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**VIRTUAL COMMUNICATION  
IN MULTINATIONAL  
CORPORATIONS**

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# Virtual Communication in Multinational Corporations



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## Abstract

With the increasing use of virtual communication for interactions in the global business environment in this era, more and more multinational corporations (MNCs) have become globally integrated, resulting in a geographically dispersed workforce. Consequently, this research aims to understand how virtual communication affects the psychological well-being of employees and cooperation in global teams, as well as organizational outcomes. This has been demonstrated by collecting empirical data from the organization, Novo Nordisk A/S, and with the support of the PERMA Model and the Job Demands-Resources Model. Three key findings were identified: *‘Low engagement and cooperation in virtual settings,’ ‘Absence of relationship building in virtual settings,’* and *‘Absence of cultural knowledge in global teams.’* Based on the empirical data, these findings are the most significant in this research. Therefore, it is believed that this study is relevant and extends to the literature within the international business and management field, as research in this area of study is scarce. The findings are expected to help shed light on understanding the challenges of virtual communication to develop strategies to handle well-being and cooperation issues in MNCs.

**Key words:** *Multinational corporations, virtual communication, psychological well-being of employees, cooperation in global teams, PERMA Model, Job Demands-Resources Model, international business and management*

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# 1. Introduction

Over the last three decades, multinational corporations (MNCs) have become more globally integrated, resulting in a geographically dispersed workforce (Blomqvist & Nordstrand, 2018; Simpson, 2017). This trend has been accelerated and aided by the growing interest in the use of virtual communication, which has become an indispensable tool for interactions and collaborations in the global business environment today (Davis, 2022; Hill, Axtell, Raghuram & Nurmi, 2022; Blomqvist & Nordstrand, 2018; Simpson, 2017; DuFrene & Lehman, 2016; Gilson, Maynard, Jones Young, Vartiainen & Hakonen, 2015; Gajendran & Harrison, 2007). Many organizations have already shifted towards some form of telecommuting and flexible work arrangements, while more are likely to follow suit (Hill et al., 2022; World Health Organization & International Labour Organization, 2022; Gilson et al., 2015; Gajendran & Harrison, 2007). Virtual communication has changed how MNCs conduct their work, enabling them to connect with others worldwide, regardless of place and time (Davis, 2022; Simpson, 2017; DuFrene & Lehman, 2016; Breuer, Hueffmeier & Hertel, 2016; Gilson et al., 2015; Hoch & Kozlowski, 2014). Although virtual communication is not a new concept, the adoption of virtual communication has already become the norm in many organizations, considered to be critical for success (Shrivastava & Singh, 2021; DuFrene & Lehman, 2016; Breuer et al., 2016; Gilson et al., 2015; Hoch & Kozlowski, 2014).

The literature has also recognized the growing significance of virtual communication and its increasing interest. However, there is still much to be learned, and much remains to be explored, especially concerning the psychological well-being of employees and cooperation in global teams in the field of international business and management, where research has been scarce. This can be because the concept of employee well-being derives from the field of psychology. Given the increasing use of virtual communication and its presence in the contemporary business landscape, there is a pressing need for further research. Therefore, as limited research has been found within the field of international business and management, conducting this current research is relevant. This research provides some insights into this area of study, contributing to the literature and field of international business and management.

## **2. Research area**

This chapter will provide a clear conceptualization of both the research question and the research aim to help the reader understand the significance of this research. The research question and research aim are two essential components of any research and serve as the foundation upon which the entire research is built.

### **2.1. Research question**

The research question is the core ingredient in all knowledge development (Alvesson & Sandberg, 2013). It is the inevitable and crucial starting point for academic research because it establishes the problem or topic that the research aims to investigate (Alvesson & Sandberg, 2013). It serves as a guide for the researchers to determine the appropriate research design and methodology to use, while also helping to identify the theoretical and practical implications that the research may have or generate (Alvesson & Sandberg, 2013). The research question for this study is the following:

*How does virtual communication affect the psychological well-being of employees and cooperation in global teams, and what are the organizational outcomes?*

The research question was formulated due to a common interest among the authors. As a result of the COVID-19 pandemic, the authors experienced several months of virtual communication in school and workplace settings. It was observed that while virtual communication allowed for greater flexibility and convenience, it also had potential drawbacks. These observations led the authors to examine the well-being of employees in the context of virtual communication and from the perspective of global teams. However, as the authors dove deeper into the literature, they discovered that virtual communication had been used in the workplace for many years prior to the pandemic. Despite this, limited research has been conducted on this specific area of interest. With inspiration from various courses and lectures in the Master's Program in International Business at Aalborg University Business School and guidance from the supervisor, the authors decided to contribute to the existing body of knowledge by investigating this research question.



## **2.2. Research aim**

The aim of this research is to investigate and understand the impact of virtual communication on the psychological well-being of employees and cooperation in global teams. The findings of this research could be of significant interest due to the growing trend among MNCs to prioritize virtual communication as a means of reducing travel, minimizing CO2 emissions, and saving time. However, the complete absence of physical meetings may result in some problems that are yet to be understood. In addition, this research may uncover findings that can assist organizations in developing strategies that effectively address challenges related to virtual communication so that they minimize the potential impact they may have on the psychological well-being of employees, which can then further result in enhanced cooperation among global teams.

## **3. Literature Review**

This chapter will present a comprehensive literature review, which is a review of the existing research relevant to a particular topic or area of study. A literature review is an essential component of research as it offers a critical evaluation of previous and current studies. This allows researchers to identify gaps in the knowledge base and provide justification for the research, as well as formulate research questions that address the existing gaps. Moreover, the literature review will help to understand and define certain terms that will be used in this research.

### **3.1. Virtual Communication**

Communication has evolved since the earliest signs of human life, from a simple process of exchange until speech, and later by using symbols and written communication (Gonçalves, Ferreira, Gonçalves, Putnik & Cruz-Cunhaa, 2014). The pace of ways to communicate has accelerated dramatically over the past decades, overcoming time and space barriers by becoming computer-mediated. Nowadays, communication is considered the fundamental process for driving a business and is an essential dimension of virtual team working (Gonçalves et al., 2014). While many communication tools are available for collaborating in virtual teams,

few studies have evaluated their overall effectiveness (Kozlowski & Ilgen, 2006). Therefore, the new challenge in meeting business requirements is applying the philosophy of effective and efficient virtual communication. The relationship between team communication and performance has been commonly measured within the literature (Espevik, Johnsen, Eid & Thayer, 2006). According to Espevik et al., (2006), Kozlowski & Bell (2003), and Kozlowski & Ilgen (2006), communication can be defined as a team process that enhances team performance. Agreeing with the above-mentioned researchers, communication is in this research defined as a process that facilitates the development of integral team processes and outcomes.

A defining feature of virtual teams is that communication mainly occurs through virtual tools (Gibson & Cohen, 2003). Both Graetz, Boyle, Kimble Thompson & Garloch (1998), Hollingshead (1996), and Straus (1996) demonstrate a common finding that virtual teams take longer to complete tasks, which stems from a variety of issues, such as the time delay related to utilizing virtual tools and the nature of some virtual tools (Malhotra, Majchrzak, Carman & Lott, 2001). This study area could be led by inconsistent and inconclusive findings emerging from research assessing communication content rather than communication volume, producing mixed findings (Malhotra et al., 2001). Similarly, Hiltz, Johnson & Turoff (1986) discovered that virtual teams mainly focus on exchanging task-oriented communication rather than face-to-face teams. On the other hand, Bordia, Difonzo & Chang (1999) established that communication content was not distinctive, in terms of task focus, between virtual and face-to-face teams. However, Bordia et al. (1999) argue that their results are suggestive rather than conclusive, as they did not incorporate a formal comparison between virtual teams and face-to-face groups.

Virtual communication has become an increasingly important aspect of daily life, particularly in the wake of the COVID-19 pandemic. It offers many positive outcomes, such as convenience, flexibility, and the ability to connect with people from all over the world (Stratone, Vătănescu, Treapăt, Rusu & Vidu, 2022). Overall, while virtual communication has many positive outcomes, it is vital to be aware of the potential adverse outcomes it brings and take steps to mitigate them.

Several studies suggest that virtual communication has, in fact, various negative consequences (Marlow, Lacerenza & Salas, 2017). One of the main obstacles to virtual

communication is that it can lead to a lack of face-to-face interaction. While virtual communication allows us to connect with people worldwide, it can also result in loss of social skills and a decreased ability to communicate effectively (Marlow et al., 2017). Without the nuances of nonverbal communication, such as facial expressions and body language, it can be harder to accurately convey emotions and intentions. This can lead to misunderstandings and misinterpretations, especially in high-stakes situations such as business negotiations or conflict resolution (Gonçalves, et al., 2014). In addition, virtual communication can sometimes lead to a lack of accountability (Gonçalves, et al., 2014). Without the face-to-face pressure of a physical office, some people may be more likely to procrastinate or not follow through on their commitments (Ivanovski & Gruevski, 2014). This can be especially problematic in team settings, where one employee's lack of accountability can impact the entire team's productivity and success (Ivanovski & Gruevski, 2014).

Another negative outcome of virtual communication is the potential for information overload (Marlow et al., 2017). With so many communication channels, such as email, instant messaging, video conferencing, and social media, it can be difficult to keep up with all the messages and notifications. This can lead to stress, anxiety, and a feeling of being constantly "plugged in," that can negatively impact the individual's mental health and well-being (Hyland, Lee & Mills, 2015), which will be further explained later in this chapter. In addition, studies have suggested that many employees experience blurred boundaries between work and home when working remotely (Kanter, Sherman & Le, 2016). Individuals are often found feeling like they are balancing multiple roles, making it difficult to find time for proper self-care and restoration (Kanter et al., 2016; Zoom Communication Inc., 2020). For that particular reason, platforms like Zoom, a video communication company that assists in virtual communication, have tried to find solutions to create programs that encourage people to set personal boundaries, prioritize their health first, and enable time to disconnect (Zoom Communication Inc., 2020). Zoom's founder and Chief Executive Officer (CEO) Eric S. Yuan states:

*“While Zoom has been helping people stay connected and productive during this pandemic, we know that never unplugging can cause stress and affect heart health. I deeply value happiness and mental health and have been personally impacted by cardiovascular disease in a family member. I want our company to lead the way in empowering people to put their health first.”* (Zoom Communication Inc., 2020).

This program aims to make a difference by promoting a new kind of "happy hour", which encourages employees to step away from their computers and spend an hour enjoying an activity outside or with loved ones (Zoom Communication Inc., 2020).

For several users, virtual communication can sometimes be unreliable. Technical glitches, poor internet connections, and other malfunctions are just some of the issues that can cause delays or failures in communication (Morrison-Smith & Ruiz, 2020). This can be frustrating and may lead to missed deadlines or misunderstandings. Despite that, digital tools are still increasingly implemented in organizations as tools for communication among employees (Morrison-Smith & Ruiz, 2020).

More and more organizations are getting involved with the Metaverse, a virtual world with a homogeneous connection between Virtual Reality and Augmented Reality (Kye, Han, Kim, Park & Jo, 2021). Organizations have invested heavily in creating their own virtual worlds, making it possible to have real-world-like interactions, including talking, greeting, and having face-to-face conversations as if everybody were actually talking at the office, even though they were all sitting at home (Danthamrongkul, 2021; Efinancethai, 2021; Puncreobutr, Dhamacharoen & Tapaneyakorn, 2022). Metaverse has the potential to create a new Metaverse Economy that could significantly disrupt current lifestyles, leading to changes in the economy, society, politics, and business sectors. This new digital platform could potentially lead to remote work replacing current jobs (Kye et al., 2021).

The Metaverse concept first appeared in 1992, when it referred to a virtual reality existing beyond reality (Hawkins, 2022). It is a compound word of *meta*, meaning transcendence and virtuality, and *universe*, meaning world and universe. This term refers to the digitized earth as a new world expressed through digital media such as smartphones and the internet (Hawkins, 2022). After the concept of the Metaverse appeared, extensive efforts and research were carried out to make the Metaverse a reality, which was later put into motion by CEO Mark Zuckerberg (Bojic, 2022). The mirror world Metaverse was further activated by the COVID-19 pandemic (Kye et al., 2021). In other words, the biggest contributor to enabling the mirror world is the user. Users meet and play games with physically distant people in the mirror world and perform meaningful tasks. The mirror world is a simulation of the external world that refers to an informationally enhanced virtual model or "reflection" of the real world (Kye et al., 2021). The mirror world is a metaverse where the real world's appearance, information, and structure are transferred to virtual reality as if reflected in a mirror (Kye et al., 2021). However, the

expression *efficient expansion* is more appropriate than describing these systems as reproducing the real world. A representative example of the mirror world is video conferencing systems such as Zoom, Webex, Google Meet, Teams, and Skype (Kye et al., 2021).

According to Kross, Verduyn, Demiralp, Park, Lee, Lin, Shablack, Jonides & Ybarra (2013), limited studies reveal how communicating virtually, aided by the technology and platforms mentioned above, influences employees. As new technologies begin to emerge and increase across organizations, it is important to develop an understanding of how they enable and constrain communicative activities (Leonardi, Huysman & Steinfield, 2013). Consequently, there seems to be a lack of research examining how technology usage influences employees. A further developed digital platform like Metaverse is therefore considered to have additional unknown consequences for virtual communication, given the currently discovered negative effects that working virtually has with use of digital tools.

### **3.1.1. Remote Work versus Hybrid work**

The more frequent usage of remote work when working in a virtual environment has changed some of the most important features of jobs, such as communication configurations and the conception of the workplace (Sokolic, 2022). This has not only led to significant modifications in how work is completed but also changed socialization patterns within the workplace (Sokolic, 2022). The need to transition to a virtual environment has required organizations and employees to adopt altered ways of working in managing virtual teams, ensuring infrastructure and access to work resources, managing teams, workspaces, and more (Sokolic, 2022).

Within the past few years, remote work has become a frequently researched topic in relation to more and more organizations incorporating this concept into their work structures (Baker, Avery & Crawford, 2007). However, multiple studies have highlighted both the positive and negative aspects of working from home (Baker et al., 2007). Remote work, which is a way of communicating virtually, refers to the practice of working outside of a traditional office setting, often from one's home (Baker, 2007). This can be done on a full-time or part-time basis and has become increasingly common in recent years due to advances in technology that have made it easier for employees to communicate and collaborate remotely (Baker et al., 2007). Furthermore, Farooq & Sultana (2022) explain remote work as the practice of working outside

of physical space, empowered by technology, that decreases travel time and increases efficiency. A comparable explanation is presented by Wang, Liu, Qian & Parker (2021), who define remote working as a flexible work arrangement where employees work in a location of their choice remote from their offices. In this definition, the employee is not required to have any personal contact with colleagues, but it is possible to communicate with the help of technology. However, a definition presented by the U.S. Office of Personnel Management (2021) states the following: “*A work arrangement in which the employee resides and works at a location beyond the local commuting area of the employing organization’s worksite; generally includes full-time telework and may result in duty location to the alternative worksite*”. This view is considered to denote any form of work not conducted in the central office, including work at branch locations and in different business units. Another captivating definition was made by Di Martino & Wirth (1990) as they define remote work as: “*A flexible work arrangement whereby workers work in locations, remote from their central offices or production facilities, the worker has no personal contact with co-workers there, but is able to communicate with them using technology*”. In the review of literature on remote work, all definitions share the premise that it involves working at a location away from a central office. Additionally, most definitions include the use of technology to complete work while away from the office. However, many definitions fail to acknowledge the extent of telecommuting (ranging from a few hours per week to nearly full-time), the type of employment relationship (part of a larger organization, home-based business, or outsourced independent contractor), and the location of primary work done outside the central office (e.g., at home, locations outside major cities but near residences, call centers, sales locations, hotels, and airports) (Allen, Golden & Shockley, 2015). This lack of specificity and wide variation in definitions has resulted in different conclusions being drawn, with important implications for researchers who attempt to summarize the state of scientific findings on remote work in literature reviews (Allen et al., 2015). The above-presented definitions are similar, and each captures the significant essence of how remote work is defined.

As earlier mentioned, recent studies regarding the ability to measure the complete effect virtual communication through remote work has on team performance, productivity, and outcome have shown to be inconsistent and inconclusive (Gibson & Cohen, 2003; Hiltz et al., 1986). Some organizations have decided to entirely work remotely, while a variety of organizations still prefer to work within an office, exclusively for collaboration and community-building

purposes. Surveys and studies have indicated that flexibility is a crucial factor when deciding whether to accept a job offer (International Workplace Group, 2019; Microsoft, n.d.).

It has been shown throughout the years that the traditional work system is not, after all, the most effective (Iqbal, Khalid & Barykin, 2021). The remote work structure was discovered to be effective only in some assessments, particularly with the new normal that exists post pandemic (Iqbal et al., 2021). As both work structures have been properly tested with each of their challenges, perhaps the next convenient option is to introduce a fusion of both systems to achieve a better working environment. Fusing the traditional workplace with the remote work system proves its advantages and might have further implications yet to be discovered (Teebken & Hess, 2021). Recent surveys indicate that the attractiveness of full remote work is lower compared to hybrid work, as workers prefer to work remotely for a period of time and would, for that reason, favor hybrid work, which offers a form of flexibility (Eurofound, Mandl, Vargas-Llave, Weber & Wilkens, 2020). According to Yang (2019), hybrid arrangements in the workplace aim to maximize the productivity of members of an organization. A hybrid work setting is geared towards the employee's convenience, and therefore, there is a higher expectation for the employees to fulfill their obligations (Leclercq-Vandelannoitte, 2021; Yang et al., 2019). Within this research, the term *hybrid work* is defined as the practice of allowing employees to work from home a few times a week with the use of technology to complete work as well as the option to work from offices.

### **3.2. Virtual Communication and the Psychological Well-being of Employees**

While there has been an increase in the use of virtual communication in organizations worldwide, the negative outcomes can significantly affect the psychological well-being of employees. Studies have shown that those negative outcomes can lead to feelings of exhaustion, stress, anxiety, depression, and burnout (Deloitte, 2022 Yang, Murard, Chaudhary & Saeed, 2022; Hill, Axtell, Raguram & Nurmi, 2022; Carter & Andersen, 2019; Glazer & Kozusnik, 2012). Therefore, organizations must understand the potential impacts that virtual communication can have on the psychological well-being of their employees and take steps to mitigate any negative outcomes while promoting positive outcomes. However, the discussion surrounding psychological well-being has also received more attention. It has become a more

important topic of study in recent years, particularly amplified by the outbreak of the COVID-19 pandemic, which pushed a massive number of employees to work from home (Deloitte, 2022; Caligiuri, De Cieri, Minbaeva, Verbeke & Zimmermann, 2020).

Today, organizations are becoming increasingly aware of the importance and need to prioritize the well-being of their employees (International Labour Organization, n.d.). Some organizations understand that their employees are their most valuable assets and are taking steps to ensure their well-being, while other organizations are just beginning to address well-being issues because it has become evident that many workplace problems stem from neglecting the needs of their employees (International Labour Organization, n.d.). For instance, in a recent report published by the World Health Organization & International Labour Organization (2022), it was noted that the practice of working virtually, using communications technology to stay connected, has an essential and growing role in the workplace and has the potential to impact the psychological well-being of employees, underscoring the need for organizations to prioritize this issue.

Despite the increasing focus on psychological well-being and greater use of virtual communication in organizations worldwide, it has yet to be heavily researched. According to Caligiuri et al. (2020), the abrupt shift to virtual communication has exacerbated the challenges of effective collaboration at a distance, which were already well-known challenges in the field of international business and management. Regardless of understanding of these challenges, they have mainly been neglected or received minimal attention in management practices (Caligiuri et al., 2020).

One study by Gilson, Maynard, Young, Vartianen & Hakonen (2015) examined the research on virtual teams and found that the well-being of employees has been discussed as playing a significant role in shaping member affect and performance, especially when employees are geographically dispersed, which is often the case with employees working in global teams. However, the same study also noted that there had been limited research on well-being in general, including the impact of working virtually on employee well-being and whether they are positively or negatively affected by working virtually (Gilson et al., 2015). A study by Glazer & Kozusznik (2012) examined global virtual teams and, similar to the findings of Gilson et al. (2015), did not find any empirical literature addressing the impact of working virtually in geographically dispersed teams on the well-being of employees. In addition, a study



by Hill, Axtell, Raghuram & Nurmi (2022) investigated virtual communication and its impacts on employees' well-being and discovered a need for a more comprehensive understanding of psychological well-being in virtual work environments and communication.

As a result, the question that needs to be posed is; what exactly constitutes the psychological well-being of employees? Essentially, psychological well-being is about lives going well with the combination of feeling good and functioning effectively, preferably where positivity predominates over negativity (Hubbert, 2019; Carter & Andersen, 2019). However, when separating the two components of psychological well-being, the term *psychological* pertains to the human mind and feelings (Cambridge Dictionary, n.d.-b). In contrast, the term *well-being* is a broad and complex concept, and there seems to be no international consensus around a single definition of well-being (Simons & Baldwin, 2021; Centers for Disease Control and Prevention, 2018; Carter & Andersen, 2019; van de Weijer, Baselmans, van der Deijl & Bartels, 2018; Scott-Jackson & Mayo, 2017). Often, well-being is poorly defined (Carter & Andersen, 2019). In addition to this, the lack of a consistent definition exacerbates the problem, as well-being is often used interchangeably with other terms, such as *happiness*, *flourishing*, *enjoying a good life*, *life satisfaction*, *languishing*, and *thriving*, each of which has distinct interpretations and underlying meanings (Simons & Baldwin, 2021; Carter & Andersen, 2019; Lijadi, 2018). Many other terms, such as *welfare*, *individual well-being*, *subjective well-being*, and *quality of life*, have also been mentioned as determinants of well-being (Lijadi, 2018). Furthermore, the factors that can affect well-being are among the reasons why it is challenging to establish a single, universally accepted definition (Scott-Jackson & Mayo, 2017). Additionally, the term *well-being* has distinct meanings in different languages, leading to diverse interpretations that can add to the challenge of establishing a universal definition of well-being (Lijadi, 2018). Consequently, the meaning of *well-being* has become increasingly ambiguous (van de Weijer et al., 2018). Therefore, it needs to be clarified precisely what well-being is referred to when used (van de Weijer et al., 2018). As a result, well-being has been captured in many ways (Simons & Baldwin, 2021).

According to the American Psychological Association (APA) (n.d.-c), well-being is defined as “*a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life*”. A more simplified definition of well-being provided by the Cambridge Dictionary (n.d.-c) is “*the state of feeling healthy and happy*”. Ryan & Deci (2001) state that well-being represents “*optimal experience and functioning*”, while

Sonnentag (2015) defines well-being as “*feeling good and/or experiencing fulfillment and purpose*”. According to Lijadi (2018), the definition of well-being has evolved to encompass more than just affect and life satisfaction. It now involves significant and meaningful interaction between an individual and their social and physical environments, where the human is deemed to be well when they live in harmony with their nature and essence (Lijadi, 2018). Hill et al. (2022) rely on the definitions provided by both Ryan & Deci (2001) and Sonnentag (2015).

