IMPROVING PRODUCTIVITY THROUGH EFFECTIVE COMMUNICATION AND WELL-BEING IN DISTRIBUTED PROJECT TEAMS

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Statement of Originality

I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

Reza Azar

10 July 2025

Authorship Attribution Statement

A portion of Chapter 2 of this thesis is based on content that was included in a co-authored conference paper:

Crawford, L.H., & Azarbouyehbinaki, G. (2021). Wellbeing and productivity in project work. Paper presented at the EURAM (European Academy of Management) Conference: Reshaping Capitalism for a Sustainable World, 16–18 June, Online.

In this publication, the lead and corresponding author is Lynn Heather Crawford, and the second author is listed under my previous name, Gholamreza Azarbouyehdinaki. I confirm that Gholamreza Azarbouyehdinaki and Reza Azar refer to the same person.

The contribution of the candidate to the paper included:
Preliminary literature review, review of paper, supply of Figure 4.

The contribution of the supervisor included:
Writing of the paper, literature review, data collection for and write up of case study, analysis, discussion.

I confirm that the material presented in this thesis is consistent with the work I contributed to the publication and that my contribution is appropriately acknowledged. This statement is signed by the candidate and the principal supervisor.

Reza Azar
July 10, 2025

As the supervisor for the candidature upon which this thesis is based, I can confirm that the authorship attribution statements above are correct.

Lynn Heather Crawford
17 July 2025

Statement on the Use of Generative Artificial Intelligence

During the preparation of this thesis, the author used the University of Sydney's protected AI tool, Microsoft Copilot, for the purposes of language enhancement. The use of this generative AI tool included adjustments to paraphrasing, sentence structure, spelling, grammar, and academic tone.

The author confirms that where text was modified by generative AI, the content was critically reviewed for possible errors, inaccuracies, and bias.

The author takes full responsibility for the submitted thesis and ensures the work is their own and has used generative AI within the parameters of use.

Reza Azar

10 July 2025

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I would like to acknowledge that a portion of this thesis was previously presented as a conference paper at EURAM 2021. The details of the paper are provided below, and the full paper is included as an appendix to this thesis:

Crawford, L.H., & Azarbouyehbinaki, G. (2021). Wellbeing and productivity in project work. Paper presented at the EURAM (European Academy of Management) Conference: Reshaping Capitalism for a Sustainable World, 16–18 June, Online.

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This thesis is dedicated to my family, whose love and support made it possible.

Keywords

Productivity, effective communication, employee wellbeing, distributed project teams, remote work, virtual collaboration, organisational productivity.

Abstract

This study explores the characteristics of effective communication and wellbeing in distributed project teams, with the goal of identifying key drivers of productivity. In response to the global COVID-19 pandemic, organisations have increasingly adopted remote and hybrid work arrangements, reshaping collaboration practices and intensifying the need for robust virtual communication systems. While remote work is not a new concept, the crisis accelerated its adoption across industries, underscoring the centrality of communication and employee wellbeing to sustained project team productivity.

Guided by three primary research questions, this study examines the key factors influencing productivity in distributed project teams, how theoretical perspectives align with practical observations, and the ways in which communication and wellbeing interact to shape outcomes. Distributed teams are defined here as groups whose members may experience varying degrees of social connection, either as part of the same in-group or across distinct out-groups, while working toward shared project goals.

The study adopts a qualitative methodology, combining a PRISMA-guided systematic literature review with Thematic Analysis and the Gioia Method. These approaches enabled a nuanced examination of how productivity is affected by communication practices and wellbeing initiatives in distributed project teams.

Findings reveal three main insights. First, effective communication extends beyond formal systems to include both structured practices, such as clear role allocation, knowledge sharing, and timely feedback, and informal, relationship-based interactions that build trust, responsiveness, and shared understanding. Second, employee wellbeing operates as a structural foundation of productivity: workload balance, psychological support, self-aware leadership, and team

collaboration enable resilience and reduce burnout. Third, organisational and contextual conditions, including culture, planning, and leadership style, mediate how communication and wellbeing are enacted, either amplifying or constraining their impact on productivity. Together, these findings demonstrate that productivity in distributed project teams emerges from the dynamic interplay of communication practices, wellbeing frameworks, and organisational environments.

This study makes both practical and theoretical contributions. Practically, it offers evidence-based strategies for project managers and organisations to enhance productivity in distributed and hybrid teams. Theoretically, it advances understanding of how communication, wellbeing, and organisational context interact, providing an integrated framework that bridges prior literature with empirical insights from 41 interviews across five Australian organisations.

Keywords: *Productivity, effective communication, employee wellbeing, distributed project teams, remote work, virtual collaboration, organisational productivity.*

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Chapter 1: Introduction

This chapter introduces the background, purpose, and methodological foundations of the study, which investigates how effective communication and employee wellbeing affect productivity in distributed project teams (Braun & Clarke, 2006; Gioia et al., 2013). As organisations increasingly adopt distributed work arrangements—particularly in knowledge-based and project-driven sectors—understanding the human and communicative dynamics that support team performance has become increasingly important (Gilson et al., 2015; Wang et al., 2021; Nasution et al., 2024; Tjimuku & Atiku, 2024; Raith et al., 2022; Zhang & Li, 2024). This study responds to this shift by exploring how communication practices and wellbeing conditions affect productivity when teams are dispersed across geographical, temporal, and organisational boundaries (Adair et al., 2024; Sultan, 2024; Isham, Mair, & Jackson, 2021; Hamar et al., 2015; Warr & Nielsen, 2018).

The chapter begins by outlining the research background (Section 1.1), followed by a statement of the research objectives (Section 1.2). Section 1.3 explains the methodology adopted to address these objectives. The conceptual framework that underpins the study is presented in Section 1.4, and the study's contributions to theory and practice are highlighted in Section 1.5. Section 1.6 provides an overview of the study structure, while Section 1.7 concludes with a summary of the chapter.

1.1 RESEARCH BACKGROUND

Projects are central to how organisations implement strategic goals, and they increasingly take place within flexible and hybrid structures (Nasution et al., 2024; Wang et al., 2021). Some individuals pursue projects independently, while many organisations embed projects within functional departments based on their strategic relevance (Nasution et al., 2024). Whether individual or organisational, projects require coordination, clarity, and consistent engagement—factors that can be shaped by the structure of the team. Distributed project teams, in particular, introduce both opportunities and challenges.

Effective communication and employee wellbeing are critical factors that directly influence productivity in distributed project teams. Despite their importance, these factors remain underexplored in the context of distributed project teams. While extensive research exists on general organisational communication and employee wellbeing (Gilson et al., 2015; Hamar et al., 2015), few studies specifically investigate how they interact to influence productivity in project-based, geographically dispersed teams (Wang et al., 2021; Sultan, 2024). While distributed work has been studied extensively in organisational contexts, limited research focuses specifically on distributed project teams, where coordination, deadlines, and interdependent tasks intensify the impact of communication and wellbeing on productivity (Nasution et al., 2024; Adair et al., 2024). This study addresses this gap, providing insights that are both academically relevant and practically applicable in complex project environments. This gap highlights the need for research that examines the interplay between communication practices, wellbeing, and performance in distributed project environments, where challenges such as isolation, time zone differences, and hybrid structures uniquely shape team dynamics.

Communication is not merely the exchange of information. It encompasses coordination, knowledge sharing, trust-building, and the maintenance of team cohesion—elements often challenged by geographic dispersion, time zone differences, and reliance on digital collaboration tools (Adair et al., 2024; Sultan, 2024; Gilson et al., 2015). Similarly, employee wellbeing—including psychological safety, engagement, and stress management—shapes motivation, decision-making, and overall performance (Hamar et al., 2015; Warr & Nielsen, 2018; Isham, Mair, & Jackson, 2021). In distributed project environments, where team members may feel isolated or disconnected from organisational culture, prioritising communication and wellbeing is essential to sustaining productivity, achieving project goals, and fostering resilient, high-performing teams (Nasution et al., 2024; Adair et al., 2024; Sultan, 2024; Hamar et al., 2015).

As Tjimuku & Atiku (2024) note, distributed teams reduce the need for physical office spaces, increase convenience for employees, and lower operational costs. However, these benefits can come at the cost of reduced organisational culture, limited in-person interactions, and the risk of isolation, making it essential to support

productivity through effective communication and wellbeing strategies (Raith et al., 2022; Raith et al., 2017; Tjimuku & Atiku, 2024).

Distributed teams typically combine on-site and remote members, making them distinct from fully remote teams. In contrast to remote-only models, distributed teams maintain a central office to facilitate communication and coordination (Papagiannidis & Marikyan, 2020). This hybrid model allows for both flexibility and institutional anchoring. However, it also places greater pressure on communication systems and leadership practices. In a globalised and digitised economy, distributed teams have gained prominence, and their relevance is amplified by shifts in technological paradigms—from automation and artificial intelligence (AI) to emotionally intelligent systems (Al-Tit et al., 2025). The result is a workforce that is increasingly mobile and digitally connected, but one that still requires human-centred management practices to ensure cohesion and productivity.

This transformation is also visible in the freelance and gig economies, where individuals operate as distributed project teams without centralised oversight. These teams deliver high-value outcomes across borders while benefiting from reduced overhead costs (Nasution et al., 2024). In this context, distributed work models have become a competitive advantage, allowing organisations to scale while reducing their physical footprint. The shift accelerated significantly during the COVID-19 pandemic, which forced many organisations to experiment with distributed work at an unprecedented scale. Although the concept of distributed teams predates the pandemic, COVID-19 served as a global catalyst that expanded its adoption and visibility (Marek et al., 2021).

During the pandemic, many organisations implemented hybrid structures, with some employees working on-site and others remotely. This arrangement tested both the resilience and adaptability of distributed teams (Ozkan et al., 2022). As Velavan and Meyer (2020) describe, COVID-19 represented the largest work-from-home experiment in history, disrupting norms across all sectors. Organisations rapidly adopted digital tools and remote collaboration practices, while also confronting challenges related to inequality, access to technology, and declining mental health. For instance, students and educators navigated similar transitions, illustrating how distributed models affect not only corporate settings but also public institutions and social systems (Henry et al., 2021). These developments underscore the urgent need

to understand how communication and wellbeing function under conditions of spatial dispersion, and how they influence outcomes like productivity.

In distributed project teams, the relationship between communication, wellbeing, and productivity is particularly complex. Effective communication is not merely a matter of transmitting information—it involves maintaining trust, fostering inclusion, and reinforcing organisational identity (Qin & Men, 2023; Hamar et al., 2015). These elements, in turn, have a direct effect on employee wellbeing. When communication is timely, accurate, and participatory, it contributes to psychological safety and reduces stress, thereby enhancing both individual and team-level performance (Hamar et al., 2015). However, maintaining such standards in distributed settings can be especially challenging due to time zone differences, fragmented workflows, and technological dependencies.

Sultan (2024) highlights that when communication flows effectively in distributed teams, employees feel connected to the organisation's culture, which promotes a sense of belonging and ownership. These psychological benefits are not trivial: they translate into higher engagement, stronger commitment, and improved project delivery. The implication is that communication is not simply a logistical function but a core driver of productivity in distributed contexts. When paired with strategies to support employee wellbeing, effective communication can mitigate many of the risks associated with distributed work and transform them into advantages.

While distributed teams have been widely examined in organisational studies, fewer studies have focused on their operation within project-based environments, where temporary structures, tight deadlines, and interdependent tasks heighten the importance of communication and wellbeing. The present study responds to this gap by investigating how these two factors interact to affect productivity in distributed project teams. Managing communication across diverse, partially remote teams is a demanding task that requires sustained attention and tailored practices. As this dissertation will show, the links between communication, wellbeing, and productivity are not only conceptual but practical and measurable, and they hold significant implications for how organisations design and manage distributed projects.

1.2 RESEARCH OBJECTIVES

This section outlines the primary and secondary objectives that guide the study. The overarching aim is to investigate how effective communication and employee wellbeing influence the productivity of distributed project teams. Given the increasing reliance on distributed work structures, especially in project-based contexts, understanding these dynamics is essential for both academic inquiry and practical application. The study also considers how insights gained can support organisations in enhancing performance, reducing operational costs, and sustaining productivity through more efficient team structures.

1.2.1 PRIMARY OBJECTIVES

The primary objectives of this research are as follows:

- To identify the key factors affecting productivity in distributed project teams;
- To examine how these factors are understood both in theoretical literature and in practical organisational settings;
- To explore the specific roles of effective communication and employee wellbeing in affecting productivity in distributed project teams.

These objectives serve to bridge the gap between conceptual understanding and real-world practice. By focusing on both theory and application, the study aims to provide a holistic view of productivity drivers in distributed project teams.

1.2.2 SECONDARY OBJECTIVES

In support of the primary aims, the secondary objectives are:

- To assess the effects of communication and wellbeing on productivity in distributed project teams;
- To examine the interrelationships between productivity, effective communication, and wellbeing;

- To understand why effective communication and wellbeing are particularly significant within the context of distributed work;
- To identify additional factors that may affect the productivity of distributed project teams.

These secondary goals enable a more nuanced exploration of the study's core concepts. By mapping out these relationships, the research not only contributes to the academic literature but also offers practical insights for organisations seeking to optimise project teams' productivity in increasingly decentralised environments.

1.2.3 LIMITATIONS

This study is subject to several limitations that must be acknowledged in order to contextualise its findings and establish appropriate boundaries for interpretation. The research focuses specifically on the productivity of distributed project teams within five large capital-intensive organisations based in Australia. While this setting provides a valuable lens through which to examine the interplay between effective communication, employee wellbeing, and productivity, it also introduces a number of constraints that limit the generalisability and scope of the findings. It is also important to note that the research is situated within the Australian cultural and organisational context. Consequently, findings may reflect local workplace norms, communication practices, and attitudes toward remote or distributed work, which could differ in other countries or cultural settings.

First, the organisational context restricts the applicability of the study's conclusions. By concentrating on capital-intensive organisations—such as those in infrastructure, energy, and resources—the research does not account for distributed project practices in other sectors such as healthcare, education, information technology, or professional services. The selected organisations share common structural features, such as large-scale operations, long project cycles, and hierarchical decision-making, which may not be representative of more agile or decentralised industries. As a result, the findings cannot be directly generalised to all types of organisations or project environments.

Second, the research is limited in terms of sample coverage. Not all project teams within the selected organisations operate in a distributed format.

Consequently, the study focuses only on those teams that engage in distributed work practices—either fully or partially—excluding co-located or office-based teams. This selective focus narrows the research scope but allows for a more in-depth exploration of distributed team dynamics. Nevertheless, it means that the study does not reflect the experiences of the broader organisational workforce.

Third, the nature and composition of project teams impose further limitations. Project teams vary in their structure, function, and distribution. For example, teams composed of project managers, engineers, and technical staff in owner-side capital projects operate under conditions distinct from those in consulting or financial services. Even within distributed teams, differences exist between work teams (which focus on ongoing operational tasks) and skill-based teams (which are assembled based on specialised expertise for a specific phase of a project). These variations influence how team members experience remote work, collaborate across distances, and perceive productivity challenges. Therefore, the diversity of team types makes it difficult to apply the study's insights uniformly across all distributed project teams.

Fourth, the study is subject to perceptual and experiential limitations arising from the nature of the data collection. The research primarily captures the perspectives of selected project team members within the participating organisations. As a result, the findings reflect the subjective experiences, attitudes, and interpretations of a specific group, rather than offering a comprehensive or universal view of distributed project work. Since perceptions of remote work, communication quality, and wellbeing can vary significantly based on individual roles, organisational support, or technological access, the study's conclusions must be understood as context-specific.

Lastly, the study is bounded by theoretical constraints in its conceptual framework. The focus on the relationship between effective communication, wellbeing, and productivity—while central to the research aim—does not account for other potentially influential variables, such as leadership style, organisational maturity, digital infrastructure, or cross-cultural dynamics. These factors may play a significant role in shaping the outcomes of distributed project work but fall outside the scope of the present investigation.

In sum, although this research provides valuable insights into productivity in distributed project teams within capital-intensive organisations, the aforementioned limitations highlight the need for caution in generalising its results. Future studies may seek to address these constraints by adopting comparative or cross-sectoral designs, incorporating diverse project types, or exploring additional mediating variables.

1.3 RESEARCH QUESTIONS AND METHODOLOGY

Guided by the objectives outlined in Section 1.2, this study addresses three central research questions designed to explore how effective communication and employee wellbeing influence productivity in distributed project teams:

1. What are the key factors affecting productivity in distributed project teams?
2. How do the factors identified in theory relate to those observed in practice?
3. In what ways do effective communication and employee wellbeing affect productivity in distributed project teams?

These research questions informed the development of the analytical framework and the selection of appropriate qualitative methods. To investigate these questions, the study adopts a qualitative research approach, using two complementary methods: Deductive Thematic Analysis (Braun & Clarke, 2006) and the Gioia Grounded Theory approach, specifically the Gioia methodology (Gioia et al., 2013). This methodological combination ensures alignment with existing literature while allowing for the emergence of new insights from real-world data. The following conceptual synthesis reflects the author's interpretation of the data and literature, rather than being drawn directly from prior studies.

Thematic Analysis, as developed by Braun and Clarke (2006), is a widely used method for identifying, analysing, and reporting patterns within qualitative data. It offers flexibility in interpreting data while maintaining systematic procedures for generating themes. Thematic Analysis involves both description and interpretation, making it well-suited for exploring complex organisational phenomena such as communication, wellbeing, and productivity in distributed teams.

To complement the deductive insights of Thematic Analysis, the study incorporates Grounded Theory (Glaser & Strauss, 2017; Charmaz, 2014) as a robust inductive method for theory generation. Grounded Theory is especially useful for developing new theoretical insights grounded in participants' lived experiences. Seminal contributions to Grounded Theory methodology—by Glaser and Strauss (2017), Charmaz (2014), Urquhart (2022), and Walsh et al. (2015)—affirm its value in producing testable and innovative theoretical contributions in organisational studies. This interpretation reflects the author's conceptual integration of deductive and inductive approaches as applied in this study.

Among Grounded Theory variants, this study adopts the Gioia methodology (Gioia et al., 2013), which is particularly well-suited for organisational research involving experienced professionals. The Gioia approach assumes that participants are capable of articulating their thoughts, intentions, and actions, thereby enabling the researcher to trace how organisational realities are socially constructed. As Gioia et al. (2013, p. 17) note, "people [who] know what they are attempting to do and can explain their thoughts, intentions, and actions" are central to theory building in this tradition.

The data set analysed in this study comprises both secondary data (existing literature) and primary data gathered through in-depth semi-structured interviews conducted between 2021 and 2022. The interviews were scheduled over this period to capture participants' experiences of distributed project work during the post-pandemic shift to hybrid and remote arrangements, thereby reflecting contemporary challenges and practices. Participants included project managers and project team members from five large capital-intensive Australian organisations, specifically nominated by their respective organisations. This selection ensured access to individuals with direct, hands-on experience in distributed project teams, enabling the study to gather rich insights into team dynamics, communication practices, and wellbeing within complex, resource-intensive project environments.

Deductive Thematic Analysis was used to organise the interview data around pre-established concepts derived from the literature, such as productivity, communication quality, psychological safety, and wellbeing (Braun & Clarke, 2006). In contrast, the inductive Gioia methodology enabled new themes to emerge from the data without being constrained by existing theoretical assumptions (Gioia et al.,

2013). This combination of deductive and inductive approaches allows for both confirmation and discovery: the Deductive Thematic Analysis ensures that well-established concepts are rigorously tested against empirical data, while the Gioia Grounded Theory approach allows for the emergence of novel insights.

Overall, the integrated use of Deductive Thematic Analysis and the Gioia methodology provides a rigorous yet flexible methodological framework. It allows the study to examine known theoretical constructs while remaining responsive to the lived realities of distributed project teams. This approach supports the generation of both practical insights and theoretical advancements related to productivity, effective communication, and wellbeing in complex organisational settings. The conceptual integration presented here represents the author's synthesis of methodological principles to suit the specific aims and context of this research.

1.4 CONCEPTUAL FRAMEWORK

This study conceptualises productivity in distributed project teams as the dependent variable, affected by two core independent variables: effective communication and employee wellbeing. These constructs are central to understanding the dynamics of distributed project environments, where physical separation, technological mediation, and diverse time zones can amplify challenges to both communication and wellbeing.

To guide the investigation, a conceptual model is proposed to illustrate the relationships among the key variables based on the research objectives. The diagram below serves as a visual representation of these relationships:

Effective Communication ⟺ Productivity of distributed project teams

- Effective communication in distributed project teams is expected to support productivity improvement.

Employee Wellbeing ⟺ Productivity of distributed project teams

- Wellbeing within distributed project teams is similarly expected to contribute to productivity improvement.

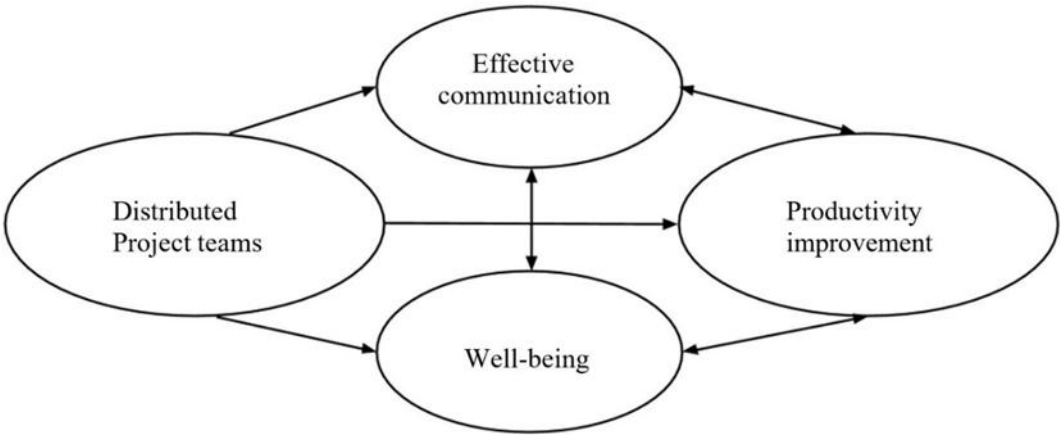

Figure1.1. Conceptual Model

Figure 1.1 illustrates the conceptual model developed for this study, which integrates the primary research constructs. These constructs have been identified in alignment with the study's core research question, which seeks to examine how effective communication and employee wellbeing affect productivity in distributed project teams. The conceptual basis of these constructs is further explored and justified in Chapter 2, which provides an in-depth review of the relevant literature.

1.5 RESEARCH CONTRIBUTIONS

This study makes both practical and scholarly contributions by addressing the challenges and opportunities presented by the rise of distributed project teams—an increasingly prevalent organisational reality, especially in the aftermath of the COVID-19 pandemic. As remote and hybrid modes of work become more embedded in project-based organisations, understanding how productivity can be sustained and improved in distributed teams is both timely and essential.

The primary practical contribution of this research lies in its potential to inform organisational strategies for managing distributed project teams. By examining how effective communication and employee wellbeing influence productivity, the findings provide actionable insights for project managers and decision-makers seeking to improve project outcomes in virtual and geographically dispersed teams.

Specifically, the study offers evidence-based suggestions for fostering clear communication channels and supporting the psychological and social needs of team members. These insights can assist organisations in creating working conditions and interactive environments that promote both wellbeing and productivity.

In addition to its practical relevance, the research contributes to the academic and professional discourse in project management. It enhances the theoretical understanding of how interpersonal and organisational factors—namely communication and wellbeing—interact to affect productivity in distributed project teams. This contribution is especially valuable in the context of capital-intensive sectors, where effective team coordination and sustained performance are critical.

Moreover, the study has resulted in a scholarly output that contributes to the broader body of knowledge in project management. A peer-reviewed conference paper arising from this research was presented at the European Academy of Management (EURAM) Conference in Montreal, hosted by the University of Quebec in June 2021 (Crawford and Azarbouyehdinaki, 2021). Co-authored with the lead supervisor, Professor Lynn Crawford, this paper reflects the research's contribution to academic dialogue and professional practice.

In summary, this research offers:

1. Practical contributions to organisational practice by identifying how effective communication and employee wellbeing can be leveraged to improve productivity in distributed project teams; and
2. Academic contributions through its integration of empirical findings with theoretical insights and through dissemination via scholarly publication.

1.6 STUDY OUTLINE

This thesis is organised into six main chapters, each designed to address a key aspect of the research process and contribute to a comprehensive understanding of how effective communication and employee wellbeing affect productivity in distributed project teams. It begins with Chapter 1, which introduces the research problem, its context, research objectives, and an outline of the study. Chapters 2 through 6 cover

the following: Literature Review (Chapter 2), Methodology (Chapter 3), Data Analysis (Chapter 4), Discussion (Chapter 5), and Conclusion (Chapter 6).

- **Chapter 1** introduces the research topic, including the background, problem statement, research objectives, research questions, conceptual framework, and overall structure of the study.
- **Chapter 2** presents a critical review of the relevant literature. It begins with an explanation of the review process and search strategy, followed by a synthesis of key themes, including distributed work, effective communication, employee wellbeing, and productivity in project contexts.
- **Chapter 3** outlines the research methodology. It discusses the overall research design, data collection methods, the use of Deductive Thematic Analysis and Gioia Grounded Theory, the conceptual framework, and ethical considerations.
- **Chapter 4** reports the research findings derived from both primary and secondary data. It presents the results of Thematic Analysis and Grounded Theory analysis, identifying patterns and emergent themes.
- **Chapter 5** interprets and discusses the findings in relation to the existing body of knowledge. It explores the theoretical and practical implications of the results, highlighting contributions to research and practice.
- **Chapter 6** concludes the thesis by summarising the key findings, discussing their implications, outlining limitations, and offering recommendations for future research.

1.7 SUMMARY

This chapter has introduced the central focus of this thesis: examining how effective communication and employee wellbeing affect productivity in distributed project teams. The chapter began by contextualising the research problem within the evolving nature of project-based work, especially in response to the rise of distributed project teams in the post-pandemic era, where projects increasingly span organisational and geographic boundaries. It established the significance of improving project productivity through human-centric factors, highlighting the role

of communication and wellbeing as underexplored but critical drivers of performance.

The chapter outlined three core research objectives: identifying key productivity factors in distributed teams, examining how these factors are understood in both theory and practice, and exploring the specific roles of effective communication and employee wellbeing in shaping productivity outcomes. In alignment with these objectives, the study adopted a qualitative research approach using both Deductive Thematic Analysis and the Gioia methodology to analyse primary data collected through semi-structured interviews and secondary data from the literature. The interviews were conducted with project team members from capital-intensive organisations, ensuring that the empirical data reflects distributed project environments, rather than general organisational teams.

A conceptual model was also proposed to visualise the relationships between the study's key constructs, positioning productivity as the dependent variable shaped by effective communication and employee wellbeing. The interpretive approach—combining Deductive Thematic Analysis with Gioia Grounded Theory—enabled the study to both validate theoretical assumptions and uncover emergent insights from practice. The rationale for adopting this methodological combination was grounded in the study's research aims and the complexities of distributed project environments.

By integrating both theoretical and practical perspectives, this research aims to generate insights that can support individuals, project teams, and organisations in fostering more productive, communicative, and wellbeing-oriented distributed work environments. The research has also contributed to academic discourse through a peer-reviewed conference publication, demonstrating its relevance to both scholarly and professional communities. The chapter concluded with an overview of the thesis structure, which guides the reader through the subsequent chapters on Literature Review, Methodology, Data Analysis, Discussion, and Conclusion. The next chapter presents a detailed review of the relevant literature, establishing the scholarly foundation for the study. By focusing on distributed project teams, the study is distinguished from broader organisational research on remote or hybrid work and is firmly situated within project management.

Chapter 2: Literature Review

Studying productivity in distributed project teams presents significant challenges due to the multitude of interrelated factors that influence outcomes. Among these, effective communication and wellbeing have emerged as primary variables of interest. This chapter, therefore, offers a systematic review of recent literature that explores these dimensions. It not only defines and contextualises these variables but also examines how they interact and influence productivity in distributed settings. By doing so, it sets the stage for a deeper understanding of the structural and human factors that shape productivity in project environments.

Although there is an extensive body of research on the general relationship between productivity and influencing factors such as communication and wellbeing (Masoudinejad & Veitch, 2023; Korber et al., 2024), few studies focus exclusively on distributed project teams. In contrast, works by Papadopoulos and Papadia (2022), Martin (2018), Saxena and Burmann (2014), and (Balakrishnan et al., 2024) address this more specific context. However, the interplay between these factors and productivity remains ambiguous. It is evident that depending on the context, these factors can either support or hinder a project's overall productivity. This complexity underlines the need for a more targeted investigation into distributed teams.

Within this landscape, communication plays a pivotal role in maintaining cohesion and efficiency across teams, particularly when they are geographically dispersed. Equally important is the wellbeing of team members, which is often overlooked in productivity discussions. Recent findings by the World Health Organisation (WHO, 2019) underscore this point, estimating that anxiety and depression contribute to a global loss of productivity amounting to US$1 trillion annually. This data strongly supports the assertion that any attempt to improve productivity must directly address employee wellbeing as a strategic priority. Hence, both communication and wellbeing must be considered as interlinked elements of productivity.

Further reinforcing this argument, the WHO report identifies several workplace risk factors—such as disengagement and weak communication channels—that directly impact employee mental health. These factors highlight the importance of effective communication not just as a logistical necessity but as a key determinant of wellbeing. When communication is poor, it not only disrupts workflow but also creates psychological strain on employees, leading to decreased productivity. Therefore, improving workplace communication emerges as a dual solution: enhancing operational efficiency and safeguarding team wellbeing (WHO, 2019).

As a result, this chapter focuses on synthesising research that demonstrates the combined influence of communication and wellbeing on productivity in distributed teams. The following sections are structured to provide context by first reviewing the nature of distributed teams and how their function evolved during the pandemic. Subsequent parts discuss the critical role of wellbeing, review the influence of communication on productivity, and identify research gaps that inform the development of the study's research questions. This structure aims to build a coherent narrative that leads logically from theory to inquiry.

2.1 REVIEW PROCESS AND SEARCH STRATEGY

To systematically examine the role of communication and wellbeing in distributed project teams, this study adopts the Preferred Reporting Items for Systematic Reviews (PRISMA) guidelines (Moher et al., 2009; Page et al., 2021). These guidelines provide a coherent structure for identifying relevant studies, applying inclusion and exclusion criteria, and documenting each step of the review process. Given that the research involved secondary data from publicly available sources, no ethical approval was required under national guidelines. This procedural clarity ensured a reliable and replicable review.

The review unfolded in several stages, beginning with the development of a protocol that outlined the research question, defined appropriate data sources, and established a keyword strategy alongside criteria for study selection and quality assessment. Two prominent academic databases—Scopus and Web of Science—were chosen for their broad disciplinary reach and rigorous indexing standards. Titles, abstracts, and full texts were systematically screened, with any inconsistencies

in inclusion resolved through discussion among the reviewers. The selected studies were then synthesised into meaningful insights. This staged approach ensured that the final selection was both methodologically sound and thematically aligned with the study objectives.

In designing the protocol, the research followed the Cochrane Handbook for Systematic Reviews (Higgins et al., 2024), which served as a benchmark for the formulation of inclusion parameters and data evaluation techniques. The primary research question focused on strategies to improve productivity in distributed project teams. Scopus and Web of Science were deemed particularly suitable because their high h-index values help minimise irrelevant or duplicate records. Due to the large volume of search results, a preliminary background analysis was conducted to guide the inclusion process. This initial scan ensured that only studies matching the conceptual scope of the research were retained for full review.

To ensure comprehensive coverage, the keyword strategy was directly derived from the core themes of the study—namely, distributed teams, productivity, communication, and wellbeing. For example, variations of the term "team" such as "virtual teams," "remote teams," and "distributed teams" were included to reflect different terminologies used across disciplines. Likewise, "productivity" was expanded through synonyms like "capacity," "yield," and "potency." Boolean operators (AND/OR), field tags, and truncation techniques were employed to create effective combinations of search terms. This deliberate design maximised both sensitivity and specificity in identifying relevant literature. The inclusion of communication and wellbeing in the search logic ensured thematic consistency throughout the review (See Table 2.1).

Table 2.1. Search keywords

(Productivity AND 'project team' OR 'distributed team' OR 'virtual team' OR 'remote team') OR (Communication AND 'distributed team' OR 'virtual team' OR 'remote team') OR (Wellbeing AND 'distributed team' OR 'virtual team' OR 'remote team') OR (Productivity AND 'effective communication' OR 'wellbeing')

To ensure the integrity and focus of the review, clear inclusion criteria were established. Studies were selected based on their thematic alignment with the

research objective—namely, improving productivity in distributed project teams. Only articles published between January 2000 and December 2022 were considered, reflecting over two decades of evolving work practices and digital collaboration tools. Limiting the review to this time frame allowed for the inclusion of both foundational and contemporary perspectives. Moreover, to ensure accessibility and interpretability, only studies published in English or those translated into English were included.

Importantly, the selected studies had to report on outcomes directly related to productivity factors—such as team dynamics, communication practices, or wellbeing—that influence distributed project performance. Methodological rigor was also a key criterion; only empirical studies employing case study, quantitative or qualitative research designs were retained (see Table 2.2). This methodological diversity ensured a more holistic view, combining statistical insights with contextual understanding. By narrowing the scope in this way, the review focused only on studies capable of generating actionable insights, thereby reinforcing the relevance and depth of the subsequent analysis.

Table 2.2. Inclusion and exclusion criteria.

A) Inclusion criteria
1. Focus on improving productivity in distributed project teams
2. Published between January 2000 and December 2022
3. Only studies in English or translated into English
4. Factors that enhance productivity in project teams
5. Case study, quantitative, or qualitative research designs
B) Exclusion criteria
1. Studies without clearly defined productivity outcomes
2. Studies with limited relevance to distributed project teams
3. Studies lacking sufficient focus on productivity improvement
4. Studies not in English or without a verified translation
5. Studies with poor methodological quality or lacking rigorous analysis

The initial database search yielded a total of 17,134 studies from Scopus and Web of Science. To manage and refine this large dataset, results were exported to Excel for systematic processing. In the first step, duplicate entries (1,897) and non-

original works such as editorials, book chapters, and opinion pieces (4,587) were excluded. This left a refined dataset of original research articles for further screening. Two independent reviewers conducted a title and abstract screening based on the defined inclusion criteria—relevance to distributed teams, publication date, and language. This screening stage resulted in the exclusion of 9,646 studies, with any disagreements between reviewers resolved through collaborative discussion.

Following this, a full-text review was carried out on the remaining 1,004 studies to assess their alignment with the research scope. Articles were evaluated on the clarity of their research question, methodological soundness, robustness of Data Analysis, and relevance of conclusions to team productivity. This thorough evaluation led to the exclusion of an additional 958 papers, primarily due to vague or undefined productivity measures, minimal relevance to distributed teams, or limited focus on enhancement strategies. Ultimately, 46 studies met all criteria and were included in the final review (Figure 2.1). These studies provide a solid empirical foundation for the analysis presented in the subsequent sections, ensuring that the review is both focused and evidence-based.

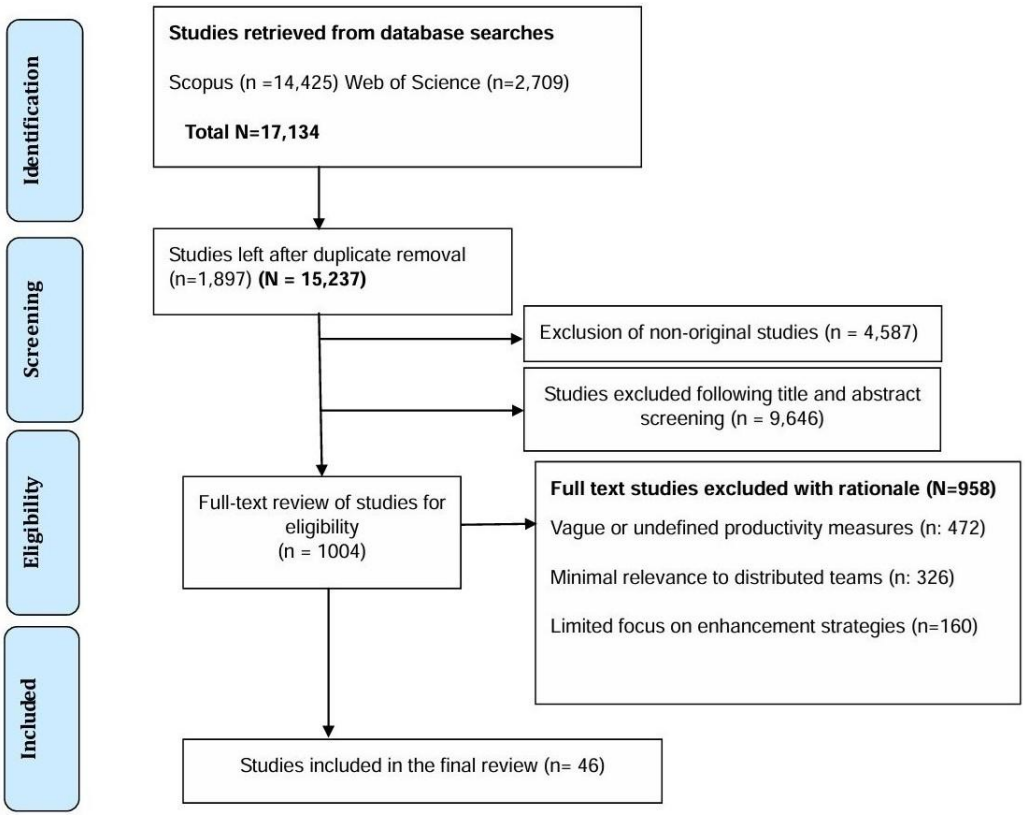

Figure2.1. PRISMA Flow Diagram of Study Selection

2.2 CHANGING WORKPLACES IN THE ERA OF COVID-19

The COVID-19 pandemic accelerated changes in workplace design and management, driven by rapid digital adoption and evolving expectations around flexibility and productivity. Activity-Based Workplaces, where employees navigate between spaces designed for collaboration, focused work, or private reflection, have gained prominence during this period (Bergsten et al., 2021; Masoudinejad & Veitch, 2023). While Activity-Based Workplaces are often promoted for improving productivity and space efficiency, evidence suggests that their effectiveness depends on alignment with employee needs and task demands (Haapakangas et al., 2019). When workstations are difficult to locate or poorly designed, productivity and wellbeing decline, emphasising that environmental flexibility alone cannot guarantee performance. This underscores a critical challenge for project-based environments: physical workplace design must be integrated with workflow and human factors to support team outcomes.

Project-based contexts, such as construction, further illustrate the complex relationship between management practices and productivity. Ghodrati et al. (2018) show that workplace safety and productivity are not automatically aligned; improvements depend more on specific management strategies than on safe conditions alone. Some practices aimed at enhancing efficiency can inadvertently compromise safety, while safety-focused interventions may limit productivity if poorly implemented. These findings reveal a gap in the literature: while office-based Activity-Based Workplaces are extensively studied, distributed and project-focused teams receive less attention, particularly regarding strategies that balance efficiency, safety, and human wellbeing. Addressing this gap requires context-sensitive approaches that coordinate managerial, procedural, and environmental factors.

The rise of digital workplaces adds another layer of complexity. Collaborative platforms, remote access tools, and AI-driven systems can boost productivity, but only when integrated meaningfully with work processes and team needs (Papagiannidis et al., 2020; Attaran et al., 2019). Over-reliance on technology can reduce spontaneous interactions, increase cognitive load, or create friction if organisational structures are not adapted. In project-based teams, these challenges

highlight that technological adoption alone does not drive performance; rather, tools must be aligned with human behaviour, workflow, and team coordination. This reinforces the broader lesson from Activity-Based Workplaces and construction projects: productivity interventions require a holistic integration of physical, digital, and managerial elements.

Collaboration emerges as a decisive factor in complex, project-oriented environments. Lackie and Tomblin Murphy (2020) demonstrate that productivity is intertwined with inter-professional collaboration, autonomy, and perceived work relevance. Structural barriers such as rigid hierarchies or narrowly defined roles can hinder both collaboration and efficiency, even when team members are competent and motivated. Similar dynamics are evident in project-based teams, where coordinated effort, shared understanding, and communication are essential for effective performance. Consequently, enhancing productivity requires cultivating supportive cultures, leadership models, and practices that facilitate cohesive teamwork, not just implementing new tools or spaces.

Overall, evidence consistently indicates that productivity in contemporary and project-based workplaces is multifaceted, shaped by environmental design, technological integration, and human collaboration. Activity-Based Workplaces and digital workplaces provide opportunities for efficiency, but their success depends on deliberate, context-aware implementation that considers operational, human, and managerial dimensions (Bergsten et al., 2021; Haapakangas et al., 2019; Papagiannidis et al., 2020; Attaran et al., 2019; Lackie & Tomblin Murphy, 2020). In project-based settings, where team interdependencies are high, interventions must integrate physical, digital, and organisational factors to achieve sustainable productivity improvements. By focusing on these intersections, future research and practice can develop strategies that are responsive to the realities of collaborative, dynamic work.

2.3 DEFINITION OF DISTRIBUTED TEAMS

Over the past decade, the widespread use of terms such as distributed, remote, and virtual teams has led to conceptual ambiguity, with definitions often overlapping. Recent literature defines virtual teams as groups that collaborate across both

geographical and organisational boundaries by leveraging Information and Communication Technologies (Papadopoulos & Papadia, 2022). Similarly, Papadopoulos and Papadia (2022) highlight defining characteristics of distributed teams such as their dependence on Information and Communication Technologie, their ability to transcend conventional organisational structures and time zones, and their inherently fluid and adaptive team compositions.

Building on this technological and structural foundation, Korber et al. (2024) extend the definition to encompass virtual organisations, describing them as entities that are geographically dispersed, culturally and functionally diverse, and connected via lateral communication networks. This perspective introduces diversity—both cultural and functional—as essential dimensions of virtual collaboration. In line with this, Papadopoulos and Papadia (2022) argue that the concept of virtualness must be central to any attempt to define such teams, noting the importance of drawing clearer boundaries to distinguish among the various forms of distributed work.

Together, these perspectives underscore the evolution of distributed teams as not merely a technological phenomenon, but as a response to shifting organisational realities. Distributed teams are those whose members are geographically dispersed and who rely on communication technology to collaborate. Technology now enables teams to overcome spatial and structural barriers, and this capability has become increasingly relevant in conversations around productivity, communication, and collaboration. As more organisations embrace flexible, decentralised models of work, the need for precise conceptual frameworks becomes even more critical (Garro-Abarca et al., 2021).

Yet despite these definitional efforts, challenges remain. One central issue is the semantic overlap between distributed, remote, and virtual teams, which continues to blur the conceptual clarity of the literature (Papadopoulos & Papadia, 2022). Furthermore, many studies neglect to address the operational complexities that arise specifically in virtual teams—particularly those related to cross-cultural collaboration and functional diversity (Setiawan et al., 2021). This lack of conceptual precision may hinder both theoretical development and effective practice.

Therefore, advancing research and practice in this area demands clear and comprehensive definitions that capture the structural, technological, and interpersonal dynamics unique to each team type. To that end, further empirical

investigation is needed to illuminate the lived realities of distributed collaboration and to inform strategies that enhance communication, cohesion, and productivity across distributed project settings (Papadopoulos & Papadia, 2022; Setiawan et al., 2021).

