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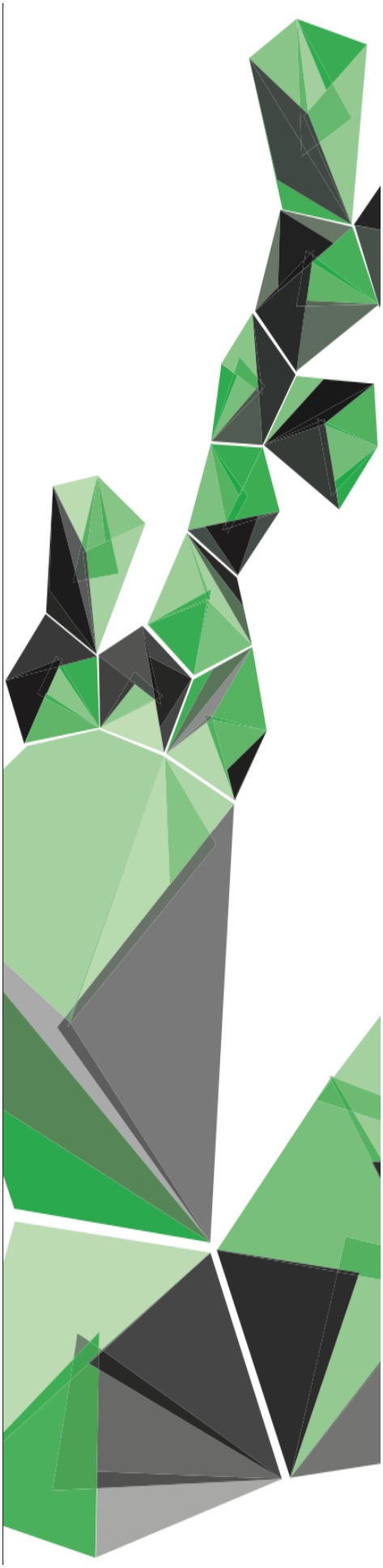

Master Thesis

Cultural Context and Innovation: A Case Study Exploring the Influence of Hofstede's Dimensions on Team Psychological Safety and Innovation

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Date: 25.09.2023

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BMS Faculty

Department of Business Administration 2023

Abstract

Objectives: This study aims to investigate the influence of national culture, as characterized by Hofstede's dimensions, on the relationship between team psychological safety and organizational innovation. By filling this research gap, the study seeks to provide practical insights for global organizations to tailor strategies and work environments that foster both safety and creativity in diverse cultural contexts.

Methodology: The exploratory study was conducted through semi-structured interviews, with a total of 12 participants from a subsidiary of a large German company. To analyse and interpret the data of the interviews, the study made use of thematic analysis. The codes of the codebook were analysed and interpreted based on their frequencies and the relevance of their individual meanings for the context of the study.

Findings: The study's findings indicate that organizational innovation is strongly driven by intrinsic and extrinsic motivation factors, feedback culture, professional development opportunities, and the extent of hierarchical structures. National culture played a role, with reduced power distance and individualistic tendencies favourably influencing the relationship between psychological safety and innovation, while uncertainty avoidance and aspects of masculinity posed potential challenges to innovation.

Implications: This study confirms the pivotal role of team psychological safety in driving organizational innovation. By incorporating Hofstede's cultural dimensions, the research enriches the understanding of how cultural factors influence the relationship between team psychological safety and organizational innovation. The study provides actionable strategies for organizations seeking to enhance their innovation capabilities. Prioritizing psychological safety, trust, mutual respect, and open dialogue is crucial for creating an innovation-friendly environment. Overall, this research offers valuable insights for scholars and industry practitioners aiming to foster inclusive, adaptive, and innovation-driven workplaces.

Keywords: team psychological safety; organizational innovation; national culture; Hofstede

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1. Introduction

Organizations are urged to evolve consistently due to increased competitive forces in the contemporary era of rapid globalization. The important role of innovation as a central determinant of organizational success is highlighted in academic studies by Liu et al. (2018) and Jiménez-Jiménez et al. (2019). Specifically, innovation is perceived as a primary determinant for achieving a competitive advantage and increasing firm performance. This perspective is further emphasized by Shanker et al. (2017), who stress the need for organizations to cultivate an innovative position within the market sphere.

While the overarching theme of innovation's centrality is well-documented in academic literature, it goes beyond the boundaries of organizational benefits. Innovation possesses the potential to address wider societal challenges, such as mitigating climate change implications, fostering ecological progress, and bolstering social cohesion (Lam, 2006). Günday et al. (2011) classify innovation into four main types, of which this study narrows its lens on "organizational innovation", a type particularly pertinent due to its encompassment of organizational structures and individual mindsets (Alves et al., 2018). The foundation for an organization's innovative capacity can often be traced back to the capabilities of its workforce and the synergies they form. Bergmann and Schaeppi (2016) identified that teams focusing on their members' personality compositions achieve higher profit margins and accelerate business development. In this context, cultivating an environment where individuals can openly express their perspectives without fear plays a substantial role. This construct, known as "psychological safety", as Edmondson (1999) described, is instrumental in fostering team cohesion and innovation.

However, the dynamics of psychological safety are not uniformly experienced or expressed across diverse cultural settings. An influential work by Hofstede et al. (2010) detailed the multifaceted dimensions of national culture, presenting a paradigm crucial in the discourse of psychological safety (Edmondson & Lei, 2014; Frazier et al., 2016; Newman et al., 2017). While extant literature underscores a robust association between psychological safety and innovation, the role of national culture remains less explored. A systematic literature review conducted by Newman et al. (2017), which analysed 83 published articles detailing the antecedents and consequences of psychological safety, provided a holistic perspective on the current academic discourse. Notably, Newman et al. (2017) emphasized the urgency of examining the effects of psychological safety across varied cultural contexts. While some investigations have attempted to clarify this connection (Edmondson & Lei, 2014; Frazier et

al., 2016), the research base concerning this interplay remains relatively uncharted. Given this backdrop, the present research aims to address the following question:

"What is the influence of national culture, as characterized by the dimensions of Hofstede, on the relationship between team psychological safety and organizational innovation?"

From a theoretical perspective, this research aims to fill a gap in the current literature. By combining Hofstede's cultural dimensions with the dynamics of team psychological safety and its potential effects on innovation, the study aims to provide a more nuanced, in-depth understanding of these relationships. From a practical perspective, the findings could hold significant implications for global organizations. As businesses increasingly operate across borders and cultural contexts, understanding how to harness their inherent cultural strengths and navigate potential challenges becomes crucial (Edmondson & Lei, 2014; Frazier et al., 2016). By gaining insights into the role of national culture in the relationship between psychological safety and innovation, organizations can make informed decisions, craft tailored interventions, and design work environments that foster safety and creativity. While most of Hofstede's dimensions are relevant, long-term orientation and indulgence vs. restraint are omitted in this study due to a lack of relevant literature in the context of psychological safety and innovation.

The structure of this thesis unfolds as delineated below. The following section presents a theoretical framework of the extant literature concerning the interplay between culture, psychological safety, and innovation. Subsequently, the third section outlines the research methodology adopted for this study, encompassing research design, data collection, and analytical techniques. Next, the fourth section presents the results of the data collection process. The fifth section conveys and interprets the study's findings, and the broader implications and limitations are elaborated. In the concluding sixth section, the study's conclusion is presented, followed by the bibliography and the appendices.

2. Theoretical framework

The following section will delve into the foundational theories relevant to this study, specifically focusing on the constructs of organizational innovation, national culture, and team psychological safety, as well as the interconnections among them. To delineate the framework of this research, propositions related to each key concept will be presented. For a visual representation of the research model, see Figure 1. Employing propositions in qualitative research offers a structured means to guide the exploration of complex phenomena, enabling researchers to navigate and interpret emerging narratives and patterns (Baxter & Jack, 2015). A full overview of all propositions, including relevant evidence from the literature, can be consulted in Appendix C.

2.1 Organizational innovation

Organizational innovation, as articulated by Alves et al. (2018), refers to "how managers do what they do" (p. 3). It signifies transformative shifts in organizational structures, individual attitudes and beliefs, and the incorporation of fresh rules, roles, and processes (Alves et al., 2018). Delving deeper, Hollen et al. (2013) depicted organizational innovation as "firm-specific, new-to-the-firm management activities linked with setting goals, motivating personnel, coordinating tasks, and decision-making, which emerge from new interorganizational associations and aim to fulfil organizational objectives" (p. 41).

Central to organizational innovation is the focus on enhancing an organization's structural methodologies and adaptive capabilities. Such innovations boost the quality and efficiency of work, reshape organizational culture, foster employee retention, and redefine the enterprise's interaction with stakeholders. Organizational innovations primarily revolve around the institution's resilience to environmental shifts, especially within institutional frameworks and markets. While some facets of innovation target product enhancement, manufacturing methods, and marketing strategies, organizational innovation delves into the tacit knowledge inherent in a company (Tavassoli & Karlsson, 2015). This form of knowledge, distinct due to its unspoken and non-transferable nature, is pivotal as it supports the design of new strategies, control systems, and frameworks to disseminate knowledge within teams.

Interpersonal relationships within different areas of the organization play a fundamental role in cultivating organizational innovation. The synergy from such interconnections, when combined with the elements of psychological safety, such as well-being, self-esteem, and

motivation, empowers individuals to transcend their limitations. As Irai and Lu (2018) posited, this subsequently enables increased levels of creativity and innovation.

Moreover, the vitality of innovation, as reflected in numerous scholarly works, underscores its significance for advancements in both economic expansion and societal progress (Damanpour, 2017; Edwards-Schachter, 2018; Efrat, 2014). A nation's economic evolution is intimately linked to the constant introduction of innovative products. Recognizing this, governments worldwide have emphasised innovation because it introduces new possibilities, enables favourable trade dynamics, and enhances a nation's living standards (Hage, 1999). However, the implications of innovation extend beyond the limits of a single entity. Innovative firms are pivotal in mitigating climate change, propelling environmental sustainability, and fostering societal cohesion (Lam, 2006). Shanker et al. (2017) posited that an enterprise must acquire an innovative position within the market to sustain its competitive edge.

2.2 Psychological Safety

Psychological safety is a key construct that refers to the individual's belief that they can express themselves openly without fearing negative consequences in a group or team setting. Historically, the conceptualization of psychological safety has evolved. Schein and Bennis (1965) initially explored change processes in group environments. They described psychological safety as "the extent to which individuals feel secure and confident in their ability to manage change" (p. 23). Edmondson (1999) further refined the concept as "a shared belief that the team is safe for interpersonal risk-taking" (p. 354). Meanwhile, Kahn (1990) presented a more individual-centric view, denoting it as an employee's "sense of being able to show and employ one's self without fear of negative consequences to self-image, status or career" (p. 708). For this study, Edmondson's (1999) definition has been selected owing to its pervasive relevance in contemporary literature on psychological safety (Newman et al., 2017) and its specific applicability to the research context, focusing on team dynamics.

After elaborating on the concept of psychological safety, it is vital to introduce another intertwined construct: trust. Both trust and psychological safety are critical constructs in team dynamics. Trust, as defined by Edmondson (1999), is "the expectation that others' future actions will be favourable to one's interests, such that one is willing to be vulnerable to those actions" (p. 354). It is essential to understand that while trust is interpersonal and rooted in the interactions and perceptions between two individuals, psychological safety is a collective perception of the group atmosphere. Newman et al. (2017) validated this distinction, noting

that psychological safety is a collective norm while trust is individual-centric. Given the nature of the current study, the primary emphasis will be on psychological safety, as it aligns with the study's focus on group-level constructs.

Psychological safety in the workplace offers many tangible advantages relevant to individual and collective growth. At its core, such an environment empowers individuals by bolstering their confidence, allowing them to freely express their ideas without fearing likely consequences. This atmosphere of acceptance and security not only facilitates transparent communication but also enables productive disagreements. Bradley et al. (2012) attest that this openness enhances problem-solving capabilities, an indispensable trait in thriving workspaces.

One of the most important aspects of psychological safety is its encouragement of owning up to and learning from errors. Carmeli (2007) emphasized this trait, highlighting how employees in psychologically safe settings are more ready to admit mistakes, viewing them as invaluable learning opportunities rather than crippling setbacks. This perspective is crucial, especially considering the inherent risks associated with experimentation, a fundamental facet of the learning process, as noted by LePine and Van Dyne (1998) and Detert and Burris (2007).