Current research on well-being emerges from two generally well-established but different perspectives on well-being, *hedonic well-being* and *eudaimonic well-being* (Carter & Andersen, 2019; Ryan & Deci, 2001; Sonnentag, 2015; Hill et al., 2022; van de Weijer et al., 2018; Simons & Baldwin, 2021). The first perspective, hedonic well-being, is rooted in the word *hedonia* and is defined as *pleasure* (Lijadi, 2018; Simons & Baldwin, 2021). This belief dates back to ancient times, when it was believed that the ultimate purpose of life was to seek out sensory pleasure, regardless of the outcome and consequences (Simons & Baldwin, 2021; van de Weijer et al., 2018). According to Ryan & Deci (2001), hedonic well-being comprises pleasure or happiness, while Simons & Baldwin (2021) characterize hedonic well-being as positive feelings. Sonnentag (2015) also defines hedonic well-being as pleasure or happiness, similar to the definition provided by Ryan & Deci (2001). Hill et al. (2020) define hedonic well-being as being related to feeling good, which focuses on pleasure attainment and pain avoidance. To provide an authoritative definition of hedonic well-being, the American Psychological Association (n.d.-b) defines the term as: “*The type of happiness or contentment that is achieved when pleasure is obtained, and pain is avoided*”. Thus, hedonic well-being refers mainly to a subjective experience of feeling good (Sonnentag, 2015).

The second perspective, eudaimonic well-being, is rooted in the word *eudaimonia* and defined as a *life well-lived* (Lijadi, 2018; Simons & Baldwin, 2021; van de Weijer et al., 2018). However, the exact meaning of the term eudaimonia has been debated, but it is often referred to as meeting one’s full potential (Simons & Baldwin, 2021; van de Weijer et al., 2018). According to Ryan & Deci (2001), eudaimonic well-being encompasses more than just happiness but also the realization or fulfillment of one’s true nature or daemon, while Simons & Baldwin (2021) define the term as meeting one’s full potential as a member of society. Hill et al. (2020) define eudaimonic well-being as being related to experiencing fulfillment and purpose, which focuses on the pursuit of meaning, authenticity, and self-realization, whereas

Sonnentag (2015) defines the term as being focused on personal growth and self-realization, authenticity and personal expressiveness, and the pursuit of meaning in life. To provide an authoritative definition once again, the American Psychological Association (n.d.-a) defines eudaimonic well-being as: “*The type of happiness or contentment that is achieved through self-actualization and having meaningful purpose in one’s life*”. Thus, eudaimonic well-being refers mainly to living a good and meaningful life (Sonnentag, 2015).

Hedonia and eudaimonia are widely accepted as categories for grouping different facets of well-being (Hill et al., 2022). Despite the popularity of the hedonia and eudaimonia distinction within the well-being literature (Ryan & Deci, 2001; Sonnentag, 2015; Lijadi, 2018; Hill et al., 2022; Carter & Andersen, 2019; Simons & Baldwin, 2021; van de Weijer et al., 2018), prior studies suggest a substantial overlap between the two constructs (Sisabato, Goodman, Kasdan, Short, & Jarden, 2016). Other studies caution against using the two constructs interchangeably but view them as related domains of the same overall well-being construct (van de Weijer et al., 2018). Therefore, after reviewing several definitions of well-being, including the two overall categories of well-being provided by various researchers and authorities, it is evident that the term is indeed broad and complex and has been defined and redefined over time. However, while there is no international consensus around a single definition of well-being, there is at least a minimum agreement that it involves the presence of positive emotions and moods, such as happiness and contentment, as well as the absence of negative emotions, such as depression and anxiety (Centers for Disease Control and Prevention, 2018). Given this minimum agreement, this research acknowledges, as Hill et al. (2022) do, that psychological well-being represents the following: “*The achievement of optimal experience and functioning, defined as feeling good and/or experiencing a sense of fulfillment and purpose*”. Therefore, as the research primarily focuses on the well-being of employees, this definition will be used for the *psychological well-being of employees* in this research.

### **3.2.1. Mental Health**

In order to understand what psychological well-being is, it may be helpful to introduce and define the term *mental health*, an essential component of overall human well-being (World Health Organization, 2022). While the terms *mental health* and *well-being* are related and often used interchangeably, they differ. The term *psychological well-being* has already been defined

in this research as referring to the achievement of optimal experience and functioning by feeling good and/or experiencing a sense of fulfillment and purpose, mental health, on the other hand, refers to an individual's overall psychological state and the absence of mental illness or disorders. The World Health Organization (2022) defines mental health as:

*“A state of mental well-being that enables people to cope with stresses of life, to realize their abilities, to learn well and work well, and to contribute to their communities. Mental health is an integral component of health and well-being and is more than the absence of mental disorder.”* (World Health Organization, 2022).

The World Health Organization (2022) also adds that mental health can be considered a complex continuum that encompasses experiences ranging from an optimal state of well-being to severe states of suffering and emotional pain. In this research, the definition provided by the World Health Organization for the term *mental health* is acknowledged. It provides a comprehensive understanding of mental health. However, the reason for highlighting mental health is its relationship to psychological well-being. According to a recent report by Deloitte (2022) on mental health and well-being in the workplace, when someone experiences adverse mental health symptoms, it can have negative impacts on various aspects of their life. These effects may extend beyond their mental health and affect their overall well-being and productivity at work. This is supported by a study conducted by Kaur & Pooja (2016), which found a positive correlation between mental health and psychological well-being. Therefore, while mental health is an essential component to overall well-being and contributes to psychological well-being, the latter is a broader concept. In other words, good mental health is one of the factors that contribute to overall well-being.

### **3.3. Virtual Communication and Cooperation in Global Teams**

#### **3.3.1. Global Teams**

Before defining the term *global teams*, which mostly communicate virtually, it is crucial to define the term *team* first. According to Rosenthal (1997), almost everyone in an organization is part of a team, and therefore, teams are responsible for carrying out the work of the organization. Communication within an organization and between organizations is constructed

through informal and formal team meetings. However, there are other ways to organize team-based interactions than through meetings. The majority of organizational tasks are solved by teams such as project teams, global teams, process teams, sales teams, production teams, and manufacturing teams (Reimer, Russell & Roland, 2017).

Each team has a specific organizational purpose, and the term is also defined as: “*Dynamic entities of two or more interdependent individuals who work together toward common goals*”, (Kozlowski & Bell, 2003). Teams usually have a history and a future, and they collaborate with the same members repeatedly (Reimer et al., 2017). The definition of the term *team* emerges from social psychology (Chiocchio, Kelloway & Hobbs, 2015), and it was defined by Ilgen (1999) as: “*People who are interdependent that work together to achieve a common aim*”. However, the term has developed into another definition since the working methods have changed over time (Chiocchio et al., 2015). Recent literature demonstrates as follows: “*A team can be defined as (a) two or more individuals who (b) socially interact (face-to-face or virtually); (c) possess one or more common goals; (d) are brought together to perform organizationally relevant tasks...*”, (Kozlowski & Ilgen, 2006). Chiocchio et al. (2015) have combined the definitions that are proposed by Salas, Rosen, Burke & Goodwin (2009), Kozlowski & Bell (2003), and Kozlowski & Ilgen (2006), into the following definition that this research acknowledges:

*“Teams are complex open systems forming entities characterized by two or more individuals who exist to perform organizationally relevant tasks, who interact socially, dynamically, recursively, adaptively, and often virtually; who have shared or common valued goals; who hold meaningful and high levels of task, feedback, and goal interdependencies; who are often hierarchically structured; whose group as a limited life span; whose expertise, roles, and responsibilities are distributed and who are bounded by and embedded within an organizational/environmental context that sets top-down constraints and that influences and is influenced by bottom-up phenomena occurring over time and enacted by competences and processes, emergent cognitive and affective states, performance outcomes, exchanges with other teams, and stakeholder judgments of team member and team effectiveness.”* (Chiocchio et al., 2015).

While the definition of the term has evolved over time due to different ways of working, the literature still seems to have the same understanding of what a team is. The various definitions

illustrate teams as two or more interdependent individuals who want to accomplish a common goal together. However, to accomplish a common goal, a variety of resources are needed to allow individuals to collaborate and aim. Furthermore, team members must build positive relationships through trust to depend on each other to complete a task effectively, which will be further explained in later chapters. As mentioned, teams are a fundamental element of organizations since many tasks are carried out by them. The combination of different individuals is assembled to manage and solve various issues together and make important decisions to accomplish objectives that are in the interest of the organization.

The definition of the term *team* has been established, and therefore, the definition of *global teams* can be examined. Global teams are defined as having members who are from two or more nationalities or cultural backgrounds (Stoverink, Kirkman, Mistry & Rosen, 2020). Therefore, it is also called *multinational work teams* even though the term does not necessarily imply that team members work virtually or are geographically dispersed (Stoverink et al., 2020). However, this research acknowledges that a significant majority of contemporary global teams operate primarily in virtual environments, and therefore, the review of the literature encompasses research on both *global teams* and *global virtual teams*. Regardless of the term used to describe them, such teams are defined as:

“... a specific type of... the more general form of team (i.e., two or more individuals who interact directly or indirectly for the accomplishment of a common goal) inasmuch as members must come from two or more different national or cultural backgrounds”, (Earley & Gibson, 2002).

According to Bartlett & Ghoshal (1998), global teams are crucial for organizations when responding to challenges that emerge from customer demands, converging markets, and resource availability, eventually helping organizations achieve global efficiency. Global teams offer the benefit of flexibility, as they can be reconfigured and redeployed to respond to changing opportunities in international markets and meet the evolving task requirements in dynamic and turbulent global business environments (Jarvenpaa & Leidner, 1999). van Knippenberg & van Ginkel’s (2010) research demonstrates the importance of cultural diversity, and therefore, organizations should see it as an asset rather than a liability due to its informational value. Greater team diversity can lead to better performance because each team member has unique experiences and skills, which can result in a more creative and innovative team with better problem-solvers and decision-makers and, therefore, an overall better

performer than homogeneous teams (van Knippenberg & van Ginkel, 2010). However, Adler & Gundersen (2008) argues that due to their unique assets and liabilities, global teams are often either highly effective or highly ineffective, with single-culture groups tending to be moderately effective.

The common definition of the term *global team* is that the team consists of culturally diverse members, with at least two or more individuals with different cultural backgrounds. In addition, the definition is similar to that of a team; two or more interdependent individuals who work toward a common goal. However, scholars seem to focus more on global virtual teams. The literature offers many practical suggestions for developing global teams and argues for the necessary conditions for global virtual teams' effectiveness (Gibson & Cohen, 2003; Kirkman & Mathieu, 2005). Therefore, the researchers acknowledge that global teams rely primarily or exclusively on electronic forms of communication to work together toward achieving their goals (DuFrene & Lehman, 2016). As mentioned, the literature emphasizes that global teams increasingly resemble virtual teams over time. Therefore, the term *virtual teams* will be investigated in the following chapter.

### **3.3.2. Virtual Teams**

The term *virtual teams* has evolved since the early 1990s. This type of communication has been a developing way of communicating in global corporations since the beginning of the 21st century (Breuer et al., 2016; Gilson et al., 2015; Hoch & Kozlowski, 2014). The increasing globalization of markets and the growing geographical dispersion of organizations, combined with increased information technology's ability to assist in collaborations, have led to strong growth in various virtual team collaborations (Lipnack & Stamps, 1999; Tung & Turban, 1998).

Increasing demand for cognitive tasks has forced many corporations to remain competitive and contend with implementing teams across diverse fields (Ilgen, 1994). As virtual teams have become a more frequently used term within organizations, researchers have tried to examine their contribution to team effectiveness (Ilgen, 1994). Communication can be understood as a team process that is consistently identified as a factor that enhances team performance by accelerating the development of fundamental team processes and outcomes (Espevik et al.,

2006; Kozlowski & Bell, 2003; Kozlowski & Ilgen, 2006). Consequently, the relationship between team communication and performance has been frequently assessed in the literature (Hertel, Geister & Konradt, 2005). A precise definition proposed by Karoui, Gürkan & Dudézert (2010), describes a team as: *“A group of people with complementary competencies who may be geographically and temporally dispersed, communicate via information technologies, and execute simultaneous and collaborative work processes in order to accomplish a common objective”*. Another captivating definition was made by Tworoger, Ruppel, Gong & Pohlman (2013) as they all define virtual teams as: *“Spatially or geographically dispersed work arrangements that are generally characterized by a relatively short life span, technology-enhanced, communications, and an absence of face-to-face interaction”*.

A defining characteristic of virtual teams is that communication primarily occurs through virtual tools (Gibson & Cohen, 2003). Therefore, researchers have attempted to understand the complete effect this process has on team performance and outcome. A common finding is that virtual teams take longer to complete given tasks, which stems from a variety of issues. A potential concern in this area of study is that the findings are inconsistent and inconclusive. Recent research assessing communication content rather than communication volume has been the cause of mixed findings. According to Hiltz, Johnson & Turoff (1986), virtual teams generally exchange more task-oriented communication than traditional face-to-face teams. On the contrary, Bordia et al., (1999) argued that the content of the communication that was exchanged did not differ in task focus among virtual and face-to-face teams. Nevertheless, as the research within the field of teams has expanded rapidly, multiple findings assessing these relationships have emerged that have yet to be linked. Communication within teams is an often conceptualized and defined topic (Marlow et al., 2017). However, team communication findings are commonly discussed in context with other studies, despite the fact that communication is measured in different ways. The altered measurement has contributed to inconsistent findings and a less nuanced understanding of this construct and its relationship with team performance (Marlow et al., 2017). Therefore, the force of the relationship between information shared and performance has so far been demonstrated to be reliant upon how information is defined.

As earlier mentioned, people are closely linked to the virtual world in their professional and private lives, and many global organizations rely on virtual teams (Simpson, 2017). Barfield,



Furness & Furness (1995) define a virtual environment as a computer-simulated domain consisting of software representations of real agents, objects, and processes and a human-computer interface for displaying and interacting with these models, which is how virtuality will be defined in this research. However, to fully grasp how teams in virtual environments interact and collaborate, the following section will thoroughly review how researchers define the term *cooperation* in global teams.

### 3.3.3. Cooperation in Global Teams

The term *cooperation* is defined as: “*the willful contribution of personal effort to the completion of interdependent jobs*” (Wagner, 1995), and refers to a specific behavior that intends to accomplish a set of goals and ensure the well-being of a team on a higher level (Afflerbach, 2020). Team members can enhance the likelihood of achieving individual performance and well-being goals if they synchronize their resources to achieve desired results (Afflerbach, 2020). The success of teamwork depends on the members’ willingness to share responsibility for the team’s effort and performance, especially when members depend on one another to complete their tasks (Carte, Chidambaram & Becker, 2006). This will have two effects; (a) it will enhance the team members’ sense of responsibility towards each other’s behavior (Kiggundu, 1983) or (b) it will increase the motivation to demonstrate teamwork behaviors (Campion, Medsker & Higgs, 1993).

Members who identify with their team can encourage cooperative behavior, and therefore, team identification is considered a crucial factor for collaboration in a virtual environment (Wiesenfeld, Raghuram & Garud, 1999; Fiol & O’Connor, 2005), because it substitutes for the lack of physical contact (Pratt, 2001). The definition of *team identification* refers to: “*the process by which individual team members perceive themselves in terms of the values, goals, attitudes, and behaviors they share with other team members*”, (Janssen & Huang, 2008). Therefore, team members who consider their team's goals as their own are more willing to make an effort to accomplish these goals. Team members will unhesitatingly share information and knowledge, and they are more willing to help each other (Afflerbach, 2020).

*Trust* is a key variable for enabling cooperation between employees (Afflerbach, 2020), as researchers state the following argument: “*perhaps there is no single variable which so thoroughly influences interpersonal and group behavior as does trust*” (Golembiewski &

McConkie, 1975). However, the main challenge for teams working in virtual environments seems to be the development and maintenance of trust (Duarte & Snyder, 2001). There are many definitions of the term *trust* but McEvily & Tortoriello (2011) found a definition that has been cited more than 1.300 times: “*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*” (Mayer, Davis & Schoorman, 1995). Therefore, trust is both a result and a condition of social interaction processes. Research has indicated that with virtual communication, teams working in virtual environments face challenges in creating trust and building relationships between parties. This is largely due to the digital nature of their interactions, which can make it difficult to get to know someone. Additionally, the absence of a shared history or future as a basis for building trust and the fact that team members may not have met in person can further complicate the process (Glazer & Kozusznik, 2012). Some studies also argue for teams working in virtual environments to meet face-to-face at the beginning, as it can help establish a sense of cohesion and trust among team members and, thereby providing the opportunity to build relationships (Glazer & Kozusznik, 2012). The lack of face-to-face meetings can result in a lack of trust and a weaker working relationship (Breuer et al., 2016). Therefore, frequent interactions can build trust and open communication within the team (Han & Harms, 2010). A critical presumption is that team trust is related to high team effectiveness. Intriguingly, whereas trust has been shown to be a substantial interpreter of organizational outcomes for various purposes, such as direct supervisors or organizations (Colquitt, Scott & LePine, 2007; Dirks & Ferrin, 2002), the impact of trust in virtual teams is less clear. Although some studies have discovered a positive relationship between team trust and team effectiveness (Davis, Schoorman, Mayer & Tan, 2000; De Jong & Elfring, 2010), additional studies have uncovered no relationship (Hertel, Konradt & Orlikowski, 2004) or equally negative correlations (e.g., Dirks, 1999; Langfred, 2004). Furthermore, virtual communication can also lead to a lack of emotional connection between parties. It can be hard to express emotions such as empathy, sympathy, or even humor through digital tools, making it difficult to build strong relationships with colleagues or clients. This lack of emotional connection can also lead to a lack of trust, which is crucial for effective communication and collaboration. According to Marks, Mathieu & Zaccaro (2001), team emergent states are the team’s specific emotional, mental, and motivational states as they collaborate with each other over time. These states are affected by various factors, such as the team’s past and present situations, communication and interaction within the team, and the team’s accomplishments. For instance, trust is an emergent team state because it develops gradually over time as team

members build positive relationships with each other (Marks et al., 2001). Teams tend to reveal, at a given development stage, a common pattern of actions and behaviors associated with relationships and tasks and the same level of effectiveness (Peralta, Lourenço, Lopes, Baptista & Pais, 2018). According to research, teams that are in the higher stages of development tend to have healthier and more satisfied members as well as being more productive (Peralta, et al., 2018; Jacobsson, Rydbo & Børresen, 2014; Wheelan & Hochberger, 1996).

### 3.4. Culture

As mentioned, the definition of the term *global teams* necessitates that the team comprise two or more individuals of different nationalities (Earley & Gibson, 2002). Therefore, culture is an element that can both affect the psychological well-being of employees and the cooperation within teams. Cultural barriers, such as language, geographical locations, and more, can impact team members' behaviors and priorities.

The term *culture* is defined as: “*the totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought characteristic of a community or population*” (American Heritage Dictionary, n.d.). Culture is one of the significant elements in international business and management, and it cannot be disregarded in global teams as it is associated with important topics such as cross-border activities, globalization, and management (Caprar, Devinney, Kirkman & Caligiuri, 2015). Another definition of the term *culture* is by the authors Leung, Bhagat, Buchan, Erez & Gibson (2005): “*a national group's values, beliefs, customs, and behavioral patterns*”. This definition is also supported by other researchers (Hofstede, 1980; Leung et al., 2005), but many cultural works of literature use the acknowledged social psychologist Geert Hofstede and the Cultural Dimensions Theory (1980), which is a framework for cross-cultural communication (Hofstede, 1980). However, Hofstede has received criticism for his work, as researchers describe his framework as being too stereotypical (Fitzgerald, 2004; Søndergaard, 1994). Nevertheless, Hofstede's definition of the term *culture* is still the most acknowledged and significant within the literature on culture (Morden, 1995).

Culture in international business can be classified as national or organizational culture (Rodrigues, Costa & Gestoso, 2014). National culture is similar to the abovementioned and

general definitions of culture (Morden, 1995). According to Morden (1995), national culture can be defined as the *collective mental programming* of a society. Moreover, he agrees with Hofstede and believes that individuals of any nationality are shaped by elements such as education, life experiences, and socialization (Hofstede, 1980; Morden, 1995). However, according to Rodrigues et al. (2014), national culture is the sharing of ideas, history, language, philosophies, and practices, which can be applied in the organizational planning and controlling of projects due to their findings of a correlation between national culture and the success of projects. However, they admit and are aware that the success of a project can be difficult to measure as the term *success* can be interpreted in different ways (Rodrigues et al., 2014).

It is evident in the literature that national culture influences various aspects, including organizational culture, which is defined as beliefs, perceptions, or shared values retained by employees within an organization (Robbins & Coulter, 2021). The same perception is shared by Nicolescu & Verboncu (2007) and Maier, Dan, Coroian & Gavris (2019): “*an ensemble of values, beliefs, aspirations, expectations, and behaviors shaped over time in each organization, which directly and indirectly condition their functionality and performance, and which predominate within it*”. Schein (1992) shares a similar view and argues that the behaviors of employees have a direct or indirect influence on the organization’s performance. However, Alvesson (2002) argues that the correlation between organizational culture and performance is ambiguous.

As there may be different opinions on the definition of organizational culture, many of them agree that the term refers to consistent and observable patterns of behaviors, beliefs, and values (Nicolescu & Verboncu, 2007; Schein, 1992; Robbins & Coulter, 2021). However, the understanding of the term *organizational culture* can vary depending on the literature. According to Sanchez-Runde, Poelmans, Cardona, Lee & Reiche (2009), the term can be difficult to understand because it can have more than one specific meaning. Furthermore, O’Donnell & Boyle (2008) argue that the term can be understood as unique and individualistic, and therefore, it can be considered a significant competitive advantage. Some researchers even argue that an organization can have more than one culture (Mansaray & Mansaray Jnr, 2020). Lastly, Kotter (2008) divides the organizational culture into two distinct levels; *visibility* and *resistance to change*. *Visibility* refers to the organization’s behavior patterns that the new employees are urged to follow. *Resistance to change* is the result of the values that are shared by the employees over time, even if the members of the organization change. Consequently, it

can be hard to change these values due to their unawareness of them and the fact that they share them and bind them together (Kotter, 2008). Therefore, the overall conclusion is that the term can be understood as multidisciplinary (Mansaray & Mansaray Jnr, 2020).

The association and distinction between national culture and organizational culture have been discussed by many authors. However, many researchers agree with Hofstede (1991); national culture belongs to the field of anthropology due to rooted values, whereas organizational culture belongs to the field of sociology because of practices that can be changed (Mansaray & Mansaray Jnr, 2020). Although the term *culture* has been extensively researched, it is important to mention that its ambiguity and complexity can create different interpretations by different researchers, making it challenging to capture its dimensions (Caprar, 2015).

Apart from culture being divided into national and organizational cultures, other elements, such as communication, are just as crucial to understand and define because of their significance in global teams as multinational corporations rely on them (Szkudlarek, Osland, Nardon & Zander, 2020). As mentioned, global teams perform better than homogenous teams due to their unique experiences and skills, but only when the heterogeneous team shares, discusses, and somehow develops their unique knowledge and perspectives into a team product (e.g., progress, decisions, solutions, results, and more) (van Knippenberg & van Ginkel, 2010). Therefore, communication is a crucial part of an organization's success, and it is not enough to be culturally diverse; team members must communicate effectively (Matthews & Thakkar, 2012). However, communication in intercultural settings can be difficult, but by understanding the cultural differences, these challenges can be mitigated (Szkudlarek et al., 2020; Neeley & Kaplan, 2014). Multinational corporations must adapt to numerous foreign national cultures, which can create obstacles that are challenging to manage due to the differences in behaviors, beliefs, and perceptions. These misunderstandings and conflicts can have a potential impact on the organization's costs. For instance, coordination costs can increase due to miscommunication in cross-cultural operations, longer decision wait times, inefficient knowledge and information transfer, or increased interpersonal conflicts (De Jong & van Houten, 2014). According to Groton (1997), conflicts between team members often emerge from poor interpersonal skills, a lack of responsiveness, inefficient communication, and opportunistic or unethical behavior.