2.4 THE IMPORTANCE OF DISTRIBUTED TEAMS IN THE COVID-19 PANDEMIC

The COVID-19 pandemic catalysed a dramatic reconfiguration of workplace practices, compelling organisations—particularly project-based teams—to rapidly adopt remote work to maintain continuity. While this transition led to notable improvements in virtual meeting efficiency and overall productivity (Smith et al., 2020), it also underscored a pressing need for more effective communication and collaboration tools. This duality—gains in operational efficiency juxtaposed with new communicative challenges—highlights the complex dynamics of distributed teamwork in times of crisis.

Beyond logistical adaptation, the pandemic also brought systemic inequalities within scientific fields into sharp focus. In the context of conservation science, Nocco et al. (2021) draw attention to how existing disparities were exacerbated, revealing uneven access to digital infrastructure, institutional support, and psychosocial resources. Despite robust institutional protocols for physical safety in field and lab settings, these measures often failed to account for the differential ways individuals experienced the pandemic, especially in terms of remote work viability and emotional resilience.

Such disparities manifested in unequal access to essential work-enabling resources like high-speed internet, private workspaces, and supportive home environments. These factors, often shaped by socioeconomic status and caregiving responsibilities, significantly influenced researchers' mental and emotional wellbeing during this period (Nocco et al., 2021). Consequently, the pandemic did not merely disrupt research logistics—it also redefined the terms of participation, deepening the inequities within distributed teams.

In this context, the role of Principal Investigators evolved from project oversight to fostering inclusion, equity, and wellbeing. The responsibility to

accommodate team members' varied circumstances moved beyond ethical consideration—it became central to sustaining effective collaboration. Promoting resilience within research teams thus required not only adaptive planning but also a commitment to social fairness, aligning team leadership practices with broader institutional goals of equity and long-term sustainability (Smith et al., 2020; Nocco et al., 2021).

Responding to these needs, researchers such as Miller-Rushing et al. (2021) and Primack et al. (2021) advocate leadership models that embed mental health awareness and empathetic mentoring into the core of distributed team management. Their findings indicate that productivity and team satisfaction can be simultaneously enhanced when leadership acknowledges individual constraints and adopts flexible strategies. Particularly during ongoing uncertainty—such as fluctuating lockdowns—wellbeing-oriented leadership emerged as a stabilising force.

However, the push for productivity in distributed teams is not without consequence. Although higher output per worker remains a cornerstone of improving living standards, several studies warn of its potential adverse effects on employees' wellbeing (Isham et al., 2021; Primack et al., 2021; Hardt et al., 2020). Hafner et al. (2015), for instance, demonstrate that employees in the UK who were at risk of mental health issues exhibited 13 per cent higher productivity losses compared to their counterparts. These findings problematise the assumption that productivity and wellbeing are naturally aligned, instead revealing a more nuanced relationship that must be navigated carefully in the post-pandemic workplace.

Workplace productivity is influenced by a complex interplay of factors, which can be broadly categorised into three interrelated domains:

The first domain involves *job and workplace characteristics*, encompassing aspects such as the physical and social work environment, organisational expectations, and the institution's commitment to employee health and wellbeing. These structural elements shape not only task execution but also the broader organisational culture that supports—or undermines—employee engagement.

The second category pertains to *individual characteristics*, including psychological wellbeing, personal motivation, and lifestyle choices. These traits mediate how workers perceive and respond to workplace demands, thereby affecting

their performance and resilience. For instance, individuals with higher psychological resources may be more equipped to manage stress and sustain productivity, even under challenging conditions.

Finally, *physical and health-related conditions*—such as chronic illnesses, cardiovascular risk factors, or mobility limitations—can impose additional constraints on worker output. These health-related issues may interact with both personal and job-related factors, amplifying their effects on performance. Understanding productivity through this tripartite lens provides a holistic foundation for identifying leverage points for organisational intervention and support.

Figure 2.2 illustrates how these three domains—job characteristics, individual attributes, and health conditions—interact to influence workplace productivity, highlighting the multidimensional nature of employee performance and wellbeing.

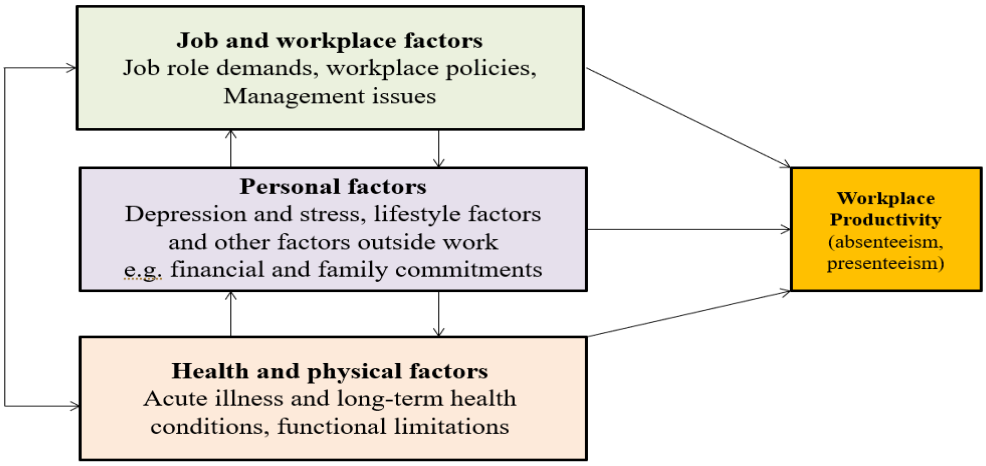

Figure2.2. factors affecting workplace efficiency (Hafner et al., 2015) pg.13.

Building on the multidimensional understanding of workplace productivity, Isham et al. (2021) examined the complex relationship between employee satisfaction and performance through the lens of the happy-productive worker theory. This theory posits that increasing employee happiness leads to higher productivity, a claim that the authors investigated through empirical analysis. Their experimental findings revealed a causal link between happiness and productivity, confirming that emotionally satisfied workers tend to produce more. However, the study also introduced a critical nuance: sustaining productivity through this route may require

resource-intensive conditions, such as supportive work environments or mental health interventions. Furthermore, the researchers cautioned that excessive emphasis on output can ultimately undermine wellbeing, suggesting a potential trade-off between short-term gains and long-term employee health. As shown in Figure 2.3 of their study, individuals reporting higher levels of happiness also demonstrated greater productivity, reinforcing the importance of wellbeing as a foundational element of sustainable performance.

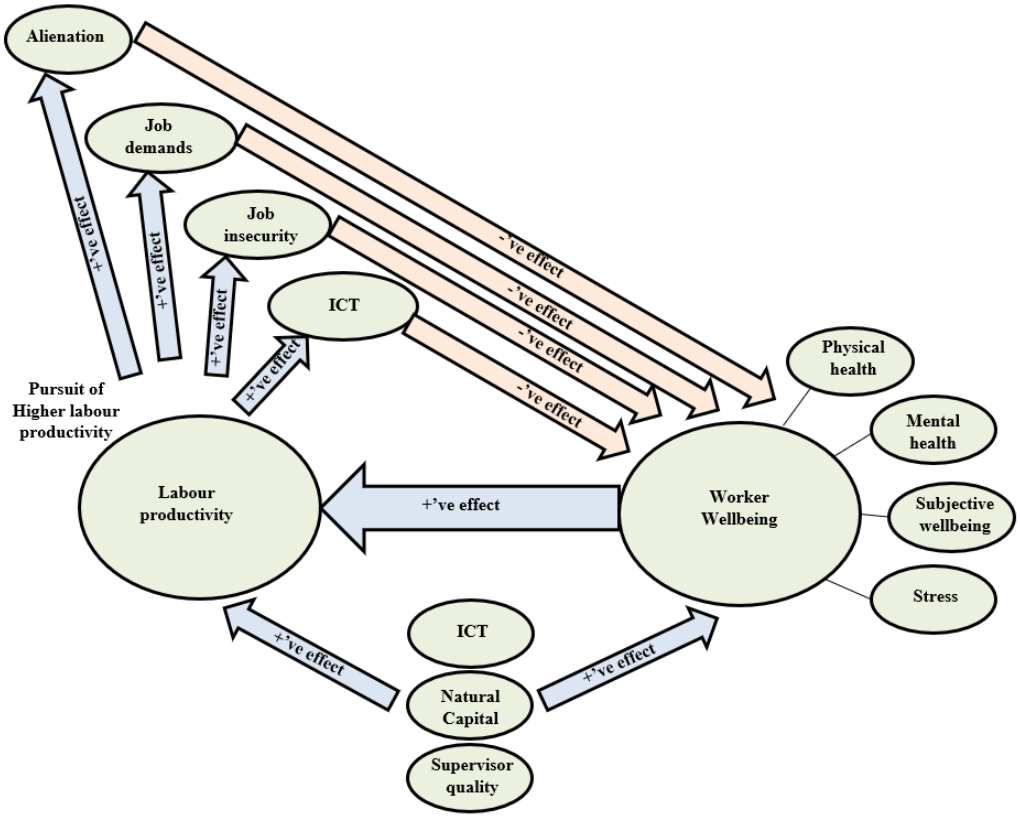

Figure2.3. Graphical representation of the correlation between employee satisfaction and output on the job (Isham, et al., 2021)pg.22.

As the COVID-19 pandemic accelerated the shift to remote work, many employees and supervisors encountered virtual collaboration for the first time, forcing a rapid adaptation of leadership practices. This transition marked a significant departure from managing in-person teams, requiring a rethinking of how productivity and cohesion are maintained in digital spaces. Newman and Ford (2021) respond to this challenge by outlining five essential leadership practices for remote settings: articulating the new working reality, cultivating trust, enhancing

communication practices, embracing shared leadership, and conducting alignment audits to maintain organisational cohesion. These strategies highlight the central role of intentional leadership in navigating virtual environments. Supporting this view, Koch and Denner (2022) highlight the significance of mutual trust, reliability, and stable internet connections as foundational elements for successful communication in virtual teams. Contreras et al. (2020) extend the discussion by introducing the concept of e-leadership, which is particularly important for coordinating geographically dispersed teams across time zones. Together, these studies underscore that leadership in remote contexts must go beyond logistics; it must actively prioritise employee wellbeing, as this directly shapes productivity and long-term organisational performance. While virtual collaboration presents limitations—especially in interpersonal connection—protecting the wellbeing of remote workers emerges as a non-negotiable foundation for sustaining an effective and resilient virtual workforce.

2.5 EFFECTIVE COMMUNICATION IN THE PROJECT CONTEXT

Effective communication plays a pivotal role in aligning employee wellbeing with organisational success, serving as a foundational mechanism for bridging individual and collective goals (Robbins & Judge, 2019). Beyond verbal exchanges, communication encompasses a wide range of tools, platforms, and channels—many shaped by ongoing digital innovation. In contemporary project environments, such technologies enable the rapid and accurate transmission of information, allowing teams to make timely decisions and coordinate their actions effectively (Maruping & Magni, 2015). This technology-driven communication is especially vital in distributed or fast-paced project settings, where clarity and responsiveness can determine team cohesion and ultimately influence productivity.

A well-designed communication strategy is essential for reducing project costs and saving time, especially under the constraints of tight schedules and complex team structures. This involves choosing tools and channels that are suited to the team’s dynamics and the project's objectives. In fast-moving environments, transparent information sharing and proactive issue resolution can significantly affect project outcomes. Accordingly, effective project management hinges on maintaining

consistent and clear communication among all stakeholders (Turner, 2016). When organisations foster open communication, they support better alignment, stronger engagement, and quicker responsiveness within teams—factors that not only promote goal achievement but also enhance employee wellbeing and broader organisational productivity.

Moreover, effective communication contributes to organisational success through improved employee morale, satisfaction, and engagement. When communication is clear and consistent, employees gain a better understanding of their roles, responsibilities, and work conditions, which in turn strengthens their sense of loyalty and commitment to the organisation (Kalogiannidis, 2020). In the multifaceted discipline of project management, such clarity is indispensable for coordinating tasks, aligning team members, and maintaining focus on project goals (Zulch, 2014). As a result, communication becomes a key driver of both team effectiveness and overall productivity.

To support this, Bhimani (2024) outlines seven key elements that shape communication in project management, offering actionable insights for project managers (Rajhans, 2018). These elements include effective and interactive listening, the preparation of clear project documentation, the facilitation of purposeful meetings, the delivery of engaging presentations, the use of a dedicated project website, and the setup of a project war room. Together, these strategies enhance internal communication by promoting informed decision-making, streamlining workflows, and ensuring alignment among stakeholders. When integrated into the project management process, these practices not only improve communication effectiveness but also help sustain productivity and organisational coherence.

The significance of effective communication in project management is well-established in the literature, particularly in relation to team morale, performance, and productivity. Zhang and Li (2024) highlight that a project manager's ability to communicate effectively is essential not only for maintaining morale but also for enhancing employee performance, ultimately contributing to overall project success. Clear and consistent communication fosters collaboration, reduces the likelihood of misunderstandings, and strengthens team performance. The ability to articulate project goals, convey expectations, and deliver constructive feedback becomes a core competency for project managers aiming to meet or exceed project outcomes.

Building on this, Sadia et al. (2016) explored how open communication channels within organisations affect employee productivity. Their study posed two central questions: “How do employees interpret communication?” and “How does communication within the company affect productivity?” Their findings indicate that effective communication builds trust between employees and management, which leads to enhanced performance and increased output. This highlights the strategic role of communication as a facilitator of organisational productivity, reinforcing its relevance beyond interpersonal dynamics to include tangible performance outcomes.

Leadership effectiveness also hinges on communication. Zhang and Li (2024) underscore that project managers dedicate a significant portion of their responsibilities to communication-related activities, demonstrating that communication is not an ancillary skill but a central function of project leadership. Their study offers a multi-step framework for effective communication, identifies common barriers, and presents solutions for overcoming them. More importantly, it links clearer communication practices to improved project management outcomes, reinforcing the idea that productivity in complex project environments depends significantly on communication clarity and intent.

In an increasingly globalised workforce, communication challenges are further compounded by cultural diversity. Adair et al. (2024) highlight that effective communication in multicultural teams is essential for reducing conflict, building trust, and enhancing team cohesion. Their study emphasises that while multicultural employees represent a valuable organisational asset, managers must create inclusive environments where communication in a shared language is encouraged. Such efforts support collaboration, mutual understanding, and ultimately, improved team performance. These findings show how inclusive communication practices directly contribute to both team cohesion and overall organisational productivity.

Similarly, Zulch (2014) stresses that successful project delivery depends on maintaining open communication across key project dimensions—cost, scope, time, and quality. Through a survey-based approach, Zulch illustrates how communication functions as a unifying mechanism that integrates these elements, ensuring alignment and improving project execution. However, effective communication becomes increasingly difficult in complex technical environments. Norouzi et al. (2015) draw attention to this challenge in the context of architectural projects, where intricate

workflows and interdisciplinary collaboration demand more robust communication strategies. Their study reveals that as projects become more complex, especially in the technology sector, communication may not necessarily become more efficient, necessitating deliberate planning and tailored communication systems to preserve productivity.

Conversely, Harikrishnan and Manoharan (2016) conceptualise communication as a team-coordinating mechanism that simplifies and enhances the execution of even the most complex projects. They argue that inadequate communication can lead to delays, cost overruns, and inefficient resource utilisation. To mitigate these risks, the authors recommend classifying communication methods and models while also identifying the key challenges that affect communication effectiveness. These include managing the many channels of interaction—speaking, listening, reading, and observing—which must be synchronised to optimise project outcomes.

Project teams frequently encounter challenges such as significant disagreements, ineffective communication, and reduced productivity. However, clear communication and collaborative behaviours among team members are essential for overcoming these issues and ensuring project success. As Kerzner (2025) notes, successful projects are often underpinned by teams that communicate openly, share relevant information transparently, and demonstrate mutual trust. Inter-team communication facilitates the continuous exchange of information across the project lifecycle, thereby bridging knowledge gaps through dimensions such as frequency, scope, and the transformative nature of information exchange.

Expanding on this perspective, Wu et al. (2017) identify three critical components of effective team communication: openness to feedback, the degree of formality in exchanges, and comfort in informal interactions. Among these, a general willingness to communicate emerges as the most influential driver of project success. Wu et al. (2017) further argue that informal communication channels allow team members to access information quickly, enhancing transparency and clarity regarding project priorities. This improved visibility strengthens team cohesion and supports the successful achievement of project objectives. Moreover, effective communication not only facilitates information flow but also nurtures team wellbeing, harmonises goals, and aligns perspectives across diverse roles within the project. Open dialogue fosters motivation, encourages a sense of belonging, and

promotes proactive engagement, all of which enhance problem-solving and innovation capabilities within teams.

The relationship between communication and conflict is also central to project success. Wu et al. (2017) propose a dynamic model linking communication practices with conflict types and project outcomes. Their findings reveal that task-related conflict can have a positive effect on project success when accompanied by strong communication between teams. For instance, a study by Hussaini (2024) emphasises that effective task conflict management leads to better team performance and organisational outcomes by facilitating communication, creativity, and decision-making. In contrast, process and relational conflicts—when combined with poor communication—tend to negatively impact outcomes. Research by Zhang et al. (2024) indicates that relationship conflict is negatively associated with team performance, and effective conflict management strategies are essential to mitigate these effects. Interestingly, while formal communication and willingness to communicate were positively correlated with success, informal communication showed a negative association (Wu et al., 2017). These results underscore the importance of establishing structured communication channels and promoting a culture that values dialogue. To optimise task conflict and minimise the adverse effects of process and relational tensions, Zhang et al. (2024) recommend reinforcing formal communication throughout the project lifecycle.

The influence of communication on various project performance factors is illustrated in Table 2.3. Using a five-point Likert scale (where 1 indicates strong agreement and 5 strong disagreement), Kerzner (2025) collected data through interviews with nine industry professionals, including project managers, department heads, engineers, and other senior staff. These insights reaffirm that effective communication is not only instrumental in coordinating technical tasks but also serves as a strategic lever for improving team productivity and navigating project complexities.

Table 2.3. Indices of effective interaction and completed projects (Wu et al., 2017) pg.45

Possible factors	Measurement

Formal communication	The group can benefit from using efficient means of communication like charts, spreadsheets, lists, etc. Meeting regularly allows for precise information sharing across teams. Documents allow for rapid, accurate, and efficient team communication. Teams can acquire the data they need to make timely choices. Members of a team can evaluate the efficacy of their communication in a way that is both practical and straightforward. With the help of this information hub, everyone can acquire the skills they need to succeed. Consideration of the whole scope of the project is possible during the development of a communication strategy.
Informal communication	It can understand how gaining access to the knowledge gained by other teams' flagship projects would be useful. Casual conversations thrive when they are held face-to-face. Team members can modify their methods of interaction with one another to take cultural differences into account. Strategic approaches to communication will take into account its generalisability, adaptability, and potential for further development. Leadership plays a role in lessening the amount of off-the-cuff chatter that occurs A failure to negotiate effectively might impede open dialogue.
Communication willingness	Communication with the opposing team occurs frequently and effectively. The group is prepared to keep other groups apprised of developments that could affect them. It is apparent what each team is responsible for prior to any form of communication.

	In the course of conversation, care is taken to build a system of trust. The group is trustworthy since its members are honest and open with one another. The members of the team are sensitive to one another when they talk to one another.
Project success	The project is moving along as planned. Costs for the project are well within projections. The final product of the project is satisfactory to the client. Successful completion and acceptance of the project have been achieved. In most cases, issues that arise in the course of a project's execution can be resolved using the project. Every step of the project's execution has been successful so far. Final users benefit from the project's efforts. The project's success has been acknowledged by the owner. Feel confident in the outcome of the project and willing to work with the other party again in the future All the client's unique requests were accommodated in this project.

As indicated in the table above, effective communication in the building construction sector has been identified as a key factor in managing changes, time constraints, and costs. Yap et al. (2017) analysed delay durations and additional expenditures in Malaysian construction projects, offering critical insights into how communication lapses can negatively impact outcomes. Their research contributes to a growing body of evidence that underscores the value of clear, structured communication in improving project efficiency and mitigating potential bottlenecks—particularly in dynamic and high-risk sectors like construction.

To clarify the conditions that facilitate productive communication, Yap et al. (2017) categorised the influencing variables into three stakeholder groups: contractor, client, and consultant. Each group contributes uniquely to shaping

communication flow. Contractors ensure operational clarity through site-level coordination, clients articulate project expectations and priorities, and consultants provide timely technical guidance and documentation. This categorisation enabled the researchers to propose a structured communication framework designed to promote the systematic and timely exchange of relevant information. Such a framework supports not only better coordination among stakeholders but also enhanced productivity through clearer task execution and faster decision-making.

These findings affirm the centrality of effective communication in advancing team efficiency and performance, particularly when managing future initiatives. This conclusion aligns with the work of Andalib et al. (2018), whose research also recognises communication as a foundational pillar of successful project management across industries. Together, both studies emphasise that while project contexts may vary, robust communication practices consistently underpin improved outcomes and stronger team dynamics.

Andalib et al. (2018) approached the subject through the guiding question, "What is the relationship between project management and communication?" Their findings demonstrate that clear and consistent communication fosters a seamless exchange of knowledge, perspectives, and information among project stakeholders. This process enables role clarity, goal alignment, and effective coordination of tasks—factors crucial to enhancing collaboration and preventing miscommunication, particularly in distributed or cross-functional teams.

Further deepening their analysis, Andalib et al. (2018) examined communication management across the entire project lifecycle. Each stage—initiation, planning, execution, monitoring, and closure—was shown to benefit from tailored communication strategies. For example, during the initiation phase, communication is vital in aligning stakeholder expectations and defining project goals. In the execution phase, structured and regular communication supports task allocation, progress tracking, and prompt issue resolution. By mapping communication requirements to each project phase, their study reinforces the need for strategic communication planning to ensure consistent performance, reduced conflict, and enhanced productivity throughout the life of a project.

The insights provided by Andalib et al. (2018) reinforce not only the functional value of communication but also its role as a strategic enabler of project success.

Their findings align with this study's focus on communication systems and tools that facilitate collaboration in distributed project environments. By illustrating how effective communication enhances team cohesion and improves project outcomes, the study underscores the critical role communication plays in driving productivity.

Positioning communication as a dynamic and central element of project management, Andalib et al. (2018) make a meaningful contribution to the broader discourse. Their framework conceptualises communication as more than a supporting activity; it is portrayed as a core mechanism for achieving coordination, efficiency, and success throughout the project lifecycle. This framing offers valuable guidance for project managers seeking to boost productivity through refined and deliberate communication strategies.

Within the construction sector, open and transparent communication among stakeholders is vital for enabling collaboration and achieving desired results. Effective communication enhances mutual understanding, supports coordination, and contributes significantly to project success. In contrast, communication failures often lead to conflict, delays, and disruptions that compromise project performance (Hussain et al., 2018). Their research highlights that communication management in construction is a multifaceted challenge involving diverse stakeholders, varying contexts, cultural dynamics, and differing levels of expertise.

To address these challenges, Hussain et al. (2018) propose a structured process for enhancing communication efficiency. They identify ineffective communication as a major factor in project failure and stress the importance of recognising the causal links between communication breakdowns and negative project outcomes. Their case study of a construction project at the University of Kuwait provides practical insights into how communication issues manifest and how they may be resolved through targeted strategies. These findings underscore the need for proactive approaches that prevent miscommunication and safeguard project timelines and deliverables.

Further advancing this line of inquiry, Goldschmidt et al. (2019) identify successful communication techniques through extensive fieldwork using a multi-method research strategy. Their study highlights the adaptability of communication practices in managing disruptions and unanticipated changes, particularly in construction projects. A key contribution is their emphasis on maintaining stakeholder engagement across the project lifecycle through transparent and

continuous communication. This approach not only mitigates risks but also supports organisational and technological progress. Goldschmidt et al. (2019) also point out that strategic communication can play a pivotal role in securing investor confidence, thereby aligning with broader literature that positions communication as fundamental to project success. Their findings are consistent with those of Hussain et al. (2018) and Andalib et al. (2018), who advocate for structured communication frameworks as essential tools for achieving project objectives and improving productivity.

Open communication plays a vital role in assessing the strengths and weaknesses of individual team members. Such transparency facilitates the identification of skill gaps and informs targeted development efforts, thereby improving both individual performance and overall team competence. Establishing mechanisms for reciprocal feedback supports continuous learning and growth, ultimately enhancing the project team's collective knowledge base. Within the project management context, effective communication is essential for fostering team cohesion and ensuring successful project delivery (Yap et al., 2017; Turner, 2016; Kerzner, 2017).

Yap et al. (2017) highlight the significance of structured communication and collaborative practices within project teams. Their study explores how managing design changes through reusable project experiences and effective communication can lead to improved project performance. The findings emphasise that fostering strong communication channels and collaborative environments enhances team dynamics and efficiency.

This research underscores the critical role of structured communication strategies in enhancing project performance, aligning with the broader consensus that effective communication is a fundamental driver of project success. This view is further supported by Hussain et al. (2018) and Goldschmidt et al. (2019), who highlight the importance of clear communication practices in improving team coordination and project outcomes.

Maintaining open lines of communication is therefore one of the most critical components for ensuring both organisational productivity and employee wellbeing. Effective communication also significantly influences employee morale, satisfaction, and engagement, all of which are crucial to organisational success (Kalogiannidis, 2020). It is not only essential for conveying project deadlines but also for enabling

the timely and successful completion of tasks (Agyeiwaa & Arboh, 2022). At the heart of successful project teams lies open and honest dialogue among members. Balakrishnan et al. (2024) argue that effective communication alleviates adverse workplace conditions and enhances productivity. Managers play a critical role in cultivating these communication channels, ensuring that tasks are executed efficiently and that collaboration remains seamless. This organisational aspect should not be underestimated.

Moreover, communication challenges are often exacerbated in teams composed of individuals from diverse linguistic and cultural backgrounds. As technological systems evolve, they further complicate the clarity and efficiency of communication. Both formal and informal channels are essential to ensure that messages are understood as intended. Effective communication among stakeholders fosters the cooperative efforts required for project success, while the presence of communication barriers can negatively impact financial performance and operational efficiency (Kloppenborg et al., 2019). Thus, integrating communication strategies at every stage of a project is vital, as unresolved barriers may result in delays, misunderstandings, and ultimately, project failure (Agyeiwaa & Arboh, 2022).

When workers are not aligned with their supervisors, clients, or teammates, disengagement from their work often ensues. A lack of transparency in communication fosters assumptions, disseminates misinformation, and intensifies existing issues. Such communication breakdowns pose one of the most significant challenges for multinational organisations, adversely affecting both financial performance and overall productivity. Adair et al. (2024) identified poor communication as a critical impediment confronting project managers, particularly in cross-cultural project settings. Their research underscores the importance of recognising and adapting to cultural differences as a potential remedy. They examine how cultural disparities hinder communication effectiveness and highlight the importance of cultural awareness in reducing miscommunication and enhancing collaborative outcomes. The study's primary objective was to assess communication barriers and identify key obstacles impeding effective communication in culturally diverse project environments.

Echoing this perspective, Ali (2024) argued that communication difficulties frequently emerge when individuals from different cultural, linguistic, and perceptual

backgrounds work together toward a common goal. These challenges obstruct clear communication by distorting intended messages or complicating their interpretation. Ali identified a range of communication barriers—including those related to face-to-face interactions, semantics, cognitive perceptions, and varied interpretations of language—that can undermine mutual understanding. In distributed teams, such barriers are further amplified by emotional and linguistic disparities, where uneven levels of comprehension among team members hinder cohesive collaboration. These communication gaps not only affect team dynamics but also pose broader organisational challenges that require strategic intervention.

Building on these insights, it becomes evident that overcoming communication barriers in multinational and distributed teams necessitates a dual approach: fostering cultural sensitivity and intentionally addressing semantic, emotional, and interpretive obstacles. The implementation of such strategies is essential for promoting transparency, enhancing team cohesion, and achieving project objectives effectively.

As demonstrated in the literature, several sub-themes are closely associated with effective communication. Numerous scholars have explored the relationships between these elements and communication efficacy, identifying themes such as formal and informal communication, communication tools and infrastructure, communication willingness, language diversity, and shared leadership (Ramadanty & Martinus, 2016; Wu et al., 2017; Kuroda & Yamamoto, 2018). Each of these themes is briefly discussed in the following section.

2.5.1 **FORMAL COMMUNICATION**

Although extensive research has examined the relationship between communication and employee effectiveness, a specific understanding of how formal communication influences productivity remains underexplored. This relationship is often mediated by indirect variables such as managerial effectiveness and employee morale, which serve as key drivers of organisational performance. Empirical evidence suggests that well-structured formal communication programmes can significantly boost employee morale, which in turn enhances productivity (Musheke & Phiri, 2021). High morale is consistently associated with increased productivity, while low morale is commonly linked to decreased output. By focusing on these interconnected factors,

organisations can better understand how formal communication strategies function not only as channels for information delivery but also as levers for improving workforce motivation and operational performance (Musheke & Phiri, 2021; Kalogiannidis, 2020).

In the workplace, formal communication occurs through various channels—written, verbal, and non-verbal—including reports, meetings, official memos, and structured presentations. Managers play a critical role in developing communication frameworks that ensure the systematic and efficient exchange of information. For these frameworks to be effective, they must promote both accessibility and clarity, allowing employees to understand and act on the information conveyed. This highlights that formal communication is not only about structure, but also about ensuring that messages are received and interpreted as intended. When communication systems are thoughtfully designed and well-executed, they facilitate operational transparency and reinforce alignment between organisational goals and employee actions (Robbins & Judge, 2019).

The effectiveness of formal communication is also shaped by the quality of interpersonal interactions within professional relationships. Mutual respect, active listening, and context-sensitive engagement—both verbal and non-verbal—contribute to building trust among employees and managers. These dynamics foster a psychologically safe environment in which employees feel encouraged to contribute ideas, seek clarification, and collaborate productively (Baker et al., 2019). When formal communication is reinforced by respectful interpersonal relationships, employees are more likely to comply with instructions confidently and participate in team efforts, ultimately boosting productivity and strengthening organisational cohesion (Miller & Martin, 2020).

Importantly, formal communication extends beyond the mere transmission of information; it also cultivates shared understanding and reinforces collaborative culture. In environments where communication is structured and respectful, employees tend to feel valued and empowered, which contributes to a culture of engagement, performance, and organisational wellbeing. When employees perceive formal communication as fair and inclusive, they are more likely to take initiative, align their behaviour with organisational values, and maintain high performance levels (Krauss & Fussell, 2021).

A substantial body of research has further examined the multifaceted role of workplace communication, highlighting its influence on a wide range of organisational outcomes, including team dynamics, employee satisfaction, and overall performance (Ramadanty & Martinus, 2016). Given these broad implications, scholars have focused on identifying the antecedents of communication satisfaction, such as clarity, consistency, and openness. Importantly, effective communication must not only flow from upper management but also operate consistently across all levels of the organisation. A holistic communication network that encourages input and feedback fosters greater satisfaction and supports the efficient functioning of project teams and departments (Chen et al., 2017; McKeown et al., 2019).

Ultimately, an organisation's long-term success and productivity depend on a shared recognition—by both leadership and employees—of the strategic importance of formal communication (Kalogiannidis, 2020; Miller et al., 2020). When this recognition informs the design and implementation of communication strategies, organisations are better positioned to promote trust, ensure clear information flow, and build a culture of collaboration. In such environments, formal communication becomes a foundational element of job satisfaction, effective coordination, and sustained productivity (Baker & Lee, 2021).

2.5.2 **INFORMAL COMMUNICATION**

Informal communication, often described as "grapevine" communication, flows organically within organisations and operates independently of formal structures. It is characterised by immediacy, relational proximity, and spontaneous exchanges that emerge from interpersonal connections among employees (Wu et al., 2017). Unlike formal communication, which follows documented and hierarchical processes, informal communication typically leaves no trace and encompasses both work-related and personal topics. This spontaneous exchange arises naturally from the social networks that employees cultivate, enabling the rapid dissemination of information and fostering relational bonds (Koch & Denner, 2022).

Conceptually, informal communication represents the opposite pole of a communication continuum, with formal communication occupying the other end. While formal communication adheres to protocols and organisational hierarchies,

informal communication is unstructured and flexible, often bypassing those formal channels. In this context, employees engage more as individuals and less as formal role holders, focusing on social connection rather than professional obligation (Koch & Denner, 2022). These casual conversations—often among colleagues in a non-hierarchical setting—are instrumental in building relationships and contributing to the overall cohesion of the organisation (Korber et al., 2024).

Although informal exchanges frequently involve personal matters, they can also include discussions related to colleagues, work tasks, or organisational issues. Such interactions, though unofficial, influence employees' perceptions of their work environment and contribute to shaping the organisational culture (Koch & Denner, 2022). Informal communication thus complements formal systems by enriching the workplace's social fabric and reinforcing shared norms and values.

One of the key functions of informal communication within organisations is the facilitation of knowledge dissemination. It supplements formal communication by providing background context, tacit knowledge, and experiential insights that are often absent from official channels. Informal networks transcend departmental boundaries, enabling the fluid exchange of information across different parts of the organisation. This dynamic enhances organisational responsiveness and promotes informed decision-making (Katz & Kahn, 2017; Kalogiannidis, 2020), thereby contributing to improved coordination and productivity.

Informal communication also plays a vital role in collaboration and day-to-day problem-solving. It facilitates practical tasks such as scheduling meetings, confirming availability, sharing documents, and offering real-time updates. Although these interactions may seem peripheral, they foster familiarity and mutual understanding, allowing team members to recognise one another's strengths and delegate tasks more effectively (Balakrishnan et al., 2024). In this way, informal communication enhances teamwork and contributes to organisational effectiveness (Zhang et al., 2024).

Additionally, informal communication supports employee integration and socialisation within teams and the broader organisational environment. Through casual interactions, individuals establish rapport and build trust, which strengthens team cohesion and mutual support. These social ties contribute to a positive workplace atmosphere and foster an inclusive team culture that encourages

collaboration and engagement—both of which are strongly linked to higher productivity (Lackie & Tomblin Murphy, 2020; Kalogiannidis, 2020).

Informal exchanges also serve a restorative function by providing brief, low-pressure breaks during the workday. Though sometimes viewed as distractions, these moments of informal interaction can relieve stress, improve mood, and sustain focus. Research has shown that such short breaks enhance employee wellbeing, reduce cognitive fatigue, and lower error rates, ultimately supporting greater productivity (Bosch & Sonnentag, 2019).

Finally, informal communication offers a psychologically safe outlet for employees to express concerns, frustrations, or emotions that may not be addressed through formal channels (Parker et al., 2020). While this function is occasionally perceived as disruptive, it can actually foster job satisfaction, facilitate emotional regulation, and encourage team development. By enabling rapid and candid exchanges about work-related issues, informal communication contributes to a more responsive and adaptive organisational environment. As such, it holds significant potential to improve productivity when managed constructively (Edmondson, 2018).

2.5.3 **COMMUNICATION TOOLS, SYSTEMS, AND INFRASTRUCTURE**

Communication technologies have become essential to the functioning of modern workplaces, replacing outdated methods such as protracted email chains and inefficient communication formats. These tools not only streamline information exchange but also improve employee engagement and improve overall productivity. Their integration into daily operations is no longer optional but a strategic necessity. Organisations that neglect to equip their workforce with appropriate communication systems risk facing disengagement, demotivation, and disconnection from the broader operational context. This risk is especially pronounced in an era marked by the rise of remote work and geographically dispersed teams, where robust communication infrastructures are critical to sustaining connectivity and performance (Kalogiannidis, 2020).

Maintaining team cohesion and morale across distances has become a central challenge in today’s business environment. Research underscores this challenge, with recent studies identifying communication breakdowns as a major contributor to

organisational inefficiencies and failures (Contreras et al., 2020). In response, organisations across sectors have increasingly prioritised the deployment of advanced communication technologies. These tools serve as vital enablers of collaboration, enhancing engagement and supporting the strategic goals of operational efficiency and productivity.

A diverse range of communication tools now exists to meet varying organisational needs. These include video conferencing platforms that support real-time interactions, file-sharing services for seamless information exchange, private messaging systems for quick updates, and collaborative project management tools for structured task coordination. Selecting the appropriate tools requires a careful assessment of organisational challenges and communication objectives (Barkley & Zhang, 2019). While some tools function effectively in isolation, their true potential is often realised when integrated into broader systems, allowing for cohesive communication flows and enhanced operational responsiveness (Usmani et al., 2023).

Among these technologies, project management tools hold particular significance for coordinating communication within complex, multi-tiered organisational structures. Such tools support project tracking, facilitate real-time updates, and enhance transparency across teams. In fast-paced environments with multiple interdependent tasks, a robust project management system is vital for aligning responsibilities and meeting critical milestones (Dow & Taylor, 2015). These systems provide a shared interface through which all team members can access timelines, deliverables, and progress updates, creating a common operational language that fosters collaboration.

Integrated systems offer even greater advantages by presenting a holistic view of team activity—including time allocation, resource usage, and task dependencies. This comprehensive oversight reduces fragmentation and improves coordination across project phases (Braglia & Frosolini, 2014). With a unified dashboard, managers can identify bottlenecks—such as overloaded personnel or delayed deliverables—and respond proactively by reallocating tasks based on availability and expertise. This responsiveness is crucial for maintaining alignment with project goals and ensuring operational continuity.

In sum, communication tools, particularly those embedded within project management systems, play a dual role: they facilitate efficient information exchange while also serving as strategic instruments for improving productivity. By providing visibility, promoting accountability, and supporting collaborative workflows, these tools help organisations navigate the complexity of modern work environments and deliver results with greater speed and cohesion (Dow & Taylor, 2015).

2.5.4 **COMMUNICATION WILLINGNESS**

Effective communication remains fundamental to the smooth functioning of organisations and is widely acknowledged as a cornerstone of organisational success. Robust communication practices reduce inefficiencies, foster clarity, and empower both employees and customers to act productively and with confidence. In contrast, communication failures often result in misunderstandings, delays, and disengagement, all of which contribute to substantial productivity losses and, by extension, reduced organisational performance (Musheke & Phiri, 2021).

As the business environment evolves, many organisations are shifting away from hierarchical, bureaucratic communication structures toward more open, transparent, and collaborative approaches. This transition has placed greater emphasis on the quality of interpersonal interactions at all organisational levels. Increasingly, communication is viewed not just as a formal mechanism for task execution but as a dynamic social process that encompasses informal, relationship-driven exchanges. These informal conversations—often spontaneous and not directly related to work tasks—play a pivotal role in building trust and strengthening the social fabric of the workplace. Motivated by personal interest, interpersonal attraction, and the desire for connection, such interactions form the foundation of informal networks that support organisational cohesion and contribute meaningfully to productivity (Musheke & Phiri, 2021; Lackie & Tomblin Murphy, 2020).

Traditionally, communication has been a central responsibility of management, with leaders dedicating substantial time to information dissemination, feedback, and coordination. In the contemporary context, however, communication has become an integral function of leadership and a central pillar of operational management. Cross-functional collaboration now demands proactive and consistent communication

among employees from diverse units and disciplines. Simultaneously, the advent of digital communication technologies—such as email—has introduced complexities such as information overload, which can negatively affect employee wellbeing and diminish productivity. This evolution underscores the strategic importance of communication strategies tailored to manage performance, foster collaboration, and maintain employee motivation in increasingly complex work environments (Newman, 2017; Kalogiannidis, 2020). Tools designed specifically for project management are particularly effective in supporting these goals, enabling structured and transparent communication (Dow & Taylor, 2015).

At the interpersonal level, communication plays a vital role in relationship-building, which is essential for fostering cooperation, trust, and cohesion within teams. These relationships are not only important for daily operations but are also critical to the long-term resilience and adaptability of organisations (Balakrishnan et al., 2024). Crucially, the effectiveness of workplace communication depends not just on the availability of tools or systems, but on employees' willingness to engage in meaningful interactions. This willingness underpins productive collaboration, supports the development of shared goals, and enables the integration of individual efforts into collective outcomes. In this sense, communication willingness is a key driver of both productivity and organisational effectiveness, reinforcing the importance of cultivating a communicative culture that values openness, participation, and trust (Balakrishnan et al., 2024).

2.5.5 **LANGUAGE DIVERSITY**

Building a workforce with the right blend of skills is a central pillar of any effective production strategy. While technical expertise is essential, complementary human capital traits such as multilingualism and cross-cultural awareness have emerged as equally important in enhancing organisational performance. Employees who bring diverse linguistic, cultural, and religious perspectives can significantly contribute to higher output and revenue (Kuroda & Yamamoto, 2018). In particular, language diversity has the potential to serve as a catalyst for innovation by facilitating the exchange of new ideas and alternative viewpoints, thereby supporting long-term organisational development (Kalogiannidis, 2020).

The relationship between language diversity and productivity is increasingly recognised as critical. Internal communication depends heavily on the linguistic

competence of employees, and miscommunication due to language barriers can hinder information flow, reduce coordination, and delay decision-making. Conversely, effective communication across language differences enhances clarity and accelerates collaboration. In global markets, success often hinges on the organisation's ability to understand and adapt to local language and cultural norms, making multilingual capacity a strategic asset (Balakrishnan et al., 2024). As organisations continue to expand across borders, the integration of cultural awareness into communication practices becomes essential for promoting productive teamwork and achieving project success.

In the context of the knowledge economy, information exchange is fundamental to sustaining innovation and competitiveness. However, knowledge sharing becomes more complex in linguistically diverse teams, especially when employees are required to communicate in a non-native language (Balakrishnan et al., 2024). These dynamics can introduce barriers that affect collaboration and slow down workflows, yet they also present opportunities to build inclusive communication strategies that promote equal participation and foster shared understanding.

Multilingual employees offer clear advantages beyond language translation. They are often viewed as adaptable, open-minded, and culturally sensitive—qualities that contribute to improved interpersonal relations and more effective problem-solving. Even in roles that do not explicitly require foreign language proficiency, multilingualism is associated with transferable competencies such as motivation, prioritisation, and sound judgment (Balakrishnan et al., 2024). These traits not only support individual productivity but also enhance team dynamics and contribute to customer satisfaction.

In sum, language diversity is both a challenge and a strategic resource. When managed effectively, it strengthens communication, promotes innovation, and enhances organisational productivity. As globalisation continues to shape the workplace, cultivating linguistic and cultural competencies among employees will remain vital to organisational resilience and growth.

2.5.6 **SHARED LEADERSHIP**

The leadership style adopted by senior members of an organisation plays a pivotal role in shaping employee productivity. Different approaches to leadership influence how effectively employees perform their roles, with productivity often measured as the ratio of output to input relative to predetermined targets. High productivity, therefore, reflects efficient and meaningful employee input, which directly contributes to organisational performance (Sharma, 2024; Setiawan et al., 2021). Conversely, diminished input—whether due to unclear direction, lack of motivation, or inadequate support—typically results in reduced output. In competitive business environments, where productivity serves as a critical indicator of success, leadership strategies must be aligned with efforts to optimise the quality and consistency of employee input.

Within this context, shared leadership has emerged as a performance-oriented model that offers substantial organisational benefits. Defined as a dynamic and interactive team process, shared leadership decentralises authority and promotes collaboration, mutual accountability, and participative decision-making (Zhang et al., 2024). Despite its theoretical appeal, the practical application of shared leadership still faces challenges, particularly regarding the temporal and contextual factors that influence its success in project-based environments.

When implemented effectively, shared leadership capitalises on the diverse expertise and competencies within a team. Rather than centralising authority in a single individual, this model empowers team members to take on leadership roles as appropriate to their skills and situational demands. This inclusive approach enhances social capital by fostering open communication, building trust, and encouraging proactive engagement with team objectives. The result is a more responsive and resilient team dynamic, where members are motivated by both individual accountability and collective ownership of outcomes. Peer-to-peer influence becomes a powerful mechanism for reinforcing shared responsibility, promoting a sense of mutual respect and sustained collaboration (Zhang et al., 2024; Adair et al., 2024).

