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TITTEL: Which mediators must be present for team psychological safety to enhance team performance in organizations, and which moderators strengthen this relationship?

ENGELSK TITTEL: Which mediators must be present for team psychological safety to enhance team performance in organizations, and which moderators strengthen this relationship?

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Preface

This paper is the final assignment of the bachelor's in economy and administration at the University of Stavanger, spring 2024.

I have always had a personal interest in psychology, as well as developing fondness for organizations and their structures in recent years. Since this bachelor's degree is revolved mostly around the economic, administrative, and structural aspects of organizations, I knew I wanted to incorporate psychology into my final paper. Thus, it was evident that I would write about a psychological theme within the organization and management subject area.

The first struggle arose when deciding and specifying the problem statement, as psychology is a vast and nuanced subject. It was challenging to narrow and limit the scope, as the personal interest for psychology made different findings and sub-topics interesting. This led to difficulty in maintaining a common thread and relevancy to the problem statement throughout the paper. Since psychology is a broad topic, it was also challenging to choose specific enough search-words in researching the data. These struggles were overcome with great help, guidance, and thorough feedback from my supervisor Kjersti Berge Evensen, which I am very grateful for.

Keesha Jasmine Rawf

Stavanger, May 2024

Summary

This paper's problem statement is: "Which mediators must be present for team psychological safety to enhance team performance in organizations, and which moderators strengthen this relationship?". This paper used an integrative review approach to collect data to answer this problem statement, while data analyses were guided by Thematic analysis by Clarke & Braun (2006). The findings of Google's Project Aristotle served as background and reasoning for researching team psychological safety. The results showed that learning from failures was found to be the sole mediator, while the five identified moderators were communication, performance, psychological empowerment, meaning and impact, and leadership. Additionally, psychological safety was examined through the lens of social exchange theory to understand the social process and examine areas for potential mediator- and moderator variables.

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1 Introduction

Along with the development of the modern society, organizations constantly strive to optimize their systems and procedures to efficiently achieve their goals. Valuable inputs such as money, time, labor, and raw materials, are scarce resources that should be utilized in the most efficient manner to ensure quality performance and efficiency. Efficiency can be defined as “using the least amount of inputs to achieve the highest amount of outputs” (Banton, 2023). Efficient organizations can in this way increase profitability, minimize costs, while also gaining competitive edge (Wrike, 2023). By enhancing the employees’ performance, organizations can ensure that their resources are being used in a proficient manner. As most businesses operate with teams rather than individually, it is necessary to examine efficiency and performance in teams. Therefore, it is crucial and beneficial for both organizations and the global economy to identify as to what makes high performing teams.

During Google’s project called “Project Aristotle”, they identified important elements that were necessary to their high-performing teams. The most key element reported from their teams was psychological safety. Psychological safety is ensured when the team members feel comfortable with contributing with their ideas, thoughts, concerns, and opinions, without expecting negative consequences (Dumpeti, 2023). Project Aristotle brings light to the importance of psychological safety for efficiency among teams, however, other studies show that psychological safety cannot improve performance on its own. These studies show that psychological safety can improve performance when in synergy with other factors, e.g., supportive environments (Hirak et al., 2012) and learning from failures (Hirak et al., 2012), (Kim et al., 2020), (Carmeli, 2007), and (Newman et al., 2017). These factors work as links between psychological safety and increased performance, through a mediative effect.

Studies have shown and proven how psychological safety has positive effects on job performance (Castro et al., 2022). However, some of these studies do not include information about the components of mediators that allow psychological safety to enhance performance, additional to which moderators strengthen this relationship (Frazier et al., 2016) & (Lin & Wang, 2022). Thus, the problem statement this paper will address is: “Which mediators must be present for team psychological safety to

enhance team performance in organizations, and which moderators strengthen this relationship?". This paper is a literature study, using an integrative review approach to answer the problem statement. This paper will identify the mediators that psychological safety needs to enhance performance and discuss this process in organizations. The reasoning is to gain knowledge into the nuanced characteristics of psychological safety and understand how it can be best utilized for performance and efficiency.

1.1 Background

Google's Project Aristotle took place in 2012 and aimed at gaining insight into team dynamics, rather than individual performance. The project leaders conducted 200 interviews from 180 of their own teams for two years, to identify the critical elements that contribute to successful teams. Both qualitative and quantitative data was collected from the interviews by including performance- and opinion-oriented questions. They measured efficiency divided into the different sections of the teams: team members, manager, and leader, to be able to specifically identify the different areas of the teams. In this way, Google was able to identify the five most key elements to what makes a successful team, in terms of efficiency and job performance (Duhigg, 2016).

The name of the project originates from the well-known quote "the whole is greater than the sum of its parts", by the Greek philosopher Aristotle. It accurately defines the motivation and belief that pushed this substantial project to be carried out.
In the beginning of the study, they had the premonition that diversification was the most important factor of high performing teams. Additionally, they believed that a team would be successful if they had an experienced manager, access to all resources, and a minimum of a couple of high performing individuals. While searching for contributing factors, they also identified factors that were more insignificant than previously believed. Variables that didn't have a significant impact for team efficiency were factors revolving composition and location such as team size, workload, the number of seniors present, individualistic performance, having

teammates sit together in the same space, extroversion versus introversion, tenure, and collective decision making via consensus (Duhigg, 2016).

The five key elements that were found to make Google's teams successful were in order of importance (Google re:Work, n.d.):

1. Psychological safety
2. Dependability
3. Structure and clarity
4. Meaning
5. Impact

Psychological safety turned out to have the most significant impact on team performance and efficiency. The study showed that the teams that had high levels of psychological safety had improvements in decision-making, work engagement, and increased innovation (Google re:Work, n.d.). To ensure a psychological safe environment, individuals need to feel safe to express their opinions, take interpersonal risks and make mistakes, without the expectation of punishment or ridicule (McKinsey & Company, 2023). Dependability refers to all team members ensuring that the work gets done on time, with the quality and standard that Google sets. Structure and clarity refer to the communication among the team members. The team needs to have the same understanding of roles, goals and plans to work efficiently. Fourth and fifth on the list, meaning and impact, is about the importance of the work. The employees need to understand and feel the importance, novelty, and impact of the work that they do, and how it affects people (McKinsey & Company, 2023).

