Master Thesis

Creating Psychological Safety in Cross-Functional Teams in Non-profit Organizations

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ABSTRACT

Nonprofit organizations (NPOs) devote themselves to solving social issues and bringing attention to the rights of the minority of society. The complexity of social issues requires integrating diverse knowledge and being agile to public requirements, where NPOs find cross-functional teams (CFTs) a suitable team type to apply. Since NPOs do not focus on the profit they can get from their work but the influence they can make through working, workers heavily depend on the vision and belief of NPOs to collaborate harmoniously. The unique characteristics of NPOs and workers affect psychological safety (PS) in CFTs, indirectly affecting knowledge sharing in teams. Therefore, this research was conducted to identify the challenges and enablers that impede or ensure the fostering of psychological safety (PS) in cross-functional teams (CFTs). Semi-structured interviews were conducted with 15 members of a nonprofit organization from Taiwan about their experiences and perceptions of the challenges and enablers of CFTs. The findings of this qualitative study show the most common challenges, including task uncertainty and unfamiliarity with team members in CFTs, shared the fundamental characteristic of unpredictability. Accordingly, three enablers were identified to overcome the challenge, which provides clarity and connection with team members, and fosters a positive environment. This research has been comprehensive in suggesting that clarity, connection, and positivity can help mitigate the challenge of unpredictability.

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1. INTRODUCTION

Non-profit organizations (NPOs) are also referred to as "third sector" entities, which is distinct from both public and private sector entities (Adro & Leitão, 2020). The most distinguishing feature of NPOs is their lack of emphasis on profit generation, in contrast to the primary objective of private business enterprises. Instead, NPOs concentrate their efforts on addressing social concerns that often receive insufficient attention from the public, including poverty, disability, and educational inequality (Adro & Leitão, 2020). However, the social issues NPOs seek to address are inherently complex because the issues regularly involve considerations from multiple aspects. Consequently, the solution to these social problems requires the input of individuals from a multitude of sectors, who must engage in collaborative problem-solving through the application of creative and innovative approaches (Al-Tabbaa et al., 2022; Brunetto et al., 2024; Adro & Leitão, 2020). To deal with complex social issues, NPOs employ cross-functional teams (CFTs) as functional units to incorporate diverse perspectives and develop innovative solutions.

A cross-functional team (CFT) is defined as a temporary workgroup with a shared goal, comprising professionals from various functional departments, such as software development, marketing, public relations, and so forth (Dussart et al., 2021; Majchrzak et al., 2012). The diverse knowledge base characteristic of CFTs attracts organizations to utilize this type of team composition in their strategic response to the ever-changing market. However, the process of knowledge sharing and integration may present notable challenges in CFTs, largely due to the diverse functional backgrounds of their members. Each member brings their own objectives, priorities, and agendas from their respective departments, which can result in disparate and occasionally conflicting project focuses (Edmondson & Harvey, 2018; Ghobadi, 2011; Nissen et al., 2014). The existence of these divergent perspectives can result in prolonged and complex decision-making processes. The frustrating integration process often leads to debating or criticizing different opinions and eventually compromising on decisions, with members choosing to "get things done" over the pursuit of optimal solutions.

As might be expected, the effect on knowledge diversity is double-edged. The difference between opinions provides a potential opportunity for innovation (Ghobadi, 2011), however, the benefit is not guaranteed; it depends on the extent to which members feel free and open to express their thoughts in CFTs. A full discussion of diverse perspectives can occur in an environment where individuals feel safe to express their opinions. This highlights the significance of the concept of "psychological safety", which refers to the belief that one can speak up without fear of personal criticism (Edmondson, 2018; Ghobadi, 2011). This belief reflects the understanding that members are aware the team will not reject them for expressing their thoughts (Edmondson, 2018). It is crucial to highlight that PS is regarded as the most pivotal factor for effective teams, proven to facilitate learning and innovation in teams (Edmondson & Lei, 2014; Newman et al., 2017).

Despite the positive influence of PS in the literature and its implementation in various settings, including healthcare, technology, and higher education (Edmondson & Bransby, 2023), the topic remains under-researched within the context of NPOs. Although NPOs are valued for their role in advocating for social issues, research indicates that a significant number of NPO employees remain in their roles for less than a year (Baloch & Siddiqui, 2020). The high turnover ratio brings the instability of NPOs, with employees frequently having to interact with new colleagues. This situation further complicates the process of collaboration in CFTs, as members must overcome not only differences in knowledge backgrounds but also the challenge of working with unfamiliar colleagues. The distinctive challenge makes the development of PS in the nonprofit context a valuable area of investigation.

Given the identified challenge, the objective of this investigation is to examine the difficulties encountered when fostering PS in CFTs within the non-profit context. Further, this research investigates enablers in the context of overcoming challenges. To achieve this, interviews were conducted within an NPO in Taiwan to investigate potential elements. The qualitative data reflects the opinions and feelings of the collaboration and provides a comprehensive understanding of the challenges they face and the factors that could facilitate their resolution.

2. THEORETICAL FRAMEWORK

2.1 Non-Profit Organizations (NPOs)

An NPO is defined as an organization that is established for a public purpose, in stark contrast to a business enterprise whose objective is to generate profit. The objective of NPOs is to provide services to individuals who are neglected or lack sufficient assistance from society, to enhance the quality of life for minority groups (Baloch & Siddiqui, 2020; Theron & Hons, 2015). The distinctive purpose and selfless vision of NPOs give rise to two distinct characteristics among their employees that are different from employees in business companies. Firstly, employees in NPOs prioritize their social influence. Some employees are volunteers who do not receive a salary, while others get slim compensations for their services. However, their motivations for joining NPOs are not primarily financial; rather, they are driven by the social impact they can make (Theron & Hons, 2015). Secondly, employees view their role as a means of personal fulfillment. The employees of NPOs perceive their roles within these organizations as a means of achieving personal fulfillment and finding a meaningful purpose. They often view their work as a calling, a vocation that goes beyond mere employment (Theron & Hons, 2015). As a result of these notable characteristics, NPO employees tend to be highly motivated by beliefs and intrinsic factors, leading to a notable difference in characteristics between NPOs and for-profit organizations. Employees of business companies focus on their performance and other employees' performance: they are more profit-oriented and speak from revenue. On the contrary, NPO employees have the same beliefs and vision to address social problems with certain strategies, as their working environment is based on trust and cooperation, and similar value systems (Baloch & Siddiqui, 2020).

However, the unique task NPOs are working on needs a more flexible team structure to foster innovation. The need for innovation stems from the complex social issues that NPOs aim to address, which involving considerations from a variety of fields (Acosta-Prado et al., 2020). NPOs are eager to find solutions to meet requirements from multiple aspects and be acknowledged by the public, which is the reason NPOs call for innovation. Furthermore, the

increasing competition in the market also puts extra push for innovation. When there are more NPOs in the market, donors choose the organizations they want to donate more carefully and also have higher expectations of the organizations (Adro & Leitão, 2020). As a result, NPOs have to come up with extraordinary fundraising events or strategies to be visible in the market and meet donors' expectations. In light of the vision to address social issue and the increasingly competitive market, NPOs anticipate that their employees will demonstrate innovation to practically solve social issues and to secure financial support from the public (Adro & Leitão, 2020). Consequently, some NPOs employ agile CFTs to facilitate timely responsiveness to market dynamics and facilitate the co-creation of effective, feasible, and innovative strategies that align with organizational goals.

2.2 Cross-Functional Teams (CFTs)

CFTs consist of professionals from different knowledge backgrounds, thereby enabling them to address tasks that are beyond the intelligent capabilities of any single expertise (Ghobadi, 2011; Zhang & Guo, 2019). For example, a task of developing a new feature on the website, including professionals from departments such as user experience, user interface design, product design, and software engineering. Within the complex task, each member is responsible for providing their functional perspective and knowledge resources to support the project, thus, sharing accountability for the success or failure of the tasks (Huang & Newell, 2003).

CFT is a broad concept that encompasses teams with members from multiple functional departments. There are two main categories of CFTs: long-term, fixed teams with stable membership and long-term goals, and temporary teams with fluid membership formed to achieve short-term project goals, disbanding once the goals are met (Edmondson & Harvey, 2018; Zhang & Guo, 2019). The present study focuses on temporary task-based teams with short-term project goals.

2.2.1 Competitive Relationship in CFTs

Companies categorize departments based on the functional knowledge backgrounds of their employees. Individuals within the same functional department collaborate daily, and their shared knowledge base leads to a similar way of thinking (Edmondson & Harvey, 2018; Majchrzak et al., 2012). The location of the same department facilitates increased interaction and the formation of stronger social connections. However, in CFTs, members do not work together permanently. Collaboration in CFTs begins with the project and ends with the project, which results in weaker connections among members (Dussart et al., 2021). Consequently, members develop a stronger identification with their respective functional departments. This lack of identification with CFTs frequently results in members prioritizing their departmental perspectives and goals, making it easy for them to dismiss suggestions that are unfavorable to their departments, even if those suggestions are the best options for the CFTs (Ghobadi, 2011). Consequently, members of CFTs may perceive the climate as more competitive than cooperative, purposely hiding information or unwilling to share thoughts (Ghobadi, 2011).

2.2.2 Potential Conflicts Due to Knowledge Diversity

With the unique team composition of CFTs, multiple specialized expertise within the team increases knowledge diversity (Ghobadi & D'Ambra, 2012; Zhang & Guo, 2019), which can enrich knowledge resources but also will easily lead to team conflict. Knowledge diversity includes diverse specialized knowledge, different perspectives, and different ways of thinking, setting the foundation for novel ideas (Edmondson & Harvey, 2018; Østergaard et al., 2011; Ratcheva, 2009). As a result, knowledge diversity provides a broad range of knowledge resources and thinking to make decisions, integrate knowledge, and foster innovation (Ghobadi, 2011; Stipp et al., 2018; Zhang & Guo, 2019).

However, knowledge diversity might have potentially negative effects on CFTs (Zhang & Guo, 2019). When a team consists of members with different knowledge, collaboration with team members makes knowledge boundaries visible. The knowledge boundary can be seen as a wall that is piled up with domain knowledge, skills, and competencies that experts are equipped with, separating members from one another(Edmondson & Harvey, 2018). For example, marketing members might have a hard time understanding the thoughts of software

engineering members since the jargon they use is unfamiliar to marketing members. Each functional department has its own functional goals, priorities, and agendas, the planning of one department is not completely aligned with another department (Ghobadi, 2011). Because of department-specific perspectives and goals, divergent or conflicting standpoints might pose a challenge to team collaboration (Edmondson & Harvey, 2018; Ghobadi & D'Ambra, 2012). For instance, the competitive relationship prolongs the discussion in debating, negotiating, and competing resources, which delays project progress and negatively influences team members' relationships.

2.2.3 Sharing Knowledge is Fundamental for Team Success

To resolve the challenge from different perspectives, team members need to step out of their knowledge boundary and discuss with other members on common ground, and the concept of boundary crossing is thus discovered. Boundary crossing is the concept that describes the process of professionals stepping outside of their primary discipline to engage with and integrate different perspectives (Engeström et al., 1995). This process is considered full of learning potential. That is because when crossing the boundary, individuals face an unfamiliar expert field, they have to explore their own limits and learn from different fields to co-create or innovate together (Akkerman & Bakker, 2011; Carla et al., 2020). Crossing boundaries through learning leads to great consequences for teams in developing integrative solutions and transcending differences in knowledge, thereby, maximizing the benefits of knowledge diversity within CFTs (Edmondson & Harvey, 2018).

The operational dynamics of boundary crossing practice can be found in the present study, which introduced four dialogical mechanisms of learning at the boundary developed by Akkerman and Bakker (2011). The four mechanisms of this learning are summarized as identification, coordination, reflection, and transformation. Identification entails identifying how one domain differs from another by questioning the core identity of overlapping parts. Coordination encompasses a communicative connection between multiple perspectives, establishing the continuity of action in a team. Reflection involves making specific understandings and knowledge of an issue or taking other people's perspectives to see oneself

with reflexive knowledge of one's perspective. Lastly, transformation involves collaboration and the establishment of routine practice together. This framework provides a comprehensive lens about the learning mechanisms in boundary crossing, which would be boundary crossing behavior indication in practice.

With the same essence, the four learning mechanisms all focus on communication to align different minds and establish common ground (Akkerman & Bakker, 2011; Edmondson & Harvey, 2018). The learning in boundary crossing primarily happens during interaction or reestablished actions, such as asking questions, discussing, or seeking feedback (Akkerman & Bakker, 2011; Edmondson & Harvey, 2018). In summary, communication that aims to learn at boundaries is a crucial element in facilitating boundary crossing, as it enables members from different functional departments to gain a comprehensive understanding of the information within the CFTs (Patrashkova-Volzdoska et al., 2003). It is a catalyst for knowledge exchange and integration, enabling teams to leverage the full potential of their diverse expertise (Edmondson & Harvey, 2018).