Taking a broader lens, the essence of psychological safety aligns seamlessly with Bandura's (1977) Social Learning Theory. This alignment is based on feedback and reinforcement's fundamental role in the learning process, a cornerstone of Bandura's theory. Central to both psychological safety and Bandura's theory is the recognition that individuals learn and develop within a social context, and this dynamic interplay accentuates the construct's overarching relevance in organizational settings. It posits that individuals acquire new knowledge and behaviours by observing others and receiving feedback about their actions. In essence, the theory highlights the influence of social interactions and experiences on personal growth. Within the context of psychological safety, this dynamic becomes particularly pronounced.

2.3 Innovation and psychological safety

In the dynamic realm of organizational management, the capacity to foster innovation is deeply intertwined with cultivating a favourable organizational environment. In an insightful study by Judge et al. (1997) analysing research & and development departments in organizations, a distinction emerged between innovative and less innovative organizations. The primary differentiator was management's proficiency in instilling a sentiment of collective responsibility and mutual support among employees.

This perspective is further substantiated by Shanker et al. (2017), who argued that an organization's readiness for innovation is intrinsically tied to leadership dynamics, the prevailing organizational environment, and structural configurations that enable inventive thought and creativity. In their exploration, they stated that the organizational environment strongly and positively influenced innovative work behaviours (IWB). Offering a clear conceptualization, De Jong (2007) delineates IWB as "individuals' behaviours directed toward the initiation and intentional introduction of new and useful ideas, processes, products, or procedures within a work role, group, or organization" (p. 19). This statement was confirmed in the work of West and Rickards (1999), who advocate that it is primarily environmental factors within an organization that reinforce innovative and creative tendencies among employees.

When summarizing the current discourse, it becomes evident that a psychologically safe work environment, where open communication and mutual trust are prevalent, is indispensable for organizational innovation. Structural dimensions, such as hierarchy and functional delineation, undeniably influence innovation. However, the overarching topic of organizational environment, especially when combined with psychological safety, profoundly affects an entity's innovative capabilities.

2.4 National culture

The term "culture" has its roots in the Latin word "colere," which translates to "to construct," "to take care," "to sow," or "to cultivate." As such, "culture" frequently relates to phenomena shaped or affected by human actions, encapsulating the notion that culture is intentionally nurtured (Dahl, 2004). Predominantly, this term is employed to depict tribes or ethnic groups in anthropology, nations in political science, sociology, and management, and organizations in both sociology and management fields. In these contexts, culture manifests through crafted artefacts, the distinct behaviours of culture members and their values and attitudes. These facets collectively define the culture (Hofstede, 2011). However, as Dahl (2004) posits, culture is only overtly expressed periodically and symbolizes "a set of shared values that emerge in the behaviours and other artefacts of a specific group" (p. 3). Thus, it can be understood as a framework of characteristic behaviours subtly shaping individuals' actions.

Historically, initial conceptualizations of culture underlined its nature as an integral social system. Such representations were often derived from anthropological surveys, which sought to study nonindustrial social groups outside Western industrialized settings and draw comparative insights. Through this, certain shortcomings of Western societies became more

apparent (Smith et al., 2008). The quest to conceptualize cultural norms using survey techniques initially met with scepticism. However, the cultural analysis by Hofstede (1994) marked an important milestone, as it became the initial study to extensively survey a vast population (Smith et al., 2008). For clarity, Hofstede (1994) define culture as "the collective programming of the mind which distinguishes the members of one category of people from another" (p.1). Here, a "category" spans nationalities, genders, age groups, social classes, professions, businesses, organizations, and even families. Highlighting the significance of Hofstede's perspective, countries, according to him, "form a significant portion of the common mental blueprint of their inhabitants" (p. 12). This underscores the assertion that individuals, shaped by national and organizational cultures, inherently differ from those belonging to contrasting cultural environments (Dwyer et al., 2005; Tian et al., 2018).

Hofstede's cultural dimensions framework has been a foundation in cross-cultural studies. However, it has not been without its critics. Critics have pointed out methodological concerns (Ailon, 2008; McSweeney, 2002), a potential overlooking of context (Taras et al., 2010), and possible Western-centric biases (Baskerville-Morley, 2005). It is essential to note that these criticisms have propelled refinements and evolutions in the broader field of cultural studies. Nevertheless, Hofstede's contributions remain paramount, especially in research linking culture to psychological safety and innovation (Baer & Frese, 2003; van Everdingen & Waarts, 2003; Zaman & Abbasi, 2020). His work has set a precedent for numerous cross-cultural studies, resonating with value-centric systems observed by other researchers (House et al., 2004; Schwartz, 1992). Considering the continued relevance of Hofstede's dimensions and their predictive accuracy, as Taras et al. (2010) noted, this study has chosen to employ Hofstede's cultural framework.

To further elaborate, Hofstede et al. (2010) separated culture into six distinctive dimensions: power distance, individualism vs collectivism, masculinity vs. femininity, uncertainty avoidance, long-term orientation, and indulgence vs. restraint. Although the dimensions of long-term orientation and indulgence vs. restraint offer profound understandings of societal norms, they have been excluded from the scope of this research due to their limited relevance to our central research objectives. Additionally, there is a conspicuous gap in the literature concerning these dimensions compared to the others posited by Hofstede (Bukowski & Rudnicki, 2018), rendering them less relevant for the present research context.

2.4.1 Power distance

The Power Distance Index (PDI) delineates the degree to which a society's dominant and subordinate members endorse disparities in power allocation. Hofstede et al. (2010) posit that such distinctions receive validation from those who possess authority and those subjected to it. Behaviours within this dimension are often moulded by familial upbringing and educational experiences. Cultures with pronounced power distance manifest elevated authority for senior figures such as parents or educators. Conversely, cultures characterized by a diminished power distance cultivate an equal opportunity and fairness ethos, nurturing children's autonomy, fostering their investigative spirit, and championing their questioning and contrarian perspectives in educational settings (Hofstede et al., 2010). Organizational paradigms within high power distance societies typically centralize decision-making authority, heavily relying on formalized rules. In contrast, those in societies with reduced power distance often avoid rigid hierarchies and may abandon stringent regulations in favour of pragmatism (Kaasa & Vadi, 2010).

2.4.2 Individualism

Individualism assesses the cohesion of societal bonds among its members, determining whether they are fragile or resilient. Societies oriented towards individualism prioritize personal autonomy, with members primarily concerned with their immediate family´s wellbeing. In contrast, collectivist cultures underscore profound integration within broader social groups, embodied by expansive familial structures, wherein collective prosperity is prioritized above individualistic aspirations (Hofstede et al., 2010)

2.4.3 Masculinity

The concept of Masculinity delves into the societal allocation of roles across genders. Highly masculine societies emphasize competitive and assertive postures, accentuating accomplishments, performance metrics, and the acceptance of symbols denoting status. In contrast, feminine cultures promote an equal distribution of gender roles, prioritizing life's qualitative aspects and fostering profound interpersonal bonds over materialistic pursuits (Dywer et al., 2005).

2.4.4 Uncertainty avoidance

Uncertainty Avoidance Index (UAI) describes an individual's comfort level when confronted with unfamiliar and irregular scenarios. Societies scoring high on the UAI typically

strive to avoid unpredictability, endorsing rigorous regulations and amplifying safety provisions (Lee et al., 2013). This preference for predictability in high-UAI societies often inhibits their innovative impulses (Dywer et al., 2005). On the contrary, societies with lower UAI scores show a higher tolerance for competitive dynamics and diverse perspectives, which are necessities for pioneering innovative solutions or services (Efrat, 2014).

2.5 The role of national culture

The propensity for organizational innovation is, to a degree, influenced by national culture (Efrat, 2014). An enterprise's combination of cultural components may increase or inhibit its innovative capabilities**.** While the organizational ambience is observable through the company's processes and policies, the foundational beliefs and values intrinsic to its culture remain intangible. They operate as cognitive frameworks guiding reactions to environmental stimuli (Ahmed, 1998). These frameworks resonate with Hofstede's cultural dimensions (Efrat, 2014).

Subsequent research has delved deeper, elaborating potential rationales supporting the abovementioned observations. These comprehensive interpretations will be expounded upon in the subsequent section, with each explanation followed by a relevant proposition.

While a substantial body of research exists on psychological safety and cultural paradigms, the connection between the two warrants further academic exploration (Newman et al., 2017). Investigations exploring the interaction effects between psychological safety and culture remain scarce, with a predominant focus on the cultural dimensions as defined by Hofstede et al. (2010). The following section will detail these significant findings.

2.5.1 Power distance

As expounded by Hofstede et al. (2010), power distance has been predominantly emphasized in scholarly works and is often associated with pronounced social hierarchies. These hierarchical structures in organizational settings tend to inhibit innovation due to restricted information flow and communication. Specifically, Tian et al. (2018) and van Everdingen and Waarts (2003) underscored the pitfalls of hierarchical cultures, suggesting that organizations should deviate from these traditional structures for innovation to flourish. An environment with diminished power distance fosters open communication even across boundaries of rank or profession, paving the way for a rich combination of creative ideas that could spark significant innovative breakthroughs (Kaasa & Vadi, 2010). Contrarily, a high

measure on the power distance index typically aligns with stringent control mechanisms, bureaucracy, and exhaustive guidelines. Such an environment inhibits employees' innovative capacities, pushing them into more passive roles, which are counterproductive to creative ideation and innovation (Herbig & Dunphy, 1998; Shane, 1992). Supporting this idea, Shane (1993) provided evidence to show that higher power distance has a negative impact on innovation measurements, such as the number of trademarks per capita.

Studies relating to power distance and team psychological safety often focus on the dynamic between leaders and subordinates. Li et al. (2010) argued that high power distance accentuates employees' commitment to their designated roles and responsibilities, often at the cost of personal interests. This unwavering dedication to role-related tasks inadvertently diminishes psychological safety as employees frequently suppress their voices and perspectives, thereby reducing the levels of psychological safety. This was confirmed by a recent study by Appelbaum et al. (2020), centring on team dynamics within the healthcare realm, which identified power distance as a significant precursor to psychological safety levels. Their findings showed reduced power disparities between medical and nursing students were associated with heightened psychological safety. Additionally, diminished power distance correlated with improved team cohesion and perceived effectiveness.

In light of these multifaceted discussions on power distance's influence on innovation and psychological safety, the subsequent proposition was formulated:

Proposition 1: Power distance (PDI) influences the effect of team psychological safety on organizational innovation.

In cultures with low power distance (low PDI), team psychological safety will be positively associated with organizational innovation, while the relationship will be weaker or nonexistent in high power distance cultures (high PDI).

2.5.2 Individualism

The academic discourse surrounding the influence of individualism on organizational innovation posits a direct association. Predominantly, cultures marked by high levels of individualism are observed to have a favourable disposition towards innovation. Hofstede's (2001) findings support this, emphasizing that individualistic cultures tend to grant more patents, reflecting an enhanced autonomy for employees in new product development processes (Kaasa & Vadi, 2010). Lynn and Gelb's research in 1996 further fortified this

position by highlighting the hedonistic and product-focused attributes of individualistic cultures as catalysts for innovation. Their study unveiled a distinct pattern: national innovativeness in European countries is significantly tied to the degree of individualism. This nuanced understanding is further extended by the contrasting ethos of collectivistic societies, where individual contributions are subsumed under organizational ownership. On the other hand, individualistic cultures have an established tradition of recognizing and rewarding individuals for groundbreaking and innovative ventures (Kaasa & Vadi, 2010). Shane's (1992) correlation between individualism and patented innovations substantiates this intrinsic motivation to pursue innovation in individualistic cultures.

In the realm of psychological safety, individualism's role exhibits parallels to that of power distance. Li et al. (2010) observed that workplaces defined by individualism frequently manifest traits of prioritizing self-interest. This is contrasted against the collective ethos and operational efficiency characteristic of collectivist cultures. Such cultures, emphasising group harmony, often deter individuals from expressing dissenting opinions or questioning authoritative decisions, fostering a psychologically safe work environment. Building on this, Walumbwa and Schaubroeck (2009) advanced that while members of individualistic cultures predicate their trust in leadership on perceived capability and integrity, those in collectivist cultures lean on predictability and benevolence in interactions, which in turn shape the existence of psychological safety.