Ultimately, shared leadership fosters a culture of participation and distributed responsibility, which strengthens team cohesion and supports more agile, adaptive forms of working. In such environments, productivity benefits not only from improved communication and trust, but also from the increased initiative and

autonomy of team members. As organisations seek to enhance performance in increasingly complex and fast-paced contexts, shared leadership offers a compelling model for aligning team structure with productivity-driven outcomes.

2.5.7 SUMMARY OF EFFECTIVE COMMUNICATION IN THE PROJECT CONTEXT

Effective communication is integral to organisational productivity, shaping how teams collaborate, solve problems, and achieve shared objectives. This section has examined multiple facets of communication within the project context—formal and informal exchanges, digital tools and infrastructure, employees' willingness to communicate, language diversity, and shared leadership. Together, these elements underscore the multifaceted nature of workplace communication and its decisive impact on performance. Formal communication ensures clarity and structure, while informal communication fosters relationship-building and rapid knowledge sharing. Communication technologies, when strategically implemented, enable coordination across distributed teams and enhance transparency. Meanwhile, employees' willingness to engage in communicative processes—both formal and informal—supports cohesion, motivation, and team functionality. Language diversity adds further complexity, highlighting the need for cultural and linguistic awareness in managing knowledge exchange. Finally, shared leadership models exemplify how communication and distributed influence can raise both individual accountability and collective productivity. Overall, communication is not merely a support function but a strategic mechanism that underpins successful project execution and sustained organisational effectiveness (An et al., 2021; Schwerha et al., 2020; Dale-Olsen & Finseraas, 2020).

2.6 WELLBEING IN THE PROJECT CONTEXT

Wellbeing has emerged as a central concern in project management research, particularly in light of the increasing demands placed on distributed and project-based teams. This section examines how wellbeing has been conceptualised and operationalised within project environments and underscores its significance in

influencing productivity. The discussion begins by differentiating types of wellbeing before exploring how they manifest at individual and organisational levels.

A key challenge in the study of wellbeing is the diversity of definitions and measurement approaches. Warr and Nielsen (2018) emphasise that wellbeing is not a monolithic concept but one that encompasses broad indicators such as happiness, life satisfaction, and affective states. Importantly, studies vary in whether they focus on long-term wellbeing, transient emotional states, or stable personality-linked affectivity (Warr & Nielsen, 2018; Zhang et al., 2024). This variation necessitates a multidimensional approach to wellbeing assessment, especially in dynamic project contexts where both chronic and situational stressors are present.

Expanding beyond general definitions, workplace wellbeing has traditionally centred on physical health promotion, such as incentives for active commuting or gym memberships (Cvenkel, 2020; Krekel et al., 2019). While these efforts offer benefits, they often fall short in addressing mental health, which has grown increasingly urgent amid heightened workloads and pandemic-related stress (Bakker & Demerouti, 2017; Hobfoll et al., 2018). For distributed teams, where isolation and communication fatigue are prevalent, programmes that target mental wellness play a vital role in fostering engagement and sustaining collaboration (Parker et al., 2020). This shift signals a broader understanding that workplace health must include emotional and psychological support structures.

The relationship between wellbeing and organisational outcomes is well established. Krekel et al. 2019 demonstrate that employee wellbeing is closely tied to productivity, job engagement, and retention. In virtual settings, where workers are physically removed from traditional support systems, these effects are magnified. Burke and Page (2017) further reinforce this connection by highlighting how work stress emerges from the interplay between job conditions and external pressures—an interaction that can be particularly volatile in project-based and distributed contexts. Thus, addressing wellbeing is not merely a support function but a strategic lever for performance.

To operationalise these insights, various tools and models have been developed. The Workplace Wellbeing Questionnaire (Hyett & Parker, 2015) measures satisfaction through factors such as enjoyment, employer care, and Work–Life Balance, offering a structured way to gauge wellbeing across teams. Similarly,

Zheng et al. (2015) identify three dimensions—personal wellbeing, job satisfaction, and emotional health—that collectively capture the breadth of the employee experience. These frameworks are valuable not only for diagnosis but also for designing targeted interventions aimed at enhancing morale and performance.

Ultimately, fostering wellbeing in project environments is both an ethical commitment and a strategic imperative. Evidence suggests that low wellbeing contributes to reduced output and disengagement, while happier managers and leaders have a positive cascading effect on team performance (Krekel et al., 2019). By investing in wellbeing infrastructures, organisations are better equipped to build resilient project teams that can thrive under pressure and adapt in competitive and uncertain conditions.

2.6.1 THE ROLE OF MANAGERS IN SUPPORTING EMPLOYEE WELLBEING

Managers are often described as the organisation's "primary wellbeing officers" due to their central role in shaping the workplace environment and directly influencing employee morale (Quelch & Knoop, 2018). This responsibility goes beyond task supervision, requiring a proactive commitment to building a culture that prioritises mental health, inclusivity, and psychological safety. Quelch and Knoop (2018) propose that organisations adopt actionable strategies such as "welcoming diversity and neurodiversity," "reducing stress and stigma," and "creating a safe environment for discussing wellbeing challenges." These approaches not only promote open dialogue but also provide a replicable framework for leadership across sectors—from corporate enterprises to start-ups and non-profits.

Crucially, managerial effectiveness in promoting wellbeing begins with self-awareness. Quelch and Knoop (2018) recommend that leaders engage in self-reflection through prompts such as "How am I doing?" and "What can I do better?"—questions intended to foster mindfulness and continuous personal development. Their concept of the *wellbeing pillars: leading the pack* underscores the importance of modelling positive behaviours, suggesting that visible and authentic commitment to wellbeing can influence team norms and promote a culture of support. Additionally, their emphasis on identifying stressors—particularly those

arising from organisational change and external uncertainty—positions managers as both protectors of employee welfare and facilitators of workforce resilience.

This dual role is echoed by Cvenkel (2020), who highlights the unique responsibilities of Human Resource managers in orchestrating wellbeing strategies across diverse and multigenerational workforces. By focusing on the employment relationship and aligning Human Resource practices with wellbeing objectives, organisations can initiate deeper conversations about how Human Resource professionals shape the social and psychological conditions of work. Cvenkel (2020) further outlines the key attributes of successful organisations, advocating for targeted interventions to reduce stress and mental illness—factors that, if unaddressed, can significantly diminish productivity and employee engagement.

Beyond ethical considerations, prioritising employee wellbeing presents tangible organisational benefits. Cvenkel (2020) argues that enhancing employee health and happiness not only reduces healthcare and turnover costs but also strengthens productivity and long-term organisational resilience. This is particularly relevant in today's complex workplace environments, where multigenerational teams bring varying expectations, stressors, and communication styles. Thus, effective wellbeing strategies must be inclusive and adaptable, reinforcing both employee satisfaction and business performance.

However, wellbeing is also shaped by workload and job demands, which directly influence mental health outcomes. High job intensity, if left unchecked, can lead to burnout and depression. In this context, Hyett and Parker's (2015) four-factor model offers a comprehensive lens through which to understand the individual experience of wellbeing, encompassing psychological, physical, mental, and workplace domains. Their model provides a nuanced understanding of how different forms of wellbeing interact with work structures to affect organisational productivity.

Furthermore, organisational culture plays a defining role in either reinforcing or undermining wellbeing. Discriminatory practices, unconscious bias, or exclusionary environments can erode individual wellbeing and drive down morale, leading to measurable losses in productivity and efficiency (Hobfoll et al., 2018). As Krekel et al. (2019) and Burke and Page (2017) emphasise; the wellbeing of managers themselves is instrumental: when leaders are supported and mentally

healthy, their positive behaviours and attitudes tend to cascade throughout the organisation, influencing both culture and performance.

Communication also emerges as a foundational mechanism linking leadership, wellbeing, and team cohesion. According to Hyett and Parker (2015), the ability to communicate clearly and empathetically is central to maintaining organisational quality and employee trust. Without effective communication, even well-designed wellbeing programmes may fail to engage or support their intended audiences. Thus, fostering a communication culture that aligns with wellbeing goals is essential for promoting transparency, collaboration, and collective resilience.

In sum, achieving and sustaining wellbeing within organisations requires attention to multiple, interdependent factors—including subjective, financial, physical, and mental dimensions, as well as workplace flexibility, compassionate leadership, and the physical environment. The following sub-section delves into these components in more detail, examining empirical studies that explore their impact on organisational outcomes.

2.6.2 **SUBJECTIVE WELLBEING**

Subjective Wellbeing refers to how individuals perceive and evaluate their lives, encompassing both emotional experiences and assessments of specific life domains. In the context of project-based work, this construct is increasingly recognised as a key determinant of employee performance. A foundational concept underpinning this recognition is the "happy-productive worker" hypothesis, which asserts that employee happiness is a reliable predictor of improved labour productivity at both individual and organisational levels (Nocco et al., 2021). This perspective frames wellbeing not merely as an outcome of work conditions but as a driving force behind enhanced performance. Importantly, initiatives that support employee mental health and foster a positive work environment contribute not only to worker satisfaction but also to better financial outcomes through increased efficiency and reduced turnover (Isham et al., 2020).

Empirical studies further substantiate the economic value of prioritising wellbeing in the workplace. Oswald et al. (2015) report that improving employee wellbeing can result in productivity gains of up to 12 per cent, underscoring the

material benefits of such investments. In fact, returns on wellbeing programmes are estimated to range from five to twelve times the initial investment within a year. Despite this evidence, some managers continue to resist flexible work arrangements such as remote working, often due to concerns about declining performance. Yet, such scepticism is increasingly challenged by research demonstrating that remote workers can maintain—or even improve—their productivity when supported by appropriate structures that mitigate burnout and facilitate Work–Life Balance (Wang et al., 2021).

Therefore, integrating wellbeing programmes with remote work strategies offers a dual advantage: maintaining operational efficiency while also safeguarding employee satisfaction. This approach reflects a broader shift in organisational thinking, one that recognises the interdependence of worker wellbeing and sustainable productivity. By embedding wellbeing into the fabric of workplace culture—especially in project environments where stress levels can be high—organisations can cultivate resilience, boost morale, and enhance long-term performance outcomes.

2.6.3 **FINANCIAL WELLBEING**

Financial wellbeing has emerged as a central dimension of workplace health, increasingly acknowledged by both scholars and practitioners as essential for employee performance and organisational sustainability. Organisations aiming to attract and retain top talent must develop a deeper understanding of workers' financial concerns—not only as a matter of individual welfare but also as a strategic imperative that influences broader business outcomes (Jackson & Fransman, 2018). Research highlights the significant costs of poor financial health, which is closely associated with absenteeism, lower productivity, and presenteeism—where employees are physically present but mentally distracted by financial stress (Krekel et al., 2019). These findings suggest that supporting financial wellbeing is not only beneficial for employees but also integral to maintaining overall productivity.

Presenteeism, often driven by unresolved financial stress, serves as a key indicator in assessing the organisational consequences of poor financial wellbeing. Employees experiencing financial insecurity tend to exhibit reduced focus and

engagement, which in turn undermines team performance and operational efficiency. Recent industry reports continue to validate these trends, providing updated metrics on how widespread financial stress translates into diminished workplace output and increased costs for employers (PricewaterhouseCoopers, 2020). These insights reinforce the conceptual linkage between financial wellbeing and broader psychological health, underscoring the need for holistic wellbeing strategies that address both material and emotional dimensions of employee experience.

Moreover, financial anxiety does not exist in isolation; it frequently spills into other domains of employee life, affecting sleep, health, concentration, and workplace conduct. Stress stemming from financial hardship has been shown to disrupt an employee's ability to focus and perform at their best, ultimately eroding the sense of satisfaction and commitment that typically fuels productivity (Adkins & Ylöstalo, 2020). These effects highlight the vulnerability of even high-performing individuals when financial insecurity is left unaddressed.

To mitigate these challenges, many organisations have begun integrating financial wellness into their employee benefit strategies. These initiatives often include tools for budgeting, personalised financial assessments, and educational programmes designed to promote financial literacy and self-efficacy. Such support not only helps individuals manage financial risk but also contributes to a more stable, focused, and resilient workforce. Importantly, over half of employers now recognise the positive relationship between financial literacy and improved productivity, affirming the strategic value of such programmes (Adkins & Ylöstalo, 2020).

Ultimately, the integration of financial wellness into broader workplace health strategies yields multiple benefits: reduced stress, higher retention, enhanced job satisfaction, and even lower healthcare costs. These outcomes position financial wellbeing as a foundational element of employee welfare, one that complements other domains such as mental, social, and physical health. By investing in financial wellness, organisations can foster a more balanced and effective workforce, advancing both individual and institutional performance over the long term.

2.6.4 **MENTAL WELLBEING**

Mental wellbeing, a core aspect of psychological health, is often underemphasised in organisational behaviour despite its critical role in shaping workplace dynamics and employee outcomes. Ghodrati et al. (2018) define psychological health as encompassing the pursuit of meaningful goals, personal growth, and the development of quality interpersonal relationships—key elements of optimal psychological functioning. In organisational settings, mental wellbeing strongly influences workplace sustainability, as poor mental health is a primary contributor to reduced productivity through absenteeism, presenteeism, and increased sick leave. Conditions such as depression, anxiety, and alcohol use disorders not only impair individual functioning but also result in significant human and financial capital losses. In contrast, fostering supportive and healthy working conditions contributes to enhanced employee wellbeing and performance, thereby strengthening overall organisational productivity and resilience (Ghodrati et al., 2018).

The link between mental wellbeing and job performance can be understood through two interconnected domains: the working environment and the individual employee profile. Zheng et al. (2015) highlight that the working environment encompasses employer-driven incentives and the quality of workplace relationships—both of which influence employee motivation and output. Meanwhile, individual profiles involve factors such as resilience, stress management capacity, and the value employees attach to their roles. Together, these dimensions shape how workers respond to pressures and opportunities in the workplace.

Proactive mental health interventions can serve as powerful tools for promoting sustainable organisational performance. When implemented effectively, such interventions yield benefits at multiple levels. For individuals, they increase job satisfaction, strengthen psychological resilience, and improve overall wellbeing. For organisations, they result in lower turnover, improved productivity, and reduced absenteeism (Zheng et al., 2015). These outcomes confirm that mental wellbeing is not simply a matter of personal health but a strategic asset directly tied to business performance.

In sum, promoting mental wellbeing in the workplace should be viewed as both a moral obligation and an economic necessity. Organisations that actively support the psychological health of their workforce are better positioned to achieve sustained

productivity, foster employee loyalty, and cultivate a workplace culture grounded in trust and engagement. The consistent association between strong mental health and enhanced job performance underscores the importance of embedding wellbeing initiatives within broader organisational development strategies.

2.6.5 **PHYSICAL WELLBEING**

Physical wellbeing is a foundational component of overall employee health and plays a vital role in supporting organisational productivity. Its close interconnection with mental wellbeing is well established, as regular physical activity has been shown to improve mood, reduce stress and anxiety, and mitigate the risk of developing mental health disorders (Issa & Pan, 2021). When physical health is prioritised, employees are more likely to experience enhanced emotional resilience and sustained energy, contributing to greater satisfaction in both personal and professional spheres. In modern organisations, this holistic sense of wellness supports consistent performance and long-term success. Employees who are physically healthy are not only more motivated but also more likely to engage in collaborative and constructive workplace behaviours.

On the other hand, poor physical health is frequently associated with reduced workplace performance through both absenteeism and presenteeism (Ghodrati et al., 2018). These effects are often compounded by underlying mental health concerns, particularly when employees hesitate to disclose psychological struggles due to stigma or fear of professional consequences (Issa & Pan, 2021). Such reluctance can prevent timely interventions, allowing problems to escalate and further impair performance. In this context, presenteeism poses a significant challenge: workers may be physically present but unable to function optimally due to unmanaged physical or mental health conditions.

Moreover, initiatives designed solely to improve productivity—especially in high-pressure or remote environments—may inadvertently compromise employee wellbeing. As Zheng et al. (2015) argue, efficiency gains must be balanced with sustained investments in employee welfare. When physical health is neglected, even well-intentioned performance strategies may backfire, diminishing work quality and undermining team cohesion. Particularly in distributed or project-based teams, where

performance depends on sustained individual contributions, the cost of poor physical wellbeing can be considerable.

Addressing both physical and mental health challenges in tandem enables organisations to cultivate healthier and more productive work environments. By creating supportive infrastructures—such as wellness programmes, ergonomic workspaces, and policies that encourage movement and rest—employers can help reduce illness-related disruptions while enhancing workforce morale and capacity. Ultimately, fostering physical wellbeing is not only a personal benefit for employees but also a strategic imperative that underpins organisational resilience and high performance.

2.6.6 **JOB SATISFACTION**

Job satisfaction refers to the degree to which individuals feel fulfilled and content in their professional roles, and it remains a core component of overall workplace wellbeing. While dissatisfaction can be relatively easy to detect through reduced engagement or morale, measuring job satisfaction itself is often complex due to the variability in individual needs, values, and expectations (Kuroda & Yamamoto, 2019). These differences underscore the importance of cultivating a positive work environment that accommodates diverse preferences and supports employees' intrinsic and extrinsic motivations. A workplace that actively supports job satisfaction contributes not only to employee retention but also to sustained productivity (Judge et al., 2017).

Evidence consistently shows that satisfied employees are more productive (Harter et al., 2020; Permadi et al., 2018; Judge et al., 2017; Bakotić, 2016; Oswald et al., 2015). Permadi et al. (2018) reported that positive employee attitudes can boost productivity by an average of 31 per cent, whereas dissatisfied workers perform approximately 10 per cent less efficiently than their more content peers (Oswald et al., 2015). These figures highlight the tangible performance implications of job satisfaction, reinforcing its strategic value for organisations. Furthermore, job satisfaction is closely tied to emotional wellbeing and personal meaning at work, serving as both an outcome of positive workplace conditions and a driver of continued engagement and contribution.

In addition, Krekel et al. (2019) argue that enhancing job satisfaction involves more than increasing workload capacity; rather, it requires clarifying priorities and reducing workplace distractions to enable focused and meaningful work. This perspective challenges the traditional "hustle" mentality that values doing more in less time, advocating instead for deliberate and sustainable approaches to performance. Organisations can support this shift by encouraging individual and team-level rituals—such as reflective check-ins, consistent communication practices, and recognition of achievements—that reinforce a sense of purpose and workplace cohesion.

Overall, job satisfaction serves as a vital link between wellbeing and performance. By aligning workplace conditions with employee needs and fostering cultures of support and clarity, organisations can enhance both morale and measurable productivity outcomes (Abane et al., 2022; Wang et al., 2025).

2.6.7 **COMPASSIONATE MENTORSHIP**

Mentorship, typically led by experienced professionals, plays a critical role in helping emerging practitioners translate theoretical knowledge into practical skills. It supports novices in setting and achieving developmental goals that extend beyond their current competencies, fostering a gradual path toward autonomy (Lackie & Tomblin Murphy, 2020). Particularly during job transitions, mentorship facilitates smoother adaptation to new roles, bridging the gap between academic preparation and workplace expectations. While traditional mentorship focuses on skill development and task performance, compassionate mentorship expands this scope by emphasising holistic growth, emotional intelligence, and psychological support—especially for individuals thrust into senior leadership roles. At all levels, mentorship creates opportunities for mutual learning, reflection, and challenge, thereby cultivating both personal and professional advancement (Prummer et al., 2024).

A growing body of research highlights the value of mentorship in enhancing job performance, career satisfaction, and organisational productivity. Mentored employees often outperform their non-mentored peers, achieving greater success and displaying higher levels of engagement (Prummer et al., 2024). Compassionate mentorship programmes also support novice leaders and team coaches through structured feedback, peer collaboration, and guidance from trained mentor-coaches.

These mechanisms not only build individual capability but also contribute to improved team effectiveness and reduced time to competency—key factors in boosting organisational productivity (Newman & Ford, 2021). By enhancing skills, confidence, and team cohesion, compassionate mentorship also indirectly supports project performance and overall productivity.

2.6.8 **JOB FLEXIBILITY**

Workplace flexibility has emerged as a pivotal factor in cultivating a productive workforce. It is commonly associated with enhanced work-life balance, increased autonomy, and a more supportive organisational climate (Kuroda & Yamamoto, 2019). Flexibility typically involves giving employees greater control over how, when, and where they carry out their tasks. While the benefits of flexible work arrangements are increasingly recognised, some organisations remain hesitant to adopt them, often questioning whether such models can maintain or improve productivity. This reluctance is frequently rooted in concerns about employee disengagement or diminished commitment. However, studies suggest that when flexibility is thoughtfully implemented, it can reduce burnout and lead to higher levels of productivity and motivation (Bloom et al., 2015).

The broader debate continues over whether workplace flexibility and productivity are inherently compatible and how best to structure flexible arrangements to foster innovation and sustained output. Flexibility has become a key consideration in talent acquisition and retention strategies, as many prospective employees prioritise work-life balance and organisational support when selecting an employer (Isham et al., 2021). A common oversight is treating flexibility solely as an employee perk, without recognising its strategic value in promoting sustained organisational success. Satisfied and engaged employees are not only more productive but also more likely to show commitment to long-term organisational goals (Bloom et al., 2015).

Importantly, research has shown that employees who perceive a high degree of trust from their employers place greater value on flexible arrangements and often respond with heightened loyalty and performance (Nasution et al., 2024). These employees tend to go beyond basic requirements, adapting their work habits to align

with organisational objectives. In this context, a flexible workplace is not simply about accommodating employee preferences but fostering a collaborative environment where managers and staff work together to achieve shared goals. Rather than being motivated by surveillance or fear of reprimand, such environments empower individuals to contribute meaningfully to organisational productivity (Al-Tit et al., 2025; Shangguan et al., 2025; Tjimuku & Atiku, 2024; Nasution et al., 2024). By enabling employees to manage tasks efficiently, flexible work arrangements also contribute to sustained project outcomes and overall productivity.

2.6.9 **WORKING ENVIRONMENT AND CONDITIONS**

The working environment encompasses the broader setting in which individuals operate, including physical surroundings, organisational structures, and the systems that guide daily activities. Within the field of organisational behaviour, it is widely understood that the environment in which people work profoundly influences their ability to collaborate, innovate, and meet shared objectives (Zamani & Gum, 2019). This environment consists of both tangible elements—such as tools, technology, and facilities—and intangible aspects, including workplace culture, managerial support, and psychological safety. These interrelated components can either enhance or hinder performance, with direct implications for employee productivity.

From a practical standpoint, the workplace can also be understood as the specific physical location where job tasks are performed, ranging from offices and factories to construction sites. Within these settings, environmental conditions—such as air quality, lighting, noise levels, ergonomic design, and access to facilities like childcare or adequate parking—have been shown to significantly affect employee wellbeing and job satisfaction (Smith et al., 2020; Rapport et al., 2020). When these factors are aligned with employee needs, they support higher engagement and enable individuals to sustain productivity over time.

A well-designed work environment not only safeguards health and safety but also promotes efficient, focused, and uninterrupted work. In contrast, environments that are poorly maintained or misaligned with employee requirements can lead to physical strain, distractions, and reduced performance (Papagiannidis & Marikyan,

2020). The quality of the working environment, therefore, plays a central role in enabling employees to function effectively and meet organisational expectations.

Moreover, the physical workspace shapes how individuals interact, collaborate, and perceive their roles within the organisation. Subtle features such as layout, temperature, noise control, and the availability of natural light influence interpersonal dynamics and work behaviour in measurable ways. For example, research shows that even small improvements in ergonomic design or ambient conditions can have a significant impact on satisfaction, concentration, and ultimately productivity (Arata et al., 2024). Thus, the physical and psychological characteristics of the workplace environment are not peripheral concerns—they are central determinants of individual performance and organisational productivity. By optimising both the physical and organisational environment, employees can perform more effectively, positively influencing project outcomes and overall productivity.

2.6.10 SUMMARY OF EMPLOYEE WELLBEING DIMENSION

The discussion above highlights the multifaceted nature of employee wellbeing and its critical role in improving organisational productivity. The interconnected dimensions—subjective, financial, mental, and physical wellbeing, alongside job satisfaction, compassionate mentorship, job flexibility, and working environment and conditions—collectively shape how individuals perform and thrive in the workplace. These elements do not function in isolation; rather, they interact dynamically to influence employee engagement, resilience, and effectiveness.

Research consistently shows that wellbeing initiatives yield measurable productivity gains, reduce absenteeism and presenteeism, and improve employee retention (Oswald et al., 2015; Adkins & Ylöstalo, 2020; Zheng et al., 2015). For instance, financial wellness programmes help reduce the cognitive load caused by money-related stress, while mental health interventions strengthen employee focus and emotional stability. Similarly, job satisfaction and flexible working arrangements contribute to sustained motivation and a healthier work-life balance.

Moreover, cultivating supportive environments through compassionate mentorship and well-designed physical spaces enhances not only performance but also collaboration and innovation. When employees feel valued, trusted, and

empowered, they are more likely to exceed expectations and contribute meaningfully to organisational goals.

Ultimately, investing in comprehensive wellbeing strategies is not merely a human resources initiative—it is a core component of organisational success. By addressing these dimensions in an integrated and intentional way, organisations can build a culture that prioritises employee welfare as a pathway to long-term productivity and sustainability.

2.7 COMMUNICATION AND WELLBEING IN THE PROJECT CONTEXT

Although communication and wellbeing are well-researched themes, much of the existing literature centres on healthcare settings, particularly nursing and medicine. However, their relevance extends far beyond these domains. Warr and Nielsen (2018) argue that stress significantly impairs an individual's ability to communicate effectively, with detrimental consequences for health, happiness, and workplace functionality. One major stressor is role ambiguity, which can erode both wellbeing and productivity. Conversely, when roles and responsibilities are clearly communicated, employees experience greater clarity and support, fostering healthier and more productive work environments.

Beyond reducing stress, effective communication also supports employee fulfilment. Franco-Santos and Doherty (2017) highlight that communication enhances the sense of meaningful work by enabling job enrichment, work-life balance, and career development. These factors collectively contribute to employee satisfaction and overall wellbeing. Furthermore, the evolution of technology continues to reshape communication practices in ways that influence how work is structured and experienced (Warr and Nielsen, 2018; Franco-Santos and Doherty, 2017), underscoring the need for communication strategies that adapt to rapidly changing work environments.

The significance of communication for wellbeing is also evident in higher education settings. Franco-Santos and Doherty (2017), investigating academic staff, found that directive performance management approaches—grounded in agency theory and focused on output metrics—had adverse effects on staff wellbeing . In contrast, performance systems aligned with stewardship theory, which prioritise

employee development, open communication, and contextual understanding, were positively linked to staff happiness. Notably, the perceived work environment mediated this relationship, suggesting that management practices must be both enabling and communicative to enhance wellbeing and, by extension, productivity.

Effective communication also plays a vital role in workplace health and safety. While many organisations acknowledge the importance of supervisor–employee interaction in creating safe environments, there is limited understanding of how such communication operates in practice. Addressing this gap, Newnam and Goode (2019) draw on Social Exchange Theory (SET) to explore how everyday interactions among managers from different departments influence organisational communication patterns. Their study identifies structural and cultural constraints as key influences shaping how communication occurs.

Newnam and Goode (2019) categorise workplace communication into three types: task-related, relationship-related, and broader informational exchange. Task-related communication is primarily geared towards improving productivity and operational efficiency. Relationship-related communication, by contrast, fosters a positive social climate and expresses concern for employee wellbeing. Informational exchange captures incidental, yet consequential, interactions that support both social connection and organisational function. All three communication types contribute to workplace dynamics and affect employee health and safety outcomes.

By framing workplace dialogue as a series of ongoing exchanges, Newnam and Goode argue that effective communication strengthens social and safety systems alike. Relationship-oriented communication, in particular, helps signal genuine concern for employees, reinforcing organisational trust and cohesion. Their findings also show that productivity-oriented conversations dominate, often at the expense of safety and wellbeing discussions. Nonetheless, the presence of all three communication types suggests that a balanced approach—one that includes targeted communication about health and safety—is both possible and necessary.

In sum, communication serves not only as a vehicle for coordinating work but also as a foundational element in shaping workplace wellbeing. Whether through clarifying roles, enriching work experiences, fostering supportive environments, or reinforcing safety culture, communication directly affects both health and productivity. The challenge for project-based organisations is to maintain this

balance, ensuring that communication strategies promote not only performance but also the sustained wellbeing of their teams.

2.8 PRODUCTIVITY IN THE PROJECT CONTEXT

Productivity within project environments is shaped by a range of interdependent factors, and addressing these effectively is key to improving team performance. Among the most prevalent challenges are time and cost constraints, which often stem from communication breakdowns. Misunderstandings, inadequate explanations, and unclear expectations can significantly hinder progress and contribute to delays and budget overruns (Norouzi et al., 2015; Hussaini, 2024). These inefficiencies underscore the importance of establishing clear communication protocols and setting precise expectations at the outset of each project. Doing so not only reduces operational friction but also enables project teams to meet targets more consistently and productively.

Beyond clarifying expectations, attention must be directed toward the operational aspects of productivity management. Palvalin (2019) stresses the value of devoting time to improving labour management practices, noting that such investments can lead to measurable gains in productivity growth. His review introduces "activity analysis" as a foundational tool for evaluating workplace efficiency. Defined as “the process of persistent enhancement of productivity,” activity analysis focuses on how time is distributed across various tasks. This diagnostic approach enables managers to identify inefficiencies and redirect efforts toward core functions, thereby increasing both individual and team-level productivity.

While such process-oriented approaches are essential, productivity in project contexts—especially those involving knowledge workers—also hinges on strategic leadership and cultural awareness. Franco-Santos and Doherty (2017) highlight a common knowledge gap among project managers, many of whom are uncertain about how best to support and improve the productivity of their teams. In response to the question, “Are you doing all that you can to boost the productivity of your knowledge workers?” most experienced managers were unable to provide a confident answer. The study further suggests that in economies facing demographic

shifts—such as declining birth rates—organisations must maximise the efficiency of knowledge workers by supporting discretionary decision-making and fostering more effective external engagement. However, these goals are often impeded by organisational barriers to productive interaction, particularly among knowledge-intensive roles.

To overcome such obstacles, Prusak and Matson advocate for senior project managers to take a more active role in removing productivity barriers and promoting environments where knowledge workers can thrive. This involves not only structural changes but also cultivating a workplace culture in which collaboration, initiative, and effective communication are prioritised.

In this context, the findings of Balakrishnan et al. (2024) reinforce the broader argument: productivity is significantly improved when organisations combine clear communication strategies with a workforce composed of skilled, committed personnel. Employees who bring both expertise and a professional, cooperative mindset contribute to organisational success well beyond their individual roles. Therefore, promoting continuous development and fostering a communicative, knowledge-sharing culture are essential strategies for improving productivity across project settings.

2.8.1 BARRIERS TO PRODUCTIVITY IN PROJECT TEAMS

Productivity within project teams is frequently constrained by a range of organisational, technical, and interpersonal barriers. Zhang et al. (2024) offer a comprehensive framework identifying five principal categories of obstacles to knowledge worker productivity: physical, technical, societal or cultural, situational, and temporal. Each of these barriers may manifest differently depending on the organisational context, but all have the potential to impede the efficient execution of project tasks.

Physical barriers—such as geographical dispersion and time zone differences—pose logistical challenges that disrupt synchronous communication and hinder collaborative workflows. Technical barriers, meanwhile, often involve ineffective systems for allocating tasks in accordance with employees' expertise,

resulting in misalignment between skills and responsibilities. These inefficiencies not only affect individual performance but can undermine overall project coherence.

Societal and cultural barriers further compound these issues. Hierarchical organisational structures, limited autonomy, and insufficient motivational mechanisms can prevent the optimal placement of employees in roles where they would be most effective. Zhang et al. (2024) stress the importance of addressing these barriers by promoting a culture of open communication, structured performance feedback, and leadership-driven knowledge sharing.

Situational barriers frequently arise from fragmented communication flows within and between teams. To mitigate these, the authors advocate for deliberate strategies that encourage interdepartmental collaboration and the development of platforms for sharing expertise across functional boundaries. Lastly, temporal barriers—especially perceptions of time scarcity—significantly disrupt productivity by limiting the capacity for reflection, planning, and focused task execution.

Together, these findings highlight that overcoming productivity barriers requires more than operational fixes; it necessitates a strategic commitment to fostering collaboration, enabling clear communication, and reducing systemic time pressures. By addressing these interconnected challenges, organisations can better position their project teams to achieve sustainable productivity gains.

2.8.2 MEASURING PRODUCTIVITY OF KNOWLEDGE WORKERS

Although a substantial number of studies address productivity measurement, relatively few examine it in relation to individual project workers or project teams. This gap is significant, given the increasing reliance on project-based structures in modern organisations. However, the growing body of research on the productivity of skilled professionals offers valuable insights that can be adapted to project contexts. Knowledge workers—defined as individuals primarily engaged in processing, generating, and applying knowledge—share key characteristics with project workers. Both operate in roles marked by non-repetitive, creative, and intangible outputs (Heidary et al., 2018; Wang et al., 2021), making traditional productivity metrics often inadequate.

Wang et al. (2021) identified the measurement and enhancement of knowledge worker productivity as the foremost managerial challenge of the twenty-first century. This claim highlights the complexity of evaluating performance in knowledge-intensive and project-driven environments, where outputs are rarely linear or easily quantifiable. As such, there is a need for performance strategies that account for the intellectual, collaborative, and adaptive demands of project work.

To address this challenge, Bakker and Demerouti (2017) outlined six essential criteria for assessing knowledge worker productivity. These criteria are directly applicable to project roles, as they reflect the dynamic and autonomous nature of such work. Each criterion emphasises the need for a more nuanced and context-specific understanding of productivity in project environments. The six criteria are outlined as follows:

1. Responsibility for determining tasks: Unlike traditional roles where tasks are assigned, knowledge workers must identify what needs to be done. This self-direction aligns closely with the autonomy expected in project roles.
2. Independence: Productivity in knowledge work depends on the freedom to make decisions and exercise professional judgment. Independence enables knowledge workers to respond flexibly to evolving project demands.
3. Incorporation of new ideas: Continuous innovation is essential. Knowledge workers must be encouraged to integrate new concepts and methods, thereby improving both individual and team productivity.
4. Continuous learning: Ongoing development is crucial in knowledge-intensive environments. Regular training and upskilling allow workers to remain effective amid changing technologies and project requirements.
5. Focus on quality: The emphasis is on delivering high-quality outcomes, rather than high volumes of output. This quality-centric approach aligns with the expert-driven and solution-focused nature of project work.
6. Asset, not liability: Knowledge workers are strategic assets whose contributions are central to organisational success. Viewing them as such reinforces a culture that supports engagement, development, and long-term productivity.

Plum et al. (2017) identify six interrelated elements—social cohesiveness, perceived supervisory support, information sharing, vision and goal clarity, communication channels, and trust—as critical to the effectiveness of teams involved in knowledge work. These factors exhibit strong statistical correlations with team performance and underscore a shift from individual-centric assessments to team-level evaluations of productivity. Since knowledge work often involves collaboration on complex, non-routine tasks, its productivity cannot be accurately gauged by aggregating individual outputs alone. Instead, it emerges through collective processes shaped by relational dynamics and shared understanding within teams.

Further supporting this perspective, Palvalin et al. (2015) conducted a comprehensive review of literature and identified fourteen commonly used indicators for measuring knowledge worker productivity. These include metrics such as output volume, cost or profitability, timeliness, autonomy, quality, effectiveness, usefulness, and customer satisfaction. Additional indicators encompass innovation and creativity, project management success (notably including communication), perceived responsibility, worker perceptions of productivity, and absenteeism. While no single measure fully captures the multifaceted nature of knowledge work, the concurrent use of multiple indicators—typically between three and five—enables a more balanced and context-sensitive assessment.

The work of Palvalin et al. (2015) is particularly relevant to project environments due to its attention to team diversity and employee wellbeing. Their model for evaluating knowledge management effectiveness incorporates both individual and organisational factors, recognising that productivity is strongly influenced by workplace culture, health, and job satisfaction. This integrated approach aligns with current understandings of productivity as a multidimensional construct shaped by contextual, interpersonal, and operational dynamics. The model is further developed in a subsequent paper by Palvalin (2017), as illustrated in Figure 2.4, where the relationship between knowledge management practices, employee wellbeing, and organisational performance is more explicitly mapped. This visual representation underscores the importance of aligning strategic, technological, and human factors to support sustained productivity in knowledge-intensive work environments.

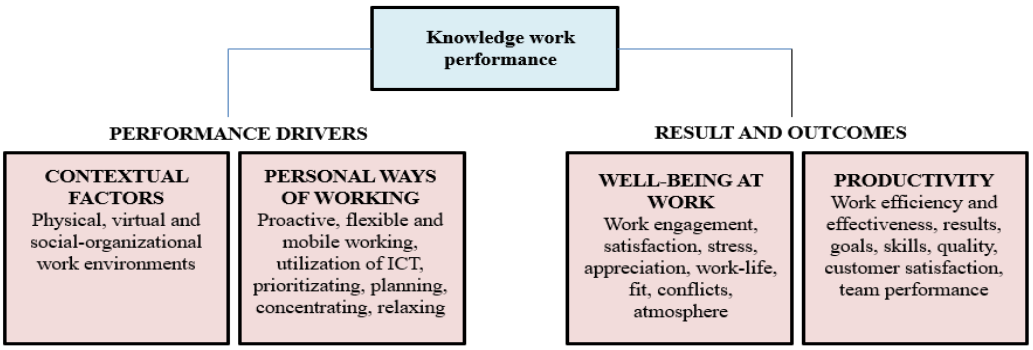

Figure2.4. Elements that influence how successfully people perform tasks that require knowledge from Palvalin et al. 2015.

In 2015, this framework and its accompanying questionnaire were piloted in Finland, with data collected from nine organisations and a total of 998 participants. Following this initial implementation (Palvalin et al., 2015), the framework was further refined and validated in subsequent research (Palvalin et al., 2018). As a result, the questionnaire has become a widely recognised tool for examining both the health and productivity of knowledge workers. The framework evaluates six key dimensions that collectively influence employee effectiveness: the physical workplace, online workplace, social workplace, personal work habits, wellbeing at work, and productivity. These interrelated components are visually presented in Figure 2.5, offering a holistic perspective on the factors that shape knowledge work outcomes.

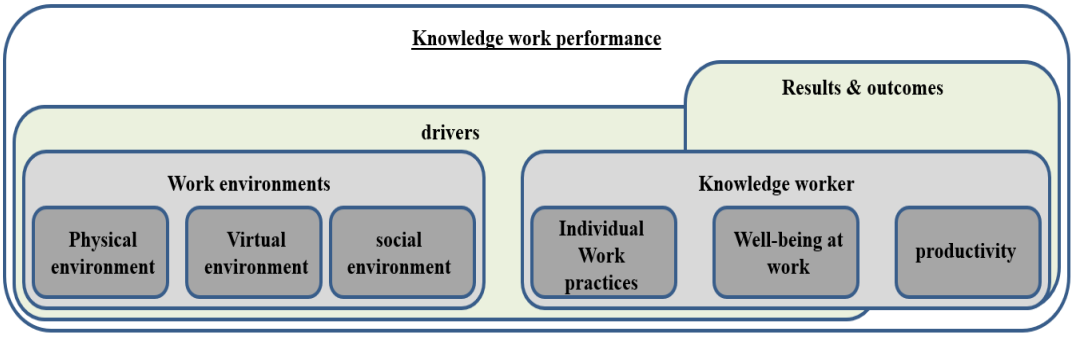

Figure2.5. Model for Optimising Knowledge Workflow Efficiency (Palvalin, 2017)

In striving to ensure optimal health and performance in knowledge work, a critical question arises:

1. Workplace happiness is important to me.
2. I feel that my work is meaningful and worthwhile.
3. I bring a contagious enthusiasm to my work.
4. Having a clear goal in my work is important to me.
5. I do not experience significant stress at work.
6. My supervisors value me and the work I do.
7. I currently maintain a good balance between work and personal time.
8. Our office environment is calm and relaxing.
9. Workplace conflicts are resolved effectively within our team.

Productivity

1. I am generally able to accomplish my goals to a satisfactory degree.
2. In most cases, I complete my tasks efficiently and without difficulty.
3. I am largely able to focus my workdays on activities that directly support my objectives.
4. A significant portion of my work involves tasks where I can effectively utilise my skills and expertise.
5. My capabilities enable me to consistently deliver results that exceed expectations.
6. The outcomes of my work are consistently of a high standard.
7. Our team performs effectively when everyone contributes collaboratively.

The findings of Palvalin et al. (2015, 2018) and Palvalin (2019) are especially relevant to distributed project teams, as they offer empirically grounded insights into the conditions that promote both wellbeing and productivity in knowledge-intensive environments. These studies underscore the integral relationship between employee

wellbeing and organisational performance, particularly in project contexts where knowledge work predominates. By identifying specific dimensions of the work environment—such as personal work habits, workplace design, and leadership support—that directly influence outcomes, the research highlights actionable areas for improvement. Enhancing these aspects not only contributes to healthier, more satisfied employees but also strengthens team effectiveness and overall productivity. Thus, these findings support the argument that fostering wellbeing is not merely a human resources concern but a strategic imperative for sustaining productivity in modern project teams.

2.8.3 PRODUCTIVITY AND COMMUNICATION IN THE PROJECT CONTEXT

Effective communication is widely recognised as a critical factor influencing productivity in project teams, including distributed environments. Workers in organisations with strong communication capabilities tend to hold each other to higher performance standards, as clear instructions and shared understanding foster accountability. Schwerha et al. (2020) demonstrate that structured communication improvements can simultaneously enhance safety, efficiency, and productivity in interdisciplinary teams. While their study provides valuable insights, it primarily examines co-located teams, limiting direct applicability to distributed project teams where remote coordination and digital tools play a larger role.

The study's Excel-based training approach promoted collaborative problem-solving and engagement across functional boundaries, yet it offers limited guidance on managing asynchronous communication or cultural and temporal differences in dispersed teams. In contrast, Dale-Olsen and Finseraas (2020) address linguistic diversity, showing that increased heterogeneity can reduce productivity due to misunderstandings, though it may also foster innovation. Their findings suggest that distributed teams, which often span geographic and cultural boundaries, must carefully manage communication strategies to balance potential benefits against coordination challenges.

Building on these insights, An et al. (2021) introduce the concept of inter-team "coopetition," a blend of cooperation and competition, as a mechanism to enhance productivity. Their experimental findings indicate that hybrid dynamics improve

performance and that strong group identity moderates these effects. This research adds nuance by showing that team dynamics and relational factors can either amplify or diminish the productivity gains of collaborative strategies—an aspect particularly relevant for distributed project teams, where social cohesion may be harder to establish.

Critically comparing these studies highlights several important considerations for distributed project teams. First, while structured communication and training can improve performance, interventions must account for remote collaboration constraints. Second, diversity in language and culture presents both challenges and opportunities, requiring deliberate management to avoid miscommunication and inefficiency. Third, fostering positive inter-team dynamics, including strategic competition and cooperation, can reinforce productivity, but only if teams have mechanisms to build identity and trust across distances. Collectively, these findings underscore that productivity in distributed project teams depends not only on individual competence and task clarity but also on the interplay of communication strategies, team cohesion, and organisational interventions.