2.3 Psychological Safety (PS)

Sharing knowledge and thoughts is fundamental for the team to collaborate and think from the big picture (Nguyen, 2020; Nguyen et al., 2018). However, sharing thoughts in discussions is sometimes seen as an interpersonal risk because of the risk of being judged, rejected, or laughed at (Edmondson, 1999). For example, when team members want to propose new ideas in a team discussion, they may be afraid that other team members will think their ideas are not practical enough and reject the idea, or worse, that others will think they are incapable. The mentioned interpersonal risks limit members from speaking up and prevent teams from efficient problem-solving, optimization, and innovation (Edmondson & Lei, 2014). Therefore, the concept of psychological safety (PS) was introduced to provide a better understanding of how beliefs affect teamwork (Edmondson, 1999). PS describes a belief of individuals that the environment is safe from interpersonal risk, and that they will not be rejected or judged simply for expressing their thoughts (Dusenberry & Robinson, 2020; Edmondson, 1999; Rivera et al., 2020). There are three levels of analysis, namely individual-

level, organizational-level, and group-level. The difference is based on the focused unit of the subject and the corresponding factors. In this study, the focus is on the group level of PS, which is a shared belief of safety in a team, and further investigates the factors that influence the shared belief that the team is a safe place to share thoughts.

PS shares some overlapping concepts with trust, but there are some differences between them (Edmondson, 1999; Newman et al., 2017). PS involves a broader sense of comfort and mutual respect within a team, including but extending beyond the interpersonal trust typically shared between two individuals. Trust focuses on the evaluation or perception of an individual's behaviors. When trust is fostered, one person is willing to show weakness and the person expects other people's actions to be favorable (Dusenberry & Robinson, 2020; Edmondson, 1999). For example, when members trust their team members, they will let other members know the difficulties they are facing now, and they also believe that other members will react to that in a way they want. On the other hand, PS is more about member's comfort level when working with the team, it is a personal belief that others will not push them away, it requires interpersonal trust and also mutual respect so that team members can feel comfortable being themselves (Dusenberry & Robinson, 2020; Edmondson, 1999). Interpersonal trust in a team is a crucial ingredient to creating PS, but PS goes beyond simply trust (Edmondson, 1999).

2.3.1 The Benefits that PS Brings

First, the benefit that PS brings to the team, is that it can trigger learning behaviors in the team. Because PS creates a sense of safety in the team, where members feel comfortable and do not have to worry about interpersonal risks, members know that the team will not reject them if they try new ideas and fail (Newman et al., 2017). The link between PS and learning behavior is confirmed in the empirical research by Edmonson in 1999, which showed that with higher levels of PS, the fear of failure can be reduced; instead, members are willing to bring their failures to the table for discussion and improvement. The comfortable environment brought by PS allows members to contribute their thoughts to the team and learn through

discussion of different ideas and failures, resulting in higher team performance (Edmondson & Lei, 2014).

Secondly, a higher level of PS in a team can improve team communication and enhance knowledge sharing in the team. With the belief of PS, members can feel comfortable expressing their thoughts, concerns, or mistakes, where they can just be themselves in the team (Newman et al., 2017). The safety encourages members to be transparent about their thoughts and open about their concerns and mistakes, which improves communication in the teams(Lechner & Tobia, 2022). As a result of improved qualitative communication, the team knows all the information about the task, so members can communicate on common ground. However, high-quality communication does not mean less conflict in the team, it is the other way around. Conflicts result from different opinions and perspectives, but the conflict is not what the team should prevent, the goal is to reach a consensus in the team. This is where PS can contribute, as PS can moderate the conflict by providing a non-judgmental environment to find the best solutions (Dusenberry & Robinson, 2020; Myers, 2022; Safdar et al., 2017).

Considering the benefits PS brings, PS is also considered to be a fundamental factor in working teams to achieve better performance and come up with innovative solutions due to the openness of sharing and discussing (Clark, 2020; Edmondson & Lei, 2014; Newman et al., 2017). Therefore, understanding what the working environment looks like with a high level of PS is crucial.

2.3.2 Working Environment with a High Level of PS

As mentioned in the previous section, PS is a shared belief that individuals can share their thoughts freely without fear of punishment or judgment, and it has a connection with team climate. When the level of PS is high in a team, the team climate is a mixture of trust, respect, and openness (Edmondson, 1999), and the team members believe that no one will try to hurt them. Members understand that every opinion and discussion is not trying to take someone down, making them feel less threatened but comfortable. As a result, when members hear different opinions, they do not shut them out, instead, communicate with each other and

try to understand the reasoning behind every opinion (Edmondson, 2018). When members feel respected and safe, they feel valued and are willing to contribute more to the team, such as idea contribution, and attentive listening to different ideas (Rivera et al., 2020). Furthermore, the conflicts in the team caused by diverse opinions can be solved more easily since members understand everyone in the team does not reject anyone, as they try to find a consensus together (Dusenberry & Robinson, 2020).

Additionally, an open climate provides a sense of tolerance toward different opinions and thoughts, but also for mistakes (Rivera et al., 2020). It is important to note that mistakes are not simply tolerated because members prevent conflict. Instead, with a higher level of PS, members consider mistakes as learning opportunities to prevent the same mistakes in the future (Edmondson & Bransby, 2023). Learning from mistakes is highly related to performance since it shows something is not working as predicted and needs to be adjusted (Edmondson, 1999). An environment with a high level of PS is fundamental for CFTs since team conflicts potentially appear more often due to diverse perspectives in a team, and with strong PS, members can align their thoughts and reach a consensus by openly discussing different opinions, eventually solving the conflicts. In conclusion, a climate with a high level of PS can make team members willing to share their thoughts freely and talk about mistakes to learn for improvement (Dusenberry & Robinson, 2020).

2.3.3 Factors that Contribute to PS

Although PS brings several benefits to the teams, it is also influenced by some factors. From the perspective of team characteristics, the interdependent work, and structure of the team are all positively related to PS (Bresman & Zellmer-Bruhn, 2013; Chen & Tjosvold, 2012; Frazier et al., 2017; Newman et al., 2017). Not all types of tasks require a high level of PS: tasks generally require interdependent work, while collaboration between team members would benefit from a high level of PS (Edmondson, 1999; Frazier et al., 2017). Specifically, a high level of PS is required in interdependent work for team members to effectively communicate with each other to exchange information about the task and make decisions based on the shared information to achieve the project goal (Edmondson & Lei, 2014). However, with many

members of the team sharing the responsibility of task success, it will be difficult if there is a lack of clarity of goal and role. In the scholarly work of Bresman and Zellmer-Bruhn (2013), they show that a highly structured team with clear goals and priorities, clear role expectations, and clear leadership can provide team members with a sense of safety. The reason behind this might be because team members can easily predict each other's expectations and behavior based on clear and shared understanding so that members know how to behave in the team to meet the team's expectations.

Within the team, interpersonal relationships and interactions between members also influence PS in the team (Aranzamendez et al., 2015; Edmondson & Lei, 2014; Frazier et al., 2017; Lechner & Tobias, 2022; Newman et al., 2017). Past work experience, prior interactions, familiarity, and social relationships with team members seem to be key drivers of PS (Newman et al., 2017). Without any past experience of working together prior to the project, members will feel more insecure about speaking up, since they cannot anticipate how others would react to their argument. This poses a risk of being rejected by others (Roberto, 2002). As a result, the unfamiliarity between team members could raise concerns about speaking up to others when faced with difficulties (Roberto, 2002). Therefore, interpersonal relationships can link to support from team members and team caring (Frazier et al., 2017), influence members' perceptions of safety within the work environment. Team members will use their past experiences to assume if the team will support them and fully accept them, and this affects their willingness to speak up about their opinions in the team. The factors that contribute to a high level of PS are extremely crucial in the team structure of CFTs, since this team type unlike teams that are more stable and homogenous, need more extra effort to build on PS in teams.

2.4 The present Study

Since NPOs do not use profit to attract and retain talented employees, a positive working environment is important to increase employee commitment and performance (Adro & Leitão, 2020). A climate that includes PS is fundamental for employees to commit themselves to the organization since it can make employees feel the organization values and appreciates them as crucial members of the organization based on the employee's personal characteristics (Adro

& Leitão, 2020). However, when NPOs try to use CFTs to be agile and make the best use of organizational resources, it is often challenging. Although CFTs can bring diverse knowledge together to achieve specific organizational goals and foster innovation, communication, and collaboration, these team compositions can be challenging due to differing priorities and knowledge boundaries.

NPOs have unique characteristics that differ from business companies (non-profit oriented, belief-driven employees, etc.), as a result, their challenge of fostering PS and source for PS might also be different since what the employees focus on are different, and they are more care about fulfilling the vision of the organizations. However, PS is not yet fully investigated in an NPO context, making the way to create PS unclear. Without the understanding of creating PS in NPOs, NPOs are not able to leverage the power of PS in organizations to facilitate collaboration and foster innovation, stopping their way to achieving their vision to eliminate the inequity of society. Consequently, this research explores how this specific organization type and team characteristics of CFTs will negatively or positively influence PS. As a result, the current study emphasizes the specific challenges faced by CFT members and how to develop PS in a non-profit context, investigates the specific obstacles CFTs in NPOs encounter, and how to moderate those challenges by other factors to build on PS. By focusing on these challenges and identifying elements that contribute to building PS in a non-profit work environment, this research aims to provide insights into the challenges and factors in building PS in an NPO context.

The current research will examine from a member's perspective within CFTs in an NPO setting while highlighting elements that support the formation of PS. In summary, the following question will be answered: *"How to create psychological safety within cross-functional teams in an NPO?"* The comprehensive answer to this research question shall be guided by two sub-questions.

1. What specific challenges do cross-functional teams face in establishing psychological safety at non-profit organizations?

2. What might be the enablers for cross-functional teams to enable and foster effective psychological safety within non-profit organizational contexts?

This research hopes to bring value into the understanding of the dynamics of CFTs in NPOs by answering two sub-questions, therefore, providing relevant recommendations toward enhanced PS in such organizational contexts.

3. METHODOLOGY

3.1 Research Design

An explanatory research design is adopted to probe and search for elements that contribute to the research topic. Consequently, to investigate the dynamics during the collaboration, this research uses qualitative data to deeply understand what elements in CFT collaboration are challenging or facilitating the process of creating PS and the reasons behind it. To deeply understand how PS fosters, the data collection methods used in this research are individual interviews. Semi-structured interviews are conducted with team members in CFTs, which affords a guided yet open-ended approach, allowing interviewees to illustrate their thoughts on specific topics (Babbie, 2021). Using the obtained qualitative data, this research identifies challenges and factors for CFTs to create PS in NPOs and provides insights into how to facilitate PS within such team compositions.

3.2 Respondents

This research focuses on the challenges and enablers in creating PS in CFTs, especially in NPOs, so the population of focus is CFTs in NPOs in general. This study employed purposive sampling, a non-probability sampling method to obtain a suitable sample for addressing specific research questions (Babbie, 2021). This specific sampling method was chosen due to the specific conditions in the basic setting. Since this research focuses on creating PS in CFTs in NPOs, participants in this study must meet specific criteria to ensure the relevance and validity of the research findings. The requirements for interviewees are working in an NPO, and also have experience in CFTs as leaders or members. These two conditions mentioned above should happen simultaneously, meaning that the interviewees should have CFT experience in an NPO.

3.2.1 Context & Participants

The participants of this study were employees in an NPO in Taiwan. The organization was focusing on developing an educational platform and kept developing features to facilitate student's learning. Other than that, this organization proactively collaborated with other NPOs,

government, and business companies to gain funds or reputation to raise public awareness. As a result, even though there were distinct departments in the organization (marketing, software engineering, data processing, etc.), the organization mostly relied on CFTs to react to the needs of schools, governments, companies, or other organizations with efficiency and high quality. The CFTs in the organization were temporary workgroups, the team composition was unique, and the team started from a project and disbanded when the project ended. Hence, when the team was just formed, team members had rarely worked in such a team composition before, and even if they did, the required tasks were always unique and had never been done before.

In this study, 15 participants who had collaboration experience in CFTs were included, 13 full-time employees and 2 interns agreed to join this study. Furthermore, the gender distribution of the participants was even, there were 7 female and 8 male participants who joined this study. As for participants' department backgrounds, their departments comprised software engineering, product, data processing, content development, organizational development, sustainable development, teacher training, and government relations departments. Because of the diverse backgrounds of participants, data included opinions from various departments. Hence, the conclusion is not merely from one specific perspective, but results from diverse opinions, providing a comprehensive view of CFTs. Additionally, to get an overall understanding of CFTs, most of the participants came from differently formed CFTs so that the findings can be more comprehensive and applied to different teams in the specific context.