Consequently, given these analyses, the proposition is as follows:

Proposition 2: Individualism (IDV) influences the effect of team psychological safety on organizational innovation

In individualistic cultures (high IDV), team psychological safety will have a positive effect on organizational innovation compared to collectivistic cultures (low IDV).

2.5.3 Masculinity

The cultural dimension of masculinity has been a significant topic in discussions on organizational innovation and team psychological safety. Masculine societies, characterized by their materialistic and assertive nature, demonstrate a pronounced appreciation for acquiring new products. Moreover, cultures with a masculine orientation prioritize achievement and demonstrate lower levels of gender equality (Khan & Cox, 2017). Consequently, the adoption and diffusion of product innovations manifest more swiftly in these societies compared to

feminine societies, which emphasize a person-oriented, quality-of-life approach (Dwyer et al., 2005). Furthermore, Efrat (2014) argues that the prevalent attributes of confidence, positivity, and readiness for change in masculine societies naturally predispose them towards an innovative orientation.

Delving into specific organizational contexts, Rawski and Workman-Stark (2018) examined the notion of "masculinity contest cultures" within the precincts of police organizations. The policing profession, predominantly male-dominated, manifests a highly competitive work environment reflective of the masculine cultural dimension. Their findings explained the relationship between policing's masculine culture and diminished psychological safety in such work environments. This alignment was further reinforced by Workman-Stark (2021), who deduced that heightened perceptions of masculinity contests correlated with decreased levels of psychological safety among the police force. Although the studies mentioned above are confined to the specific environment of policing, they provide invaluable insights into the broader connection between high masculinity and compromised psychological safety.

Given these complex interplays between masculinity, psychological safety, and innovation, the following proposition was formulated:

Proposition 3: Masculinity (MAS) influences the effect of team psychological safety on organizational innovation.

In cultures characterized by a focus on masculinity (high MAS), innovation tends to be prioritized, potentially at the expense of team psychological safety. Conversely, in cultures leaning towards femininity (low MAS), there may be a stronger emphasis on psychological safety, possibly reducing the focus on innovation.

2.5.4 Uncertainty avoidance

Uncertainty avoidance has emerged as a salient cultural dimension when considering its impact on organizational innovation and team psychological safety. According to van Everdingen and Waarts (2003), cultures with elevated scores on the uncertainty avoidance index (UAI) are characterized by a risk-averse attitude. Such cultures often hesitate to embrace innovations unless their value has been empirically validated in the marketplace. This is rooted in the intrinsic association of innovations with unpredictability and change. Furthermore, a pronounced inclination towards rules in high-UAI cultures may impede the development of

innovations, with individuals less incentivized to propose potentially groundbreaking ideas for fear of rejection (Kaasa & Vadi, 2010). Conversely, cultures with a lower UAI demonstrate an increased readiness for risk (Lee et al., 2013) and exhibit a more receptive disposition towards innovative ideas (Shane et al., 1995). In organizational settings, a strong inclination towards avoiding uncertainty is frequently associated with resistance to innovative practices, highly structured management approaches, and limitations on innovative initiatives (Laukkanen, 2015).

However, the interplay between psychological safety and uncertainty avoidance remains underexplored in scholarly research. Frazier et al. (2016) provided a nuanced examination of how cultural norms create psychologically safe environments. They posited that psychological safety assumes heightened importance in high-UAI cultures. In practical settings, such cultures often manifest a reduced willingness to challenge authority, exhibit diminished flexibility, and demonstrate an intensified reliance on formalized rules and protocols. Additionally, there exists a subdued emphasis on individual learning (Zaman & Abbasi, 2020). In societies characterized by elevated uncertainty avoidance levels, socio-cultural dynamics tend to be constraining. Consequently, individuals frequently hesitate to express divergent opinions out of concern for potential social repercussions or to receive disapproval from peers (Dong & Liu, 2010). In contrast, members from low-UAI cultures are more willing to display non-conformist behaviours (Shane et al., 1995).

Notably, a significant portion of empirical research on psychological safety is anchored in low-UAI cultures, thereby underscoring the need to ascertain its applicability to high-UAI cultures. Frazier et al. (2016) suggested that individuals from high-UAI cultures, in their pursuit to avoid risk, might be more industrious, potentially amplifying the benefits of a psychologically safe environment on performance. However, Newman et al. (2017) called for more comprehensive research, positing that the very nature of uncertainty avoidance could be contradictory to creating a psychologically safe atmosphere.

Considering this complex interaction and potential outcomes, the following proposition was posited:

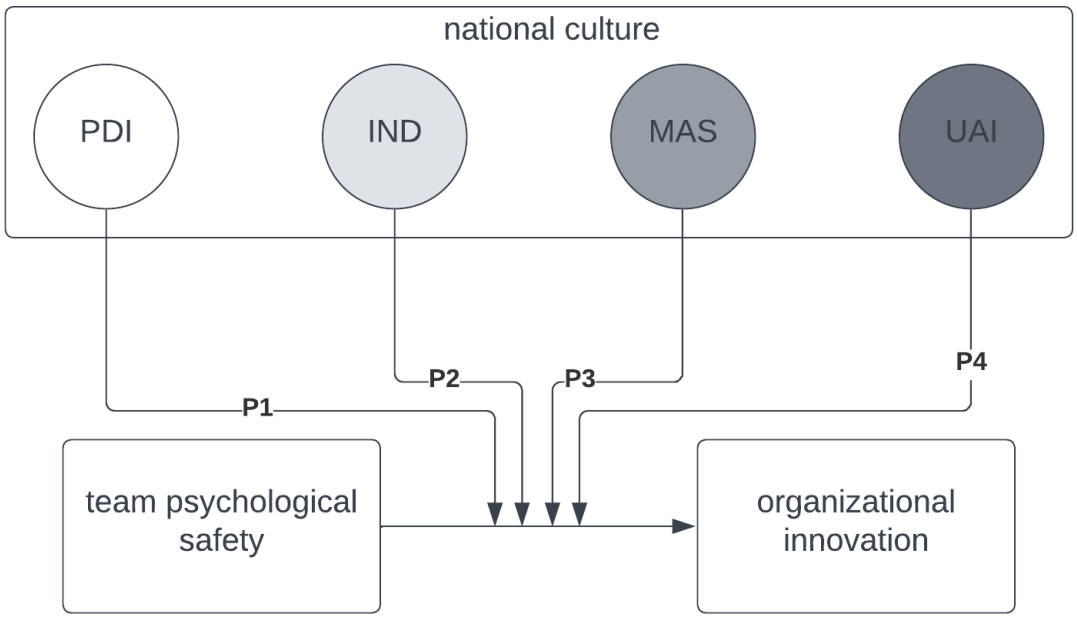
Proposition 4: Uncertainty Avoidance (UAI) influences the effect of team psychological safety on organizational innovation.

In cultures with high uncertainty avoidance (high UAI), the influence of team psychological safety on organizational innovation might be diminished compared to cultures with low uncertainty avoidance (low UAI).

In conclusion, existing academic research has explored the connection between Hofstede's cultural dimensions and national innovative propensity. The extant literature posits that individuals originating from cultures with elevated masculinity and individualism scores and diminished uncertainty avoidance and power distance exhibit a heightened inclination toward innovation compared to their counterparts from cultures diverging from this profile. Concurrently, prominent studies investigating the interplay between psychological safety and culture suggest that a diminished power distance correlates with augmented psychological safety, where the team's leadership plays a crucial role in creating a psychologically safe work environment. However, there is still much room for additional academic research.

Figure 1

The visual model of the influence of national culture on the effect of team psychological safety on organizational innovation



3. Research methodology

The following section contains a comprehensive discussion of the methodological approach of this study, including a detailed presentation of the research design and the research instrument, the characteristics of the sample, the data collection process, and the techniques adopted for data analysis. Additionally, the section will address the measures taken to ensure the reliability and validity of the findings. Special attention will also be given to elaborating on how scores from Hofstede's cultural dimensions were integrated into the research process and their significance in the broader context of the study.

For the study, an exploratory research design was employed to examine the relationship between team psychological safety and organizational innovativeness, specifically focusing on understanding the role of national culture, as defined by Hofstede et al. (2010). The central research question was as follows:

"What is the influence of national culture, as characterized by the dimensions of Hofstede, on the relationship between team psychological safety and organizational innovation?"

For this study, exploratory research was used. This type of research is performed to gain a deeper understanding of a relatively unknown or not well-understood topic. Unlike explanatory research, which aims to confirm hypotheses, exploratory research is more about asking questions and searching for new insights. This type of research is often used when a problem is not clearly defined and can be important in determining the best research design, data collection method, and selection of subjects. Exploratory research can also provide qualitative insights into a given issue, helping to define a future course of action or formulating more specific research questions for further study (Stebbins, 2001)

To perform this study, data was collected about participants´ thoughts and associations regarding team psychological safety, as well as the innovativeness of their organization. Furthermore, data on participants´ cultural perspectives and experiences was gathered.

3.1 Research design & instrument

The present qualitative study employed semi-structured interviews and deductive and inductive data coding. This selection was made because it enables the researcher to gather data concerning participants' perceptions and reflections on psychological safety, innovativeness, and cultural associations. Moreover, given the intimate nature of the subject matter, which delved into feelings, emotions, and opinions, qualitative research was deemed a more fitting

approach (Newcomer et al., 2015). It facilitated a deeper understanding of the intricate layers of participants' experiences beyond what might be achievable with quantitative methods alone. Additionally, qualitative research offered the flexibility for participants to provide richer, more detailed accounts and even unexpected insights, further enriching the data. This was crucial as the objective was not only to understand their perceptions but also to enable participants to provide any supplementary data that could offer a fuller picture of their experiences (Newcomer et al., 2015). It also offered the possibility to capture additional, relevant factors or aspects related to the topics at hand, allowing participants to share their individual perspectives (Adeoye-Olatunde & Olenik, 2021). This research focused on participants' thoughts and associations regarding team psychological safety, organisational innovativeness, and cultural perceptions and attitudes.

Since the study aimed to investigate participants´ thoughts and experiences, it was important to consider possible biases. Among these is the social desirability bias, where respondents give answers based on what they think is the most preferred answer (Barriball & While, 1994). To mitigate the effects of this bias, several measures were undertaken. Firstly, participants were assured of the confidentiality of their responses, emphasizing that there were no 'right' or 'wrong' answers. This aimed to encourage genuine and honest reflections. Secondly, neutral and non-leading question phrasing was emphasized, reducing the likelihood of steering participants towards a perceived socially desirable response. Lastly, ensuring respondent anonymity can often alleviate the pressure of adhering to societal expectations, allowing for more candid input. The conclusion to employ these methods was drawn from previous research indicating that transparency, confidentiality, and anonymity can significantly reduce the potential impacts of social desirability bias on participant responses (Lavrakas, 2008).

The study made use of semi-structured interviews. A semi-structured interview (SSI) "employs a blend of closed- and open-ended questions, often accompanied by follow-up why or how questions" (Newcomer et al., 2015, p. 493). In this setting, it is common to interview participants individually. The uniqueness of the SSI lies in the fact that during the interview, the questions can be asked depending on the flow of the conversation, allowing the researcher to explore additional thoughts and ideas that may come up during the interview (Adeoye-Olatunde & Olenik, 2021). Therefore, it is important to stay on topic, ensuring that the information collected is relevant to the study. SSIs enable gathering individual perspectives and beliefs on a particular topic from a carefully selected sample (Newcomer et al., 2015). The method was especially suited because it allowed for probing questions and follow-ups to gather

the individual thoughts of participants. It allowed them to freely express their views without being bound to pre-defined answers. The flexibility of SSIs allowed both researcher and participant to move into areas outside of the pre-defined questions, enabling a deeper discussion depending on the general atmosphere of the conversation (Newcomer et al., 2015).

The interviews of the study had a duration ranging from 45 to 60 minutes. These interviews were conducted to explore the individual's values concerning psychological safety within their work team and its relationship to their innovative work behaviour. Additionally, participants were probed regarding their cultural perspectives. The interviews were conducted using the virtual platform MS Teams, and the data was recorded for later analysis. Before the interview, participants were asked orally for consent.

In the initial phase of the study, demographic data of the respondents were collected using specific interview questions. This information encompassed their age, seniority in the organization, and total work experience.

To delve into organizational innovativeness, the interview questions were specifically constructed based on the theoretical framework underpinning this study. By aligning the questions with established theoretical constructs and insights, the aim was to ensure that the data collected was relevant and comprehensive. This methodological choice guaranteed a coherent connection between the study's theoretical foundation and the primary data collected. A full overview of the interview questions, grounded in the theoretical framework, can be found in Appendix D.

