

Independent Project

LCBB6014

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Project Proposal Structure

Research Title: From Tool to Team Member: A Quantitative Exploration of Human–AI Collaboration in Project Management

Chapter 1: Introduction and Background

AI increasingly supports project planning, stakeholder communication and decision-making (Bainey, 2024; Joshi, 2024). Human–AI collaboration refers here to coordinated contributions from project professionals and AI systems, while decision accountability remains human. However, inconsistent definitions, indicators and performance measures limit comparison across project settings. Quantitative synthesis may therefore clarify relationships between AI involvement, collaboration conditions and project outcomes.

1.1 Research Aim

To quantitatively examine how collaboration between professionals and AI is defined, measured and related to project outcomes, and which contextual factors influence its effectiveness, using secondary evidence.

1.2 Research Objectives

- To trace AI's changing role from automated support to shared task performance.
- To identify and classify quantitative collaboration indicators.
- To compare reported outcomes across different degrees of AI involvement.
- To assess how user-related, system-related and organisational characteristics relate to collaboration effectiveness.

1.3 Research Questions

- How has AI's role changed from automated support to shared task performance?
- Which quantitative indicators represent human–AI collaboration?
- How do reported outcomes differ across degrees of AI involvement?
- How do user-related, system-related and organisational characteristics relate to collaboration effectiveness?

Chapter 2: Literature Review

This review evaluates how human and AI collaboration is defined, measured and related to project outcomes in existing quantitative evidence.

2.1 Artificial Intelligence in Project Management

AI supports scheduling, forecasting, risk assessment, resource allocation and monitoring (Nabeel, 2024).

2.2 Changing Forms of Human–AI Collaboration

AI has progressed from supervised task automation towards generating recommendations and supporting shared project activities, although its involvement varies across tasks and organisational settings (PMI, 2023).

2.3 Measuring Human–AI Collaboration

Existing studies use varied indicators, including AI usage, decision accuracy, trust, satisfaction, productivity and outcome quality (Joshi, 2024; PMI, 2024). These differences restrict direct comparison of collaboration levels.

2.4 Project Outcomes

Existing evidence associates AI use with greater productivity, improved forecasting and decision quality (Nabeel, 2024; PMI, 2024). However, differences in samples, technologies and settings restrict attribution to collaboration.

2.5 Factors Associated with Effectiveness

Collaboration may depend on user competence, trust, system reliability, leadership support, training and workflow integration, while its relationship with performance may vary by task complexity and human involvement (Bainey, 2024; PMI, 2023).

2.6 Research Gap

Differences in measures and reported outcomes restrict consistent comparison of collaboration levels and project performance (Joshi, 2024; Nabeel, 2024; PMI, 2024). The proposed analysis will systematically examine these relationships.

Chapter 3: Theoretical Framework

Two complementary perspectives will guide variable selection and analysis of the relationship between AI engagement and project performance.

3.1 Technology Acceptance Model

TAM examines users' perceptions of technology adoption but does not explain the quality of subsequent collaboration (Ghosal et al., 2026).

3.2 Human–AI Collaboration Framework

Collaboration extends beyond adoption by combining complementary human and AI contributions towards a common goal (Margretnis et al., 2026, p. 20).

3.3 Proposed Conceptual Framework

The combined framework proposes that user perceptions, system characteristics and workplace context may shape collaboration and relate to project outcomes.

4. Research Methodology

The study will quantitatively analyse secondary evidence on human-AI collaboration and project outcomes.

4.1 Research Philosophy

Positivism is appropriate because the study examines quantitative evidence and observable relationships, supporting systematic comparison rather than subjective interpretation.

4.2 Research Approach

A deductive approach will apply the conceptual framework to assess relationships among user perceptions, system characteristics, workplace context, collaboration and reported outcomes.

4.3 Research Design

A structured quantitative evidence review will synthesise numerical findings from academic studies, credible industry reports and organisational research. No primary data will be collected.

