

Psychological Safety Across Dual Work Contexts: An Exploratory Case Study of Team Diversity and Perceived Performance

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Abstract—Team diversity can broaden the knowledge and perspectives available to a team while increasing communication and coordination demands. This study examines how psychological safety shapes the use of diversity across two contrasting work contexts and how this process relates to perceived team performance. A qualitative case study was conducted with one key informant, an information technology implementor who works at a client hospital while remaining connected to the company's internal team. Data were collected through a semi-structured interview and analysed through initial coding, category development, and theme integration. The findings reveal an efficiency–variety trade-off: perceived similarity within the internal team supports communication efficiency but offers narrower perspective variety, whereas the more diverse client environment broadens perspectives while requiring greater communication adaptation. Psychological safety is situational and is shaped by hierarchy, outsider status, counterpart openness, and expertise boundaries. Lower safety increases withholding, creating missed information and additional clarification. The study shows that diversity contributes to effectiveness when different knowledge can be voiced, understood, and integrated into coordination.

Keywords—team diversity, psychological safety, voice, coordination, perceived team performance, Input–Process–Output

I. INTRODUCTION

Team diversity is increasingly relevant as organizations rely on collaboration among people with different demographic and functional backgrounds. Such differences can expand the information available for problem solving because members contribute distinct knowledge, experience, and perspectives [1]–[4]. Yet they can also increase interpretive distance, communication effort, and coordination difficulty, helping explain why diversity–performance relationships are not uniformly positive [5], [6]. The critical issue is therefore not simply whether differences exist, but how they are handled within team interaction.

Psychological safety provides a process explanation. It refers to a shared belief that the interpersonal environment is safe for risks such as asking questions,

seeking help, acknowledging uncertainty, proposing ideas, or expressing disagreement [7]. Psychological safety does not directly guarantee performance; it enables behaviours that make effective work possible. This role is particularly important in diverse settings because informational variety becomes a team-level resource only when individuals are willing to voice what they know.

These dynamics are visible in boundary-spanning work. Employees embedded at a client site coordinate with their home organization while interacting with actors who differ in profession, expertise, routines, and authority. This study examines Company D, an information technology provider that implements a hospital information system. Its implementors work at client hospitals to support users, diagnose problems, and connect client needs with the company's internal team.

The focal informant experiences two contrasting settings: an internal team perceived as relatively similar in information technology background and ways of working, and a hospital environment involving physicians, nurses, registration and medical-records staff, information technology personnel, and managers with broader professional, educational, age, and hierarchical differences. This within-person comparison allows the study to examine how the same individual experiences diversity, psychological safety, and coordination under different interaction conditions.

Using the Input–Process–Output (IPO) logic, team diversity is treated as an input that creates information variety and interaction demands; psychological safety is positioned within the process because it shapes whether information and differences are voiced; and perceived team performance is treated as an output reflecting responsiveness, problem resolution, and work effectiveness. The study asks how psychological safety shapes the relationship between team diversity and perceived team performance across the two contexts. It contributes a process-oriented account showing how informational benefits and coordination costs coexist and how psychological safety and shared understanding influence whether differences become usable information.

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II. LITERATURE REVIEW

A. Team Diversity

Team diversity describes differences among members in demographic and functional characteristics that affect information acquisition and integration [1]. From an information-resource perspective, these differences broaden the knowledge base and provide alternative ways of interpreting problems [2]–[4]. However, cognitive and cultural differences can also complicate cohesion, understanding, and coordination [5], [6]. Functional diversity similarly expands knowledge while potentially increasing disagreement because members use different professional frames [8], and means–ends diversity can reduce alignment when different goals or preferred methods are not integrated [9]. This study therefore treats diversity as an input that simultaneously creates information variety and coordination demand.