The evaluation of psychological safety was based on the 7-item scale devised by Edmonson (1999), which was adapted for the interview format. This adaptation involved transforming the closed-ended and structured survey questions into open-ended and conversational interview queries. This approach allowed participants to provide detailed and personalized responses, enabling a deeper understanding of their experiences. Additional explanations were provided whenever necessary to ensure clarity and facilitate meaningful participant insights. For the specific items of the scale, please refer to Appendix B.

3.2 Sample and data collection

A total of 12 interviews were conducted with members of a work team within a subsidiary of a large German company. The average age of the participants was 41.5 years, ranging from 24 to 57 years. On average, the participants had been with the company for 8.06 years, with tenures varying from 1 to 18 years. Additionally, the participants had an average work experience of 21 years, with individual experiences ranging from 1 to 40 years in the

workforce. Of the 12 interviewees, 3 held regular roles, 7 held senior roles within the company, and two were in leadership positions.

This study employed the "census sampling" method, also known as complete enumeration, which involves collecting data from every member of the target population under investigation (Groves et al., 2004). By conducting a census, the researcher was able to gather insights from all team members, spanning from executives to front-line employees, thus facilitating a comprehensive understanding of team dynamics, collaboration, and individual contributions within the context of the study.

An important advantage of census sampling is eliminating sampling error, a common issue in traditional sampling methods, because the sample and the population are identical. Therefore, the researcher can draw more accurate conclusions and make data-driven decisions without inferring findings to a larger population (Sapsford & Jupp, 2006).

To meet the criteria for inclusion in the study, participants were mandated to belong to the identical team of 12 individuals as their fellow respondents. Additionally, they were required to be a team member for no less than six months, ensuring the data's authenticity and validity.

The interviews were conducted between the 5th of June and the 30th of June 2023. The total duration of all interviews amounted to 10 hours, 8 minutes, and 15 seconds. On average, the interviews lasted 50 minutes and 41 seconds, with the shortest interview lasting 32 minutes and 26 seconds and the longest interview lasting 66 minutes and 25 seconds.

3.3 Data analysis

To analyse the data, this study made use of thematic analysis. This method is often used in qualitative research for identifying, analysing, and defining patterns or themes within qualitative data, thereby organizing it minimally and allowing for a detailed description. For a detailed overview of the steps included in thematic analysis, see Table 1 (Braun & Clarke, 2006, p.87). The coding process involved a combination of deductive coding, guided by a pre-defined codebook derived from the existing literature (see Appendix E), and inductive coding, which allowed for new findings and themes in the form of new codes (Fereday & Muir-Cochrane, 2006).

Table 1

Steps of thematic analysis

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Note. From "Using thematic analysis in psychology", by V. Braun and V. Clarke, 2006, *Qualitative research in psychology, 3*(2), p. 87 (https://doi.org/10.1191/1478088706qp063oa). CC BY-NC.

The software atlas.ti was utilized to facilitate the coding process and organize the data efficiently. Atlas.ti (version 23) is a powerful qualitative data analysis software that allows researchers to manage and analyse large volumes of textual, visual, audio, and video data. The software offers a range of tools and features to support qualitative analysis, including the creation and application of codes, the ability to link codes to specific segments of the data, and the capability to visualize relationships between codes. Through atlas.ti, the researcher could systematically organize and store interview data, code segments of text, and explore connections between codes and themes. The software's functionality enabled efficient data retrieval, comparison, and synthesis, leading to a comprehensive qualitative data analysis (Atlas.ti, 2023). The data were systematically reviewed during the initial coding phase, and relevant portions were assigned to pre-defined codes. This process ensured that the analysis was grounded in the established theoretical framework and previous research findings.

Simultaneously, an inductive coding approach was applied, allowing for the identification of new themes and insights that may not have been previously considered in the codebook. As the data analysis progressed, the researcher remained open to the emergence of novel patterns, themes, and perspectives. Furthermore, the Gioia coding method was employed to ensure a systematic and rigorous approach to data analysis. This method, renowned for its structured process, involved a progression from first-order codes (directly drawn from participant language) to second-order themes (researcher-derived thematic labels) and, finally,

to aggregate dimensions (Gioia et al., 2012). This structured progression aided in refining the analysis and ensuring the participant voices remained central to the emergent findings. New themes not initially included in the codebook were assigned new codes, capturing fresh insights that emerged directly from the participants' responses.

Upon completing the coding procedure for all interviews, code consolidation was initiated. Codes that were singularly mentioned or not mentioned at all were removed from the dataset. Codes that were similar in meaning were merged. This was implemented to ensure that the final codebook, consisting of 89 codes, only contained relevant and significant codes to the study's objectives. In total, 705 citations were placed throughout the coding process. For a full overview of the final codebook, please consult Appendix F. Should there be any need for further clarification, readers are encouraged to refer to the author directly.

3.4 Inter-coder reliability

To ensure the credibility of the findings, it is essential to ensure inter-coder reliability, which is defined as "the extent to which independent coders evaluate a characteristic of a message or artefact and reach the same conclusion" (Freelon, 2010, p. 20). In this study, inter-coder reliability was achieved through a systematic process involving an inductive and a deductive approach to coding and the involvement of a second coder to validate and compare coding results.

To begin with, a pre-defined codebook was developed based on the existing literature, employing a deductive coding approach. This codebook served as a foundation for organizing and categorizing the interview data, providing a structured framework for analysis. It contained predefined codes corresponding to key themes and concepts identified in the literature relevant to the research objectives.

After the codebook was prepared, the semi-structured interviews were conducted. The researcher and the second coder independently analysed and coded one of the interviews during the coding process. The participants' responses were systematically reviewed, and relevant text segments were assigned to the pre-defined codes from the codebook.

To clarify, while inter-coder reliability (ICR) was employed to enhance the reliability and rigour of the qualitative data analysis process, the researcher abstained from assigning a specific numerical value. Instead, the approach involved extensive discussions, comparisons, and consensus-building techniques between the researcher and the second coder to maintain coding consistency and ensure the trustworthiness of the qualitative findings (Campbell et al., 2013).

New findings that emerged during the coding process in new codes were also scrutinised to ensure inter-coder reliability further. The relevance and validity of these new codes were assessed to ensure they accurately captured novel insights from the data. The validation of coding through this iterative approach enhanced the trustworthiness and validity of the study's findings.

Overall, using a dual approach involving deductive and inductive coding and including a second coder contributed significantly to ensuring inter-coder reliability in this qualitative study. The systematic comparison and validation of coding results enhanced the rigour of the research and bolstered the credibility of the study's conclusions.

3.5 Cultural dimensions scores

To measure and compare different national cultures, it is important to clarify the scores and the comparative insights that can be drawn from them. Hofstede's cultural dimensions are essential for understanding and comparing cultural values across different societies. These dimensions include power distance (PDI), uncertainty avoidance (UAI), masculinity (MAS), and individualism (IDV). The dimensions of long-term orientation and indulgence vs restraint were not considered due to a lack of relevance for the present study. The scores assigned to each dimension range from 0 to 100, with 50 representing the mid-level point. Scores below 50 indicate values lower than the global average, while scores above 50 indicate values higher than the global average (Hofstede Insights, n.d.). As evident in Figure A1, Germany scores low on power distance (35) and moderate to high on individualism (67), masculinity (66), and uncertainty avoidance (65) (Hofstede Insights, n.d.). These scores will, therefore, be taken as reference points due to the nationality of the company and the interview subjects.

4. Results

This section presents the study's results, starting with the central themes of innovation and psychological safety. The core of this section focuses on the findings concerning the influence of culture on the relationship between team psychological safety and innovation. It is essential to highlight that participant quotations represent the entire sample.

4.1 Innovation

Participants strongly perceived their organization's innovativeness, linking it to several key factors, including motivation, openness to feedback, and the nature of the business. Motivation was observed to be driven by both intrinsic and extrinsic factors. Participants reported a high level of intrinsic motivation, as they felt a sense of purpose and commitment to the higher societal goal of the company's industry. One participant articulated this sentiment, stating, *"the willingness to really do something not just for the sake of the company, but for the sake of the planet is really high".*

External factors also played a significant role in motivating employees to innovate. The intense competition in the market compelled the company to continually innovate to maintain its competitive position, as stated by one participant: *"It feels like there's zero resistance to change simply because it's just not an option".*

Participants highlighted the company's openness to feedback and emphasized that it fostered a culture of receptiveness and actionability. Managers were willing to provide feedback and receptive to receiving it from their peers. The company's commitment to acting upon collected feedback was perceived positively by employees, with one participant mentioning that "*feedback is collected and there are tangible actions that are taken”.*

The participants also mentioned the extensive professional development opportunities provided by the organization, with each employee being offered the option to design a personal development plan aligned with their objectives. This emphasis on individual growth was well-regarded, as expressed by a participant: *"So yeah, development-wise really, it's a really good organization”.*

Furthermore, the organization empowered employees to shape their roles according to their skill sets, and they were encouraged to take on new tasks and responsibilities proactively. To support these endeavours, the company offered accessible training resources, mentors, and coaches.

However, the study also revealed some obstacles to innovation. Regulatory guidelines were identified as a hindrance to effective communication, as adherence to these guidelines

sometimes posed challenges. One participant made a specific quote about rules and regulations, stating that *"because if people obey them too strictly, it makes communication more difficult"*.

Participants observed that the organization's structured hierarchy and established protocols, influenced by regulatory mandates and the company's enduring projects with substantial investments, acted as barriers to unrestricted thought and spontaneity. One participant offered insights on this aspect, remarking that the firm maintains a "*very hierarchical setup and many written procedures due to many fault reasons, sometimes in legal requirements"*. When asked how to improve, the participant responded that the company needs *"a bigger push towards building that more startup mindset, entrepreneurial mindset"*.

Participants recognized the need for a more entrepreneurial mindset to foster organizational innovation. However, in doing so, they also reported obstacles in the shape of high formal requirements. One participant said, *"If it's not down on PowerPoint and you haven't presented it at a meeting and got endorsement from your colleagues, that it doesn't really exist"*.

In conclusion, the participants consistently voiced their perceptions about organizational innovativeness. Their collective insights revealed that elements like motivation, feedback culture, available professional development opportunities, and the extent of hierarchical and bureaucratic structures notably influence an organization's innovativeness. The interviews showed that many participants felt that their team facilitated open communication, learning, and innovation. They described the environment as possessing a positive and constructive problem-solving approach, a marked receptiveness to fresh ideas, valuing individual differences, and being committed to advancing through effective communication.

4.2 Psychological safety

Participants consistently reported high levels of psychological safety within their team. They described their discussions with colleagues as easy-going and professional, highlighting a strong sense of understanding and comfort among team members. One participant expressed, *"we're quite comfortable challenging each other"*. All participants agreed that such a high level of psychological safety positively impacts their collaboration with peers, leading to efficient and effective teamwork.

Furthermore, the team showed a positive and constructive attitude towards problem-solving. When faced with unmet expectations, they viewed it as a valuable learning opportunity rather than a failure. One participant elaborated on this perspective, expressing a preference for

cultivating a learning culture within the team and organization: *"Prefer talking about a learning culture. And that's what we also try to promote within our team and within the organisation"*. This learning-oriented culture is fostered through regular physical meetings, during which team-building activities are organized. Moreover, the participants recognized the vital role of the leader in shaping the team's behaviour, emphasizing the need for the leader to exemplify the desired behaviour for others to follow*: "ultimately someone needs to start it and when they do start it, the reaction needs to be the right reaction because the wrong reaction will shut it down. The right reaction will expand that"*.

The participants also reported a strong sense of mutual support within the team. They found it easy to seek help from their colleagues, who were readily available and enthusiastic in assisting when needed. The team was perceived as approachable and supportive, creating a nurturing environment for innovation and collaboration. One participant stated: "*I've got a good relationship with them and I'll ask them I need help and they'll hopefully then be able to help me"*.

Additionally, the team was described as highly receptive to new ideas. The participants stressed the team's prioritization of openness to novel concepts, an essential aspect of their line of business. One participant articulated: *"If it's a new idea and people go, oh, that's a good idea, then immediately there's energy to kind of go after it"*. The team members felt comfortable sharing new plans, even in their early stages of development. This open exchange allowed the team to collectively contribute their insights and make the most of emerging ideas, as expressed by one participant: *"Feel quite comfortable doing that with the team and, and sharing my ideas or ideas even [...] when they're in their infancy because again, that supportive network that we've got"*.