3.3 Procedure & Instrumentation

3.3.1 Interview Guideline

During the interview, the participants were interviewed about their experience of collaborating in CFTs. The main focus of the interviews is to understand how participants view their PS level during the collaboration. The interview guideline was developed based on the research questions and the purpose of this study. It included the introduction of this research, the main questions, the follow-up questions, and some probing questions. The use of interview

guidelines provided structure and focus of the interview process, and helped interviewees to think more deeply about the research topic (Roberts, 2020), which was their PS during the collaboration in this study. According to Edmonson's (1999) definition of PS, the framework of the interview questions included events that might cause interpersonal risks in the teams (raising questions, asking for help, showing concerns, and admitting mistakes), and gradually led participants to share their perceptions in experiences. In the beginning, the interview guidelines included general questions like their department, their position, job title, and also what kind of work participants do in the organization. Gradually, the interview guidelines narrowed down to the topic: participants were asked to share a specific experience of working in CFTs, such as the team's goal and how they worked together during that time. Based on the experience participants shared, participants were asked about the level of PS in the team climate, what the challenges were, and what the enablers were, and the reasons behind them. The interview guidelines can be found in Appendix A.

3.3.2 Procedure

Before data collection, all relevant documents about ethical issues were sent to the Ethical Committee at the University of Twente to request approval. Once the permission was approved, potential participants were contacted, and the participants received the informed consent forms and information sheet. After the participants fully understood the information of this research and showed a willingness to participate, the participants signed the forms to formally join this research. After collecting the consent forms, the data collection began. One-to-one interviews with members were conducted through online meetings due to geographical differences, and the duration of each interview was between 30 to 90 minutes, depending on how much experience and perceptions participants could share. At the beginning of each interview, the researcher announced the goal of the interview and the declaration of protecting participants' data to make sure participants understood the information of this research and their rights to withdraw from this research. After the announcement, the whole interviews were recorded to conduct further analysis. Below, the overview of the data is presented in Table 1.

Table 1.

Data overview of the participants.

Participant label	Functional Department	Gender	Full-time/Intern	Interview duration	Transcription
Member A	Brand marketing	Female	Intern	89 mins	51 pages
Member B	Brand marketing	Male	Intern	61 mins	51 pages
Member C	Brand marketing	Female	Full-time	55 mins	50 pages
Member D	Content co-creation	Female	Full-time	76 mins	66 pages
Member E	Content co-creation	Male	Full-time	31 mins	19 pages
Member F	Data governance	Male	Full-time	49 mins	44 pages
Member G	Ecosystem operations	Female	Full-time	70 mins	43 pages
Member H	Organizational development	Male	Full-time	58 mins	66 pages
Member I	Platform Operations	Male	Full-time	52 mins	37 pages
Member J	Product development	Female	Full-time	57 mins	51 pages
Member K	Software development	Male	Full-time	83 mins	62 pages
Member L	Sustainable development	Female	Full-time	45 mins	25 pages
Member M	Sustainable development	Female	Full-time	36 mins	25 pages
Member N	Sustainable development	Male	Full-time	70 mins	73 pages
Member O	Teacher training and policy	Female	Full-time	54 mins	36 pages

Note: To keep the data anonymous and protect participants from being identified, the participant's label in the Findings is a number that is randomly assigned.

3.4 Data Analysis

In this study, the main goal is to discover the challenges and enablers of creating PS in CFTs in an NPO. The data was collected through interviews, participants were all from the same NPO and had experience working in CFTs. Participants' experiences were told in the form of stories, and participants explained under what situation they felt safe and unsafe in the CFT, and why. However, the experiences participants shared often included many elements that were contextual, subjective, and richly detailed, requiring analysis to make sense of qualitative data, assisting the researcher in grasping the abstract concept and pattern of the data (Ngulube, 2015).

Since this topic is not yet fully investigated in an NPO context, leaving room for exploring but also lacking previous literature as the foundation to fully analyze the qualitative data. As a result, the data analysis adopted an inductive approach of coding to develop themes in a specific context. Unlike the deductive approach of coding, which uses a predefined set of codes to analyze the data, the inductive approach of coding requires the researcher to get close to the raw data and derive themes and abstract concepts from raw data (Azungah, 2018).

The analysis procedure applied thematic analysis to provide a pathway to conduct inductive coding. Thematic analysis is a popular technique for analyzing qualitative data for qualitative researchers and is due to two reasons from the literature of Naeem et al. (2023). Firstly, the thematic analysis provides a concrete procedure for analyzing qualitative data, it provides a pathway for the researcher to get familiar with the data and identify patterns. The organized procedure can enhance the consistency and comprehensiveness of the findings, clearly connecting the data, interpretation, and theme nicely together. Secondly, thematic analysis can help researchers to retrieve new insights and understandings of research topics, since it requires researchers to work closely with data and use the data as a basis to develop themes, avoiding influence from preconceptions. The clear procedure and benefit for researchers to identify themes is useful for qualitative data analysis, and the characteristic of developing themes from raw data also nicely aligns with the inductive approach that is required for analyzing data on the topic of this research.

From the scholarly work of Naeem et al. (2023), the procedure is systematically structured, it comprises six steps in the analyzing process, namely getting familiar with the data, selecting keywords, coding, developing themes, interpreting, and developing the conceptual model. However, since this research does not go further to develop a conceptual model, but to understand the relations between concepts, the final step was not taken in the data analysis section of this research. Below, the purpose of each step in the thematic analysis procedure and how it is implemented in this research are illustrated. Furthermore, the reliability test is also mentioned in the end.

3.4.1 Thematic Analysis Procedure

Step 1: Transcription, Familiarization with the Data, and Selection of Quotations

The initial step is to turn the interviews into text form, get familiar with the data, and select quotations that are highly relevant and able to answer research questions. The goal is to familiarize oneself with the data and understand what the interviewee was thinking and what they had experienced. To implement this step in this research, the interviews were firstly conducted through Microsoft Teams, the generating transcripts feature was activated to provide the transcripts of interviews, turning video files into textual format. After getting the transcripts, the researcher read through the transcripts and listened to video recordings once again, getting familiar with the data, correcting typos in the transcriptions, and highlighting quotations for the next step of analysis.

Step 2: Selection of Keywords

In this step, selecting suitable and meaningful keywords for each quotation is conducted to help researchers build on themes and concepts. The keywords should be words to represent the meaning of the quotations, helping researchers to know the meaning of the quotation quickly in the coding stage. Naeem et al. (2023) address that the keyword should reflect the real experience of the interviewees, provide detailed understanding, and represent important moments. To implement this step in this research, the researcher first uploaded transcripts with highlighted quotations to the software ATLAS.ti to assign keywords or code to each quotation.

Following up, the researcher first distinguished if the quotation was about the challenges or enablers when building PS, creating keywords respectively as “Challenge” and “Enabler”. Subsequently, the researcher applied more detailed keywords for each quotation to understand what elements were challenging or facilitating the creation of PS. For example, in the quotation *“…or I will become very afraid to admit my poor work performance.”*, the keywords were “Challenge” and “Afraid to admit”.

Step 3: Coding

In the third step, the textual data is simplified and transformed into a theoretical form. The goal is to help researchers identify elements that are highly relevant to their research questions with concise labels. A code can be a word or a short phrase to symbolize the essence and summative attribute of the data, giving researchers quick access to see the overview of the data and to make sense of the data afterward. Based on the similarity of codes, codes that share the same attributes are categorized together, developing broader concepts for sets of codes.

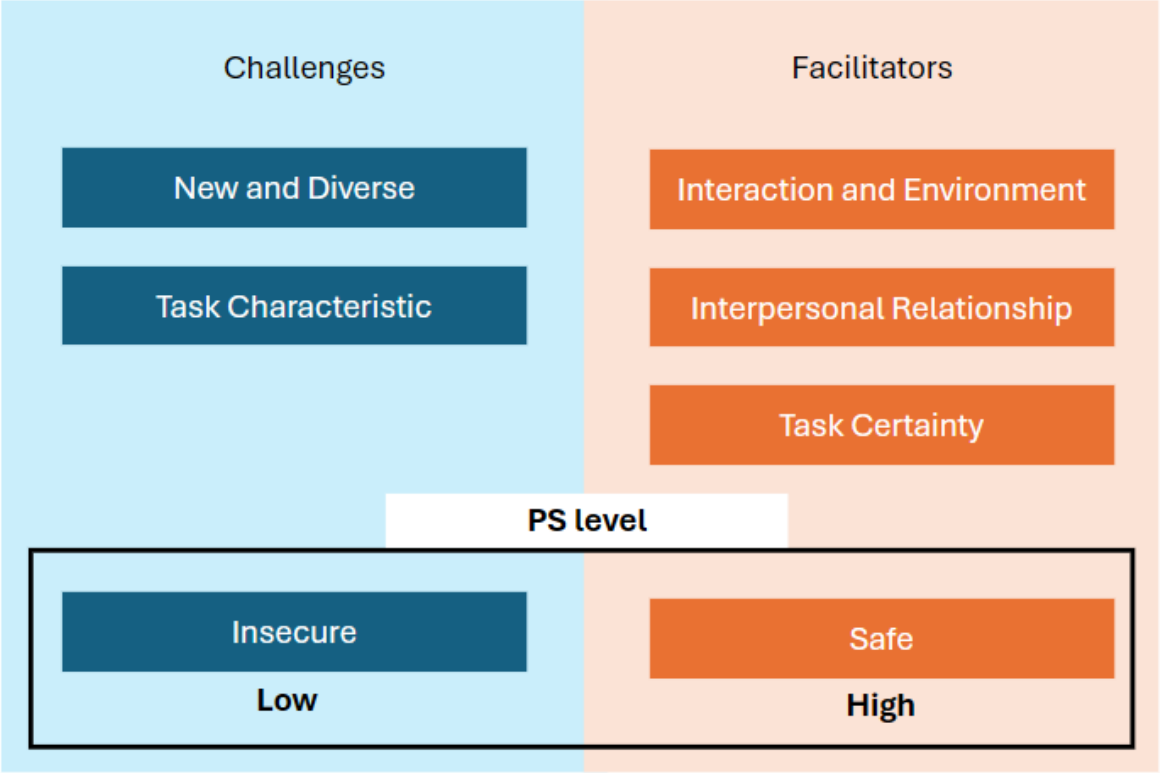
To implement this step in this research, past literature on the same topic was examined, finding a theoretically based concept to include several keywords. A word or a short sentence of a concept to be a code was used, assigning the code to quotations that fit the definition of the concept. During coding, a memoing technique (Babbie, 2021) was used, this technique is used to keep track of the thoughts and insights about codes, theories, or relations between them during coding.

Collected codes that shared similar attributes were used together to build categories. At the end of coding, all the codes were organized into two main categories, which were “Challenges” and “Enablers”. Under the category of “Challenges”, three sub-categories were included: “New and Diverse”, “Task characteristic”, and “Insecure”. For another category of “Enablers”, there were four sub-categories, which were “Interaction and Environment”, “Interpersonal Relationship”, “Task certainty”, and “Safe”. When the codes were all categorized, the codebook was developed to provide a clear overview of all the elements and definition that

were mentioned in the interviews (Appendix B). The overview of the categories is represented below in Figure 1.

Figure 1.

Overview of categories



Step 4: Theme Development

In this step, the goal is to develop themes that represent meaningful patterns to fully represent the data. Compared with categories, themes are more abstract and require interpretation and conceptualization, which include patterns, trends, and relationships between codes. To implement this step in this research, the researcher used co-occurrence analysis to see what elements were overlapping, which suggests a stronger relation. To see if the members felt safe or unsafe, the sub-categories of “Insecure” and “Safe” were used as indicators, showing low and high levels of PS based on past research (A. Edmondson, 1999; A. C. Edmondson, 2018).

The sub-categories within the category “Challenges” — “New and Diverse”, and “Task Characteristic”, were analyzed for co-occurrence with “Insecure” respectively, to understand the relation between experience in CFTs in an NPO, and low level of PS.

Similar to the category “Enablers”, the three sub-categories of “Positive Interaction and Environment”, “Interpersonal Relationship”, and “Task certainty” were put in co-occurrence analysis with “Safe” to see what feelings were triggered and for its connection between the characteristics of experience in CFTs in an NPO and a high level of PS.

Step 5: Conceptualization Through Interpretation of Keywords, Codes, and Themes

In this step, the themes that emerged from the data are conceptualized into a more general meaning. Finding the relations between concepts is the main goal in this step, and interpreting the relations with keywords, codes, and themes. To discover the relations between different concepts, utilizing previous research to get a better understanding is beneficial to refine the way to interpret the relations. To implement this step in this research, the result of the co-occurrence analysis, the overlapping quotations, and transcripts were checked to understand the stories that participants shared. Also, a mind-mapping technique (Babbie, 2021) was used to visualize the connection between elements and concepts. At the end of this step, past literature was used to interpret and refine the relations, contextualizing the relations in existing research.