2 Theory

2.1 Psychological safety

The term “psychological safety” was first coined in 1954 by Carl Rogers, a clinical psychologist, in the context of creativity. He explains the term as necessary for an individual to feel unconditional worth, to foster creativity (Rogers, 1961). However, the person most famously associated with the term is Amy Edmondson, author and professor of Leader and Management at Harvard Business School. Edmondson coined the term in 1999 in the context of job performance and team learning. She explains the term with the quote: “Psychological safety means an absence of interpersonal fear. When psychological safety is present, people are able to speak up with work-relevant content” (McKinsey Quarterly, 2020). Psychological safety has been proven to have multiple positive impacts on team performance, especially in the original research of Edmondson (Edmondson, 2019). It has been proven to enhance motivation and engagement, resilience, innovation, creativity, and learning from mistakes. However, Edmondson acknowledges that psychological safety seems to have a different level of impact depending on the type of work. She explains that the impact it has on performance is stronger when the work is of a creative or novel sort, or completely collaborative (Edmondson, 2019, p. 17-18).

It has been found that cultivating a psychologically safe climate among teams increases creativity, learning, improvements at work, sharing of information, communication, experimentation, and novel performance both collaboratively and individually (Eldor et al., 2021). It has especially been found to be an important contributor for teamwork and communication among healthcare teams, subsequently benefitting the overall safety of patients (Dietl et al., 2023). Research has found that psychological safety increases engagement with 76%, reduces stress with 74%, increases the probability rate of employees applying learned skills on the job by 67%, increases probability of collaboration by 57%, increases productivity by 50%, increases life satisfaction with 29%, 27% less turnover, and lastly a 26% increase in skill improvement caused by increased learning (Minnick, 2023).

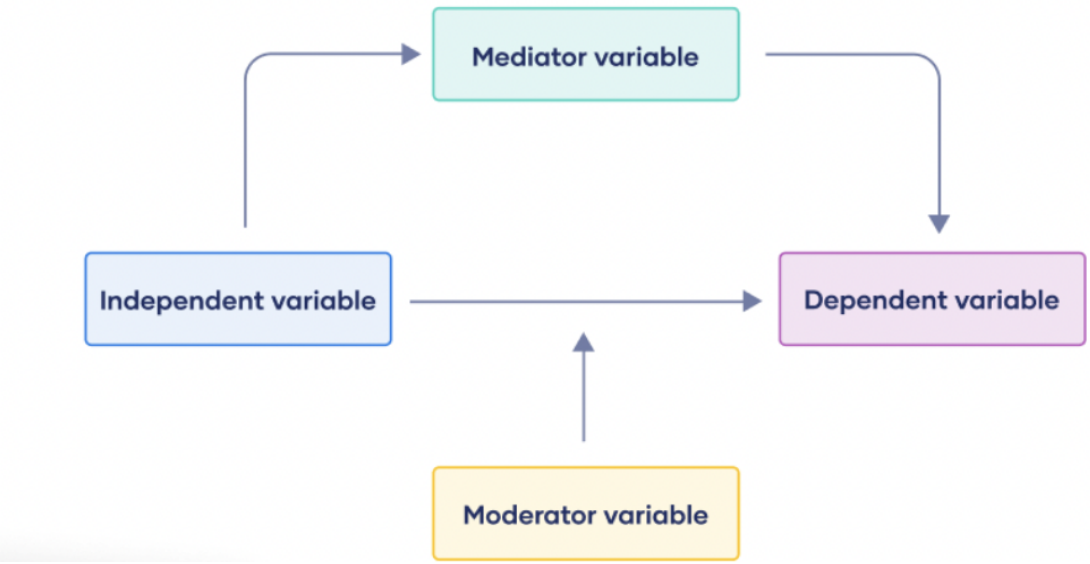
2.2 Mediator versus moderator

To identify possible mediators and moderators between psychological safety and team performance in organizations, it is crucial to correctly understand and

differentiate between what mediating- and moderating variables are. Both terms explain how a third variable have an affect between two other variables, however they signify two different relationships. A mediator explains how two different variables are related, while a moderator affects the strength and direction between two variables (Bhandari, 2023). Regarding this paper's problem statement, identified mediators explain how a third variable acts as a link and allows for psychological safety to enhance team performance. However, an identified moderator explains how a third variable affects the strength between psychological safety and team performance. There can be both mediators and moderators present between two variables. The mediator is caused by the independent variable, and influences the dependent variable (Bhandari, 2023). This process is illustrated below:

Figure 1

The relationship between independent variable, dependent variable, mediator variable, and moderator variable (Bhandari, 2023).



Another factor that is important to note is whether the mediation is a full mediation or partial mediation. A full mediation effect means that the relationship is caused by the mediator, meaning that the relationship would not exist without the mediator present (Bhandari, 2023). Regarding the problem statement, a full mediation is present if the effect between psychological safety and enhanced team performance only occurs when combined with the mediator. A partial mediation also means that the relationship between the interdependent and dependent variable is somewhat

caused by the mediator variable, however the relationship still exists when the mediator variable is removed. This suggests that there are other mechanisms or factors involved as well.

2.3 Social exchange theory

Social exchange theory can explain the dynamics of psychological safety in organizations by examining the interpersonal relations. By understanding the dynamics of social exchanges, the mediators between psychological safety and performance can become more visible.
Social exchange theory was first developed as a concept by sociologist Homans in 1961, and then further developed by Blau in 1964, and by Emerson mainly from 1962 to 1976 (Cook & Rice, 2003). The theory draws from psychological and philosophical literature of behaviorism and utilitarianism. Behaviorism as a theory in psychology was first developed by John B. Watson in 1913, with his article "*Psychology as the Behaviorist Views It".* Watson's work states how psychology needs to focus on the observable and measurable factors, such as behavior, as opposed to the mental processes that are subjective and non-empirical (Watson, 1913, p. 251-253). This theory emphasizes how the environment and conditions are the most influential factors that shape behavior. Utilitarianism was first coined by the philosopher Jeremy Bentham in the late 18th century, and then further developed by philosopher John Stuart Mill in the 19th century (Tardi, 2023). The moral and ethical guidelines of utilitarianism advocates for choosing actions that grants the most happiness overall, believing that this benefits the society. In this way, the environmental focus of behaviorism combined with the utilitarianism philosophy, developed into the social exchange theory.