2.8.4 PRODUCTIVITY AND WELLBEING IN THE PROJECT CONTEXT

Understanding and addressing both individual and collective wellbeing challenges in the workplace is central to improving productivity in project-based environments. Krekel et al. (2019) provide robust empirical evidence demonstrating that workplace wellbeing is positively associated with employee performance and organisational productivity. Their research emphasises that emotionally informed policies—when translated effectively into actionable practices—can enhance employee satisfaction and performance without imposing significant financial burdens. This approach highlights the importance of cultivating a supportive work environment as a deliberate productivity strategy, rather than treating wellbeing as a peripheral concern.

Complementing this view, Oswald et al. (2015) provide empirical evidence supporting the positive link between wellbeing and productivity. Their study addressed a fundamental managerial question: Does happiness lead to improved performance at work? Using a randomised experimental design, participants

identified as ‘happy’ were assigned to three treatment groups, all of which demonstrated approximately 12 per cent higher productivity compared to control groups. This finding substantiates the hypothesis that human wellbeing plays a causal role in enhancing individual output. In particular, the study revealed that lower levels of happiness consistently correlate with reduced productivity, reinforcing the importance of prioritising emotional health in organisational settings.

Three key insights emerged from Oswald et al.’s (2015) research. First, the study confirmed emotional wellbeing as a causal driver of productivity, strengthening the argument for integrating wellbeing initiatives into workplace strategy. Second, it called for deeper interdisciplinary collaboration to further explore the mechanisms linking happiness and performance. Third, it demonstrated the long-term benefits of wellbeing, with happier individuals consistently outperforming their less content peers across sustained periods. Together, this body of research underscores that enhancing worker wellbeing is not merely a matter of employee satisfaction but a critical determinant of project success and overall productivity.

Berg and Karlsen (2014) further reinforced the connection between wellbeing and productivity by arguing that project managers should prioritise the happiness of their teams. Their findings suggest that contented employees are not only more productive but also experience greater satisfaction and success in their roles. This dual benefit contributes to both workforce morale and organisational performance, highlighting the strategic importance of fostering happiness in the project environment. The study underscores that emotional wellbeing is not a secondary concern but a fundamental enabler of both individual productivity and broader project outcomes.

Building on this perspective, Bryson et al. (2017) explored the relationship between employees’ subjective wellbeing and workplace performance using linked employer–employee data from the United Kingdom. Their analysis revealed a robust and statistically significant association between job satisfaction and productivity. This relationship held consistently across a range of estimation techniques and model assumptions, and it was confirmed in both cross-sectional and longitudinal analyses. Notably, however, the study found no strong link between transient affective states—such as momentary moods—and productivity outcomes. This distinction suggests that stable dimensions of wellbeing, such as job satisfaction, may have a more

meaningful and sustained influence on performance than fleeting emotional experiences.

Bryson et al.'s (2017) study was the first to utilise nationally representative UK data to assess the organisational impact of job satisfaction, lending strong empirical support to the argument that employee happiness should be a priority in strategic planning. Their findings present job satisfaction as a practical and measurable target for managerial intervention, one that can drive improvements in organisational efficiency and effectiveness. In this view, employee wellbeing is reframed not merely as a matter of individual contentment, but as a critical determinant of operational success.

Further support for the importance of wellbeing initiatives comes from Riba et al. (2019), who developed a comprehensive guide for Employee Assistance Programmes, employers, and workplace wellbeing practitioners. Their resource offers an in-depth exploration of wellbeing models and best practices, with a particular focus on the impact of depression in organisational settings. The authors identified depression as a major source of lost productivity, absenteeism, and impaired cognitive functioning, all of which contribute to workplace accidents and declines in output quality. Additionally, the emotional toll of depression extends beyond the affected individual, impacting colleagues and family members alike. Despite these challenges, Riba et al. (2019) demonstrated that well-designed wellbeing programmes can yield significant returns on investment, reducing productivity losses, lowering staff turnover, and improving engagement and satisfaction. Their findings reinforce the idea that investing in employee wellbeing is not only ethically sound but also economically advantageous for organisations operating in high-performance, project-based contexts.

Another crucial dimension influencing employee wellbeing and productivity is the quality of the supervisor–employee relationship. Despite its centrality to daily work experiences, this dynamic has received comparatively limited attention in the economics literature. Addressing this gap, Kuroda and Yamamoto (2018) investigated whether workers' wellbeing is influenced by their supervisors' communication skills and management competencies. While it is widely assumed that effective leadership enhances productivity, the study extended this notion by

examining how supervisor communication—shaped by personal attributes such as personality and professional experience—affects job satisfaction and wellbeing.

Drawing on longitudinal data, the researchers analysed how supervisors' managerial competencies, interpersonal traits, and communication styles influenced employees' self-reported wellbeing and performance. Their findings underscored the critical importance of supervisor–subordinate communication as a driver of both employee welfare and productivity. Even after accounting for individual characteristics and job-specific factors, the study revealed that effective communication and competent supervision played a significant role in improving employee outcomes. These findings are particularly relevant in project contexts, where leadership plays a pivotal role in coordinating efforts and maintaining team cohesion.

Several key insights emerged from this research. First, employees reported higher levels of wellbeing when their supervisors demonstrated both strong communication skills and management competence. Second, open and constructive communication with supervisors was associated with reduced absenteeism and higher productivity levels. Third, ineffective communication and weak managerial support were identified as primary contributors to employee turnover, suggesting that poor leadership directly undermines organisational stability. Lastly, the study highlighted the value of interpersonal compatibility—particularly shared personality traits—between supervisors and employees, which can enhance communication effectiveness and foster a more supportive working environment. Notably, the influence of a supervisor's interpersonal style extended beyond task execution, affecting employee wellbeing even in periods of low project intensity (Kuroda & Yamamoto, 2018).

These findings contribute to a growing body of evidence affirming the importance of managerial communication as a core driver of employee wellbeing and productivity. They also suggest that leadership development strategies should go beyond technical competencies to include interpersonal and communication skills, particularly in project-based environments where team dynamics are central to success.

2.8.5 SUMMARY OF PRODUCTIVITY IN THE PROJECT CONTEXT

Across diverse organisational and project-based settings, productivity is strongly influenced by multiple interrelated factors, including work environment, communication effectiveness, and employee wellbeing. The reviewed studies reveal that productivity is not solely a function of technical efficiency or individual performance, but rather emerges from systemic conditions that support collaboration, clear communication, and psychological health. Research by Palvalin et al. (2015, 2018, 2019) highlights how well-designed practices in knowledge-intensive environments can improve both productivity and wellbeing. Communication-focused studies, such as those by Schwerha et al. (2020) and Dale-Olsen and Finseraas (2020), illustrate the dual role of communication as both a productivity enabler and a challenge, particularly in linguistically diverse or safety-sensitive contexts. Similarly, An et al. (2021) demonstrate how cooperative and competitive inter-team dynamics can boost productivity through enhanced engagement and group identity. In parallel, wellbeing studies by Oswald et al. (2015), and Bryson et al. (2017) underscore the productivity benefits of employee happiness, job satisfaction, and emotional support. Finally, Kuroda and Yamamoto (2018) emphasise the centrality of supervisor communication in fostering both wellbeing and sustained performance. Collectively, these findings affirm that productivity in project environments depends on a holistic balance of efficient communication, supportive leadership, and proactive wellbeing strategies.

2.9 PRODUCTIVITY, COMMUNICATION, AND WELLBEING IN THE PROJECT CONTEXT

Karanikas et al. (2018) conducted a pilot study exploring how the dissemination of information on human factors and safety regulations influenced the prioritisation of safety relative to productivity. The results revealed a persistent tension: while safety was recognised as important, it was not consistently prioritised over production goals. Employees tended to navigate safety responsibilities independently during routine tasks, selectively applying safety regulations in context. This pattern of self-management implies that organisational communication and cultural norms—though not explicitly investigated in the study—may play a significant role in how safety is balanced with productivity. The findings suggest that merely sharing information

about human factors is insufficient to ensure that safety and productivity are treated with equal importance.

Further nuances emerged regarding employee characteristics. Those working in larger organisations, employed full-time, or with a stronger understanding of human factors were more likely to prioritise safety. In contrast, longer tenure was negatively correlated with effective communication in the absence of supervisory oversight (Karanikas et al., 2018; Newnam & Goode, 2019). This suggests that organisational communication practices may require adaptation for different employee subgroups, especially in complex or unsupervised task environments. Despite the presence of bidirectional communication structures, these disparities point to the limitations of one-size-fits-all communication strategies and the need for more tailored interventions.

Achieving a meaningful balance between safety and productivity, therefore, may require more than procedural compliance or training; it depends on communication strategies that account for individual, organisational, and task-related variables. Newnam and Goode (2019) argue for safety communication frameworks that are responsive to the specific needs of employees. This individualised approach facilitates the integration of safety and productivity goals, offering a model that could extend beyond safety to broader dimensions of project performance, including wellbeing and collaboration.

This insight becomes particularly relevant in distributed project environments, where communication and wellbeing are closely intertwined with productivity outcomes. Just as tailoring safety strategies enhances the safety–productivity balance, broader organisational efforts to support employee wellbeing can yield similar benefits. Papagiannidis et al. (2020) highlighted the role of interdisciplinary collaboration in European workplaces, noting that employee happiness tends to enhance communication within multidisciplinary teams. These improvements in communication, in turn, strengthen team cohesion, elevate productivity, and improve financial performance. The findings align closely with the dynamics of distributed project teams, where effective communication and wellbeing are not merely supportive factors but essential drivers of sustained productivity.

Expanding upon these perspectives, Temporal Dispersion has emerged as a critical factor affecting productivity in distributed project teams. While the concept

of dispersion in such teams was historically defined by geographical separation, recent scholarship has turned attention to the more intricate challenges posed by Temporal Dispersion—the degree to which team members work asynchronously across time zones. Despite growing interest, empirical evidence on the effects of Temporal Dispersion on team productivity remains limited (Al-Tit et al., 2025). This lack of empirical clarity is especially problematic given the increasing prevalence of distributed teams and the need to optimise their output under diverse conditions.

To address this gap, Al-Tit et al. (2025) conducted an empirical study exploring the relationship between Temporal Dispersion and team output in the context of open-source software development. Grounded in coordination theory, the study tested whether Temporal Dispersion positively correlates with productivity and sought to quantify this relationship across 100 globally distributed teams. Drawing on historical datasets and objective metrics, the regression analysis revealed statistically significant associations, showing that the productivity benefits of Temporal Dispersion intensified with rising project complexity. In particular, a positive correlation emerged between the temporal spread of team activities and improved project outcomes, suggesting that Temporal Dispersion—when managed effectively—can enhance productivity under complex conditions.

These findings suggest that temporal dispersion is not inherently detrimental; rather, its impact depends on the nature of the work being performed. In complex projects, asynchronous workflows may allow teams to maintain momentum across time zones, thereby increasing output. This interpretation aligns with broader themes in the literature, which emphasise the role of effective communication and wellbeing in navigating the productivity challenges of distributed teams. The implication is clear: to realise the benefits of Temporal Dispersion, organisations must actively manage the interplay between time, task complexity, and communication quality.

Complementing this view, insights from the domain of Knowledge Work further illuminate the productivity dynamics of distributed teams. Given its inherently abstract, creative, and often unstructured nature, Knowledge Work poses unique measurement challenges. In response, Bosch-Sijtsema et al. (2011) and Bosch-Sijtsema et al. (2009) developed an integrative model for evaluating Knowledge Work Productivity in distributed teams within Multinational Corporations in the Information Technology sector. Their multidisciplinary

framework draws from organisational psychology, information systems, and knowledge management to identify key enablers and barriers to productivity in geographically dispersed teams.

The model synthesises findings from empirical studies and addresses practical concerns, such as how expert knowledge is transferred across locations and how dispersed teams can coordinate effectively. Critical variables include team roles, communication structures, workspace configurations (both physical and digital), and the broader organisational climate. These elements, illustrated in Figure 2.6, interact in complex ways to shape the productivity of distributed knowledge workers.

By acknowledging and addressing these multifaceted factors, organisations can mitigate productivity obstacles and foster more effective collaboration in geographically dispersed environments (Shangguan et al., 2025). These insights reinforce the broader argument that successful project delivery in distributed teams depends not only on technological or structural solutions but also on human-centred strategies. In this context, tailored approaches to communication, wellbeing, and temporal coordination are essential for unlocking the full productivity potential of distributed knowledge work.

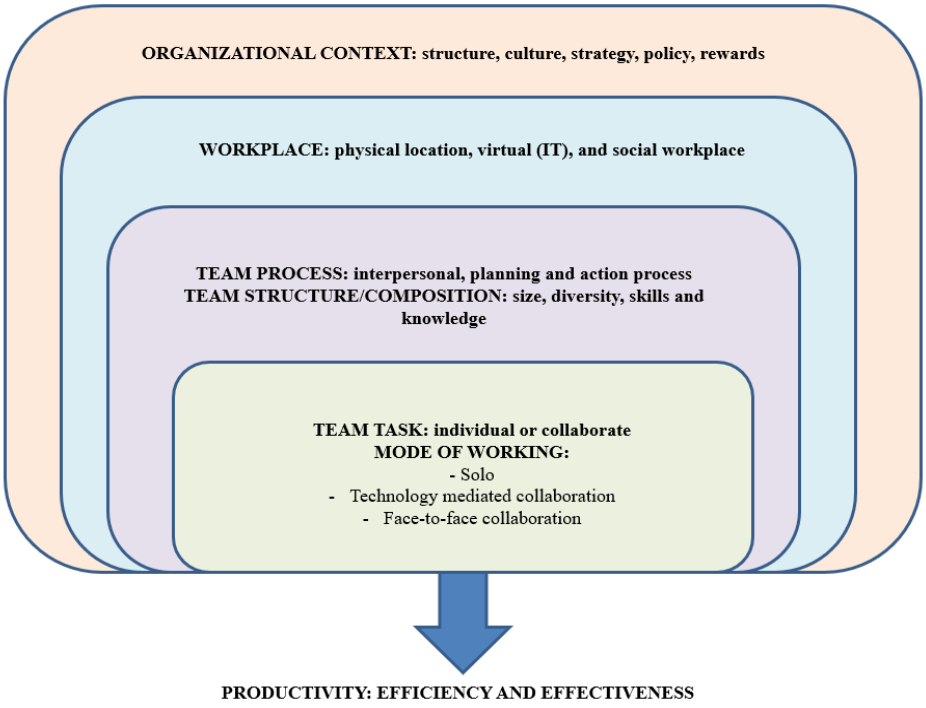

Figure2.6. Reasons why some teams are more productive than others when working remotely (Bosch-Sijtsema et al., 2009) p 12

Given that a company's competitive edge relies heavily on employees' ability to collaborate and share knowledge, creating an environment of trust and cooperation becomes essential for maximising performance. This imperative echoes earlier discussions on the role of communication and wellbeing in distributed teams, where trust functions as a bridge between individual engagement and collective productivity. Within Multinational Corporations, the adoption of globally distributed teams is increasingly seen as a strategy to stimulate knowledge creation and drive innovation. However, the cultural and functional diversity inherent in such teams, while offering opportunities for synergy, also introduces significant challenges to cohesion and individual effectiveness (Manjeet, 2025). Manjeet (2025) argues that although diversity can foster innovation through divergent perspectives, it can simultaneously hinder collaboration and reduce productivity if not managed carefully.

Despite its growing significance, the link between group diversity and distributed team performance—especially in global contexts—remains insufficiently explored. Taras et al. (2021) note that as communication technologies reduce geographic barriers, team members may become more acutely aware of interpersonal and cultural differences, which can impact team dynamics. Mahadevan (2024) reinforces this concern, suggesting that diversity in beliefs, values, and work styles may unintentionally cause feelings of exclusion or disengagement. Such outcomes erode trust, which is especially critical in remote project environments where direct, informal interactions are limited. Without trust, individuals may withdraw from collaboration, resist feedback, and attribute negative motives to colleagues, all of which diminish communication quality and productivity. Conversely, when trust is present, team members are more inclined to share ideas freely, engage in problem-solving, and harness collective creativity—outcomes essential for distributed team success.

In their simulation studies, Taras et al. (2019) further demonstrate the strategic benefits organisations can derive from distributed collaboration, provided that challenges related to diversity are properly addressed. Their findings reveal that perceptions of diversity influence not only team trust and cohesion but also individual-level productivity. The study highlights the dual nature of diversity: while

it can disrupt team harmony and impede performance, these effects are not inevitable. Rather, deliberate efforts to foster trust, mutual respect, and shared understanding can counterbalance the risks. In this context, trust functions as a core enabler, facilitating alignment between individual contributions and collective goals, thereby improving productivity even in culturally diverse, geographically dispersed teams.

The increasingly mobile and multi-locational nature of today's workplaces has reshaped how Knowledge Work is performed, with geographically dispersed collaboration becoming the norm rather than the exception. In this evolving global workforce, Knowledge Work frequently occurs within dynamic teams that operate across shifting environments and locations (Palvalin et al, 2018). Recognising the complexity of these arrangements, Palvalin et al. (2018) conducted a comparative qualitative case study to identify core factors influencing the productivity of distributed knowledge workers. Their analysis revealed five critical elements—team tasks, team structure, teamwork processes, workspace design, and organisational context—that together frame the performance landscape of distributed collaboration. These dimensions underscore the importance of understanding not only task-related variables but also the broader environmental and organisational dynamics shaping team productivity.

One of the study's central findings is that distributed Knowledge Work environments are inherently fluid, shaped by geographic dispersion, mobility, and the use of multiple physical and virtual sites. This fluidity demands continuous adaptation by both individuals and teams, as they respond to evolving work conditions and configurations. Palvalin et al. (2018) stress that the ability to navigate these shifting contexts directly impacts a team's capacity to manage complex and asymmetrical structures, as well as heavy workloads. Moreover, the lack of regular opportunities for strategic reflection compounds these challenges, making it difficult to maintain alignment across dispersed teams. The study thus reinforces the argument that a deep understanding of how spatial and structural dispersion interacts with organisational processes is essential for improving productivity in knowledge-intensive, distributed project environments.

Complementing these insights, Wang et al. (2021) provide empirical evidence on how team configuration influences project outcomes in distributed settings. Their

study examined how structural decisions impact work quality and team output. Their findings reveal that managing distributed teams involves inherent trade-offs between productivity and quality—two goals that are not always simultaneously attainable. While certain configurations may enhance output efficiency, others are more conducive to delivering high-quality results. This divergence highlights the strategic complexity of designing team structures that align with both project goals and organisational expectations.

Wang et al. (2021) further show that decisions at the configuration level significantly shape the interplay between productivity, quality, and profitability. For instance, regression analysis revealed that productivity tends to increase when staffing is unevenly distributed, suggesting that certain asymmetries in team composition may foster output gains. However, the study also noted that teams with highly diverse professional backgrounds often experience reduced productivity, indicating that heterogeneity, while potentially beneficial for innovation, can hinder performance without appropriate management. Moreover, efforts by more experienced staff to elevate work quality frequently came at the expense of overall productivity. These findings underscore the delicate balance required when configuring globally dispersed teams, where decisions aimed at enhancing one performance dimension may unintentionally constrain another. Ultimately, aligning team configuration with strategic objectives is crucial for achieving sustainable productivity in distributed project contexts.

Building upon these findings, further empirical analysis highlights the structural trade-offs inherent in distributed team configurations. Specifically, different setups of geographically dispersed teams yield distinct performance outcomes, reinforcing the argument that managing distributed teams involves navigating complex tensions between competing priorities. Attempting to simultaneously optimise productivity and quality often necessitates divergent, and sometimes opposing, structural decisions.

The study also underscored the strategic importance of aligning team configurations with broader organisational objectives. While both productivity and quality were found to influence profit margins positively, Wang et al. (2021) note the difficulty of achieving concurrent gains in these dimensions. In particular, some configurations that enhanced productivity appeared to do so at the cost of quality,

and vice versa. This trade-off reflects ongoing challenges in managing distributed project teams, where optimising one performance measure may lead to compromises in another.

Regression analysis in Wang et al.'s (2021) study offered additional insight into these dynamics. They observed that certain asymmetries in personnel distribution were associated with increased productivity, suggesting that uneven staffing might contribute to efficiency gains. However, as experiential diversity across locations increased, productivity tended to decline—even as quality improved under the same conditions. This inverse relationship reflects the complex and often competing pressures inherent in configuring geographically dispersed teams. These findings are consistent with the broader literature on the multidimensional effects of team structure on distributed project outcomes.

Expanding the conversation on team dispersion, Eseryel et al. (2020) challenged the long-standing assumption that physical collocation is a prerequisite for high-performing project teams. Their study of Free/Libre Open-Source Software development illustrated how globally distributed teams can achieve sustained productivity and continuous output through asynchronous collaboration. In these cases, the team's distributed nature was turned into a strategic asset, enabling 24/7 development cycles and uninterrupted task execution. By leveraging time zone differences, these teams maintained both speed and quality in their workflows.

Eseryel et al. (2020) argued that the success of distributed Free/Libre Open-Source Software teams hinges not merely on communication infrastructure but also on team members' motivation, skills, and autonomy. Their findings reinforced the view that geographic dispersion, while often seen as a barrier, can be offset by the right combination of individual competencies and technological tools. However, they acknowledged that certain aspects of collaboration—particularly mentoring and informal knowledge exchange—might still benefit from occasional physical proximity. This nuanced perspective enriches previous discussions by showing that productivity in distributed teams is not solely a function of configuration but also of human capital and tool usage.

In contrast to these optimistic perspectives, Colomo-Palacios et al. (2014) presented a more critical view of remote work's implications for productivity. Through a comprehensive literature review, they examined how geographic

remoteness impacts team performance and found that offshore teams were generally less productive than their in-house counterparts. This difference was especially notable given that in-house teams were often assigned more complex projects, yet still demonstrated higher productivity. Crucially, the study attributed this discrepancy not to communication difficulties, but to the effectiveness of management practices. These findings suggest that while remote work can pose inherent challenges, many productivity limitations stem from insufficient management rather than from the distributed nature of the work itself. As such, the research reinforces the centrality of skilled leadership and tailored management approaches in mitigating the performance gaps between collocated and geographically dispersed teams.

Tasks requiring specialised expertise, such as those in project management, have traditionally benefited from centralised workspaces due to the critical role of effective knowledge sharing. Research on interpersonal communication supports this view, suggesting that physical separation can inhibit face-to-face interactions necessary for transferring tacit knowledge—an essential component of collaboration within and between organisations. Reflecting this belief, many firms in the 1980s and 1990s adopted co-location strategies for large, cross-functional teams to mitigate the negative effects of distance (Bjørn et al., 2020). However, advances in communication technologies have significantly reshaped this landscape. Virtual teams, defined as geographically and temporally dispersed groups working toward shared organisational objectives through digital tools, have become a cornerstone of contemporary organisational strategies (Gilson et al., 2015; Malhotra et al., 2021).

In this context, Kroll et al. (2016) advanced the understanding of Globally Distributed Teams through a field study comparing a co-located team and a Globally Distributed Teams working on the same project. Drawing on the knowledge exchange concepts elaborated by Zhang et al. (2024), they developed a “knowledge factory” model that capitalises on geographic dispersion to sustain continuous productivity and strategic advantage. Conducted at International Business Machines (IBM) Company over a 12-month period, the quasi-experiment involved two teams of equal size and expertise, utilising identical tools and facing comparable project demands. The study revealed differing knowledge-sharing strategies: the co-located team relied more heavily on codification, whereas the Globally Distributed Teams

emphasised personalisation. Yet both teams ultimately blended these strategies to improve knowledge reuse and drive innovation.

Significantly, the findings indicated no substantial differences in productivity or output quality between the two teams, suggesting that virtual teams can match co-located teams when supported by effective practices and technologies. Kroll et al. (2016) thus extended Haas and Hansen's framework to the organisational level, contributing to the broader literature on productivity in remote knowledge work. Their study demonstrated that, while geographic separation presents challenges, these can be transformed into strategic advantages through deliberate design and management, affirming the viability of distributed models for high-level project execution.

Complementing this organisational perspective, Kazekami (2020) explored the broader societal implications of telework adoption in Japan, particularly its potential to alleviate labour shortages stemming from an ageing population. The study also assessed productivity implications of remote work in relation to time management, life satisfaction, and commuting patterns. Despite evidence from the 2016 Japanese Communication Usage Survey that telework improves average productivity, adoption remained low—only 13.2 per cent of companies had implemented it, and in most of these, fewer than 5 per cent of employees participated. Using a fixed effects model, Kazekami's analysis revealed that moderate levels of telework improved productivity by reducing commuting time and workplace interruptions. However, excessive telework produced diminishing returns and heightened stress, especially related to balancing work and domestic responsibilities.

Interestingly, the study found that telework indirectly boosted productivity by increasing life satisfaction, though this was offset by the stress of managing home and work responsibilities. Those who commuted via public transport benefited most from telework, while those using private or active transport methods saw negligible gains. These nuanced findings suggest that the productivity impact of telework is mediated by individual circumstances and job characteristics, particularly distinguishing between routine tasks and more cognitively demanding roles. Moreover, the research highlighted the importance of effective management in realising the potential benefits of remote work, aligning with earlier findings that

productivity outcomes in distributed settings depend as much on management quality as on technological infrastructure.

In light of the widespread adoption of remote and hybrid work arrangements, Eubanks et al. (2016) examined a specific team structure known as the Virtual Partially Distributed Team. These teams include at least one co-located subgroup alongside others collaborating virtually across geographic boundaries. Their study focused on temporary Virtual Partially Distributed Teams and explored how team role composition influences performance. The findings identified key roles—including Project Coordinator, Implementer, and Finisher—as critical to success. High-performing teams typically maintained one Project Coordinator per subgroup and a balanced ratio of Implementers to Completer-Finishers. These configurations enhanced both communication and workflow efficiency. Importantly, the study concluded that Virtual Partially Distributed Teams can support higher productivity by fostering role clarity, improving coordination, and promoting wellbeing across dispersed settings.

The study by Eubanks et al. (2016) exemplifies how structured role design and effective communication significantly enhance coordination and wellbeing in distributed teams. Clear role allocation—such as maintaining one Project Coordinator per subgroup and balancing Implementers with Finishers—was shown to strengthen trust, improve collaboration, and sustain productivity. These configurations foster clarity in expectations, enabling members to anticipate interdependencies, manage workloads, and minimise role conflict. Moreover, consistent communication routines reduce uncertainty and stress, promoting a sense of psychological safety and inclusion across geographically dispersed members. This demonstrates that productivity in hybrid and virtual contexts relies not only on technological facilitation but also on purposeful interaction and mutual support. These findings align with the broader literature review, which identifies effective communication and wellbeing as interdependent pillars of team success. Together, they illustrate that structured communication, role clarity, and supportive leadership collectively underpin sustainable performance and engagement in modern project environments.

2.10 SUMMARY AND IMPLICATIONS

This chapter has systematically reviewed the literature to identify two central and interrelated themes essential to workplace success in the project context: Effective Communication and Wellbeing. These themes emerged as critical to sustaining productivity, enhancing team performance, and supporting employees in increasingly complex and distributed work environments.

Effective Communication was shown to underpin successful collaboration by enabling the clear exchange of information, coordination of tasks, and development of shared understanding. The literature emphasised the strategic use of both formal and informal communication channels, recognising their complementary roles in fostering trust and engagement. Crucially, factors such as communication willingness, language diversity, and shared leadership were identified as enablers of inclusive communication climates, contributing to improved cohesion and higher productivity across teams—particularly in geographically and culturally dispersed settings.

Wellbeing, examined as a multidimensional construct, was shown to have a direct and lasting impact on employee motivation, resilience, and performance. Dimensions such as subjective wellbeing, mental and physical health, financial security, and job satisfaction were consistently linked to higher levels of engagement and sustainable productivity. The literature further highlighted the significance of supportive workplace conditions—including compassionate mentorship, equitable policies, and flexible work arrangements—as mechanisms that enhance wellbeing while mitigating burnout and disengagement. These insights are particularly salient in project environments where demands can fluctuate and work intensity may challenge employee endurance over time.

The review also underscored the growing importance of distributed and hybrid work models, which necessitate deliberate efforts to integrate communication practices with wellbeing initiatives. Research showed that when organisations invest in both domains—enhancing communicative efficacy while safeguarding employee welfare—they are better positioned to foster high-performing teams, maintain innovation, and retain talent in competitive labour markets.

Taken together, these findings highlight the imperative for organisations to adopt integrated strategies that do not treat communication and wellbeing in isolation, but rather as mutually reinforcing pillars of workplace productivity. Prioritising these areas is essential not only for fostering a cohesive, inclusive, and high-functioning organisational culture, but also for enhancing employee engagement and achieving sustained project performance. For practitioners, the implications are clear: effective communication structures and holistic wellbeing frameworks must be embedded into the design and management of work. For researchers, future inquiry should further examine the dynamic interplay between these factors in varying project contexts, including under conditions of high uncertainty, remote collaboration, and rapid organisational change.

In summary, the reviewed studies collectively demonstrate that productivity in project-based settings is shaped by two interrelated constructs: Effective Communication and Wellbeing. Table 2.4 summarises the themes extracted from the main findings of the included studies, detailing the underlying subthemes and their associated sources. It highlights how factors such as communication infrastructure, shared leadership, workplace flexibility, and supportive environments interact to enhance collaboration, engagement, and sustained performance. This synthesis provides a foundation for the conceptual framework developed in the next chapter.

Table 2.4. Summarised themes extracted from the main finding of the included studies

Themes	Codes	Reference
Effective communication	Informal communication	Kelly Lackie and Gail Tomblin Murphy (2020); Guangdong Wu et al., (2017); Stavros Kalogiannidis (2020)
	Formal communication	Sparsh Johari and Kumar Neeraj Jha (2021); Sachiko Kuroda and Isamu Yamamoto (2018); Aysha Sadia et al. (2016); Sari Ramadanty and Handy Martinus (2016); Guangdong Wu et al. (2017); Stavros Kalogiannidis (2020)
	Communication tools, System, and Infrastructure	Sean A Newman et al. (2020); Sparsh Johari and Kumar Neeraj Jha (2021); Ankit Singh et al. (2018); Stavros Kalogiannidis (2020); William Dow and Bruce Taylor (2015)
	Communication willingness	Guangdong Wu et al. (2017); Sean Newman (2017); Stavros Kalogiannidis (2020)
	Language diversity	Harald Dale-Olsen and Henning Finseraas (2020); Stavros Kalogiannidis (2020)
	Share leadership	Kelly Lackie and Gail Tomblin Murphy (2020); Sean A Newman et al. (2020); Sachiko Kuroda and Isamu Yamamoto (2018)
Wellbeing	Subjective wellbeing	Mallika A. Nocco et al. (2021); Amy Isham et al. (2021); Nariman Ghodrati et al. (2018); Sachiko Kuroda and Isamu Yamamoto (2018); Amy Isham et al. (2021); Xiaoming Zheng et al. (2015); Christian Krekel et al. (2019)
	Financial wellbeing	Leon T.B. Jackson and Edwina I. Fransman (2018); Lisa Adkins and Hanna Ylöstalo (2020)

	Mental wellbeing	Nariman Ghodrati et al. (2018); Sachiko Kuroda and Isamu Yamamoto (2018); Xiaoming Zheng et al. (2015); Peter Warr and Karina Nielsen (2018); Rashad Issa and Yu-Chun Pan (2021)
	Physical health	Mallika A. Nocco et al. (2021); Nariman Ghodrati et al. (2018); Peter Warr and Karina Nielsen (2018); Rashad Issa and Yu-Chun Pan (2021)
	Job satisfaction	Sachiko Kuroda and Isamu Yamamoto (2019); Zahra Zamani and Dawn Gum (2019); Peter Warr and Karina Nielsen (2018)
	Compassionate mentorship	Mallika A. Nocco et al. (2021); Kelly Lackie and Gail Tomblin Murphy (2020); Sean A Newman et al. (2020)
	Improved equity	Mallika A. Nocco et al., (2021)
	Working hour/Job flexibility	Amy Isham et al. (2021); Sachiko Kuroda and Isamu Yamamoto (2019); Leon T.B. Jackson and Edwina I. Fransman (2018)
	Working environment and conditions	Zahra Zamani and Dawn Gum (2019); Savvas Papagiannidis and Davit Marikyan (2020); Xiaoming Zheng et al. (2015); Frances Rapport et al. (2020)

Chapter 3: Research Design

This chapter presents the research methodology employed in this study, which aims to investigate the characteristics of effective communication and wellbeing in distributed project teams to improve productivity. The methodology was carefully designed to address the primary research questions: What factors influence the productivity of distributed teams? How do these factors compare between the literature and current practice? And how do effective communication and wellbeing contribute to productivity? This chapter details the approach used to collect, analyse, and interpret data, providing insights and drawing conclusions that respond to these questions.

The research methodology described in this chapter was adopted to achieve the aims and objectives outlined in Section 1.2 of Chapter 1. Section 3.1 introduces the study's methodology, detailing the research design and implementation stages. Section 3.2 discusses the data collection methods, including both secondary and primary sources, and justifies their selection. Section 3.3 outlines the Data Analysis procedures, such as Deductive Thematic Analysis and Gioia Grounded Theory, which were used to identify and interpret key themes from the data. Section 3.4 presents the conceptual framework, describing the relationships between effective communication, wellbeing, and productivity. Finally, Section 3.5 addresses ethical considerations, including participant confidentiality and consent, as well as the challenges and limitations of the research.

3.1 METHODOLOGY AND RESEARCH DESIGN

3.1.1 RESEARCH DESIGN

To achieve the research objectives, a qualitative research design was adopted. The choice of a qualitative approach was guided by the nature of the research questions, which sought to understand complex, human-centred interactions within distributed teams. The research aimed to identify factors influencing productivity, both positively and negatively, and to determine the impact of effective communication and wellbeing. Thus, qualitative research techniques were well-suited for capturing

the nuances of social dynamics, team interactions, and organisational practices in distributed project settings.

The research design incorporated a systematic review of the literature as well as a combination of deductive and inductive approaches for Data Analysis. The systematic review provided a foundation for understanding the theoretical landscape of distributed team productivity, while the empirical data was collected through interviews with project team members across five large capital-intensive organisations in Australia during 2021/22. The dual use of deductive and inductive methodologies allowed for a more holistic exploration of the research questions, enabling the analysis to be both data-driven and theoretically informed. The decision to focus on five large capital-intensive organisations in Australia was guided by the relevance of this context to the study's objectives. These organisations typically operate complex, multi-site projects that depend heavily on distributed teams to manage technical, financial, and logistical challenges. Such environments provide an ideal setting to examine how communication and employee wellbeing influence productivity, as project success relies on coordination across geographically dispersed teams and highly interdependent roles. Furthermore, large capital-intensive industries, such as mining, energy, and infrastructure, are major contributors to the Australian economy and employ substantial project-based workforces. Studying these organisations therefore provides insights that are both contextually significant and practically relevant within Australia's economic landscape.

3.1.2 RESEARCH APPROACH

The research utilised both Deductive Thematic Analysis and an inductive Grounded Theory approach, known as Gioia Grounded Theory or Gioia methodology, to analyse the data set. This combination provided a comprehensive understanding of the productivity factors in distributed teams by leveraging both pre-existing theories and emerging themes.

The Deductive Thematic Analysis was employed to identify and categorise themes from the interview transcripts based on existing literature. Deductive Thematic Analysis allowed the researcher to systematically organise data according to known concepts while maintaining flexibility for novel insights. Using this

approach, themes such as communication practices, workload management, and organisational support were identified and examined.

The Gioia methodology, on the other hand, provided an inductive lens to understand organisational phenomena from the perspectives of the participants. Gioia et al. (2013) describe this method as one that enables researchers to construct concepts by interpreting participants' narratives and explanations of their experiences. The Inductive Grounded Theory approach allowed for the identification of emergent factors, capturing participants' interpretations of how communication and wellbeing influenced productivity within distributed teams. This open approach allowed new and unanticipated insights to surface, contributing to a richer understanding of the research problem.

As shown in Figure 3.1, the research methodology comprises several distinct stages that facilitate a systematic approach to data collection and analysis.

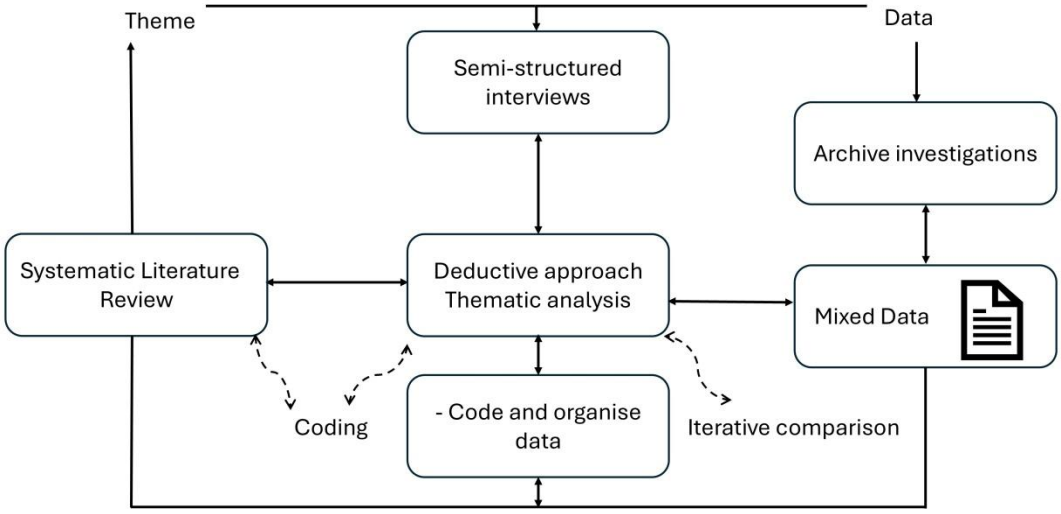

Figure 3.1. Overview of Research Methodology

3.2 DATA COLLECTION

The data collection process involved gathering both secondary and primary data. Secondary data was obtained through a systematic literature review, which provided a broad theoretical context for the study, as well as key concepts and factors that had been previously identified in research. This formed the basis for understanding distributed team dynamics and productivity factors. The five large capital-intensive

organisations were purposefully selected because they represent complex, project-based environments where distributed teams are integral to operations, making them particularly suitable for investigating the study's focus on communication, wellbeing, and productivity.

Primary data was collected through semi-structured interviews with project team members from five large capital-intensive organisations based in Australia. These interviews took place during the years 2021 and 2022, offering insight into the experiences of individuals involved in distributed project teams under real-world conditions. The semi-structured nature of the interviews allowed participants to freely express their views and experiences while ensuring that key areas of interest were addressed, such as communication practices, wellbeing initiatives, and productivity outcomes.

Participants were recruited using purposive sampling to ensure that individuals had relevant experience working in distributed project environments. In total, forty-one (41) semi-structured interviews were conducted across the five participating organisations. This number was guided by the principle of data saturation, where no new themes or insights were emerging from additional interviews. The sample size also reflected practical considerations of access and availability across the five organisations, ensuring adequate representation of roles and perspectives while maintaining depth of qualitative analysis. Participants represented two roles, including project managers and project team members, and both male and female participants were interviewed. This diversity enhanced the richness of the data and allowed the study to capture multiple perspectives on effective communication and employee wellbeing in distributed project teams. Recruitment was facilitated through internal contacts at each organisation, and participation was entirely voluntary.

3.3 DATA ANALYSIS

Data analysis was conducted using a twofold approach. First, deductive thematic analysis was applied to the interview transcripts to identify patterns and themes that aligned with pre-existing concepts from the literature. This deductive approach allowed for the validation of previously identified factors, such as the role of effective communication and organisational support in fostering productivity. Coding

was conducted systematically using Microsoft Excel and ATLAS.ti qualitative data analysis software to support the organisation and retrieval of thematic data. Initial codes were developed based on the literature review and refined through multiple rounds of analysis to ensure consistency and relevance. Themes such as work knowledge, workload balance, teamwork, and distraction management emerged from this process.

To enhance conceptual rigour, the Gioia method was used in parallel with thematic analysis. This structured coding process—moving from first-order participant terms to second-order researcher interpretations and finally to aggregate theoretical dimensions—allowed the study to link concrete participant experiences to abstract conceptual categories relevant to communication, wellbeing, and productivity.

The six-step thematic analysis framework proposed by Braun and Clarke (2006) was followed to ensure systematic and transparent data interpretation. In this study, the framework was applied iteratively to the interview data to explore how communication and wellbeing influenced productivity in distributed project teams. During familiarisation, the researcher read and annotated all transcripts to identify productivity-related expressions. In the coding phase, statements reflecting communication challenges, wellbeing concerns, and productivity outcomes were labelled as initial codes. These codes were then collated into potential themes that captured recurring ideas such as workload balance, team cohesion, and managerial support. Themes were refined through multiple reviews to ensure conceptual clarity and distinctiveness. Finally, themes were named and defined to reflect their contribution to understanding how distributed project practices affect team performance.

Subsequently, the Gioia Grounded Theory method was employed to analyse the interview data inductively. The focus was on understanding participants' narratives about their experiences with distributed teams and identifying emergent concepts that were not initially anticipated. The Gioia approach involves a rigorous and systematic process of data coding and theme development, allowing for the construction of grounded theoretical insights that explain organisational phenomena. This method enabled the researcher to delve deeply into participants' lived experiences, uncovering themes related to wellbeing, team cohesion, and

communication effectiveness that contribute to productivity. The Gioia methodology involved first-order coding of informant-centric terms, followed by second-order coding that reflected researcher-centric concepts. These were then distilled into aggregate dimensions that formed the basis of theoretical insight. Coding was performed by the researcher, and iterative memoing was used to track the development and saturation of themes. The integration of both deductive thematic analysis and Gioia Grounded Theory ensured methodological triangulation, allowing the analysis to remain both theory-informed and grounded in participant perspectives.

3.4 CONCEPTUAL FRAMEWORKS

The conceptual framework for this study treats productivity as a dependent variable that is influenced by particular factors. Specifically, the research investigates the impact of two independent variables—effective communication and wellbeing—on the productivity of distributed project teams. The relationship between these variables was examined through both the literature review and primary data collection.

The framework proposes that effective communication leads to an improvement in productivity by reducing misunderstandings, enhancing collaboration, and ensuring that all team members are aligned with project goals. Similarly, wellbeing initiatives were hypothesised to positively affect productivity by improving job satisfaction, reducing stress, and creating a supportive work environment. This relationship is illustrated in Figure 1.1 (see Figure 1.1 in Chapter 1, p. 10), which represents the conceptual model that guided this research. The constructs within this model were further explored in the Thematic Analysis, providing empirical support for the relationships posited by the conceptual framework.

3.5 ETHICAL CONSIDERATIONS

Ethical considerations were a fundamental part of the research process. All participants were informed of the study's purpose and gave their consent before the

interviews took place. Confidentiality was ensured by anonymising all interview transcripts and using codes to reference individuals and organisations. Ethical approval for this research was obtained from the Research Integrity and Ethics Administration (Human Research Ethics Committee) with the project No: 2021/072.

3.6 METHODOLOGICAL LIMITATIONS

In addition to ethical safeguards, it is important to acknowledge methodological limitations inherent in this study. As with most qualitative research, findings are not intended to be generalisable to all distributed project teams but are instead contextually grounded in the experiences of participants from five Australian organisations. The reliance on self-reported data introduces potential biases related to participant perception, recall, and social desirability. Moreover, all data coding and interpretation were conducted by a single researcher, which may influence thematic emphasis despite efforts to maintain analytical rigour. While the use of both Deductive Thematic Analysis and Gioia Grounded Theory strengthens the study's credibility, the absence of inter-coder reliability checks is a limitation that should be addressed in future research.