3.4.2 Reliability

The coding scheme used in this study should be clear and replicable by other researchers. To test reliability, this research employed inter-coder reliability (ICR). ICR is a consistency test where two or more coders independently code the same raw data to see how consistent their results are (Elliott, 2018). In this research, there were nearly 30 codes in total, and each segment could be applied to one or more codes. The complex nature of data led to difficulties in reaching a satisfactory ICR index, so instead of focusing on the ICR index, the ICR process of this research served as a tool to reflect on analysis and keep improving coding schemes to reach consensus (O’Connor & Joffe, 2020). As a result, the ICR process in this study

is iterative, involving stages of coding data, discussing and aligning definitions, and then coding again.

To conduct ICR in this research, another coder from the same faculty and program was invited to participate in the reliability test. The researcher randomly selected two interview transcripts, maintaining the segments in the transcripts but removing the codes. The segmented but uncoded transcripts and the coding scheme were then provided to the second coder. After the second coder completed the coding, the files were compared with the researcher's coded transcripts. Subsequently, the researcher and the second coder had a reflective discussion to clarify the definitions of each code and align understanding together (O'Connor & Joffe, 2020). With the same understanding of the codes from the discussion, the second coder used the revised coding scheme to code again, reaching a consensus on the coding. Based on the iterative IDR process, the codebook was revised, and the rest coded data was updated accordingly.

4. FINDINGS

The findings illustrate the complexities of fostering PS in CFTs are multifaceted. Challenges include uncertainty and unfamiliarity, which lead to the main fear of unpredictability. These factors create an environment where team members often feel insecure about sharing their ideas and collaborating effectively. Subsequently, the findings also include the factors for CFTs in NPOs to create PS in the teams, which are providing clarity, connecting with team members and a positive environment. The challenges and enablers are explained below.

5.1 Challenges to Creating PS

In order to respond to the initial research question of the study, namely, "What challenges do CFT members encounter in an NPO when striving to establish PS? " the experiences of participants were systematically gathered, analyzed, and organized. Two primary themes emerged: uncertainty about the task and unfamiliarity with team members, which collectively gave rise to a more pervasive phenomenon of unpredictability. In the following paragraphs, these themes and the overarching challenge will be elucidated with the aid of transcripts from the interviews, thereby affording greater depth of insight.

5.1.1 Uncertainty of Task

The first theme in the challenges of creating PS in CFTs was the uncertainty of the task, which means the collaboration remains ambiguous, resulting in an uncertain situation and posing a threat to team PS. The CFT projects in the interviews were illustrated as complex and had never been done before, and only had a limited timeframe to complete. The tasks required two or more functional teams to collaborate quickly to achieve project goals. Especially in an NPO, the limited budget requires members to achieve multiple strategic goals in one project in a limited timeframe: they often put lots of effort into finding the most suitable plan for conducting the project.

In the course of the interviews, numerous members observed that, in the context of such unfamiliar cross-functional projects, there was no definitive solution to be found. This perception contributed to a complex and long communication process, during which members put effort into aligning their diverse opinions and judgments regarding the execution of the tasks. However, the different opinions of members often led to misalignment between each other due to time pressure. Instead of discussing and aligning, they tended to spend time working. Moreover, the complexity of the tasks frequently necessitated that members cross the boundaries of their respective areas of expertise and offer insights about unfamiliar subject matter. For example, when developing a marketing webpage, the marketing team must communicate their ideas and requirements to the UI/UX team clearly and effectively.

Members often exhibited a diminished sense of assurance when offering input in domains that were not within the scope of their professional expertise, due to the discrepancies in knowledge backgrounds and the limitations of their experience. As a consequence, uncertainty regarding the tasks at hand was high, and members were uncertain as to the best way to proceed and navigate knowledge fields which they had limited familiarity. In the context of data analysis, task uncertainty was found to be associated with feelings of apprehension, concern, and a lack of confidence. During the interviews, participants indicated that these concerns stemmed from the intricate nature of the tasks and the challenges encountered in communication with individuals from different domains of expertise. Frequently, they reported feelings of being “afraid," "worried," and "untrusted.", and a fear of making an inadequate contribution that might not be accepted or, worse, impede the team's progress.

M6: “I think there are many things in the (project name), don’t have a correct answer... In those situations, even if I have different ideas, I might choose to respect her opinions and not express my own opinion.”

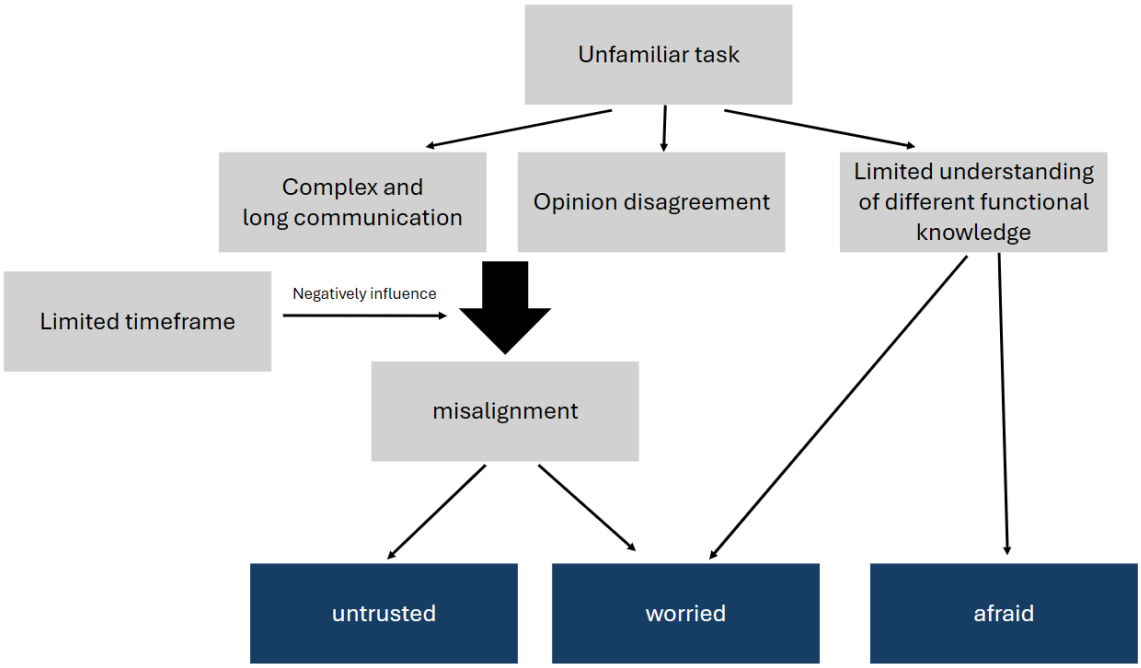
M6” “Sometimes we reach a deadlock. Just trying to clarify each other's issues can be difficult, making it hard to move forward. In such cases, I might defer to her perspective first, and then we continue the discussion. I won't bring up my doubts...”

M3: "Because sometimes, like in cases where the topic isn't my area of expertise, I feel a bit afraid to express my opinion. I worry that the true experts might not think the same way."

The excerpts of the interviews demonstrated that task uncertainty gave rise to concerns among members about the possibility of being wrong and eventually led to undesired results. The lack of confidence while contributing their thoughts on unfamiliar topics becomes fear and worry about making mistakes. In this context, the relationship between task uncertainty and safety was low, which represented a significant challenge for fostering PS within CFTs. To enable the reader to better understand the theme, the illustration of the challenge of the uncertainty of the task is represented in Figure 2.

Figure 2.

Theme: Uncertainty of Task



5.1.2 Unfamiliarity with Team Members

Secondly, another theme emerging from the analysis was unfamiliarity with team members, meaning that members had a lower similarity of knowledge and way of working,

making members hard to know how other members would respond when they shared their thoughts. Since members had different knowledge, perspectives, and ways of working, members sometimes perceived conflicting focus. Members shared that the different focus and reasoning made them unable to anticipate how other members would react to their thoughts. Especially when members tried to clarify their reasoning, members were worried if their arguments would be accepted. The concern grew stronger when members had the experience of being questioned by others when they had different approaches to achieving the goals. From the interviews, members who experienced the situation illustrated the questioning made them feel uncomfortable and unsafe.

> *M2: "But for the (A department), … the tasks I need to complete in the next two weeks were already decided last week… They (other members) often don't understand why such requests might need to be scheduled for two weeks later or even four weeks later."*

> *M14: "You end up facing a lot of internal or external, well, let's not call it attacks, but doubts about whether there are better ways to accomplish what you're doing. I'm currently experiencing this, and it feels really uncomfortable."*

However, compared to the diversity in the teams, the superficial relationship was mentioned even more when it comes to the challenges of PS. This kind of relationship showed limited social bonding and only having this temporary relationship when the work required them to. Contrary to working with members in the same functional department, members from different functional departments had a lower frequency of collaborating together. Since their department locations were separated, members from different functional departments also had fewer private interactions. The physical boundary between departments made members feel they did not really know others from different functional departments.

M7: "Compared to working within a single department, cross-functional team collaboration tends to be less frequent and less regular. For example, I might work with you this time and with another colleague the next time."

In the analysis, the element of superficial relationship and the fact that the team was newly formed for the specific project, were connected to the feeling of being "unsafe" and "worried". However, when looking into the stories that members shared, members talked about unfamiliarity because superficial relationships made them unable to predict others' reactions. When members wanted to ask questions or share thoughts, the unpredictability made them worried. For example, when members had an idea for the project, if they did not really know other members, they were inclined to not share it. Since members did not know how open-minded others were, they were afraid that their idea would be turned down right away. The unpredictability of other's reactions made members try to prevent sharing their thoughts unless they were sure others are willing to listen to their ideas. As a result, what triggered members' insecurity was not the superficial relationship itself, but the difficulty to predict reactions from someone they were not familiar with.

M5: "When more unfamiliar people participate in the project, I tend to be more cautious about what opinions I express. I worry whether my opinions will be accepted or recognized by everyone or the majority."

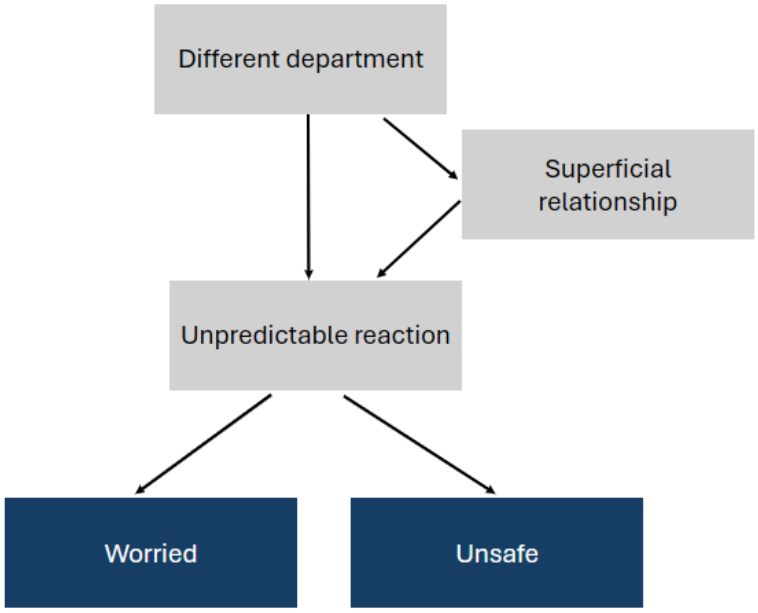
M8: "If someone asks me a question but the rapport between me and (Member name) hasn't been established yet, there might be situations where (Member name) is thinking A and I'm thinking B. There have been instances where our thoughts differed. In those moments, I feel a sense of insecurity."

For the theme of being unfamiliar with team members, it is clear that the main factor that made up unfamiliarity included the insecurity of how other members might react to them. Different knowledge backgrounds and different department locations were also factors that made it hard to get familiar with each other. As a result, members who felt they cannot be sure

if they would be accepted or not, remained worried and concerned. This theme showed the dynamic in CFTs that unfamiliarity would pose a threat to team PS. Below, an illustration of how unfamiliarity with members influences the level of PS is presented in Figure 3.

Figure 3.

Theme: Unfamiliarity with Team Members



5.1.3 The Main Challenge: Unpredictability

From the analysis of the two themes addressing the challenges faced by CFTs, a higher-level concept emerged: unpredictability. When members were facing an uncertain activity or working with unfamiliar team members, they felt that both the activity and the collaboration were venturing into unknown territory. This kind of unpredictability gave them the feeling of being "out of control," which triggered emotions related to low PS, such as anxiety, fear, and insecurity.