Social exchange theory focuses on the interpersonal relations from a psychological- and sociological perspective. The theory explains how social behavior consists of repetitions of exchanges between individuals at a micro-level, and how these exchanges create societal macro-structures (Cook & Rice, 2003). These interactions, regardless of being with the intention of negotiation or reciprocation, are imperative to examine. Homans' perspective is that individual behavior is driven by

reinforcements of past behavior, influencing them to put emphasis on past rewards in future behavior. Blau's understanding of social exchange is more economical and utilitarian, by believing that people think more of future rewards, as opposed to Homans' focus on past reinforcements. Blau's economical approach derives from the focus of maximizing the benefits of social exchange in interactions (Cook & Rice, 2003). This theory bases its core assumption about individualistic nature on the belief that humans are seeking rewards as well as avoiding punishments. Therefore, the interpersonal process of interactions is based on the anticipation of rewards and the minimizing of costs between two or more people. In this way, social exchange theory can help explain the process of psychological safety through the lens of social reciprocity, support, trust, and norms.

3 Method

This study uses an integrative review approach to gather and analyze a broad specter of academic literature examining the mediators between psychological safety and enhanced performance in organizations. Integrative review is a method that allows for combinations of multiple methodologies, to gather a vast collection of data to analyze (Whittemore & Knafl, 2005). Both theoretical and empirical literature can be gathered with this method, allowing for a combination of literature that can compare theory in practical studies and settings. The benefit of this method is the holistic overview of the relevant studies published. By having a broad view over the academic information available, it can lead to a more precise understanding of how far, vast, and thoroughly the research has covered the topic. Thereby, it can simplify the identification part of the review. Another benefit is that this method allows for further processing the findings that the collective scholars and scientists have made, ensuring that the time, energy, and resources that have been used is properly utilized. Additionally, this method allows for using new information to explain findings and eventual flaws in previous studies and theories (Whittemore & Knafl, 2005).

3.1 Data collection

This papers method of conducting an integrative review involves primarily using the search engine Google Scholar, to gather relevant studies from different scientific databases. The main databases that have been used in this thesis is Science Direct, Emerald Insight, Frontiers, Sage Journals, National Library of Medicine, ResearchGate, ProQuest, SA Journal of Industrial Psychology, SSRN, Taylor & Francis Online, and SHS Web of Conferences. These are peer-reviewed search engines where scholarly articles are written and evaluated by other experts in the field, ensuring a level of professionalism and validity to the sources (McKenzie, 2024). All included studies are published in these peer-reviewed journals, written in English, containing empirical data, with one study being a systematic review. The inclusion criteria are that the studies have “psychological safety” in the title or keywords, and that they must be conducted in teams in organizations.

The literature search was conducted in Google Scholar by combining “psychological safety” with the following keywords:

- “Psychological safety” and “team performance” and “organization” and “mediator” or “mediating”
- “Psychological safety” and “team performance” and “organization” and “learning” or “learning from failures”
- “Psychological safety” and “team performance” and “organization” and “leadership” and “moderator”

The screening process consisted of identifying potentially relevant studies by relevance of titles and keywords in the first phase. Afterwards, the studies’ abstracts, conclusions, and results, were screened to examine whether the potential studies had produced findings of relevance to this papers problem statement. In practice, this meant reviewing the papers with an explorative perspective to gather findings regarding the mediators that allow psychological safety to improve team performance in organizations. These results are then pieced together and discussed to create a holistic understanding of how these mediators work in practice, additional to discussing which factors determine the degree of the performance enhancing effect. Lastly, eventual gaps in the literature can become more prominent, leading to an understanding of concerns that further research should take into consideration.

3.2 Data analyses

Data analyses were guided by Thematic analysis (Clarke & Braun, 2006). Thematic analysis offers a systematic approach regarding the analysis of qualitative data, which also provides flexibility. The process is divided into several steps to analyse themes across the data (Clarke & Braun, 2006).

1. Familiarization with the data: The first step is to read and understand the data to gain an overview of the literature, while noting initial ideas.
2. Creating initial codes: Then, the researcher identifies relevant segments in the data to the research question, which then form the initial codes, forming the foundation of the themes.
3. Searching for themes: The coded data is then reviewed to identify possible themes and patterns across the selected literature. This process is done by organizing the initial codes into similar groups.
4. Reviewing the themes: The themes are then reviewed and refined into accurate themes that explain the data. In this step, examining consistency and cohesiveness is crucial.
5. Defining and naming the themes: The researchers define and name the decided themes and describe them in relation to the research question. The themes are explained with context to the research.
6. Producing the report: Finally, the report is produced by presenting the findings incorporated with the themes in relation to the research question.

The findings were synthesized by first extracting the key findings in each study. This means identifying results that proves a mediator or moderator of the relationship between psychological safety and team performance. After identifying and gathering these individual results from each study, important pieces in the literature was highlighted and collected into relevant segments of information. These made the initial categories which were analyzed to search for repeating patterns, themes, and relationships across the literature. These patterns can only be identified by analyzing multiple studies. In this manner, the integrative review method allows for using

existing information to create new knowledge. However, the key to gather accurate additional information through these studies is by reviewing them objectively, unbiased, and critical.

4 Results

The results consist of eight main studies about the mediators and moderators of the relationship between psychological safety and team performance in organizations, whereas one is a systematic review. The systematic review also included findings of psychological safety itself having mediation- and moderation effect onto team performance (Newman et al., 2017). The identified mediators and moderators made the themes of this paper. Learning from failures was the only identified mediator of this relationship, while the moderators were found to be communication, unit performance, psychological empowerment, meaning and impact, and leadership. The seven themes of this paper are presented in the table below, with including the categories that made the themes.