B. Psychological Safety, Performance, and IPO

Psychological safety concerns whether people feel able to take interpersonal risks in team interaction [7]. It matters because knowledge initially held by individuals must be communicated before it can influence collective action. When people feel safer to speak, they can ask, clarify, challenge, and share; when interpersonal risk is high, participation may be restricted. Perceived team performance in this study refers to the informant's assessment of responsiveness, issue resolution, improvement, and complaints rather than objective organizational performance. Within the IPO logic, diversity represents the input, psychological safety and related interaction mechanisms constitute the process, and perceived performance represents the output. The qualitative analysis extends the process stage by examining communication adaptation, voice or withholding, shared understanding, and information integration.

III. METHODOLOGY

A. Research Design and Case Selection

This study adopts a qualitative case study design to examine diversity and psychological safety within their real-life work context. Qualitative research is appropriate for examining participants' meanings and relational experiences, while case studies allow intensive examination of phenomena embedded in context [10]. Company D was selected because its implementors simultaneously interact with an internal information-technology-oriented team and professionally diverse hospital stakeholders. The case is used for in-depth exploratory explanation rather than statistical generalization; descriptions of internal-team homogeneity are therefore treated as the informant's perception rather than verified demographic measurements.

B. Informant and Data Collection

One key informant, A.S., was purposively selected because his boundary-spanning role provides direct experience of both contexts. A.S., an Information Systems graduate, has worked as an implementor at Company D since March 2023 and was assigned to a client hospital in Jakarta while remaining connected to the internal team.

Data were collected through an online semi-structured interview on 25 November 2025 lasting 53 minutes and 29 seconds. The interview explored team composition, communication across differences, inclusion, psychological safety, voice and withholding, coordination, perceived performance, and how diversity and safety jointly affected work effectiveness. Semi-structured interviewing allowed a consistent focus while enabling follow-up questions to explore concrete experiences [10].

C. Data Analysis

The interview was transcribed and analysed iteratively. Initial/open coding divided the transcript into units of meaning and produced 87 initial codes (OC01–OC87) covering work context, diversity, communication, hierarchy, outsider position, leader openness, voice, withholding, shared understanding, resource capacity, and perceived performance. Related codes were grouped into broader categories and then integrated into higher-order themes. The data structure followed Magnani and Gioia [11], moving from informant-centred first-order concepts to theory-centred second-order themes and aggregate dimensions. Six broad groups emerged: case context and positioning; team diversity as input; communication and coordination; work-process architecture; psychological safety as process; and perceived team performance as output.

IV. FINDINGS AND DISCUSSION

The findings indicate that diversity, psychological safety, and perceived performance are connected through interaction mechanisms rather than a simple linear relationship. Four themes organize the explanation: an efficiency–variety trade-off, situational psychological safety, voice and information integration, and an extended IPO interpretation that includes work-process and resource conditions.

A. Diversity Creates an Efficiency–Variety Trade-Off

A.S.'s boundary-spanning role requires him to translate user problems into information the internal team can use and later translate technical or project decisions back to the hospital. Within the internal team, communication is described as flexible and requiring relatively little explanatory effort because members share a similar information technology frame. A.S. uses the analogy of an "orange": when an issue is named, internal colleagues already understand much of the intended context. Shared background therefore reduces interpretive distance and supports quicker agreement, although A.S. also notes that internal discussions can become repetitive, suggesting narrower perspective variety.

The hospital produces the opposite pattern. A.S. interacts with multiple professions, and technical terms cannot always be used directly. He explains, "With the hospital team, I have to use more general language, language that is not too technical." The additional translation effort lengthens discussion and can increase misunderstanding, consistent with research showing that cognitive and cultural diversity may create coordination challenges [5], [6]. At the same time, exposure to different professions broadens A.S.'s perspective and empathy for user constraints. The two contexts therefore reveal an efficiency–variety trade-off: similarity supports

fast shared understanding, whereas diversity requires more adaptation but provides richer perspectives.

This trade-off helps clarify why diversity should not be treated as an automatically positive or negative team property. In the internal context, common professional language reduces the effort needed to establish meaning, but that efficiency can limit the number of alternative interpretations entering discussion. At the hospital, differences in professional knowledge increase the cost of establishing a common frame, yet the same process exposes A.S. to operational realities that are not visible from the technical side alone. The case therefore supports an information-processing interpretation of diversity: differences create value when the additional perspective they provide is successfully translated and integrated, but they become costly when translation demands exceed the team's capacity to coordinate [1], [8], [9].