5.2 Factors that Facilitate the Formation of PS

To address the second research question, "*What enablers do CFT members experience in an NPO when building PS?*", the needs of its members were purposefully collected, processed, and analyzed. Three major themes had been identified from the data: clarity provision, member connection, and positive environment building. Within these themes are some strategies that would counteract the challenge of unpredictability and provide security to members. The themes that will be explored in more detail in the following paragraphs are identified, as is the overall challenge, with the use of interview transcripts.

5.2.1 Providing Clarity

The first theme that emerged from the analysis was clarity provision, meaning that members had a clear framework of team setting, each member had their own responsibility and decision authority on topics that fell under their responsibility.

This theme included information transparency, clear roles, and decision authority, and when the main knowledge required in the project is the member's knowledge. These elements had the connection to the feeling of safety, and willingness to speak up. The reason was that those were the ways for members to have more control and certainty in the collaboration, and they felt they had the ability and right to make decisions for the team.

Additionally, when the main knowledge required in the project was the member's knowledge, members felt they could understand everything in the discussion, and it provides a sense of certainty, and they felt safer in the collaboration. Moreover, when members knew their roles in the project, and consequently what kind of decision they could make, they felt empowered and more willing to share their thoughts during discussions. Since they knew their roles of how to contribute to the project and have decision authority, they knew clearly what kind of input to provide, having no doubt of crossing the authority line.

> *M5: "For example, if this (project name) requires training, marketing, and external relations, these three teams should be defined. What roles or decisions can each of us take on during each stage of the project? Wouldn't this be very helpful?"*

M1: "I clarify the nature of my work by recognizing that I am a relatively execution-level partner. My role is to provide all the information I know to the higher-ups for their reference… Even if the communication process isn't very smooth, I will still do my best to express what I need to express and fulfill my responsibilities."

The theme of providing clarity to the team highlighted the importance of creating a team environment where every member understands how they can contribute and has access to all relevant project information. This sense of certainty was especially pronounced when the project aligned closely with their functional expertise, as their background knowledge enhanced their comprehension of the project. Clarity in the team setting fostered a sense of safety, encouraging members to speak up and contributing to a higher level of PS. This addressed the second research question by demonstrating how clarity facilitates the establishment of PS within CFTs.

5.2.2 Connecting with Team Members

The second theme that emerged in the analysis was connecting with team members, meaning members had close relationships outside the workplace and got to know each other through interactions, regardless of whether it was during collaboration or attending activities together, such as team building.

From the interviews, the ways of connecting with team members were the experience of working together, or company-planned activities members engaged in together, such as cross-department team building or one-on-one meetings. The interactions helped members to become familiar with each other, and when members had a common personal value system and perspective, members developed a closer relationship, which was also helpful for members to get familiar with one another. The factors of getting more familiar and closer with each other were found to be connected to the feeling of safety, and members saw the team as a whole instead of separated members from different functional departments. This feeling made

members assured they can be themselves during collaboration: they were also more willing to speak up when they had different thoughts about the collaboration.

In the interview excerpts, members shared that familiarity with members can help them feel safe since they felt familiar members would not judge them easily. They also believed that those with whom they had built a closer connection would not judge them based on how they performed in their work but considered other aspects of them, such as their personality. This belief gave members the courage to share their thoughts or express the difficulties they were encountering more freely because they knew other members would not directly consider them lazy or incapable. An example of the feeling of trust and safety related to familiarity is presented in the interview of Member 6 (M6).

> *M6: "This person understands me, so they know that what I'm saying is not just complaining or targeting anyone specifically. Instead, it means that I might be facing difficulties right now… they know I'm a dedicated worker and won't judge me negatively because of these complaints."*

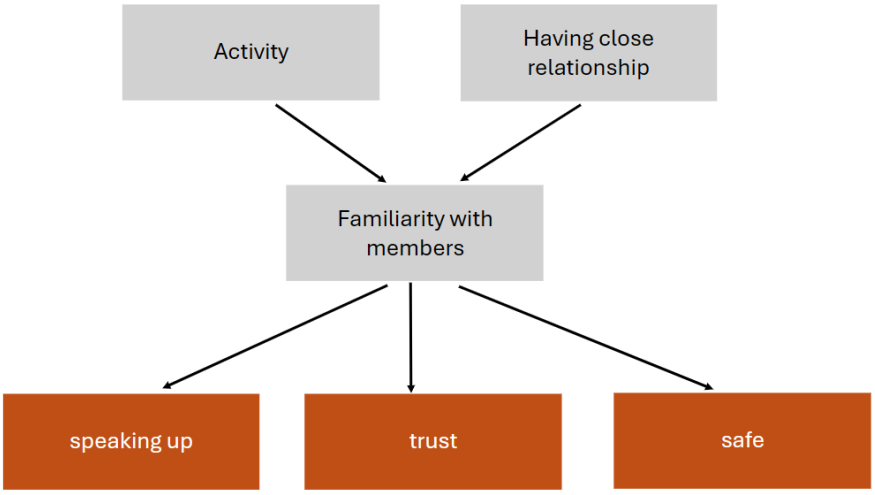
Interestingly, even though familiarity was also mentioned as a challenge because they had a lower frequency of collaborating together, the challenge of unfamiliar with team members and the enabler of connecting with members are not contradicting. In the enablers, members mentioned that familiarity was based on their interaction, and since the interactions rarely naturally happened, they could purposely trigger that. For example, team building and one-on-one meetings with other members were often mentioned in the interviews when talking about getting familiar with individuals from different functional departments. The activities helped them to interact with each other in a non-office setting, helping them to get to know each other. Despite the low frequency, members shared that just merely the interaction of one afternoon could already helped them to get familiar with each other and smoothly collaborate together.

M15: "It's probably because of that team-building event where we interacted with each other. Later, when they handled (project name), I knew how to interact with them better from the start... This makes the initial interactions smoother—or rather, it helps me build a sense of psychological safety more easily."

The theme of connecting with members showed the power of interactions and activities giving some kind of familiarity amongst the team members. It was through such familiarity that the members started to get recognized as people and not just contributors to the working team. As a result, they started to trust that their fellow colleagues were not going to judge them based on their work performance alone, but also shared their concerns and problems. Through social activity, this familiarity rose PS—members felt safe and trusted enough to freely express thoughts or admit to having made a mistake. This answered the second research question by showing how building interpersonal connections lays a path for establishing PS within CFTs. To illustrate how members felt safe through connecting with each other, an illustration is shown in Figure 4.

Figure 4.

Theme: Connecting with Team Members



5.2.3 Positive Environment

Finally, the theme of increasing the level of PS in CFTs was a positive environment, meaning that the environment provided support to the members, and members were friendly and respected each other, which led to high-level PS.

A positive environment included interactions during collaboration, and from the interviewees' perspectives, they could perceive the environment was safe to be wrong. The interactions that were mentioned in the interviews included trying to understand each other's thoughts, proactively asking for feedback, or openly stating "It is okay to be wrong." Interactions like those were connected to the feeling of safety, trust, and no fear of speaking up in the analysis. In the interviews, members shared that when they received support (mental support or direct help on work), respect, empathy, and friendliness from other members during collaboration, they sensed goodwill from others. The goodwill let members consider the environment was safe, and no one would judge them when they asked questions or admitted mistakes.

> *M3: "Guide me to clearly define or think through what I want to say or guide me to express my ideas. Then tell me it's okay if I'm wrong, or just encourage me to share my thoughts directly. I believe this can increase the sense of security for all the project team members and make them more willing to share their ideas."*

Interestingly, when it came to a positive environment in collaboration, members often mentioned the organization's culture as an important factor, and it could advocate and trigger other elements that create a positive environment. The principles in organizational culture encourage employees to say the truth with care and focus on the problem but not blame members. Among the principles, focusing on the problem but not blaming members was illustrated as problem-based solving, which was mentioned the most, it was considered to help members to share thoughts in teams. This included focusing on the problem that happened and trying to solve it together, in contrast to making it personal and finding someone to blame. The organizational culture and the way of discussion it advocated connected to the feeling of trust,

safety, and the willingness to speak up. In addition, one interviewee mentioned the reason why organizational culture was important for CFT collaboration was the guideline for members to know how to collaborate together when the teams only worked together temporarily for the project.

> *M7: "I think that if an organization has a clear culture or principles, such as our values of integrity and our preferences and discouragements, then everyone can discuss things based on these principles… for short-term cross-functional team collaboration, such as a project where we work together for just two weeks, it's hard for me to imagine putting extra effort into building a sense of security specifically for these brief interactions."*

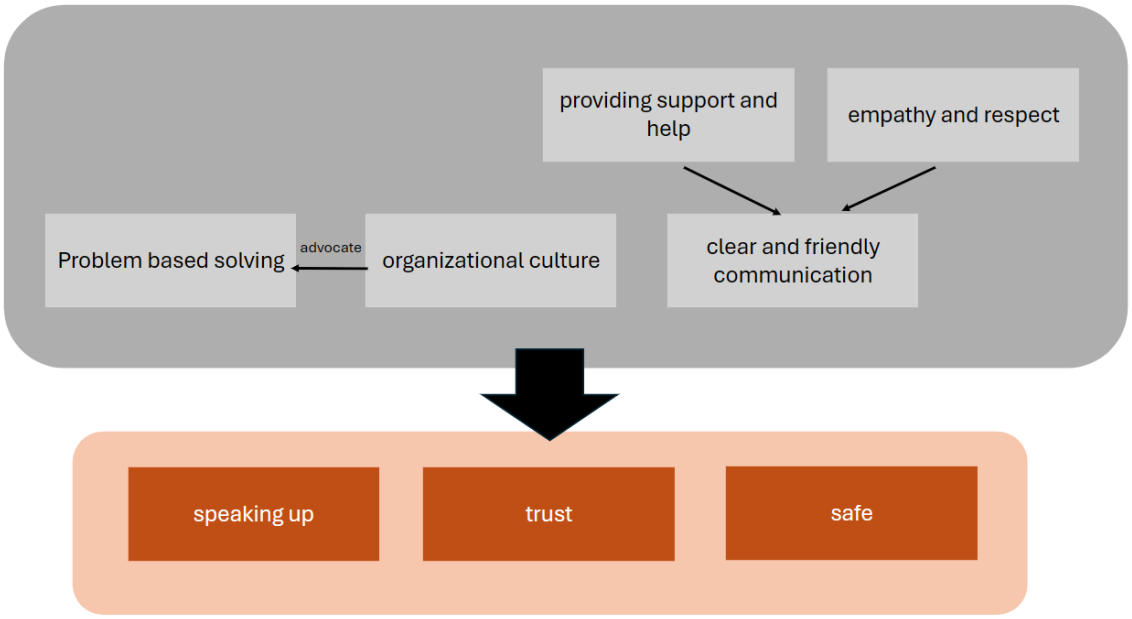
The organizational culture provided members with a sense of safety in collaboration. Members believed that every team member followed the principles of organizational culture, and in that sense, others would not judge or reject them. Instead, members were encouraged to be transparent and focus on how to solve the problems instead of blaming others. These guidelines could help members to collaborate without facing interpersonal risk-taking and feel safer during the collaboration. Additionally, organizational culture also served as the rule for collaborating, providing a sense of clarity during collaboration.

> *M11: "I think it's about creating a consistent overall atmosphere, which is part of the organizational culture…if you see positive dialogue and interactions, and see that colleagues are willing to share their thoughts openly, you'll likely feel more comfortable doing the same."*

The theme of a positive environment encompasses the organizational culture, friendly interactions, and collaborative methods. This environment was cultivated through interactions that demonstrate goodwill, helping members develop trust and the assurance that others would not harm them for personal gain. By addressing the main challenge of unpredictability, this theme assured members that organizational support was available when needed and clarified collaborative processes at the organizational level. Creating a positive environment fostered trust and safety, encouraging members to share their thoughts during collaboration. Notably,

under co-occurrence analysis of this theme and the feelings of safety, it showed 44 times co-occurrence, which was higher than the other two themes, highlighting its crucial role in creating PS within CFTs. This finding answered the second research question. To further illustrate this theme and its impact on creating PS in CFTs, Figure 5 provides a detailed depiction.

Figure 5. *Theme: Positive Environment*



5. DISCUSSION

The main aim for many NPOs is often to raise public awareness of social issues and to utilize innovative strategies to facilitate the resolution of these issues. Recently, more attention has been paid to organizational innovation in NPOs (Adro & Leitão, 2020). Innovation of NPOs is described as one of the key factors for effective impact and making a difference in society by positive social change. This research employs a qualitative data analysis approach to examine the insights gleaned from interviews with CFT members in NPOs, offering a comprehensive understanding on factors that determine and provide high PS.

The findings show that unpredictability is the major challenge in building PS within CFTs in NPOs, which answers the first research question of this research. In addition, three related

factors were found to have the potential to reduce this challenge: providing clarity, connecting with members, and creating a positive environment. The paragraphs below discuss the contribution of the research to academia and practice and explore the limitations of this study.