Furthermore, the team's recognition of the value of individual differences was identified as another key strength. The participants acknowledged that team maturity and diversity contributed to this appreciation, noting that diversity extended beyond gender and nationality to encompass diverse backgrounds and experiences. It was believed that this diversity enriched perspectives and ultimately contributed to achieving better outcomes. As one participant stated: "*I think we're quite a diverse team in terms of approach and as we always try to make space for different perspectives*".

Lastly, the team's commitment to improvement and learning was evident through intense communication and structured methods. They engaged in deep dives into specific topics, thoroughly discussing challenges, their origins, and the underlying reasoning. One participant explained their approach: *"we really dive deep into those challenges, discuss [...]*

where do they come from [...] so there's a lot of reasoning [...] that goes with it. [...] we do that in a very structured way within business transformation". This dedication to communication and structured problem-solving processes contributed to the team's ability to address issues effectively and foster psychological safety within the team.

In summary, participants in the study consistently described experiencing high levels of psychological safety within their team, marked by easy and professional interactions with colleagues. They believed this positively influenced their teamwork, emphasizing the benefits of open challenges and efficient collaboration. The team adopted a constructive attitude towards problem-solving, perceiving unmet expectations as learning opportunities. They held regular physical meetings with team-building activities and acknowledged the role of leadership in setting behavioural examples. The team atmosphere encouraged mutual support, innovation, and openness to new ideas, emphasising the value of individual differences and diversity. In essence, the team's psychological safety, supportive environment, openness to ideas, importance of diversity, and commitment to learning drove effective teamwork.

4.3 The role of national culture

In the subsequent sections, this study will investigate the role of national culture on the relationship between team psychological safety and organizational innovativeness, in line with the propositions formulated earlier. Unlike previous sections that separately examined innovation and psychological safety, this section specifically emphasizes the unique role of national culture, clarifying the distinct interplay between these constructs. For a full overview of all propositions, see Table 2.

4.3.1 The relationship between power distance, team psychological safety and organizational innovation

In general, the participants reported low levels of power distance that were perceived as beneficial for their cooperation with colleagues. Participants in this study were very open about how information is shared throughout the organization and how this affects their work. One participant stated: *"If I need to be informed, I get informed by my line manager or colleagues or people I'm working with there"*. Participants were also positive about how information is shared on an organizational level. The organization was perceived as supportive of transparency and information sharing, with one participant stating: *"I think the organisation helps develop that in that we certainly encourage people to feel safe about sharing information and communication"*.

However, on the other hand, participants also reported situations where information sharing was constrained to some extent. Within the team, it was generally perceived as positive and open. However, information sharing was sometimes considered constrained with other internal teams, external parties, or higher levels of the organization. One participant noted, "*it might be that we are still quite working in certain silos, like my team is my kingdom and this is where I naturally move and share information"*. Referring specifically to communication with higher organisational levels, another participant indicated that *"sometimes it took quite some time until they really started sharing information"*.

The participants indicated an easy-going style of communication with superiors. Superiors were considered to be accessible, although in a structured way. One participant described the way communication happened as *"scheduled regular touchpoints"*. Superiors were also considered supportive of new ideas by their subordinates and encouraged them to share these new ideas. One participant described this situation as follows: *"People are able to come up with their ideas, voice their opinions and do so in an environment that I would say is, is safe. That's my experience".* The participants mentioned diverse leadership styles, ranging from directive to democratic. One participant noted that *"it depends which leader you're talking to and what their preferred style of communication is. You would change and adapt"*.

The findings derived from the interviews present a diverse range of outcomes. However, a predominant trend within the data suggests that reduced levels of power distance tend to favourably influence the association between team psychological safety and organizational innovation. Participants described instances of constrained information sharing and a perceived resistance to cross-hierarchy communication. In contrast, participants also depicted a working environment where open dialogue flourished, and innovative thoughts were actively encouraged. Consequently, proposition 1 was supported.

4.3.2 The relationship between individualism, team psychological safety and organizational innovation

In general, participants reported high levels of individualism in their work environment. For example, participants mentioned high degrees of autonomy in their work. This was explicitly emphasized by the company and beneficial towards fulfilling the role. However, this also means that participants were responsible for their personal development and achievements. The company was considered cooperative in this regard but not actively encouraging, reflected by statements such as *"everyone has responsibility on their personal achievements"* or *"they don't request you specifically to get this training done"*.

However, some statements of the participants were related to low levels of individualism. For example, one participant reported that *“when it's an opinion, I keep it to myself”* and that the team always *“aim[s] for consensus”*. Some participants expressed hesitancy to speak up in the team, stating, *"I still often experience this initial reaction of pushing back arguing against"*. In general, the team's discussion culture was considered *“maybe sometimes too friendly”*. Moreover, it was found that often, individual arguments are held back to follow the company's judgment.

The participants emphasized the importance of rewards and recognition in an individualistic culture. One participant mentioned the existence of rewards for exceptional performance, stating that employees can receive *"A financial reward or some other kind of reward”*. Another participant noted that *"they're rewarding very well even in terms of compensating good benefits and also rewarding with some initiatives like giving you appreciation as well*”, emphasizing the recognition aspect. Additionally, a participant mentioned how projects are selected for presentation to the wider team with certificates given, leading to employee appreciation in front of the community.

Participants expressed a sense of autonomy and empowerment in shaping their roles in the organization. One participant mentioned: *"If I want to work with a particular team in a particular way, I can do that”*. Another participant stated, *"as long as we are within the rules and the legal framework, you've got quite a lot of freedom”*, and *"I'm quite free to do what I feel is right”*. Another participant emphasized their need for freedom in their work, stating: *"I want and need a high level of personal autonomy in how I work”.* The boundaries set by the organization regarding shaping one´s role were considered to be very loose as long as objectives could be fulfilled and one could prove the necessity for a certain “role configuration”.

To sum up, the participants' insights drew a distinction between individualistic and collectivistic aspects. Participants believed that a pronounced value is placed on personal freedom, being recognized, autonomy, and expressing one's views. In contrast, participants also provided insights that leaned towards values like group harmony and trust. However, they did acknowledge that the nuances of open expression and empowering individuals play out differently in such settings. Therefore, proposition 2 was supported.

4.3.3 The relationship between masculinity, team psychological safety and organizational innovation

The participants´ statements regarding masculine or feminine traits offer a mixed view. Some of the participants' statements reflect characteristics associated with assertiveness and competitiveness. For example, one participant reported that they considered themselves *"a competitive person to some extent"*. The longevity of the projects they work on brought about a certain "professional attachment", reflected in the following statement: *"You work on it for certain period of time, so it is your own baby. And yes, you definitely want to win it"*.

While these aspects were considered beneficial towards business performance, some aspects of masculinity were perceived as less useful. For example, some participants mentioned that they feel that *"they have to kind of prove themselves a little bit*". This leads to a culture where failure is less accepted. Regarding management, another participant stated: *"I think they could be better in sharing failures. So we didn't win this auction, for example. Yeah. that's something we're not good at*".

The participants also reported some feminine aspects in their work environment. For example, it was observed that conflict is sometimes avoided until it becomes inevitable. This is reflected by the following statement: *"conflict sometimes take too much time to arise because they are probably better kept"*. Moreover, participants generally favoured close collaboration as this was perceived to enhance team performance; as stated by a participant: *"I don't believe in stepping over people on the people so I can get the top of the pile"*.

To sum up the findings regarding masculinity, participants shared their understanding and experiences, suggesting a nuanced interplay with team psychological safety and innovation. They felt that traits like materialism, assertiveness, and an orientation towards achievement in predominantly masculine cultures could potentially enhance the bond between a team's psychological safety and its innovativeness. Still, they also recognized areas like confidence and readiness to adapt as needing a deeper dive. Based on these findings, proposition 3 was supported.

4.3.4 The relationship between uncertainty avoidance, team psychological safety and organizational innovation

The data derived from the participants' statements offer a rich understanding of the organizational attitudes and behaviours concerning uncertainty avoidance. For once, the participants' statements reflected a risk-averse attitude within the organization. One participant expressed that *"individuals may refrain from proposing ideas due to the fear of potential*

negative outcomes". Another participant indicated there is a *"clear lack of central processes and procedures and rules"*. A sentiment that supports this was that *"if they were to speak out that and share that in the group, then people, they would be going against the group culture"*.

Despite some showing a positive attitude towards innovation, there was a hesitancy to forward recommendations. A participant noted: *"I think people are not comfortable in putting forward recommendations to the board or to their directors"*. This might be *"because they feel they may do something wrong"*. Participants also mentioned that the high degree of formality further contributes to the apprehension towards proposing new ideas. As one participant said, *"if it's not down on PowerPoint and you haven't presented it at a meeting and got endorsement from your colleagues, it doesn't really exist"*.

While the overall attitude towards innovation is characterized as open, participants perceive the organization as hostile towards large and structural changes, stating, "*I think there's a resistance to anything big*".

The participants' statements suggest a willingness to express dissenting opinions. While some felt there's *"something which everyone can see, but there's a fear of naming it"*, others believed that *"you've got to be aware of the preferred communication styles of the business leaders"*.

Lastly, participants indicated openness to non-conforming behaviour within the team. Despite some feelings that *"individuals may fear naming certain concerns"*, others felt that *"we are not the kind of group that kind of hesitates to open up mouth"*. The statement echoed this sentiment that ideas *"might be completely off or it might not be in line with others, but there is no hesitation"*.

Overall, the study's results suggest that low levels of uncertainty avoidance positively influence the relationship between team psychological safety and organizational innovation. In contrast, high levels of uncertainty avoidance seem to influence the effect negatively. Participants stated that environments displaying characteristics of risk aversion and reluctance to change could potentially diminish the impact of team psychological safety on innovation. Conversely, environments characterized by openness and flexibility were perceived to potentially bolster the positive effects of team psychological safety on innovation.

Therefore, proposition 4 was supported. It is important to note that these perspectives are derived exclusively from the interviews, displaying the participants' individual experiences and interpretations. Below, a table delineates each proposition and indicates whether it was supported based on the evidence gathered during the study.

Table 2

Overview of supported propositions

Proposition	Supported / Not supported
Proposition 1: *Power Distance (PDI) influences the effect of team psychological safety on organizational innovation.*	Supported
Proposition 2: *Individualism (IDV) influences the effect of team psychological safety on organizational innovation.*	Supported
Proposition 3: *Masculinity (MAS) influences the effect of team psychological safety on organizational innovation.*	Supported
Proposition 4: *Uncertainty Avoidance (UAI) influences the effect of team psychological safety on organizational innovation.*	Supported

5. Discussion

In this exploratory study, the author aimed to understand the influence of national culture, as delineated by Hofstede's dimensions, on the effect of team psychological safety on organizational innovation. In the following, the study's findings will be discussed and compared to the existing literature base, thereby explaining potential deviations from the literature.

5.1 The effect of team psychological safety on organizational innovation

The intricate relationship between organizational structures, human dynamics, and the implementation of new procedures provides an expansive framework for understanding organizational innovation, as outlined by Alves et al. (2018). Diving deeper into this landscape, one can recognize the crucial role of team psychological safety in shaping such innovation. This relationship, illuminated through the interview results, aligns with existing theoretical constructs while adding nuance.

Central to the concept of organizational innovation is motivation, a prominent driver identified in the present study. Irai and Lu (2018) posited that psychological safety fosters positive emotions, notably motivation, thus boosting an individual's drive towards innovation. Within such a psychologically safe environment, intrinsic motivations rooted in societal ideals and extrinsic motivations influenced by market dynamics seem to flourish. The creation of this supportive environment empowers team members to innovate without hesitation.

As this study reveals, a pronounced feedback culture, fortified by psychological safety, seems to bolster an organization's learning and adaptability, in line with previous studies by Edwards-Schachter (2018). In such environments, feedback is not merely offered; it is acted upon, paving the way for knowledge dissemination, and fostering team innovation (Tavassoli & Karlsson, 2015).

As reflected in participants ' perspectives, emphasising professional development and empowerment further cements the bond between psychological safety and organizational innovation. Drawing parallels with Tavassoli and Karlsson (2015), such autonomy encourages employees to leverage their tacit knowledge, guiding organizational transformations. The freedom to take risks, coupled with an organization’s supportive stance in training and mentorship, amplifies this.