## 4. Theoretical Background

This chapter will explain the theories and frameworks chosen to conduct this research. As mentioned, the concept of well-being is complex and not possible to define in a simple sentence since theorists have different assumptions and premises. Consequently, the significance of the concept varies from theory to theory. For the purpose of this research, the *PERMA Model* and the *Job Demands-Resources Model*, have been selected as most applicable in the analysis of how virtual communication affects the psychological well-being of employees in global teams and what the organizational outcomes are. This will also contribute to the understanding of the impacts on cooperation among global teams. Overall, it is believed this research will provide one with a greater comprehension of virtual communication in MNCs.

### 4.1. PERMA Model

The PERMA model is an acknowledged model in positive psychology that was proposed in 2011 by the American psychologist and professor Martin Seligman as an extension to his original theory of authentic happiness (Seligman, 2011). In the original model, Seligman (2011) argued that happiness could be analyzed through three different elements, including positive emotions, engagement, and meaning, allowing the individual to increase the amount of happiness in one's life. Each of these three elements was predictors of life satisfaction (Seligman, 2011). However, a decade later, after rethinking and further developments, he came to the conclusion that the concern should be about well-being rather than happiness, whereas the goal was not to increase life satisfaction but rather, to increase flourishing (Seligman, 2011). The PERMA model therefore consists of five elements that need to be considered to increase flourishing: positive emotions, engagement, relationship, meaning, and accomplishment/achievement (Seligman, 2011; Seligman, 2013). Seligman (2011) argues that each element of well-being must itself have the following three properties; each contributes to well-being, each is or should be pursued for its own sake, and each is defined and measured independently (Seligman, 2011; Seligman, 2013).

The first element, *positive emotions*, includes experiencing more than just happiness. It includes a wide range of positive feelings, such as joy, contentment, compassion, gratitude, hope, interest, love, and pride (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019).

Not only do positive emotions make humans feel good, but they also motivate many human actions and thereby, enhance performance at work (Kun, Balogh & Krasz, 2016).

The second element, *engagement*, includes being fully engaged, absorbed, or focused on activities that are considered meaningful and enjoyable, or builds upon one's interest or life (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019).

The third element, *relationship*, includes the strong inner need for contact with others and, therefore, the ability to establish and maintain strong and positive relationships with others, whether they are with family, friends, or colleagues (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019). These relationships lead to a sense of belonging (Kun et al., 2016).

The fourth element, *meaning*, includes being connected to something greater than oneself or having a purpose that contributes to a sense of meaning in life (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019). This gives a compelling reason why one does what one does (Kun et al., 2016). It also helps one focus on what is important when facing significant challenges or hardship (Madeson, 2017).

The fifth element, *accomplishment/achievement*, includes achieving or challenging goals, and experiencing a sense of accomplishment (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019). Overall, these five elements include both hedonic and eudaimonic components.

Despite being acknowledged among researchers in the field of positive psychology, the model has been criticized for not being a formal theory. Therefore, Seligman clarified the value of the PERMA as a framework for well-being (Donaldson, van Zyl & Donaldson, 2022) but further research to expand the construct was needed (Donaldson et al., 2022). Despite criticism, research has shown strong and positive associations between each of the elements and job satisfaction as well as work performance (Madeson, 2017; Donaldson et al., 2022). As a significant portion of the day is spent at work interacting with colleagues, the workplace environment and the level of happiness experienced by each employee are significantly impacted by an organization's productivity. Therefore, implementing the PERMA model in the workplace can foster a positive work environment, leading to a flourishing workforce. By focusing on these five key elements, the PERMA model provides a practical framework for comprehending and enhancing the psychological well-being of their employees.

## 4.2. Job Demands-Resources Model

The Job Demands-Resources (JD-R) model is an acknowledged model in occupational health psychology, initially proposed by Demerouti, Bakker, Nachreiner, and Schaufeli in 2001. Drawing from Lee and Ashforth's (1996) differentiation between job demands and job resources, as well as Maslach, Jackson & Leiter's (1997) structural model of burnout, the authors concentrated on *exhaustion/fatigue* as a manifestation of *strain/ill-health* and *cynicism/withdrawal* as a form of *demotivation*. This aligns with previous theories on the fundamental dimensions of burnout, such as Schaufeli and Taris' (2005) findings. Since its initial publication, the JD-R model has undergone several modifications. While the earliest version focused solely on burnout as its main outcome, later versions have explored a wider range of outcome variables and incorporated personal characteristics into the model. Additionally, the model now includes work engagement as an outcome variable. In 2004, Schaufeli & Bakker made revisions and expansions to the JD-R model of burnout. The updated model encompassed not only burnout as an indicator of strain but also job engagement as a motivational concept. The key components of engagement are vigor, which refers to high levels of energy and resilience, and dedication, which pertains to a sense of significance, pride, and challenge (Schaufeli & Bakker, 2010). Additionally, absorption, which denotes being fully absorbed and focused on one's work, is the third aspect of engagement (Taris, Leisink & Schaufeli, 2017).

The current version of the model considers the interplay between work characteristics (job demands and job resources), personal characteristics (e.g., self-efficacy, resilience, and personality traits), and work outcomes (e.g., health, well-being, motivation, and performance) (Taris & Schaufeli, 2016). The model is based on three key assumptions: firstly, high levels of job resources are expected to promote job performance by enhancing motivation, called the motivational process; secondly, high levels of job demands are likely to lead to negative health outcomes through high levels of strain, called the health impairment process; and thirdly, job demands and job resources are expected to interact, with high levels of resources mitigating the negative effects of high job demands on health and strain, and the combination of high demands and high resources resulting in increased motivation (Taris et al., 2017).

Although popular among researchers, the model has been criticized for being non-specific and vague, as well as for not providing comprehensive and detailed information about job demands



and resources (Schaufeli & Taris, 2014). Furthermore, some argue that the model does not emphasize the element of personal characteristics and individual differences, e.g., abilities, personality traits, and skills of employees, which are considered important predictors of well-being and performance (Schaufeli & Taris, 2014). However, the JD-R model examines the interaction between job demands and job resources and provides a comprehensive perspective on the impact on employee well-being and the work environment. It mentions factors, such as workload, role ambiguity, and time pressure, that can negatively impact employees, while job resources, such as autonomy, development opportunities, and social support, can promote well-being. Consequently, helping organizations with insights on how to foster positive environments (Schaufeli & Taris, 2014). Lastly, the model has been practical in various cross-cultural contexts and is therefore helpful for analyzing the psychological well-being and cooperation of employees in global teams. It transcends cultural boundaries and enables a systematic investigation of job demands and resources across various countries and organizations (Schaufeli & Taris, 2014).

## **5. Conceptualization**

This chapter will present a brief conceptualization to enhance the notion of abstract, concepts, and constructs that this research will address. As a result, the significant theories, models, and concepts will be identified and integrated into this section.

There has been identified a gap in the literature within this research. Based on this gap, certain concepts and terms need to be defined, discussed and justified to gain a deeper understanding of how they can be analyzed and used to develop an integrated conceptual framework. The relevant concepts that are discussed are virtual communication, psychological well-being, and cooperation in global teams.

The gap illustrates the influence virtual communication has on employees well-being within global teams, which is not a highly discussed topic within the literature. A report published by the World Health Organization & International Labour Organization (2022), highlights the significant and increasing role of virtual work in modern workplaces. The report emphasizes that this trend, which involves utilizing communication technologies to maintain connections, can have a considerable impact on the psychological well-being of employees. Consequently, the report underscores the importance of organizations making this issue a top priority. The

existing literature on this issue focuses separately on factors that can affect the well-being of employees. Organizations are more likely to address well-being issues as it has evident that many workplace difficulties stem from neglecting the needs of their employees. However, it can be affirmed that with the further digitization of settings in a workplace, it is important to consider all these factors' implications as a whole. By not having the whole picture of all of the factors that can affect the employees' well-being, it is not possible to have a complete comprehension of the synergies and complexity in global teams that utilize virtual communication in their daily work. Therefore, this research attempts to understand the complete effect virtual communication has on the employees' psychological well-being and the implications it has on team's cooperation.

When investigating how different researchers conceptualize virtual communication, a defining characteristic that most of those definitions have in common is that the communication primarily occurs through virtual tools. A common finding is that the members of global teams are working remotely or hybrid from their preferred location. This location can either be in an office in another location, both locally and globally, or from the comfort of their home, while still having the opportunity to cooperate and interact physically within a team. Therefore, when the concept of *virtual communication* is mentioned in this study, the researchers will be referring to the construct of working in a virtual environment while still having the opportunity to work physically within a team.

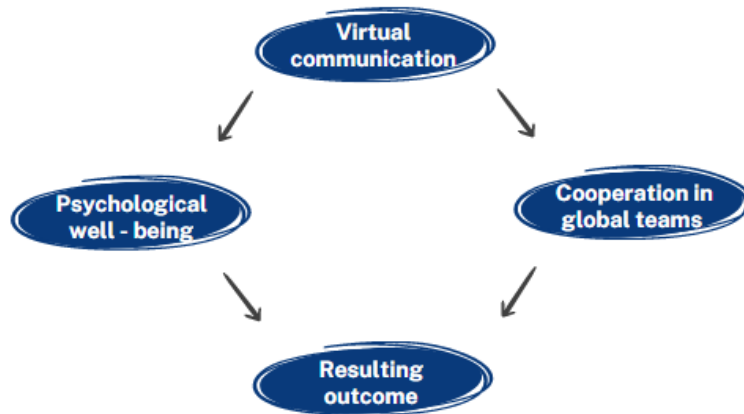
The topic of team communication is frequently conceptualized and defined, however, the findings related to it are often discussed in combination with other studies, despite variations in how communication is measured. This inconsistency in measurement has led to inconclusive findings and a less nuanced understanding of the relationship between team communication and performance, as workplace well-being and job performance are directly correlated. This may be due to the fact that communication is a widely discussed topic in the literature. However, the research findings are not always consistent, which have resulted in mixed findings emerging from research assessing communication content rather than communication volume. This creates a lack of understanding of the term *communication*, without knowing how it is measured, it can be challenging to investigate to what degree this type of communication affects the employees well-being in global teams. Within this research, the concept *communication* will be conceptualized based on its content rather than its volume, as studies have shown that virtual teams mostly focus on exchanging task-oriented communication rather

than face-to-face teams. Therefore, it can be conceptualized that virtual teams have a higher communication content in comparison to traditional face-to-face teams, which provide a greater volume of communication.

Based on the above, this research aims to explore the impact of virtual communication tools on the cooperation between global team members and their influence on employees' well-being. This topic has practical implications, as more and more organizations are looking to optimize their global team collaboration and support their employees' well-being in a virtual work environment. Within this research, the definition of Stoverink et al. (2020) will be applied, as a global team is understood as groups comprising members from two or more nationalities or cultural backgrounds, regardless of whether they work virtually or are geographically dispersed. Nevertheless, the research recognizes that a substantial portion of present-day global teams operate primarily in virtual environments. Consequently, the review incorporates studies on both global teams and global virtual teams.

To ensure effective cooperation among team members, organizations must develop an understanding of the significance of trust-building when utilizing digital tools, as it can hinder emotional connection between individuals. Expressing empathy, sympathy, or humor through digital tools can be challenging, making it difficult to establish robust relationships with colleagues. This lack of emotional connection can also result in a lack of trust, which is a vital component of effective communication and collaboration. Trust is therefore believed to be an important factor in team cooperation in this research, as a lack of trust can result in mental issues, and therefore be the root of issues with team cooperation. Trust is considered a crucial factor in team cooperation, as a lack of trust can lead to mental health issues and ultimately hinder effective cooperation among global team members. This is also believed to affect the team as a whole.

For this research, the conceptual framework is built on key factors of well-being in virtual communication that influence effective global team management. To illustrate the above mentioned, relevant points from the literature can be applied. By applying the points, the paper can have a more general approach to the well-being of employees in global teams.



*Figure 1: Conceptual Framework - Factors of well-being in virtual communication that influence effective global team management cooperation (Own creation).*

The PERMA model has been chosen to understand the backgrounds and characteristics of psychological well-being of employees in global teams. This model will provide knowledge of the current state of the interviewees' psychological well-being in their workplace. The five key components of the PERMA model are believed to be essential for promoting employees' overall well-being, satisfaction, and sense of fulfillment. By aiming to cultivate a content and fulfilled workforce, this model can potentially lead to improved employee performance and productivity. However, the PERMA model solely focuses on factors of individuals, it limits researchers' ability to explore the broader organizational factors that influence the global team's well-being, thus lacking an organizational perspective.

In this sense, application of the PERMA model will not alone generate no major new insights into how global team member's who utilizes virtual communication when collaborating, which is why the JD-R model will be presented to highlight the evident implications of virtual communication on employee's psychological well-being from an organizational dimension.

The current version of the JD-R (Job Demands-Resources) model, introduced by Taris et al., (2007), contributes to this research. The current model examines how organizations support psychological well-being of their employees by fostering positive work engagement to meet the required demands. Thus, there should occur an interplay between demands and resources to attain an optimal level of psychological well-being of employees. However, the model does not explicitly reveal the specific nature of factors that can either enhance or decrease employees' psychological well-being which is why the PERMA model is in addition essential.

The JD-R model solely identifies general resources and demands that respectively serve as motivating factors for improvement or sources of strain that could potentially diminish their psychological well-being. Therefore, only selected components of this model have been integrated into the conceptual framework of this study, to provide the organizational perspective. Based on the existing literature, it is presumed that virtual tools, which now have become an essential job requirement and resource that can facilitate effective collaboration among employees' regardless of geographical barriers. However, it is also anticipated that an extensive use of virtual tools can foster a sense of exhaustion leading to a decreased engagement, motivation, and eventually contributing to burnout, which in turn affects their health and performance. Consequently, these implications will take a central place in the approach of understanding whether they further have an effect on how global team members cooperate.

As a result, combining the JD-R model and the PERMA model seems to be a suitable approach to address the research objective, which currently lacks consideration of the virtual communication aspect that has been uncovered from the literature. In the proposed framework illustrated in Figure 1, the focus will be on examining the relationship between virtual communication and well-being, and how this, in turn, impacts cooperation within teams. The conceptual framework will also identify with what the outcome has been, as this research attempts to uncover this issue. It will additionally serve as a guide for examining how these constraints affect the cooperation between global teams and how they respond to them by rethinking their strategic approach to communication.

## **6. Philosophy of Science**

This chapter will explain the research philosophy and the philosophical positioning, including the considerations in this regard. The purpose of the philosophy of science is to provide readers with an understanding of the underlying assumptions and principles that guide researchers in their investigations. It aims to provide an understanding of the nature of knowledge and research as well as the implications of the findings.

The quality of the research is ensured by considering the philosophy of science, which impacts the investigation's direction and perspective. There exist numerous paradigms in the field of scientific theory that differ from each other, but some view reality similarly. Positivism and social constructivism are considered the main paradigms, but they do not share the same values for producing knowledge, which are called ontology and epistemology (Darmer, Jordansen, Madsen & Thomsen, 2010; Easton, 2010).

According to Kuhn (1962), the following definition can provide an understanding of a paradigm's purpose for research: “*The set of common beliefs and agreements shared between scientists about how problems should be understood and addressed*”. However, one must also understand ontology and epistemology since they are associated with the paradigm and contribute to how reality is seen (Kuhn, 1962).

The phenomenon will be presented before the paradigm because it is substantial to understand the perception of a phenomenon to comprehend it being investigated. According to Oxford English Dictionary, the term phenomenon is: “*A thing which appears, or which is perceived or observed; a particular (kind of) fact, occurrence, or change as perceived through the senses or known intellectually; esp. a fact or occurrence, the cause or explanation of which is in question.*” (Oxford English Dictionary, 2023). The phenomenon for this research is *virtual communication in multinational corporations*. The research aims to investigate how virtual communication affects both the psychological well-being of employees and the cooperation in global teams, as well as what the organizational outcomes are, which will be investigated by interpreting the collected interviews and survey data.

The paradigm *critical realism* will guide the researchers in terms of understanding the underlying assumptions and principles of this study. Roy Bhaskar is the central philosopher of this paradigm, which originated in 1975 (Easton, 2010). Critical realism consists of transitive and intransitive entities. The intransitive refers to the paradigm's ontology and assumes that the existence of reality is independent of observers. In contrast, the transitive refers to epistemology and means to construe rather than construct the world, therefore acknowledging that knowledge is a social product that depends on those who produce it (Easton, 2010).

## **6.1. Ontology**

The ontology of critical realism is understood as a reality that extends beyond what human senses can observe, and it is the researcher's responsibility to understand the unobservable level, which consists of mechanisms and structures. Thus, the ontology of critical realism is considered objective because the intransitive objects remain unchanged even when our understanding of them changes. Therefore, our knowledge about the phenomenon may differ from the phenomenon itself. As mentioned, this research will focus on the effect of virtual communication on both the psychological well-being of employees and cooperation in global teams. The researchers need to approach the field of research in an analytical method and understand the phenomenon to propose a solution on how global teams can use virtual communication to maximize its efficacy and potential (Buch-Hansen & Nielsen, 2005).

## **6.2. Epistemology**

The epistemology of critical realism is the researcher's method to investigate and what is desired to achieve by using material science such as concepts, models, and theories to examine the field of objects. It is not the existence of the object field that is questioned, but rather what allows the researchers to examine it. New knowledge is based on existing transitive objects and produced by human activity in social contexts, but it is only valid for a while as society changes and thereby creates new materials. Therefore, the epistemology of this research will determine what method will be used to examine the subject field. Theories and frameworks will be used to examine the reality of the research area. However, it is crucial to admit that the knowledge produced is a product of human construction and thus subject to fallibility (Buch-Hansen & Nielsen, 2005).

## **7. Research Methodology**

This chapter will explain the research methodology, including considerations in this regard. The purpose of the research methodology is to explain the reasoning behind the approach to carrying out the research. It is a mode of thinking and refers to the methods and techniques for

collecting, analyzing, and summarizing data in order to develop it into knowledge, including research design, research methods, the selection of a case company, data collection, and data analysis. This also includes the consequences of choosing methods and techniques that are consistent with the philosophical and theoretical considerations made in this research.

## 7.1. Research Design

A research design is the action plan that connects a research idea to its execution (Kuada, 2012). It serves as the blueprint for conducting the study (Kuada, 2012). It enables the reader to have a comprehensive understanding of this study and to see the connections between the research question presented at the start of the research and the conclusion at the end of the research (Kuada, 2012). With that being considered, the research design for this study is as follows:

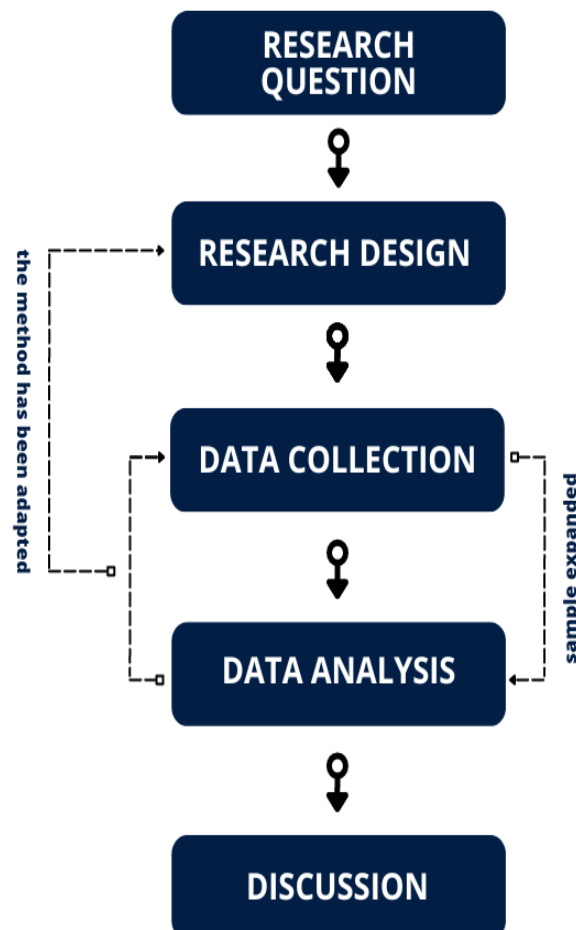


Figure 2: Research Design - Own creation



To demonstrate how knowledge has been acquired through this research, it is important to explain the research approach used to conduct this study. The research approach is also referred to as *reasoning*. There are two recognized types of reasoning, inductive and deductive. These two approaches differ when conducting research, and they are likely to involve different thought processes and considerations. Inductive reasoning entails the researcher conducting research to develop a new theory due to the lack of an existing theory for the phenomenon under investigation (McGregor, 2018; De Vaus, 1995). The research begins with specific observations and derives a theory from these observations (De Vaus, 1995). In other words, induction deals with probability and involves moving from the specific to the general (Darmer et al., 2010) or from data to theory (McGregor, 2018). This is also referred to as the *theory building approach* (De Vaus, 1995). On the other hand, deductive reasoning entails the researcher using an existing theory but proposing hypotheses to add to it or modify it (McGregor, 2018). The research begins with a theory and then uses that theory to guide which observations to make (De Vaus, 1995). In other words, deduction deals with certainty and involves moving from the general to the specific (Darmer et al., 2010) or from theory to data (McGregor, 2018). This is also referred to as the *theory testing approach* (De Vaus, 1995). These two approaches to reasoning are illustrated in figure 3.

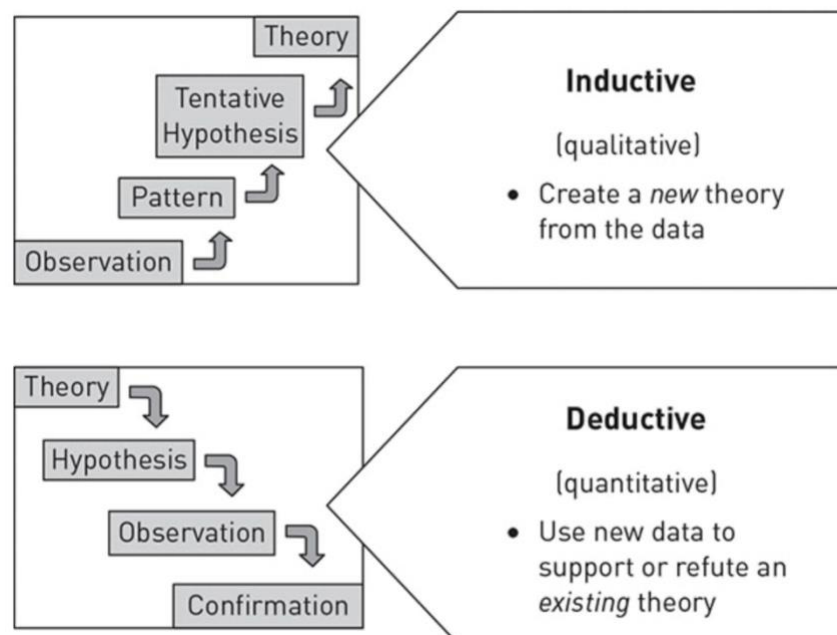


Figure 3: Inductive and deductive reasoning for research (McGregor, 2018).