	Theme	Categories
1	Psychological safety as mediator and moderator	• Supportive environments as antecedents of psychological safety • Psychological safety as a mediator between supportive environments and performance • Moderating effects of psychological safety on team expertise diversity and performance
2	Learning	• Learning from failures • Mediating effect of team learning between team psychological safety and team performance • Influence of leader inclusiveness on learning • Amplifying effect of conflict and learning on psychological safety • Learning environment • Exploitative learning

		• Learning-orientation and behavior • Relationship between learning, social capital, and psychological safety
3	Communication	• Team communication as crucial for collaboration and performance • Structure and clarity in team communication • Consistency in survey answers • Social capital and its impact on learning from mistakes through communication
4	Performance	• Moderating role of team performance in the relationship between leader inclusiveness and team performance • Psychological safety through leader cues and behavior being more significant for low-performing teams • Performance affecting leader dependability • Psychological safety maintaining productivity in high-performance teams
5	Psychological empowerment	• Moderating effect of psychological empowerment on the relationship between psychological safety and team performance • Employee influence • Control and power
6	Meaning and impact	• Importance of purpose • Workplace contribution • Key factors in high-performing teams • Psychological empowerment dimensions
7	Leadership	• Moderating effect of transformational leadership on psychological safety and team learning • Leadership style and its impact on team performance • Supportive environments

4.1 Theme 1: Psychological safety as a mediator and moderator

Newman et al. (2017) conducted a systematic review of psychological safety. They examined a total of 83 articles, of which 78 were empirical studies, that included the term ‘psychological safety’ in the title, keywords, abstract, or in the empirical analysis. They only included studies done about work environments, between the years 1990 and 2015. Across these studies, the researchers found that the main factors that foster psychological safety individually and among teams are connected to supportive environments. Supportive environments in this setting are categorized as supportive practices, supportive leadership, and supportive relationships. They elaborate that these environments are found to be the antecedents of psychological safety, where psychological safety in turn acts as a mechanism where the positive effects of the supportive environment can transmit into desirable results (Newman et al., 2017). The mediation effect of psychological safety was also proven between transformational leadership and team process performance (Gari et al., 2020). Psychological safety was proven to enforce a full mediation effect, allowing transformational leadership to improve the team process. In this manner, psychological safety is found to act as a channel, or a mediator between supportive environments and improved performance.

The systematic review of Newman et al. (2017) also showed that psychological safety plays a moderative role on the positive relationship between the diversity of team expertise and team performance. There have been studies exploring the limitations of how expertise diversity can improve performance, concluding that it can hinder performance depending on whether task uncertainty is high (He et al., 2021). These results show that diversity in team expertise can both enhance and hinder performance. In practice, this means that when a team has positive effects caused by expertise diversity, psychological safety can amplify these positive effects onto performance. However, this effect is not unconditional, as task uncertainty can hinder this process.

4.2 Theme 2: Learning

The data analysis for possible mediators between psychological safety and team performance showed that learning from failures repeatedly appeared as a proven mediator (Hirak et al., 2012), (Ortega et al., 2014), (Kim et al., 2020), & (Jha, 2018). This reoccurring pattern proves the importance of learning from mistakes to enhance performance. It was found evidence that suggests that psychological safety is not enough as a sole factor to improve performance. This evidence stems from results that showed that when teams are effective in learning from their failures, psychological safety no longer showed a relationship to performance in their tests (Hirak et al., 2012). Similarly, a research article that examined the factors that influences performance in teams also found that only the indirect effect of learning was significant in their model, proving a full-mediation effect (Kim et al., 2020). Learning-orientation has been tested for both mediation- and moderation effect between team psychological safety and team performance (Jha, 2018). The results confirmed learning-orientation as a mediator between psychological safety and performance (Jha, 2018). Another study examining the relationship between change-oriented leadership, psychological safety, and team performance, also found that team learning mediates the relationship between psychological safety and team performance (Ortega et al., 2014). Furthermore, no other mediation variables appeared in the data between psychological safety and team performance, which indicates the possibility of learning from failures to be the sole mediator of this relationship.

Another noteworthy finding is about the relationship between social capital, psychological safety, and learning from failures. The study by Carmeli (2007) examined the relationship between these factors to understand and distinguish exactly how they affect each other. Social capital is measured into the extent that employees work together to share ideas and information, solve problems, and develop solutions. It was found that social capital is both indirectly and directly related with learning from failures through psychological safety, hence signifying a partial mediation (Carmeli, 2007). This result emphasises that social capital and teamwork has effect on learning from failures, however learning from failures is the only variable that has shown a full mediation effect from the dataset.

The mediation process of learning from failures is described by psychological safety facilitating both environmental and behavioral types that aligns with learning. When employees are psychologically safe, they are safe enough to speak up, which in turn creates a learning environment (Hirak et al., 2012). The learning environment encourages the team to admit to mistakes, which allows the employees to learn more rapidly and thereby increasing performance (Hirak et al., 2012). As well as creating a learning environment, psychological safety also facilitates learning-oriented behavior. Psychological safety encourages employees to seek feedback and operate with learning-oriented behavior (Jha, 2018), which ultimately enhances performance. The mediation process between the variables can be explained through an analogy of psychological safety being the engine of performance, while learning from failures is the fuel (Kim et al., 2020). This analogy highlights learning from failures to be the reason for improved performance, while also highlighting the necessity of psychological safety as component. Lastly, the results showed that tasks that included conflicts or that motivate learning had an amplifying effect on psychological safety, which in turn had amplified results on job performance and exploitative learning (Newman et al., 2017). Exploitative learning refers to learning by refining, recombining, and using pre-existing information, as opposed to explorative learning which means learning by experimenting and search for new knowledge (Zhao et al., 2020).

4.3 Theme 3: Communication

Team communication appear as a standout factor in the results, being crucial for fostering collaboration in teams and enhancing performance. These findings mirror the findings in Google's Project Aristotle, where "structure and clarity" ranked third among the top five factors for establishing effective teams. Structure and clarity refer to the need for solid communication within teams, through the team members having a shared and united understanding of roles, goals, and plans for effective teamwork. This shared understanding is crucial, which is also indicated and shown by the findings in the results.

The research by Hirak et al. (2012) showed that the strength of the psychological safety climate acted as a moderator of the relationship between psychological safety and improved performance. This climate strength refers to less variation across the answers in the survey regarding the experienced psychological safety at work, which means that the whole unit reported the same level of psychological safety. This can be tied together with how similar reporting indirectly refers to proper communication, leading the unit to have similar experiences and beliefs. In this way, the results showed that when the individuals in the units experience the same understanding of how psychologically safe they are at work, the effect of how psychological safety enhances performance strengthens. All units, regardless of whether they have a weak or strong psychological safety climate, experience high psychological safety to increase unit performance. However, the strength of the climate determines the extent to how psychological safety increases performance (Hirak et al., 2012).