3.7 SUMMARY

In summary, this study employed a qualitative research methodology combining Deductive Thematic Analysis and Gioia Grounded Theory to investigate the factors affecting productivity in distributed project teams. The research utilised both secondary data from the literature and primary data from interviews conducted with team members across five large organisations. A purposive sampling strategy ensured relevance of participant experience, and the interpretive approach to Data Analysis allowed for a systematic exploration of both known and emergent factors. The study's ethical integrity and acknowledged limitations contribute to its transparency and academic rigour. The findings from this methodology are expected to guide organisations and project managers in improving productivity by promoting effective communication and employee wellbeing practices within distributed project teams.

Chapter 4: Analysis

Thematic Analysis, a widely used method in qualitative research, was employed to systematically identify and interpret recurring patterns within the dataset. This method was selected due to its compatibility with the study's objectives, particularly its interpretive nature and capacity to capture the richness of participant experiences. Thematic Analysis provides a structured yet flexible framework for coding and categorising qualitative data, enabling the identification of themes and the examination of their prevalence across the dataset (Braun & Clarke, 2006). Its use in this study strengthens the analytical depth by supporting a coherent narrative that links empirical findings with conceptual insights, thereby enhancing the reliability and transparency of the research process.

A deductive approach was adopted, in line with the study's theoretical orientation and research design. This approach allowed for the use of a priori codes derived from the systematic review of relevant literature in Chapter 2. These codes formed the foundation for comparing empirical findings with established knowledge, enabling a comparative analysis that situates participant perspectives within broader academic discourse (Fife & Gossner, 2024). By grounding the analysis in existing frameworks while remaining responsive to emergent patterns, the study ensures both theoretical alignment and contextual relevance to project management practice.

In addition to Thematic Analysis, the Gioia Method was employed to further structure and interpret the qualitative data. This complementary approach enhances analytical rigour by guiding the progression from first-order, participant-centric terms to second-order, researcher-driven themes and, ultimately, to aggregate theoretical dimensions. The Gioia methodology thereby enhances the clarity and depth of interpretation, enabling a more nuanced understanding of the underlying dynamics that influence communication, wellbeing, and productivity in distributed project teams.

4.1 ANALYTICAL FRAMEWORK AND APPROACH

To guide the interpretation and presentation of findings, this section outlines the analytical framework used to examine the qualitative data collected for the study. This study employed the six-step Thematic Analysis framework developed by Braun and Clarke (2006), which offers a structured and transparent approach to qualitative data analysis. This framework was selected for its practical applicability and its capacity to support systematic engagement with the data. Through this method, the researcher developed familiarity with the interview transcripts, enabling the identification and coding of segments that reflected productivity-related experiences in the context of distributed project teams. These codes were then examined for recurring patterns across responses to different interview questions, supporting the development of consistent and meaningful themes.

The Thematic Analysis process also facilitated the refinement of themes associated with factors, practices, and strategic approaches that contribute to improved productivity in distributed project teams (Braun & Clarke, 2006). The method's later stages—defining themes, assigning descriptive labels, and reporting findings—ensured that each theme was both grounded in the data and aligned with the overarching research questions. The application of this framework thus enabled a systematic and coherent interpretation of participant insights.

To complement the Thematic Analysis, the Gioia Method was also employed to enhance the conceptual rigour of the analysis. This method offers a structured process for moving from raw data to higher-order theoretical constructs, using a three-tiered coding scheme: first-order concepts, second-order themes, and aggregate dimensions. By linking participant terminology to researcher-driven categories and abstract concepts, the Gioia approach supports a richer interpretation of the emergent data. Its inclusion in this study adds further depth to the analysis and strengthens the reliability of the findings by clarifying how individual perceptions connect to broader theoretical frameworks relevant to communication, wellbeing, and productivity.

4.1.1. DATA SOURCES AND ANALAYTICAL BASIS

To ensure a systematic and meaningful interpretation of the qualitative data, this section outlines the analytical foundation of the study, describing the data sources

and how they informed the subsequent stages of analysis. The focus here is on the nature of the data and its role in shaping the analytical process.

A questionnaire was used as the primary instrument to collect qualitative data from participants. This instrument was designed with open-ended questions to elicit detailed reflections on productivity, communication, and wellbeing within distributed project teams. Participants were asked to respond during semi-structured interviews, either verbally (recorded) or in writing, allowing for follow-up questions to explore their experiences in depth.

The questionnaire was structured around a priori codes derived from the literature review (Chapter 2), ensuring alignment with the study's theoretical framework while also allowing participants to introduce new perspectives. Interviewers prompted participants to reflect on specific situations where productivity was higher or lower than usual and on the influence of distributed work conditions on performance.

Responses were audio-recorded with consent and transcribed verbatim for analysis. The data were then coded and analysed using Thematic Analysis and the Gioia Method, moving from first-order participant expressions to second-order themes and aggregate dimensions. This approach ensured that the questionnaire responses were systematically interpreted, conceptually rigorous, and closely linked to the research objectives.

4.1.2. ANALYTICAL FOCUS AREAS AND QUESTION FRAMEWORK

To clarify the analytical scope of the study, this section outlines the key focus areas that shaped the interpretation of data. The interview questions served not only as prompts for eliciting participant insights but also as anchors for organising and analysing responses in relation to the study's conceptual framework.

In alignment with the Thematic Analysis framework described earlier, three semi-structured interview questions were developed, guided by the a priori codes identified during the literature review. These questions were designed to explore participant perspectives on productivity, communication, and wellbeing within the context of distributed project teams. By grounding the questions in pre-established

themes, the interview design ensured coherence between the data collection process and the study's conceptual foundations.

Participants were drawn from diverse fields relevant to the project domain, providing a broad range of insights. The interview questions (see Table 4.1) were intended to prompt reflective, experience-based responses while allowing for the emergence of unanticipated themes. The semi-structured format preserved methodological flexibility, enabling the interviewer to follow up on relevant issues raised by participants and adapt the conversation to each interview context. This approach ensured that data collection remained both focused and open-ended, aligning with the interpretive goals of qualitative research.

Table 4.1. Interview primary questions

S/N	Question
1	Could you describe an instance when you felt that your productivity or your team's productivity was notably higher than average? If so, what factors contributed to this increase?
2	Could you share an experience when you perceived your productivity or your team's productivity to be lower than usual? If applicable, what factors do you believe caused this decline?
3	Do you believe that working conditions, such as distributed project teams, virtual work, remote work, or working from home, influence productivity? If yes, what specific impacts have you observed?

4.1.3. PARTICIPANT ANALYTICAL CONTEXT

To interpret the findings in relation to the diversity of experiences represented, this section outlines the analytical context of the participant group. Understanding the composition and characteristics of participants is essential for situating the qualitative analysis within the organisational settings from which the data were drawn.

In this study, the target population comprised project managers and project team members involved in distributed project work. This population represents the broader universe of individuals whose roles and experiences are directly relevant to the study's focus on productivity, communication, and wellbeing in project

environments. While a research population may include individuals, groups, or organisational entities, the unit of analysis in this study was the individual.

Given the practical constraints of identifying and accessing the entire population, a sample was selected to represent the broader group. The study specifically focused on individuals from five Australian organisations, ensuring a relevant and contextually grounded sample. By focusing on both project managers and team members, the research captured diverse perspectives within distributed project teams, thereby enriching the depth of qualitative insights.

4.1.4. ANALYTICAL SAMPLE SCOPE AND RATIONALE

To ensure that the analysis captured a diverse yet relevant range of perspectives, this section outlines the scope and rationale of the analytical sample. The description clarifies how participant selection supported the depth and credibility of the subsequent thematic interpretation.

Given the nature and scope of the target population, it was not feasible to identify or engage all potential participants. As such, a sample was drawn to represent the broader community of interest. This study employed a purposive, non-probabilistic sampling strategy, aligned with principles of theoretical sampling commonly used in qualitative research. Participants were selected based on their relevance to the research focus—specifically, their roles as project managers or project team members within project teams.

The sample size was determined progressively, guided by the principle of data saturation. In qualitative research, particularly in Thematic Analysis, the emphasis is not on numerical representation but on the richness and repetition of insights. Data collection continued until no new themes emerged from participant responses, indicating that saturation had been reached.

Participants were nominated by their respective organisations, facilitating access to individuals with direct experience in distributed project work. The purposive sampling approach ensured that the data collected was both relevant and information-rich, while also allowing for efficient and timely data collection. Table 4.2 provides a summary of the study participants and their organisational affiliations.

Table 4.2. Research sample

	Male	Female	Total
Project Managers	18	4	22
Project Team Members	13	6	19
Total	31	10	41

4.1.5. DATA PREPRATION AND CODING PROCESS

To support a systematic and rigorous interpretation of the data, this section describes the preparation and coding process applied to the interview transcripts. The focus here is on how raw data were organised and transformed into analysable units to enable the identification of meaningful patterns and themes.

This study employed a qualitative research approach, using primary data collected through interviews. Participants were drawn from five capital-intensive organisations, with project managers and project team members selected based on their direct involvement in project delivery. Their proximity to the operational aspects of distributed project teams positioned them to provide informed insights into productivity, communication, and wellbeing.

A total of forty-one participants—both male and female—were interviewed. Each was given adequate time to respond to the semi-structured interview questions, allowing for detailed and reflective answers. All data collection procedures followed ethical research protocols, including informed consent, voluntary participation, and strict confidentiality.

The interviews were audio-recorded with participant permission and subsequently transcribed verbatim. These transcripts constituted the primary data for analysis. Thematic Analysis, as outlined by Braun and Clarke (2006), was employed to identify and interpret meaningful patterns within the dataset. This method facilitated the systematic development of themes that captured core issues raised by participants, particularly those relating to productivity in distributed project teams.

In addition, the Gioia Method was used to structure and conceptualise the data. This approach enhanced analytical rigour by supporting the transition from raw participant statements to higher-order constructs. Codes and themes were derived inductively from the transcribed interviews and guided by a priori concepts established through the literature review. A summary of participant characteristics is presented in Table 4.3.

Table 4.3. Overview of the interviewed participant

S/n	Organisation	Rank in the organisation	Position	Gender
1	A1	4	PM	F
2	A1	5	PM	M
3	A1	6	PM	M
4	A1	7	PM	F
5	A1	8	PM	M
6	A2	5	PM	M
7	A2	6	PM	M
8	A2	9	PM	M
9	A2	10	PM	M
10	A2	13	PM	F
11	A2	14	PM	M
12	A3	3	PM	M
13	A3	4	PM	M
14	A3	5	PM	M
15	A3	7	PM	M
16	A4	5	PM	M
17	A5	1	PM	M
18	A5	3	PM	M
19	A5	4	PM	F
20	A5	7	PM	M
21	A5	10	PM	M
22	A5	14	PM	M
23	A1	9	TM	M
24	A1	10	TM	M

25	A1	11	TM	F
26	A1	12	TM	M
27	A1	13	TM	F
28	A1	14	TM	M
29	A1	15	TM	M
30	A1	16	TM	M
31	A1	17	TM	F
32	A1	18	TM	F
33	A2	7	TM	M
34	A2	8	TM	M
35	A2	11	TM	M
36	A2	15	TM	M
37	A2	16	TM	F
38	A5	2	TM	M
39	A5	6	TM	M
40	A5	15	TM	F
41	A5	16	TM	M

Note: A1-5 is used to depict the five organisations. PM=represent project manager, TM=represent team member, F=female and M=male.

4.2 DATA ANALYSIS

Following the completion of the semi-structured interviews, Data Analysis was conducted using the Thematic Analysis framework developed by Braun and Clarke (2006). This approach allowed for the systematic classification of codes and themes grounded in the participants' narratives. To support the process, Microsoft Excel and ATLAS.ti were used to organise, manage, and code the qualitative data. The software facilitated rigorous tracking and comparison of data across interviews. Given that Thematic Analysis can involve subjective interpretation, extra care was taken to ensure analytic precision. The researcher maintained a critical stance throughout, avoiding both over-interpretation and omission of relevant insights.

The analysis followed the six-phase Thematic Analysis process, as outlined below:

1. **Data Familiarisation**: This initial phase involved immersing in the data by reading and re-reading the transcripts to gain deep familiarity with the content. As described by Ahmed et al. (2025), this step was essential for understanding the richness and nuance of participants' experiences.
2. **Initial Coding**: After familiarisation, the transcripts were reviewed in detail to generate initial codes. These codes represented meaningful units of data and reflected interesting patterns or concepts emerging from participant responses (Saldana, 2021; Braun and Clarke, 2006).
3. **Searching for Themes**: The third phase involved sorting and collating codes into potential themes. Drawing on Saldana (2021), this step involved pre-coding, extensive listing of codes, and using visual tools such as mind maps, diagrams, and tables to organise codes into coherent thematic groupings.
4. **Reviewing Themes**: The fourth phase required a detailed review of the initial themes. Some themes were refined, combined, or discarded if they lacked sufficient supporting data or overlapped conceptually. This process helped ensure that each theme was analytically distinct and well-supported (Braun and Clarke, 2006).
5. **Defining and Naming Themes**: Once themes were finalised, they were clearly defined and given concise, descriptive labels. Theme networks were constructed to map the relationships among themes and subthemes, providing a foundation for deeper analysis (Clarke and Braun, 2024).
6. **Report Compilation**: The final phase involved compiling a coherent and compelling analytical narrative. The report aimed to present the thematic findings in a structured manner, supported by illustrative quotations from participants. In line with Braun and Clarke (2006), the narrative was crafted to be logically organised, engaging, and analytically robust.

While Thematic Analysis formed the core of the analysis, the Gioia Method was also employed to strengthen analytical depth and conceptual clarity. This method structured the findings into three levels: first-order concepts (participant terms), second-order themes (researcher interpretations), and aggregate dimensions (theoretical constructs). This process allowed for a more nuanced understanding of the key factors influencing productivity in distributed project teams. Figures

illustrating the Gioia data structure and its analytical steps are included in subsequent sections.

By combining Thematic Analysis with the Gioia Method, the study achieved a balance between empirical richness and conceptual abstraction. This dual-method approach ensured that the findings were credible, methodologically rigorous, and well-aligned with the study's objectives. A summary of the Thematic Analysis approach is presented in Table 4.4.

Table 4.4. Summary of Thematic Analysis phases (Braun and Clarke, 2006)

Phase	Process	Expected outcome
Phase 1	Reading and re-reading of data to get a better understanding of what it contains, and paying special attention to any patterns that emerge.	Detailed comments and preliminary start codes.
Phase 2	Document where and how patterns arise to generate the initial codes. This is accomplished by data reduction, which involves the collapsing data into labels in order to generate categories for easier analysis. The intricacy of data is likewise finished here. This entails the making assumptions about the meaning of the codes.	Detailed descriptions of how data responds to research questions.
Phase 3	At these stage codes were combined into overarching themes that appropriately reflect the data is a good way. What the themes signified was describes.	A list of potential themes for further analysis.

Phase 4	How the themes support the data were examined in this phase and the overarching theoretical approach at this level.	Recognising how themes are patterned in order to convey a whole story about the data.
Phase 5	Each of the theme were define in order to identify which features of data are being recorded and what makes the themes noteworthy.	A thorough analysis of how the themes aid in the comprehension of the data.
Phase 6	Defining the themes which contribute meaningfully to the comprehension of the data.	A lengthy summary of the outcomes.

4.3 THEMATIC ANALYSIS RESULT

The Thematic Analysis yielded sixty-eight (68) distinct codes, which were systematically organised into code groups corresponding to the study's two primary focus areas: wellbeing and effective communication. Codes that demonstrated a clear thematic alignment with either of these areas were grouped accordingly, while those not directly related were assigned to an "others" category to maintain analytical clarity.

Within the wellbeing category, working environment and conditions emerged as the most frequently cited theme, highlighting its perceived influence on productivity. In parallel, communication tools and systems were the most prominent within the effective communication category, reinforcing their centrality in distributed project team dynamics. The full distribution and interrelation of codes, including their interaction with the concept of productivity, are presented in Table 4.5.

The analysis of participant perspectives on productivity revealed a clear dominance of positive responses compared to negative ones. This trend is visually summarised in Figures 4.1, 4.2, and 4.3, which depict the distribution of responses across the identified themes. Furthermore, a network analysis (Figure 4.4) illustrates the dynamic interplay between productivity, code groups, and individual codes, highlighting the complexity and interdependency of the factors at play.

To enhance analytical depth, the Gioia Method was applied in conjunction with Thematic Analysis. This approach enabled the data to be structured hierarchically into first-order concepts, second-order themes, and aggregate dimensions, offering a more abstract and interpretive lens on the findings. The resultant Gioia data structure and its relationship with productivity drivers are depicted in Figure 4.6. The integration of this method provides a comprehensive and conceptually rich understanding of the factors affecting productivity in distributed project teams.

Table 4.5. Result of thematic coding

S/N	Code	Grounded	Code Groups	Created by	Created
1	Communication tools, Systems, Infrastructure	56	Communication	Reza Azar	02/03/2022
2	Informal communication	19	Communication	Reza Azar	02/03/2022
3	Formal communication	11	Communication	Reza Azar	02/03/2022
4	Language diversity	4	Communication	Reza Azar	02/03/2022
5	Balanced communication	3	Communication	Reza Azar	20/03/2022
6	Communication method	2	Communication	Reza Azar	15/05/2022
7	Personal relationship	2	Communication	Reza Azar	15/05/2022
8	Communication willingness	1	Communication	Reza Azar	02/03/2022
9	Working environment and conditions	180	Wellbeing	Reza Azar	02/03/2022
10	Working hours/work flexibility	40	Wellbeing	Reza Azar	02/03/2022
11	Mental wellbeing	23	Wellbeing	Reza Azar	02/03/2022
12	Subjective wellbeing	23	Wellbeing	Reza Azar	02/03/2022
13	Shared leadership	22	Wellbeing	Reza Azar	02/03/2022
14	Job autonomy	14	Wellbeing	Reza Azar	20/03/2022
15	Team collaboration	10	Wellbeing	Reza Azar	20/03/2022
16	Compassionate mentorship	9	Wellbeing	Reza Azar	02/03/2022
17	Job satisfaction	8	Wellbeing	Reza Azar	02/03/2022
18	Mental health	7	Wellbeing	Reza Azar	20/03/2022
19	Job burnout	4	Wellbeing	Reza Azar	18/04/2022

20	Physical health/wellbeing	3	Wellbeing	Reza Azar	02/03/2022
21	Financial wellbeing	2	Wellbeing	Reza Azar	02/03/2022
22	Self-awareness	1	Wellbeing	Reza Azar	20/03/2022
23	Work knowledge/work complexity	48	Other	Reza Azar	19/03/2022
24	Organisational culture/style/structure	41	Other	Reza Azar	20/03/2022
25	Proper planning	19	Other	Reza Azar	17/04/2022
26	Leadership style	18	Other	Reza Azar	19/04/2022
27	Distraction	15	Other	Reza Azar	09/05/2022
28	Work process	13	Other	Reza Azar	17/04/2022
29	Work deadline	9	Other	Reza Azar	18/04/2022
30	Personality	7	Other	Reza Azar	13/05/2022
31	Teamwork	6	Other	Reza Azar	21/04/2022
32	Workload	6	Other	Reza Azar	15/05/2022
33	Work pressure	5	Other	Reza Azar	15/05/2022
34	Motivation	4	Other	Reza Azar	14/05/2022
35	Work automation	4	Other	Reza Azar	18/04/2022
36	Accountability	3	Other	Reza Azar	15/05/2022
37	Challenges	3	Other	Reza Azar	20/03/2022
38	Workplace facilities	3	Other	Reza Azar	15/05/2022
39	Covid impacts	2	Other	Reza Azar	16/05/2022
40	Culture of trust	2	Other	Reza Azar	21/04/2022
41	Decision making	2	Other	Reza Azar	13/04/2022
42	Hitting target	2	Other	Reza Azar	13/05/2022
43	Organisational change	2	Other	Reza Azar	17/04/2022
44	Risk management	2	Other	Reza Azar	15/05/2022
45	Team dynamics	2	Other	Reza Azar	16/05/2022
46	Weather conditions/seasonality	2	Other	Reza Azar	18/04/2022
47	Competing priority	1	Other	Reza Azar	15/05/2022

48	Delivery stage	1	Other	Reza Azar	15/05/2022
49	Empowerment	1	Other	Reza Azar	13/04/2022
50	External distraction	1	Other	Reza Azar	09/05/2022
51	FTE Full time equivalent	1	Other	Reza Azar	13/04/2022
52	Individual traits	1	Other	Reza Azar	13/05/2022
53	Leadership accessibility/accessible leader	1	Other	Reza Azar	22/04/2022
54	Leadership knowledge	1	Other	Reza Azar	19/04/2022
55	Predictability	1	Other	Reza Azar	20/03/2022
56	Resources allocation	1	Other	Reza Azar	15/05/2022
57	Resources availability	1	Other	Reza Azar	16/05/2022
58	Rework	1	Other	Reza Azar	15/05/2022
59	Risk	1	Other	Reza Azar	13/04/2022
60	Stakeholder’s feedback	1	Other	Reza Azar	16/05/2022
61	Standardisation	1	Other	Reza Azar	15/05/2022
62	Team care	1	Other	Reza Azar	15/05/2022
63	Team structure	1	Other	Reza Azar	15/05/2022
64	Work collaboration	1	Other	Reza Azar	21/04/2022
65	Work crises	1	Other	Reza Azar	20/03/2022
66	Work phase	1	Other	Reza Azar	16/05/2022
67	Work safety	1	Other	Reza Azar	15/05/2022
68	Work stage	1	Other	Reza Azar	20/04/2022

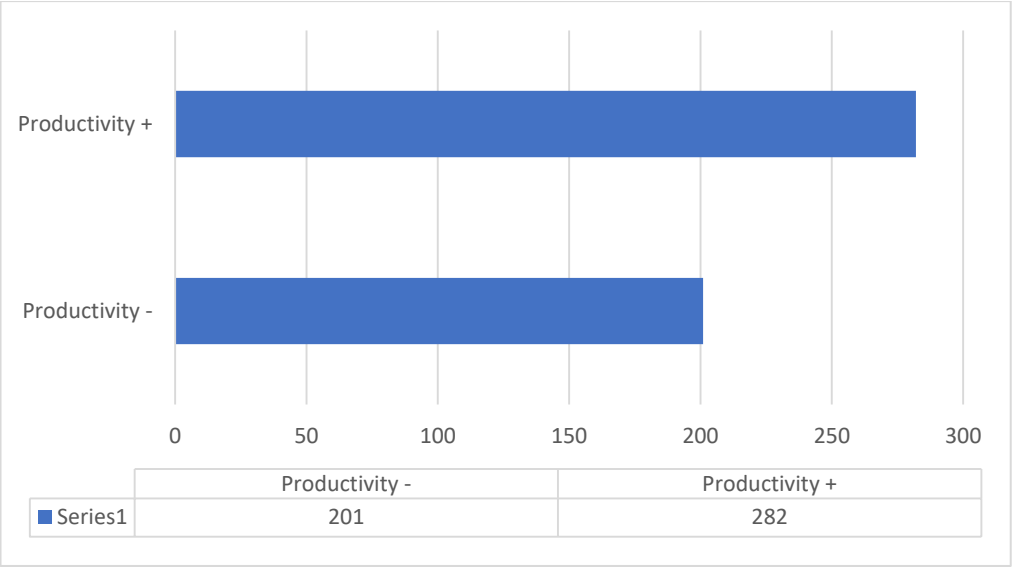

Figure 4.1. Productivity response

The analysis of response identified a total of 483 responses to productivity, of which 282 responses approx. 58 per cent were associated with positive effect on productivity as shown in figure 4.1.

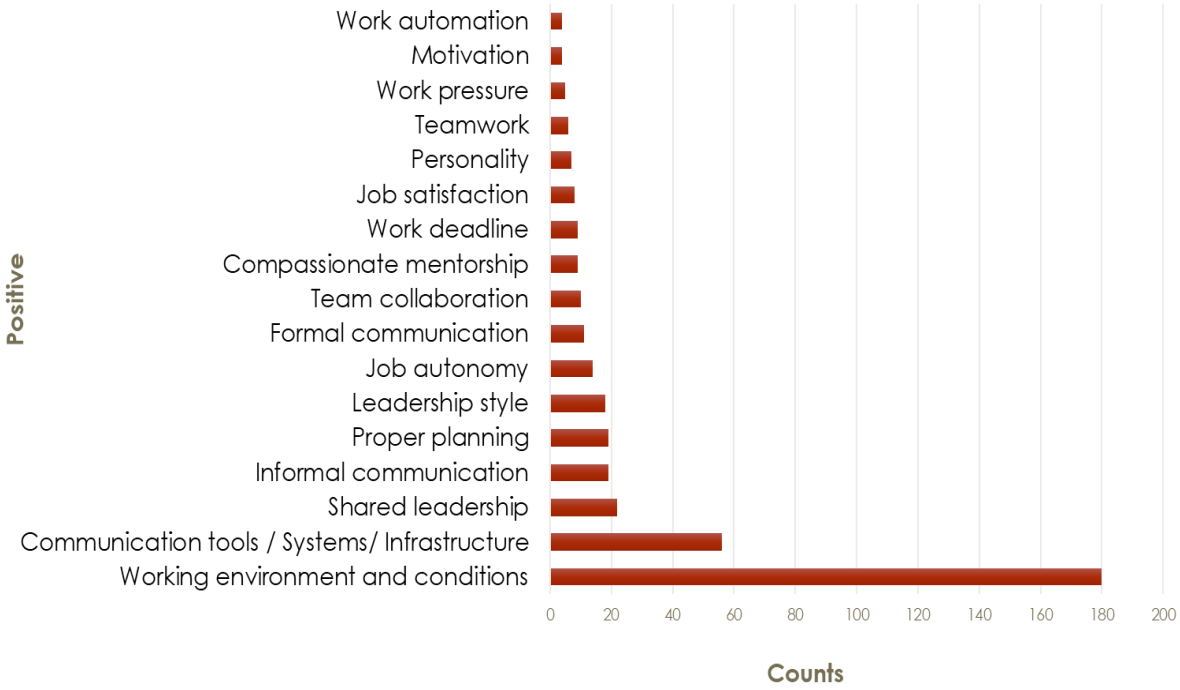

Figure 4.2. Factors with positive effect on productivity

Figure 4.2 illustrates the factors that had a positive effect on productivity. The results show that 'working environment and conditions' received the highest number of positive responses, while 'work automation' had the lowest.

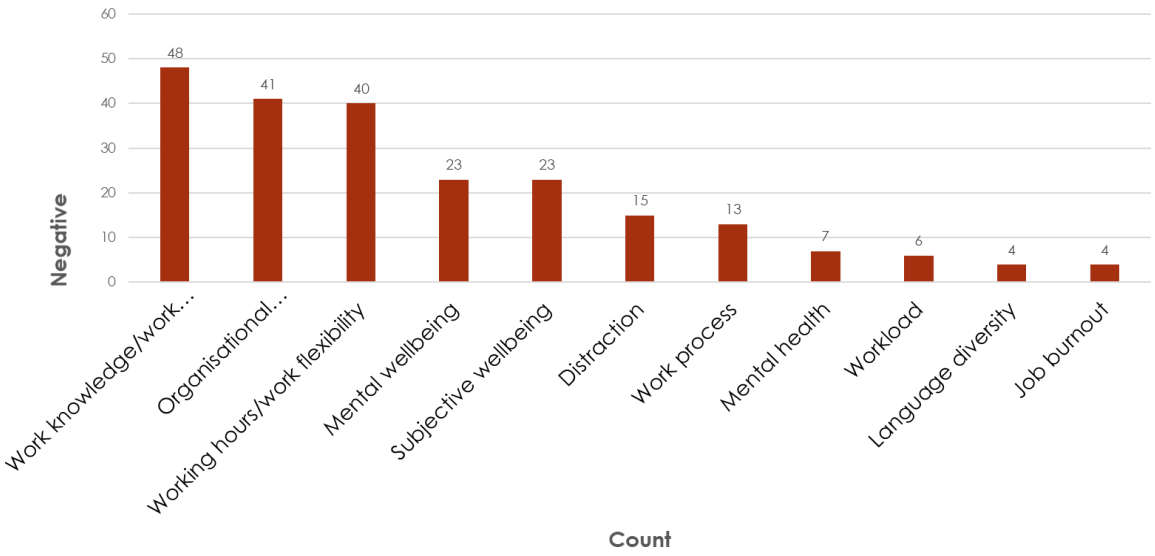

Figure 4.3. Factors with negative effect on productivity

The factors that had negative effects on productivity are shown in Figure 4.3. The results reveal that 'work knowledge' and 'work complexity' received the highest number of negative responses, while 'job burnout' and 'language diversity' had the lowest.

To clarify how positive and negative factors affect productivity, it is important to distinguish between the roles of formal and informal communication. Formal communication involves providing teams with clear instructions and essential information related to their tasks, which typically improve productivity. However, in distributed work environments, the absence of timely and structured communication can hinder performance and reduce productivity.

Informal communication, on the other hand, includes casual conversations, small talk, and non-task-related interactions. While these exchanges may not directly concern work, they help build interpersonal relationships, foster collaboration, and encourage mutual support among team members. In traditional office settings, such

interactions often occur during coffee breaks or hallway conversations. These spontaneous discussions are largely absent in distributed or virtual work settings.

From one perspective, the reduction in informal interactions may eliminate distractions, allowing individuals to focus and potentially extend their working hours—thereby increasing productivity. However, this same absence can also blur the boundaries between work and personal life, contributing to burnout. Furthermore, informal encounters often provide opportunities for knowledge sharing and problem-solving, which are less frequent in virtual environments.

Across interviews, participants consistently emphasised the value of face-to-face communication. Nevertheless, many noted that its importance varies depending on the nature of the task and the stage of the project.

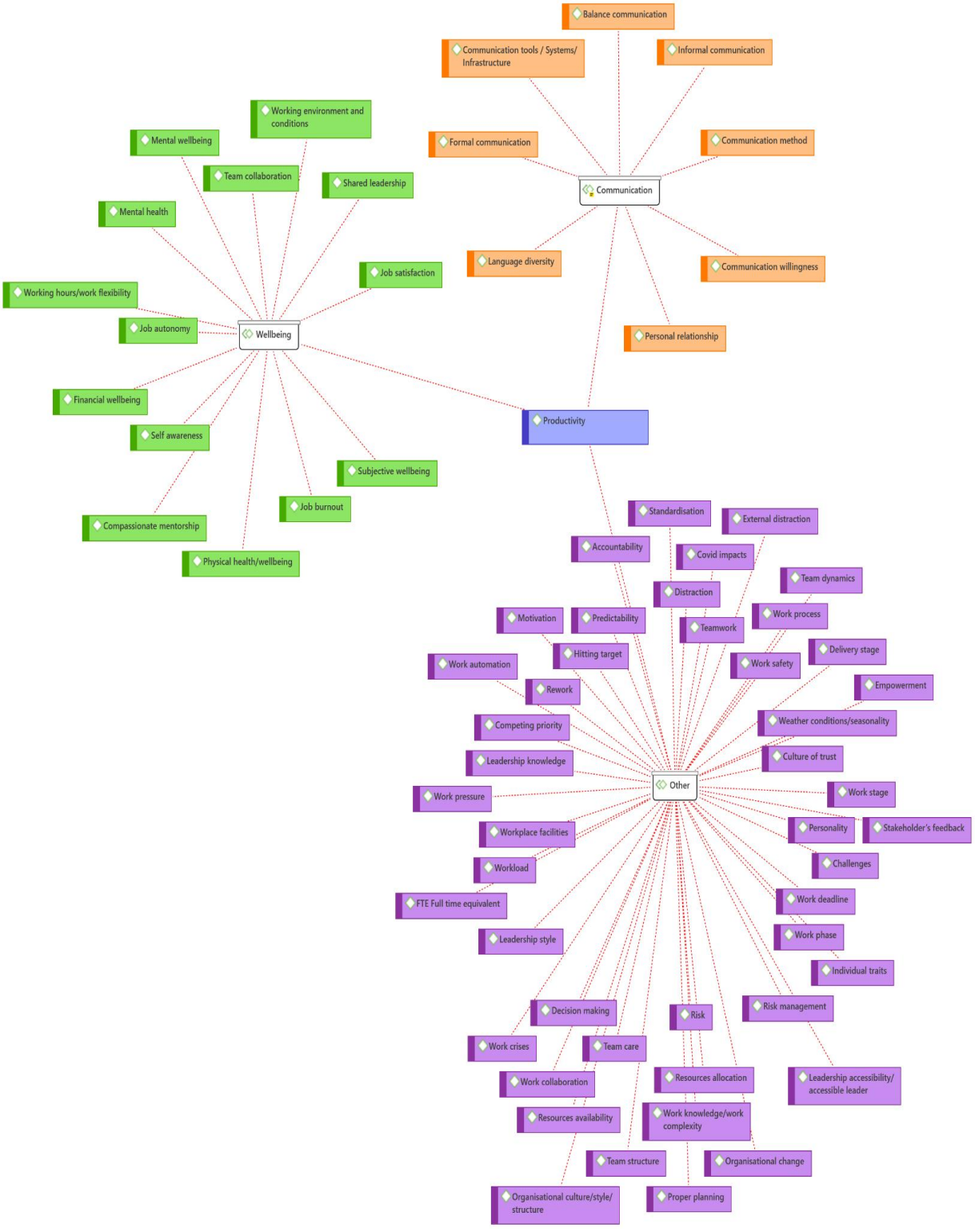

Figure 4.4. Thematic Network of Factors affecting Productivity

Figure 4.4 presents a thematic network diagram illustrating the first-order codes identified through participant interviews, organised into three primary

dimensions: Wellbeing (green), Communication (orange), and Other Factors (purple). These categories reflect the major domains derived from the Thematic Analysis of qualitative data. The red dashed lines represent conceptual links between individual factors and their perceived effect on productivity, as interpreted from participant responses.

This visual map serves as an intermediate analytical output, capturing the richness of the data prior to the abstraction and consolidation of themes using the Gioia methodology. It highlights how specific elements—such as communication tools, working environment, job autonomy, leadership style, and work complexity—interrelate and collectively affect productivity in distributed project teams.

The colour-coding enhances interpretability:

- Green nodes (Wellbeing) represent personal and organisational factors contributing to psychological, physical, or social wellbeing (e.g., mental health, team collaboration, and financial wellbeing).
- Orange nodes (Communication) capture both formal and informal communication mechanisms, methods, and challenges (e.g., communication tools, language diversity, and communication willingness).
- Purple nodes (Other Factors) encompass a broader range of contextual and operational issues that affect team functioning and project delivery (e.g., workload, team dynamics, and organisational change).

This diagram not only supports a more nuanced understanding of productivity drivers but also provides a structured foundation for the subsequent data structuring in the Gioia data model (Figure 4.6).

4.4 APPLICATION OF THE GIOIA METHOD IN DATA ANALYSIS

To ensure a structured and rigorous analysis of qualitative data, this study employed the Gioia Method alongside Thematic Analysis. The Gioia Method offers a systematic and transparent framework for developing Grounded Theory by organising data into coherent conceptual categories. This dual approach ensured that insights were both deeply rooted in participants' lived experiences and theoretically

informed. It was particularly effective in uncovering the multifaceted factors affecting productivity in distributed project teams.

4.4.1 UNDRESTANDING THE GIOIA METHOD

The Gioia Method adopts a multi-stage approach to qualitative analysis, facilitating the transition from raw empirical data to theoretical abstraction through iterative coding and theme development. Particularly suited to complex organisational settings, this method clarifies how participant narratives connect to broader conceptual models.

The process unfolds in three stages:

1. First-Order Concepts: These are direct participant quotations and preliminary descriptive codes that capture the informants' views in their own terms. This stage retains the authenticity of participants' voices without premature interpretation.
2. Second-Order Themes: At this level, the researcher begins to interpret the first-order data by identifying patterns, similarities, and differences. These themes reflect the underlying meaning behind participant expressions and begin to connect the data to broader theoretical ideas.
3. Aggregate Dimensions: These are high-level conceptual categories that synthesise second-order themes into overarching domains. Aggregate dimensions offer an integrative understanding of the core phenomena and reflect the theoretical contribution of the research.

4.4.2 VISUALISING THE DATA STRUCTURE

Figure 4.5 presents the data structure derived from the application of the Gioia Method. It systematically organises the progression from first-order concepts to second-order themes and aggregate dimensions, providing a clear visualisation of how raw qualitative data were transformed into conceptual insights. This hierarchical framework enhances transparency and strengthens the theoretical grounding of the study's findings.

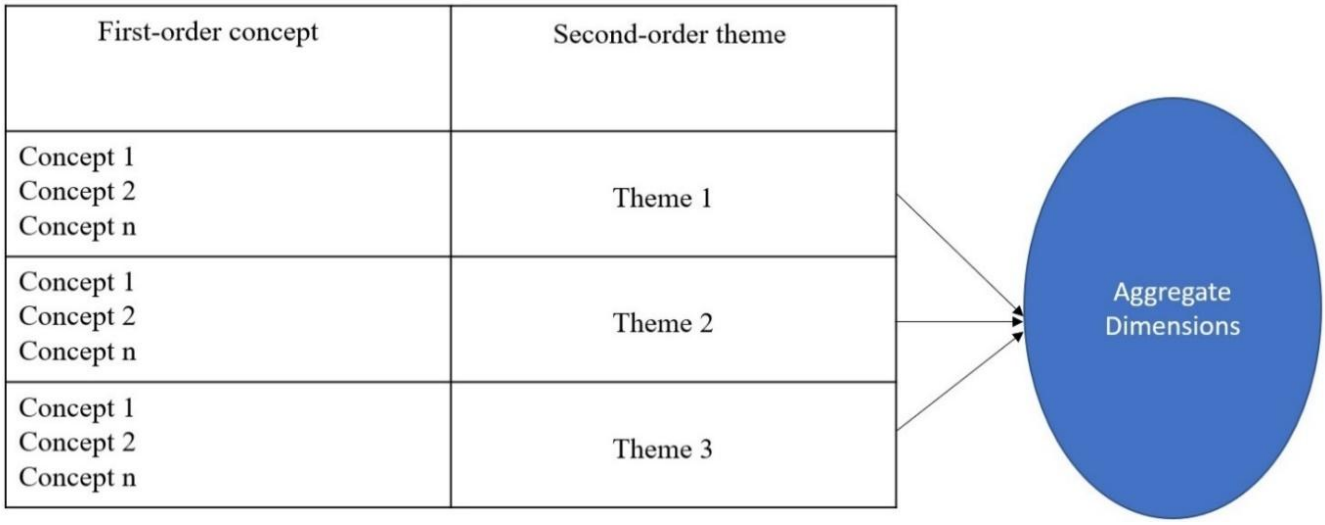

Figure 4.5. Data structure template of Gioia Method

4.4.3 AGGREGATE DIMENSIONS AFFECTING PRODUCTIVITY

Application of the Gioia Method revealed three aggregate dimensions central to understanding productivity in distributed project teams:

1. Effective Communication
2. Wellbeing
3. Other Productivity Factors

Each dimension encompasses several second-order themes, grounded in participant narratives. As shown in Figure 4.6, the first two dimensions—Effective Communication and Wellbeing—closely align with the study's core focus. The third, Other Productivity Factors, includes additional variables that, while peripheral to the main research questions, offer important insights into distributed team productivity.

The Thematic Analysis identified eight key communication factors influencing productivity: communication systems, informal and formal communication, language diversity, balanced communication, communication willingness, communication method, and personal relationships. Communication systems and informal communication emerged as the most influential. Reliable tools and infrastructure were essential to maintaining productivity, especially during crises like COVID-19. However, over-reliance on written formats such as email often reduced effectiveness,

with many preferring verbal or face-to-face interaction for clearer, more productive engagement. Simply having tools was insufficient—effectiveness depended on using them well, with a blended approach (e.g., email, calls, check-ins) seen as optimal.

Face-to-face communication remained central to productivity. Respondents stressed its importance for collaboration, relationship-building, and non-verbal understanding. While virtual tools offered temporary alternatives, they could not fully replicate in-person benefits. Informal interactions were valued for fostering trust and spontaneous problem-solving, suggesting that productive teamwork relies on more than structured meetings.

Virtual tools were acknowledged as useful substitutes when in-person meetings weren't possible, especially for small groups. However, as complexity or group size increased, virtual effectiveness declined. Respondents repeatedly highlighted that serious discussions and relationship-building were better suited to physical presence, which supported deeper understanding and minimised miscommunication.

Wellbeing also emerged as a major productivity factor, with fourteen interrelated codes identified. The working environment was especially significant. Clean, safe, and well-equipped workspaces boosted focus and motivation. Flexibility in tailoring one's environment was particularly valued in distributed teams. Similarly, flexible working hours enhanced productivity by supporting work-life balance, increasing autonomy, and reducing distractions. Participants reported feeling more committed and satisfied when allowed to work during their most effective hours. Ultimately, both communication and wellbeing factors were shown to impact productivity not just through their presence but through thoughtful application in remote and distributed work contexts.

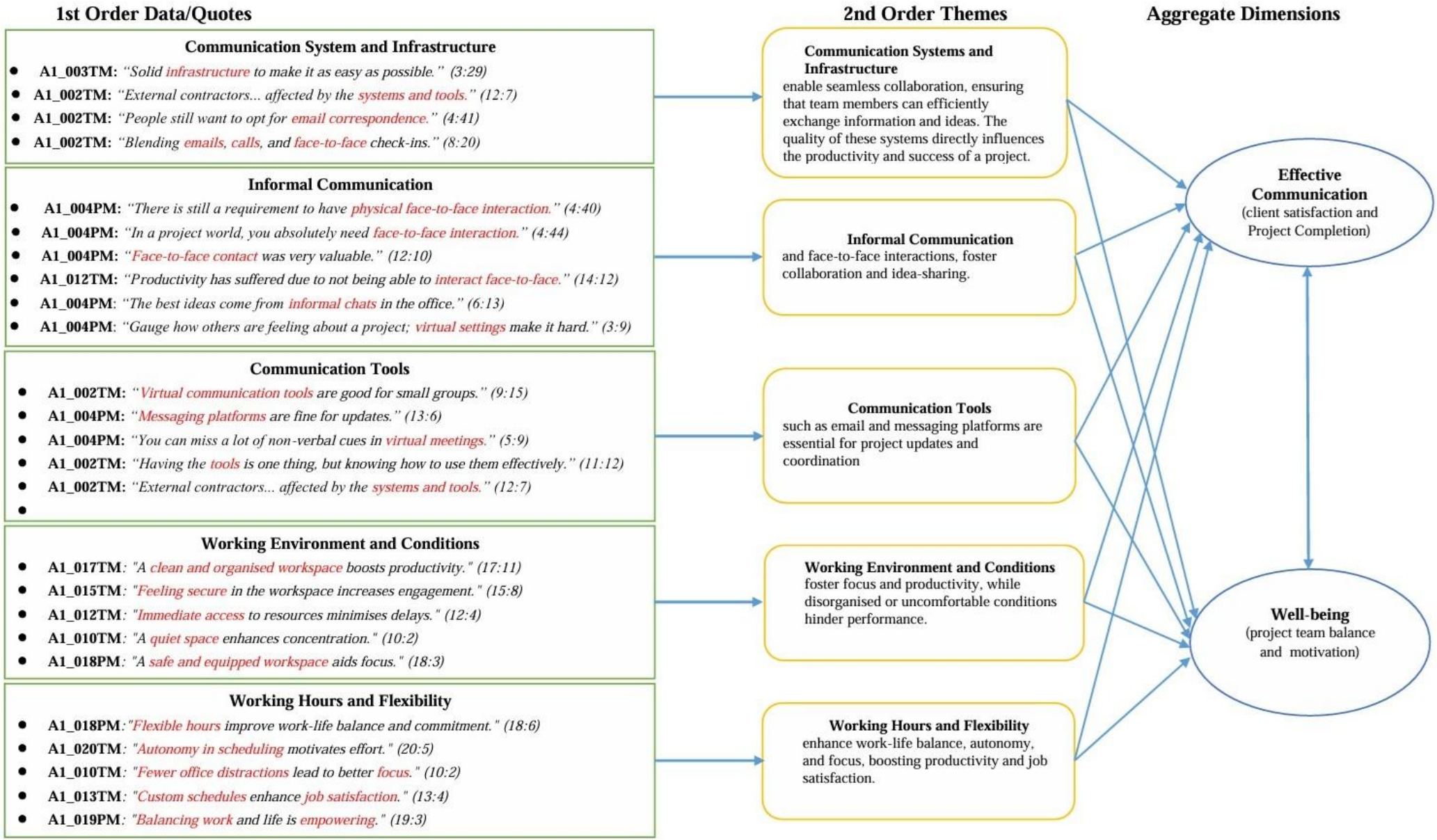

Figure 4.6. Aggregate dimensions affecting productivity of distributed project teams

4.4.4 ANALYTICAL AND THEORETICAL CONTRIBUTIONS OF THE GIOIA METHOD

The application of the Gioia Method significantly enhanced the analytical rigour of this study by offering a transparent and systematic approach to interpreting qualitative data. Its structured, multi-level coding process supported a disciplined transition from participant narratives to higher-level theoretical constructs. When integrated with Thematic Analysis, the Gioia Method enabled the development of a robust analytical framework for understanding how productivity in distributed project teams is affected by key factors such as communication practices, wellbeing, and organisational dynamics. This combined approach ensured that insights were grounded in participants' lived experiences while also linked to broader conceptual frameworks.