This research applies a combination of inductive and deductive reasoning. The following subchapter advocates for the use of mixed research methods with both quantitative and qualitative data. By using a combination of inductive and deductive reasoning, knowledge is acquired through a constant movement between data and theory (De Vaus, 1995).

## **7.2. Research Method**

When empirical research is required to answer a research question, it is possible to choose among various types of research methods (Kuada, 2012). The choice of research method depends on the type of research question that the study is going to answer (Kuada, 2012). However, the choice of research method should also be based on the type that offers the greatest potential for addressing the research question (Kuada, 2012). Some research questions are best answered by using qualitative methods, while quantitative methods may be necessary for others (Kuada, 2012). It is also possible to use a combination of both methods, known as mixed research methods, if that is most appropriate for addressing the research question (Kuada, 2012).

The quantitative method is generally used when a researcher wants to collect and analyze numerical data to test specific hypotheses and establish statistical or causal relationships between specified variables in the research (Kuada, 2012). Quantitative research methods involve surveys and quantitative interviews (Kuada, 2012). One advantage of using quantitative research methods is that the data is more objective and the findings can be generalized due to the larger sample size that is typically randomly selected (Rahman, 2016). However, in this particular research, the participants were carefully selected due to the special context. This is further elaborated in Chapter 7.4.2. *Interviewees*. Another advantage is that data collection is less time-consuming and is faster to obtain (Rahman, 2016). In contrast, one disadvantage of quantitative research methods is that they are typically not flexible or adaptable once the research has begun (Rahman, 2016). Another disadvantage is that it is difficult to ask clarifying questions because such questions are typically qualitative in nature (Rahman, 2016). Therefore, quantitative research methods may not reveal deeper underlying meanings and explanations for participants' feelings, opinions, and experiences (Rahman, 2016). They also tend to only provide a snapshot of the phenomenon being researched (Rahman, 2016).

On the other hand, the qualitative method is typically selected when a researcher wants to conduct research that produces findings that do not derive from statistical procedures or other forms of quantification (Kuada, 2012). Such research is characterized by its emphasis on cases and contexts, which allows for a more in-depth and comprehensive understanding of the phenomenon under study (Kuada, 2012). Qualitative research methods involve focus groups, observational methods, and qualitative interviews (Kuada, 2012). One advantage of using qualitative research methods is the ability to produce a comprehensive and detailed description of participants' feelings, opinions, and experiences, thus providing a deeper understanding of the phenomenon being studied (Rahman, 2016). It allows for the use of clarifying questions, which can uncover the underlying meanings and explanations of the participants (Rahman, 2016). Another advantage of qualitative research methods is their flexibility and adaptability, because they can be adjusted ad hoc to the research or findings (Rahman, 2016). In contrast, one disadvantage of qualitative research methods is that they are highly time-consuming because they require detailed data collection and analysis (Rahman, 2016). Another disadvantage is that since small sample sizes are typical in qualitative research methods, it can be difficult to generalize the findings (Rahman, 2016). The qualitative method is further elaborated on in Chapter 7.4.1. *Interview*.

This study is centered around a two-part research question that aims to investigate the impact of virtual communication on the well-being of employees and cooperation in global teams. The first part of the question, which is crucial to this study, starts with a “how” question and seeks to illuminate the underlying meanings and explanations by which virtual communication affects these two variables. The second part of the question, complementary to the first part, starts with a “what” and is designed to examine the outcome of this impact. According to Yin (2014), “how” questions are typically addressed by qualitative research methods, while “what” questions are often addressed by quantitative research methods. Thus, it has been chosen to use mixed research methods in this study, integrating both quantitative and qualitative data obtained through surveys and interviews, respectively, to answer the research question. Mixed research methods are not meant to replace either quantitative or qualitative research methods but rather to draw from their strengths and minimize their limitations (Kuada, 2012). This purposeful combination is argued to enhance the yield of empirical research (Kuada, 2012), by providing valuable and meaningful insights into the special context and perspective of this particular research. The mixed research methods are not only the most appropriate for addressing the research question, but they are also consistent with the chosen paradigm and

philosophical considerations in this study. Critical realism supports both qualitative and quantitative methods in research but emphasizes that researchers must be critical and recognize each method's limitations, as well as how cultural and social contexts have shaped them (Buch-Hansen & Nielsen, 2005). The qualitative method, which is based on interviews with project managers and stakeholders experienced in their roles, provides nuanced perspectives on how virtual communication can affect the well-being of employees and cooperation in global teams. However, the quantitative method cannot entirely capture the objective reality of social phenomena because it provides information about correlations and patterns in data, but statistical data alone cannot fully capture the complexity of social phenomena (Buch-Hansen & Nielsen, 2005). Thus, critical realism acknowledges the importance of using mixed research methods to develop a comprehensive understanding of the phenomenon (Buch-Hansen & Nielsen, 2005).

### **7.3. Case Study**

To investigate *how* virtual communication affects the psychological well-being of employees and cooperation in global teams, as well as *what* the organizational outcomes are, a case study is most appropriate due to the fact that Yin (2014) suggests that “how” research questions are suitable for case-based research. A case study is a well-recognized research method and is used in almost every field and discipline (Yin, 2014; Eduardsen, 2021-a). So, what exactly is a case study? There is no general consensus on the basic characteristics of case studies (Eduardsen, 2021-a). One reason for this is that the term is not restricted to social science research and is used in many different contexts (Eduardsen, 2021-a). Additionally, diverse schools of thought and philosophical considerations exist, which can differ greatly from one another (Eduardsen, 2021-a). However, according to the well-recognized methodologist Robert K. Yin, a *case study* is defined as: “*an empirical inquiry that investigates a contemporary phenomenon (the case) in depth and within its real-world context especially when the boundaries between phenomenon and context may not be clearly evident; and in which multiple sources of evidence are used.*”. This definition of a case study is a twofold one (Yin, 2014). The first part highlights that the research investigates a phenomenon in its context, which means that the phenomenon is not studied in isolation from its context nor does it devolve from its context (Yin, 2014; Eduardsen, 2021-a). To achieve this, evidence about the phenomenon is collected where it is actually taking place (Yin, 2014; Eduardsen, 2021-a). The second part of the definition highlights that

conducting a case study involves using multiple sources of evidence in data collection and data analysis strategies because distinguishing between phenomena and context can be challenging in real-world situations (Yin, 2014; Eduardsen, 2021-a). This research acknowledges the definition of a case study provided by Yin (2014).

So when should you use a case study as a research method? According to Yin (2014), case study research should be considered in situations where: *“(1) the main research questions are “how” or “why questions; (2) a researcher has little or no control over behavioral events; and (3) the focus of study is a contemporary phenomenon.*

Once a researcher has determined that the research question is adequately answered using case study as the research method and defined its boundaries, the researcher must consider the “type” of case study to be conducted (Baxter & Jack, 2008). There are different types of case studies (Eduardsen, 2021-a). According to Yin (2014), case studies can be categorized as exploratory, explanatory, or descriptive (Baxter & Jack, 2008). All three types of case studies serve different purposes. The exploratory case study aims to explain the research questions or procedures that can be used in subsequent research studies, regardless of whether or not it is a case study (Yin, 2014). This type of case study can provide insights in an area where little is currently known (Eduardsen, 2021-a). It does so by examining a phenomenon that lacks detailed preliminary research, including formulating hypotheses that can be tested (Eduardsen, 2021-a). Moreover, it is often used to look for patterns, ideas, or hypotheses that can be used inductively to build theories (Eduardsen, 2021-a). On the other hand, the explanatory case study aims to explore why or how some conditions or situations came to be (Yin, 2014). This type of case study is used for developing plausible explanations for why or how a phenomenon occurred or did not occur (Eduardsen, 2021-a). Moreover, it is often used for deductive logic to test propositions, revise existing theories, and establish causal relations (Eduardsen, 2021-a). In contrast, the descriptive case study aims to describe a particular phenomenon in detail and the real-world context in which it occurs (Yin, 2014). This type of case study can be used to generate descriptive knowledge. Moreover, a descriptive case study distinguishes itself from other types of case studies by its preoccupation with articulating a descriptive theory (Eduardsen, 2021-a). It typically does not contain any analytical comparison between groups, nor does it attempt to make causal statements or describe unexplored territory (Eduardsen, 2021-a).

In addition, there are also variations in case studies. According to Yin (2014), case studies can be differentiated between single-case studies and multiple-case studies. A single-case study is organized around a single case (Yin, 2014), while a multiple-case study is organized around two or more cases (Yin, 2014). The choice of the specific type and variety of case study design will be guided by the overall research purpose (Baxter & Jack, 2008). This will be further elaborated in the following chapter.

### **7.3.1. Justification of Single-Case Study**

This research undertakes a single-case study to search for knowledge and draw insights that contribute to a particular area of study. The single-case study is an appropriate design under several circumstances, for instance, when one has a case that represents a critical, unusual, common, revelatory, or longitudinal case (Yin, 2014). In this research, the single-case study can be justified based on a variety of rationales, but it can be argued that the revelatory case rationale fits with the research aim (Yin, 2014). The aim of the research is to investigate and understand the impact of virtual communication on the psychological well-being of employees and cooperation in global teams, with the hope of uncovering new insights and perspectives within this particular area of study. The study could provide new knowledge and understanding of the positive and negative outcomes associated with virtual communication, which can expand or challenge existing literature and theories in the field. Additionally, this study could provide valuable insights for organizations seeking to develop strategies to address the challenges related to virtual communication, which could lead to improved psychological well-being of employees and enhanced cooperation among global teams. Given the aim of this research, the applied research methods, including the methods for data collection, and the distinction among types of case studies, this study is categorized as an exploratory case study with a focus on exploration rather than mere explanation and description.

Through this study, the research question will be examined from the perspective of a single company, Novo Nordisk A/S. However, since this research only includes a single company, the conclusions drawn may not be applicable to other companies, and therefore, there are limitations in terms of generalizability (Eduardsen, 2021-a). Limitations associated with single-case studies are also elaborated on in Chapter 11. *Limitations*. Researchers must also be

aware of potential biases that may arise when conducting research, such as those associated with single-case studies, which are elaborated on in Chapter 7.6. *Bias*.

### **7.3.2. Case Company**

Novo Nordisk A/S was founded in 1923 by August Krogh, who was a professor at the University of Copenhagen and a Nobel Prize-winning scientist in physiology in 1920 (Novo Nordisk A/S, 2011). His wife, Maria Krogh, was a doctor and had acquired the medical doctorate in 1914 as the fourth woman in Denmark. She did research and had her own practice, where several patients had type 1 diabetes, but she also had type 2 diabetes herself (Novo Nordisk A/S, 2011). While traveling in the United States, they learned about insulin, a hormone that could treat the disease. This inspired Krogh and the diabetes doctor Hans Christian Hagedorn to focus on developing life-changing healthcare treatments for diabetes in 1922. The first Scandinavian insulin product, called 'Insulin Leo', was marketed in 1923 (Novo Nordisk A/S, 2011).

Since its inception, the organization has grown significantly and has now expanded into a multinational corporation with a presence in over 150 countries and serving almost 40 million patients globally (Novo Nordisk A/S, 2023). The mission is to drive transformative change in the healthcare sector by curing diabetes and other significant chronic diseases such as endocrine diseases, obesity, and rare blood diseases (Novo Nordisk A/S, 2023). Novo Nordisk A/S aims to enhance patients' lives by discovering scientific breakthroughs, increasing accessibility to medications, and preventing as well as curing the aforementioned diseases (Novo Nordisk A/S, 2023). The organization focuses on patient-centered care and aims to develop and provide vital treatments to enable patients to live a healthier life (Novo Nordisk A/S, 2023).

Furthermore, Novo Nordisk A/S aims to achieve zero CO<sub>2</sub> emissions across their value chain by 2045, making them the first pharmaceutical corporation to implement 100 percent renewable energy power in its global production sites (Novo Nordisk A/S, 2023).

## **7.4. Data Collection**

There are different methods for collecting data, which differ in terms of the type of data, how the data is gathered, and why the data is relevant. Data can be categorized into primary data and secondary data (Arbnor & Bjerke, 2009). Primary data is data collected by the authors of this research, while secondary data is collected by other researchers than the authors themselves (Arbnor & Bjerke, 2009). The primary data used in this research is obtained through interviews and surveys and is qualitative and quantitative, respectively. The use of primary data was to obtain first-hand information in regard to the area of study. The primary data is further elaborated on in Chapters *7.4.1. Interview* and *7.4.2. Survey*. The secondary data used in this research is obtained through peer-reviewed articles, empirical research papers, books, reports, websites, theories, and frameworks, and is predominantly qualitative. The use of secondary data serves the purpose of providing multiple sources of evidence and creating a profound understanding of the area of study. The data collection took place from February 2023 to May 2023.

### **7.4.1. Interview**

The method of interviewing is a recognized technique for gaining knowledge and is used to gather information, opinions, experiences, and insights from individuals with relevant knowledge on a particular topic (Cassell, 2012; Kvale & Brinkmann, 2015). There are different types of interviews that serve different purposes depending on the type of knowledge that researchers aim to gain (Cassell, 2012; Kvale & Brinkmann, 2015). Regardless of the type, what is common to all interviews is that they are structured conversations with a specific purpose (Kvale & Brinkmann, 2015). However, interviews are differentiated according to the level of structure; structured, semi-structured, or unstructured (Cassell, 2012). A structured interview follows a predetermined script of questions and allows little or no room for follow-up questions (Cassell, 2012). While a semi-structured interview also follows a predetermined script of questions, it differs from a structured interview in that it allows for more follow-up questions and the possibility to deviate from the script (Cassell, 2012). Unlike structured and semi-structured interviews, an unstructured interview has few, if any, predetermined questions, allowing the conversation to flow naturally in any direction, similar to an everyday conversation (Cassell, 2012).



#### **7.4.1.1. Semi-structured interview**

After careful consideration of the benefits and drawbacks of the three types of interviews, a semi-structured format was used to conduct the interviews for this research. Structured interviews are highly standardized and allow for little or no deviation from the predetermined script of questions, which may limit the scope of the research (Cassell, 2015). On the other hand, unstructured interviews can be too open-ended and might lack direction, leading to inconsistent results (Cassell, 2015). The semi-structured format is a combination of the structured and unstructured formats, where the researchers have a predetermined script of questions to guide the conversation (Cassell, 2015). It provides a balance between structure and flexibility, enabling the researchers to gather detailed information while also allowing for spontaneous discussion and side steps that can give inspiration for new topics or questions to follow-up on based on the interviewee's responses (Cassell, 2015). This type of interview was found most suitable to use for all six interviews because it is highly flexible and adaptable by nature (Cassell, 2015). The script of interview questions is attached to this research as appendix C.

#### **7.4.1.2. Interviewees**

Six interviews were conducted with six different employees on different organizational levels within the department Compliance Portfolio Management at Novo Nordisk A/S. Three interviews were conducted online due to the interviewees' locations in China and the United States, respectively, while the third was located in Denmark. The remaining interviews were conducted in person at the Novo Nordisk site in Bagsværd, Denmark, which contributed to a pleasant atmosphere and a familiar setting for the interviewees. These interviewees were carefully chosen for their relevant knowledge, as they work in global teams and rely on virtual communication. Their insight, experiences, and perspectives are considered fundamental and contributory to this research. Despite the careful selection of interviewees based on their relevant knowledge, participation in the interviews was voluntary. They were also asked whether they would like to remain anonymous and whether they consented to recording and including the interview in this research. Furthermore, each interview typically lasted between 26 and 38 minutes.

Interviewee	Position	Department	Location	Duration
Yuan Hong	Process Engineer	Compliance Portfolio Management	Tianjin, China	32 minutes and 51 seconds
Bob Tennant	Process Technical Analyst	Compliance Portfolio Management	Clayton, USA	34 minutes and 56 seconds
Donald Gong	Senior Project Manager	Compliance Portfolio Management	Bagsværd, Denmark	26 minutes and 37 seconds
Philippe Clees	Project Manager	Compliance Portfolio Management	Bagsværd, Denmark	30 minutes and 34 seconds
Deise Hansen	Senior Project Manager	Compliance Portfolio Management	Bagsværd, Denmark	33 minutes and 11 seconds
Jeppe Obdrup	Senior Project Manager	Compliance Portfolio Management	Bagsværd, Denmark	37 minutes and 37 seconds

Table 1: Interviewees - Own creation

### 7.4.1.3. Interviewer

All three authors were present during all six interviews. They already decided beforehand that one of the authors would act as the interviewer, while the other two were there to take notes and observe. They were not given specific tasks to observe in order to prevent potential oversights in the data. The results of the observations made during the interviews provided valuable insights into the interviewees' responses and behaviors. These observations may prove useful for further analysis, however, the significance of the observations will need to be evaluated in greater detail in relation to the research question. Additionally, the other authors were not used solely as passive participants during the interviews. They had the opportunity to ask follow-up questions and made sure that all questions were covered or elaborated on points that may have been overlooked. By having all three authors present during all six interviews, they were able to cross-check and validate their findings.

As already mentioned, each interview typically lasted between 26 and 38 minutes. This limited the opportunity for the interviewer and interviewee to develop a close relationship. To further avoid any potential bias, the authors chose to use one of the two authors who had no pre-existing relationship with or ties to the organization as the interviewer for all six interviews. It was decided not to use the author, who currently works at the organization, to avoid any influence from the employee's subjectivity. This approach increased transparency and ensured a higher degree of confirmation of the findings, which can increase the reliability of the research, as elaborated on in Chapter 7.7. *Validity and Reliability*. In cases where the interviewer had pre-existing relationships or ties to the organization, there would have been a risk of a biased perspective that could potentially influence the data. This point about taking measures to minimize potential biases and increase transparency is also elaborated on in Chapter 7.6. *Bias*.

#### **7.4.1.4. Transcription**

All six interviews were recorded with the agreement of both the authors and the interviewees to ensure a high degree of certainty in the subsequent analysis. The recordings were made to capture all points and statements manifested during the interviews. For the transcription of the interviews, it was decided that one of the three authors would transcribe all six interviews, while the authors together created some general guidelines for consistency. The focus was on the content rather than verbatim, leading to the omission of laughter and various noise disturbances that were deemed unnecessary for the desired knowledge. Following this, the other authors reviewed each transcription to ensure alignment between the interviews and the transcriptions. All six transcriptions are attached as appendices to this research.

#### **7.4.2. Survey**

The method of conducting surveys is also a recognized technique for collecting data and acquiring knowledge, like interviews (Kuada, 2012). It involves gathering information from a sample of participants through standardized questionnaires (Kuada, 2012). They can be conducted in several ways, including online, by phone or mail, and in person (Kuada, 2012). Researchers can ask two types of questions; closed-ended or open-ended questions (Kauda, 2012). Closed-ended questions are questions that have fixed alternative answers and can be answered with either a single word or a short phrase, such as pre-formulated answer choices (Kauda, 2012; Arbnor & Bjerke, 2009). In contrast, open-ended questions are questions that do not have fixed answers and normally demand that the respondents answer in their own words (Kauda, 2012, p. 108; Arbnor & Bjerke, 2009). Regardless of the type of question asked, common in surveys is the collection of a large amount of quantitative or quantifiable data in relation to two or more variables, which are then examined to identify patterns and relationships between the specified variables (Kuada, 2012). Compared to interviews, surveys are generally less flexible as they cannot be changed, yet they are typically more structured and standardized, usually with closed-ended questions that are designed to gather data in a systematic and efficient manner from a large number of people.

In this research, two surveys have been conducted in relation to the area of study; virtual communication in multinational corporations. The first survey was created by the researchers

themselves and consists of a total of 13 questions, of which 12 are closed-ended questions supported by 1 open-ended question in order to gain a more extensive answer. These questions are divided into three parts based on three different yet relatable themes in alignment with the research question of this study; communication, psychological well-being of employees, and cooperation in global teams. Kuada (2012) emphasizes the importance of creating a respondent-friendly survey, which requires careful consideration of questions' clarity, relevance, and meaningfulness. To achieve this, an introduction to this research is given before sending out the survey. Thoughts have also been given to the order and flow of the questions. For instance, questions on a particular topic were grouped together before the survey moved on to another topic (Kuada, 2012). In addition, personal questions, such as those related to psychological well-being, were intentionally placed at the end of the survey to allow respondents to become more comfortable by answering less personal questions first (Kuada, 2012). This also reduces the likelihood of respondents withdrawing early if they encounter personal and sensitive questions at the beginning of the survey, which can result in missing data and reduce the generalizability of the results. There is also a higher possibility that respondents would be willing to answer the questions and thereby complete the survey, as time and effort have already been invested in answering them.

Unfortunately, the researchers acknowledge some concerns regarding the validity and reliability of the self-created survey. Consequently, to address these concerns, it was decided to conduct a second survey using a standardized measure created and validated by the World Health Organization, which is a reliable and credible source known for being transparent in its work (Psykiatri Region Hovedstaden, n.d.; World Health Organization, n.d.). This survey is known as the "WHO-5 Well-Being Index" and is widely recognized as a well-established, systematic, and reliable tool for assessing and measuring psychological well-being (Topp, Østergaard, Søndergaard & Bech, 2015). The survey consists of a total of five questions, all of which are closed-ended questions related to the current state of well-being (Psykiatri Region Hovedstaden, n.d.). Given the complexity and sensitivity of psychological well-being, using an established survey like the "WHO-5 Well-being Index" can ensure that this research is utilizing a trusted and widely accepted method for measuring well-being and measuring it accurately. It also allows for comparability and consistency with other studies that have used the same survey, thereby enabling the possibility of drawing conclusions and making comparisons. Regarding the use of the "WHO-5 Well-being Index", none of the questions were modified. Instead, additional information was provided to the respondents, asking them to

answer the questions in the specific context of a virtual and hybrid workplace. Finally, to interpret the results of this survey, instructions were given by Psykiatri Region Hovedstaden. The instructions are attached with the survey results.

Both surveys were sent out on Novo Nordisk A/S' own platform, where the employees in the department Compliance Portfolio Management were invited to answer the surveys. Those who were invited were eligible to choose whether or not they wanted to participate and contribute to this research regarding virtual communication in multinational corporations. If they chose to complete the surveys, their responses would remain anonymous. The surveys were also accompanied by an introduction to the research that aimed to encourage participation (Kuada, 2012). The first survey received 23 responses, while the second survey received 18 responses, based on the employees working in global teams. The purpose of conducting these surveys is to provide this research with multiple perspectives from various employees who daily rely on virtual communication and work in global teams in order to gain a better understanding of the challenges faced by team members and what impact it may have. Furthermore, they aim to identify ways to ensure effective cooperation among global teams and promote the well-being of the employees. The surveys are attached to this research as appendices *J* and *L*, respectively, while the survey results are attached as appendices *K* and *M*. This approach of using two surveys increased transparency, which may also increase the validity and reliability of the research, as elaborated on in Chapter 7.7. *Validity and Reliability*.