These findings are further supported by the research by Carmeli (2007) on social capital and its impact on learning from mistakes through psychological safety. Social capital, measured by collaborative behaviors such as idea sharing and problem-solving, represents the quality of teamwork facilitated by communication. The results showed both an indirect and direct relationship between social capital and learning from failures through psychological safety, indication a partial mediation. Nonetheless, these findings highlight the critical role of communication through cohesive understandings of the environment, to enhance performance.

4.4 Theme 4: Performance

The study by Hirak et al. (2012) also examined how the level of team performance affected the strength of the relationship between the leader and unit performance. They found that leader inclusiveness was more important to units that showed lower work prestation. The level of team performance determines the strength of the relationship between the psychological safety from the leader and the team's performance, hence signifying team performance as a moderator.
In this study, leader inclusiveness is tied together with how the leader's cues and behavior create psychological safety in the team. The researchers argue that this

difference in strength of relationship is caused by unsure workers being more influenceable by their leaders' behavior, because of lacking self-confidence with their work. In these settings, psychological safety will have a more significant and greater effect, than in units with higher performance. However, the study also states that units with higher performance still need psychological safety to maintain their productivity (Hirak et al., 2012). In this way, the level of team performance acts as a moderator, influencing the effect that psychological safety through leadership has on team performance.

As team performance was shown to have a moderative role of the relationship between psychological safety and unit performance (Hirak et al., 2012), as well as being the dependent variable within the same relationship (Hirak et al., 2012), (Kim et al., 2020), & (Jha, 2018), team performance is a reciprocal variable. When team performance is both the dependent variable as well as a moderator of the same relationship, the variable both influences and is influenced simultaneously. Reciprocal variables refer to the bidirectional effects within the same relationship, illustrating this process (Wiedermann & Eye, 2020).

4.5 Theme 5: Psychological empowerment

There has also been found that a moderating variable of the relationship between psychological safety and performance is psychological empowerment, proven from the study by Jha (2018). Additional to testing for learning behavior as a mediator between the same relationship, psychological empowerment was also tested for as a mediator. The researcher defines psychological empowerment as a belief of empowerment, by employees believing in their own influence over team performance. Furthermore, the importance of self-empowerment is emphasized through the argument of structural empowerment being insufficient to improve performance (Jha, 2018). Psychological empowerment through employees' feelings of having control and power was found to strengthen the positive effects of psychological safety on team performance, thereby proving a moderative role.

4.6 Theme 6: Meaning and impact

The theme of meaning and impact is present in Google's Project Aristotle, as well as in the dimensions of psychological empowerment. Fourth and fifth on the list of the top five key factors to building Google's high-performing teams is meaning and impact. Meaning and impact makes up for two of the four dimensions of psychological empowerment; competence, self-determination, and impact (Spreitzer, 1995). Meaning and impact is defined similarly through the dimensions of psychological empowerment as well as in Project Aristotle. In both contexts, they are described as the believed importance of the purpose of the job to the individual employee, combined with the feeling of individual contribution and impact at the workplace. The pattern of meaning and impact repeating in the key factors for high-performing teams, as well as appearing as two of the four dimensions of the moderator psychological empowerment, signifies meaning and impact as a prominent theme.

4.7 Theme 7: Leadership

A study by Kumako & Asumeng (2013) wanted to examine the relationship between team psychological safety, transformational leadership, and team learning behavior. This led to their hypothesis: "Transformational team leadership will moderate the relationship between team psychological safety and team learning behaviour". The researchers argue that transformational leadership as a leadership style that surpasses leader inclusiveness. They define a transformational leader as a leader who ultimately improves the team performance through improving decision-making, learning, and goal setting (Kumako & Asumeng, 2013). The results showed that higher levels of transformational leadership strengthened the positive effect between team psychological safety and team learning, thus supporting their hypothesis and proving a moderation effect. Improved team learning will inherently improve team performance, by effectively learning from mistakes and learning alternative solutions to challenges (Kumako & Asumeng, 2013). Another study also supports these findings, from the results that proved transformational leadership behavior to influence and enhance the psychological safety levels in the teams (Gari et al.,

2020). These results show that the team leader has an important role between psychological safety and performance, which puts emphasis on leadership style being crucial for enhancing this relationship.

In addition to transformational leadership, studies have also been examining the effects of supportive leadership (Newman et al., 2017) and leader inclusiveness (Hirak et al., 2012), on the relationship between psychological safety and team performance. By combining the results of Hirak et al. (2012) with the findings of Newman et al. (2017), it grants a more detailed understanding of the supportive leadership leads to enhanced performance through psychological safety. It was found that supportive environments, including supportive leadership, is the primary antecedents of psychological safety (Newman et al., 2017). In this way, supportive leadership creates psychological safety, which in turn is able to enhance team performance. The results of Hirak et al. (2012) can further build on the findings of Newman et al. (2017), by contributing with adding unit performance as a moderating variable of this relationship. Unit performance acts as a moderator between supportive leadership and psychological safety. Higher performing units has a less significant relationship between the leader's behavior and experienced psychological safety, which means that they can achieve better performance independently of their leader. The results show that units with lower performance depends more on the supportive leadership to foster psychological safety, which ultimately enhances performance (Hirak et al., 2017).

5 Discussion

5.1 Theme 1: Psychological safety as a mediator and moderator

This paper's problem statement is regarding identifying the mediators that allow psychological safety to enhance team performance, and the moderators which strengthens this bond. While examining mediation- and moderation effects of this relationship, psychological safety appeared to be a mediator and moderator itself. This finding diverted from the problem statement, however, it's relevancy to the

subject is valid. While the paper originally did not take this alternative relationship into consideration, it is necessary to mention as it still benefits the holistic understanding of the nuances of psychological safety and its relationship with team performance.

The findings from Newman et al. (2017) showed that psychological safety is a moderator of the relationship between team expertise diversity and performance. Teams that have diversified expertise have a better opportunity for learning experiences to arise during team tasks and can therefore lead to a more rapid and effective learning process. By having a diversified expertise in teams, it can also improve the quality of the learning process, as it would be likely to learn multiple solutions to the problems. The results clarifies that the possible hinderance for this is by having task uncertainty, meaning that there are unclarity embedded in the tasks. In this way, by ensuring a psychologically safe environment, employees can feel safe enough to express possible confusion and openly admit to errors, hence removing task uncertainty and enhancing performance. Additionally, psychological safety was found to be a mediator between supportive environments and team performance (Newman et al., 2017). This could be due to psychological safety being the crucial factor for transmitting supportive environments into actualized effects. Supportive environments, such as supportive leadership, could be organized and well set up in an organization, while still not yielding positive results onto team performance. The effects of supportive environments would not be transmitted into desired results if the employees experience and feel the support psychologically, through psychological safety.