However, the results of the study also unveil certain barriers to innovation. Despite the inherent benefits of psychological safety, participants also mentioned external constraints,

particularly regulatory frameworks connected to the line of business, which can sometimes stifle innovative tendencies. This is coherent to the findings of Lee et al., (2013), who mentioned regulation and high formalization as barriers to innovation.

Examining the nuances of team psychological safety, the study's findings resonate with prior research, emphasizing the intrinsic connection between a conducive team atmosphere and heightened innovation (Carmeli et al., 2009; Edmondson & Lei, 2014). Within these spaces, unrestrained communication appears to thrive, laying the groundwork for collective learning and innovation**.** Leadership emerges as pivotal, with its actions and responses having a noticeable impact on team behaviours and the underpinning safety dynamics. Additionally, elements like mutual respect, trust, and open dialogue, intertwined with psychological safety, construct the foundation for innovation (Edmondson & Lei, 2014). Adding depth to this narrative is the emphasis on team diversity, which infuses a rich collection of perspectives and experiences into the innovation ecosystem. This is coherent with the findings by Bergmann and Schaeppi (2016), who emphasized the role of team diversity in creating a psychologically safe work environment.

An unexpected yet noteworthy revelation from the study relates to the team's maturity. Numerous participants mentioned that the maturity of their team, primarily characterized by the depth of their familiarity with one another, facilitated smoother collaborations. This profound understanding of team dynamics and interpersonal relationships, arising from prolonged interactions and shared experiences, positively influenced their collective approach to tasks and challenges. This finding resonates with the four-stage model of Wheelan (2009), where the fourth stage in the development of a group, known as the work stage, is characterized by heightened productivity and efficiency, enabling team members to channel their focus on achieving tasks and objectives.

The study participants also remarked on the detrimental effects of high time pressure on innovation. Many participants spontaneously mentioned concerns about excessive workloads, suggesting that their ability and desire to innovate diminished considerably when they felt overwhelmed with tasks. This finding is consistent with the findings of Hsu and Fan (2010), who argued that employees´ ability to innovate is higher when employees experience lower levels of time pressure and increased organisational support.

In conclusion, team psychological safety stands out as an indispensable catalyst for organizational innovation. As the study suggests, championing such an environment, underscored by effective leadership, a feedback-centric culture, mutual respect, and team diversity, is pivotal for fostering innovative endeavours.

5.2 The influence of culture

Understanding the cultural dimensions influencing team dynamics is critical in the rapidly evolving corporate landscape. This study, rooted in Hofstede's framework, delved deep into the national culture dimensions, unveiling their influence on the relationship between team psychological safety and organizational innovation.

5.2.1 Power distance

As the results of the study show, there seems to be an association between power distance and the effect of team psychological safety on organizational innovation. More precisely, low power distance cultures seem to cultivate an environment favourable for innovation. Concurrently, there was an emphasis on constructive superior-subordinate relationships, indicative of a psychological safety level beneficial for upward communication (Edmondson, 1999). The present study aligns with the prevailing academic discourse asserting the benefits of low power distance, where the synergy between psychological safety and innovation appears more robust (Kaasa & Vadi, 2010). This relationship is further substantiated by research on higher power distance cultures like China, wherein the emphasis on role adherence can inhibit individualistic behaviour, potentially diminishing psychological safety (Li et al., 2010).

On the other side, the conceptualization of power distance by Hofstede et al. (2010) elaborates on the potential hierarchical barriers that could inhibit innovation, especially in cultures characterized by high power distance. Such environments may inherently limit information sharing, a phenomenon evident from the findings of this study. The findings also showed resistance to cross-hierarchical communication, suggesting hierarchical influences even in more open settings. The reluctance to freely share information could obstruct the free interchange of ideas, a hallmark of innovation. In high power distance settings, the restriction on information flow could be even more pronounced, which might diminish the relationship between team psychological safety and organizational innovation (Tian et al., 2018; van Everdingen & Waarts, 2003).

Conclusively, the insights gained from this study resonate with existing academic literature, positing that power distance may influence the relationship between team psychological safety and organizational innovation. The limited information sharing and potential resistance to inter-hierarchical communication associated with high power distance might inhibit the relationship between team psychological safety and innovation. In contrast, low power distance, where dialogue is uninhibited and novel ideas are welcomed, could witness

a stronger association between team psychological safety and organizational innovation (Hu et al., 2018).

5.2.2 Individualism

The findings offer a multifaceted narrative based on the interplay between individualism and innovation. Individualistic cultures traditionally emphasize the freedom to innovate, as the study results reflect. This freedom translates to comfort in pursuing ambitions and taking initiatives, underscoring the significance of psychological safety in nurturing innovation within such cultures (Kaasa & Vadi, 2010).

Nevertheless, the results also indicate a nuanced duality. While individualism was predominant, elements of collectivism manifested in occasional hesitations to express opinions. Such tendencies suggest that the presence of organizational micro-cultures or sub-groups may harbour collectivist leanings, potentially tempering the advantages conferred by psychological safety (Li et al., 2010).

The study shows that individualistic contexts prioritize reinforcing psychological safety through rewards, recognition, and autonomy. In alignment with existing literature, the findings posit that individualistic societies often correlate rewards and recognition with innovative contributions. Such reinforcements can motivate employees to develop ground-breaking ideas, creating an atmosphere favourable for organizational innovation. Conversely, the hesitancy to vocalize opinions might be attributed to collectivism, where the collective's harmony is prioritized, often at the expense of dissent (Li et al., 2010). However, in individualistic cultures underpinned by personal achievement, there is an inclination to articulate opinions, fostering a psychologically safe space beneficial for innovation. Moreover, the study resonates with the notion that individualistic settings prioritize personal autonomy. Such freedom to define roles and responsibilities often translates to heightened commitment, engendering a sense of ownership, creativity, and consequently, innovation (Kaasa & Vadi, 2010).

Conclusively, the study's findings harmonize with prevailing literature, emphasizing individualism's profound impact on organizational innovation and team psychological safety dynamics. Individualistic contexts focus on autonomy, recognition, and freedom of expression, culminating in a psychologically secure environment that drives innovation. In contrast, collectivistic environments prioritize group consent and trust, which, while fostering safety, might influence open dialogue and individual empowerment differently.

5.2.3 Masculinity

Masculine environments, typified by materialism, assertiveness, and a focus on achievement, have been found to be beneficial for innovation (Dwyer et al., 2005). The study's findings reveal a setting where competition, a fundamental element of masculine societies, aids in accelerating innovative endeavours. Such settings often prioritize personal accomplishments, creating a competitive environment beneficial to the inception and assimilation of innovative products and ideas. However, an interesting contradiction surfaced. While the recognition and rewards in masculine cultures propel innovation, they can concurrently stifle it by creating a fear of failure. This tension between the drive for innovation and the apprehension surrounding failure manifests a nuanced environment for psychological safety. Rawski and Workman-Stark (2018) add to this by suggesting that pronounced masculinity can potentially erode psychological safety.

Contrastingly, feminine cultures, valuing relationships and harmony, might foster innovation by bolstering psychological safety. The collaborative ethos, characterized by open dialogues and mutual support, may enhance consistent innovation, albeit potentially at a pace distinct from that of masculine societies.

To conclude, the findings support the assumption that masculinity influences the interplay between team psychological safety and organizational innovation. Elements like materialism, assertiveness, and an achievement-driven mindset inherent in masculine societies might amplify the connection between psychological safety and innovation (Efrat, 2014). However, areas like confidence and adaptability within masculine cultures need more exhaustive research to conclusively ascertain their influence on innovation.

5.2.4 Uncertainty avoidance

The study's findings highlight the profound impact of uncertainty avoidance on innovative capabilities. In alignment with existing literature, high uncertainty avoidance is associated with a noticeable resistance to risk-taking, showing hesitancy in treading new or unfamiliar territories (van Everdingen & Waarts, 2003). Within such settings, individuals might hold back from presenting novel ideas or innovations out of fear of possible repercussions, thus blocking the flow of creative ideas (Laukkanen, 2015). Such reluctance is accentuated in environments lacking psychological safety. However, the findings of the study revealed an unexpected contradiction. On the one hand, traces of risk aversion were evident; on the other hand, there were indications of a tilt towards innovative thinking. This complexity implies that while broader societal or national cultures may gravitate towards one end of the

uncertainty avoidance spectrum, organizational subcultures may display contrasting tendencies.

Consistent with the present study's findings, environments defined by low uncertainty avoidance inherently encourage open discussions and constructive disagreements, forming potential sources of innovation, especially when underpinned by psychological safety (Lee et al., 2013). Here, honest feedback and different ways of thinking, without fear of potential consequences, can lead to strong and creative solutions. Environments characterized by low uncertainty avoidance appear to embrace elevated risk levels and showcase receptiveness to innovative propositions. Such an environment, where employees feel motivated and empowered to voice new concepts, creates a nurturing environment for innovation (Shane et al., 1995). Accepting non-conformity and the willingness to engage in open dialogues in these cultures further bolster psychological safety. As confirmed by the present study, this combination of openness and safety encourages team members to share diverse viewpoints, potentially driving organizational innovation forward (Lee et al., 2013).

To sum up, while low uncertainty avoidance is associated with embracing change and innovation and can amplify the influence of team psychological safety on organizational innovation, the opposite might hold true for high uncertainty avoidance. The latter may manifest resistance to novel ideas, potentially tempering the effect of team psychological safety in creating organizational innovation.

5.3 Discrepancies in the data

The discrepancies between the data obtained and the dimensions of Hofstede can be attributed to the methodological differences between this study and the work by Hofstede. Hofstede's seminal work predominantly relied upon quantitative surveys to quantify cultural dimensions, a methodology tailored to obtain structured and standardized responses. While this approach offers valuable cross-cultural comparisons, it may inadvertently obscure the nuanced, context-specific intricacies of culture that can be captured in qualitative studies (Rahman, 2016). Consequently, the qualitative investigation undertaken here has overcome the limitations of exclusively quantitative methods in capturing the richness and depth of cultural phenomena. Using a qualitative approach, this study has revealed subtleties and contextual variations that quantitative surveys might overlook, thereby enabling a more comprehensive understanding of the interaction between national culture, team psychological safety, and organizational innovativeness.

5.4 Comparing subsidiary and parent company environments

As the study progressed, an unexpected observation related to the differing organizational environments between the subsidiary and its parent company emerged. Despite being part of the same overarching corporate structure, the two entities displayed marked disparities in their psychological safety landscapes and innovative behaviour.

The subsidiary showcased a pronounced level of psychological safety among its team members. Such an environment is typically favourable for open communication, risk-taking, and the incubation of novel ideas — all hallmarks of innovation. This finding aligns with contemporary literature, underscoring the significance of psychological safety as a precursor to innovative behaviour (Newman et al., 2017).

Contrastingly, the parent company manifested a distinctly hierarchical structure, which seemed to impede its innovativeness. Hierarchies, while providing clear chains of command and decision-making structures, can occasionally stifle bottom-up innovation and limit the free exchange of ideas (Tian et al., 2018). Employees in such environments might feel restrained from challenging the status quo or introducing disruptive innovations for fear of consequences or misunderstanding (Efrat, 2014; Shanker et al., 2017). This observation suggests that the parent company's organizational design and culture might be inhibiting the cultivation of a psychologically safe environment, which impacts its innovative capacities.

5.5 Theoretical implications

The results of this study have significant theoretical implications for understanding the connection between psychological safety and organizational innovation. Firstly, the research reaffirms the paramount role of team psychological safety in influencing organizational innovation, bolstering empirical evidence for previously posited theoretical frameworks (Newman et al, 2017). Within such a psychologically safe environment, the intricate interplay between intrinsic and extrinsic motivations emerges, offering a detailed comprehension of the individual drivers of innovation. This understanding complements and broadens the academic discourse on the motivational determinants of innovative behaviour (Hollen et al. (2013).

Furthermore, feedback's dominance in the findings underscores its pivotal role in organizational adaptability and learning. This highlights a reinforced connection between a culture of feedback, psychological safety, and the resulting innovative outcomes. Building on the foundational work of Tavassoli and Karlsson (2015), the emphasis on professional development and empowerment within this context shows how autonomy combined with organizational support can serve as levers for innovation.

