, J. R., & Lee, M. (2016). Psychological collectivism and team effectiveness: moderating effects of trust and psychological safety.(report). *Journal of Organizational Culture, Communications and Conflict*, 20(1), 78.
- Mehta, J., Yates, T., Smith, P., Henderson, D., Winteringham, G., & Burns, A. (2020). Rapid implementation of microsoft teams in response to covid-19: one acute healthcare organisation's experience. *Bmj Health & Care Informatics*, 27(3). <https://doi-org.eur.idm.oclc.org/10.1136/bmjhci-2020-100209>
- Miles, R. E., & Snow, C. C. (1986). Organizations: New concepts for new forms. *California Management Review*, 18 (3), 62–73.
- Morgan, G., & Smircich, L. (1980). The Case for Qualitative Research. *Academy of Management Review*, vol. 5, no. 4, pp. 491-500.
- Morgan, N. (2018). *Can you hear me? How to connect with people in a virtual world*. Boston: Harvard Business Review Press.
- Morrison, E. W. (2014). Employee voice and silence. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 173–197. <https://doi-org.eur.idm.oclc.org/10.1146/annurev-orgpsych-031413-091328>
- Nembhard, I. M. & Edmondson, Amy. (2012). Psychological Safety: A Foundation for Speaking Up, Collaboration, and Experimentation in Organizations. *The Oxford Handbook of Positive Organizational Scholarship*. 10.1093/oxfordhb/9780199734610.013.0037.
- Newman, A., Donohue, R., & Eva, N. (2017). Psychological safety: a systematic review of the literature. *Human Resource Management Review*, 27(3), 521–535. <https://doi-org.eur.idm.oclc.org/10.1016/j.hrmr.2017.01.001>
- Noble, H. & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence-Based Nursing*, vol. 18, pp. 34-35.
- Panteli, N., & Duncan, E. (2004). Trust and temporary virtual teams: Alternative explanations and dramaturgical relationships. *Information Technology & People*, 17(4), 423–441. doi:10.1108/09593840410570276
- Parker, L. D. (2020). "The COVID-19 office in transition: cost, efficiency and the social responsibility business case", *Accounting, Auditing & Accountability Journal*, Vol. 33 No. 8, pp. 1943-1967.
- Parloff, R. (2018). "How VW Paid \$25 Billion for 'Dieselgate' – and Got Off Easy." *Fortune Magazine*. February 6, 2018. <http://fortune.com/2018/02/06/volkswagen-vw-emissions-scandal-penalties/AccessedJune13,2018>
- Pearlson, K. E., Saunders, C. S., & Galletta, D. F. (2016). *Managing and Using Information Systems: A Strategic Approach(6th ed.)*. New York, NY: Wiley
- Powell, A. L., Piccoli, G., & Ives, B. (2004). Virtual teams: a review of current literature and directions for future research. *Data Base*, 35, 6-36.
- Rock, D. (2008). SCARF: A brain-based model for collaborating with and influencing others. *NeuroLeadership journal*, 1(1), 44-52.
- Rowley, J. (2012). *Conducting research interviews*. Retrieved from: <https://search-proquest.com.eur.idm.oclc.org/DocView/928748740/fulltextPDF/31B735D8D2714C84PQ/1?accountid=13598>

- Schein, E. H. (1999). *The corporate culture survival guide: Sense and nonsense about culture change*.
- Schein, E. H., & Bennis, W. (1965). *Personal and organizational change through group methods*. New York: Wiley.
- Schweitzer, L., & Duxbury, L. (2010). Conceptualizing and measuring the virtuality of teams. *Information Systems Journal*, 20(3), 267–295. doi:10.1111/j.1365–2575.2009.00326.x
- Shenton, A. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75. doi:10.3233/EFI-2004-22201
- Spataro, J. C. V. P. F. M. (2020, June 1). 2 years of digital transformation in 2 months. Microsoft 365 Blog. <https://www.microsoft.com/en-us/microsoft-365/blog/2020/04/30/2-years-digital-transformation-2-months/>
- Stake, R. E. (1995). *The art of case study research*. Sage.
- Tracy, S. (2010). Qualitative quality: eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry*, 16(10), 837–851. University of Huddersfield, Huddersfield, pp. 1-7.
- Varty, C. T., O'Neill, T., & Hambley, L. A. (2017). *Leading Anywhere Workers: A Scientific and Practical Framework*.
- Walumbwa, F. O., & Schaubroeck, J. (2009). Leader personality traits and employee voice behavior: mediating roles of ethical leadership and work group psychological safety. *Journal of Applied Psychology*, 94(5), 1275–1275. <https://doi-org.eur.idm.oclc.org/10.1037/a0015848>
- Warkentin, M. E., Sayeed, L., & Hightower, R. (1997). Virtual teams versus face-to-face teams: An exploratory study of a Web-based conference system. *Decisions Sciences*, 28, 975–996
- Yin, R. K. (2003). *Case study research: Design and methods*. 3rd ed. Thousand Oaks: Sage.
- Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks, CA: Sage Publications
- Zolin, R., Hinds, P. J., Fruchter, R., & Levitt, R. E. (2004). Interpersonal trust in crossfunctional, geographically distributed work: A longitudinal study. *Information and Organization*, 14(1), 1–24
- Zucker, L. G. (1986). Production of trust: Institutional sources of economic structure, 1840- 1920. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior*, vol. 8 (pp. 53–111). Greenwich, CT: JAI Press.

Appendix 1. Data: Interview questions

This research has followed a semi-structured interview with 5 main questions. Further questions have followed the discussions with interviewees.

Q1. Before we start, do you have any questions for us?

Q2. What is psychological safety for you?

Q3. When did you start working virtually?

Q4. How did COVID-19 affect you and your work environment??

Q5. What is trust for you?

Q6. Does technology play a role in psychological safety of virtual teams

Appendix 2. Data: Interview transcripts and secondary sources

To protect anonymity the transcripts of the interview and the names of participants are not published, however the transcripts have been anonymized and shared with the supervisor. Furthermore, any confidential information that was shared have been anonymized.