B. Psychological Safety Is Situational and Shapes Voice

Psychological safety varies markedly across the two settings. A.S. describes the internal team as open and low-pressure: he can ask why a request cannot be completed, raise field problems, and seek explanations. When asked to rate his safety to speak, he gives the internal team a score of 10, the hospital IT team approximately 8, and larger hospital forums approximately 6. The same individual therefore experiences different levels of safety depending on the forum and relationship context, supporting the view of psychological safety as an interpersonal condition rather than a fixed personal trait [7].

In the hospital, the strongest constraints on voice are hierarchy, status, and outsider position rather than demographic difference itself. A.S. reports that participants with formal authority or close relationships with leaders have stronger influence; in such meetings, he says, "I usually do not go all out." As an external representative, he also considers whether challenging an idea could affect Company D's relationship with the client. Informational inclusion matters as well: when he joins a discussion after it has already begun, limited context makes participation more difficult. Open counterparts encourage greater contribution, while dismissive responses lead him to withdraw. However, some withholding reflects legitimate expertise boundaries rather than low psychological safety, particularly when discussion enters a medical domain outside his knowledge.

These observations show that the diversity dimension most visible in composition is not necessarily the dimension that most strongly shapes participation. Age, educational, and professional differences influence communication demands, but status and authority determine whether the informant perceives sufficient legitimacy to challenge a position. Psychological safety is therefore situational and relational in this case: it changes not only between the internal team and the hospital, but also across different hospital forums and counterparts. This distinction is important because it avoids equating a diverse setting with a psychologically unsafe setting. The hospital IT team can still provide a relatively safe interaction climate, whereas larger or more hierarchical forums generate greater interpersonal caution.

C. Voice and Shared Understanding Enable Information Integration

The clearest link between psychological safety and perceived effectiveness appears when A.S. explains what happens if he does not contribute fully: "When I am not all out, many things end up being missed, and then there has to be further discussion for clarification and confirmation." This suggests a more specific mechanism than a direct psychological safety–performance relationship. Experienced safety influences voice or withholding; voice affects information completeness; incomplete information creates additional clarification; and clarification requirements affect coordination effectiveness before being reflected in perceived performance. This interpretation is consistent with the argument that psychological safety enables behaviours required for effective work rather than producing performance automatically [7].

The mechanism is important because knowledge is distributed across professional roles. Physicians hold clinical knowledge, hospital IT staff understand local systems, the implementor understands application use and client needs, programmers understand technical constraints, and the project manager understands project priorities. Diversity creates informational potential, but voice determines whether that knowledge becomes available to the work process. Shared understanding complements psychological safety: A.S. wants enough knowledge about project-manager reasoning and programmer constraints to translate decisions to users. The project manager also serves as a coordination hub and sensemaking bridge, reducing the complexity of cross-boundary handoffs.

The data further suggest that psychological safety and shared understanding solve different coordination problems. Psychological safety concerns whether a person is willing to contribute information despite interpersonal risk, whereas shared understanding concerns whether recipients possess enough common ground to interpret that contribution. High voice without sufficient shared understanding can still produce confusion, while shared understanding without voice leaves potentially relevant information unexpressed. Their combination is especially important for boundary-spanning work because A.S. must repeatedly move between technical and clinical-administrative knowledge domains. The project manager's role strengthens this combination by providing a stable coordination channel and explanations that can be translated back to users.

D. An Extended IPO Interpretation

Perceived performance cannot be attributed entirely to interpersonal processes. A.S. evaluates Company D through responsiveness, issue resolution, and complaints, while the hospital side is also assessed through request handling and feature delivery. He perceives internal performance as more difficult to maintain after workforce reductions and hospital IT performance as improving after the addition of a programmer. Resource capacity should therefore be treated as a contextual condition affecting execution rather than as an outcome of psychological safety.