Methodologically, the Gioia Method proved particularly effective in preserving the authenticity of participants' perspectives throughout the Data Analysis process. Its focus on first-order concepts ensured that early interpretations remained faithful to respondents' own terms and viewpoints, thereby avoiding premature abstraction. This was essential in the context of distributed project teams, where socio-cultural diversity and digital communication complexity require close attention to contextual meaning. The iterative refinement from first-order codes to second-order themes and aggregate dimensions provided analytical clarity and helped surface interrelationships between constructs that may have remained implicit using conventional coding techniques.

Theoretically, this approach contributed to a deeper and more nuanced understanding of productivity in distributed work environments. The identification of three aggregate dimensions—Effective Communication, Wellbeing, and Other Productivity Factors—not only reflects empirical observations but also advances theoretical insight into the dynamics of virtual collaboration. The Gioia Method facilitated the articulation of how communication breakdowns, psychosocial strain, and digital work constraints coalesce to shape productivity outcomes. In doing so, it bridges the gap between micro-level participant experiences and macro-level organisational concerns, offering a conceptual model that extends current theory on distributed team performance and knowledge work.

Chapter 5: Discussion

The discussion of the analysis is explained under the themes of effective communication, wellbeing, and other factors, to explore their interaction with the productivity of distributed project teams. As listed in Table 4.5, the Thematic Analysis generated 68 codes under these three thematic categories.

This chapter specifically focuses on the factors that positively influence productivity, aligning with the research title, which investigates productivity improvement in distributed project teams. Among the 68 codes, 17 factors were identified as having a positive impact on productivity. For clarity and to provide a structured understanding, the discussion presents Figure 5.1, and Figure 5.2. Figure 5.1 provides a comprehensive comparison of positive and negative factors, showcasing their interaction and influence on productivity. Figure 5.2 illustrates the factors with a positive effect on productivity.

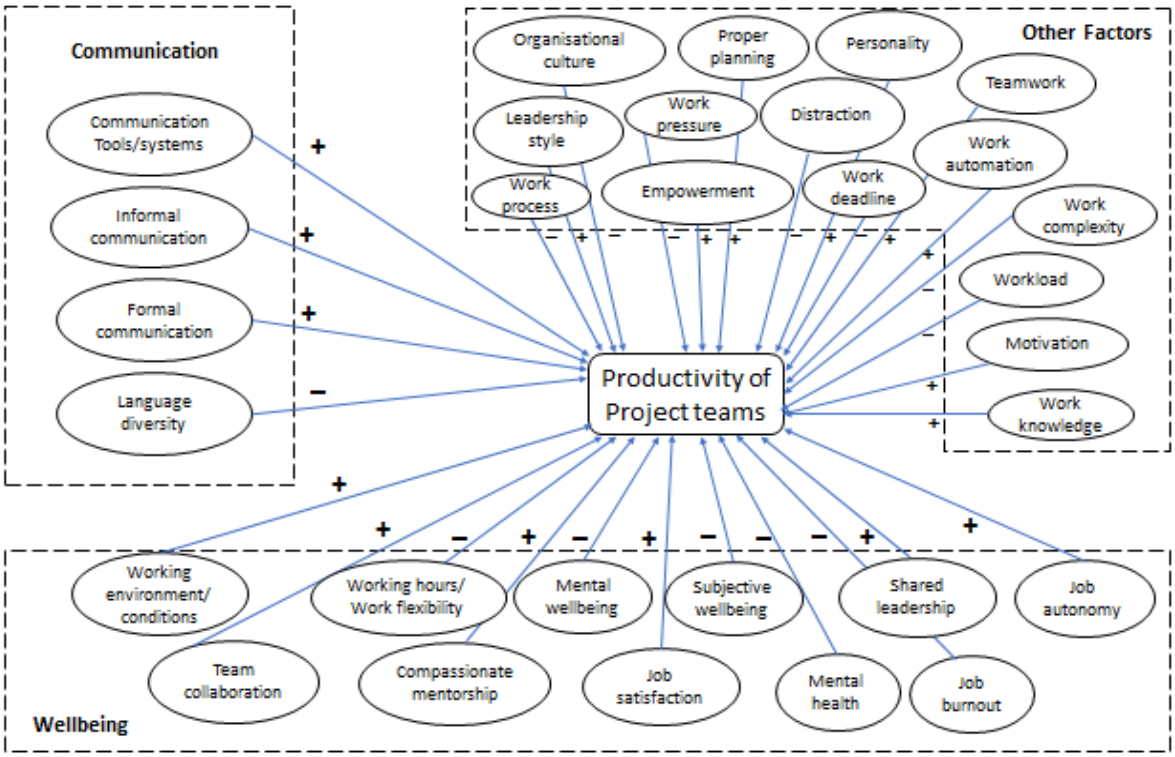

Figure 5.1. Positive and negative factors influence on productivity of project teams

Figure 5.2 aims to enhance the interpretation of the results, clarify the relationships between themes and factors, and illustrate the overall interplay between effective communication, wellbeing, and other factors in relation to productivity within distributed project teams.

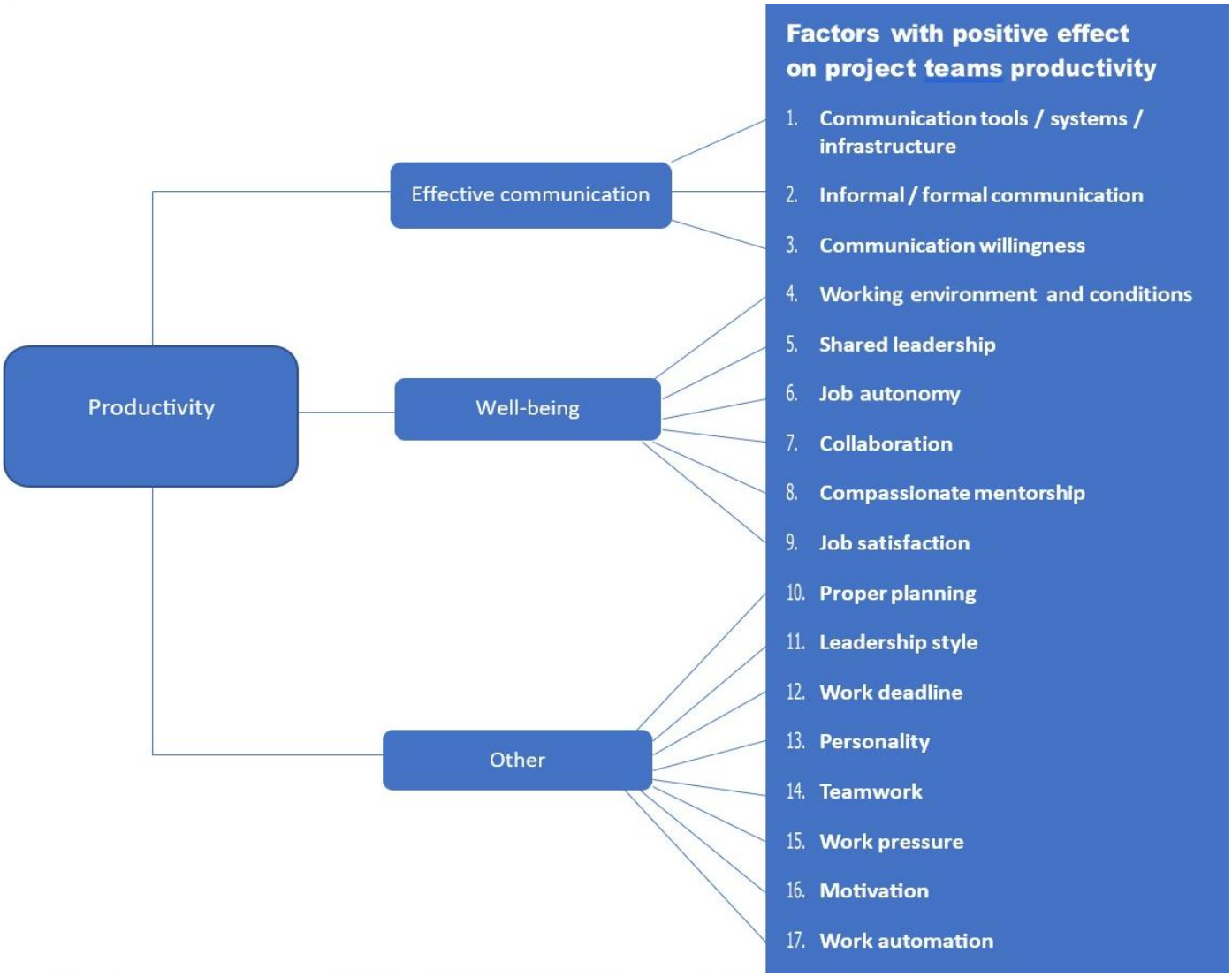

Figure 5.2. Factors with a positive effect on productivity

5.1 EFFECTIVE COMMUNICATION

The findings from the Thematic Analysis revealed eight codes related to communication and their interaction with project team productivity: communication systems, tools, and infrastructure; informal communication; formal communication; language diversity; balanced communication; communication willingness; method of communication; and personal relationships. Of these, communication systems and informal communication emerged as the most significant in affecting productivity. These findings largely support prior research emphasising that both formal infrastructure and informal exchanges are critical to sustaining team performance in complex projects (Palvalin et al., 2018; Schwerha et al., 2020). However, this study extends previous knowledge by highlighting the specific role of informal communication in distributed project teams, showing that it not only facilitates task coordination but also strengthens team cohesion across geographically dispersed members**.** This adds nuance to earlier studies, suggesting that informal interactions are especially crucial in virtual or hybrid contexts where physical proximity is limited.

5.1.1 COMMUNICATION SYSTEMS AND PRODUCTIVITY

The importance of communication systems emerged strongly from the interview data, emphasising the role that infrastructure and tools play in project efficiency. A solid communication infrastructure was perceived as essential in maintaining productivity, particularly during crisis, such as the COVID-19 lockdown. One respondent noted: "*It's not easy yet. But we are blessed with reasonably solid infrastructure to make it as easy as possible. And it works*" (3:29). The availability of robust communication tools allowed team members to maintain productivity, even under challenging circumstances. Interestingly, discrepancies between internal teams and external contractors were observed, with external teams often lacking equivalent infrastructure. One participant explained, "*Some of our external contractors... [are affected] due to the systems and tools that they have available in their corporate environment versus home environment*" (12:7). These findings confirm previous research that technological readiness and infrastructure are significant determinants of team performance in distributed environments (Bosch-Sijtsema et al., 2009), while also extending prior knowledge by highlighting the differentiated impact on internal

versus external project teams, suggesting that infrastructure gaps can disproportionately affect productivity in hybrid and distributed collaborations.

The data highlighted that despite the availability of communication tools, an over-reliance on written communication (e.g., email) in lieu of direct interaction could impair productivity. Respondents noted that even when physically present in the office, email remained the preferred mode: "*Unfortunately, with COVID, people have developed or slipped back in their habits... they still want to opt for email correspondence rather than pick up the phone*" (4:41). This reliance on written communication was perceived as less effective: "*Project management... has been purely centred around written communication systems, not so much verbal. Very opposite to where I've seen project management work well*" (4:43). These findings confirm previous research indicating that communication medium choice can significantly influence team effectiveness and cohesion (Bergsten et al., 2021; Balakrishnan et al., 2024), while also extending understanding by showing that even physically co-located teams may default to asynchronous written channels, highlighting persistent habits that can hinder productivity in hybrid and distributed settings.

Moreover, respondents noted that the effectiveness of communication systems is not solely dependent on the tools themselves but also on the team's ability to leverage them appropriately. As one participant remarked, "*Having the tools is one thing, but knowing how to use them effectively is what really counts*" (11:12). This highlights the importance of training and clear guidelines to ensure team members utilise communication tools to their full potential. While prior studies emphasise the availability of communication infrastructure (Palvalin et al., 2018; Bergsten et al., 2021), these findings extend understanding by demonstrating that team capability and guidance are equally critical, particularly in distributed environments.

Additionally, the integration of various communication methods was seen as beneficial in fostering engagement and collaboration. A respondent highlighted, "*We find that blending emails, calls, and face-to-face check-ins creates a more dynamic communication environment*" (8:20). This aligns with prior research suggesting that mixed communication approaches, combining verbal, written, and visual elements, can improve team performance by accommodating diverse work styles and preferences (Dale-Olsen & Finseraas, 2020; Palvalin et al., 2018).. Furthermore,

these findings extend prior work by demonstrating that the strategic blending of methods is particularly effective in distributed teams, where varying locations and time zones necessitate flexible and adaptive communication practices.

5.1.2 INFORMAL COMMUNICATION AND FACE-TO-FACE INTERACTION

A key theme that emerged was the need for face-to-face communication. Many respondents emphasised that physical interaction is critical for productivity: "*There is still a requirement to have physical face-to-face interaction*" (4:40). Some participants noted that while certain team members naturally engage effectively face-to-face, others may require training to replicate these interactions: "*If you are in a project world, you absolutely need to have that physical face-to-face interaction*" (4:44). These findings align with literature highlighting that non-verbal cues and informal exchanges foster trust and collaborative problem-solving, which are difficult to replicate virtually (Eseryel et al., 2020). Unlike previous studies focused on co-located teams, this study demonstrates that distributed teams face additional challenges in replicating these interactions, particularly for members less experienced with face-to-face engagement, highlighting the need for targeted training and structured opportunities for informal interaction.

Although virtual communication became commonplace during the pandemic, face-to-face communication was perceived as having greater value in certain contexts. One respondent remarked, "*while in the early days of COVID everyone got very used to VCs and this type of direction... face-to-face contact was very valuable*" (12:10). This aligns with prior research highlighting that non-verbal cues and personal engagement play a critical role in team cohesion and problem-solving (Eseryel et al., 2020). However, unlike earlier studies primarily focused on co-located teams, these findings extend understanding by demonstrating that distributed teams rely on face-to-face interactions to overcome the limitations of virtual tools, especially in complex projects where nuanced communication is essential.

Furthermore, respondents noted that the lack of in-person engagement could lead to misunderstandings or reduced team cohesion. For instance, one participant explained, "*Less face-to-face interaction from last year, particularly with some engineering service providers... led to more negative outcomes*" (5:191). This

highlights the importance of informal, direct communication in building personal relationships that underpin productive teamwork. Participants also shared that informal face-to-face interactions provided valuable moments for spontaneous problem-solving and ideation: "*Sometimes the best ideas come from informal chats in the office, where there's no agenda, just collaboration*" (6:13), and "*In person, you can gauge how others are feeling about a project; virtual settings make it hard to read the room*" (3:9). These insights support previous research on the role of informal communication in fostering trust, engagement, and team cohesion, which are linked to higher productivity (Palvalin et al., 2018). While these findings confirm prior work, they extend understanding by demonstrating the practical challenges faced by distributed teams, where reduced face-to-face contact can impede spontaneous collaboration and problem-solving, underscoring the need for deliberate strategies to replicate informal interactions in virtual or hybrid environments.

5.1.3 COMMUNICATION TOOLS AS A SUBSTITUTE FOR FACE-TO-FACE

While face-to-face communication was viewed as the ideal mode, communication systems were identified as valuable alternatives when in-person interactions were not feasible. Respondents indicated that virtual meetings could be efficient with a limited number of participants, but the effectiveness decreased as group size grew: "*Virtual communication tools are good for small groups, but it becomes difficult when there are too many people involved*" (9:15). These findings align with literature noting that while virtual tools increase flexibility, they may reduce engagement and clarity in larger groups (Kroll et al., 2016; Eubanks et al., 2016). Notably, this study extends existing knowledge by highlighting how distributed project teams must balance group size and tool selection to maintain productivity, confirming that virtual platforms are a practical substitute for face-to-face interactions but may require complementary strategies (e.g., smaller breakout sessions or structured agendas) to ensure effectiveness in larger or complex team settings.

The interaction between communication systems and productivity is complex, as effective communication often depends not only on the tools available but also on the appropriateness of their use. Tools designed for written communication, for example, may suffice for documentation but are less effective for resolving complex issues or building trust within the team. One participant elaborated, "*Messaging*

platforms are fine for sharing updates, but when it comes to serious discussions, nothing beats being in the same room" (13:6). These findings align with literature noting that reliance on written communication can limit relational and cognitive aspects of team collaboration (Taras et al., 2019; An et al., 2021). Importantly, this study extends prior research by demonstrating that even with robust infrastructure; distributed project teams still require opportunities for direct human interaction to maintain productivity, particularly for collaborative and innovative tasks.

Moreover, many respondents emphasised that face-to-face interactions facilitated a deeper level of understanding and relationship-building that was difficult to replicate through virtual tools. As one participant expressed, "*You can miss a lot of non-verbal cues in virtual meetings, which can lead to misunderstandings*" (5:9). These findings align with prior research indicating that trust, informal feedback, and shared understanding—key drivers of team productivity—are best developed through in-person engagement (Taras et al., 2019; An et al., 2021). Importantly, this study extends existing knowledge by demonstrating that in distributed project teams, even with robust virtual communication systems, the absence of face-to-face interaction can limit the development of relational understanding and increase the risk of miscommunication, highlighting practical challenges that go beyond what previous studies have emphasised.

5.2 WELLBEING

The wellbeing theme emerged as a key factor influencing productivity, with Thematic Analysis identifying fourteen interconnected codes affecting project team performance. These included working environment and conditions, working hours and flexibility, shared leadership, subjective wellbeing, mental health, job autonomy, compassionate mentorship, team collaboration, job satisfaction, burnout, physical health, self-awareness, and financial stability. Among these, working environment and flexibility were identified as primary contributors to productivity. These findings align with prior research demonstrating that employee wellbeing directly impacts motivation, engagement, and project outcomes in both co-located and distributed teams (Oswald et al., 2015; Bryson et al., 2017; Krekel et al., 2019). Importantly, this study extends existing knowledge by showing how wellbeing factors operate collectively in distributed project teams, highlighting how flexible working

conditions, supportive environments, and shared leadership together sustain productivity in contexts where physical separation can otherwise hinder performance.

5.2.1 WORKING ENVIRONMENT AND CONDITIONS

The working environment emerged as a key determinant of productivity within distributed teams, with variations in home or virtual settings significantly affecting outcomes. The analysis highlighted that a supportive and resource-rich environment is crucial for fostering productivity. Many participants emphasised that a clean, organised workspace enhanced focus and motivation. As one respondent noted, "*A clean and organised workspace helps me concentrate better and boosts my productivity*" (17:11). These findings align with prior research demonstrating that both physical and virtual workspace quality can influence attention, engagement, and task efficiency (Palvalin et al., 2018; Berg & Karlsen, 2014). Importantly, this study extends existing knowledge by illustrating how distributed teams experience compounded challenges when workspace conditions vary, showing that environmental support is especially critical for maintaining productivity in remote contexts.

Safety and comfort within the workspace were identified as important contributors to morale, motivation, and overall productivity. Participants noted that when individuals felt secure and supported in their surroundings, they were more engaged and proactive in their work. One respondent observed, "*When employees feel secure in their surroundings, they are more likely to take initiative and contribute positively to projects*" (15:8). These findings align with prior research demonstrating that a safe and comfortable work environment is a critical enabler of sustained productivity in project teams (Riba et al., 2019; Kuroda & Yamamoto, 2018). Importantly, this study extends existing knowledge by highlighting how the interplay between environmental safety and psychological comfort specifically influences productivity in distributed and remote team settings, where physical separation can exacerbate stress or disengagement.

Additionally, the availability of resources emerged as a critical factor in maintaining efficiency and productivity within distributed teams. Participants

highlighted that immediate access to tools, technology, and relevant information allowed them to work without interruptions, minimising delays and sustaining performance. One respondent explained, "*When I have everything I need at my fingertips, I can focus on my work without unnecessary delays*" (12:4). These findings align with prior research demonstrating that adequate infrastructure and resource access are essential for supporting both wellbeing and productivity in distributed work environments (Kroll et al., 2016; Bosch-Sijtsema et al., 2009). Importantly, this study extends existing knowledge by illustrating how resource availability interacts with team wellbeing to influence performance in remote and hybrid project settings, where gaps in infrastructure can directly affect engagement and outcomes.

The analysis further indicates that flexibility within the working environment enabled individuals to adapt their surroundings to meet their unique productivity needs. Some participants reported that remote work reduced distractions, while others emphasised the value of a quiet space conducive to deep concentration. This adaptability allowed team members to create customised workspaces that aligned with their personal work styles, enhancing both efficiency and job satisfaction. These findings are consistent with prior research on remote and hybrid teams, which demonstrates that autonomy and environmental control positively influence wellbeing and productivity (Kazekami, 2020; Palvalin et al., 2018). Importantly, this study extends existing knowledge by showing how such environmental flexibility interacts with distributed team dynamics, highlighting its role in sustaining performance when physical separation might otherwise hinder collaboration and focus.

Overall, the findings underscore that a well-organised, secure, and resource-rich working environment is critical for sustaining productivity in distributed project teams. As one interviewee noted, "*Having a workspace that feels both safe and equipped makes it easier to focus on the work itself, rather than managing interruptions or concerns*" (18:3). These results align with prior research highlighting the role of wellbeing-focused interventions, such as ergonomic setups and adequate resource provision, in enhancing motivation, engagement, and performance (Krekel et al., 2019; Riba et al., 2019). Importantly, this study extends existing knowledge by demonstrating how these environmental factors operate

collectively in distributed contexts, where physical separation can otherwise challenge focus and collaboration.

5.2.2 WORKING HOURS AND FLEXIBILITY AS A PRODUCTIVITY DRIVER

Flexible working hours emerged as a key driver of productivity in distributed project teams, enabling team members to better balance professional and personal responsibilities. Many participants indicated that this flexibility enhanced their work-life balance, leading to increased job satisfaction and commitment. As one respondent explained, "*Having the freedom to adjust my work hours based on my personal life has made me more committed and productive*" (18:6). These findings are consistent with prior research demonstrating that flexible scheduling supports wellbeing and sustains productivity in distributed and hybrid teams (Bryson et al., 2017; Eubanks et al., 2016). Importantly, this study extends existing knowledge by highlighting how flexible working hours interact with other wellbeing factors, such as a supportive environment and autonomy, to collectively enhance team performance in distributed project settings.

Flexibility was also perceived as reinforcing a sense of autonomy and trust within teams. Allowing team members to set their own schedules signalled managerial confidence in their capabilities, which in turn positively influenced morale and productivity. As one interviewee noted, "*When management allows me to work in a way that suits me, it motivates me to put in more effort*" (20:5). These findings align with prior research demonstrating that autonomy and trust from leadership are strongly associated with increased engagement and higher performance in project settings (Berg & Karlsen, 2014; Kuroda & Yamamoto, 2018). This study further extends existing knowledge by showing how flexible scheduling not only improves individual wellbeing but also fosters trust-driven collaboration in distributed project teams, highlighting its compound effect on overall productivity.

Moreover, flexible hours and remote work arrangements enabled team members to operate in environments that reduced distractions, thereby enhancing focus and overall productivity. Participants who worked from home reported that this setup often allowed them to concentrate more effectively than in a traditional office setting. One respondent noted, "*I find I can concentrate much better at home without*

the usual office distractions" (10:2). These observations are consistent with prior research indicating that flexible, resource-supported work arrangements improve wellbeing and productivity by allowing individuals to manage their workflow and concentration according to personal needs (Kazekami, 2020; Palvalin et al., 2018). This study extends existing knowledge by demonstrating how such arrangements operate in distributed project teams, highlighting their role in sustaining performance despite physical separation and varying work contexts.

The impact of flexibility on productivity also extended to job satisfaction and long-term engagement. When employees were able to work during their most productive hours, they experienced greater control over their schedules, fostering a positive attitude toward their work. One participant remarked, "*Working at my own pace and at times that work best for me has made a huge difference in my job satisfaction*" (13:4). These findings align with prior research demonstrating that flexible working arrangements reduce stress, enhance wellbeing, and sustain engagement in distributed teams (Oswald et al., 2015; Bryson et al., 2017). Importantly, this study extends existing knowledge by showing how flexible scheduling in distributed project teams not only improves productivity through reduced distractions but also creates a supportive work environment that reinforces long-term commitment. As one participant concluded, "*The ability to balance work with life's demands is empowering and keeps me committed to my role*" (19:3).

5.3 OTHER FACTORS AFFECTING PRODUCTIVITY

Beyond effective communication and wellbeing, forty-six additional factors influencing productivity were identified through Thematic Analysis. Of these, six factors were most prominent based on frequency of occurrence. Many of these codes intersect with themes of communication and wellbeing, highlighting their interrelated nature. Notably, work knowledge and task complexity emerged as critical determinants of productivity. Teams with members who possessed strong expertise and relevant experience were generally more efficient than those with less experienced or newer members. This aligns with prior research indicating that accumulated knowledge and skill sets significantly enhance team performance in distributed and project-based contexts (Kloppenborg et al., 2019; Wang et al., 2021; Palvalin et al., 2018).

Task complexity was also identified as a major influence on productivity. Complex projects require sustained focus on specific objectives, and high task volumes or overlapping responsibilities can increase cognitive load and reduce motivation. These findings are consistent with literature showing that task interdependence and complexity challenge team coordination and performance, particularly in distributed environments (Gilson et al., 2015; Berg & Karlsen, 2014). Importantly, this study extends existing knowledge by demonstrating how the combination of expertise, task complexity, and team experience interacts to shape productivity outcomes in distributed project teams, highlighting the need for targeted support, training, and workload management to sustain high performance.

5.3.1 WORK KNOWLEDGE AND COMPLEXITY

A clear understanding of roles and responsibilities emerged as a key determinant of productivity within distributed project teams. When team members were aware of their specific functions, tasks progressed more smoothly, and overall efficiency improved. One participant noted, "*Teams that know their roles and responsibilities are far more effective. Newer members struggle to keep up, which can slow down the entire project*" (3:12). This finding aligns with prior research emphasising that role clarity and structured knowledge sharing enhance coordination, reduce ambiguity, and improve team performance in distributed environments (Colomo-Palacios et al., 2014; Gilson et al., 2015; Palvalin et al., 2018; Berg & Karlsen, 2014).

Importantly, this study extends existing knowledge by demonstrating how onboarding, training, and explicit role definition collectively support productivity in distributed teams. The data suggest that without these measures, teams face delays, miscommunication, and inefficiencies that can cascade across the project, highlighting the practical implications for project managers aiming to optimise team performance.

Task complexity emerged as another factor significantly influencing productivity. As task complexity increased, so did the demands on team members' knowledge, skills, and problem-solving capabilities. Projects with high complexity required substantial coordination and sustained attention, which could strain teams lacking sufficient expertise or motivation. One participant described this challenge:

"*When we are tasked with too much at once, it leads to frustration and burnout unless we're highly motivated*" (8:23). Another noted, "*Juggling several intricate tasks can be overwhelming, especially when they all demand our full attention*" (5:11).

These findings align with prior research demonstrating that task interdependence, cognitive load, and project complexity can reduce efficiency and morale in distributed project teams (Gilson et al., 2015; Berg & Karlsen, 2014; Colomo-Palacios et al., 2014). Importantly, this study extends existing knowledge by showing how distributed teams face compounded challenges when navigating overlapping complex tasks, where physical separation exacerbates coordination difficulties. The data suggest that without adequate support, training, and workload management, complex task structures can impede productivity, highlighting actionable implications for project managers seeking to optimise team performance in distributed contexts.

In addition to managing task complexity, the skill level and work experience of team members emerged as a critical determinant of productivity. Teams composed of individuals with deep knowledge and expertise, were better able to navigate complex tasks without continuous guidance. One participant explained, "*Experienced team members with good knowledge of their work tend to stay productive under pressure, while those still learning can struggle*" (7:9). This observation aligns with prior studies indicating that role clarity and accumulated expertise significantly enhance team performance in distributed and project-based settings (Kloppenborg et al., 2019; Wang et al., 2021). Importantly, this study extends existing understanding by illustrating how distributed teams, where members may vary in experience and exposure to project contexts, require strategic team composition and targeted mentoring to sustain productivity under high-complexity conditions.

Furthermore, task complexity was found to influence team motivation, with participants emphasising that meaningful motivation is essential to maintain focus and prevent burnout during challenging assignments. One respondent noted, "*When the work is really demanding, knowing why we're doing it and seeing the impact helps keep us going*" (9:15). This aligns with prior research suggesting that high task interdependence and cognitive load in distributed teams can negatively affect performance if team members lack intrinsic or extrinsic motivation (Gilson et al.,

2015). These findings extend existing understanding by demonstrating that, in distributed project teams, providing clear purpose and reinforcing task significance is particularly critical, as physical separation can exacerbate the demotivating effects of complex work and hinder collaborative problem-solving.

Overall, these findings indicate that productivity within project teams depends not only on a clear understanding of roles and responsibilities but also on the effective management of task complexity. The results corroborate earlier studies emphasising the importance of skill development, role clarity, motivation, and structured knowledge sharing in enhancing project performance (Berg & Karlsen, 2014; Colomo-Palacios et al., 2014; Kloppenborg et al., 2019). However, this study extends existing knowledge by showing how distributed teams face compounded challenges when navigating overlapping tasks, varying expertise levels, and physical separation. These conditions highlight the critical need for targeted onboarding, mentoring, and structured support mechanisms to sustain productivity. As one interviewee summarised, "*Knowing what's expected of us and having the skills to meet those expectations makes all the difference in staying productive*" (3:12). Collectively, these insights illustrate that integrating role clarity, task management, and skill alignment, alongside motivation and structured support, empowers distributed project teams to perform effectively even under highly complex and dynamic project conditions.

5.3.2 ORGANISATIONAL STRUCTURE AND CULTURE

A flexible and supportive organisational culture was found to significantly enhance productivity within project teams by fostering efficiency, open communication, and engagement. Respondents emphasised that when organisational structures allowed for flexibility and minimised unnecessary bureaucracy, teams were able to focus more effectively on their core tasks. Conversely, rigid approval processes and hierarchical barriers often slowed decision-making and diminished motivation. As one participant explained, "*The more layers of approval we have to go through, the longer it takes to get anything done*" (2:19).

These findings align with prior studies indicating that flatter organisational structures and decentralised decision-making enhance team empowerment and

responsiveness in project-oriented environments (Kloppenborg et al., 2019; Wang et al., 2025). However, this study extends previous work by demonstrating how such structures are particularly critical in distributed project teams, where physical distance and asynchronous communication can amplify bureaucratic delays. By highlighting the importance of flexible decision pathways and supportive cultural norms, these findings underscore that adaptive organisational design not only promotes autonomy but also sustains productivity in geographically dispersed project contexts.

Open communication emerged as a critical element of a productive organisational culture. Teams that encouraged open channels for dialogue and collaboration demonstrated greater cohesion and alignment with project objectives. Regular check-ins and opportunities for team members to share ideas or concerns fostered a strong sense of involvement and collective responsibility. As one respondent explained, "*Regular check-ins help us feel involved and keep everyone aligned with the project goals*" (7:34).

These findings align with previous research highlighting that transparent communication and psychological safety enhance collaboration and engagement in distributed environments (Wang et al., 2025; Taras et al., 2019). However, this study extends existing knowledge by showing that regular, structured communication practices not only improve engagement but also mitigate the potential disconnect often experienced in geographically dispersed teams. By promoting inclusivity and open dialogue, distributed teams can maintain cohesion and shared purpose despite physical distance.

Additionally, organisations that prioritised recognition were seen as more supportive and engaging. Recognising contributions, both large and small, boosted morale and encouraged team members to maintain high levels of performance. As one interviewee remarked, "*When our work is acknowledged, it makes us want to keep giving our best, it reminds us that our efforts are valued*" (5:12). This regular reinforcement of value not only contributed to individual motivation but also strengthened team unity, as members felt their efforts were appreciated within the organisational framework. Recognition and trust have been linked to intrinsic motivation and performance in hybrid work environments (Palvalin et al., 2018; Kazekami, 2020; Wang et al., 2025). These findings confirm earlier studies

highlighting the motivational power of recognition but extend prior work by demonstrating its heightened significance in distributed teams, where remote conditions often reduce informal affirmation and visibility.

Furthermore, respondents indicated that organisational cultures supporting autonomy and adaptability empowered teams to make necessary decisions without excessive oversight. One participant explained, "*When we're trusted to make certain calls ourselves, we're more invested in the outcomes and work harder to make things succeed*" (3:8). This autonomy allowed project teams to respond quickly to challenges, adapting their approach as needed to ensure project success. By reducing hierarchical barriers, the organisation created an environment that encouraged initiative, creativity, and ownership. This finding aligns with earlier research suggesting that autonomy and empowerment enhance team motivation and performance (Gilson et al., 2015; Wang et al., 2025), and it extends prior understanding by demonstrating how distributed project structures can magnify the positive effects of trust-based autonomy on productivity.

The findings suggest that a supportive and flexible organisational culture—marked by open communication, recognition, and reduced bureaucracy—plays a pivotal role in improving productivity within project teams. One respondent encapsulated the sentiment, saying, "*It's easier to get things done when the organisation trusts us to handle our responsibilities, instead of making us wait for approvals every step of the way*" (6:23). Such a structure enables project teams to operate more fluidly, minimising roadblocks and fostering an engaged, motivated, and productive work environment. This observation is consistent with prior research emphasising that open communication and organisational trust enhance efficiency and innovation in distributed teams (Palvalin et al., 2018; Wang et al., 2021; Wang et al., 2025). It further extends this understanding by illustrating how reduced bureaucracy in project settings enhances responsiveness and collaboration across geographically dispersed teams.

5.3.3 PROPER PLANNING AND PREDICTABILITY

Effective planning was identified as fundamental to project success and productivity, providing a structured approach that allows teams to set realistic goals, anticipate

challenges, and maintain a clear direction. Respondents emphasised that having a well-developed plan offered predictability, helping the team stay aligned with project timelines and objectives. One participant expressed this sentiment, stating, "*Good planning is the backbone of any successful project; without it, everything can fall apart*" (10:16). This structured approach enabled the team to move forward with confidence, knowing their responsibilities and next steps. The importance of structured planning and predictability is well-documented in project management literature, where planning discipline directly correlates with success metrics (Kloppenborg et al., 2019; Gilson et al., 2015; Palvalin et al., 2018). These findings are consistent with previous studies, yet they extend existing knowledge by highlighting that, in distributed project environments, effective planning not only enhances coordination but also mitigates communication gaps and time-zone challenges. This reinforces the critical role of planning as a mechanism for cohesion and productivity across geographically dispersed teams.

Proper planning was also valued for fostering accountability and reducing stress by establishing a clear roadmap from the outset. One interviewee mentioned, "*When we have a solid plan from the beginning, it reduces the last-minute rush and gives everyone a clearer picture of what's expected*" (8:3). Teams that implemented consistent planning practices were able to better allocate resources, distribute workloads, and foresee potential roadblocks, minimising the risk of delays or unexpected issues. This predictability was particularly beneficial in distributed teams, where varying time zones and work hours can complicate communication and task coordination. As another participant noted, "*With our team spread out, planning is even more important. It keeps us all on the same page, even if we're working from different locations*" (7:22). These findings align with existing research emphasising the role of structured planning and coordination in enhancing project predictability and efficiency (Kloppenborg et al., 2019; Gilson et al., 2015; Palvalin et al., 2018). However, this study extends earlier work by demonstrating that, in distributed settings, planning not only guides workflow but also functions as a unifying mechanism that maintains team cohesion despite geographical and temporal barriers.

Additionally, planning processes that incorporated regular progress checks helped teams make necessary adjustments to avoid derailment. Respondents valued these interim assessments, with one stating, "*Midway reviews let us catch any issues*

before they become big problems. Adjusting early makes a huge difference in keeping us on track" (9:5). Such reviews allowed teams to recalibrate their approach, adapt to unforeseen challenges, and stay aligned with their goals. Proper planning further enabled teams to establish predictable project milestones, which helped manage expectations and maintain motivation. One interviewee highlighted the psychological benefits of this approach, saying, "*Hitting planned milestones is a boost for morale; it reminds us that we're making progress and that our efforts are paying off*" (5:10). These findings are consistent with prior research that emphasises the importance of iterative planning and feedback mechanisms in sustaining performance and adaptability within project teams (Kloppenborg et al., 2019; Palvalin et al., 2018). However, this study extends existing work by illustrating that in distributed project environments, regular progress reviews not only enhance coordination but also reinforce team morale and cohesion across dispersed work settings.

The findings indicate that structured planning not only ensures goal alignment and efficient resource allocation but also enhances team motivation and accountability. One respondent encapsulated the importance of predictability in project settings, stating, "*Without a plan, we're just reacting to problems as they come up. With a plan, we're ready to tackle issues before they even happen*" (4:19). This proactive mindset was found to support productivity, as teams were better equipped to handle complexities and maintain focus throughout the project lifecycle. These findings are consistent with prior research emphasising that structured planning and proactive control mechanisms contribute to improved coordination and risk mitigation in project environments (Palvalin et al., 2018; Kloppenborg et al., 2019). Moreover, this study extends earlier work by demonstrating that such structured approaches are particularly vital for distributed teams, where advanced planning mitigates the delays and misalignments caused by physical and temporal separation (Palvalin et al., 2018).

5.3.4 LEADERSHIP STYLE

Leadership style emerged as a significant factor in team productivity, with effective leaders playing a key role in fostering cohesion, motivation, and adaptability within distributed project teams. Thematic Analysis identified that supportive and adaptable leaders contributed positively to team dynamics, productivity, and individual job

satisfaction, especially in remote or distributed settings. One respondent highlighted the importance of this balance, stating, "*A good leader knows when to step in and when to let us figure things out on our own*" (11:27). This approach reflects a leadership style that fosters autonomy while providing necessary guidance, empowering team members to take ownership of their work. Prior research demonstrates that transformational and adaptive leadership styles are positively related to engagement and productivity in distributed environments (Wang et al., 2025; Wang et al., 2021; Palvalin et al., 2018; Gilson et al., 2015). These findings confirm earlier studies that link leadership flexibility and emotional intelligence to enhanced team cohesion, while extending this understanding by illustrating how such leadership behaviours help mitigate the communication and coordination barriers unique to distributed project contexts.

Supportive leadership, particularly in distributed teams, helped create an environment where team members felt trusted and motivated, improving both individual and collective productivity. For example, a participant explained, "*It's not just about getting the work done. When my manager regularly checks in and asks how things are going, it makes a big difference to my motivation*" (9:12). Leaders who established regular communication check-ins and provided both emotional and practical support often improved morale and strengthened team cohesion. This leadership approach, which values wellbeing and communication, aligns with other findings in this study, where wellbeing and effective communication are critical to productivity. Leaders who demonstrated a "culture of care," as another participant described, fostered a safe environment for sharing ideas, stating, "*I know I can raise issues or suggestions without worrying about backlash, which makes me more engaged*" (5:15). Leaders who model empathy and care build psychological safety, which is shown to enhance motivation and communication in hybrid teams. These findings support earlier research emphasising the role of empathetic and relational leadership in sustaining team performance (Taras et al., 2019; Wang et al., 2025), while extending current understanding by illustrating how such supportive practices specifically mitigate isolation and disengagement challenges in distributed project teams.

Adaptable leadership, particularly in response to changing project demands or team dynamics, was also seen as crucial. Leaders who adjusted their style according

to team needs—whether offering more structured guidance for newer members or stepping back for more experienced employees—were instrumental in maintaining productivity throughout various project phases. One respondent noted, "*Our team leader has a way of reading the room. She knows when we need more guidance and when it's better to give us space to work things out*" (10:5). During critical project phases, respondents appreciated more directive leadership, with one participant saying, "*When deadlines are tight, I value clear, direct leadership. It keeps us all focused and aligned*" (3:7). Conversely, at other stages, especially when creativity and innovation were needed, respondents favoured a more collaborative and shared leadership approach. One team member shared "*I appreciate when leaders involve us in the decision-making process, especially in the planning stages. It helps build a sense of ownership and responsibility*," (14:8). Adaptive leadership has been linked to flexibility and effective change management in complex project ecosystems. These findings reinforce earlier research highlighting the importance of leadership flexibility in promoting innovation and stability across dynamic environments (Wang et al., 2021; Wang et al., 2025). However, this study extends existing work by illustrating how adaptability in leadership is particularly critical in distributed project teams, where varied experience levels, remote coordination, and limited face-to-face supervision demand situational leadership responsiveness.

These insights underscore that the productivity of distributed teams is significantly influenced by leadership styles that balance guidance with autonomy, fostering a positive team culture. One participant summarised this dynamic, stating, "*Good leadership in a virtual setting requires trust and adaptability. When that's there, I feel much more motivated to give my best*" (6:18). This aligns with prior research indicating that leadership approaches combining support and autonomy enhance motivation, engagement, and performance in distributed work environments (Gilson et al., 2015; Wang et al., 2025). Furthermore, these findings extend existing knowledge by highlighting how trust and adaptability in virtual leadership directly impact team motivation and productivity in distributed project teams, beyond what is typically observed in co-located settings.

In summary, effective communication systems are essential for maintaining productivity in distributed project teams, particularly under challenging conditions. While virtual communication platforms offer convenience and accessibility, face-to-

face interaction remains crucial for fostering team cohesion, minimising misunderstandings, and supporting informal exchanges that enhance productivity (Palvalin et al., 2018; Taras et al., 2019). Wellbeing also emerged as a central factor, with a positive working environment and flexible working arrangements playing a significant role in sustaining motivation and focus (Bryson et al., 2017; Krekel et al., 2019; Kazekami, 2020). A clean, resource-rich workspace and adaptable schedules enable employees to balance personal and professional responsibilities, leading to increased commitment and overall team performance (Berg & Karlsen, 2014; Palvalin et al., 2018).