## 7.5. Coding

When collecting various forms of qualitative data, researchers must interpret, understand, and analyze what has been retrieved. Especially if it concerns an enormous amount of data, it can sometimes be challenging to make sense of it and draw conclusions, while also increasing the quality of one's research (Linneberg & Korsgaard, 2019). There exist various approaches to interpreting, understanding, and analyzing data, and coding is one of the tools that can be used for this process (Saldaña, 2013; Linneberg & Korsgaard, 2019).

Coding is an important tool in the process of transforming “raw” qualitative data into communicative and comprehensive results (Linneberg & Korsgaard, 2019). Coding is defined as: “*the analytic process through which data are fractured, conceptualized, and integrated to*

*form theory*” (Eduardsen, 2021-b). This involves identifying segments in the collected data and labeling them with a code. According to Saldaña (2013), a code is “... *most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data*”. The data can include interview transcripts, documents, literature, and other sources (Saldaña, 2013). While coding is just one way of analyzing qualitative data (Saldaña, 2013), it is typically the starting point for most forms of qualitative data analysis. Furthermore, the way in which coding is done varies from simple color-coding with markers to using a software program, depending on the amount of data collected and being analyzed (Linneberg & Korsgaard, 2019).

Although coding may appear unnecessary and time-consuming between data collection and drawing conclusions, researchers should dedicate time to coding for several reasons (Linneberg & Korsgaard, 2019). According to Linneberg & Korsgaard (2019), coding enables researchers to gain deep, comprehensive, and thorough insights into the collected data because it requires revisiting all aspects of the data, including those that may not have been noticed during the actual data collection, and ensuring that no important information is overlooked. Additionally, they argue that coding facilitates easy accessibility and retrieval of the data by sorting and structuring it into labeled segments, similar to organizing files into folders on a computer (Linneberg & Korsgaard, 2019). They also argue that sorting and structuring the data helps to separate relevant data from irrelevant data, ensuring the quality of the research (Linneberg & Korsgaard, 2019).

In this research, coding has been chosen as the approach to interpret, understand, and analyze the collected data. The data includes transcripts from six different interviews. Furthermore, for the qualitative data analysis, the computer software package “Delve”, will be used throughout the coding process. Such a software package will help to organize, analyze, and find insights in unstructured and qualitative data and will facilitate the coding process in terms of time and simplicity (Eduardsen, 2021-b).

Additionally, Linneberg & Korsgaard (2019) distinguish between inductive coding and deductive coding, although in practice, a combination of inductive and deductive coding is commonly used. The combination of inductive and deductive coding is also referred to as a blended approach or abductive coding (Linneberg & Korsgaard, 2019). Inductive coding is where codes are developed directly from the data based on phrases or terms used by the

participants themselves, whereas deductive coding is more theory-driven as it involves creating predefined codes (Linneberg & Korsgaard, 2019). This research employs inductive coding and is particularly relevant due to the lack of theoretical concepts to aid the comprehension of the phenomenon being studied (Linneberg & Korsgaard, 2019).

### 7.5.1. Codes

As previously mentioned, the data includes transcripts from six different interviews. Although the interviews cover the same research topic and use the same interview script, it is still necessary to code the interviews due to the benefits of coding, especially since the interviews involve six interviewees from different backgrounds and upbringings. Before starting the coding process, it is important to get familiar with the data by reading through the transcripts several times. Afterwards, the coding process involves two cycles of coding, with each cycle refining and building on the previous one (Saldaña, 2013; Linneberg & Korsgaard, 2019). The coding process is illustrated in figure 4.

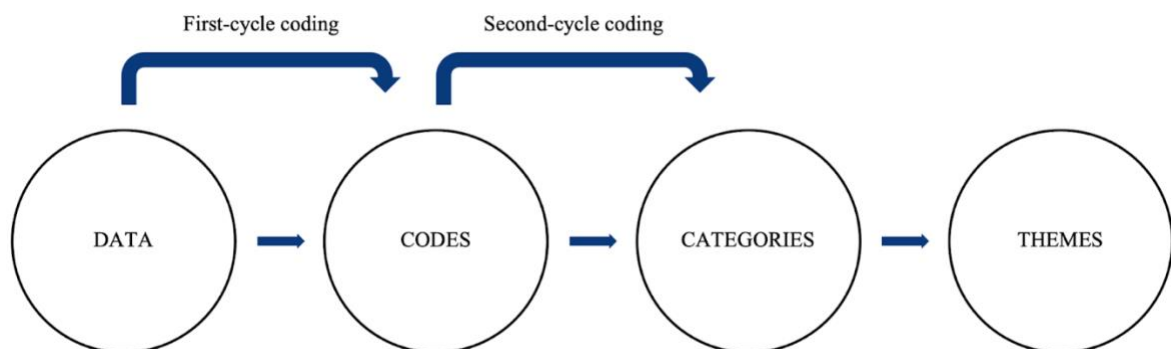


Figure 4: The coding process - Own creation

In the first cycle of coding, initial codes are developed to summarize segments of data (Saldaña, 2013; Linneberg & Korsgaard, 2019). In the second cycle of coding, the initial codes are refined and grouped into categories by examining connections between them (Saldaña, 2013; Linneberg & Korsgaard, 2019). Within each category, codes that are connected to each other according to similarity or regularity should be grouped together (Saldaña, 2013; Linneberg & Korsgaard, 2019). When grouped together, patterns are born, and a connection between them can also be seen (Linneberg & Korsgaard, 2019). Once these two cycles of coding are completed, the categories, including the codes, should be examined and then combined under

identified overarching themes that emerge from the data (Saldaña, 2013; Linneberg & Korsgaard, 2019). These themes capture the essence of the data and are illustrated in table 2:

Themes	Definition
<b>Traditional face-to-face communication</b>	The theme “traditional face-to-face communication” comprises findings on the benefits/advantages and drawbacks/challenges of the traditional face-to-face communication. Although there is a significant focus on the value face-to-face communication brings, primarily because it enables better interaction and synergy among team members and it facilitates effective communication by providing nonverbal cues, however, it may be less adopted due to time and budget allowing as well as travel restrictions due to company policies on reducing CO2 emissions.
<b>The use of virtual communication</b>	The theme “the use of virtual communication” comprises findings on the benefits/advantages and drawback/challenges of using virtual communication as a mean to communicate and work aided by technology. It also includes the importance of promoting an inclusive and engaged work environment, especially when working virtually, as well as communication strategies and approaches to working in a virtual environment to enhance cooperation among team members in global teams.
<b>Virtual communication and its impact on psychological well-being of employees</b>	The theme “virtual communication and its impact on psychological well-being” comprises findings on challenges that virtual communication presents for team members working in global teams in regard to their well-being, such as the need for human interaction, the work/life balance, as well as the behavior of demotivation and disengagement.
<b>Virtual communication and its impact on cooperation in global teams</b>	The theme “virtual communication and its impact on cooperation in global teams” comprises findings on challenges that virtual communication presents for team members working in global teams, such as cultural differences, language barriers, time zones, and geographical distance. It also includes findings on collaboration and teamwork, as well as the requirements for achieving successful collaboration.

Table 2: Most relevant themes from the coding process - Own creation

Table 2 provides an overview of the most relevant themes from the coding and includes a short definition of each theme. A more comprehensive table of the coding process, including the assigned codes and categories within each theme, is attached as Appendix N.

## 7.6. Bias

Unfortunately, when it comes to any research, there is an inevitability of bias. Therefore, a section on bias has been included in the methodology chapter of this research. According to Simundić (2013), bias is defined as: “*any trend or deviation from the truth in data collection, data analysis, interpretation and publication which can cause false conclusions*”. This definition highlights that bias can occur at any stage of the research process and may occur either intentionally or unintentionally (Simundić, 2013). There exist numerous potential



sources of bias in research (Simundić, 2013). Consequently, it is important to acknowledge and account for bias in the research to ensure or increase the validity and reliability of the findings.

Bias can be particularly common when conducting interviews because both the interviewer and interviewee may bring their own biases to the table. Human beings come from different backgrounds and upbringings, and therefore, they have varying perspectives of reality influenced by their subjectivity and presumptions. Moreover, interviewees may not be completely honest about the reality related to the organization that they represent, which can increase bias. The organization that the interviewee represents may also have a biased perspective that aligns with their own interests rather than providing the public with complete understanding and insight. For instance, Novo Nordisk A/S may have an interest in shaping the public's perception of them. This could influence the information that the interviewee is willing or able to share, leading to further bias. Despite researchers' efforts to prepare themselves for an unbiased approach to conducting interviews and selecting questions, inherent biases may still influence their work.

Since one of the three authors of this research is currently employed full-time at Novo Nordisk A/S, it is possible that their perspective may be biased. According to Darmer et al. (2010), investigating issues in one's own workplace and organization can have many advantages, but it also creates a number of challenges with subsequent demands for methodical and ethical assessment and consideration. Not only is the author bearer of a theoretical pre-understanding but also of a practical pre-understanding, which may influence the perception of the organization under research and the research itself (Darmer et al., 2010). It is imaginable that an employee may avoid writing anything negative about their employer or fellow colleagues, knowing that they have the opportunity to review and access this research. However, it is also important to note that the purpose of this research is not to discredit the organization, but rather to provide insights into issues that may be poorly understood or not yet understood in relation to virtual communication in multinational corporations. To increase the validity of this research, the remaining authors do not have any relationships or ties to the organization, which can be beneficial in challenging the potential biased perspective that one author has (Darmer et al., 2010).

The authors must also be aware of potential biases that may arise from conducting a single-case study by relying solely on a single company. These biases occur when researchers

misjudge the representativeness of a single event (Eduardsen, 2021-a). Such bias arises when researchers draw conclusions based on a single event, even if it is not representative of the larger population or phenomenon being studied. Therefore, researchers must be careful when drawing conclusions based on a single company because it does not necessarily represent all companies that communicate virtually and work in global teams. Bias may also arise when researchers rely too heavily on readily accessible or easily available data, even if it may not accurately represent the overall situation or phenomenon being studied, which can lead to biased conclusions and inaccurate generalizations (Eduardsen, 2021-a). In other words, the data collected from the department Compliance Portfolio Management at Novo Nordisk A/S represents only a small part of the organization. Thus, it does not illustrate the full picture of the organization.

## **7.7. Validity and Reliability**

When conducting research, it is necessary to understand and ensure validity and reliability. These are both concepts that evaluate the overall quality of one's research.

The concept of validity concerns the trustworthiness and utility of the research (Zohrabi, 2013). Principally, this implies whether research is believable and whether it is evaluating and measuring what it is intended to evaluate and measure (Zohrabi, 2013). A distinction is made between internal and external validity. Internal validity is the fit between the findings and reality, while external validity is the applicability of the findings beyond the particular study, for instance, with other subjects or in other settings (Zohrabi, 2013). To strengthen internal validity in this research, data is collected from a variety of sources and with different techniques (Zohrabi, 2013). This is further elaborated on in Chapter 7.4. *Data Collection*. By doing so, this can confirm findings through comparison (Zohrabi, 2013). If the same results are obtained, the data is then valid (Zohrabi, 2013). A further means to strengthen internal validity is to be aware of potential biases that researchers may have (Zohrabi, 2013). Therefore, the authors should try to remain as clear and nonjudgmental as possible throughout the research (Zohrabi, 2013). This is further elaborated on in Chapter 7.6. *Bias*. Since this research lacks comparable studies, it is difficult to compare findings to prior research, and consequently, external validity is limited (Zohrabi, 2013). Therefore, the findings may not be generalizable or applicable to other companies (Zohrabi, 2013). In addition, the sample size in this research only represents

a small part of the organization, which again raises questions in regard to generalizability and applicability. This is further elaborated on in Chapter *11. Limitations*.

The concept of reliability concerns the consistency and replicability of the research (Zohrabi, 2013). A distinction is made between external and internal reliability. External reliability is the replication of the research, while internal reliability is the consistency of collecting, analyzing, and interpreting the data (Zohrabi, 2013). To increase external reliability, the authors have intended to be as thorough as possible in explicitly explaining and justifying the choices made with regard to this research (Zohrabi, 2013). This, for instance, regards how data is collected, how data is analyzed, and how results are obtained (Zohrabi, 2013). In addition, the gathered data are all attached to the appendix. By doing so, the possibility for replication exists, although the external reliability is considered limited due to limitations in terms of generalizability. This is further elaborated on in Chapter *11. Limitations*. However, for internal reliability, as this research has been conducted by three researchers, it enables the possibility to verify and confirm with each other the entire research process; from data collection, analysis, and interpretation to validating the findings (Zohrabi, 2013). A further means to increase internal reliability is to record and store data, such as interviews, which enables the possibility of replication (Zohrabi, 2013).

## **8. Analysis**

The collected empirical data regarding the interviews and surveys demonstrates the clear challenges of virtual communication affecting the psychological well-being of employees and cooperation in global teams. This is illustrated in *Survey 2.0 Results* (Appendix M), where participants answered five questions about their emotional state when working in a virtual and hybrid setting over the timeframe of two weeks from when they completed the survey. The results reveal that virtual communication negatively impacts the psychological well-being of some respondents. As a result, this further justifies the significance and relevance of this research.

From the collected empirical data, there is a consensus that the type of workload, as well as its complexity and amount, are argued to be barriers to ensuring optimal team performance. As mentioned, the majority of the interviewees are project managers, and according to Atkinson

(1999), the definition of a project manager is: “*the planning, monitoring, and control of all aspects of a project and the motivation of all those involved in it in order to achieve the project objectives within agreed criteria of time, cost, and performance*”. The definition is similar to what the project managers themselves have described their roles to be (Appendix F, Gong, 01:01; Appendix G, Clees, 00:46; Appendix H, Hansen, 00:26; Appendix I, Obdrup, 00:25). However, two interviewees are part of project manager Jeppe Obdrup’s team. They assist as a Process Engineer in site Tianjin in China (Appendix D, Hong, 01:05) and a Process Technical Analyst in site Clayton in the United States (Appendix E, Tennant, 00:28). Their roles involve implementing requirements from regulatory affairs and corporate guidelines into the operational process (Appendix D, Hong, 01:15; Appendix E, Tennant, 02:33).

They work in the department named Compliance Portfolio Management (CPM) for the Injectable Finished Product (IFP)[1] in Product Supply (PS)[2]. Their job requires them to lead various initiations and projects across IFP on a global scale and ensure compliance with regulatory affairs and requirements on production sites in Clayton (United States), Tianjin (China), Montes Claros (Brazil), Chartres (France), Kalundborg, Hillerød, and Bagsværd (Denmark) (Appendix D, Hong, 01:05; Appendix E, Tennant, 00:25; Appendix F, Gong, 01:01; Appendix G, Clees, 00:46; Appendix H, Hansen, 00:26; Appendix I, Obdrup, 00:25). Consequently, they engage in cross-cultural collaborations where their work is conducted from geographically dispersed locations.

Therefore, to demonstrate the apparent challenges of virtual communication affecting the psychological well-being of employees and cooperation in global teams, the following two models, the *PERMA Model* and the *Job Demands-Resources (JD-R) Model* in Chapter 4. *Theoretical Background* will be used. The PERMA model will illuminate the current state of the interviewees’ psychological well-being in their workplace. Conversely, the JD-R model will examine how the organization supports their employees’ psychological well-being with resources when the demands of collaborative engagement within a virtual context, alongside a diverse team of members, are required and anticipated. Finally, the insights will provide suggestions on overcoming possible challenges that can lead to enhanced well-being when collaborating in the abovementioned context, which will be presented in Chapter 9. *Discussion*.

## **8.1. PERMA Model**

In the following section, the PERMA model will be implemented to examine how virtual communication affects the psychological well-being of employees by assessing the five elements; positive emotions, engagement, relationships, meaning, and achievement.

### **8.1.1. PERMA Model: A Concise Summary**

The following table consists of a summary of the findings obtained through the implementation of the PERMA model.

Elements	Challenges
<b>Positive emotions</b>	Remote individuals who live in different time zones may experience isolation and negative emotions due to communication challenges and information gaps. Therefore, it can potentially endanger the psychological well-being of team members who are physically distant from their colleagues due to the absence of physical interaction. However, there should be a balance between in-person and virtual meetings to increase flexibility, which also contributes to positive emotions. Furthermore, virtual communication can put pressure on employees on days with back-to-back meetings, which is still a post-COVID-19 pandemic issue that has not been solved yet.
<b>Engagement</b>	In virtual settings, team members tend to have their cameras turned off, which results in diminished engagement and negatively affects their well-being. Full participation and focus in virtual settings are crucial to elevating engagement. Furthermore, it requires an effort to understand each other to mitigate potential miscommunication caused by diverse cultures and languages. Therefore, it is considered crucial to have a fundamental understanding of different cultural working environments. Lack of understanding can ultimately result in frustration, stress, mistrust, confusion, conflicts, and more, which can negatively affect the psychological well-being of global team members.
<b>Relationship</b>	Building relationships within virtual teams is considered a major challenge, amplified by the cameras being turned off, which makes it difficult to read nonverbal cues. Furthermore, relying solely on emails hinders the ability to sense someone's needs and preferences beyond verbal communication. Virtual communication complicates the possibility of establishing and maintaining relationships with others due to the absence of physical interactions, which can result in emotional or psychological imbalances and a lack of belongingness.
<b>Meaning</b>	The differences in time zones within global teams sometimes require one or more team members to sacrifice their personal time after normal work hours. However, it is considered necessary to share this responsibility among team members to ensure fairness and equality. Furthermore, it requires sacrifice of time and dedication to assure and accommodate each cultural difference by doing more than the job role requires. Therefore, this can affect psychological well-being due to additional workload, such as stress and burnout.
<b>Achievement</b>	Culture is significant in defining the concept of achievement because it influences norms, societal expectations, and values. Chinese and Brazilian team members are seen as high achievers due to their respect and loyalty to the higher management. However, this can lead to limited self-awareness, hindering growth and reducing creativity and innovation. On the other hand, American team members prioritize individual achievement and self-reliance and, therefore, exhibit behavior that appears inconsiderate of others, potentially undermining higher-ranking roles.

*Table 3: Summary of findings in the PERMA Model - Own creation*

### 8.1.2. Positive emotions

**The first element, *positive emotions*, includes experiencing more than just happiness. It includes a wide range of positive feelings, such as joy, contentment, compassion, gratitude, hope, interest, love, and pride (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019). Not only do positive emotions make humans feel good, but they also motivate many human actions and, thereby, enhance performance at work (Kun, Balogh & Krasz, 2016).**

A common perception among the interviewees is that virtual communication does not solely bring positive emotions. Remote individuals, particularly those in different time zones, may experience increased isolation and negative emotions due to challenges in communication and receiving updates. In an office setting, providing in-person updates is more convenient; in contrast, remote colleagues may feel excluded from important information. This situation can potentially endanger the psychological well-being of team members who are physically distant from their colleagues, which indicates that meeting face-to-face does contribute positively to the social aspect and effectiveness of the team (Appendix F, Gong, 15:45). It can also be argued that these interactions also decrease stressors and help managers introduce positive emotions throughout the team.

Additionally, Philippe Clees expresses the importance of maintaining a balance between in-person and virtual communication, as a hybrid work setting helps him feel positive emotions. Clees appreciates the convenience of virtual meetings since working from home allows for more focused work without distractions from colleagues (Appendix G, Clees, 23:12). However, he mentions that having only virtual interactions for an entire week can lead to unhappiness and emotional exhaustion (Appendix G, Clees, 23:12, 24:48):

*“For me, it is in..., the balance between in person and virtual. If I would have just one week of virtual only, I would also get a bit more unhappy at the end of the week I would say for sure.”* (Appendix G, Clees, 23:12).

Therefore, it is argued that Clees enjoys being in the office and having colleagues physically present because he seeks the close bond formed through physical interactions. In addition, it provides him with positive emotions like connection and support (Appendix G, Clees, 23:12).

Therefore, it can be discussed which of these two work settings brings the most positive emotions.

Deise Hansen also mentions the emotional exhaustion of having only virtual interactions (Appendix H, Hansen, 25:34). She elaborates on the importance of a mental break when virtual meetings are booked back-to-back, meaning scheduling meetings consecutively without any breaks. According to her, virtual meetings that are booked back-to-back are more emotionally exhausting than face-to-face meetings due to the limited breaks in between. She addresses this behavior as one of the issues that emerged from the post-COVID-19 pandemic (Appendix H, Hansen, 24:36). This issue has not been solved yet, and therefore, it is argued that this can endanger the psychological well-being of employees, which can potentially lead to stress and burnout.

Hansen further elaborates that the number of virtual meeting participants can also impact psychological well-being. The ability to effectively communicate one's emotional state to a large audience is limited compared to the impact of personal interaction and direct communication with an individual. This is mainly an issue when addressing a large audience virtually, as it becomes challenging to convey personal emotions or states of mind to every individual present. In a smaller setting, it may be easier to connect by sharing a brief explanation with a participant beforehand, such as informing other participants of her emotional state so they can interpret everything correctly. However, when addressing a broader audience, the same level of connection cannot be achieved when feeling stressed or overwhelmed (Appendix H, Hansen, 29:41).

### **8.1.3. Engagement**

**The second element, engagement, includes being fully engaged, absorbed, or focused on activities considered meaningful and enjoyable or built upon one's interests or life (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019).**

According to the interviews, factors such as language and geographical distance can affect the engagement of global team members. This is also supported by Survey 1.0 (Appendix K, Question 4). While English proficiency is often expected among professionals, such as office



employees, it cannot be assumed that they all master it. Working within multilingual teams results in bridging not only cultural but also linguistic gaps.

4. What cultural barriers do you experience most often with global teams?  
*(You are allowed to select more than one or several answers)*

[More Details](#)

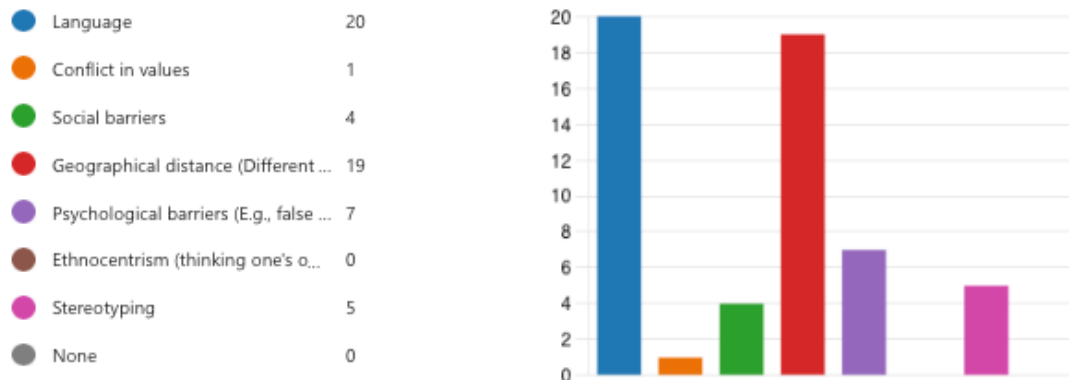


Figure 5 - Survey 1.0 Results (Appendix K, Question 4).