Taken together, the case extends the IPO logic. Diversity creates knowledge variety and coordination demand. Communication adaptation, psychological safety, shared understanding, voice or withholding, and information integration determine whether different knowledge can be used. Hierarchy, outsider position,

counterpart openness, forum context, and expertise boundaries shape participation, while resource capacity influences execution. These relationships are summarized in Fig. 1.

The resource finding also places an important boundary on the interpretation of the social mechanisms identified above. Open communication and complete information can improve coordination quality, but they cannot fully compensate for insufficient staffing or technical capacity. Conversely, additional resources may improve response capability without necessarily changing the interpersonal climate. Perceived performance in this case is therefore better understood as the joint result of interaction quality, work-process architecture, and execution capacity. This distinction prevents the IPO interpretation from attributing all changes in performance to diversity or psychological safety and keeps the conclusions aligned with the evidence available from the informant.

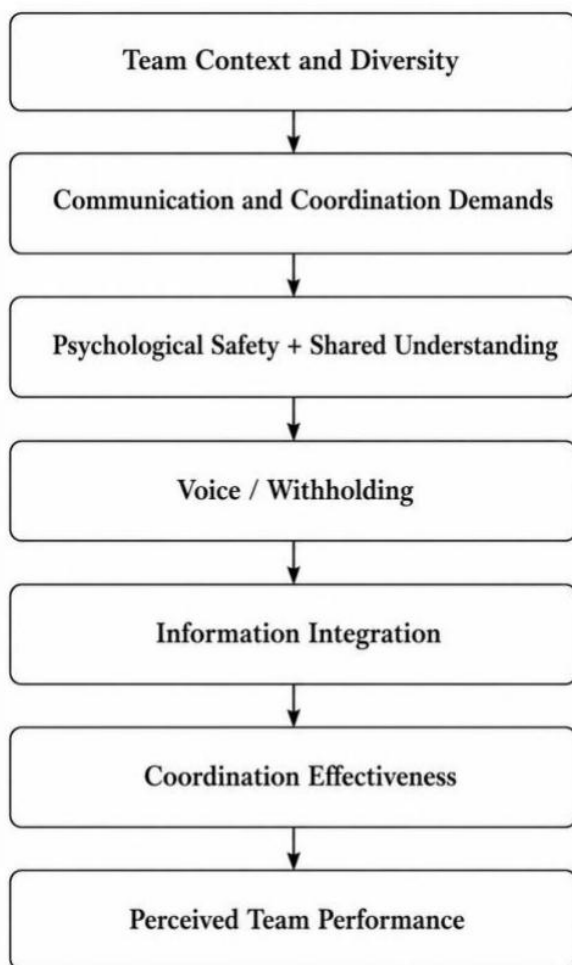


Fig. 1. Interpretive process model of team diversity, psychological safety, and perceived team performance.

The model emphasizes that diversity does not directly produce performance. It first changes communication and coordination demands. Psychological safety and shared understanding influence whether differences become voice and usable information; information integration then shapes coordination effectiveness before being reflected in perceived team performance.

V. CONCLUSION

This study shows that the relationship between team diversity and perceived performance is best understood as a process. The internal team's perceived similarity supports communication efficiency and shared understanding, whereas the more diverse hospital environment requires greater translation but provides broader perspectives. Psychological safety is situational and shaped by hierarchy, outsider status, counterpart openness, informational inclusion, and expertise boundaries.

The central mechanism is psychological safety–voice–information integration–coordination effectiveness. When the informant feels safer to speak, relevant knowledge is more likely to enter the work process; when he withholds, information may be missed and clarification increases. Shared understanding complements voice by helping different professional groups interpret one another's information, while resource capacity remains an additional condition affecting execution.

Theoretically, the study enriches the IPO logic by showing that the process stage contains connected mechanisms rather than a single mediator. Practically, organizations using boundary-spanning roles should strengthen communication openness, contextual access, clear explanations, and cross-functional knowledge sharing. The study is limited by one informant, perceptual assessments of composition and performance, and the absence of team-level validation of psychological safety. Future research should examine the proposed mechanism across multiple actors and combine perceptual accounts with additional performance evidence.

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