6.1 The Main Challenge: Unpredictability in CFTs

This research identifies two challenges that CFTs in NPOs face in fostering PS. These are the uncertainty of tasks and unfamiliarity with members. At a higher level of analysis, the primary challenge posed by unpredictability is the ambiguity it brings about, which can lead members to feel worried, afraid, or less inclined to express their thoughts. The unpredictability of the task and the potential reactions of team members give rise to concerns among members about the possible negative consequences of speaking up. Such potential risks may include a lack of acceptance, rejection, or being proven incorrect. The experience of worry and fear leads members to maintain silence during meetings and to avoid interpersonal risks.

These results are in line with the existing literature, as the previous discussion underlines that task uncertainty and unfamiliarity of tasks are challenging to cope with. As previously explained, the social problems that NPOs try to solve are complex in nature and require a task that takes into account external factors such as market turbulence and clients' needs, which may change frequently (Acosta-Prado et al., 2020). In addition, a strong identification of CFT members with their respective departments can make knowledge boundaries visible between different departments and CFT members, which could further develop their relations as a competitive relation (Ghobadi, 2011). The competitive relationship creates a distance between members and creates a situation of unfamiliarity, which becomes a barrier to the learning process across boundaries. Ultimately, the interpersonal dynamics and the nature of the tasks are the features that complicate the problem-solving process of the teams, as evidenced by Edmondson and Lei, 2014. To better understand these factors, Edmondson and Lei in 2014 made an in-depth review and synthesis of literature about PS from multiple contexts, at the individual, group, and organizational levels. The outcomes of the current study are supported by their analysis, as they concluded that in the group context, PS is influenced by multiple factors, two of them are found in the current research that pose potential challenges: social interaction

with team members and the uncertainty of the task. Further studies by Faraj and Yan (2009) and Dussart et al. (2021) elaborate on the challenges posed by these factors, thereby underscoring the necessity of addressing them to enhance PS within CFTs.

Firstly, Faraj and Yan (2009) indicated that task uncertainty serves to moderate the relationship between PS and performance. Although this was confirmed by Stock et al. (2021), high task uncertainty has the potential to result in greater knowledge sharing and, consequently, higher performance. However, the role of PS in this context remains unexamined. In order to gain insight into the relationship between boundary work and performance, Faraj and Yan incorporated additional factors, including spanning, buffering, reinforcement mechanisms, PS, task certainty, and resource scarcity. Their findings indicated that, in the absence of boundary work, high task uncertainty is associated with low performance and reduced PS. This outcome indicates that, in the context of tasks with limited definition and potential for influence by external factors, there is a lower probability of team members expressing their views and a heightened possibility of perceiving interpersonal risks. It is not uncommon for tasks in CFTs to require members to step into areas of knowledge with which they are relatively unfamiliar. Those with relatively limited knowledge about such areas may feel less certain about contributing. The literature partially supports this research finding that task complexity and uncertainty lead to lower PS. Even though the relationship between task uncertainty and PS also depends on the boundary work that employees engage in—a factor not included in the current study—this study does offer a detailed investigation into how task uncertainty leads to low PS. Specifically, the findings highlight how misalignment among team members and their limited understanding of knowledge from other functions contribute to this issue. This misalignment and lack of cross-functional understanding create an environment where team members may feel less confident in their contributions, ultimately leading to reduced PS.

Secondly, the research conducted by Dussart et al. (2021) and Edmondson and Harvey (2018) demonstrated that the physical and knowledge boundaries present an additional challenge to the already complex issue of unfamiliarity in CFTs. As Edmondson and Harvey

(2018) noted, CFTs are often constituted as temporary workgroups comprising members from different departments. These groups rarely interact with each other unless work is required. The separation of departments creates physical boundaries between members, which reduces the possibility of having private interactions and, consequently, increases the level of unfamiliarity between members. Moreover, Dussart et al. (2021) demonstrated that the presence of different departments and specialized knowledge within a team leads to a tendency for members to prioritize and adopt the perspective of their own respective departments. The differences in interpretation and opinions that arise from this context can make it challenging for members to fully understand the thoughts and perspectives of their colleagues. Similarly, in the systematic literature review conducted by Newman et al. (2017), familiarity among members is identified as a significant factor influencing positive social interaction. Roberto (2002) suggested that a lack of familiarity with one another may result in uncertainty regarding the abilities and personality traits of other members, as well as a lack of confidence in how they will respond when sharing their thoughts or admitting mistakes. The findings of the current research is consistent with those of previous studies on the impact of limited familiarity with colleagues. The results of the current research contribute to insights into PS by elaborating how in the particular context of CFTs, a lack of familiarity stems from different knowledge backgrounds and departments. A lack of familiarity can hinder PS since members might not have the ability to communicate and work effectively across such boundaries; hence, emphasizing the importance of cross-functional team dynamics in teams.

The results of this research and previous literature on this topic are in good agreement that the challenges of task uncertainty and unfamiliarity with members make members feel less likely to speak up. However, the deeper reason(s) why members feel concerned and worried about uncertain tasks and unfamiliar members is rarely investigated in previous literature, making it hard to accurately support CFTs when the fundamental reason is not fully acknowledged. As a result, this research newly discovered the shared characteristic of unpredictability in the challenges provides crucial insight to extend the knowledge of PS in academia. The outcome suggests that members show concern, worry, and even fear of

unpredictability, regardless of whether the task itself is constantly changing or members' thoughts and reactions are hard to anticipate. The characteristic of unpredictability represents the main challenge and provides important insight into the fundamental obstacle that prevents CFTs from fostering PS, which is a significant contribution to the academic literature on the subject. In the next section, it presents the existence of underlying factors that could address the challenge of unpredictability.

6.2 Overcoming Unpredictability: Three Enablers

To overcome the challenge of unpredictability in CFTs and facilitate the creation of PS in teams, this research identified three enablers that have been shown to be beneficial for CFTs in this regard. The first enabler is *providing clarity*, clearly stating what decisions each role can make, and who can make final decisions. This enabler helps CFT members cope with unpredictability by providing clarity in roles and decision authority, making members clearly understand their roles and standpoints within the team. The second enabler is *connecting with members*, including interacting with each other in projects or privately and also discussing to better understand each other's thoughts. Activities like one-on-one meetings and team building are found to be helpful to develop PS. Bonding could help members to get familiar with each other, and predict their reactions when collaborating. Lastly, the third enabler is *a positive environment*. It includes an environment of trust and respect and also friendly interactions between members to openly accept different perspectives and the culture that the organization fosters. A positive work environment could lay the groundwork for members to be brave enough to embrace the unpredictability and understand colleagues would not reject or judge them based on the organizational culture and past incidents which can let them feel the goodwill in others.

As addressed in the findings of the current research, past literature supports that providing role clarity, and clear rules for collaboration can be a building block to foster a higher level of PS in teams (Bresman & Zellmer-Bruhn, 2013; Klenke-Borgmann et al., 2023; Lechner & Tobia, 2022). In contrast to the findings of Edmondson and Mogelof (2006), which addressed the importance of flexibility in process and procedure to achieve high performance, the results

of this research support the provision of a stable setting within the team to facilitate the development of PS. Importantly, the findings of the current study reveal why team norms and clarity contribute to a high level of PS in CFTs. The reason is that the clarity of team norms and roles can provide the team with a concrete working process for members to know how to collaborate together, reducing the unpredictability of collaboration. The finding of the study extends the existing understanding of how shared rules of collaborating are important for members, not only to understand their responsibility and what decisions they can make but also to provide a common ground of ways of collaborating.

The positive member interaction is also mentioned in the literature of Binyamin et al. (2018) and Edmondson (2018), they both highlighted the importance of positive member interaction such as helping each other, caring for each other, or humbly listening to each other's opinions. As mentioned before the team climate with a high level of PS, shows an atmosphere of trust, respect, and openness (Edmondson, 2018), and this is accumulated with member's positive behaviors and attitudes toward others. According to the findings of the current research, when sincere care is conveyed, members feel cared for and are more willing to share their concerns or difficulties they encounter. The interactions between team members contribute to fostering social relationships, increasing familiarity with each other. Exceeding what past literature has addressed, this research further emphasizes the two factors that are used to overcome the challenge of unpredictability in the interpersonal aspect. Positive member interaction can assure team members that if they encounter difficulty or trouble, other team members will stand by their sides and provide support and help. Extending positive interactions with members and connecting with others simply with team building or one-on-one meetings can foster familiarity and lead to better anticipation of how other members will react to them. In addition, the connections among team members make them see each other as a whole person, not judging them only based on their performance but also include their understanding of the person.

In a higher context of the organization, organizational culture is addressed in the literature (Grailey et al., 2021; Shahid & Din, 2021) to be an important factor in nurturing PS. A

people-oriented organizational culture could accommodate a higher level of PS, meaning the organization sees employees as the biggest asset of the organization. Fundamentally, the findings of this research extend the understanding of organizational culture, providing an additional view to see how organizational culture is considerably important to CFTs. The findings suggest that organizational culture is considered to provide a guideline for working together, and it is crucial for CFTs. Since there are no pre-existing rules for collaboration in CFTs, such guidelines could set the common ground for members to work collaboratively. Additionally, organizational culture is valuable for NPOs since the belief and vision of the organization reflect the culture of the organization (Acosta-Prado et al., 2020; Baloch & Siddiqui, 2020). Employees in NPOs are very belief-driven due to the specific organizational orientation (Theron & Hons, 2015), this characteristic makes employees even more rely on organizational culture principles to work together. The factor of organizational culture in a non-profit context is not yet acknowledged in previous literature and was revealed in the current study. The findings illustrated that members in NPOs had the same vision to achieve, but did not competitively try to take others down, making the positive influence of organizational culture more significant.

Within the dynamic environment of NPOs, CFTs pose a set of challenges when attempting to establish PS. This research focused on identifying the most critical challenge that may be encountered in doing so by such teams, placing emphasis on task unpredictability due to task uncertainty and unfamiliarity of team members with one another. This research will not only serve as a contribution to the academic discourse but will also provide specific, useful insights into improving team dynamics and PS in NPOs. Indeed, the findings underline the establishment of a positive working environment, providing clarity, and connecting with members as key elements that work together to enable CFTs to cope with complex and often unpredictable work environments.

6.3 Practical Implications

These insights from this research on supporting PS in CFTs within NPOs carry important practical implications with them. Firstly, the roles and responsibilities of each member within a team should be explicitly defined to reduce unpredictability in collaboration and mitigate task

uncertainty concerns. Clearly defining who is responsible for what in the final plan and where the authority lies in various aspects of the project work can help team members understand the scope of their authority. There will be less hesitation to make a decision and contribute to discussions (Bresman & Zellmer-Bruhn, 2013). Practically, organizations can initiate kick-off meetings for project teams to discuss about positioning, expectations, and how to collaborate together, and regularly aligning thoughts as the projects go to prevent negative influence by unexcepted factors externally. Secondly, by facilitating social interaction and communication among team members through informal activities, including team-building activities and one-on-one meetings, they can become more familiar with each other. Therefore, the members open up more about their thoughts and concerns. Thirdly, an organization can also develop an organizational culture of respect and trust in which everyone will foster positive behaviors—active listening, displaying empathy, and valuing perspectives—so that individuals feel safe and included while expressing their views (Edmondson, 2018). Organizations can clearly put it down on paper and merge the culture in onboarding sessions, discussions, and daily interactions to let employees understand that some qualities are valued by the organizations. Most importantly, leaders have to lead as examples to show that the culture does exist, not just saying.

6.4 Limitations and Future Research

Even though this research discovers valuable insights into the challenges and the helpful elements for CFTs to foster PS in NPOs, this research still has a few limitations that are worth considering for future research. Therefore, in the following paragraphs, the limitations and directions for future research are illustrated.

Firstly, because the research aims to deeply understand the complex situation of an organization, the whole is based on qualitative data from a single nonprofit organization in Taiwan. Even with rich data to get in-depth insight, the findings may not be generalizable to other organizations, especially those nonprofits operating in other geographical locations and/or other sectors, checking if different cultures and industries will also produce similar findings to make the knowledge can be generally applied. This limits the extent to which conclusions from this research can be used. The results could also be influenced by the unique

cultural, organizational, and socio-economic contexts of the NPOs studied (Edmondson & Bransby, 2023; Edmondson & Mogelof, 2006), making it difficult to generalize from this single study to a population of NPOs around the world. Therefore, this research suggests future research to adapt the methodology of this research to collect data from different industries, countries, and the scale of the organizations.

Secondly, the sample size of 15 participants may not fully represent the diversity of experiences within CFTs. Some perspectives or experiences may be overlooked or underrepresented in the research findings due to the small sample size. It reduces the level of detail on which good generalizations can be based and reduces the potential to identify more subtle patterns or unique challenges relevant to different team members. This limitation therefore points to the need to extend this research with larger and more representative samples. Thus, further research with larger samples from different organizations and sectors is suggested to confirm and extend these findings.