5.2 Theme 2: Learning

The results that showed learning from failure to be a mediator between psychological safety and enhanced performance need to be discussed to comprehend the causality between the two. The question arises of whether the enhanced performance is caused by an increase of *quantity* in learning opportunities, or if it is caused by an improvement of *quality* of the learning process.

One hypothesis from the study by Carmeli (2007): “the positive relationship between social capital and failure-based learning behaviours will be stronger when psychological safety is high”, was not supported. This can be explained by understanding that the level of psychological safety is not what increases performance alone, but rather the learning process. Learning from failures is often seen to be amplified by psychological safety, but it is not constant. This was shown in the study by Hirak et al. (2012), where when the team was effective in learning from failures, psychological safety did not show a relationship with performance anymore. This shows that even though all parts; psychological safety, social capital, and learning from failures, are important and have effect on performance (Carmeli, 2007), it does not mean that every part enhances each other. While psychological safety is what allows teams to learn from their mistakes, it does not inherently mean that increased psychological safety leads to increased learning, and therefore further enhancing performance. The quality of the learning process therefore seems to be more important rather than the quantity of learning opportunities.

The positive effects psychological safety has on performance seem to only occur if the individual is learning from failures in the process. In practice, this means that for employees to experience increased performance caused by psychological safety, they must be actively making mistakes and learn from them effectively. These results point to learning from failures to be the “fuel”, while psychological safety is the “engine” to enhance performance, as stated in the research by Kim et al. (2020). It is important to note that while psychological safety may not be sufficient for enhancing performance on its own, individuals need to feel psychologically safe to be able to take interpersonal risks in the first place, and secondly to then admit to eventual errors openly to be able to learn from the mistake. The two components are therefore interdependent through a mediation process and need to coexist in organizations for teams to increase their performance.

Conflicts are inherently what creates the learning process because the discomfort having to problem solve with new methods creates the learning process. It is a conflict within, where pre-existing knowledge is insufficient to solve a problem, which leads to learning. Conflicts can also occur in interpersonal relations, which can both enhance or hinder learning, which is reflected with how team expertise diversity can

be either positive or negative for team performance (Newman et al., 2017). The diversity in expertise can create task conflict when employees have different methods and standards of operating. Thus, expertise diversity in teams can be a beneficial tool for creating opportunities for healthy task conflicts, which ultimately can enhance team performance when done correctly. The positive effects of psychologically safety, e.g., being safe enough to speak up when needed and taking interpersonal risk, can help navigate conflicts into learning opportunities, rather than being detrimental to the working process. In this way, combining expertise diversity with a psychologically safe environment, can help utilize task conflicts in a healthy manner at the workplace, ultimately increasing team performance.

Previous studies on task conflicts and team performance show that task conflicts can negatively affect team performance (Anwer et al., 2012). However, there are also previous studies proving that task conflict can enhance team performance through learning (Woerkom & Engen, 2009). These studies do not include psychological safety in the research. Because there are studies confirming both positive and negative effects of task conflict onto team performance, it indicates other influencing factors being present in the relationship which is not addressed. It was found that team expertise diversity could both enhance and hinder team performance, which is reflected in the opposing studies showing both negative and positive effects of task conflict onto team performance. However, when team expertise had positive effect onto performance, psychological safety moderates the relationship (Newman et al., 2017). It was shown that task uncertainty could determine whether expertise diversity, which inherently creates task conflict, has a positive or negative effect on team performance (He et al., 2021). This is reflected in how psychological safety can remove task uncertainty, by ensuring open communication and creating learning opportunities. Therefore, studies on task conflict and its affect onto team performance should include psychological safety as a determining factor of team performance through eliminating task uncertainty.

5.3 Theme 3: Communication

The strength of psychological safety climate, based on less variation in survey answers, indirectly refers to how communication is key to moderating the relationship between team psychological safety and team performance. United perceptions and understandings among the employees imply more consistent communication within the team, which can be facilitated through psychological safety. Consequently, aligning perceptions of psychological safety within the environment leads to more cohesive communication within the team, because the individual employees would have similar behavior based on experiencing the same level of psychological safety. Thus, team communication is facilitated by psychological safety, which ultimately enhances team performance as shown by the proven moderator effects.

As communication appear as a crucial factor for moderating the relationship between psychological safety and enhance team performance, it is necessary to examine the nuances of communication. Similarly with theme 2, learning from failures, it is key to identify whether it is the quantity or quality of communication that enhances team performance. This question is necessary in understanding how communication can be utilized in practical implications, such as in teams in organizations. Identifying whether the significance of communication lies within quantity versus quality determines how organizations should take measures to enhance their communication structure. Quantitative communication measures imply increasing the opportunities for communication within the teams, while qualitative measures would mean improving the interpersonal communication process. A meta-analysis on this topic indicates that the quality of team communication is significantly stronger than the communication frequency on team performance (Marlow et al., 2017). Qualitative improvements are inherently more challenging compared to quantitative, as it requires more information and identification to improve the quality of an intricate factor such as communication. However, psychological safety can contribute to improve both quality and quantity of the communication within teams.

5.4 Theme 4: Performance

Units with lower performance are more sensitive to their leaders cues and experience a more significant relationship between their leader and the level of

psychological safety in their unit (Hirak et al., 2012). This finding implies that work self-esteem is closely related to how psychological safety affects team performance, through the independency versus codependency between employee and leader. This could be due to low self-esteem leading to self-doubt at work, which leads the employees to look to their leader as guidance and support. In this way, the employees are dependent on feeling psychologically safe through their leader, leading to codependency. Thus, units with lower performance feel more insecure in their own decisions and capability, which leads to this unit being more sensitive to the leader's cues and reinforcements of psychological safety. This is also tied together with psychological empowerment which is about feeling in control and being confident in decision-making.