4.4 Population and Sampling

Eligible evidence will comprise sources in English reporting quantitative data on human and AI interaction in project settings. Purposive sampling will retain relevant sources with clearly defined measures. Duplicates, promotional material and evidence lacking transparent numerical data will be excluded.

4.5 Data Collection

Academic and library databases, research repositories, professional publications and corporate reports will be searched using predefined terms. Relevant quantitative findings concerning collaboration indicators, influencing factors and project outcomes will be extracted for comparison.

4.6 Data Analysis

Quantitative content analysis and descriptive statistics will compare indicator frequency, coded levels of AI involvement and reported outcomes. Patterns across studies will be examined against the conceptual framework. Statistical pooling will be avoided when definitions, samples or measurement scales are incompatible.

4.7 Ethical Considerations

The study will use published aggregate data without involving participants or confidential records. Ethical practice will require accurate transcription, source acknowledgement, consistent selection and balanced interpretation.

5. Expected Contribution

5.1 Theoretical Contribution

It may clarify relationships among technology acceptance, collaboration indicators and reported project performance.

5.2 Practical Contribution

Findings may support collaboration indicator selection and organisational assessment of AI involvement and outcomes.

5.3 Policy Contribution

The study may inform organisational policies on training, decision authority, transparency and performance reporting.

6. Limitations

Variations in definitions, samples and measurement scales may restrict cross-study comparison. Missing data, self-reported indicators and selective organisational reporting may introduce bias. Comparisons by source type and cautious interpretation may reduce these risks but cannot establish causal relationships.

7. Proposed Timeframe

The proposed research will be completed over 12 weeks, covering preparation, evidence selection, quantitative analysis, interpretation, writing and final submission.

Research stage and activity	W1-2	W3-4	W5-6	W7-8	W9-10	W11-12
Stage 1: Research preparation						
Finalise framework and review protocol	■					
Stage 2: Evidence selection						
Search and screen quantitative sources		■				
Stage 3: Data preparation						
Pilot the coding scheme		■				
Extract and standardise variables		■	■			
Stage 4: Quantitative analysis						
Conduct descriptive analysis			■	■		
Compare patterns across source groups				■		
Stage 5: Completion						
Interpret results and write dissertation				■	■	■
Review, proofread and submit						■

8. Conclusion

The proposed quantitative review will apply TAM and a human and AI collaboration framework to compare collaboration indicators, influencing factors and reported project outcomes. It will identify patterns while recognising data heterogeneity and limited causal evidence.

9. References

- Bainey, K. (2024) *AI-Driven Project Management: Harnessing the Power of Artificial Intelligence and ChatGPT to Achieve Peak Productivity and Success*. Hoboken, NJ: John Wiley & Sons.
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- Joshi, H. (2024) 'Artificial intelligence in project management: A study of the role of AI-powered chatbots in project stakeholder engagement', *Indian Journal of Software Engineering and Project Management*, 4(1), pp. 21–26. Available at: <https://www.researchgate.net/publication/377807665> (Accessed: 5 August 2026).
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- Nabeel, M.Z. (2024) 'AI-enhanced project management systems for optimizing resource allocation and risk mitigation: Leveraging big data analysis to predict project outcomes and improve decision-making processes in complex projects', *Asian Journal of Multidisciplinary Research & Review*, 5(5), pp. 53–88. Available at: <https://pdfs.semanticscholar.org/1749/b72be0bfc3597cc095c587de431864830f48.pdf> (Accessed: 5 August 2026).
- Project Management Institute (PMI) (2023) *Shaping the Future of Project Management with AI: Charting Your AI Upskilling Journey*. Newtown Square, PA: Project Management Institute. Available at: <https://www.pmi.org/learning/thought-leadership/shaping-the-future-of-project-management-with-ai> (Accessed: 5 August 2026).
- Project Management Institute (PMI) (2024) *First Movers' Advantage: The Immediate Benefits of Adopting Generative AI for Project Management*. Newtown Square, PA: Project Management Institute. Available at: <https://www.pmi.org/learning/thought-leadership/benefits-of-ai-for-project-management> (Accessed: 5 August 2026).