The limitations of this research highlight several directions for future research, focusing on understanding the generalizability of the findings. This study serves as a foundational step for researchers in the field of PS, offering insights into fostering PS within CFTs in a non-profit context. Future research should explore the generalization of why team members may feel unsafe and further investigate effective strategies for addressing these concerns. By doing so, it can contribute to a more comprehensive understanding of how to cultivate PS in similar organizational settings.

6. CONCLUSION

This research provides insight into how PS is created in CFTs within NPOs. It identifies a major challenge - *unpredictability* - and three key elements to help build PS within teams. Since NPOs are very focused on solving complex social problems and promoting their awareness campaigns with the public, building PS would be very important for them as it is the key to knowledge-sharing behaviors and thus innovative performance. However, the tasks are vague, and the members are not familiar with the other members of the team, which gives the

members a feeling of loss of control. The above situation makes the members silent to avoid the chances of probable failure and disapproval.

However, it is possible to build PS in CFTs in NPOs by applying three significant factors which include providing clarity, connecting with each member of the team, and fostering a positive environment. Firstly, clarity can be achieved by defining clear roles, decision-making authority, and how individuals will work together to reduce uncertainty. Secondly, getting to know each other as people, through team-building activities or even one-on-one meetings, will help members recognize each other's strengths, as well as their thoughts and possible reactions. Lastly, maintaining a positive atmosphere includes friendly interactions that show goodwill, and stating openly that it is okay to be wrong so that the fear of being wrong is dispelled.

Interestingly, the standout factor for creating PS in CFTs within NPOs is organizational cultures. A supportive culture gives guidelines on how to collaborate, and as such, it is of importance in NPOs where the workers are all motivated by the shared belief in making society better. The contribution of this study to knowledge in this under-researched area has practical implications for NPOs who desire to put findings into real use. This study extends the knowledge of PS to a previously not yet discovered field and offers practical implications for NPOs to implement these findings. Through the understanding of the main challenge and the factors that facilitate PS, CFTs in NPOs can continuously learn together, leading to innovative performance and benefiting society as a whole.

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APPENDIX

Appendix A: Interview Guideline

Ⅰ. Research topic and questions:

- Topic: Create Psychological Safety in Cross-Functional Project Team Collaboration
- Research questions: How to create psychological safety in cross-functional project teams?
    - What challenges of creating psychological safety are they facing in cross-functional project teams?
    - What elements do team members in cross-functional project teams think are crucial for them to foster psychological safety?

Ⅱ. Introduction

Instructions: *Hi! (Greeting) Thank you for your time to join this interview. I am the interviewer today, working on this research to assist in collecting data for it. For today, the main goal is to know about your experience in project teams in which different departments are also involved. Also, I want to know how free you feel to share your thoughts with the team, why you feel that way, and how can we improve it. The result will make you anonymous, so please feel free to share anything you have in mind. The duration of this interview will be an hour.*

Ⅲ. Asking for consent

Instructions: *To fully document your thoughts about collaboration, I will audio record the whole interview. But of course, the recording will be only used for research purposes in this project and will be destroyed once the recording is transcribed and coded. Do you consent to be audio recorded in the whole interview?*

- **Yes:** Interviewer starts interview

- **No:** The interviewer asks about the interviewee's concern and tries to resolve it. If the interviewee refuses, use note-taking instead.

Ⅳ. Interview

Some probing questions can be used during the interview:

- Can you tell me more about...?
- What do you mean by...?
- How did you feel about...?
- Can you give me an example of that?
- Do you mean that...?
- Do you have specific experiences in mind, or is this a general opinion?
- Why do you think you noticed that?

1) Project teams:

Instructions: *First, I would like to know more about you, including what department you are in and your title. Also what cross-functional project you have worked on?*

1) What department are you in now? What is your title?
2) What is the focus or goal of your department? Tell me about what you do in the major/job.
3) What is the most recent, or current cross-functional project you have worked on?
    a. Can you describe one project to me? The task, the goal, the composition of team members, and your role in the team.
    b. Is that the first time you have worked with them in this composition?
    c. What did you mostly do in the project team?
    d. Did you participate in every meeting and get involved in every discussion? If not, what kind of meeting did you participate in?
    e. What was the meeting procedure like?

f. How did you communicate between your project team and your department leader?

g. How did you deal with it, when your project team and your department leader have conflicting views?

2) Team psychological safety:

Instruction: *Thank you for sharing, now I would like to know how you feel about the collaboration in the project team.*

1) How often did you raise questions in the project team? Why often/seldom?
    a. How did your team members react to that?
    b. Can you share an example?
    c. How did you feel about that at that time?
2) How often did you ask for help from the project team? Why often/seldom?
    a. How did your team members react to that?
    b. Can you share an example?
    c. How did you feel about that at that time?
3) How often did you raise a problem you perceived in the project team? Why often/seldom?
    a. How did your team members react to that?
    b. Can you share an example?
    c. How did you feel about that at that time?
4) When you admit a mistake you make in the project team
    a. What do you think will happen? How do you think your team members might react to that?
    b. Why do you think this will happen?
    c. Can you share an example?
    d. How did you feel about that at that time?
5) How do you describe the atmosphere during meetings in the project team?

3) Challenge & crucial elements to create psychological safety:

Instruction: *Thank you for sharing, now I want to know more about what makes you not willing to share your thoughts with the team. And what makes you willing to share your thoughts?*

1) What do you think are the challenges you face when sharing your thoughts/questions/concerns/mistakes in this project team? Why is that?
    a. Maybe about the familiarity of the team, how much you know about your task, the pressure you feel due to limited time, potential team conflict you might face, difficulty communicating between the project team and your department, team members' reactions...
2) What do you think are the important things to create a safe space where team members are willing to share thoughts/questions/concerns/mistakes? Why is that? Can you give me an example based on previous experience?
3) What do you think the organization/project leader/team member can do, to create a safe space in a team?

V. Closing

Instructions: *Thank you so much for sharing! And this is the end of the interview. I know more about your thoughts about the team, the challenges you might face, and the elements you think will make you feel safer to share them with the team. Those are very helpful. Don't worry about voicing out your opinions and the other member's name, since it will be completely anonymized at the end, and the data will only used for research purposes.*

Even with what we had today, I might want to dig deeper into it after I conduct more interviews, and probably need additional information from you. Can I contact you for a follow-up interview? (Great! / That's alright.)

Also, please don't talk about this interview with other members who also participate in this research, since it might influence their thought and cause invalidity of the result. Thank you for that in advance!

Finally, is there anything you want to share/discuss about this topic? And is there anyone in the organization you think will have more insight about this topic?

Thank you again for your time. Hope you have a nice day today.

Appendix B: Codebook

Challenge

Category	Code	Description	*Example quote*
New and Diverse Team	Different department	This code is used when the interviewee talks about, mentions, or describes the differences between functional departments. Interviewees explain that each department has **its own procedures, specialized knowledge, and department leaders who make decisions.** The code also notes if the interviewee implies that their department is the most important and must compete with other departments for resources.	*M1: "Because partners from different functions might have different concerns within a project... since we are (Department A), when we negotiate and collaborate externally, things may not be resolved in just one discussion, and they won't stay the same forever without changes. However, for (Department B), when it comes to producing the products we collaborate on, it indeed cannot be changed frequently."* *M14: "I think it's extremely important. To put it bluntly, and although this might be a bit politically incorrect, to be honest, the tasks of all other teams can be postponed, like if they're busy this quarter, they can do it next*

		quarter. But for our team, that's not an option."
Unpredictable reactions	This code is used when the interviewee talks about, mentions, or describes they can not predict the reactions of other team members. Interviewees explain that they cannot foresee how other team members will respond or behave during collaboration. They might mention **trying to imagine and guess what others might do or think while expressing not being sure about their behavior.** Although this code is related to "worried," as unpredictability can cause worry, it focuses on	*M1: "This process will inevitably lead everyone to guess about how to collaborate better and improve the teamwork dynamic."* *M2: " Maybe the PM wants to block this task at their level. If I say it can be done here, then the PM won't be able to handle it the way they intended...It's also somewhat like there's no flexibility in the process because you don't know how he will react to this matter. "*

	the interviewees' thoughts of trying to predict rather than their feelings.	
Superficial relationship	This code is used when the interviewee talks about, mentions, and describes their relationship with team members is merely superficial. Interviewees explain that, due to the high level of dependency within the team, they try to maintain good relationships with other members even though they do not consider them friends. They might mention **having limited trust and only sharing thoughts when it does not impact their work, and they try to prevent conflict to protect the relationship.** This code also applies if the interviewee mentions that they are not familiar with others have few collaborating	*M1: "What I meant was that my trust with him is limited to work-related interests. It might not extend to more informal or off-the-record interactions outside of work."* *M14: "I think the key point is that, yes, and also, the long-term relationship between you is important... I think the difficult part of cross-team collaboration is that I usually won't directly confront or escalate conflicts because there's no need for that."* *"M7: ""For cross-team collaboration, the frequency of working together or having discussions is relatively less consistent*

		experiences, and have not yet developed a good working rhythm together.	*compared to working within the same team.""* *M8: ""So, if the other person asks me a question, but because the working rhythm between us hasn't been developed yet, perhaps they think of answer A while I think of answer B."""*
Task Characteristics	Complex and long communication	This code is used when the interviewee talks about, mentions, and describes the communicating process as long and complex. Interviewees mention that **the task required lots of time to clarify and align every team member's thoughts, and sometimes have to follow long procedures due to they are from different functional departments.** This code	*M1: "It seems like this might stem from the fact that neither of us has a complete technical understanding of this collaboration yet. I'm the one representing the window relatively more often than he is. Therefore, <u>it takes a longer time for us to agree on the specifications of this collaboration.</u> "*

	also applies if the interviewees feel that is a waste of time, and the process is stuck.	*M6: "I understand now. Sometimes we get into a deadlock where we struggle to clarify each other's issues, making it difficult to move forward."*
limited understanding of other functional knowledge	This code is used when the interviewee talks about, mentions, describes their limited knowledge of other functional areas. Interviewees explain that **they are not experts in certain functional fields and have only a basic understanding, which they feel is insufficient.** This code also applies when interviewees say the project is not highly relevant to their expertise, leading them to passively agree with other team members.	*M12: "During the process, delays can occur due to reasons that I don't fully understand or can't comprehend completely. These reasons might stem from complexities within the expert system, which I can't map with my own past experiences."* *M15: "For example, if he mentions something about servers and I'm unsure about what he means by "Surface server," I might think, "Hmm, does this affect what I'm currently working on?" It seems unlikely since I understand software well but not servers. I*

		might decide to let it go and figure I'll ask her if it becomes a problem later on."
Opinion disagreement	This code is used when the interviewee talks about, mentions, or describes situations where team members have different opinions during discussions. Interviewees illustrate instances where **they think oppositely from other members, believe others' ideas are not rational, or even harshly judge other members' thoughts.**	*M6: "I feel that being too insistent won't achieve the desired outcome; it might just make everyone feel antagonized towards us. However, if (Leader Name) wants to go down that path, it's up to him."* *M11: "I feel it's not okay when I first see it, but as I mentioned earlier, if there's no correct answer, and you don't want to continue arguing about it, you just wait until it's implemented."*

Limited timeframe	This code is used when the interviewee talks about, mentions, or describes the project's short and rushed timeframe. Interviewees might mention **being constantly busy and having many tasks to handle during collaboration, feeling the pressure of time constraints.** This code also applies when interviewees express that, instead of discussing together, they prefer to just get the work done quickly.	*M4: "So, at that time, everyone's workload has already become very extensive."* *M6: " But sometimes we are just too lazy to bring it up, or feel that even if we bring it up, it may not be appropriate in the current situation, because we are all very busy and may have to focus on other things."*
Misalignment	This code is used when the interviewee talks about, mentions, or describes misalignment and information gaps between team members. Interviewees illustrate situations where **information is not clear or transparent enough for them to fully understand the project.** Interviewees might have **default assumptions and expectations about roles and the project, but these assumptions are not aligned with others**, leading to different	*M1: "So, I would think, "Oh, there should be considerations in this process beyond just these two factors, but they haven't been clearly expressed."* *M2: "However, in reality, both the PM and I only expected to communicate to the client that this matter has costs but is feasible. Because the PM and I haven't actually had direct communication about it, we've only*

	understandings about the project or the distribution of responsibilities.	*evaluated it based on documentation...Then the PM chimed in and said, "Oh, I thought you meant you couldn't do it." Right, right. That's when I realized that my words gave him the impression that it couldn't be done."*
Unfamiliar task	This code is used when the interviewee talks about, mentions, or describes the task as unfamiliar to them. Interviewees might mention **that the task lacks previous reference points, they are not familiar with the clients and the overall process, and they feel uncertain about how to proceed.**	*M1: "These external individuals and matters are unfamiliar, so even if internally we have the same people, we might not effectively understand how to proceed with this case. It's the first time we're discussing how to effectively move forward with external expectations and handle this collaboration."* *M8: "I feel like there are many things about (Project Name) that I don't know. So I find it a bit challenging."*