5.5 Theme 5: Psychological empowerment

Psychological empowerment might impact the decision-making and action-taking effects of feeling psychologically safe, thus enhancing team performance. Psychological empowerment is defined as employees believing in their own influence on performance (Jha, 2018), which implies that the belief of influence correlates with motivating behavior in an action-taking orientation. Employees that feel psychologically empowered could be more inclined to trust their own decisions and influence, which can lead to more and better decision-making. Psychological empowerment can also contribute to employees perception of their work environment being supportive. This could help employees experience the effects of psychological safety more strongly, which aligns with the proven moderative effect of psychological empowerment. Another aspect to why psychological empowerment improves performance could be regarding work self-esteem. Work confidence was also seen to be impactful for performance under theme 4: team performance, which mentions that low unit performance could lead to lower self-esteem and codependency (Hirak et al., 2012). Additionally, psychological empowerment might be related to learning behavior, which is the mediator between psychological safety and performance. When individuals feel that they have influence and that their contributions matter, it could motivate learning behavior through active participation.

5.6 Theme 6: Meaning and impact

Drawing similarities between the dimensions of psychological empowerment and the findings of Project Aristotle can contribute to the application of theory in studies and practical scenarios. This comparison can signify that these two dimensions: meaning and impact, are the key dimensions that allow psychological empowerment to strengthen and moderate the relationship between team psychological safety and enhanced team performance. When individuals feel the importance of their work regarding how it impacts and affect others, engagement and motivation is likely to increase. Psychological safety could act as psychological support in this process, where being safe to express themselves freely and take interpersonal risks could be the support needed to do meaningful work.

Psychological safety might be tied to inner motivation to create meaningful contributions. In this way, meaning and impact could be tied to intrinsic motivation. Intrinsic motivation is defined by being moved to act from within, by being personally interested or finding the process enjoyable. Extrinsic motivation on the other hand, refers to being motivated by external factors, such as external rewards (Ryan & Deci, 2000, p. 55). An example of an external reward is money, while internal rewards are based on personal feelings and perceptions of fulfillment and meaning. Intrinsic motivation has been found to be vastly more effective by encouraging a higher degree of effort, while also being better for long-term performance (Harpine, 2015). This could mean that meaning and impact moderates the relationship between psychological safety and performance by creating intrinsic motivation.

5.7 Theme 7: Leadership

Transformational leadership was found to moderate and strengthen the relationship between psychological safety and team learning (Kumako & Asumeng, 2013). The reasoning for the moderation effect is thought to be through the leader improving decision-making, learning, and goal setting, through psychological safety. Among these highlighted factors, learning has been a proven mediator of the relationship (Hirak et al., 2012), (Newman et al., 2017), (Ortega et al., 2014), (Kim et al., 2020), &

(Jha, 2018), thus supporting previous studies regarding how learning facilitates performance through psychological safety.

Transformational leadership is defined as a leadership style which focuses on encouraging change, innovation, motivation, empowerment, and risk-taking (Ramakrishnan, 2024). These elements are also reflected throughout this paper. Risk-taking is directly linked to psychological safety as it refers to employees being safe enough to take interpersonal risk (Edmondson, 2019), which was shown to enhance team performance. The positive effect of empowerment is also reflected in theme 5: psychological empowerment, which acts as a moderator of the relationship between psychological safety and team performance (Jha, 2018). Transformational leadership emphasizes motivation and personal drive (Ramakrishnan, 2024), which is also reflected in theme 6: meaning and impact, where intrinsic motivation creates meaning and impact, leading to enhanced performance through psychological safety. Transformational leadership seems to enhance performance through psychological safety by delegating more power, trust, and responsibility onto the employees, which in turn creates psychological empowerment, intrinsic motivation, and a belief of meaning and impact. In this way, the traits of transformational leadership are directly reflected in the themes of this paper, thus supporting previous research of the relationship between team psychological safety and team performance.

Leader inclusiveness is another leadership style that was found to enhance performance through psychological safety (Hirak et al., 2012). However, transformational leadership is argued to surpass leader inclusiveness (Kumako & Asumeng, 2013). Leader inclusiveness is characterized by including employees in decision-making and goal setting, ensuring that all employees have equal input and responsibility (Bourke & Titus, 2019). The drawbacks of leader inclusiveness are that the similarity in responsibility throughout the team may create ambiguity of work-roles, which can hinder effectivity. This drawback may make transformational leadership more optimal for enhancing team performance through psychological safety.

5.8 Psychological safety and social exchange theory

Psychological safety and its mediators and moderators can be better understood through the lens of social exchange theory. Psychological safety is experienced when individuals believe that it is safe to take interpersonal risks, which can be speaking up, contributing with ideas, questioning, and admitting to mistakes (Edmondson, 2019). Social exchange theory can be beneficial by explaining how feeling psychologically safe at the workplace is a result of previous reinforcements of behavior. In practice, this could be by organizations emphasizing the importance of positive reinforcement and assurance from leaders to employees. Hence, fostering the anticipation of social benefits and minimizing of costs, in form of punishment. The social exchange theory assumes that humans are seeking rewards and avoiding costs/punishments, while also arguing that interactions are a source for these rewards that derives from assumptions based on previous experiences. In a workplace setting, this means that employees behavior is greatly based on the belief and assumption of potential reward versus punishment. This can be tied directly to the experience of psychological safety, as this occurs when the employee believes that taking interpersonal risks do not result in punishment or ridicule and is instead encouraged and appreciated.

Because interpersonal behavior is greatly influenced by the anticipation of reward versus punishment, it is apparent that leadership styles have a direct effect and can have a mediative and- or moderative role. The results from the study of Hirak et al. (2012) illustrates that psychological safety through leader inclusiveness have a significant and direct effect on the team's performance, depending on the team's work prestation as a moderation variable. With the social exchange theory, this variable can be explained from a perspective of dependance between employee and leader, affected by social exchanges and anticipations. Through the lens of exchange theory, being psychologically safe translates to anticipating reward from interactions, as opposed to not being psychologically safe when anticipating cost. The results from the study showed that teams with lower prestation responded more sensitively to the leader's cues, meaning that they were more suspectable for experiencing psychological safety through the leader's behavior. This could be

interpreted as the team not having enough confidence to work independently, hence depending more on their leader, which in turn leads to the social exchange process having a grander impact on performance. Therefore, the performance of the lower prestation team depends more on the anticipation of reward (support), versus cost (punishment or ridicule), when interacting with their leader, compared to the high prestation teams which are more independent.