However, the study also introduces reservations to this relationship, shedding light on potential barriers to innovation, like external regulatory constraints. Such insights augment the dialogue surrounding the potential limitations of psychological safety's impact on innovation. Furthermore, the study contributes richly to the literature by elucidating conditions that foster an atmosphere ripe for innovation, notably leadership dynamics, mutual respect, trustworthiness, open dialogue, and the diversity inherent in teams (Edmondson, 1999).

By integrating Hofstede's cultural dimensions framework, this research offers a refined lens on the cultural nuances that shape the interplay between psychological safety and innovation. Delving into facets like power distance, individualism, masculinity, femininity, and uncertainty avoidance provides a holistic, multi-faceted view, enriching the comprehension of the diverse cultural backdrops within which organizations function.

5.6 Practical implications

The findings of this study not only contribute to the academic discourse but also offer tangible strategies for organizations and institutions eager to enhance their innovative capacities.

To thrive in today's competitive landscape, organizations must strike a balance between fostering an innovative culture and ensuring the psychological well-being of their employees (Newman et al., 2017). Central to this is the establishment of psychological safety. Organizations aiming for a culture of innovation should prioritise this and initiate programs or interventions that underscore trust, mutual respect, and open dialogue. The study shows that such an atmosphere is fertile ground for ground-breaking ideas and innovative endeavours.

Another crucial facet to consider is motivation. The pivotal role of motivation in driving innovation underscores the need for companies to invest in a blend of intrinsic and extrinsic motivational tools. Implementing recognition systems, for instance, can serve as powerful catalysts to spur innovation.

Moreover, companies should cultivate a robust feedback culture to maintain agility and adaptability. This implies a focus on gathering feedback and its pragmatic implementation, ensuring that insights translate into actionable change.

Diving deeper into cultural considerations, organizations within high power distance cultures should actively seek to dismantle hierarchical barriers. Endeavours promoting open communication across all levels can create a more innovative environment. Concurrently, the complexity intrinsic to individualistic cultures demands that organizations identify and cater to

micro-cultures or sub-groups, ensuring that the benefits of psychological safety are evenly shared.

Furthermore, the study's insights into high-masculinity cultures illuminate the need to create environments where risk-taking is encouraged, and the apprehension linked with failure is removed. Policies promoting effort and fostering learning from setbacks can be invaluable in such contexts.

In contrast, organizations embedded in high uncertainty avoidance cultures would benefit from strategies bolstering psychological safety, mitigating fears, and amplifying innovative endeavours. Those operating in low uncertainty avoidance cultures, welcoming open discussions and disagreements, should further augment this with psychological safety to enable innovation.

In summation, this research offers a nuanced understanding of the complex relationship between psychological safety and cultural dimensions in shaping the innovative capabilities of organizations. Both scholars and industry practitioners can harness these insights to create more inclusive, adaptive, and innovation-driven work environments.

5.7 Limitations and future research avenues

Like all academic studies, this study was also subject to certain limitations. First, it is important to note that these findings are based on the quotes of a limited number of participants, and further research with larger sample size and in different cultural contexts would be necessary to strengthen the generalizability of these results. However, the results from this qualitative study provide valuable insights into the interplay between national culture, team psychological safety, and organizational innovation.

Another aspect to consider is the geographical and sectoral specificity of the sample. The study focuses on a team within a large German company, which may have organizational dynamics, hierarchies, and norms unique to its size, industry, and location. Consequently, the influence of national culture on the effect of team psychological safety on organizational innovation may manifest differently in smaller firms, industries, or geographical settings. Therefore, it is recommended to conduct more studies with divisions of companies in the same field to achieve a more comprehensive overview of the influence of national culture on the effect of psychological safety on organizational innovation.

Due to the stringent confidentiality requirements, there were limitations in the granularity of data presentation. The need to ensure that participants and their statements remained unidentifiable, especially concerning their cultural background, meant that some

potentially pertinent details could not be included in the study findings. This restriction may obscure certain culturally specific nuances and insights that could have otherwise enriched the understanding of the influence of national culture. Researchers and readers should be aware of these constraints when interpreting the results.

Future studies should consider the socio-cultural differences between Western and Eastern cultures to understand better empowerment's role in uncertainty avoidance and psychological safety. Given the patterns and interactions hinted at in the qualitative findings of the present study, there is a compelling case for further quantitative exploration. As illuminated through participants ' narratives, the nuanced dynamics between the cultural dimensions of Hofstede, team psychological safety, and organizational innovation would benefit from statistical validation. Quantitative research employing larger sample sizes and more diverse cultural groups can test for potential effects, offering a more rigorous analysis of how these factors interplay. Such studies could use regression models or other statistical techniques to determine if national cultural dimensions influence the relationship between team psychological safety and organizational innovation. By contrasting the rich insights of this qualitative study with the empirical robustness of quantitative methodologies, the field can attain a more comprehensive understanding of the phenomena at hand.

Future studies should also consider the dimensions of long-term orientation and indulgence vs restraint, as defined by Hofstede et al. (2010), to enhance the research base on this topic. Moreover, while the Hofstede et al. (2010) dimensions provide valuable insights, future studies could also explore other cultural frameworks. To build on the study's results, a future study could include the GLOBE study by House et al. (2002) to offer a more diversified and comprehensive understanding of the role of leadership and the interaction of culture with team dynamics and innovation, as derived from the present study.

The novel implication of team maturity suggests that while newer teams might have fresh perspectives and perhaps uninhibited enthusiasm, teams with longer shared histories might benefit from a deep-seated understanding, mutual respect, and streamlined communication, potentially resulting from their extended interactions. Such insights provide an avenue for future research, focusing on how the longevity and maturity of teams might play a role in influencing team psychological safety and, consequently, organizational innovation.

The emergence of the theme of high time pressure suggests a need for further exploration into the relationship between time pressure and innovation. Future research should dive deeper into this topic, shedding light on the effects of high time pressure on the innovative capabilities of organizations.

6. Conclusion

The interplay between team psychological safety and organizational innovation, informed by the backdrop of Hofstede's national cultural dimensions, unveils a detailed impression of the innovation ecosystem in today's organizations. A pivotal takeaway from this study is the indispensable role of team psychological safety as a facilitator for organizational innovation. When teams work in supportive environments characterized by mutual respect, clear communication, and helpful feedback, it becomes possible for innovation to thrive. While this interaction is pivotal, external variables such as regulatory frameworks and organizational hierarchies can sometimes inhibit innovation. These challenges emphasize the need for a harmonized approach, merging traditional organizational methods with entrepreneurial agility, suggesting that a balanced fusion might be the ideal environment for innovation.

The study shows that Hofstede's cultural dimensions, including power distance, individualism, masculinity, and uncertainty avoidance, have an influence on the effect of team psychological safety on organizational innovation. Their complex interrelationship with psychological safety offers profound insights, underscoring the significance of these cultural determinants in the innovation narrative. It is important to acknowledge the potential for diverse, innovative environments even within overarching organizational frameworks, as seen in the divergence between parent companies and their subsidiaries. This highlights the importance for organizations to develop psychological safety strategies knowledgeable of each entity's distinct cultural and hierarchical nuances.

In consolidating the findings, this research reveals the complex interplay between team psychological safety, cultural dimensions, and organizational innovation, offering a comprehensive framework for organizations. The insights provided are invaluable for businesses navigating the increasingly complex global corporate landscape. By acknowledging and harnessing these dynamics, organizations can unlock the vast innovative potential intrinsic to their teams, directing their trajectory towards becoming true innovation leaders. Future research endeavours are encouraged to delve deeper into these multifaceted interactions, ensuring that the impact of innovation continues to evolve with richer insights and enhanced understanding.

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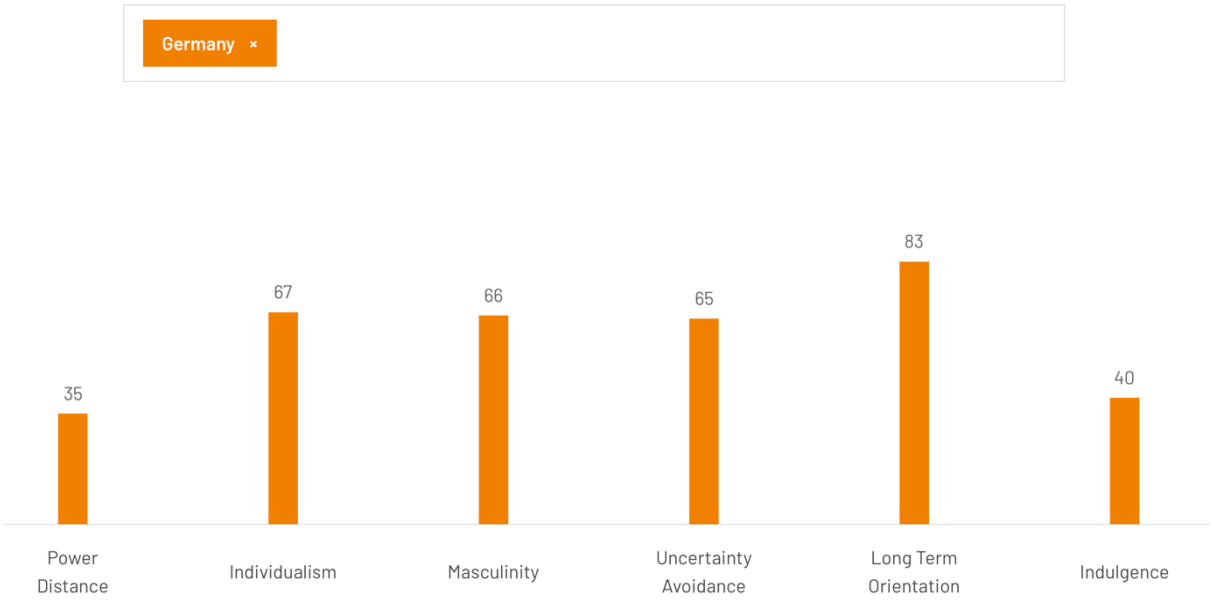
Appendix A

Overview Hofstedes country scores of Germany

Figure A1

Hofstede country scores of Germany



Note. From "*Country Comparison Tool*", by Hostede Insights, n.d. (https://www.hofstede-insights.com/country-comparison-tool?countries=germany). CC BY-NC.

Appendix B

Figure of Edmondson scale

Figure B1

Edmondson scale

		Strongly disagree		Neutral		Strongly agree
Part 1: Individual safety		**1**	**2**	**3**	**4**	**5**
1	In this team, it is easy to discuss difficult issues and problems.					
2	I won't receive retaliation or criticism if I admit to an error or mistake.					
3	It is easy to ask a member of this team for help.					
4	I feel safe offering new ideas, even if they aren't fully-formed plans.					
Part 2: Team respect		**1**	**2**	**3**	**4**	**5**
5	In this team, people are accepted for being different.					
6	My teammates welcome my ideas and give them time and attention.					
7	Members of this team could easily describe the value of others' contributions.					
Part 3: Team learning		**1**	**2**	**3**	**4**	**5**
8	In this team, people talk about mistakes and ways to improve and learn from them.					
9	We take time to find new ways to improve our team's work processes.					
10	Members of this team raise concerns they have about team plans or decisions.					
11	We try to discover our underlying assumptions and seek counterarguments about issues under discussion.					

Note. From "The fearless organization: Creating psychological safety in the workplace for learning, innovation, and growth", by A. C. Edmondson, 2018, *John Wiley & Sons*.