Insecure	not feeling trust	This code is used when the interviewee talks about, mentions, or describes a lack of trust between team members. Interviewees might mention that **they do not trust other team members or feel that they themselves are not trusted, not being supported.** This code also applies to situations where interviewees say that **they do not see other team members do as they (other team members) say, and do not see other people willing to share thoughts.**	*M6: "YYes, I need to make it public. I think what is said in private doesn't count. Yes, because in private, it's like, hey, why don't people dare to speak when I speak publicly? I will hesitate, because in private, everyone dares to say anything. "* *M1: "They may also clearly exhibit inconsistencies between their words and actions. For example, they might express a desire for us to act with integrity and be as transparent as possible. Yet, you might find that they themselves sometimes hold back. This can lead to curiosity and concerns about the values the organizational culture consistently advocates for."*

Not ask questions or sharing thoghts	This code is used when the interviewee talks about, mentions, or describes situations where they are not directly sharing thoughts or asking questions. Interviewees might mention that **they do not want to share their thoughts or ask questions during discussions.**	*M5: "I would either lower my input or consider more carefully which opinions I should express."* *M11: "If you don't want to continue arguing about this matter, just wait until it goes live."*
Not feeling safe	This code is used when the interviewee talks about, mentions, or describes feeling uncomfortable or unsafe within the team. Interviewees might illustrate **their feelings of nervousness or helplessness about the situation**. Interviewees might also mention that they have **negative self image**, such as stupidness or incacapability. Don't feel like they are a team. not confident	*M2: "When someone is explaining conceptual things to you today, you might wonder, "Am I just not getting it? Or is it that I don't understand when others explain it?"* *M11: "But I feel that from a mental health perspective, it can be quite stressful."* *M15: "I used to think, oh, I gave up halfway through learning programming; I'm really bad at it."*

Worried and Afraid	This code is used when the interviewee talks about, mentions, or describes feelings of worry or afraid. Interviewees illustrate situations where **they are worried about or afraid of not thinking the same as others, their ideas not being accepted, or being perceived as annoying and causing more work.** Interviewees might also illustrate feeling afraid of **being too different from others and try to prevent conflict during collaboration.** This code also includes concerns that **others might see them as incapable, problematic, meddling in others' business, or not good at their jobs.**	*M5: "Or <u>whether expressing these opinions will be accepted</u> or approved by everyone, or the majority."* *M9: "You might be very afraid of personal situations or how your role in interpersonal relationships relates to work performance. This could lead to a fear of admitting areas where your work performance may not be strong."* *M1: "So, even with distrust or challenging situations, I try to avoid confrontational or conflictive communication as much as possible and keep things smooth on the surface."*

Enablers

Category	Code	Description	Example quote
Interaction and Environment	Organizational culture	This code is used when the interviewee talks about, mentions, or describes the positive influence of organizational culture and overall environment on collaboration within the team. Interviewees might mention **specific organizational principles or observe similar patterns and atmospheres of working across different projects.**	*M1: "I think it might be related to the original organizational culture. I feel I can trust my boss not to harm me, so I can propose what I believe are appropriate ideas for the project as much as possible."* *M11: "I think it's an open environment where meetings might not always feel relaxed, but it's generally very free. You can express whatever you want, and everyone is open to it."*
	Problem based solving	This code is used when the interviewee talks about, mentions, or describes that discussions within the team are task-based. Interviewees illustrate that during collaboration, **discussions focus on improving the project and solving**	*M2: "Even as a supervisor, he might say, "Hey, what problems are we encountering right now? We've thought of this solution, so what do you all think?"*

	problems rather than criticizing personal abilities or finding someone to blame. This code also includes instances when interviewees say the goal of the discussion is to prevent making the same mistakes in the future.	*M7: "I think we need to go back and clarify the cause, discuss it, and avoid making the same mistake next time."*
Providing support and help	This code is used when the interviewee talks about, mentions, or describes team members showing direct mental support to other team members. Interviewees illustrate that **team members support each other's thoughts, care about each other's private lives, provide encouragement.** This code also includes team members' willingness to help, making sure everyone is comfortable, their actual actions to assist, and the good reputation they have in the team for showing support to others in the past. This code also includes when the	*M4: "To assist as much as possible or, from your perspective, provide some feedback or suggestions."* *M8: "Actually, (Member Name) didn't hand this task directly to me; he quietly uploaded the video himself."*

	interviewees talk about the importance of the elements mentioned above.	
Trust, empathy and respect	This code is used when the interviewee talks about, mentions, or describes that team members are willing to consider other members' perspectives, respect their thoughts, and trust each others. Interviewees mention that **members are willing to try to understand others without forcing them to follow and they believe team members will meet their expectations, will not harm them or judge them, and are capable of solving problems and following through on their commitments.** This code also applies when interviewees express feeling	*M8: "His willingness to consider things from the other person's perspective also contributed to the atmosphere that day, making me feel that the overall environment was reassuring and comfortable."* *M5:"Besides my mentor, I feel that there's a willingness to ask me if I want to take on this job."* *M1: "I feel that I can trust my boss not to harm me, so I can confidently put forward what I believe are appropriate*

	goodwill from other team members and do not assume that others have intentions to disrupt or undermine them.	*ideas for this project."* *M4: "But I think it comes down to goodwill from individuals. I believe that goodwill, when accumulated, makes you more willing to courageously express yourself or be yourself."*
Clear and friendly communication	This code is used when the interviewee talks about, mentions, or describes that team members communicate with each other in a friendly and clear manner. Interviewees illustrate that **communication is equal, and team members openly assure that there will be no negative consequences for speaking up, welcoming any ideas**. Interviewees might mention being proactively asked for input, receiving	*M1: "During the process, the information I provide might be a bit different, but the other person may not emotionally tell me why what I said this time is different from before. Instead, they might check with me and say, "So, is this confirmed for this time?"* *M6: "I have a very clear declarance with her. You can say whatever you want to say on that occasion. You can share your*

		positive responses, and team members' willingness to listen and express appreciation for sharing thoughts.	*feelings, but you don't have to have a solution. You can just point out the problem, but you don't have to have a solution."* *M8: "After (Member Name A) finished speaking, (Member Name B) immediate reaction was gratitude towards her for being willing to speak honestly. I thought that was really admirable."*
Task Certainty	Clarity in roles, reponsibility, task requirement	This code is used when the interviewee talks about, mentions, or describes the clarity of the roles, decision authority, task requirement. Interviewees might mention that **they clearly understand the task requirements and their or other's roles and responsibilities.** Interviewees may also refer to the company's use of the ARCI (Accountable, Responsible, Consulted, and Informed) framework to	*M2: "He may need to handle, be able to answer these things, as he is the person most aware of the entire situation. ...but the PM is simultaneously the one who understands these things the most."* *M4: "Because actually, this matter is something I am dealing with, I am handling it."*

	set roles for members, and might directly state their roles in the interview.	
Knowledge relevance	This code is used when the interviewee talks about, mentions, or describes that team members have a high level of familiarity with the project because their knowledge is crucial to the project's requirements. Interviewees might mention **that the topic of the discussion is something they are knowledgeable about.**	*M8: "I feel comfortable because the topics he discussed are ones that I have a good grasp of, so I'm not too nervous."* *M3: "Anyway, if it's a marketing project, I feel more confident in expressing my own ideas, since I have relevant skills and experience in this area."*
Information transparency	This code is used when the interviewee talks about, mentions, and describes that team members have a shared understanding of the task and each other's thoughts. Interviewees mention that team members **are aligned in their**	*M1: "Because during the meeting process, I may have fully conveyed the difficulties I face in cooperation, so he will also try to maintain flexibility as much as possible."*

	understanding of how to collaborate or communicate effectively together, and what are the difficulties and concerns they have, so that they do not have to guess each other's thoughts. Although this code might be similar with "Clarity in roles, responsibility, task requirement", this code is broader than that. This code is more focusing on individual level about their own thoughts and concerns.	*M1: "You wouldn't generate additional doubts or guess on his intentions behind what he says."*
Interpersonal Relationship Close relationship	This code is used when the interviewee talks about, mentions, or describes having a close relationship with other team members. Interviewees might mention **having interactions outside meetings or the workplace, and sharing a similar vision.** This code also includes instances where interviewees say **they expose themselves, meaning they reveal their weaknesses to other team**	*M1: "I think the amount of self-disclosure from the partner in collaboration can affect the informal dialogue, and enhance psychological safety as well."* *M10: "Sure, let's start with what you normally need to build up. In remote work settings, small talk is crucial."*

	members, it focuses on more personal matters. This code might be similar with "Clear and friendly communication" since both make members more willingly to express themselves, but the reasons are different. This code focuses on the interpersonal relationship, and "Clear and friendly communication" focuses on how they communicate.	
Familiarity with members	This code is used when the interviewee talks about, mentions, or describes being familiar with other team members. Interviewees illustrate that **they have an overall understanding of other team members and know how to interact or work with them, and they can predict their reactions and behaviors.** Interviewees might mention knowing **each other's personalities, communication patterns, work rhythms**	*M1: "Understanding the communication styles that suit each partner for advancing or collaborating within the project is crucial. Therefore, the overall process should follow a more stable rhythm due to this understanding."* *M8: "I think in this context, it's mainly about knowing your colleagues' personalities... you know they won't criticize you."*

	and habits, abilities, and professional expertise due to the frequency collaborating together. This code also includes instances where interviewees say they understand other team members' actual thoughts after clarification. While similar to "having a close relationship," this code focuses more on understanding a person rather than necessarily being close with them. setting boundaries	*M13: "I think it's because when you know the other person will share their thoughts with you, you don't have to keep guessing, like "If I do this now, how will they feel or respond?"* *M1: "These partners have had previous collaborative experiences, so they likely understand each other's preferred communication styles for advancing or collaborating within projects. Therefore, the overall process should proceed steadily based on this understanding."*
Activity	This code is used when the interviewee talks about, mentions, or describes activities planned to encourage more interactions among team members outside of work. Interviewees might mention **team building events or one-on-**	*M5: "I think team building is a bit like building relationships, where you engage in activities specifically designed for this purpose. You do these activities together, and through them, you get to know each other better."*

		one meetings in the interviews. This code also includes instances where interviewees say the organization encourages different functional departments to engage in team building together or address the importance of these activities.	*M10: "Perhaps the supervisor needs to interact with members one-on-one to understand their career needs and expectations. These needs may not necessarily be emotionally driven, but knowing them can greatly aid communication."*
Safe and Trust	Feeling safe and comfortable	This code is used when the interviewee talks about, mentions, or describes feeling safe and comfortable in the collaboration. Interviewees might mention **feeling more confident, comfortable, and free to be themselves without fear of doing anything wrong.** They may also express a sense of **belonging** to the team.	*M4: "I think that accumulated goodwill actually makes you more willing to express yourself or be yourself boldly."* *M5: "I feel like a team member, working together with them to accomplish something. Because I see myself as part of the team, it makes me feel more able to contribute my ideas."* *M8: "So I won't be too nervous."*

Speaking up	This code is used when the interviewee talks about, mentions, or describes the behavior of sharing thoughts, asking questions, asking for help, or admitting mistakes or difficulties. Interviewees might mention **their willingness to share their thoughts or express the need to ask questions** to effectively complete their work.	*M1: "Of course, most of the time, I would be more willing to put forward my ideas and considerations."* *M3: "This way, everyone might be more willing to speak their minds."*
Not being afraid of negative consequence	This code is used when the interviewee talks about, mentions, or describes the feeling of not being afraid or worried about potential negative consequences. Interviewees might mention **instances where they say they are not worried about potential negative consequences or saying something wrong.** They might also mention not being afraid of making mistakes, being fired, being misunderstood, or not being able to do	*M12:"I don't particularly feel a bit of fear or think that I can't handle this role."* *M1: "I also don't have worries like being fired or concerns about how it might impact my career, so I can express myself as much as possible."* *M3: "So that I won't be so afraid of whether I might make mistakes."*

their jobs well. This code might be similar to code "Trust, empathy, and respect", but this code encompasses a bigger concept of not feeling afraid, and the root is not necessary because of trust, empathy, and respect.

Appendix C: Use of Artificial Intelligence

During the preparation of this work, I used Grammarly and DeepAI to support professional writing and check spelling. Also, the software ATLAS.ti was used to code, and reference software manager, Mendeley, was used to check citations. After using these tools/services, I thoroughly reviewed and edited the content as needed, taking full responsibility for the final outcome.