Beyond communication and wellbeing, additional productivity drivers include a supportive organisational culture (Palvalin et al., 2018; Wang et al., 2025), effective planning (Kloppenborg et al., 2019), and adaptive leadership (Gilson et al., 2015; Wang et al., 2021). Each of these factors collectively creates an environment conducive to sustainable productivity. Organisations that prioritise recognition, autonomy, and clear planning structures foster environments where teams can operate efficiently, respond to challenges proactively, and maintain motivation throughout complex projects (Palvalin et al., 2018; Bryson et al., 2017). Adaptive leaders further enhance team performance by balancing guidance with autonomy, promoting ownership, and facilitating collaboration (Gilson et al., 2015; Wang et al., 2021). Ultimately, the interplay of these elements demonstrates that both communication effectiveness and wellbeing, alongside organisational culture, planning, and leadership, are crucial for improving the overall productivity of distributed project teams (Berg & Karlsen, 2014; Palvalin et al., 2018; Wang et al., 2021; Wang et al., 2025).

Chapter 6: Conclusion

This chapter presents the main conclusions of the study, which examined how productivity in distributed project teams is influenced by effective communication and employee wellbeing. Using a two-phase research design—a systematic review of the literature followed by thematic analysis guided by the Gioia Method—the study integrated theoretical perspectives with real-world experiences to provide a grounded understanding of productivity in distributed project settings.

The findings show that communication and wellbeing are central, interdependent factors that strongly influence team performance. While many factors identified in previous research—such as formal and informal communication, shared leadership, flexible working arrangements, and employee wellbeing—were confirmed, this study revealed how these factors interact specifically in distributed project teams. For instance, informal communication and strong personal relationships proved particularly important for maintaining cohesion and productivity across geographically dispersed members, while flexible working conditions and supportive environments played a key role in sustaining motivation and focus.

Beyond communication and wellbeing, factors such as task complexity, organisational structure, planning, and leadership style influence whether productivity thrives or falters. Altogether, the study identifies 68 factors reflecting the complex interplay of interpersonal, organisational, and psychological dynamics in distributed teams. The conceptual model evolved as these relationships became clearer, highlighting the importance of targeted onboarding, mentoring, and support mechanisms to sustain high performance. By integrating these insights, the study provides a practical, evidence-based framework for understanding and optimising productivity in complex, geographically dispersed project teams, offering guidance for both researchers and practitioners.

6.1 SUMMARY OF KEY FINDINGS

This study explored how productivity in distributed project teams is influenced by two critical dimensions: effective communication and employee wellbeing. Using a

two-phase research design—a systematic literature review followed by Thematic Analysis guided by the Gioia Method—the study developed a grounded, practice-informed framework combining theoretical understanding with real-world organisational experience.

The findings highlight that productivity in distributed teams is shaped by a complex interplay of factors across three interrelated domains: communication, wellbeing, and additional organisational-contextual influences. Effective communication emerged as central, with formal and informal interactions, communication tools, and personal relationships playing key roles in maintaining cohesion, collaboration, and task coordination. Wellbeing was equally critical, with supportive working environments, flexible arrangements, job autonomy, and team collaboration sustaining motivation, focus, and engagement. Other factors such as task complexity, organisational structure, planning, and leadership style further influenced productivity.

Collectively, the study identifies 68 distinct factors that interact in distributed contexts, offering a nuanced understanding of the conditions enabling teams to perform effectively despite challenges such as physical separation, varying expertise, and asynchronous work. These insights contribute to a practical, evidence-based framework that informs both researchers and practitioners about optimising productivity in geographically dispersed project teams.

6.1.1 EFFECTIVE COMMUNICATION AS A PRODUCTIVITY DRIVER

The study confirmed that effective communication is a central driver of productivity in distributed project teams. While prior research has often emphasised formal communication systems, structured tools, and language diversity, the interview findings reveal a more nuanced and relational perspective. Participants highlighted that informal and relationship-based communication is crucial for building trust, enhancing responsiveness, and fostering shared understanding across geographically dispersed team members. This interpersonal dimension, which is underrepresented in previous models, emerged as a key facilitator of productivity in distributed contexts.

The analysis also identified several other communication-related factors influencing team effectiveness, including communication infrastructure (56

references), informal communication (19), formal communication (11), language diversity (4), communication willingness (1), method adaptability (2), balanced use of modes (3), and personal relationship-building (2). Collectively, these findings emphasise that productivity depends not just on the presence of tools or systems, but on how teams adapt and use communication methods in ways that fit their context, needs, and relational dynamics.

By integrating these insights, the study extends existing models of team communication, showing that in distributed project teams, the relational and adaptive use of communication is as important as formal structures—providing a more complete understanding of the mechanisms that support productivity.

6.1.2 WELLBEING AS A STRUCTURAL FOUNDATION

The study identified 22 wellbeing-related factors that significantly influence productivity, highlighting the complex, multifaceted role of wellbeing in distributed project teams. Several factors emerged as both influential and underrepresented in prior research, offering new insights for theory and practice. For example, job burnout was linked to sustained workload pressure, inflexible deadlines, and inadequate recovery periods—conditions that directly undermine long-term productivity. Self-awareness, particularly among team leaders, was recognised as a key enabler of sustainable performance, allowing individuals to understand both their own and their team members' emotional and cognitive limits. Team collaboration was not only important for completing tasks but also served as a critical source of psychological safety, emotional support, and shared accountability.

Additional wellbeing dimensions identified include working environment and conditions (180 references), working hours and flexibility (40), mental wellbeing (23), subjective wellbeing (23), job autonomy (14), job satisfaction (8), physical health (3), and financial wellbeing (2). Codes such as compassionate mentorship (9) and shared leadership (22) further emphasised the role of empathetic leadership and equitable participation in distributed teams. Together, these findings advance existing wellbeing theories by grounding them in the realities of geographically dispersed work, showing that both emotional resilience and structural support are critical to sustained productivity.

The study also revealed a set of organisational and contextual factors that interact with wellbeing to shape productivity. These included work knowledge and complexity, organisational culture and structure, proper planning, leadership style, and environmental distractions. While not the primary focus, their consistent appearance across interviews underscores their practical importance. Many of these elements acted as mediators or amplifiers of communication and wellbeing—for instance, clear project planning improved communication efficiency, whereas excessive workload reduced wellbeing even in supportive environments. This highlights that productivity in distributed teams emerges from the dynamic interaction between interpersonal communication, wellbeing, and structural conditions, rather than from isolated interventions.

Overall, the findings provide a nuanced, evidence-based view of productivity in distributed project teams. While much literature emphasises the challenges of remote work, 58 per cent of the 483 coded interview statements reflected positive experiences. This optimistic perspective challenges assumptions that distributed teams are inherently less productive and demonstrates that high performance is achievable when supported by deliberate communication strategies, wellbeing-oriented practices, and enabling organisational structures. By integrating these insights, the study offers both a conceptual and practical framework for understanding and sustaining productivity in non-co-located project settings.

6.2 ANSWERING THE RESEARCH QUESTIONS

This study explored three central questions:

1. What are the key factors affecting productivity in distributed project teams?
2. How do the factors identified in theory relate to those observed in practice?
3. In what ways do effective communication and employee wellbeing affect productivity in distributed project teams?

To address these questions, the study used a two-stage methodology combining a systematic literature review with a Deductive Thematic Analysis of interview data, guided by the Gioia Method. This approach allowed integration of established theory

with the lived experiences of professionals in distributed project teams, providing a grounded and comprehensive understanding of productivity in this context.

6.2.1 RESEARCH QUESTION 1: KEY FACTORS AFFECTING PRODUCTIVITY

The study identified 68 factors influencing productivity, grouped into three domains: effective communication, wellbeing, and other organisational or contextual factors. This reflects the complex interplay of interpersonal, psychological, and structural dynamics that shape distributed team productivity.

Effective communication depended not just on tools or systems, but on how communication is enacted in daily team life. Participants highlighted both formal communication and informal, trust-based interactions. Informal communication proved especially powerful for building cohesion and responsiveness, often bridging gaps left by structured channels. Other key aspects included language diversity, communication willingness, varied communication methods (synchronous and asynchronous), and personal relationship-building. These findings suggest that communication effectiveness relies on relational quality and adaptability, not merely on technical provision.

Wellbeing emerged as the most frequently referenced domain, demonstrating its central role in sustaining performance. Key factors included working environment and conditions, job flexibility, mental and subjective wellbeing, and shared leadership. Underexplored factors such as job burnout, self-awareness, and team collaboration were highly influential in practice. Wellbeing in distributed teams is systemic, shaped by individual resilience, relational interactions, and supportive organisational structures that foster psychological safety.

Other organisational and contextual factors (37 in total) included work knowledge and complexity, organisational culture, planning, and leadership style. While some of these were recognised in prior literature, the empirical data revealed nuanced ways they shape productivity—for example, leaders' predictability and empathy, or teams' ability to adapt work processes to manage deadlines, interruptions, and cross-functional coordination.

Overall, productivity in distributed project teams arises from the dynamic interaction of communication, wellbeing, and structural factors. Isolated

interventions are insufficient; effective management requires integrated strategies encompassing communication practices, wellbeing infrastructure, and organisational adaptability.

6.2.2 RESEARCH QUESTION 2: THEORY VS. PRACTICE

A key strength of this study is its integration of theoretical concepts with empirical observations. The literature review identified productivity drivers grouped into communication, wellbeing, and organisational-contextual factors. Many theoretical factors were confirmed, but the empirical data revealed a richer, practice-grounded landscape.

In communication, literature often focused on formal systems and infrastructure, whereas empirical data highlighted informal and relational aspects, including trust, personal relationships, and cultural sensitivity.

In wellbeing, empirical evidence expanded the domain substantially. High-frequency codes such as working environment and conditions, work flexibility, mental and subjective wellbeing, job autonomy, and compassionate mentorship reaffirmed theory. The data also revealed underexplored factors such as job burnout, self-awareness, and team collaboration, showing wellbeing is multidimensional—encompassing emotional, cognitive, social, and structural elements.

Organisational and contextual factors were richer in practice. Beyond shared leadership and culture, 24 additional factors emerged, including work knowledge and complexity, planning, leadership style, workload, and deadlines. Flexible, human-centred leadership—accessible, empathetic, and predictable—was often more critical to productivity than rigid hierarchies.

This comparison shows that while theory provides a foundation, practice exposes a complex, adaptive landscape. Integrating both perspectives advances understanding by highlighting core theoretical drivers alongside emergent, context-specific factors.

6.2.3 RESEARCH QUESTION 3: HOW COMMUNICATION AND WELLBEING AFFECT PRODUCTIVITY

Both effective communication and employee wellbeing are fundamental drivers of productivity.

In communication, participants emphasised reliable tools and infrastructure for coordination, informal interactions for trust and emotional connection, formal communication for role clarity, and sensitivity to language diversity for mutual understanding. Shared leadership reinforced cohesion and distributed responsibility.

In wellbeing, participants highlighted working environment, flexibility, mental and subjective wellbeing, job satisfaction, self-awareness, and team collaboration. Job burnout emerged as a negative factor, while compassionate mentorship and shared leadership supported motivation, resilience, and sustained productivity.

These findings show that productivity depends not only on task design or resources but on relational and systemic support. High-performing teams integrated relational communication and wellbeing practices into daily workflows, demonstrating that distributed teams thrive when both domains are proactively managed.

6.2.4 CONTRIBUTION TO THE CONCEPTUAL MODEL

This study advances understanding of productivity in distributed project teams by showing how communication, wellbeing, and organisational factors interact dynamically. The conceptual model evolved during the study as these relationships became clearer. It highlights the importance of relational communication, systemic wellbeing practices, and adaptable leadership for sustaining productivity. By synthesising these insights, the study provides a practical, evidence-based framework that guides both researchers and practitioners in optimising performance in complex, geographically dispersed environments.

6.3 THEORETICAL CONTRIBUTIONS

This study makes several important contributions to understanding productivity in distributed project teams by integrating established theoretical frameworks with empirical evidence from practitioners. It expands, refines, and in some cases challenges existing assumptions in the literature.

First, the study offers a more integrated and structured model of productivity factors by grouping them into three core domains: communication, wellbeing, and other organisational and contextual factors. While prior research has examined these dimensions individually, few studies have shown how they interrelate. This triadic framing provides a structured yet flexible foundation for future theoretical work, particularly in distributed, remote, or virtual team contexts.

Second, the study validates established theoretical constructs while highlighting underrepresented or emergent drivers of productivity. For example, formal communication systems, leadership, and organisational structure were confirmed, but informal communication, personal relationship-based interactions, and communication willingness emerged as particularly influential. These findings advance communication theory in distributed project teams by emphasising relational and interpersonal dynamics alongside technical systems.

Third, the research extends wellbeing theories by providing a richer, empirically grounded understanding of distributed team contexts. Beyond commonly studied dimensions like job satisfaction and mental wellbeing, this study identifies factors such as job autonomy, work flexibility, compassionate mentorship, team collaboration, burnout, and self-awareness. This broader conceptualisation captures the complex interplay between structural and psychological aspects of work in geographically dispersed teams.

Fourth, the study addresses a gap in the conceptualisation of organisational and contextual factors in distributed project teams. Prior literature rarely considers factors such as workload management, project planning, work complexity, and temporal coordination. By introducing 24 additional codes in this category, the study highlights the need to expand existing models to better reflect the realities of non-co-located work structures.

Finally, the study contributes methodologically by applying the Gioia Method in the context of distributed project teams. This demonstrates how grounded empirical data from practitioners can be combined with theory to generate a coherent explanatory framework, supporting theory-building in project management and organisational research.

Overall, these contributions respond to calls for more contextually grounded and practice-relevant theories of productivity. The study also offers a clear conceptual model that illustrates the dynamic interplay between communication, wellbeing, and organisational factors, providing a robust platform for future research and theory development in distributed project teams.

6.4 PRACTICAL IMPLICATIONS

The findings of this study provide several actionable insights for organisations seeking to enhance productivity in distributed, remote, or virtual project teams. These implications span three main domains—communication, wellbeing, and organisational-contextual factors—and offer guidance for managers, team leaders, and policy-makers navigating the challenges of non-co-located work.

6.4.1 PRIORIRISE INTERPERSONAL AND INFORMAL COMMUNICATION

While organisations often emphasise formal communication systems and digital tools, this study shows that informal, interpersonal communication is equally critical. Participants highlighted trust, responsiveness, and relational alignment as key drivers of effective collaboration, particularly in the absence of co-location. Managers should therefore encourage communication willingness and informal exchanges through regular one-on-one check-ins, dedicated social channels, and open-door virtual practices. This represents a shift from compliance-oriented communication to relationship-centred interaction, especially in culturally and geographically diverse teams.

6.4.2 EMBED WELLBEING INTO DAILY OPERATIONS

Wellbeing emerged as a central driver of productivity. Beyond mental health and job satisfaction, tangible factors such as working environment (180 references), flexible hours (40), autonomy (14), and burnout (4) were influential. These findings suggest that wellbeing must move beyond policy statements and be operationalised in daily workflows. Organisations should implement flexible scheduling, equitable workload distribution, compassionate leadership, and embedded support mechanisms as part of

project planning and routine operations, rather than treating them as Human Resources checklists.

6.4.3 REFRAME LEADERSHIP AS ACCESSIBLE AND SHARED

Leadership in distributed teams is most effective when characterised by accessibility, empathy, and shared responsibility. Shared leadership (22 references) and leadership style (18) were frequently cited as productivity drivers. This indicates that leadership effectiveness depends more on behaviour than formal position. Organisations should train team leads and project managers in emotional intelligence, participatory decision-making, and psychological safety, reinforcing inclusive leadership to enhance motivation, alignment, and resilience across distributed teams.

6.4.4 TACKLE OPERATIONAL DRIVERS OF PRODUCTIVITY

Beyond communication and wellbeing, 24 additional organisational and contextual factors influence productivity, including work complexity (48), planning (19), distractions (15), temporal coordination (9), and workload (6). These structural challenges highlight that productivity is not solely an individual issue. Managers should focus on clarifying project goals, reducing task complexity, coordinating workflows predictably, and minimising interruptions—especially in home-based or asynchronous environments—to support sustained performance.

6.4.5 INTEGRATE COMMUNICATION, WELLBEING, AND STRUCTURE INTO GOVERNANCE

A key insight of this study is that productivity emerges from the interaction of communication practices, wellbeing, and organisational structures. Robust communication tools alone cannot compensate for poor psychological safety or inflexible workloads. Governance models should therefore be cross-functional, incorporating input from project management, Human Resources, and Information Technology to ensure that communication, team wellbeing, and organisational design reinforce one another rather than operate in isolation.

In summary, these practical implications emphasise the need for adaptive, human-centred strategies. By attending to interpersonal connection, lived wellbeing, and operational structure simultaneously, organisations can create the conditions for high-performing, resilient distributed project teams.

6.5 LIMITATIONS OF THE STUDY

While this study provides valuable insights into the impact of communication and wellbeing on productivity in distributed project teams, it is important to acknowledge its limitations. Recognising these limitations helps contextualise the findings and highlights directions for future research

First, the study employed qualitative methods, specifically interviews and Thematic Analysis, which enabled a detailed exploration of personal and organisational experiences. However, this approach naturally limits the generalisability of the findings. Although the sample was intentionally diverse in terms of roles and industries, it was relatively small and participation was voluntary. As a result, some perspectives may be underrepresented, and participants may have been more engaged or reflective about communication and wellbeing than the broader population.

Second, the timing and context of data collection may have influenced the findings. Most participants were drawn from specific regions or sectors, each with distinct organisational cultures and practices. Data collection coincided with broader global events, including the tail end of the COVID-19 pandemic, which may have uniquely affected working conditions. These contextual factors limit the direct applicability of the findings to teams in other settings or time periods.

Third, coding and interpretation of qualitative data inevitably involves subjectivity. Although the Gioia Method was applied rigorously, including cross-checking codes and confirming themes with participants, some subtleties or alternative interpretations may have been missed. Future studies using different methods—such as surveys, experiments, or mixed approaches—could help validate and extend these findings.

Lastly, although this study focused primarily on communication and wellbeing, productivity in distributed teams is influenced by a broader range of factors.

Organisational design, technological adaptability, leadership approaches, and external socio-economic conditions may all play important roles but were not the central focus here. While 68 productivity-related factors were identified, additional influences likely exist and warrant further investigation in future research.

In summary, these limitations do not diminish the study's contributions but highlight the need for cautious interpretation. They also emphasise the value of further research using broader methodologies, larger and more diverse samples, and wider contextual perspectives to deepen understanding of productivity in distributed project environments.

6.6 RECOMMENDATIONS FOR FUTURE RESEARCH

This study highlights several promising avenues for further research on productivity in distributed project teams, particularly in relation to communication and wellbeing. While the findings provide a solid foundation, additional work is needed to test their broader applicability and to explore areas beyond the scope of this research.

First, future studies could adopt mixed-method approaches to build a more comprehensive understanding. The 68 productivity-related factors identified here were derived from interviews, but it would be valuable to examine their relevance across larger samples or diverse organisational settings. Quantitative approaches, such as surveys, longitudinal tracking, or experimental designs, could help determine which factors have the most impact and how they interact over time.

Second, research could focus more closely on individuals within project teams, rather than treating teams as homogeneous units. This study included team members and managers but did not fully differentiate between roles or personal characteristics. Future research could investigate how experiences of communication and wellbeing vary by role, personality, or background, and how these differences affect both individual and team productivity.

Third, the broader organisational and cultural context warrants further exploration. Industry sector, organisational culture, and regional norms appeared to influence how communication and wellbeing were experienced in this study. Cross-cultural or cross-industry comparisons could identify which productivity factors are context-specific and which are more universally applicable.

Fourth, incorporating perspectives beyond the immediate project team could provide additional insights. Senior leaders, HR representatives, or external consultants shape the tools, policies, and cultural practices that affect distributed team functioning. Including these stakeholders could reveal structural or strategic influences on productivity not visible at the team level.

Fifth, future research could examine the interrelationships among the 68 identified factors. Some, such as job flexibility or supportive leadership, appeared to influence both communication and wellbeing. Mapping these overlaps could help identify leverage points where interventions have ripple effects across multiple productivity dimensions.

Finally, as distributed work continues to evolve, research should keep pace with changes in technology, working arrangements, and employee expectations. What drives productivity today may shift in coming years, particularly with the rise of hybrid models and new collaboration tools.

In summary, this study lays important groundwork, but there remains substantial scope to refine, expand, and challenge its conclusions. Future research can build on these findings by engaging more diverse participants, employing a broader mix of methods, and monitoring the evolving nature of distributed work.

6.7 FINAL CONCLUSION

This thesis explored how productivity in distributed project teams is shaped by the interplay of communication, wellbeing, and organisational-contextual factors. By integrating theoretical perspectives with the lived experiences of professionals, the study provides a nuanced understanding of the conditions that enable teams to perform effectively across distance and time.

A key contribution of this research is demonstrating that productivity is not solely determined by tools or formal processes, but emerges from relational, systemic, and structural dynamics that support collaboration, motivation, and engagement. The study highlights the importance of attending to the human and organisational dimensions of work to sustain high performance in distributed environments.

While limitations exist regarding scope, sampling, and methodology, the study lays a foundation for future research to explore these dynamics further, using diverse methods and contexts. Ultimately, productivity in distributed teams is best understood as a reflection of the conditions and interactions that allow work to unfold effectively, rather than as a simple output or isolated outcome.

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Appendices

Appendix A

Conference article

European Academy of Management
EURAM

ESG UQÀM

EURAM 2021

Reshaping capitalism for a sustainable world

16-18 June 2021

In collaboration with Université du Québec à Montréal, Canada

Online Conference

PROGRAMME BOOK

Track Sessions per day

Projects & Society (09:45 - 11:15)

Track: T10_03 - Projects & Society & the Dark Side of Projects

Chair(s): Luca Sabini

Discussant(s): Crystal Nguyen, Marzena Baker, Lynn Crawford, Ken Chung

Paper Presentations:

1121 HOW DOES THE ROBUST ACTIONS FRAMEWORK FIT INTO THE AUSTRALIAN CONSTRUCTION INDUSTRY CONTEXT: AN EXPLORATION

Crystal Nguyen	MONASH UNIVERSITY
Robert Moehler	MONASH UNIVERSITY
Luca Sabini	HERTFORDSHIRE UNIVERSITY

1538 WELLBEING AND PRODUCTIVITY IN PROJECT WORK

Lynn Crawford	THE UNIVERSITY OF SYDNEY
Gholamreza Azarbouyehdinaki	THE UNIVERSITY OF SYDNEY

1545 GENDER DIVERSITY LEADERSHIP ON BOARDS: THE ROLE OF A DIVERSITY CULTURE IN SUPPORTING EQUALITY AND DIVERSITY INITIATIVES AND ORGANIZATIONAL PERFORMANCE.

Marzena Baker	THE UNIVERSITY OF SYDNEY
Muhammad Ali	QUEENSLAND UNIVERSITY OF TECHNOLOGY
Erica French	QUEENSLAND UNIVERSITY OF TECHNOLOGY

1693 UNDERSTANDING PROJECT STAKEHOLDER INFLUENCE: REVISITING INFLUENCE TYPOLOGIES USING SOCIAL NETWORKS

Julian Fares	ASSISTANT PROFESSOR
Ken Chung	SCHOOL OF PROJECT MANAGEMENT, FACULTY OF ENGINEERING, THE UNIVERSITY OF SYDNEY
Lynn Crawford	THE UNIVERSITY OF SYDNEY

Wellbeing and productivity in project work

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Submitted to

EURAM 2021

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Abstract

Wellbeing and productivity are fundamental to social and economic sustainability and are inextricably linked at all levels of endeavour from global to local. Workplaces are changing rapidly in response to societal and technological change and to catastrophic events such as the COVID-19 pandemic. At the same time, work in organisations is increasingly being undertaken through projects. Project work is a form of knowledge work, and productivity of knowledge work has overtaken manual work as a major challenge of the 21st century. Wellbeing and productivity are well addressed in the general management, health and economics literatures, both together and separately. While stress and to a lesser extent, wellbeing, have had reasonable coverage in the project literature, productivity has received sparse attention. This paper contributes to understanding of wellbeing and productivity in project work by drawing upon the knowledge productivity literature to structure and inform analysis of a single longitudinal case study of a continuous delivery project team. The case is observed over two years, including the advent of the COVID-19 pandemic, and draws upon data from a variety of sources. Results provide support for use of a knowledge work performance framework as a model for structuring understanding of the complex relationships between stress, wellness and productivity in project-based work. There are early indications that remote working and highly stressful events such as a pandemic do not necessarily decrease the productivity of project work. However, the definition of productivity in project work and assessment of productivity are highly dependent upon the specific context. Productivity in project work inevitably involves some level of stress, and a major factor in wellness is balancing stress by ensuring availability of adequate coping resources, particularly the social support of co-workers.

Keywords: Wellbeing, productivity, project work, stress, COVID-19

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1. Introduction

Wellbeing and productivity are recognised as fundamental to the sustainability of economies, firms and individuals (World Economic Forum, 2020) and both are central concerns of governments and organisations as they respond to societal and technological changes and events such as the COVID-19 pandemic. There are strong but complex links between the two concepts at multiple levels from community, to organisation and individual. At the community level wellbeing, often referred to as quality of life, is dependent upon productivity, and at the organisational level, productivity is positively associated with workforce wellbeing (Hafner et al., 2015; Oswald et al., 2015; Palvalin, 2019). At the level of the individual worker, however, the pursuit of productivity growth may be associated with increased stress with potential to undermine wellbeing (Isham et al., 2019).

Work in organisations is increasingly being undertaken through projects (Schoper et al., 2018; Midler, 2019) as organisations and economies respond to rapid technological and societal change. In the workplace, new approaches are being deployed to enable flexibility, autonomy and delivery of value. Agile methodologies (Serrador and Pinto, 2015; Birkinshaw, 2018) and new ways of working (van der Voordt, 2004; Palvalin, 2019) are specifically intended to improve both productivity and job satisfaction (Laihonen et al., 2012). Much of this work is conducted in multi-disciplinary, virtual and distributed teams, encouraged by globalisation and facilitated by technology. The advent of the COVID-19 pandemic has accelerated these trends, forcing people to work from home and rapidly adapt to new ways of working. At the same time, organisations are accelerating the digitalization of work processes and see potential for nearly half their workforce continuing to operate remotely (World Economic Forum, 2020, p. 5). There are concerns, however, about the impact this will have on wellbeing and productivity both in the short and long term (Bloom et al., 2020; Brodeur et al., 2021).

Stress, wellbeing and productivity are well addressed in the general management, health and economics literatures, both together and separately, and at different levels from global, to local, to team and individual. In the specific context of project work, stress and to a lesser extent wellbeing have had reasonable coverage, but productivity has received sparse attention. This paper contributes to understanding of wellbeing and productivity in project work by addressing the following research questions:

- How do stress/wellbeing relate to productivity in project work?
- How do project teams respond to stressful events?

Data is drawn from a single longitudinal case study of a continuous delivery project team. The case is observed over two years, including the advent of the COVID-19 pandemic, and draws upon data from a variety of sources.

This paper begins with exploration and definition of the terms 'wellbeing' and 'productivity'. This includes review of research that has investigated connections between the concepts and prior research that has specifically considered aspects of wellbeing and productivity in the context of project-based work. It is followed by a brief discussion of new ways of working and workplace changes in response to COVID-19. The research methodology and case description are presented against this background and followed by discussion and conclusions.

Crawford, L. H., & Azarbouyehdinaki, G. (2021). Wellbeing and productivity in project work. Submitted to *EURAM (European Academy of Management) Conference*. Reshaping capitalism for a sustainable world - 16-18 June, Online.

2. Literature Review

2.1. Wellbeing

Wellbeing is a multi-dimensional construct and may also be referred to as quality of life or absence of distress or dysfunction (Dodge et al., 2012). It is considered to encompass a number of components both physical and psychological. The physical aspects include health, resources, freedom of movement, and ability to act (Herzlich, 1973). Psychological aspects are more diverse and are often referred to as happiness (Bradburn, 1969) or life satisfaction (Diener and Suh, 1997), including hedonia (e.g., pleasure, enjoyment, comfort, absence of distress) and eudaimonia (e.g., growth, meaning, authenticity, excellence) (Huta and Waterman, 2014). According to Ryff and Keyes (1995), psychological wellness has six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance, and is therefore a function of the individual and their environment.

Dodge et al. (2012, p. 222) propose a definition of wellbeing as "a state of equilibrium or balance that can be affected by life events or challenges". This definition captures the differential impact of change on the wellbeing of individuals. Each individual has different past experiences and psychological, social and physical resources and whenever they meet a challenge, they need to adapt their resources accordingly. An aspect of this equilibrium is that, although challenges may reduce wellbeing if resources are inadequate, lack of challenge may also undermine wellbeing through stagnation and lack of opportunity for personal growth and development (Marks and Shah, 2004).

Challenges can also be described as external forces or stressors (Boren and Veksler, 2015) and may be physical, environmental, relational and/or social. COVID-19, for example, has presented a number of challenges across these categories (Ralph et al., 2020; Saxena and Gautam, 2020; Brodeur et al., 2021). When an individual faces a challenge or stressor, they respond by psychologically appraising the stressor relative to their resources. Their body responds physiologically in a process referred to as allostasis, which can have immediate beneficial effects of adaptation and protection but will negatively affect mental and physical health if sustained over time as allostatic overload (McEwen, 2005). Negative psychological effects of stress are most likely to occur when the individual perceives their resources, including coping mechanisms, to be inadequate to meet the stressors they are experiencing (Lazarus and Folkman, 1984). Burnout (Jugdev et al., 2018) occurs when resources are insufficient to deal with the stress over a sustained period of time.

Availability of resources is therefore important to wellbeing in order to maintain balance and avoid allostatic overload. Such resources include the personal, psychological and physical characteristics specific to each individual. In the workplace, personal resources will include skills and capabilities that individuals have to meet job demands. Workplace resources such as suitable technology and systems and support for learning, growth and development may be provided by the organisation or by other people in the organisation in the form of social support (Bakker and Demerouti, 2007). One aspect of social support that is highly relevant to work in multi-disciplinary project teams is the "perceived ability to rely on co-workers in times of increasing demands" (Boren and Veksler, 2015, p. 32). Another is the ability to interact and communicate with others through work-related social support networks encompassing co-workers, supervisors and subordinates.

There is a considerable body of research that addresses stress and its impact on wellbeing in project work. A useful and recent review of this literature is provided by Darling and Whitty (2019) who set out to describe the nature of project work, its relationship with stress and how this can negatively impact wellbeing and organisational performance. The majority of research relating to stress in project work has been conducted in the context of construction projects and it must be recognised that some projects, project types and industries are likely to have different characteristics and be more stressful than others. However, from the literature, there is agreement on a number of characteristics that are common across project types. Projects typically require milestones to be met with limited resources, which can result in long hours, heavy workloads and intense pressure in lead up to deadlines (Lingard et al., 2010; Naoum et al., 2018). Projects involve multiple stakeholders which requires high levels of communication and coordination, and can be a source of competing and changing goals, demands and expectations (Pinto et al., 2016). Projects are inherently uncertain and often subject to significant ambiguity (Gällstedt, 2003; Naoum et al., 2018) affecting both tasks and roles. As temporary organisations for time-limited endeavours, there is potential in projects for job insecurity, particularly for those in contingent or contract roles (Turner and Lingard, 2016; Jugdev et al., 2018). In many cases multiple projects are being delivered simultaneously and this leads to multi-tasking and potential for project overload (Zika-Viktorsson et al., 2006).

Together and separately, the characteristics of projects represent challenges that are part of the attraction of projects for those who choose project based work as a career (Lloyd-Walker et al., 2018). Challenges are also stressors and research on the dispositional coping strategies of project managers has found that when compared to a general population, project managers are more likely to assess stressful situations as controllable or requiring more information (Aitken and Crawford, 2007), a potentially positive resource to assist in maintaining the balance required for wellbeing.

In support of wellbeing, Pinto et al. (2014) highlight the importance of job control and social support in mitigating the stress of project work. The degree of control that an individual feels they have over the work they do, and the extent to which they can make independent decisions will influence their resilience in dealing with stressors. In their study of over 300 people across four organisations, they found that project workers under stress benefitted most from receiving social support from co-workers including colleagues and supervisor.

2.2. Connecting wellbeing and productivity

Wellbeing in the workplace has implications beyond the physical and mental health of individuals. According to Kowalski and Loretto (2017), in a fast changing and fast-paced global workplace, where maintaining competitive advantage is paramount to success, identifying ways of sustaining employee wellbeing is of increasing importance to a range of stakeholders, both within the context of work and beyond. In the workplace, wellbeing is important not only to individual employees in terms of maintaining their own good health, but also to managers and organisations, as there is evidence that poor wellbeing at work can have adverse effects on performance and overall productivity (Cvenkel, 2020). By embracing the corporate responsibility of promoting the health and wellbeing of multi-generational, holistic employees, organisations have the potential for cost savings, improved employee engagement, reduced attrition and productivity advantages. Beyond the workplace, governments and health service providers must manage the potential burden of poor individual and population health (Kowalski and Loretto, 2017). This connection between wellbeing and productivity is

supported by the Word Health Organisation (WHO) which estimates that "depression and anxiety disorders cost the global economy US$1 trillion each year in lost productivity" (WHO, 2019).

Evidence of a positive connection between wellbeing and productivity is provided by a number of studies including those of Oswald et al. (2015, p. 789) which found that "happiness makes people more productive", and Bryson et al. (2017) which demonstrated positive and statistically significant relationships between the average level of job satisfaction at the workplace and workplace performance. In a review of wellbeing and productivity literature for the UK Economic and Social Research Council, Isham et al. (2019) found that wellbeing is linked to higher levels of labour productivity but that the relationship is complex, and too much organisational emphasis on productivity growth may have detrimental effects on wellbeing.

2.3. Productivity

Productivity is a term that is often used with an underlying assumption that we all know what it means but it is subject to different formal definitions and informal interpretations. From a scientific perspective it is the relationship between inputs and outputs (van der Voordt, 2004). In economic terms the main categories of productivity are labour, capital, material and total factor productivity (TFP) (Gordon et al., 2015), the latter capturing everything not included elsewhere, such as changes in knowledge, use of particular organisational structures or management techniques.

Productivity is often considered in research as a dependent variable, that can be improved or diminished by particular factors or activities under investigation. In project research, success is most widely used as the dependent variable, and there is a considerable amount of research addressing the relationship between various inputs to projects such as project management methodologies and competencies of the project manager, and the outputs or outcomes, referred to as project success (Jugdev and Müller, 2005; Ika, 2009). Yet there remains no common definition for what constitutes project success (Davis, 2014; Albert et al., 2017). It is interesting that one of the more recent reviews of stakeholder perceptions of project success suggests that "a successful project inspires motivation, improves communication, better team working and an increase in productivity" (Davis, 2017, p. 199). Productivity and project success are not the same thing, but productivity may be considered as a component or output of project success.

As a focus of interest, productivity has received scant attention in project research and literature. Henderson (2004, 2008) in considering the impact of project managers' communication competencies has provided perhaps the most useful approach to assessment of labour productivity of project teams by drawing upon 8 outcome related questions in Mott's (1972) well validated Organizational Effectiveness Questionnaire that cover productivity, quality, efficiency, anticipation of problems, innovation and adaptation to change.

Two other studies that specifically address productivity in the context of projects do so at the organizational level. Blomquist and Wilson (2009) claim to be the first to deal quantitatively with productivity in multi-project organisations, approaching it at organisation level in terms of ongoing year-to-year activities. Pollack and Adler (2014) also address productivity at the organisational level, in what is described as the "first large-scale study that has analyzed the impact of project management on productivity" (Georg Gemünden, 2014, p. 4). Based on self-reported data from two longitudinal surveys of Australian businesses, they found that use of

project management significantly increases productivity in small to medium enterprises. The definition of productivity underpinning this study is not specifically provided by the authors but is most likely to be an assessment of total factor productivity (TFP).

In relation to wellbeing and in the context of project work, our concern is with labour productivity. Drucker (1999) distinguishes between the labour productivity of manual and knowledge workers. Productivity of manual workers, particularly in manufacturing, is well understood and researched. It was a major concern of the 20th century. According to Drucker (1991, 1999) knowledge worker productivity measurement and improvement are the most challenging managerial issues of the 21st century.

Project work can be considered to be knowledge work, characterised by non-repetitiveness, creativity and intangibility (Heidary Dahooie et al., 2018), autonomous, unpredictable, unstructured and organisationally contingent, responding to changing demands (Bosch-Sijtsema et al., 2009), undertaken by workers who deal primarily with information or develop and use knowledge (Drucker, 1991)(Drucker, 1999). Project work, as knowledge work, involves collaboration, interaction and communication (Heerwagen et al., 2004). Compared with literature dealing directly with productivity of project workers, there is a good body of relevant research on productivity of knowledge workers although even here there is considered to be a paucity of research on productivity measurement (Bortoluzzi et al., 2018).

Based on a systematic review of 513 papers published since 2007, Bortoluzzi et al. (2018) concluded that there were no clear measures or definition for workplace productivity. Measurement of productivity of some areas of knowledge work, where the work is routine, such as call centres, may be relatively straightforward. It can for instance be measured as amount of time spent on routine tasks or number of phone calls per employee and per unit of time. Where there is less routine, as in project work, it has proven challenging. In such cases, a self-assessed measure of perceived productivity, and other subjective evaluations, which are widely used in research, are better than no measure of productivity (Bortoluzzi et al., 2018) and have the flexibility to capture intangible aspects of the unique fluid characteristics of knowledge work (Jääskeläinen and Laihonen, 2013). Proposed surrogates for workplace productivity include absenteeism, engagement and output and performance metrics relating to organisational goals (van der Voordt, 2004; Bortoluzzi et al., 2018).

From a review of the literature on productivity of knowledge workers, Ramírez, Nembhard (2004) identified fourteen measures that had been used for productivity: quantity (outputs and outcomes), costs and/or profitability, timeliness, autonomy, efficiency (doing things right), quality, effectiveness, customer satisfaction, innovation/creativity, project success (including communication), responsibility/importance, knowledge workers' perception of productivity, and absenteeism. They found that between one and five of these measures were used in combination, with an average of three measures being most common.

A number of researchers (Bosch-Sijtsema et al., 2009; Plum and Mawson, 2015) propose that knowledge worker productivity should be assessed at the team level, because tasks are not purely individual, but are usually performed in collaboration with others. Team productivity is not the sum of individual productivity, and overall productivity of the organization (or project) is dependent on multiple contributions towards overall organizational (or project) goals.

In addition to concern for measures of productivity, there is considerable attention given, in the literature, to factors that enable or hinder knowledge work productivity. From a review of more than 800 individual research papers and 35 meta analyses, Plum and Mawson (2015) identified six factors that had high statistical association with the performance of teams involved in knowledge work, namely: social cohesion, perceived supervisory support, information sharing, vision and goal clarity, external communication and trust. Bosch-Sijtsema et al. (2009) identified factors operating at the organisational level (structure, culture, strategy, policy, rewards), relating to the workplace, the team processes, structure and composition, the nature of the team tasks including the degree of collaboration and interdependence, and the mode of working, including face to face or technology mediated collaboration. Factors identified as particularly important for team effectiveness were those enabling the team to perform tasks and produce results and those supporting wellbeing.

Most relevant to this research is the work of Miikka Palvalin and colleagues (Palvalin et al., 2015, 2018; Palvalin, 2017, 2019) as it takes into account changes in the work environment including the work of distributed teams and includes consideration of wellbeing. They propose a model of knowledge management performance (Palvalin, 2017) in which contextual factors and personal ways of working are considered as performance drivers and wellbeing and productivity are considered as results and outcomes Figure 1.

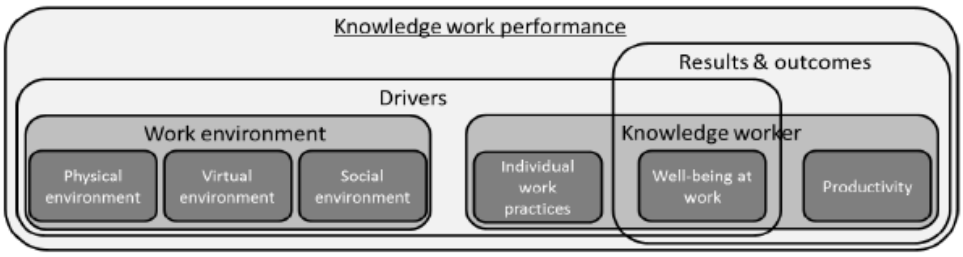

Figure 1: Framework for Knowledge Work Performance (Palvalin, 2017)

In this model, individual work practices include proactive, flexible and mobile working, use of technology, process for prioritising and planning, as well as concentrating and relaxing. Wellbeing at work covers work engagement, satisfaction, stress, appreciation, work-life balance, conflict and culture. Productivity includes work efficiency and effectiveness, results, goals, skills, quality, customer satisfaction and team performance.

This framework and an associated questionnaire were tested using data collected in Finland in 2015 with nine organizations and 998 participants. The questionnaire was developed in collaboration with practitioners and organisational representatives (Palvalin et al., 2015) with further development and testing (Palvalin, 2017) and therefore provides useful guidance for research that considers both wellbeing and productivity of knowledge workers. This research by Palvalin and colleagues provides valuable input to consideration of factors or elements contributing to both wellbeing and productivity in particular and there is clear relevance to work in distributed project teams.

2.4. Changed ways of working

Changes from traditional to new, flexible ways of working that are enabled by technology and not fixed in time or place, have been a strong motivator for much of the research on knowledge worker productivity. 'New ways of working' have been promoted as ways to "*improve productivity and business performance while also taking into account both the welfare of the personnel and the environment* " (Ruostela et al., 2015, p. 384). Multiple benefits are expected, both social and economic, but are not immediately obvious or easy to measure and diffusion has been slow (Bloom et al., 2015). For those questioning the suitability and relevance of long accepted work practices and arguing for radical change, there is a need for research that investigates the value and impact of the proposed changes and provides guidance and accepted ways of measuring the elusive knowledge worker productivity.

An element of these new ways of working is virtual working also referred to as remote, dispersed, distributed or mobile. It can be structured, as in virtual or distributed project teams or unstructured whereby workers "*use technology to interact with others, share ideas and information, and execute work*" (Makarius and Larson, 2017, p. 160). For some time, many project workers have been highly mobile, working at client sites, in hotels, while travelling and at home (Bosch-Sijtsema et al., 2009). Working from home (WFH) in particular, offers potential benefits for the individual, the organisation and for society. Benefits for the individual include decreased travel time and cost and increased opportunities for improved work-life balance. For society there is potential for greater workforce and economic dispersion and reduced environmental impact of journeys to work. For organisations there is an obvious benefit in reduced cost of office space, and some evidence of reduced attrition rates and improved worker productivity (Bloom et al., 2015). Virtual working is not beneficial for everyone. It is highly dependent upon the nature of the work and the circumstances of the workers.

In the years leading up to 2020, some organisations had been adopting flexible work practices including the option of working from home, but adoption was slow. For many, both employers and employees, it involved a significant change, and for employers there was uncertainty in terms of productivity benefits. The advent of COVID-19 in 2020 immediately accelerated the rate and acceptance of change. Within weeks, WFH had become the norm, wherever it was possible. As a result, the World Economic Forum suggests that the future of work has already arrived, and predicts potential for organisations to move 44% of their workforce to remote working (World Economic Forum, 2020) on an ongoing basis. There are concerns however about how this will affect productivity and wellbeing.