According to the respondents in Survey 1.0 (Appendix K, Question 4), language is the most common cultural barrier in global teams, closely followed by geographical distance. Cultural barriers have been shown to affect the employee’s psychological well-being in terms of creating mistrust, conflicts, and reduced retention. Creating trust among team members is considered more difficult when speaking different languages. Furthermore, some tasks may require additional communication and a higher level of language understanding, which can be a challenge for team members with different language backgrounds:

*“...or limited by the language, sometimes the English is good, sometimes is not, or sometimes we could not express what we want to say ... I’m clearly know, my English is not enough to express my opinion, so I will write them down and send e-mail before to introduce my background and was send the message to the people I want to talk and to let them clearly know what I want to say.” (Appendix D, Hong, 18:57).*

As a team member with a non-native-speaking cultural background, Yuan Hong has experienced some of these challenges within her global teams. She explains that the increased

level of miscommunication compels her to make greater efforts to interact with her team members. When Hong has to express herself in a non-native language, it requires extra preparation, which can be exhausting in the long run. In addition, she must try to think of all possible combinations of words to express herself (Kim, Robersen, Russo & Briganti, 2019). However, it can also be reasoned, from the perspective of other team members, that understanding a member who struggles with the working language is difficult, and it therefore also requires an additional effort from the team members to comprehend what is being said, which can be perceived as tiring. Consequently, the increased potential for miscommunication can result in individuals using more strain to understand their team members, which can be too demanding for many members from diverse cultures. Language barriers can therefore be anticipated to have a crucial impact on the psychological well-being of employees who work within global teams.

During the interviews, it was also found that the various business cultures present within global teams have a significant impact on how meetings can be effectively facilitated and a level of engagement achieved. Donald Gong possesses this basic understanding of different business cultures within his teams, as he characterizes his Asian colleagues as more introverted with a tendency to provide minimal input during virtual meetings (Appendix F, Gong, 06:10). Clees expresses a similar experience with his Asian colleagues:

*“Typically what you see is that in the Asian area, people are a little bit more refrained and they would also not speak up in the meeting, but rather tell you afterwards, one-to-one or in an e-mail or in Teams chat.”* (Appendix G, Clees, 12:33).

In the statement above, Clees explains that input and knowledge sharing with Asian colleagues may go differently than with others. As a result, meetings may not be as effective and engaging as anticipated. Hong addresses the basis of this issue as a team member with an Asian background and explains that with virtual tools, it is not as simple to gesture or simply use body language to communicate during meetings.

*“The virtual way especially when we cannot see each other or limited by the language, sometimes the English is good, sometimes is not, or sometimes we could not express what we want to say. So sometimes it is really limited with virtual communication.”* (Appendix D, Hong, 18:57).

The statement indicates that certain cultures tend to be more engaging than others, making it difficult for some members to participate in discussions during meetings. This language barrier can lead to difficulties in connecting with team members, which ultimately impacts meeting engagement and performance negatively (Appendix D, Hong, 18:57). However, it can be argued from the conducted Survey 1.0 (Appendix K, Question 7) that 35 percent of the participants have experienced that cultural barriers have affected their own or a team member's well-being, or both situations.

#### 7. Have cultural barriers affected your own or a team member's well-being?

[More Details](#)

<span style="color: blue;">●</span> My own well-being	3
<span style="color: orange;">●</span> A team member's well-being	2
<span style="color: green;">●</span> I have experienced both types of...	3
<span style="color: red;">●</span> I have not experienced this type ...	15



Figure 6 - Survey 1.0 Results (Appendix K, Question 7).

This is also a challenge that other meeting coordinators like Jeppe Obdrup have touched upon, as he explains that speaking up and actively engaging in meetings can vary among individuals based on cultural differences. Generally, individuals from European countries like Denmark and France find it relatively easier to express their thoughts and participate in discussions. Meeting participants from the United States may not be as engaged due to their focus on running their specific site, which creates a separate agenda for them. Obdrup has also observed that individuals from China may find it challenging to speak up and tend to agree with everything, which makes him unsure whether everyone fully comprehends the discussions (Appendix I, Obdrup, 07:26).

Obdrup further explains that cultural differences create a space where everyone can bring their strongest competencies to the team. The Chinese members might not be great at

communicating; however, based on their unique management culture, they strive to be the fastest at implementing changes to the operational process (Appendix I, Obdrup, 09:33). Bob Tennant, on the other hand, has noted that his American members generally have a more engaging and extroverted personality, leading to higher engagement and better results during virtual meetings. There can be various reasons why a low level of engagement occurs. This can be due to different work cultures but also based on different personalities, whether someone is introverted or extroverted. Lack of engagement can result from miscommunication and misunderstanding, reducing work efficiency and productivity. Ultimately, it results in employees feeling frustrated, fostering a sense of distrust and confusion, which can affect their psychological well-being. Employees who lack reliable communication sources with their colleagues and management can feel unheard, resulting in low job satisfaction (Janeva, 2020). However, some project managers also believe that despite the limited levels of engagement displayed by certain team members, they may possess other qualifications that can contribute to the team's overall performance. Therefore, it is evaluated that engagement may depend on the cultural interpretation of success, which will be thoroughly examined in Chapter 8.1.6. *Achievement.*

Another common challenge in relation to engagement is the lack of full participation of team members when working in a virtual environment. As stated by Obdrup, halfway through a meeting there is close to zero engagement, as there is neither reflection nor answers when asked whether the participants have some input (Appendix I, Obdrup, 28:06). Even when someone engages in the discussion it is demonstrated that only the same participants who engage. This prompts Obdrup to take a question round to ask all sites to acknowledge what their take or restrictions are regarding the subject of discussion, which is not optimal (Appendix I, Obdrup, 28:06). Obdrup further explains that when he feels disengaged from team members, it negatively affects his own motivation and energy (Appendix I, Obdrup, 27:58). However, he is not the only project manager who has faced engagement challenges concerning virtual meetings. Clees can also support Obdrup's statement, as he states the following:

*“Ultimately, it is always on okay we had an successful project and we delivered a solution that worked for anyone, if you simplify it like this, but of course I think you need to make sure along the way that you don't lose people like that you keep them engaged, that you can see if they also feel engaged during the meeting and not sort of just, yeah, checked out and sort of have the majority run the show. That's of course*

*more difficult when you don't have them on camera, just audio, and then if it's mute and no, just profile picture, then it's very difficult for me to assess if the person is engaged or if they completely checked out, then maybe, I do not know, run some errands at that point of anything.”* (Appendix G, Clees, 17:10).

According to Clees, a successful project is ultimately measured by the engagement to projects and the end result of them. Without visual cues like having the camera on, it becomes difficult to assess whether his team members are actively engaged or running errands during the meeting (Appendix G, Clees, 17:02). Therefore, Clees aims to ensure that participants remain engaged and that their involvement is not lost during meetings. He does so by actively observing the level of engagement among attendees to determine if they are actively participating or disengaged (Appendix G, Clees, 17:02). The significance of turning on the camera during virtual meetings is a common opinion among the interviewees, as it does not only enhance engagement but also contributes to the development and strengthening of relationships among participants (Appendix F, Gong, 11:25), which is further elaborated on in the following Chapter 8.1.4. *Relationship*.

#### **8.1.4. Relationship**

**The third element, *relationship*, includes the strong inner need for contact with others and, therefore, the ability to establish and maintain strong and positive relationships with others, whether they are with family, friends, or colleagues (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019). These relationships create a sense of belonging (Kun et al., 2016).**

According to the interviewees, building relationships in a virtual environment is considered a major challenge compared to face-to-face interaction. As mentioned, one of the issues is participants not turning their cameras on, which can hinder the opportunity to build relationships. Even though there has been an encouragement for virtual meeting participants to turn on their cameras (Appendix G, Clees, 03:51), the collected empirical data indicates that the majority do not respect project managers' wishes. For most team members activating cameras might make them feel exposed due to their environments, such as disturbances when working from home or other locations (Appendix E, Tennant, 03:44). There may also be

situations where individuals do not feel comfortable turning on their cameras because of personal appearance concerns (Appendix F, Gong, 10:17), e.g., individuals may be in their casual attire or not wearing makeup, which can be a possibility if the meeting is scheduled outside normal office hours (Appendix F, Gong, 10:17). This results in a preference for turning off cameras in the majority of meetings, which might seem like they are hiding from other participants (Appendix F, Gong, 10:17). Additionally, certain project managers suspect that their team members multitask during meetings, choosing to keep their cameras turned off: *“...Sometimes I have the sense that they are multitasking.”* (Appendix H, Hansen, 07:52). However, not knowing for sure whether or not the participant is quiet because they are just shy or in fact are multitasking keeps Hansen from accusing anyone, as this can create further conflicts (Appendix H, Hansen, 08:55). It is argued that team members who turn off their cameras may indicate no interest in building relationships, which is a major challenge for project managers. It is therefore necessary to find the right prerequisites to encourage participation and prevent individuals from remaining passive during discussions. On the other hand, having everyone turn their cameras on can help promote engagement and build trust. Therefore, meeting coordinators like Gong encourage their team members to turn on cameras whenever possible, as it helps build relationships during virtual meetings (Appendix F, Gong, 10:17).

However, according to Hansen, building relationships requires time because team members' body language and interpreting their needs are more challenging in a virtual environment than in face-to-face meetings. Furthermore, there will be a further lack of ability to sense the needs and preferences of a person in written communication, as it goes beyond verbal communication alone:

*“... I think the face to face time shorten the time to know people. Whereas in the virtual environment it takes then longer, because you don't have this opportunity of looking in the eyes. And then also you because the relationship is so long, I know also by the type of emails that receive. What... You know what, what are the needs of that person? So it is a little bit more than just the verbal communication.”* (Appendix H, Hansen, 10:37).

Body language is a form of nonverbal communication that includes using physical cues and gestures to convey emotion or meaning. 90 percent of communication is gathered through nonverbal communication, and only seven percent is verbal (White & Gardner, 2012). According to Survey 1.0 (Appendix K, Question 2), most respondents cited body language as

the primary reason for preferring face-to-face communication in collaborative task-solving within their teams. The element of body language is missing during virtual meetings, especially when the participants have their cameras turned off. Challenges such as ensuring collective understanding, assessing comprehension and emotion, determining consensus, and identifying questions are complex without body language. The project managers are not sure if all participants understand the agreements or tasks, which requires them to repeatedly ask the members if they have questions or have one-on-one or follow-up meetings to be entirely sure that everyone understands the objectives and aim of the project (Appendix I, Obdrup, 10:26). This is also in correlation with the literature demonstrating the difficulties of conveying emotions and intentions without body language (Gonçalves et al., 2014). Furthermore, building relationships also requires trust, which can be lacking when project managers are unsure if everyone understands the project's aim (Gonçalves et al., 2014; Ivanovski & Gruevski, 2014).

It is therefore argued that the challenge complicates the possibility of establishing and maintaining relationships with others in a virtual environment when team members deactivate their cameras. In contrast, there is a common understanding among the interviewees that face-to-face meetings have a distinct advantage as this form of communication shortens the time it takes to build relationships. It is therefore indicated that physical presence and human interaction have a significant impact on our overall well-being as humans. Being in close proximity, sharing hugs, and using physical touch are natural human behaviors that contribute to a sense of connection and belonging. The absence of such interactions may disrupt the natural emotional circuitry, leading to emotional or psychological imbalances, as human contact is crucial to overall well-being (Appendix F, Gong, 25:03).

### **8.1.5. Meaning**

**The fourth element, *meaning*, includes being connected to something greater than oneself or having a purpose that contributes to a sense of meaning in life (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019). This gives a compelling reason for doing what one does (Kun et al., 2016). It also helps one focus on what is important when facing significant challenges or hardships (Madeson, 2017).**

The differences in time zones within global teams sometimes require one or multiple team members to sacrifice their time after work hours to have meetings (Appendix E, Tennant, 13:25; Appendix G, Clees, 06:51; Appendix I, Obdrup, 31:27). Oftentimes, the project managers need to plan meetings strategically when they involve team members from the sites in Clayton, Montes Claros, or Tianjin in China due to different time zones. Clees mentions that meeting scheduling yields the best results from 1:00 p.m. to 3:00 p.m. Although this may require a sacrifice from his colleagues, Clees expresses appreciation for their efforts:

*“If it is all time zones, well then you know I have a window between 1:00 and 3:00 in the afternoon. And I'm happy that my Chinese or American colleagues are sort of sacrificing a bit of the early evening to be in that meeting.”* (Appendix G, Clees, 06:51).

Tennant will voluntarily sacrifice his time after work hours to have meetings with members from site Tianjin but expects that they will share that particular responsibility in the future (Appendix E, Tennant, 13:25). The time difference between site Clayton and site Tianjin is 12 hours (Time and Date AS, n.d.). Nonetheless, members of global teams must sometimes sacrifice their time after work hours to collaborate for the corporation's benefit, which indicates a value in the organizational culture that is expected to be practiced, especially in multinational corporations. However, the benefit of the technology enables employees to have meetings from their homes, which eases the burden of commuting and allows for flexibility in work schedules (Appendix E, Tennant, 13:25). The described situations indicate several elements that can contribute to the overall enhancement of well-being; feelings such as appreciation and altruism can lead to better team collaboration and performance. However, as Tennant mentions, it is argued that this responsibility must be shared within the team despite the hierarchical roles so that it can contribute to an equally important meaning.

Gong expressed another value he practices as a project manager to support his team members from other sites. He approaches each site differently because he understands the time zones and cultures. When working with colleagues in site Tianjin, the meeting will be from 8:00 p.m. to 9:00 p.m. in China; therefore, Gong understands the state of physical or mental exhaustion that can result from a work day. As mentioned, he perceives Asian culture as introverted and therefore does not expect more than simple and short answers. Thus, Gong learned to ask questions differently and often ensures that they remain awake during meetings (Appendix F, Gong, 06:10). However when he has meetings with colleagues from site Clayton, the meeting



would be from 7:00 a.m. to 8:00 a.m. in the United States, although they might still be affected by sleep inertia and feel too disoriented to perform tasks that require concentration. Therefore, Gong's strategy is to touch base with them later in the day to follow up and ensure the intention of the meeting is fully covered (Appendix F, Gong, 06:10). Gong has developed and adapted different strategies into his role as a project manager for the past three companies he has worked at (Appendix F, Gong, 06:10). Hence, his knowledge stems from his experience of engaging with diverse cultures, which is argued to be critical in understanding the motives underlying his actions. Consequently, Gong's awareness of various cultural barriers that can occur when working virtually with a diverse team may enable him to communicate more effectively with his team members to achieve results. Furthermore, of the 23 participants from Survey 1.0 (Appendix K, Question 4), 19 indicated that 'Geographical distance' was a significant barrier when working virtually with a global team, while 20 participants identified 'Language' as a challenge (Appendix K, Question 4). These findings suggest that project managers recognize these factors as potential obstacles to effective communication and are therefore implementing self-developed strategies such as touch base, follow-up, minutes of meetings, one-on-one meetings, and more that account for cultural barriers in order to overcome them. It fosters a sense of meaning among employees that exceed expectations in their efforts to support the organization and the team. However, this can be construed as having implications that can negatively affect the well-being of project managers, such as stress and burnout, because it requires an additional workload, which necessitates sacrificing more time and dedicating oneself to assuring and accommodating each diverse member's understanding of the project's aim. On the other hand, Gong ensures that every team member gets involved in a project that matters for the organization and its diabetes patients, which can create meaning for the end-users, ultimately resulting in a feeling of being connected to something greater than oneself (Madeson, 2017; Seligman, 2011).

### **8.1.6. Achievement**

**The fifth element, *achievement/accomplishment*, includes achieving or challenging goals and experiencing a sense of accomplishment (Seligman, 2011; Seligman, 2013; Carter & Andersen, 2019). Overall, these five elements include both hedonic and eudaimonic components.**

Several interviews indicated that culture could influence how achievement is defined and pursued, even if it is understood as a universal human goal. According to the project managers, the Chinese and Brazilian members are considered to be high achievers, whereas the Americans have their own ways of doing the work:

*“They [Americans] want to run for themselves, and the Chinese want to be very much involved ... and live up to all requirements... Maybe also therefore they have fewer deviations compared to other sites. And a little the same with Brazil because they also want to be front runners and be the first ones to implement projects. This may be also because they want to be seen in the organization ... In Brazil and China, they are prioritizing on a high level to implement things and not the same in the US.”* (Appendix I, Obdrup, 11:11).

According to Hofstede Insights (Hofstede Insights, n.d.), American culture is characterized as individualistic and more concentrated on personal achievement and self-interest. They prioritize autonomy, control, self-reliance, and value independence over interdependence. Consequently, Americans prefer to work alone since they perceive cooperation with others as a sign of weakness or a lack of individual initiative. Americans' self-interest can potentially affect team members', especially project managers', well-being since they are either equal to or in a higher position than them. Americans' lack of consideration for other members can affect the entire team's motivation and willingness to fulfill and accomplish projects, resulting in emotions such as frustration, irritation, and even resignation. Furthermore, project managers may feel undervalued due to the lack of consideration of their hierarchical position, leading to emotional exhaustion.

In Chinese culture, showing respect for age and hierarchical position is an integrated part of social norms. Hofstede (1980) notes a desire for a relatively large power distance with subordinates in China compared to other cultures, with managers expecting clear distinctions between themselves and subordinates. They are taught to be loyal, trustworthy, and respectful to those who lead and to complete their assignments without hesitating. Furthermore, older findings also demonstrate a higher power distance between top management and subordinates in Chinese enterprises than the average in Europe (Laaksonen, 1984a & 1984b; Duan & Huang, 1986). Obdrup may therefore experience his Chinese members' being faster and more efficient than other sites because of their respect for authority:

*“... when it comes to implementation, they [Chinese members] are the fastest. They are the first ones to implement things because they want to be the front runners... And that is maybe also a management thing because their manager says if we have some corporate things then we need to implement it... They are also running their equipment very well, a few deviations compared to other countries and high performance on their packaging lines compared to the other sites.” (Appendix I, Obdrup, 09:33).*

According to McClelland (1987), individuals are motivated differently toward achievement. Such achievements encompass the development of more efficient methods for completing tasks and addressing problems, the preference for tasks that allow successful outcomes, and the taking of personal responsibility for performance. However, these principles may not apply to Chinese achievers, even though some studies suggest that achievement is relatively essential in China (Stewart & Him, 1990; Specter & Solomon, 1990), but that could be more related to fulfilling the responsibilities and duties of a given role than reflecting intrinsic satisfaction (Jackson & Bak, 1998). It is therefore predicted that this form of fear can lead to stress and demotivation in the future due to the constant need to meet the needs of higher management to retain the job. The focus on external rewards can result in burnout and disengagement, which can be exhausting and unsustainable in the future. Furthermore, neglecting intrinsic satisfaction can affect development, learning, and self-improvement opportunities. There is limited self-awareness of one's strengths, weaknesses, and areas for improvement, which can hinder growth and reduce creativity and innovation since the focus is only on fulfilling responsibilities, leading to dissatisfaction in professional and personal life.

The Brazilian work culture is characterized by paternalism, which is defined as a dyadic relationship between management and their subordinates in which managers provide guidance and protection in exchange for loyalty and respect on the part of subordinates, personal relationships, power concentration, flexibility, and loyalty to one's in-group and leader (Kjellin & Nilstun, 1993). Organizational ethics are influenced by a preference for social cohesion, which is demonstrated through loyalty to the team leader. In contrast, the leader is responsible for each team member's well-being. This indicates that social cohesion is an essential value for the Brazilian members, and therefore, they appreciate collaboration, teamwork, and group cohesion by promoting and maintaining the values of showing loyalty to the team leader (Ardichvili, Jondle, Kowske, Cornachione, Li & Thakadipuram, 2012). However, it is argued that there must be some fear when loyalty is expected to a certain degree because of limited

autonomy. Teams with high social cohesion tend to prioritize collective interests over individual autonomy, which can result in limited creativity and innovation and thereby demotivate them to self-improve. Furthermore, collective interest suppresses an individual's critical thinking and diverse perspectives in favor of conformity and consensus, which can affect the ability to challenge existing norms and practices and be open to adopting new ideas. Moreover, it can cause the individual to not feel comfortable and appreciated in the team, leading to isolation and depression.

Obdrup may experience a better work ethic at some sites than others due to the cultural definition of achievement. The Chinese and Brazilian cultures are influenced by the will to achieve great results because of their fear and respect for their managers at their representative sites. However, this can create positive and negative outcomes; on the positive side, it can lead to higher performance for individual team members if they feel loyalty and respect for the group and the leader. Nonetheless, such loyalty is associated with a fear of making mistakes, potentially reducing creativity and innovation. On the other hand, Obdrup may experience that his American members have their own agenda due to their culture of independence and the tendency to believe they are superior to others. However, this can affect the team's collaboration and performance.

## **8.2. Job Demands-Resources Model**

In the following section, the JD-R model will be implemented to examine how virtual communication affects the psychological well-being of employees and cooperation in global teams by assessing the job demands and resources. As mentioned in Chapter 4.2. *Job Demands-Resources Model*, job demands are referred to as: “*those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs.*” (Schaufeli & Taris, 2013). In contrast, job resources, also known as job positives, are referred as: “*those physical, social, or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development.*” (Schaufeli & Taris, 2013).