When observing interpersonal communication as an exchange in this way, it can help identify areas in organizations that could have mediators and moderators regarding psychological safety and performance. By understanding that the interaction behavior of employees is motivated based on the anticipation of exchanges, it becomes apparent that the behavior, and ultimately work performance, is most affected by the areas of interpersonal exchanges. Both mediators and moderators are variables that are responsible for affecting the relationship between two other variables, meaning that the areas of interpersonal exchanges are where possible mediators and moderators can exist. Therefore, it is necessary to examine the areas of interpersonal exchanges in organizations to help identify possible mediators and moderators between psychological safety and performance.

6 Limitations

6.1 Integrative review as method

The integrative review method has been criticized for lacking rigor, and not controlling enough for bias (Whittemore & Knafl, 2005). Integrative reviews are also limited to topics that are published, as well having limitation in samples in the primary research (Russell, 2005). The validity is a great concern while conducting an integrative review, as the validity must be controlled for in each individual study that is included in the review (Russel, 2005). There are multiple areas of the integrative review that are vulnerable for bias to skew the presentation of the results. For an integrative review to be controlled enough, having enough rigor, and without biases, it must be conducted as systematic and objectively as humanly possible. It is a

complex process, as there are many variables throughout the review that must be controlled for. This is especially relevant in the data collection, where the data search needs to be the right amount of narrow and wide, to collect an amount of information that is representative and relevant enough to the research question. Personal interpretation of the data is also important to note, as interpretation and communication vary individually. However, when the integrative review is done correctly, it grants many benefits to research. It helps identifying gaps in the literature, creates overlaps and connections between different research, helps identifying areas that need further research, explores practical and theoretical implications, and reevaluates previous research for further processing and interpretation (Russel, 2005).

6.2 Exclusion- and inclusion criteria

The literature search did not exclude studies based on date nor geography. It is debatable whether this decision strengthens or weakens the integrative review, as there are both benefits as well as drawbacks. This paper attempts to answer the problem statement in an explorative manner, which is why an open search has been utilized with minimal external limitations. By not limiting studies based on dates, it is possible to gather a holistic understanding of the development of psychological safety through different times. In this way, the included studies are meant to give a comprehensive understanding. An eventual drawback to this is that the phrase had a different contextual meaning from when first coined in 1954 by Carl Rogers, to 1999 when coined by Amy Edmondson, who transformed it to the present contextual meaning. However, the term was not popularized until the 1990s, which leads to most studies being published after 1999 (Edmondson & Lei, 2014). Therefore, it did not appear to be necessary to limit the search based on date. Geographical limitations could have been implemented to assure that cultural factors do not skew the understanding of the term psychological safety, as some terms can have different interpretations across varied cultures. However, as the included studies are made by and reviewed by peers of expertise, the term should be of objective academic understanding, as opposed to cultural and subjective.

7 Conclusion

The problem statement if this paper is: “Which mediators must be present for team psychological safety to enhance team performance in organizations, and which moderators strengthen this relationship?”.

This paper highlights the mediation variable of learning from failures to be the sole mediator between team psychological safety and team performance (Hirak et al., 2017), (Ortega et al., 2014), (Kim et al., 2020), & (Jha, 2018). Learning from failures is seen to be the bridge that allows this relationship to exist, proven by full-mediation effects in research. The mediation process is explained by researchers that found that when the teams were efficient in learning from failures, psychological safety no longer showed a relationship onto performance (Hirak et al., 2012). This point highlights the importance of learning from failures over psychological safety, however, psychological safety is closely related to learning environments. This is argued to be because psychological safety facilitates a learning environment and behavior, by creating a safe environment for the employees to speak up and contribute without interpersonal fear to hinder the learning process. In this way, psychological safety and learning from failures are closely connected, and must coexist to enhance team performance. Additionally, it is noteworthy that psychological safety itself was found to both mediate and moderate the relationship between other variables and team performance (Newman et al., 2017) & (Gari et al., 2020). This finding diverted from the paper’s problem statement; however, it contributes to depict a true picture of the nuanced effects of psychological safety onto team performance.

Furthermore, there are five moderators that are identified in this paper of the relationship between team psychological safety and team performance. The moderators are communication, performance, psychological empowerment, meaning and impact, and leadership. These five factors were found to strengthen the relationship between team psychological safety and team performance. The effects of psychological safety onto performance were enhanced when there was better communication within the team (Hirak et al., 2012), (Newman et al., 2017) &

(Carmeli, 2007). Improvement in quality and quantity in communication enhances the effects of psychological safety onto team performance, however, the quality improvement is most likely to be the main contributing factor to the increased performance. Team performance was found to dictate the team's sensitivity to the psychological safety through the leaders' cues, meaning that teams with lower performance depends more on psychological safety to perform (Hirak et al., 2012). This finding could be used in practice, by organizations being aware over the different needs for psychological safety to enhance performance, based on unit performance and co-dependency. Psychological empowerment, especially it's dimensions of meaning and impact, strengthen the relationship by increasing intrinsic motivation and self-esteem (Jha, 2018). This is also reflected in the findings of Google's Project Aristotle, where meaning and impact scored fourth and fifth of top five key factors that makes high-performing teams (Google re: Work, n.d.). Lastly, leadership was found to moderate the relationship between team psychological safety and team performance, with the emphasis on transformational leadership (Kumako & Asumeng, 2013) and leader inclusiveness (Hirak et al., 2012). The transformational leadership style is argued to enhance the effects of psychological safety onto team performance by increasing motivation, change, and risk-taking. Leader inclusiveness enhances performance by allocating responsibility and empowerment to the employees. However, leader inclusiveness can have drawbacks by creating ambiguity of work-roles, thus hindering performance. This argument could point to transformational leadership to be better for team performance.

Studies that only mentions how supportive environments are the antecedents that create psychological safety which then ultimately enhances team performance depicts a lacking picture of the true process. This is because the mediating variable of learning from failures needs to be present in the relationship as well. In this way, these studies are beneficial, but since psychological safety is found to be a highly nuanced variable while dependant on other variables such as the mediator and moderators, studies on this topic should have a broad scope, instead of a narrow specific area.

8 References

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9 Figures

Figure 1: Bhandari, P. (June 22, 2023). Mediator vs. Moderator Variables. Differences & Examples. *Scribbr*. https://www.scribbr.com/methodology/mediator-vs-moderator/