A Bank of England study on the impact of COVID-19 in terms of productivity indicates that total factor productivity had decreased across the UK economy by 5% at the end of 2020, with a 1% reduction expected in the medium term (Bloom et al., 2020). Productivity of individual firms is expected to decrease due to costs of responding to the pandemic, reduced research and development expenditure and senior management distraction. However, a pre-COVID-19 study by one of the authors of the Bank of England report provided evidence of improved work satisfaction, reduced attrition rate and a minimum productivity increase of 13% as a result of offering employees the opportunity to WFH (Bloom et al., 2015). If, as expected, remote working continues at a high rate across the workforce, there is clearly a need for greater understanding of the nature of knowledge work, how to it can be measured and how it can be nurtured to sustain both productivity and wellbeing.

Wellbeing has clearly been impacted, globally, by the pandemic. Early research into the impact of COVID-19 on those now working from home suggests that the results are mixed (Mustajab et al., 2020). For many, WFH has improved work-life balance, but for others, multi-tasking may be a distraction. Suitable technology is essential. Employee engagement, creation of a sense of community, and sensitivity to wellbeing are seen as the key challenges of organisations dealing with remote and flexible workforces (Mustajab et al., 2020; World Economic Forum, 2020) and aiming to support productivity.

2.5. Summary

Review of the literature reveals that although there has been a considerable amount of research relating to stress in the context of projects there has been less emphasis on wellbeing. Labour productivity has not been specifically addressed in project research. While a connection between wellbeing and productivity is generally assumed and supported by several recent studies in the broader literature, it has rarely been the primary focus of research in relation to project work. A further dimension is added by the advent of COVID-19, a stressful event that has accelerated workplace change and highlighted the connections between wellbeing and productivity and their importance to sustainability at all levels of endeavour.

3. Research setting and methods

This paper aims to address research gaps, contributing to understanding of wellbeing and productivity in project work, using a case study approach (Yin, 2012). The methodological choice was guided by the contextual embeddedness of the concepts of wellness and productivity and by the opportunity to draw upon longitudinal data covering the periods prior to and during COVID-19. The case is that of a continuous delivery project team that reports through a senior manager to the executive level of an ASX 100 organisation headquartered in Australia (CorpCo) and covers a two-year period from December 2018 to December 2020. Multiple data sources are used to illustrate the reality of wellbeing and productivity in project work and in response to the impact of COVID-19. Palvalin's (2017) Framework for Knowledge Work Performance (Figure 1) is used as the interpretive lens. Analysis and discussion are presented together.

3.1. Case Study Description

There are 14 members in the project team which reports through a senior manager to the executive level of CorpCo. The team had adopted the philosophy of new ways of working (Ruostela et al., 2015) several years ago, including activity based working. They use agile project management approaches (Serrador and Pinto, 2015), delivering against a quarterly planning cycle, in agile sprints. 'Stand-ups', short meetings at which team members discuss their progress, are held once or twice a week. They communicate using Slack (Johnson, 2018; Slack, 2020). The case study focuses on the relationship between context, wellbeing and productivity of the team over a two year period from December 2018 to December 2020.

Both qualitative and quantitative data are provided to describe and illustrate the case study. All data are de-identified. Stress and wellbeing of the team over the two year period are based on application of natural language processing to team communications in Slack. Results are presented as levels of team stress or wellbeing over time. This information was provided by Pioneera (www.pioneera.com.au), with the consent of CorpCo. Pioneera is an organisation founded by Danielle Owen Whitford, who experienced burnout in 2016 after a successful business career. She started Pioneera with the aim of providing individuals and organisations with early warning signs of negative stress in order to take action and build safe, productive

and engaged workplaces. Pioneera's 'Indie' is described as a 'bot' that integrates with collaboration systems such as Slack and Teams and monitors words and phrases used in team communications to provide real time indicators of stress and wellness (see Figure 2 for indicative words and phrases). This information is made available in a dashboard for managers, enabling them to take action if there is ongoing imbalance suggesting negative stress in the team. Feedback received by Pioneera suggests that this analysis provides a realistic reflection of workplace sentiment.

Figure 2: Words and phrases used by Pioneera's natural language processing (NLP) to analyse team wellness and stress

This data provided by Pioneera is set in context including events external to the team and organisation such as COVID-19 and internal events such as regular reporting cycles and illness affecting team members. Contextual information and observations relating to productivity were provided by the Team Manager.

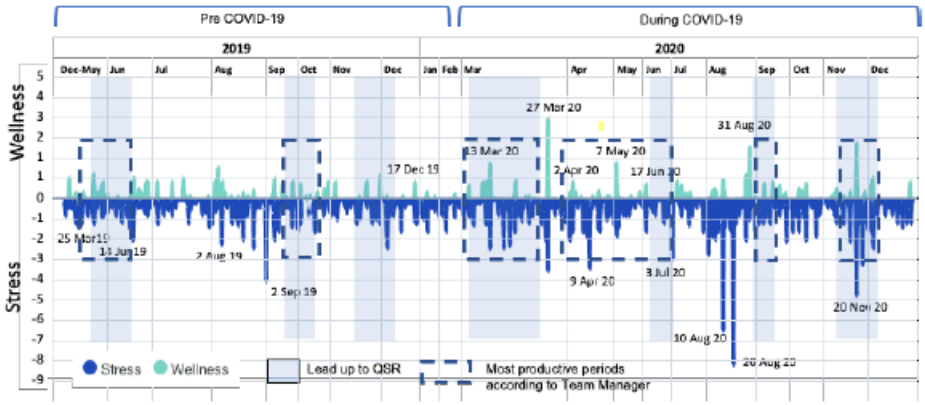

Figure 3: CorpCo Team Stress & Wellness: 2019 -2020

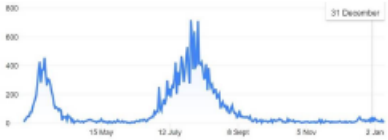

Figure 4: Coronavirus (COVID-19) statistics data: Australia, March 2020 - December 2020 (Source: (https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Australia)

Stress and wellness in the CorpCo Team are provided for a two-year period, from December 2018 to December 2020 (Figure 3). The greater the distance between two points, the higher the volume of communication over that period. Dates are provided for points of particularly high or low stress or wellness associated with particular internal or external events. The actual events occurring at or around those dates are provided in discussion. Figure 4 provides data relating to the impact of COVID-19 in Australia.

4. Analysis and Discussion

The structure of analysis and discussion is based on Palvalin's (2017) Framework for Knowledge Work Performance (Figure 1). Notably, Palvalin classifies wellbeing as both a driver and an outcome of knowledge work performance. Work environment, individual work practices and wellbeing are drivers, and wellbeing and productivity are (desirable) results and outcomes.

4.1. Work environment

The primary physical work environment for this team is in an office building, based in a major Australian city. Office space is open planned. Activity-based working and other aspects of flexible working had been introduced in recent years. In the period leading up to the advent of COVID-19, location of work was flexible and team members often travelled to other office locations as part of their team activities. From March 2020, due to COVID-19, the entire team began working from home. The virtual environment is supported by video-conferencing facilities, email and the preferred chat system is Slack. The organisation was required to quickly enhance the virtual environment when working from home became necessary due to

the pandemic. In terms of social environment, the Team Manager describes this is a 'caring team', that respect one another and work well together.

4.2. Individual and shared work practices

Projects are conducted using agile approaches (Birkinshaw, 2018). This includes a continuous delivery approach using time-boxed agile sprint cycles, or workflows, to deliver specific outcomes; regular meetings, referred to as 'stand-ups' to check in on progress; and retrospectives at the end of the sprint to review and plan for improvements prior to the next sprint cycle. Work is supported by the Atlassian (https://www.atlassian.com/) suite of development and collaboration tools to support agile practices.

4.3. Wellbeing at work

As described earlier in this paper, wellbeing requires a fine balance between stressors, also described as challenges, and the coping resources of individuals. It is not surprising that in the project literature and elsewhere, stress receives considerably more attention than wellbeing because it is stress that has potential to tip the balance. Job satisfaction, particularly for project workers, involves challenge, and challenge causes stress. Depending upon the individual circumstances, stress can either enhance or undermine wellbeing. It is sustained periods of stress without relief, stretching individual resources, that lead to negative mental and physical health outcomes.

The wellbeing of this team is represented by analysis of their communications in Slack over a period of two years. While it is obvious from Figure 3 that there is more evidence of stress than of wellbeing, it is important to remember that stress is a natural part of life and inherent in the challenge that is considered by many as an attractive aspect of project work (Lloyd-Walker et al., 2018). Notably, the Team Manager interprets the wellbeing spikes as specific efforts by the team to be upbeat and to provide support to one another when they are aware that some or all of the team are feeling stressed. As the Team Manager had access to the stress and wellbeing data, at the team level, on a day to day basis, they were able to take action to provide the resources, organisational or social, that were required to tip the balance towards wellbeing and avoid allostatic overload (McEwen, 2005).

In order to address the research questions concerning response to stressful events and the relationship between stress, wellbeing and productivity, the pattern of stress and wellbeing for this team will be discussed in relation to relevant internal and external events.

Impact of COVID-19

It is clear from Figure 3 that the level of communication in Slack in the ten month period from March to December 2020, the period affected by the COVID-19 pandemic, is higher than that in the previous 15 months. This is to be expected as everyone started working from home, reducing office-based face to face interactions and requiring more virtual communication.

The patterns of stress and wellness are also clearly different in the two periods. Evidence of stress is significantly greater in the period from March 2020 and although the wellness in this period is less consistent than in the previous period, it includes a number of higher spikes generally following periods of high stress. This was explained, by the Team Manager as the team responding to recognition of high levels of stress with positive engagement and support. This provides a clear illustration of the stress incurred as a result of the pandemic and suggests efforts of the team to recognise and deal with increased stress. This supports the importance

of social support (Boren and Veksler, 2015), especially from co-workers, as a resource to balance stress and maintain workplace wellbeing.

Discussions about the pandemic began across CorpCo at the end of January 2020. In early March the organisation started restricting travel and separating teams to ensure continuity. By mid-March they had restricted the size of gatherings and given staff the option of working from home if they wished to do so. By early April, the majority of people were working from home (WFH). There was a notably higher level of communication during March, and to a lesser extent April 2020, indicative of adjustment by the team to changed working arrangements. The strong wellbeing spike on 27 March is interpreted by the Team Manager as the team providing support to one another as they began WFH as well as a positive response to internal stressors involved in meeting an internal deadline.

Levels of stress in early April are associated with teething problems relating to organisational systems required to enable effective WFH. From mid-May to mid to late July 2020 the level of communication and stress had steadied and the pattern of stress, although heavier than for the equivalent period in 2019, showed fewer extremes. Reading Figures 3 and 4 together, it is easy to see a relationship between the very high levels of stress in August 2020 and the rise and peak of reported COVID-19 cases in Australia with a hard lockdown experienced by ost of the For the CorpCo team. It was a challenging time, as this rise in cases came as a surprise for the community following a period where Australia appeared to have almost eliminated the virus. Most of the CorpCo team were subjected to a hard lockdown and internal and external stressors combined at this time.

Impact of internal events

In mid-July the Team Manager had a serious health event requiring hospitalisation and absence from mid-July to late August. As the team received this news in early July there is evidence of some social support (wellbeing) and then there is a build-up of stress from the end of July through August while the Team Manager was away and the team had the additional pressure of working without their leader while dealing with acceleration of the virus in the community. The strong stress spike in mid to late November is explained by a combination of work pressures, high work levels, and an emotionally stressful event for one member of the team. Support for the affected team member was explained as the basis for the high wellness spike about that time.

There is a pattern of higher levels of stress building up in roughly two-week periods prior to Quarterly Sponsor Reviews (QSR) held in March, June, September and December. These are events that represent a busy time, with pressure for the team, with a hard deadline and the need to coordinate with other teams across the organisation. These periods of stress are typically accompanied or followed by wellness spikes occurring just after the meeting, as the team recognises their stress and works to improve morale and support those who had the additional stress of participating in the quarterly meeting (QSR).

4.4. Productivity

As noted earlier in this paper, self-assessed measures of perceived productivity, and other subjective evaluations vary widely in relation to knowledge worker productivity, in part because they have the flexibility to capture the intangible and contextually specific characteristics of productivity in knowledge work (Jääskeläinen and Laihonen, 2013). Use of such subjective measures also reflects the difficulty of finding relevant but more objective

measures. Also in line with the literature, productivity should be addressed at the team level due to the interactive and collaborative nature of their work (Bosch-Sijtsema et al., 2009; Plum and Mawson, 2015).

In this case, the Team Manager was the source of information on the productivity of the team. As there is no clear definition of productivity in the context of knowledge or project work, the Team Manager was first asked what they considered productivity to be. Their response was that they considered the team productive when they had a clear goal and achieved it; when everyone had their part to play and did it; and when "*the vibe in the team is humming – like a train chugging down the line with all the carriages in line doing their bit*". It is interesting that this description embodies aspects of conditions for workplace wellbeing including having clarity around goals and the work they are required to do to achieve them. The Team Manager continued their definition with three outcomes they would expect as evidence of productivity, namely:

1. *We achieve our goals and produce good quality outputs*
2. *Our executive team are engaging with our outputs, asking questions and wanting to know more*
3. *I have fewer interpersonal problems in the team. People are too busy doing good work to get offended by each other and get upset*

With this definition and interpretation of productivity in mind, the Team Manager indicated the periods over the two years during which they considered the team to be most productive. These periods are indicated in Figure 3. The most productive periods tend to be those associated with deadlines in the form of the Quarterly Sponsor Reviews. This demonstrates the importance of milestones in project-based knowledge work presenting challenges that generate both stress and productivity. Where the stress is relieved, as the evidence suggests it is with this team, by social support interpreted here as wellbeing, and by possibly less productive periods, it may be indicative of overall wellbeing of the team.

There is a period of prolonged productivity from late March to the end of June, overlapping a period of preparation for the June QSR. This is indicative of the time when the team was adjusting to a dramatic change to their ways of working, moving from primarily face to face, office-based interaction to remote working, from home. They will have been developing, learning and negotiating new ways of working. This kind of activity satisfies a number of Drucker's (1999) factors for determining the productivity of knowledge workers:

1. they must identify the task themselves
2. they need to have autonomy
3. innovation has to be part of knowledge work
4. knowledge work requires continuous learning and teaching

Finally, there does not appear to have been any significant decrease in productivity of this project team as a result of significant changes to place of work, and work practices and to life in general. If anything, based on the information provided, the team appears to have been more productive in this period than in the same period for the previous year. Like much of the work on measurement of knowledge worker productivity, such a conclusion is anecdotal. On the other hand, as this is a project team, they have milestones which they have met and stakeholders that they have kept satisfied, providing supporting evidence that they have been productive.

5. Conclusion

In this paper we set out to contribute to understanding of wellbeing and productivity in project work and address the following research questions:

- How do stress/wellbeing relate to productivity in project work?
- How do project teams respond to stressful events?

By use of a single, longitudinal case study of a continuous delivery project term operating in an environment that promotes innovative, flexible and agile ways of working, and by drawing on the knowledge worker productivity literature and Palvalin's (2017) Framework for Knowledge Work Performance, we have been able to provide one rich and contextually embedded example of the complex relationship between stress, wellbeing and productivity in project work. As Palvalin (2017) proposes, wellbeing is both a driver of productivity and an outcome or result in its own right.

We were able to draw upon data that monitored stress and wellbeing throughout the periods before and after the advent of the COVID-19 pandemic, enabling us to illustrate how one project team has responded to an highly stressful event. They responded without any evident reduction to, and with possible improvement in their productivity as perceived by their Team Manager. They experienced periods of stress but tended to counter this by providing social support to one another. As identified in the literature, wellbeing is not the absence of stress but the ability to achieve balance through availability and application of coping resources.

This research makes a contribution to project-based theory and literature by identifying a gap in terms of labour productivity in projects and drawing upon the extensive knowledge worker productivity literature as a source for guidance. Links have been drawn between the knowledge worker productivity literature, research on new ways of working and the nature of project work suggesting that there may be some links between the extensive but inconclusive literature on project success and the similarly extensive but inconclusive literature on knowledge worker productivity. Palvalin's (2017) Framework for Knowledge Work Performance provided a useful model for reporting and interpretation of the case study, indicating that it would be helpful in further studies of wellbeing and productivity in project-based knowledge work. Finally, the paper provides an early contribution to research relating to the impact of COVID-19 on project-based work and other new ways of working.

For practitioners, this case offers a working example of analysis of everyday communication data to monitor stress and wellness in project teams that can be used to raise individual, team and organisational awareness and encourage action to provide particularly social but also other forms of support that help to maintain a healthy balance between stress and coping resources.

A limitation is that this is a single case study. Although a single case is an informed response to the complexity and contextually embedded nature of project-based knowledge work, there would be value in conducting other similar studies with a view to identifying common themes. There is clearly an opportunity for further research on productivity in the context of projects, on the relationship between wellbeing and productivity, and the impact that new ways of technology enabled working may have on both wellbeing and productivity. Such research would contribute to both economic and social sustainability.

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Appendix B

Ethical Approval

THE UNIVERSITY OF SYDNEY

Research Integrity & Ethics Administration
HUMAN RESEARCH ETHICS COMMITTEE

Tuesday, 2 March 2021

Prof Lynn Crawford
Project Management; Faculty of Engineering
Email: lynn.crawford@sydney.edu.au

Dear Lynn,

The University of Sydney Human Research Ethics Committee (HREC) has considered your application.

I am pleased to inform you that after consideration of your response, your project has been approved.

Details of the approval are as follows:

Project No.:	**2021/072**
Project Title:	**Project Productivity**
Authorised Personnel:	**Crawford Lynn; Azarbouyehdinaki Gholamreza; Pollack Julien**
Approval Period:	**02/03/2021 – 02/03/2025**
First Annual Report Due:	**02/03/2022**

Documents Approved:

Date Uploaded	Version Number	Document Name
25/01/2021	Version 1	Organisational Participant Consent Form
25/01/2021	Version 1	Round Table Participant Consent Form
25/01/2021	Version 1	Project Participant information Statement - Individual
25/01/2021	Version 1	Project Participant information Statement - Organisation
25/01/2021	Version 1	Individual Participant Consent Form
25/01/2021	Version 1	Project Participant information Statement - Round Table
25/01/2021	Version 1	Interview Questions

Special Condition/s of Approval

1. Please provide final copies of the PIS and PCF documents with the version number and date in the footer. This can be provided via email to the Ethics Office.

Condition/s of Approval

- Research must be conducted according to the approved proposal.
- An annual progress report must be submitted to the Ethics Office on or before the anniversary of approval and on completion of the project.
- You must report as soon as practicable anything that might warrant review of ethical approval of the project including:
  - Serious or unexpected adverse events (which should be reported within 72 hours).
  - Unforeseen events that might affect continued ethical acceptability of the project.
- Any changes to the proposal must be approved prior to their implementation (except where an amendment is undertaken to eliminate *immediate* risk to participants).

Research Integrity & Ethics Administration
Research Portfolio
Level 3, F23 Administration Building
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NSW 2006 Australia

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ABN 15 211 513 464
CRICOS 00026A

THE UNIVERSITY OF SYDNEY

- Personnel working on this project must be sufficiently qualified by education, training and experience for their role, or adequately supervised. Changes to personnel must be reported and approved.
- Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation, as relevant to this project.
- Data and primary materials must be retained and stored in accordance with the relevant legislation and University guidelines.
- Ethics approval is dependent upon ongoing compliance of the research with the *National Statement on Ethical Conduct in Human Research*, the *Australian Code for the Responsible Conduct of Research*, applicable legal requirements, and with University policies, procedures and governance requirements.
- The Ethics Office may conduct audits on approved projects.
- The Chief Investigator has ultimate responsibility for the conduct of the research and is responsible for ensuring all others involved will conduct the research in accordance with the above.

This letter constitutes ethical approval only.

Please contact the Ethics Office should you require further information or clarification.

Sincerely,

[Redaction]

Dr Haryana Dillon
Chair
Human Research Ethics Committee (HREC 3)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2018) and the NHMRC's Australian Code for the Responsible Conduct of Research (2018)

Appendix C
Interview Documents

THE UNIVERSITY OF SYDNEY

ABN 15 211 513 464

LYNN CRAWFORD
Professor

School of Project Management
Faculty of Engineering

Building K06A
The University of Sydney
NSW 2006 AUSTRALIA
Telephone: +61 2 9036 9110
Email: lynn.crawford@sydney.edu.au
Web: http://www.sydney.edu.au/

PROJECT PRODUCTIVITY

PARTICIPANT CONSENT FORM

I, ... [PRINT NAME], agree to take part in this research study.

In giving my consent I state that:

- I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.
- I have read the Participant Information Statement and have been able to discuss my involvement in the study with the researchers if I wished to do so.
- The researchers have answered any questions that I had about the study and I am happy with the answers.
- I understand that being in this study is completely voluntary and I do not have to take part. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the University of Sydney or my employer organisation now or in the future.
- I understand that I can withdraw from the study at any time.
- I understand that I may stop the interview at any time if I do not wish to continue, and that unless I indicate otherwise, and up to the point of publication of the draft White Paper, any recordings will then be erased and the information provided will not be included in the study. I also understand that I may refuse to answer any questions I don't wish to answer.
- I understand that personal information about me that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to. I understand that information about me will only be told to others with my permission, except as required by law.
- I understand that the results of this study may be published, and that publications will not contain my name or any identifiable information about me.

I consent to:

- **Audio-recording** YES ☐ NO ☐
- **Video-recording** YES ☐ NO ☐
- **Being contacted about future studies** YES ☐ NO ☐

I would like to review my interview transcripts YES ☐ NO ☐

I would like to receive feedback about the overall results of this study YES ☐ NO ☐

If you answered **YES**, please indicate your preferred form of feedback and address:

☐ Postal: _____

_____

☐ Email: _____

.....
Signature

.....
PRINT name

.....
Date

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PROJECT PRODUCTIVITY

ORGANISATIONAL PARTICIPANT CONSENT FORM

I, ... [PRINT NAME], agree to take part in this research study.

In giving my consent I state that:

- I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.
- I have read the Participant Information Statement and have been able to discuss my involvement in the study with the researchers if I wished to do so.
- The researchers have answered any questions that I had about the study and I am happy with the answers.
- I understand that being in this study is completely voluntary and I do not have to take part. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the University of Sydney or my employer organisation now or in the future.
- I understand that I can withdraw myself and my organisation from the study at any time.
- I understand that I may stop the interview, and my organisation's participation in this study, at any time if I do not wish to continue, and that unless I indicate otherwise, and up to the point of publication of the draft White Paper, any recordings will then be erased and the information provided will not be included in the study. I also understand that I may refuse to answer any questions I don't wish to answer.
- I understand that personal information about me or information about my organisation that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to. I understand that information about me or my organisation will only be told to others with my permission, except as required by law.
- I understand that the results of this study may be published, and that publications will not contain my name or any identifiable information about me or my organisation.

I consent to:

- **Audio-recording** YES ☐ NO ☐
- **Video-recording** YES ☐ NO ☐
- **Being contacted about future studies** YES ☐ NO ☐

I would like to review my interview transcripts YES ☐ NO ☐

I would like to receive feedback about the overall results of this study YES ☐ NO ☐

If you answered **YES**, please indicate your preferred form of feedback and address:

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PROJECT PRODUCTIVITY

ROUND TABLE PARTICIPANT CONSENT FORM

I, ... [PRINT NAME], agree to take part in this research study.

In giving my consent I state that:

- I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.
- I have read the Participant Information Statement and have been able to discuss my involvement in the study with the researchers if I wished to do so.
- The researchers have answered any questions that I had about the study and I am happy with the answers.
- I understand that being in this study is completely voluntary and I do not have to take part. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the University of Sydney or my employer organisation now or in the future.
- I understand that I can withdraw from the study at any time.
- I understand that I may leave the Round Table at any time if I do not wish to continue. I also understand that it will not be possible to withdraw my comments once the group has started as it is a group discussion.
- I understand that personal information about me or information about my organisation that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to. I understand that information about me or my organisation will only be told to others with my permission, except as required by law.
- I understand that the results of this study may be published, and that publications will not contain my name or any identifiable information about me or my organisation.

I consent to:

- **Audio-recording** YES ☐ NO ☐
- **Video-recording** YES ☐ NO ☐
- **Being contacted about future studies** YES ☐ NO ☐

I would like to review my interview transcripts YES ☐ NO ☐

I would like to receive feedback about the overall results of this study YES ☐ NO ☐

If you answered **YES**, please indicate your preferred form of feedback and address:

☐ Postal: _____

_____

☐ Email: _____

.....
Signature

.....
PRINT name

.....
Date

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Project Productivity

PARTICIPANT INFORMATION STATEMENT

(1) What is this study about?

You are invited to take part in a research study about productivity in the context of project based work.

You have been nominated by your organisation to participate in this study because you are involved in directing, managing or carrying out one or more aspects of project based work. This Participant Information Statement tells you about the research study. Knowing what is involved will help you decide if you want to take part in the research. Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

Participation in this research study is voluntary.

By giving your consent to take part in this study you are telling us that you:
- ✓ Understand what you have read.
- ✓ Agree to take part in the research study as outlined below.
- ✓ Agree to the use of your personal information as described.

You will be given a copy of this Participant Information Statement to keep.

(2) Who is running the study?

The study is being carried out by the following researchers:

- Professor Lynn Crawford and Associate Professor Julien Pollack, School of Project Management and John Grill Institute of Project Leadership, The University of Sydney

Gholamreza Azarbouyehdinaki is participating in the conduct of this study as part of the degree of Doctor of Philosophy at The University of Sydney. This will take place under the supervision of Professor Lynn Crawford and Associate Professor Julien Pollack.

This study is being funded by BHP in association with The University of Sydney.

This research is being funded by BHP as they are interested in understanding productivity of project based work as a basis for improving and communicating the productivity, value and efficacy of project management and leadership in delivering value to their business. More broadly, they wish to make a practical and scientific contribution to an important societal issue, the productivity of knowledge work in increasingly projectified and distributed work environments. They aim to do this through collaboration with other organisations who share their interest in understanding and improving productivity of project based work. Results of the research will be made available to all participating organisations and individuals.

(3) What will the study involve for me?

As a participant in this study we are asking you to

a) Participate in an interview for approximately one hour, in which you will be asked to consider and discuss the questions provided in Attachment A of this document.
b) Provide access to relevant documentation (such as data, information, documents, tools and techniques used in the management of projects) that may be identified as providing insight into your organisation's understanding and measurement of productivity.
c) Respond to a survey giving feedback following receipt of a draft White Paper providing preliminary results from the study.

The interview may be conducted in person but is most likely to take place by phone or video-conference. The interview will be recorded, transcribed and the transcription checked with you for accuracy. Your interview transcription will be de-identified.

Any documents made available to the researchers are expected to be provided electronically and will be stored securely subject to any specific requirements, by your organisation, in terms of confidentiality, non-disclosure or commercial-in-confidence.

(4) How much of my time will the study take?

The interview is expected to take approximately one hour of your time. Some additional time may be required to provide the researchers with access to relevant documentation referred to in the interview and to read the transcript of the interview. Feedback on the draft White Paper is expected to take no more than 30 minutes.

(5) Who can take part in the study?

You have been nominated by [ORGANISATIONAL REPRESENTATIVE] as a person in your organisation who has a role as a senior / sponsor / director / leader / manager or team member with an involvement in delivery of projects by or for your organisation. We are looking for different perspectives on and understandings of what constitutes productivity in project based work.

(6) Do I have to be in the study? Can I withdraw from the study once I've started?

Being in this study is completely voluntary and you do not have to take part. Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at the University of Sydney or your employing organisation.

If you decide to take part in the study and then change your mind later, you are free to withdraw at any time. *You can do this by contacting Professor Lynn Crawford by email at* *lynn.crawford@sydney.edu.au* and ensuring that you receive acknowledgement from her by return.

You are free to stop the interview at any time. Unless you say that you want us to keep them, any recordings will be erased and the information you have provided will not be included in the study results. You may also refuse to answer any questions that you do not wish to answer during the interview.

If you decide to withdraw from the study, we will not collect any more information from you. Please let us know at the time when you withdraw what you would like us to do with the information we have collected about you up to that point. If you wish your information will be removed from our study records and will not be included in the study results, up to the point that we have analysed and published the results in the draft White Paper.

(7) Are there any risks or costs associated with being in the study?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

(8) Are there any benefits associated with being in the study?

As a participant in this study, to its conclusion, you and your organisation will receive access to the results in the form of a White Paper. You will be contributing to practice relevant research and thought leadership.

You will receive insights that will potentially contribute to your organisation's

- Ability to measure productivity and improve project practices to deliver value to the business
- Ability to communicate productivity, value and efficacy of project management and leadership

For the broader community, you will be contributing to an important societal issue – measuring the productivity of knowledge work in increasingly projectified and distributed work environments

(9) What will happen to information about me that is collected during the study?

Information collected in interviews will be ideas, perspectives, experiences and practices relating to productivity in the context of projects. As indicated above, interviews will be recorded and transcribed. Transcription will be done by the researchers supported by transcription software (eg Otter.ai). The recording, transcription process, and any organisational documentation (3(b)) will be handled and stored in accordance with the **University's Research Data Management Policy** and **Procedures**.

Data will be de-identified for analysis and publication of results. Results will be published in a White Paper, and in conference papers and journal articles. Participant names will not be included in publication and presentation of results unless specifically agreed with the participating individuals and organisations. De-identified data and results from this study may also be used in subsequent research by the researchers.

By providing your consent, you are agreeing to us collecting personal information about you and your organisation for the purposes of this research study. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

Your information will be stored securely and you and your organisation's identity/information will only be disclosed with your permission, except as required by law. Study findings will be published, but you will not be identified in these publications unless you agree to this in writing at time of request.

We will keep the information we collect for this study, and we may use it in future projects. By providing your consent you are allowing us to use your information in future projects. We don't know at this stage what these other projects will involve. We will seek ethical approval before using the information in these future projects.

(10) Can I tell other people about the study?

Yes, you are welcome to tell other people about the study.

(11) What if I would like further information about the study?

When you have read this information, Professor Lynn Crawford and/or Associate Professor Julien Pollack will be available to discuss it with you further and answer any questions you may have. If you would like to know more at any stage during the study, please feel free to contact Professor Lynn Crawford *(E:lynn.crawford@sydney.edu.au; M:* [Redaction] *)* or Associate Professor Julien Pollack *(E: Julien.Pollack@sydney.edu.au; M:* [Redaction] *).*

(12) Will I be told the results of the study?

You will receive a copy of a draft White Paper, and a copy of the final White Paper at the conclusion of the study.

(13) What if I have a complaint or any concerns about the study?

Research involving humans in Australia is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this study have been approved by the HREC of the University of Sydney *Protocol No. 2021/072.* As part of this process, we have agreed to carry out the study according to the *National Statement on Ethical Conduct in Human Research (2007).* This statement has been developed to protect people who agree to take part in research studies.

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the university using the details outlined below. Please quote the study title and protocol number.

The Manager, Ethics Administration, University of Sydney:

- **Telephone:** +61 2 8627 8176
- **Email:** human.ethics@sydney.edu.au
- **Fax:** +61 2 8627 8177 (Facsimile)

This information sheet is for you to keep

ATTACHMENT A

INTERVIEW QUESTIONS

1) How would you define or describe productivity in the context of your organisation's projects?

2) Do you have any measures for what you or your organisation consider to be productivity?

3) What documents, processes or systems are used for tracking any aspect of productivity?

4) Can you tell me about a time when you considered your productivity or that of your team, was lower than usual?

5) Can you tell me about a time when you considered your productivity or that oof your team, was higher than usual?

6) Do you consider that working conditions, such as distributed teams, remote working and working from home have an impact on productivity? Is yes, what impact have you observed.

7) Do you have any other thoughts or ideas you would like to share with us about productivity and what it means in your projects and organisation?

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Project Productivity

ORGANISATIONAL PARTICIPANT INFORMATION STATEMENT

(1) What is this study about?

You are invited to take part in a research study about *productivity in the context of project based work*.

You have been invited to participate in this study because you are involved in directing, managing or carrying out one or more aspects of project based work. This Participant Information Statement tells you about the research study. Knowing what is involved will help you decide if you want to take part in the research. Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

Participation in this research study is voluntary.

By giving your consent to take part in this study you are telling us that you:
- ✓ Understand what you have read.
- ✓ Agree to take part in the research study as outlined below.
- ✓ Agree to the use of your personal and organisational information as described.

You will be given a copy of this Participant Information Statement to keep.

(2) Who is running the study?

The study is being carried out by the following researchers:

- Professor Lynn Crawford and Associate Professor Julien Pollack, School of Project Management and John Grill Institute of Project Leadership, The University of Sydney

Gholamreza Azarbouyehdinaki is participating in the conduct of this study as part of the degree of Doctor of Philosophy at The University of Sydney. This will take place under the supervision of Professor Lynn Crawford and Associate Professor Julien Pollack.

This study is being funded by *BHP* in association with The University of Sydney.

This research is being funded by BHP as they are interested in understanding productivity of project based work as a basis for improving and communicating the productivity, value and efficacy of project management and leadership in delivering value to their business. More broadly, they wish to make a practical and scientific contribution to an important societal issue, the productivity of knowledge work in increasingly projectified and distributed work environments. They aim to do this through collaboration with other organisations who share their interest in understanding and improving productivity of project based work. Results of the research will be made available to all participating organisations and individuals.

(3) What will the study involve for me?

As a participant in this study we are asking you to:

a) Participate in an initial meeting with the researchers in which you will discuss and agree on the conduct of this research in a manner best suited to your organisation and the aims of the research. The results of this initial meeting will set the parameters for the following activities.
b) Nominate people in your organisation, as agreed in (a), who would be invited to participate in interviews of approximately one hour, during which they would be asked the questions outlined in Attachment A. The number and type of people to be interviewed is expected to be 2 people at senior / sponsor / director / leader level, 2 at manager level and 2 team members, for one or more of your project divisions or major projects. We are looking for different perspectives on and understandings of what constitutes productivity in project based work. Those who participate in the interviews will also be given the opportunity to provide feedback on the draft White Paper providing preliminary results of the study.
c) Provide access to relevant documentation (such as data, information, documents, tools and techniques used in the management of projects) that may be identified as providing insight into your organisation's understanding and measurement of productivity.
d) Participate in and/or provide a nominee for participation in a Round Table, to be held approximately 6 months after commencement of the study, at which results will be presented and discussed. The Round Table is expected to be held face to face, in Sydney, depending upon health guidance at the time, but there will be an option for participation by video conference if required.
e) Respond to a survey providing feedback following the Round Table.

All interviews (a,b) are expected to be conducted by phone or video-conference, recorded, transcribed and transcriptions checked with interviewees for accuracy. Individual participant transcriptions will be de-identified. Your own organisational level results will be made available to you. Unless otherwise agreed, organisational level results will be de-identified with no attribution to your organisation when compared with results from other organisations.

Documents are expected to be provided to the researchers electronically and will be stored securely subject to your specific requirements in terms of confidentiality, non-disclosure or commercial-in-confidence.

The Round Table discussion (d) will be recorded, transcribed, and findings used along with results from (e) as input to final output of the research which will be documented in a White Paper made available to all participants at the conclusion of the project.

(4) How much of my time will the study take?

The initial meeting (3(a)) above, is expected to take 1 to 1.5 hours of your time. We propose a further meeting of up to one hour to review the results following interviews and document review. Depending

upon the agreed process for contacting nominated participants from your organisation and obtaining access to documents (if required), there will be some administrative time.

The Round Table is planned to be of 2 hours duration. Feedback following the Round Table is expected to take no more than 30 minutes.

(5) Who can take part in the study?

Organisations being asked to participate in this study are those that are project based or conduct a large part of their activity through projects. This includes divisions of larger organisations that are specifically concerned with the delivery of projects on behalf of the business.

(6) Do I have to be in the study? Can I withdraw from the study once I've started?

Being in this study is completely voluntary and you do not have to take part. Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at The University of Sydney or BHP.

If you decide to take part in the study and then change your mind later, you are free to withdraw at any time. You can do this by *contacting Professor Lynn Crawford by email at lynn.crawford@sydney.edu.au and ensuring that you receive acknowledgement from her by return.*

If you take part in the Round Table, you are free to stop participating at any stage. However, it will not be possible to withdraw your individual comments from our records once the group has started, as it is a group discussion.

If you decide to withdraw from the study, we will not collect any more information from you or your organisation. However, if you withdraw after publication of the draft White Paper, any information that we have already collected and analysed, and which forms part of the base data, will be kept in our study records and may be included in the study results.

(7) Are there any risks or costs associated with being in the study?

Aside from your time and that of your staff, we do not expect that there will be any costs associated with taking part in this study apart. There may be travel costs if you or others from your organisation wish to attend the Round Table in person.

There is potential risk of disclosure of confidential information. This will be mitigated by de-identification of data as agreed with you (3(a)), and by signing of confidentiality or non-disclosure agreements as required.

(8) Are there any benefits associated with being in the study?

As a participant in this study, to its conclusion, you and your organisation will receive access to the results in the form of a White Paper. You will have an opportunity to collaborate with your peers by participating in a Round Table discussion and refinement of results from the study.

You will receive insights that will potentially contribute to your organisation's

- Ability to measure productivity and improve project practices to deliver value to the business
- Ability to communicate productivity, value and efficacy of project management and leadership
- Contribution to employee value proposition by providing opportunities for engagement in practice relevant research and thought leadership

For the broader community, the benefits will be:

- Practical and scientific contribution to an important societal issue – measuring the productivity of knowledge work in increasingly projectified and distributed work environments
- Demonstration of industry collaboration and contribution to thought leadership

(9) What will happen to information about me and my organisation that is collected during the study?

Information collected in interviews and round table discussion will be ideas, perspectives, experiences and practices relating to productivity in the context of projects. As indicated above, interviews and round table discussions will be recorded and transcribed. Transcription will be done by the researchers supported by transcription software (eg Otter.ai). The recording, transcription process, and any organisational documentation (3(c)) will be handled and stored in accordance with the **University's Research Data Management Policy** and **Procedures**.

Data will be de-identified for analysis and publication of results. Results will be published in a White Paper, and in conference papers and journal articles. Organisational participant names will not be included in publication and presentation of results unless specifically agreed with the participating organisations. De-identified data and results from this study may also be used in subsequent research by the researchers.

By providing your consent, you are agreeing to us collecting personal information about you and your organisation for the purposes of this research study. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

Your information will be stored securely and you and your organisation's identity/information will only be disclosed with your permission, except as required by law. Study findings will be published, but you will not be identified in these publications unless you agree to this in writing at time of request.

We will keep the information we collect for this study, and we may use it in future projects. By providing your consent you are allowing us to use your information in future projects. We don't know at this stage what these other projects will involve. We will seek ethical approval before using the information in these future projects.

(10) Can I tell other people about the study?

Yes, you are welcome to tell other people about the study.

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(12) Will I be told the results of the study?

You will receive preliminary results of the study in a draft White Paper, prior to the Round Table session (3(d)) and a final copy of the White Paper at the conclusion of the study.

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This study is being funded by BHP in association with The University of Sydney.

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(3) What will the study involve for me?

As a participant in this study we are asking you to:

a) Participate in and/or provide a nominee for participation in a Round Table at which initial results of this study will be presented and discussed. The Round Table is expected to be held face to face, in Sydney, depending upon health guidance at the time, but there will be an option for participation by video conference if required.
b) Respond to a survey providing feedback following the Round Table.

The Round Table discussion (a) will be recorded, transcribed, and findings used along with results from (b) as input to final output of the research which will be documented in a White Paper made available to all participants at the conclusion of the project.

(4) How much of my time will the study take?

The Round Table is planned to be of 2 hours duration. Feedback following the Round Table is expected to take no more than 30 minutes.

(5) Who can take part in the study?

Organisations being asked to participate in this study are those that are project based or conduct a large part of their activity through projects. This includes divisions of larger organisations that are specifically concerned with the delivery of projects on behalf of the business.

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If you decide to withdraw from the study, we will not collect any more information from you or your organisation. However, if you withdraw after publication of the draft White Paper, any information

that we have already collected and analysed, and which forms part of the base data, will be kept in our study records and may be included in the study results.

(7) Are there any risks or costs associated with being in the study?

Aside from your time, we do not expect that there will be any costs associated with taking part in this study apart. There may be travel costs if you or others from your organisation wish to attend the Round Table in person.

There is potential risk of disclosure of confidential information. This will be mitigated by de-identification of data as agreed with you (3(a)), and by signing of confidentiality or non-disclosure agreements as required.

(8) Are there any benefits associated with being in the study?

As a participant in this study, to its conclusion, you and your organisation will receive access to the results in the form of a White Paper. You will have an opportunity to collaborate with your peers by participating in a Round Table discussion and refinement of results from the study.

You will receive insights that will potentially contribute to your organisation's

- Ability to measure productivity and improve project practices to deliver value to the business
- Ability to communicate productivity, value and efficacy of project management and leadership
- Contribution to employee value proposition by providing opportunities for engagement in practice relevant research and thought leadership

For the broader community, the benefits will be:

- Practical and scientific contribution to an important societal issue – measuring the productivity of knowledge work in increasingly projectified and distributed work environments
- Demonstration of industry collaboration and contribution to thought leadership

(9) What will happen to information about me that is collected during the study?

Information collected in round table discussion will be ideas, perspectives, experiences and practices relating to productivity in the context of projects. As indicated above, the round table discussion will be recorded and transcribed. Transcription will be done by the researchers supported by transcription software. The recording and transcription process will be handled and stored in accordance with the **University's Research Data Management Policy** and **Procedures**.

Data will be de-identified for analysis and publication of results. Results will be published in a White Paper, and in conference papers and journal articles. Organisational participant names will not be included in publication and presentation of results unless specifically agreed with the participating organisations. De-identified data and results from this study may also be used in subsequent research by the researchers.

By providing your consent, you are agreeing to us collecting personal information about you and your organisation for the purposes of this research study. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

Your information will be stored securely and you and your organisation's identity/information will only be disclosed with your permission, except as required by law. Study findings will be published, but you will not be identified in these publications unless you agree to this in writing at time of request.

We will keep the information we collect for this study, and we may use it in future projects. By providing your consent you are allowing us to use your information in future projects. We don't know at this stage what these other projects will involve. We will seek ethical approval before using the information in these future projects.

(10) Can I tell other people about the study?

Yes, you are welcome to tell other people about the study.

(11) What if I would like further information about the study?

When you have read this information, *Professor Lynn Crawford and/or Associate Professor Julien Pollack* will be available to discuss it with you further and answer any questions you may have. If you would like to know more at any stage during the study, please feel free to contact *Professor Lynn Crawford (E:lynn.crawford@sydney.edu.au; M:* [Redacted] *) or Associate Professor Julien Pollack (E: Julien.Pollack@sydney.edu.au; M:* [Redacted] .

(12) Will I be told the results of the study?

You will receive preliminary results of the study in a draft White Paper, prior to the Round Table session and a final copy of the White Paper at the conclusion of the study.

(13) What if I have a complaint or any concerns about the study?

Research involving humans in Australia is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this study have been approved by the HREC of the University of Sydney *Protocol No. 2021/072.* As part of this process, we have agreed to carry out the study according to the *National Statement on Ethical Conduct in Human Research (2007).* This statement has been developed to protect people who agree to take part in research studies.

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the university using the details outlined below. Please quote the study title and protocol number.

The Manager, Ethics Administration, University of Sydney:

- **Telephone:** +61 2 8627 8176
- **Email:** human.ethics@sydney.edu.au
- **Fax:** +61 2 8627 8177 (Facsimile)

This information sheet is for you to keep