### 8.2.1. Job Demands-Resources Model: A Concise Summary

The table below consists of a summary of the findings attained through the implementation of the JD-R model. Each subject has been considered a job demand; however, the job resources are mentioned in the context of the demands because they stabilize and harmonize the existing adverse conditions. Consequently, the authors implement the model to examine how the organization supports their employees' psychological well-being with resources when the demands of collaborative engagement within a virtual context, alongside a diverse team of members, are required and anticipated. Furthermore, the insights will assist the authors in providing suggestions on overcoming possible challenges that can lead to enhanced well-being when collaborating in the aforementioned context, which will be presented in Chapter 9. *Discussion.*

Concise Summary of Job Demands-Resources Model			
Aspects of job		Job Demands	Job Resources
Physical aspects	Office setting	Employees working virtually spend most of the day exposed to a computer screen and seated for prolonged periods, especially since meetings are booked back-to-back, which does not allow for stretching legs or cognitive pauses. This leads to feelings such as isolation and emotional distress due to the lack of physical interaction, harming employees' physical and psychological well-being.	The possibility of using meeting rooms or offices on-site, where adjustable and ergonomic furniture are provided. There is also an emphasis on icebreakers during work hours to promote health, build relationships with colleagues and step away from digital devices. The organization takes several health measurements to ensure employee well-being.
	Conflict resolution	Working in a virtual setting can create an environment where employees do not trust each other, which can affect the team's relationship-building. Team members who are geographically separated face greater difficulties in connecting and coordinating, leading to increased social distance, affecting the outcome of tasks, and hindering successful collaboration, which are associated with stress-related consequences entailing psychological strain, depression, emotional exhaustion, and counterproductive as well as harmful behaviors at work. Additional issues are disrupted communication and relational conflicts. These can lead to a sense of demotivation and exclusion, posing a risk to the psychological well-being, which gives rise to a negative and unproductive work environment.	The department's manager is available to help solve conflict situations. Handling of conflicts is done by having one-to-one meetings to get an understanding of what has occurred. Effective conflict resolution fosters healthy relationships, enhances collaboration, and promotes positive and productive work environment.
Social aspects	Availability	There is a presumption that employees working virtually are constantly available at all hours due to technology, which creates a constant pressure and need to respond immediately to any messages or emails in order to maintain the appearance of constant availability during work hours. This leads to challenges in unplugging and maintaining work-life balance, which is essential for overall well-being. In addition, employees are often disturbed by others, which can enhance a frustration of not being able to focus, creating a negative disturbance in the team dynamic, and worsening the synergy among team members.	Being able to unplug provides an opportunity to disconnect from the constant demands of work and maintain a work-life balance, which reduces stress and prevent burnout. Therefore, regular breaks from digital devices and work-related activities are necessary for employees to recharge, focus on their personal lives by being fully present in the moment, and engage in meaningful activities that foster positive emotions.
	Cooperation in global teams	The dynamics of cooperation can be complex when collaborating with diverse team members due to multifaceted barriers, such as language and linguistic diversity, which requires experience and knowledge to fully understand the complexity of working in a multifaceted environment. A limited level of experience leads to emotional exhaustion, demotivation, and sense of inadequacy in job performance. Insufficient knowledge can result in offending other team members, cause them to not feel included or even respected. This results in demotivation and less commitment towards the team. Over time, it can also impact the team's dynamic and synergy, which reduces engagement, lack of trust and cohesion, increased conflicts or tension, and decreased productivity.	Cultural diversity can help organizations increase innovation, inherent ways of thinking and improve financial performance, which benefits team performance. Each member's uniqueness can result in a more creative and innovative team with better decision-makers and problem-solvers, leading to better performance. The organization offers employees the opportunity to enroll in courses that educate on cultural diversity. Furthermore, feedback promotes learning and increases job competency, including accommodating multiple cultures, while receiving recognition for one's job. This ensures inclusion and foster a sense of belonging among team members, which strengthens retention, enhances team cooperation and the efficiency of task resolution.
Organizational aspects	Virtual communication	Utilizing virtual communication is required to achieve effective and efficient organizational performance. The number of platforms and channels have increased significantly over the years, leading to confusion and a sense of being. Monitoring and managing information that is spread across various channels and team chats is necessary to be competently informed, which is difficult balancing and consolidating, while potentially harming employees' well-being. Furthermore, the absence of physical interaction can be challenging, as well as the lack of nonverbal cues.	Working across multiple virtual platforms and having diversified communication platforms, enables teams to leverage each of their unique features and functionalities to foster collaboration. It also enables teams to choose the most suitable channel for their needs, ensuring more efficient and effective communication and task-solving across global teams as well as providing the flexibility to access and share information in real-time. Team members can connect and collaborate regardless of their physical location, enabling remote work and global collaboration, as well as accommodating different time zones. This contributes to autonomy, resulting in higher job satisfaction and lower job strain, leading to higher job performance. This combination of autonomy and flexibility promotes employee engagement and motivation.
	Technology	Using technology to work remotely and have virtual meetings with global team members, can be negatively impacted by poor internet connection, technical issues, or sudden disappearances of participants, which can determine the flow of the meeting and the quality of the communication. With the limited opportunities to showcase physical objects, it can hinder effective knowledge transfer and collaboration, which causes frustration. These technical issues can lead to delays or failures in communication, resulting in missed deadlines or misunderstandings.	The option to work on-site and provides meeting rooms or assigned offices with better internet quality, to enhance collaboration.

## 8.2.2. Physical aspects

### Office setting

The duration of computer screen exposure is considered a job demand in the virtual setting. According to Clees, this can harm the employees' physical and psychological well-being: “... you are just looking at the screen and talking to people through a camera and webcam and receiving feedback via headphones or a computer speaker.” (Appendix G, Clees, 01:30). It is argued that employees working in a virtual setting tend to spend most of the day seated for prolonged periods. Furthermore, Hansen mentions that back-to-back meetings when working from home do not allow for stretching legs or cognitive pauses (Appendix H, Hansen, 24:36). It is therefore evaluated that the described setting can cause feelings such as isolation and emotional distress due to the lack of physical interaction and positive emotions that is significant for the individual's ability to seek close bond, which is further elaborated in Chapter 8.1.2. Positive Emotions. As mentioned, not only do positive emotions make humans feel good, but they also motivate many human actions and, thereby, enhance performance at work (Kun et al., 2016).

However, a job resource that Novo Nordisk A/S provides is the possibility of using meeting rooms or one's office. It is understood that the organization has invested in the physical well-being of its employees by providing adjustable desks, allowing them to decide when to work while standing or sitting (D. Gong, personal communication, May 9, 2023). It has also been scientifically proven that sitting for a longer period of time can negatively impact blood circulation by slowing down the blood flow to one's leg, which is harmful to the circulation in one's back and can lead to blood clots over time (Bemer Group, 2020). In combination with the adjustable desks, the organization also provides their employees with ergonomic seating solutions (D. Gong, personal communication, May 9, 2023). Furthermore, the organization allows time for icebreakers during work hours, both physically and virtually. Employees can do 10 minutes of exercise to promote healthy blood circulation, build relationships with colleagues, and step away from digital devices. According to the literature, icebreakers can foster creative and diverse thinking, which increases overall well-being (Hertel-Storm & Lund, 2016). Lastly, to accommodate the employee's physical well-being, the organization provides

lunch service for a fee and free coffee (D. Gong, personal communication, May 9, 2023). From this, the organization takes several health measurements to ensure their employees' well-being, understanding that they are their most valuable assets.

### **8.2.3. Social aspects**

#### **Conflict resolution**

Conflict resolution in the social aspect of an organization is a critical factor that aims to address and resolve issues that arise among individuals or teams in the workplace. Effective conflict resolution fosters healthy relationships, enhances collaboration, and promotes a positive and productive work environment. As mentioned in Chapter 8.1.3. *Engagement*, a common challenge of working in a virtual setting is that there has to be a certain level of engagement and full participation to understand how individuals work together. Through discussions and engagements, familiarity with everyone's individuality can be created, which can strengthen the relationship and ultimately build trust (Appendix F, Gong, 11:25).

Virtual settings can create an environment where members do not trust each other, which affects the team's relationship-building. Team members who are geographically separated face greater difficulties in connecting and coordinating, leading to increased social distance and hindering successful collaboration. As earlier mentioned, Tennant has had prior experience with disconnecting with a team member who felt excluded to the point where the manager had to get involved. The degree of distance can therefore affect the team as a whole, which can affect their cooperation and the outcome of tasks. In contrast, team members who cooperate with no or only a little distance are more likely to build a connection, and therefore trust can be immediately established. Nevertheless, Tennant is not alone in finding the geographical dispersion a challenge, as Gong also mentions the following:

*“I think sometimes there is a tendency that because of the distance away, we tend to maybe not on purposely, but forget them. And there have been a couple of times where, you know, there were some people out on a local national holiday that were not involved in the meeting. And they felt a bit, you know, not part of the discussion. They felt that they were not included and it got to a point where they escalated it to their manager.”* (Appendix F, Gong, 15:45).

In such situations as described in the above citation, team members may feel demotivated and excluded from discussions, which might be unintentional and not politically motivated. However, individuals working remotely, especially those in different time zones, may feel further isolated due to the difficulty of communication and updates. It is easier to update someone by walking over to them and providing information, whether the updates are work-related or personal, which can make remote colleagues feel a sense of exclusion. This may pose a risk to the psychological well-being of team members who are physically distant from their colleagues (Appendix F, Gong, 15:45). Ultimately, it leads to a negative and unproductive work environment, which has further complications for the psychological well-being of those individuals as the team members have yet to connect and build trust. Tennant explains a situation he has encountered as follows:

*“It turns into the teams maybe not trusting each other or talking sort of poorly about one another because there is this competition to see who can sort of produce the most. But they don't see each other, you know, and I feel like when they do see each other face-to-face, they are like, ohh that guy is not so bad, or you know that she is nice and, you know, we are all just kind of here doing the job.”* (Appendix E, Tennant, 17:10).

It is evident from the statement above that some conflicts can easily be resolved through face-to-face interactions. The ongoing competition between different sites around the globe has been fueled by working in virtual teams, which has resulted in an “us versus them” environment amplified by diversity. Team members tend to like the ingroup more than the outgroup and are, therefore, more willing to communicate and collaborate with those similar to themselves. Additionally, diverse teams may experience issues such as disrupted communication, lowered cooperation, and relational conflicts compared to homogeneous teams (van Knippenberg & van Ginkel, 2010). In Tennant’s opinion, meeting in person can help reduce those barriers and enhance the trust and positive emotions team members create toward each other, which can further enhance conflict management.



## 6. To what extent do you trust your team members to complete their work tasks?

[Flere detaljer](#)

<span style="color: blue;">●</span> No trust at all	0
<span style="color: orange;">●</span> Low level of trust	0
<span style="color: green;">●</span> Moderate level of trust	5
<span style="color: red;">●</span> High level of trust	16
<span style="color: purple;">●</span> Complete trust	2



Figure 7 - Survey 1.0 Results (Appendix 7, Question 6).

Based on Survey 1.0, it was found that 70 percent of the individuals working in global teams at Novo Nordisk A/S expressed a significant level of trust in their team members when it came to completing work tasks. However, the conducted interviews reveal a contrasting observation, suggesting that certain sites do not demonstrate mutual respect towards the trust given by the team. Obdrup has personally encountered this conflict several times in the past month with his team members located in Tehran, Iran. This conflict is because the site in Tehran only produces for the Iranian market, so they tend to follow the instructions made by the Iranian authorities. However, this is not aligned with the decisions made by Novo Nordisk A/S' headquarters, as all compliance standards should fulfill the requirements suggested by the European Union (Appendix I, Obdrup, 15:21). According to Obdrup, this is an ongoing issue that consistently repeats itself without any noticeable changes in the outcome. However, Obdrup explains that he has made an effort to engage in one-on-one meetings with the process responsible at the Iranian site in order to gain a deeper understanding of the issue. However, it can be assumed that there are limitations to what Obdrup can achieve with his current capabilities (Appendix I, Obdrup, 16:21).

As understood, in a conflict situation, the only option to solve issues is to address them to the department's manager, which is therefore considered a resource. However, it is argued that the effectiveness of this solution may not be enough. It is unclear whether or not the organization provides education in conflict management or cross-cultural communication, which are considered crucial elements in handling issues. Nevertheless, there is an indication that Obdrup tried to handle conflicts on his own before reporting them to his manager. He describes the

process of handling the conflict by having one-on-one meetings with the team member to understand the miscommunication that has occurred. In addition, Clees uses the same approach as Obdrup, and he further elaborates that it can affect the team's cooperation if one site does not fulfill the obligation by the agreed deadline.

*“First the personal talk with them, why? And also why is it important that I get it by that date? What are the consequences if we don't? Because they can be quite severe impact depending on what it is. And if I see coherently problems with that I would probably consult my manager and say hey, this is the situation that I'm experiencing. Should I go talk to their manager? What do you suggest? Or is it maybe through you that we do something here?”* (Appendix G, Clees, 26:27).

Clees' statement indicates no clear guidelines to manage conflicts, which further emphasizes the importance of crisis management. Without proper consequences and guidelines, there may be a lack of clear direction and coordination, leading to some sites' lack of consideration for higher authority. It can therefore be presumed to have a negative impact on the team's motivation to effectively cooperate, as there appears to be a level of organizational injustice. In addition, the team can be affected by unfairness when other members do not comply with the requirements. Organizational injustice can be associated with stress-related consequences entailing psychological strain, depression, emotional exhaustion, and counterproductive as well as harmful behaviors at work (Banking Standards Board, n.d.). Without clear guidelines and consequences assigned by higher management, it can cause a workplace where global team members experience psychological and physiological strains due to the unfair treatment presented by management. These strains consist of extra workload and effort from the project managers, who must do insufficient work.

### **Availability**

Hybrid work settings create the presumption that employees are constantly available at all hours due to technology. According to Hansen, this constant pressure stems from the expectation of maintaining availability to address work-related matters, regardless of when. Therefore, employees working virtually may find it difficult to unplug and maintain a work-life balance, but it is considered essential for promoting overall well-being. Regular breaks

from digital devices and work-related activities are necessary for individuals to recharge, focus on their personal lives, and engage in activities that foster positive emotions. Unplugging provides an opportunity to disconnect from the constant demands of work, which can reduce stress and prevent burnout (Amato, 2006). However, it is demonstrated to be more difficult when working virtually, which Hansen experiences:

*“This thing about working after hours or after I put my kids to bed, I have three children, does not work for me because if I need to work from 8:00 p.m. to 10:00 p.m... It is very difficult for me to unplug. So it is not that I don't do it, I do it, I would rather not... And kids, they don't work in schedules. So maybe they fall asleep at 7:30 p.m., maybe they fall asleep at 9:00 p.m. And then is it fair that I work from 9:00 p.m. to 11:00 p.m.? Sorry that is my own rules. But I do it, you know... But I rather don't open my computer from 8:00 p.m. o'clock or... Because my children are very small.”* (Appendix H, Hansen, 26:19).

Individuals allow themselves to be fully present at the moment and engage in meaningful connections when unplugging. According to Hansen, it has been difficult to unplug from work, and she has therefore prioritized not receiving emails or instant messages on her work phone by turning off notifications to minimize the pressure of responding to her team members (Appendix H, Hansen, 26:19).

Another challenging perspective when working from home is the pressure to maintain the appearance of constant availability during work hours. Others may doubt one's level of productivity when working remotely, as there is a need to respond immediately to any instant messages or emails. He further mentions that it can be distracting when solving work-related tasks, and remote work can sometimes have a counterproductive effect when working in calm surroundings to complete tasks.

*“... you need to sort of seem like you are always available ... because there is this thing like, ‘What are they doing when they are working at home?... Are they actually at their computer?... Are they actually working?’”* (Appendix E, Tennant, 03:44).

In contrast, Hansen prefers to seek assistance when she is curious about handling certain challenges when working virtually because she assumes the recipient will not be stressed by it. However, working on-site develops a feeling of hesitation, as it might be a burden to pressure

colleagues to divert their attention away from their work. Furthermore, it creates a fear within her that the tendency to seek help might be perceived as a weakness. In Hansen's opinion, the privilege of having physical close proximity also has a disadvantage in terms of shying away from seeking assistance when needed (Appendix H, Hansen, 31:17). Tennant's and Hansen's experiences and preferences are different from each other which indicates a need to display the availability of one's current work status. Otherwise, this can lead to irritation or even frustration towards colleagues who may not know the work ethic of others, while others may experience positive emotion and a sense of meaning in helping others even though it disturbs their focus. This frustration toward colleagues may also create a negative disturbance in the team dynamic, worsening the synergy among team members. However, it is noticed that there are no resources to enhance this particular demand, but possible solutions will be discussed in Chapter 9.

*Discussion.*

## **8.2.4. Organizational aspects**

### **Cooperation in global teams**

In order to effectively implement changes to production lines at the specified sites, the team must cooperate whenever regulatory affairs initiate modifications to the production process. However, the dynamics of cooperation can be increasingly complex when collaborating with diverse team members due to multifaceted barriers such as language and linguistic diversity, work ethics, social norms, values, and more. As mentioned, individuals of any culture are formed by elements such as life experiences, socialization, education, and more (Hofstede, 1980; Morden, 1995), and this uniqueness is defined by the individual strengths and weaknesses each possesses. Therefore, fully comprehending and using each team member's competencies to cooperate efficiently requires experience and knowledge, which Obdrup also explains:

*“You just have to pay special attention I think and I also think it is a little hard for new people. Now I am very experienced in the area, but if I was replaced tomorrow with a person who is not that known about these cultural differences, then it could be very hard to work with them. So, I think it is good to have some years of experience working with these different cultures.”* (Appendix I, Obdrup, 12:56).

It is therefore considered a demand to cooperate with diverse team members, but it requires experience and knowledge to fully understand the complexity of working in a multifaceted environment. Otherwise, a limited level of experience can potentially lead to emotional exhaustion, demotivation, and a sense of inadequacy in job performance.

However, each member's uniqueness can result in a more creative and innovative team with better decision-makers and problem-solvers, leading to better performance. Therefore, cultural diversity is considered a resource for team cooperation, which Tennant also agrees with:

*“... a diverse team is always gonna be better than, like, a homogeneous team because everyone has a different point of view. Everyone is coming from a different place, you know, everyone has different... And then the different cultural backgrounds when shared across a team can spark ideas, maybe from a different group who never even considered it from that point of view. So to me, the more diverse the team, the better outcome you are gonna have always.”* (Appendix E, Tennant, 21:57).

This is also supported by McKinsey & Company (2020), where research demonstrates that diversity can help organizations increase innovation, reconsider inherent ways of thinking, and improve financial performance. According to van Knippenberg & van Ginkel (2010), employees are unaware of the benefits of sharing knowledge and therefore do not purposely pursue it. Consequently, diversity can only benefit team performance if insights and knowledge are deliberately shared by exchanging, discussing, and integrating task-relevant perspectives. However, as mentioned in Chapter 8.1.5. *Meaning*, 20 respondents selected ‘Language’ as a cultural barrier, which may indicate insufficient knowledge of cultural diversity. Regardless, Obdrup mentions that Novo Nordisk A/S offers courses in this subject, but it depends on the department's own initiative to register (J. Obdrup, personal communication, 9<sup>th</sup> of May). It is therefore argued that insufficient knowledge can potentially result in unintentionally offending others, which can cause them not to feel included or even respected. As a consequence, this can result in demotivation and less commitment to the team. Furthermore, over time, it can impact the team's dynamic and synergy if one or more members feel neglected, which can reduce engagement, lack of trust and cohesion, increase conflicts or tension, and decreased productivity. In a virtual setting, it is argued that insulted team members will turn off their cameras, exhibit a lack of participation, and not prioritize the meetings. Therefore, it is assessed that the opportunity to enroll in courses that educate on cultural diversity is seen as a job

resource; however, it may be a necessity to enforce it rather than offer it as an option. This subject will be further discussed in Chapter 9. *Discussion*.

Lastly, feedback is considered significant when it comes to job resources, as it provides project managers with information that can improve their competencies in terms of accommodating multiple cultures. In addition, this can ensure inclusion and foster a sense of belonging among team members, which can strengthen retention and potentially enhance team cooperation and the efficiency of task resolution. Furthermore, by identifying areas for improvement through feedback, project managers can promote learning, thereby increasing job competency and receiving recognition for their job (Schaufeli & Taris, 2013). Thus, feedback is important, whether employees are giving or receiving it. In the interview with Hansen, she emphasizes the importance of receiving feedback from her team members:

*“I always invite in the e-mail... It is only good if they review and ask questions. If my audience does not review, then it works only for me and then I will not do a good job for the group. So I tried to create this environment, please review and provide questions, corrections.”* (Appendix H, Hansen, 15:48).

In this statement, Hansen understands that feedback is crucial for understanding her strengths and weaknesses. Therefore, she values her team members' thoughts, insights, and concerns, which can contribute to her self-improvement.

### **Virtual communication**

As mentioned in the literature, virtual communication is considered a fundamental process for driving a business in the present era (Gonçalves et al., 2014). Utilizing this form of communication is therefore considered a job requirement to achieve effective and efficient organizational performance (Kozlowski & Ilgen, 2006). However, with the increasing emergence of new technological platforms across organizations, it is crucial to understand how they enable and constrain communicative activities (Leonardi, Huysman & Steinfield, 2013). Hansen expresses that managing information across communication channels is a constraint, as it has become a challenge in the contemporary digital era (Appendix H, Hansen, 27:57). The number of platforms and channels available for communication has expanded significantly over the years. For instance, Hansen also elaborates that email was the only communication

method in the past, followed by the introduction of Skype messages. However, there are multiple channels in the present era, including email, Teams, Skype, Google Meet, Yammer, and more. Consequently, the abundance of platforms and channels can lead to confusion and a sense of being overburdened for some employees. Thus, monitoring and managing information that is spread across various channels and team chats is necessary to be competently informed (Appendix H, Hansen, 28:56). Furthermore, Hansen has even received messages through unconventional channels like WhatsApp, which further adds to the complexity of managing each team members' communication preferences (Appendix H, Hansen, 29:07). As a result, this particular job demand can harm employees' well-being since balancing and consolidating information across different platforms, and channels remains a considerable challenge, all while ensuring effective communication.

When communicating through instant messages on channels such as Teams, the absence of physical interaction can be challenging, as there is no tone of voice or body language to interpret. The lack of nonverbal cues can make it challenging to understand the meaning behind a response, such as when someone replies with a simple "okay." Without context, this may come across as harsh or upsetting. Therefore, to address this, emojis or emoticons can substitute for nonverbal cues and convey the intended tone of the message (Walther & D'Addario, 2001). According to Tennant, emojis can help fill the gap left by the absence of in-person communication (Appendix E, Tennant, 08:02). Furthermore, employees often feel more liberated to say or do things they would not say in person when communicating virtually. This can escalate conversations, causing disagreements that face-to-face communication could have avoided. In Tennant's experience, some colleagues tend to be stubborn during online conversations, resulting in conflicts that could have been resolved quickly in a face-to-face meeting. Therefore, when working with certain individuals, meeting with them in person is more effective to reach an agreement rather than relying on email or instant messaging (Appendix E, Tennant, 10:28).

Even though there are challenges with working across multiple virtual platforms, it can also be regarded as an organizational resource. The opportunity to utilize various platforms enables teams to leverage their unique features and functionalities to foster collaboration. For instance, a particular platform may be suitable for text-based messaging, video conferencing, and audio calls, while another platform may be more appropriate for document sharing and editing. Consequently, having diversified communication platforms can also be considered a resource

the organization provides. Thus, it enables teams to choose the most suitable channel for their needs, enabling more efficient and effective communication and task-solving across global teams.

Additionally, working across multiple virtual platforms provides the flexibility to access and share information in real-time. Team members can connect and collaborate regardless of their physical location, which enables remote work, global collaboration, and accommodating different time zones. According to Survey 1.0 (Appendix K, Question 1), 87 percent of the responses indicated that face-to-face communication was most effective for solving tasks. However, the majority also mention that it depends on the characteristics of the task, such as the type, amount, and complexity of the workload. Given this, Gong, Hansen, and Obdrup prefer traditional face-to-face interactions for certain tasks if feasible, as this setting enables effective task-solving. Furthermore, some of their responsibilities require physical presence, which is another reason they find this setting more effective (Appendix F, Gong, 04:27; Appendix I, Obdrup, 02:55).

*“I definitely prefer face-to-face meetings because the value is much higher. We just had a face-to-face meeting in March in the packaging process group and it gave so much value to be in the same room than 19 people that are meeting virtual. There is much synergy working in the same room, that you can use your body language, you can see the mood of people and you can see how we interact much better when we are face-to-face.”* (Appendix I, Obdrup, 02:55).

Obdrup finds several benefits to in-person meetings, as it leads to a better dynamic among team members. However, the traditional face-to-face meetings no longer seem straightforward due to the organization’s focus on CO2 emissions. Novo Nordisk A/S, being a multinational corporation, has a mission to achieve 100 percent sustainability across its entire value chain by 2045 (Appendix I, Obdrup, 19:01). Therefore, with the travel restrictions that are now in place due to environmental concerns, a collective responsibility to decrease the carbon footprint has forced the employees to have virtual meetings.

Autonomy is an important job resource for employees that can result in higher job satisfaction and lower job strain, leading to higher job performance. This combination of autonomy and flexibility can promote employee engagement and motivation, which becomes particularly



important when job demands are very hindering (Schaufeli & Taris, 2013; Bakker, Demerouti, Diener, Oishi & Tay, 2018).