Appendix C

Table of propositions and literature evidence

Table C1

Propositions and evidence from the literature

Proposition	Literature evidence from theoretical framework
Proposition 1: *Power Distance (PDI) Moderates the Effect of Team Psychological Safety on Organizational Innovation.*	hierarchical culture inhibits innovation through constrained information sharing; therefore, organizations must avoid these hierarchical cultures (Tian et al., 2018; van Everdingen & Waarts, 2003) low power distance between members of an organization enables communication across professional or hierarchical perimeters (Shane, 1993) low power distances enables the linkage of various creative ideas and thoughts can result in exceptional combinations and even revolutionary breakthroughs (Kaasa & Vadi, 2010) power distance enhances employees´ focus on the fulfilment of their role and related responsibilities. This focus on the task means that in general, employees will set aside their self-interest in favour of their task. This abandonment of self-interest reduces psychological safety as it conflicts with the felt obligation towards an employee´s role. It also makes employees less likely to speak up, which is associated with reduced psychological safety (Li et al., 2010)

	as power distance between medical and nursing students decreased, the psychological safety increased (Appelbaum et al., 2020)
Proposition 2: *Individualism (IDV) Moderates the Effect of Team Psychological Safety on Organizational Innovation.*	in individualistic cultures, patents are awarded more often than in collectivistic cultures; this is linked to increased freedom of employees to engage in new product development (Hofstede, 2001; Kaasa & Vadi, 2010)
	the more hedonistic and product-focused characteristics of individualistic cultures are favourable for innovation (Lynn & Gelb, 1996)
	in individualistic societies, individuals are more likely to receive rewards and recognition for their innovative and valuable ideas (Kaasa & Vadi, 2010)
	In collectivistic cultures, members of an organization are also less likely to speak up or challenge a leader´s decision because they value group harmony, and thus the existence of a psychologically safe working environment (Li et al., 2010)
	in individualistic cultures, people base their trust in a leader on the perceived ability and integrity of that leader, whereas in collectivistic cultures, people trust others when interactions are predictable and benevolent; this aspect is related to psychological safety (Walumbwa & Schaubroeck, 2009)

Proposition 3: *Masculinity (MAS) Moderates the Effect of Team Psychological Safety on Organizational Innovation.*	The materialistic, assertive character of masculine societies makes introducing and accepting new product innovations occur faster in these societies than in those with a more person-oriented, quality-of-life emphasis typically associated with feminine cultures (Dwyer et al., 2005). Masculine cultures are more achievement oriented and exhibit less gender egalitarianism (Khan & Cox, 2017) members of masculine societies are also generally associated with confidence, positivity, and change readiness, which is more likely to result in an innovative orientation (Efrat, 2014) Policing culture was linked with reduced psychological safety in work environments (Rawski & Workman-Stark, 2018) the perception of the masculinity contests was associated with lower levels of psychological safety among police officers (Workman-Stark, 2021)
Proposition 4: *Uncertainty Avoidance (UAI) Moderates the Effect of Team Psychological Safety on Organizational Innovation.*	in cultures with a high score on the uncertainty avoidance index (UAI), a risk-averse attitude means that companies will avoid taking unnecessary risks and will only embrace innovations if their value has already been demonstrated in the market (Everdingen & Waarts, 2003) On the contrary, cultures with low uncertainty avoidance are more comfortable with increased

levels of risk (Lee et al., 2013) and are more easily convinced about the value of innovative ideas (Shane et al., 1995).

The associated attitude and mentality of uncertainty avoidance also means that individuals are less motivated to propose new ideas that might be turned down (Kaasa & Vadi, 2010)

In an organizational context high uncertainty avoidance is often related to resistance to innovations, highly formalized management and the constraining of innovations (Laukkanen, 2015)

Employees in high-UAI cultures are generally less empowered to express their opinions and values, as they often face greater social repercussions that can damage their reputation or attract disapproval from their peers (Dong & Liu, 2010)

On the work floor, high uncertainty avoidance is visible through a reduced inclination to disagree with superiors, less flexibility and increased reliance on formal rules and procedures, as well as a low interest in individual learning (Zaman & Abbasi, 2020)

On the other side, members of low-UAI societies are more comfortable with showing non-conforming behaviour (Shane et al., 1995).

Appendix D

Interview schedule

Interview procedure

1. Presentation of the author, the study and the purpose of the interview and the potential contribution it might add to the existing literature
2. Mention that all collected data will be anonymized and used exclusively for the purpose of this study. After completion the data will be deleted
3. Mention that it is possible to skip questions if they feel uncomfortable or unwilling to answer
4. Mention that it is possible to stop/pause the study at any point
5. Ask for consent on the reuse of transcript quotes
6. Ask for recording
7. Launch recording

1. General questions

a) Age
b) Gender
c) Years of employment
d) Years of experience
e) Job title (junior, senior, head of, …)

Transition: First, some questions about your organization and your role

2. Organizational Innovation

a. How would you characterize the communication with superiors?

Do you consider your superiors to be open to new ideas?

How does this influence communication across different roles or levels?

b. How would you characterize the atmosphere inside the organization?

Would you consider the company to be hierarchical or nonhierarchical?

How would you say the culture affects information sharing throughout the organization?

How does your company encourage new ideas from you or your team?

How does the organization recognize and reward employees for innovative ideas?

Would you consider the organization to be bureaucratic (rigid and hierarchical organizational structures, excessive rules and regulations, and a focus on formal

procedures and protocols) or decentralized (a more flexible and decentralized decision-making process, with fewer formalities and a greater emphasis on individual or local autonomy)? And why?

c. To what extent can you shape your own role in the organization?

Do you experience strict or loose boundaries in the shaping of your role?

d. According to literature, organizations sometimes experience challenges when trying to innovate, such as lack of time or other resources, or resistance to change. To what extent do you agree with this statement regarding your organization?

How does the organization address or overcome these challenges?

e. In what way are you able to provide feedback to your organization?

f. Is your organization open for feedback and suggestions about existing practices?

Are there formal channels or processes for employees to contribute ideas or provide feedback on existing practices?

g. How does your organization measure and evaluate the success of its innovative initiatives?

Are there specific metrics or indicators used to assess the impact of innovation on organizational performance or outcomes?

h. How does your organization support you in your professional development?

Are there training programs, workshops, or resources available to help employees enhance their innovation capabilities?

Transition: Now I am going to ask some questions about how you perceive working with your team

3. Team Psychological safety

a. How does your team handle challenges that may arise in the process of working together?

How does your team discuss these challenges?

Would you consider these discussions easy or difficult?

b. Can you share any experiences or examples of situations where you were unable to meet expectations in the context of your job?

How did your team react to this situation?

Did you receive negative consequences or criticism?

How do you think a team can create an environment where people feel safe to admit and address errors?

c. Can you describe your experiences and thoughts about asking for help from other team members?

What makes it easy or difficult to ask for help within the team?

Can you give any specific examples that show how seeking assistance from team members works?

d. Can you tell me about your experiences and thoughts regarding openness to new ideas and plans in your team or workplace?

How do you feel about sharing new plans, even if they are not fully developed?

Are there any factors or aspects of the team or organization that make it safe to share these early ideas or plans?

e. Can you describe how your team accepts and values individual differences in opinion or mentality?

How do team members embrace diversity in opinions and attitudes?

f. Can you describe how your teammates receive your ideas?

How do they show openness and attentiveness to your ideas?

Can you give any specific examples where your ideas were welcomed and given careful consideration?

g. Can you describe how team members recognize and appreciate each other's contributions?

How do they understand the importance and impact of others' contributions?

Can you give any specific examples where team members easily acknowledged the value of each other's contributions?

h. Can you describe how the team addresses situations that were not in line with expectations and encourages improvement and learning?

How do team members discuss mistakes, and what approaches or strategies are used to learn from them?

Can you give any specific examples where the team openly talked about mistakes and actively sought ways to improve and learn?

i. Can you describe how the team identifies and implements new ways to improve work processes?

How does the team go about seeking and implementing improvements?

Can you give any specific examples where the team took time to explore innovative approaches or suggestions to enhance work processes?

j. Can you describe how the team encourages raising concerns about plans or decisions?

How do team members express their concerns and contribute to the decision-making process?

Can you give any specific examples where team members felt comfortable raising concerns and had their voices heard?

k. Can you explain how the team talks about the ideas they believe to be true and considers different points of view when they discuss underlying assumptions?

How do team members identify ideas and consider alternative viewpoints?

Can you give any specific examples where the team actively sought a better understanding of ideas and actively sought different perspectives?

Transition: Lastly, I want to ask you some questions about your personal views / attitudes, not related to work or private

4. Culture

a. How comfortable are you with deferring (showing respect, obedience, or submission to someone or something) to greater authority?

How comfortable are you with hierarchical structures?

b. Which do you believe in more: conforming to community values or being personally responsible for your own success and achievements?

c. Do you prefer having a well-organized and planned life, or do you feel more comfortable in situations that are spontaneous and dynamic?

Are you okay with unexpected events, or do you prefer everything to be carefully organized?

d. Is it more important for adults to prioritize material comforts (cars, houses), social status, and prestige, or do you believe that being part of a supportive community and having a large family is the most valuable aspect of life?

Appendix E

Pre-defined Codebook

Table E1

Pre-defined Codebook based on theoretical framework

Code group	Codes
demographics	age
	job title
	seniority
	work experience
organizational innovation	openness for feedback
	atmosphere
	autonomy
	bottom up communication
	incentives
	bureaucratic
	centralized decision-making
	communication channels
	innovation awareness
	innovation challenge
	innovation culture
	innovation enabler
	innovation leverage
	innovation measurement
	innovation obstacles
	innovative ideas
	loose boundaries
	measuring improvement
	open information sharing
	professional development
	reliance on formal rules
	rules & regulations
	support in development
	training

	unused potential
	willingness to improve
team psychological safety	(negative) consequences/criticism
	asking for help
	openness for ideas
	improvement
	discussion
	discussion culture
	discussion of mistakes
	easy discussion
	expressing concerns
	expressing opinions and values
	feedback
	feedback channels
	feedback culture
	hard discussion
	high psychological safety
	identifying underlying assumptions
	improvement plan
	leader characteristics
	low psychological safety
	open communication
	shaping own role
	sharing new plans
	team characteristics for psychological safety
	team culture
	team reaction
	trust
	valuing individual differences
power distance	decentralized decision-making
	participation in decision making
	constrained information sharing

	cross-level communication
	focus on role fulfillment
	hierarchical culture
	hierarchy
	high power distance
	low power distance
	negligence of self-interest
	perceived obligation
	top down communication
individualism	challenging leader
	trust based on ability
	trust based on predictability
	chain of command
	collectivism
	focus on group harmony
	high individualism
	negligence of rules
	recognition
uncertainty avoidance	high uncertainty avoidance
	low uncertainty avoidance
	preference for planning
	risk averse
	spontaneity
masculinity	assertiveness
	competitiveness
	femininity
	focus on successes
	high masculinity
	low masculinity
	materialism
	person-orientation
	quality of life focus
	strong social integration

Appendix F

Final codebook

Table F1

Final Codebook sorted by Code Group and Frequency

Group	Code	Frequency
demographics	work experience	11
	seniority	11
	job title	11
	age	11
organizational innovation	innovation challenge	23
	innovation culture	21
	innovation obstacles	17
	professional development	15
	hierarchy	14
	innovation enabler	12
	leadership	11
	high work pressure	11
	support in development	10
	autonomy	10
	open information sharing	9
	bottom up communication	9
	openness for feedback	8
	atmosphere	8
	innovation measurement	7
	innovation awareness	6
	company characteristics	6
	reliance on formal rules	5
	communication channels	5
	resistance	4
	loose boundaries	4
	cultural bias	4
	confidentiality	4
	bureaucracy	4

	ambiguity	4
	rules & regulations	3
	willingness to improve	2
	measuring improvement	2
	innovation leverage	2
	incentives	2
team psychological safety	high psychological safety	75
	openness for ideas	25
	open communication	24
	low psychological safety	22
	team characteristics for psychological safety	20
	asking for help	19
	valuing individual differences	16
	feedback	16
	team culture	15
	feedback culture	14
	leader characteristics	13
	discussion culture	12
	shaping own role	11
	reflecting	7
	feedback channels	7
	trust	6
	improvement	6
	expressing opinions and values	6
	seeking improvements	5
	expressing concerns	5
	sharing new plans	4
	easy discussion	4
	discussion of mistakes	4
	(negative) consequences/criticism	4
	team reaction	3
	showing vulnerability	3
	identifying underlying assumptions	3

	discussion	3
	problem solving	2
	hard discussion	2
	empowerment	2
	team maturity	3
power distance	high power distance	29
	low power distance	19
	hierarchical culture	13
	cross-level communication	11
	nonhierarchical culture	10
	rationalization of hierarchy	6
	constrained information sharing	6
	participation in decision making	5
	decentralized decision-making	5
	top down communication	3
individualism	high individualism	27
	collectivism	19
	focus on group harmony	5
	recognition	2
uncertainty avoidance	high uncertainty avoidance	28
	low uncertainty avoidance	21
	spontaneity	3
	preference for planning	2
masculinity	femininity	12
	high masculinity	9
	low masculinity	5
	assertiveness	4
	competitiveness	2

Note. The column “Frequency” shows the frequency of code usage in transcripts.