## **Technology**

One of the demands of virtual communication is using technology to communicate with fellow team members effectively. Factors such as poor internet connection, technical issues, or sudden disappearances of participants can impact the flow of the meeting and the quality of communication (Appendix D, Hong, 17:16). According to Gong, some of the technical challenges he has experienced are described in the following statement:

*“I think the first challenge I had was first from a technological perspective. How do you get the external mic to work? Is the connection okay in the hotel? No, it is bad connection then they can’t hear you and you have said like for the last five minutes what the issue is, they go like ”sorry Donald, we lost the last two minutes of you” and then you are like... Okay, I will e-mail you it and then you call me on the phone and we talk about it.”* (Appendix G, Gong, 21:48).

Gong further elaborates on experiences with limited opportunities to showcase physical objects, which can be instrumental in explaining issues that require hands-on observation. The absence of these physical objects and the inability to engage in tactile communication can hinder effective knowledge transfer and collaboration, which is another frustrating aspect of virtual tools (Appendix F, Gong, 05:02). According to the literature, these technical issues can cause delays or failures in communication, potentially leading to missed deadlines or misunderstandings (Morrison-Smith & Ruiz, 2020). However, certain generations can better navigate through the use of virtual tools, as they have grown up in a digital era and are familiar with technological functions, whereas, for older generations, it is a relatively recent development. This generation values the traditional approach of physical interactions and engaging in face-to-face conversations. However, virtual communication may be more quickly adapted for those who have grown up with technology. Hence, it may be a generational preference, where the older generations prefer face-to-face communication while younger individuals find virtual communication just as effective (Appendix F, Gong, 23:37).

However, Novo Nordisk A/S allows employees to work on-site and provides meeting rooms or assigned offices for better collaboration. For instance, Hansen prefers working on-site when she has meetings with a larger audience to provide her participants with the option to either attend virtually or physically. Furthermore, working on-site offers significant internet quality, which some employees prefer to utilize to avoid technical issues affecting the meeting flow (Appendix D, Hong, 17:16; Appendix F, Gong, 05:10).

## **9. Discussion**

This chapter will explain the findings from the empirical examination of the PERMA- and JD-R models. Numerous challenges associated with virtual communication in a global team can be identified, which are considered to significantly impact the employee's psychological well-being and the team's. This ultimately influences their ability to communicate and cooperate within teams effectively. Therefore, a framework created by the authors will be presented to the findings, followed by a thought-through discussion and contribution to the literature.

According to the findings, virtual communication can harm the psychological well-being of employees and cooperation in global teams if demands are not required through appropriate actions. According to Survey 2.0 Results (Appendix M), one respondent has poor well-being and demonstrates signs of depression due to virtual communication (WHO-5 Well-Being Index), which therefore requires proactive actions toward a healthier environment for global teams.

### **9.1. Low engagement and cooperation in virtual settings**

One of the findings suggests that the team's engagement decreases during virtual meetings because the cameras and audio are deactivated, and therefore, the interpretation of nonverbal cues, such as body language, facial expressions, gestures, and tone of voice, is not possible. The frequency of camera deactivation among multiple team members may provoke others to follow suit. As a result, project managers are not entirely sure if teams understand the agreements and assignments of projects. Furthermore, project managers are concerned if their

team members multitask by working on other tasks while participating in meetings, reducing productivity. However, project managers such as Hansen will not accuse them for fear of creating conflicts. It is therefore assumed that there are insufficient organizational frameworks to structure virtual communication, thus, global teams can effectively collaborate in a manner that does not affect the psychological well-being of employees. The abovementioned challenges lead to various burdens on project managers and team members, feeling emotions such as exhaustion, decreased engagement, trust, and motivation, which results in decreased work engagement. Lastly, the mentioned emotional states can further impact insufficient cooperation, which demonstrates the mutual influence between the psychological well-being of employees and cooperation in global teams, whereas virtual communication serves as the connecting factor.

Therefore guidelines must be established to address this challenge to increase engagement and cooperation among team members. Guidelines are instructions, principles, or recommendations that direct or suggest approaches to a certain process, task, or situation and serve as a framework that can be followed in order to attain a particular outcome (Cambridge Dictionary, n.d.-a). Guidelines can be interpreted as a demand, but it is necessary to attain effective collaboration in global teams. Consequently, team members are expected to turn cameras on during virtual meetings, which they must respect to ensure mutual understanding and avoid miscommunication. However, it can foster cooperation, trust, and relationship building as well as enhanced performance. Strengthened cooperation in global teams can increase positive emotions such as belongingness, acceptance, empowerment, appreciation, safety, equality, connection, validation, happiness, and more, thereby enhancing the psychological well-being of teams.

As mentioned, teams usually have a history and a future, and therefore repeatedly cooperate with the same members (Reimer et al., 2017), demonstrating the significance of relationship building. In the interest of the project managers' well-being, guidelines can reduce the amount and complexity of workload because of the opportunity to interpret nonverbal cues and reduce miscommunication. Instead, they can focus on other elements of the team dynamic that can further enhance engagement and performance, such as touching base with members frequently and being more open to assisting. It therefore facilitates job satisfaction, as the project managers provide the necessary resources so their team members can perform at their best. Furthermore, project managers develop trust towards their team members, fostering positive

collaboration while utilizing virtual communication. However, it is necessary to mention that guidelines may implement control and restraint, as an employee's personal boundaries can be crossed. In such cases, a decrease in autonomy and flexibility will result in team members experiencing micromanagement, distress, frustration, irritation, and disengagement.

## **9.2. Absence of relationship building in virtual settings**

Based on the findings, building relationships in a virtual environment is considered a significant challenge for global team members. The lack of non-verbal cues amplifies the difficulty of getting to know team members, requiring more time than face-to-face. This can impact the team's cooperation and, consequently, determine the level of synergy among members.

A potential solution to build relationships between team members in a virtual environment is to embrace and prioritize team building. This concept refers to coordinating all team members into a cohesive group to perform activities and share skills, experiences, or expectations for accomplishing tasks while trusting, supporting, and respecting one another (University of California Berkeley, n.d.). Team building intends to build more robust relationships among team members and enhances team dynamics, which can increase engagement while ensuring inclusivity and reinforcing a positive virtual environment. Team-building activities like icebreakers, and regular virtual or one-on-one meetings can encourage and embrace teamwork.

Icebreakers are activities, games, or events that can help build conversations among team members in virtual meetings. These aim to establish a feeling of comfort and ease since discomfort is commonly experienced when team members do not have similarities. Icebreakers can ensure inclusivity, increase engagement and strengthen trust, enhancing the psychological well-being of employees and cooperation in global teams. Furthermore, regular virtual meetings to maintain and build relationships should be prioritized. These regular meetings do not have to be limited to conversations regarding work-related topics only. However, frequent interactions in terms of informal meetings can create a more relaxed and friendly atmosphere, leading to trust and open communication. Lastly, one-on-one meetings enable stronger relationships because team members can be more personal and engage in meaningful

conversations, which can establish deeper connections. Therefore, embracing team building can ensure that the virtual environment remains positive. However, it is recommended that team members meet in person at the beginning of their cooperation, as it can help establish a sense of cohesion and trust and provide the opportunity to build relationships. However, if that is not possible, face-to-face meetings should be prioritized at least once a year, as it can overcome various barriers among team members.

As elaborated in Chapter 9.1. *Low engagement and cooperation in virtual settings*, an opportunity is to incorporate team building as one of the guidelines since it can bring many positive aspects of cooperation, such as trust building, enhanced engagement, and better performance. Positive implications appear in the form of inclusivity, engagement, and satisfaction. In contrast, the negative implications toward this guideline depends on the characteristic of the individual's personality, as introverts for instance would rather see this as an overwhelming and emotionally draining requirement, which would have the opposite effect than intended. counterproductive effect

### **9.3. Absence of cultural knowledge in global teams**

Based on the findings, a significant aspect concerning the collaboration of diverse global teams has been identified. This aspect comprehends the limited awareness of the beneficial aspect of utilizing diverse team members' competencies to facilitate efficient cooperation. Why is this matter significant in the context of global team management? Diversity within organizations can contribute to enhanced innovation and creativity where modern cognitive patterns challenge inherent ways of thinking, and therefore the overall performance increases. Subsequently, acquiring awareness of various barriers that can arise when engaging in virtual collaborations with a heterogeneous team can enhance one's ability to communicate effectively with team members and attain the desired outcome.

Nonetheless, it is essential to recognize that a diverse team also presents certain complications. One such challenge arises from communication barriers such as differences in language, cultural norms, or communication styles, which all can induce poor collaboration. Further complications of insufficient knowledge regarding this matter can additionally result in unintentional offense, which can cause feelings of miscommunication, exclusion, and lack of consideration. These adverse experiences can result in demotivation and less commitment to

the team, potentially creating a scenario where a decrease in psychological well-being may adversely impact cooperation within global teams.

Due to limited awareness regarding the advantageous nature of cross-cultural knowledge sharing, many employees do not actively pursue it. Consequently, diversity can only benefit team performance if insights and knowledge are deliberately shared by exchanging, discussing, and integrating task-relevant perspectives. Obdrup additionally mentions that Novo Nordisk A/S offers courses to enhance their knowledge in this subject, however, it depends on the department's own initiative to register (J. Obdrup, personal communication, 9<sup>th</sup> of May). Nevertheless, allowing employees to choose whether or not to participate in the course is evaluated inadequate in relation to the significance of the knowledge acquired as well as its positive impact on overall organizational performance. A potential suggestion to this challenge with global teams could be the provision of cultural and language courses. Additionally, Novo Nordisk A/S could also facilitate an annual meeting for all virtual meeting coordinators, to give them a course on how to create the most productive and healthy virtual environment for global team members, focusing on the well-being aspect.

An advantage of doing so is, co-workers from diverse cultures working in global teams can gain more knowledge, understanding, and get educated on different cultures, languages, and communication styles. This increased awareness can contribute to a more inclusive work environment, fostering better cross-cultural interaction with manners, decreasing virtual communication strains. By offering these courses, the organization has the ability to introduce numerous benefits to the organization by fostering an environment that values and embraces diversity. While this suggestion of providing mandatory cultural and language courses has many benefits, it also has some limitations. A significant limitation with offering cultural and language courses is that it becomes a requirement creating stress and pressure. Learning a new language or adapting to a different culture can therefore be challenging and demanding. This can also develop feelings of inadequacy or frustration for the employees who struggle with language learning or have difficulty grasping cultural concepts. Lastly, it can increase anxiety and social pressure, as participating in cultural and language courses may trigger social anxiety as interactions.

## 8.4 Revised conceptual framework

To fully grasp how employees' psychological well-being is affected by virtual communication, a model was proposed, which represented the relationship that was expected to occur between the characteristics that was desired to be studied, illustrated in chapter 5. *Conceptualization*. The proposed model was constructed based on models as well as on empirical data derived from the existing literature review on this topic. After creating the conceptual framework for this research, data was collected and analyzed.

However, through these findings, it was ultimately determined that a contemporary conceptual framework had to be developed due to the unique context and perspective that could not be analyzed by the previously conceptualized model. The revised model will provide new insight that further explains the most significant factors that have an impact on the psychological well-being of employees' who utilize virtual tools in their occupation.

To illustrate the above mentioned, a revised version of the conceptual framework called "factors of well-being in virtual communication that influence effective global team management cooperation" can be developed. By developing a revised version of the model, this research paper can have a more general approach to the psychological well-being of members in global teams.

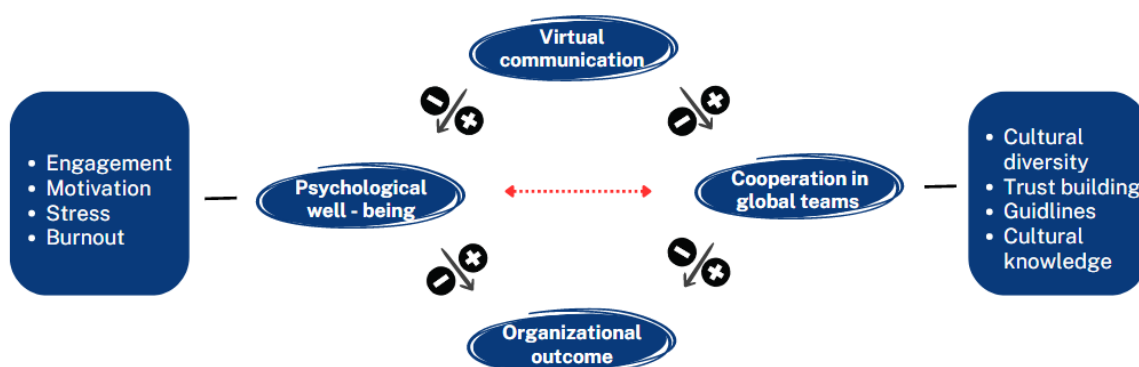


Figure 8: The revised conceptual framework (Own creation).

The primary dimension of this model encompasses the impact of virtual communication on employees' psychological well-being. Drawing upon the JD-R model, the research uncovered

that the demand associated with utilizing virtual tools can create both positive and negative effects on well-being, potentially leading to increased motivation or strain within the work environment. The framework has incorporated the most influential factors extracted from the findings, which have significant implications for employee well-being.

The subsequent aspect of the model explores the influence of virtual communication on cooperation within global teams. This dimension acknowledges that virtual communication can have both negative and positive consequences for collaborative efforts in global teams. The connection between virtual communication and team collaboration, as highlighted both in the extant literature and findings. The factors to this point were subtracted from the discussion, as these are argued to be the most significant factors affecting communication in global teams.

A significant finding emerged from the research, revealing a significant connection between the psychological well-being of employees and their level of cooperation within global teams. This connection, which was not initially anticipated, sheds light on the interplay between individual well-being and collaborative dynamics in a global team setting. The conducted research emphasizes that employees who experience a higher level of psychological well-being were more likely to engage actively and effectively in team collaboration. These individuals demonstrated greater willingness to share ideas, contribute to discussions, and support their teammates. Conversely, employees experiencing lower levels of psychological well-being displayed reduced engagement and participation in team activities, often exhibiting hesitancy, withdrawal, or resistance to collaborative efforts. The implications of this connection suggests that the psychological well-being of employees has a direct influence on their ability to effectively cooperate within global teams. When individuals experience positive well-being, characterized by a sense of fulfillment, positive emotions, and a favorable mental state, they are more inclined to engage in open communication, trust-building, and collaborative problem-solving. This, in turn, contributes to higher levels of overall team performance and organizational outcome. On the other hand, employees facing challenges in their psychological well-being, such as stress, burnout, or dissatisfaction, may struggle to effectively engage in collaborative endeavors. Their diminished well-being can impede their ability to communicate effectively, manage conflicts, or contribute constructively to team objectives. This, in turn, can hinder the team's progress, reduce synergy, and undermine overall team effectiveness. This point is extremely important for the further development of this research paper.



## 10. Conclusion

In the following chapter, the research question will be addressed and concluded with the findings that have been identified in order to contribute to theory and practice.

There has been identified gap in the literature review within this research. The identified gap indicated that research and literature on virtual communication and its impact on the psychological well-being of employees and cooperation in global teams should be more researched. As there is a growing trend among multinational corporations to prioritize virtual communication as a means of reducing travel, minimizing CO2 emissions, and saving time, it was also believed that the complete absence of physical meetings perhaps would result in some problems that were yet to be understood. Therefore, the research question for this study was formulated as follows:

*How does virtual communication affect the psychological well-being of employees and cooperation in global teams, and what are the organizational outcomes?*

From the analysis, it can be concluded that virtual communication affects employees' psychological well-being. Benefits such as increased autonomy and flexibility enable employees to work from their preferred locations, which enhances the work-life balance and reduces commuting stress. In addition, it empowers employees to become more independent and in control of their work and personal life, which can enhance feelings of competence and job satisfaction. However, this can also blur the boundaries between work and personal life, and employees may feel constantly plugged in and available for others, which can result in stress and burnout and negatively impact their well-being. Lastly, virtual communication does not have the same level of face-to-face interaction, which is crucial for psychological well-being since it can lead to emotions such as loneliness and depression. However, in the aspect of working in global teams, virtual communication has further impacts on the psychological well-being of employees due to communication challenges and cross-cultural dynamics. Virtual communication can lead to miscommunication, misinterpretation, and technical difficulties, resulting in team members' confusion, frustration, and stress. Moreover, in cross-cultural dynamics, virtual tools enable employees to cooperate with geographically dispersed individuals, which can foster learning but also lead to misunderstandings or conflicts due to cultural differences that can be emotionally exhausting and draining.

Virtual communication and the emotional states of employees can also affect cooperation in global teams. Technological tools enable real-time communication and cooperation across geographical locations and different time zones, and team members can easily share information, exchange ideas,

and cooperate on projects more effectively, which enhances cooperation. However, findings demonstrated that nonverbal cues such as body language and facial expressions are crucial in understanding others, but virtual communication enables participants to deactivate the camera, which eliminates nonverbal cues. Teams must be mindful of this and understand that it can prevent them from communicating effectively to ensure clarity. Lastly, building trust and relationships is significant for effective cooperation within global teams, but this can be challenging in virtual environments since informal interactions and relationship-building are not possible.

Firstly, based on the findings, there is a low level of engagement and cooperation in virtual settings. This suggests a need to establish guidelines for team expectations, such as turning cameras on during virtual meetings, which must be respected to ensure mutual understanding and avoid miscommunication. Secondly, there is an absence of relationship-building in virtual settings, which is a significant challenge for global teams. This suggests a need to embrace and prioritize team building, including building relationships and enhancing trust and team dynamics. Thirdly, there is an absence of cultural knowledge in global teams, which is a significant aspect of collaboration. This suggests providing cultural and language courses, mandatory for those working in global teams due to the diversity of members. These findings and associated proposed solutions are the most important found in this research concerning how virtual communication affects the psychological well-being of employees and cooperation in global teams.

## **11. Limitations**

This chapter will explain and outline the limitations identified and experienced during the process of writing and conducting this research.

Despite its contributions to the field of international business and management, this research is not without identified and experienced limitations. The first and foremost limitation is about the data collection. The data collected is limited to only concern employees who work solely in global teams. In this case, we interviewed six employees, and the surveys received 23 and 18 respondents, respectively, from one company. This number of participants only represents a tiny part of the company, and therefore, it does not illustrate the complete picture of the whole organization. Consequently, it raises questions about the validity of the findings when only a tiny part of the company is represented and whether it is accurate to generalize the results. The issue regarding validity is further elaborated on in Chapter 7.7. *Validity and Reliability*.

Regarding the participants, the desired number of survey respondents was not received, which also supports the fact that generalizability is limited.

Another limitation is the focus on a single company. Because the data was collected from just one company, the findings may not be generalizable or applicable to other companies. Therefore, generalizability is limited. Consequently, this also raises questions about the validity of the findings. Additionally, the authors need to consider and be aware of the bias associated with focusing solely on a single company and relying too heavily on the data collected from a single-case study, which relates to a further limitation. Human beings are inherently biased as they come from different backgrounds and upbringings, and therefore, they have varying perspectives of reality influenced by their subjectivity and presumptions. However, the authors have been aware of the potential bias. This issue regarding bias is further elaborated on in Chapter 7.6. *Bias*.

While the authors have been able to draw some conclusions to the research question in this study, a deeper and more valid conclusion could have been obtained using multiple companies rather than just one. Perhaps conducting a multiple-case study design would have been a better approach. This would involve examining several companies by comparing and understanding the similarities and differences between the empirical data. Such an approach provided stronger arguments, minimized bias, and increased validity regarding the possibility of generalizing and applying the findings to other companies. Multiple-case studies are considered robust and reliable; however, they also require more resources as they are time-consuming and expensive to conduct compared to single-case studies. Therefore, this research only provides a snapshot of what is being studied, mainly because the data was collected at a specific time. However, if more time were given, perhaps it would be possible to conduct a longitudinal study by making observations at Novo Nordisk A/S over a longer period of time. As mentioned, there are limitations in terms of generalizability due to the results being based on a snapshot.

A further limitation regards the lack of previous and comparable studies in our research area. We spotted a gap in the literature, indicating that research and literature on virtual communication and its impact on the psychological well-being of employees and cooperation in global teams are under-researched. When an area of study is under-researched, such as this one, prior research studies and literature that are relevant to this current study may be limited.

As a consequence of this limitation, it can be difficult to build research upon or compare results to existing literature and studies.

The final limitation identified and experienced is about the chosen theories and frameworks applied in this study. This is further elaborated on in Chapter 4.1. *The PERMA Model* and Chapter 4.2. *The Job Demands-Resources Model*. Despite their limitations, the authors have intended to justify why these theories and frameworks have been applied to this study. However, given that all theories and frameworks have their limitations, it also opens the possibility and opportunity for further research, which is elaborated in the following chapter.

## **12. Further research**

This chapter will explain the possibility and opportunity for further research.

The abovementioned limitations also open the possibility and opportunity for further research. To extend this research, it would be beneficial and interesting to collect data from several companies and thereby get multiple perspectives on this area of study, as alluded to in some of the identified and experienced limitations. This would involve conducting more interviews and collecting more survey respondents within the same company and from other companies that also use virtual communication in global teams. Finally, getting multiple perspectives on this area of study would enable future researchers to obtain a more comprehensive understanding of the positive and negative outcomes related to virtual communication and its impact on employee well-being and cooperation in global teams.

Another opportunity for further research is to include other theories and frameworks than the ones the authors have applied for this current research. Since limited theories and frameworks on this research topic have been developed within the field of international business and management, there may be a call for new theories and frameworks. Therefore, future researchers could develop or even improve the existing ones.

A third opportunity for further research is empirically testing the revised conceptual framework developed in this research. For instance, the framework can be further developed by separating the well-being element into several levels, such as individual and team.

In addition, since validity has been limited, these suggestions for further research may help validate the findings of this current research.

Overall, the authors believe this study can serve as a starting point and foundation for further research on this research topic. Interacting virtually and working in a virtual environment is here to stay and will likely become more crucial in the future workplace. Therefore, it is also important to acknowledge and understand the challenges of virtual communication to better develop strategies to address them. Furthermore, as virtual communication continues to evolve, so should best practices for managing it effectively, for which further research within this area of study can help identify what works and what does not.

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## 14. Content of Appendices

*This chapter will present the appendix including a list with an overview of each appendix attached.*

**Appendix A:** The PERMA Model

**Appendix B:** The JD-R Model

**Appendix C:** Interview script

**Appendix D-I:** List of interviews

List of interviews				
Interviewee	Position	Location	Date & Venue	Appendix
Yuan Hong	Process Engineer	Tianjin, China	20 <sup>th</sup> of April - Microsoft Teams	D
Bob Tennant	Process Technical Analyst	Clayton, USA	20 <sup>th</sup> of April - Microsoft Teams	E
Donald Gong	Senior Project Manager	Bagsværd, Denmark	24 <sup>th</sup> of April - Site Søborg, Denmark	F
Philippe Clees	Project Manager	Bagsværd, Denmark	24 <sup>th</sup> of April - Site Søborg, Denmark	G
Deise Hansen	Senior Project Manager	Bagsværd, Denmark	24 <sup>th</sup> of April - Site Søborg, Denmark	H
Jeppe Obdrup	Senior Project Manager	Bagsværd, Denmark	8 <sup>th</sup> of May - Microsoft Teams	I

**Appendix J:** Survey 1

**Appendix K:** Survey 1 - Results

**Appendix L:** Survey 2

**Appendix M:** Survey 2 - Results

**Appendix N:** Qualitative data coding