

أثر المهارات الفنية لمدير المشاريع في أداء المشاريع

The Effect of Technical Skills of Project Manager in Projects Performance

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1. Chapter 1: Introduction

1.1. Research Background

Project management has become an essential requirement across various industries and sectors, as organizations seek strong leadership skills to drive innovation, efficiency, and growth. Traditionally, project managers have been valued for their leadership and communication skills, essential for coordinating teams, stakeholders, and resources. However, the impact of technical skills in project managers rooted in specialized knowledge and technical competence on project outcomes remains a debated topic in project management literature.

The role of project managers has traditionally been defined by their ability to plan, coordinate, and oversee projects effectively, focusing primarily on management competencies such as leadership, communication, and time management. However, with the increasing complexity and technological demands of modern projects, there is growing interest in examining the effect of technical skills in project management. Technical skills, for the purpose of this study, refer to the specialized knowledge and abilities that enable project managers to understand and interact with the technical aspects of the projects they oversee. These skills include knowledge of specific tools, methodologies, software, and technical processes relevant to the industry or project type.

Recent studies suggest that project managers with a strong technical background might be better equipped to handle the intricacies of technically demanding projects, thereby potentially improving overall project performance. Technical competencies can enhance a project manager's

ability to make informed decisions, foresee potential challenges, and communicate effectively with technical team members. This alignment between managerial and technical skill sets could foster more efficient resource allocation, risk management, and problem-solving strategies, all of which are critical factors in successful project outcomes.

Despite these potential benefits, the necessity and degree of technical skills required for project managers remain areas of debate. Traditional project management frameworks, such as the Project Management Body of Knowledge (PMBOK) by the Project Management Institute (PMI), emphasize soft skills and procedural knowledge over technical proficiency, particularly in industries where projects are highly specialized. Furthermore, empirical research on this topic has yielded mixed results, with some studies showing positive correlations between technical expertise and project success, while others suggest that technical skills may not significantly impact performance if strong managerial skills are already present.

This research explores the extent to which a project manager's technical skills influence project performance. Specifically, it examines how technical skills contribute to the overall efficiency, accuracy, and success of project execution, aiming to determine if technical skills serve as a valuable complement to the project manager. By addressing this question, the study provides insights into whether organizations should prioritize technical proficiency in their project managers, especially for complex or highly specialized projects.

Understanding the role of technical skills can be significant for companies aiming to optimize project outcomes. If technical expertise correlates positively with project performance, this could reshape hiring and training practices in project management, promoting a balance between managerial and technical competencies. This research, therefore, seeks to bridge gaps in knowledge regarding the technical skill set of project managers and its potential impact on achieving successful project outcomes.

This study seeks to address these inconsistencies by systematically investigating the effect of technical skills on project performance. By analyzing project outcomes associated with project managers who possess varying levels of technical expertise, this research aims to determine if technical skills are a decisive factor in achieving high-performance outcomes. The findings will contribute to project management literature by offering evidence-based insights into the relative importance of technical skills and suggesting potential pathways for project management training and hiring practices.

1.2. Research Problem

The central problem of this study is to understand whether and to what extent the technical skills of a project manager influence project performance. This question arises from a lack of consensus in the current literature and a practical need to optimize project management practices in technology-intensive fields. Specifically, the research seeks to clarify if technical skills are a significant factor in improving project efficiency, quality, and

completion rates, or if managerial and interpersonal skills alone are sufficient for successful project management.

1.2.1. Theoretical Gaps

The existing literature on project management competencies primarily emphasizes managerial, interpersonal, and leadership skills, often underplaying or inconsistently addressing the role of technical skills. Many studies, such as those aligned with the Project Management Body of Knowledge (PMBOK), focus on project managers' soft skills, such as communication, motivation, and stakeholder management, as critical to project success (PMI, 2021). While some research (El-Sabaa, 2001; Müller & Turner, 2010) acknowledges technical skills, findings are inconsistent about their actual impact on project performance, leaving a theoretical gap in understanding the interplay between technical and managerial skills in diverse project environments.

Additionally, there is limited consensus on which technical skills are most valuable for project managers. Studies often refer to “technical skills” broadly, without specifying if these pertain to industry-specific knowledge, software competencies, or technical methodologies. This lack of specificity creates a gap in the theory, as it remains unclear if all technical skills equally contribute to performance or if specific skills are more impactful for certain project types (Pettersen, 1991; Crawford, 2005). Moreover, the literature has not fully explored the relationship between technical skills and project complexity whether projects of varying technical demands benefit differently from a project manager’s technical knowledge. This gap underscores the need for a more nuanced theoretical framework that addresses how technical skills

interact with other competencies to affect performance across various project settings.

1.2.2. Practical Gaps

From a practical perspective, organizations face uncertainty regarding the optimal balance of technical versus managerial skills in their project management teams. Hiring and training practices often prioritize leadership and communication skills over technical expertise, largely due to established project management frameworks that de-emphasize technical competencies (PMI, 2021). This emphasis may overlook the potential advantages of technical skills, particularly in highly technical projects where project managers without sufficient technical knowledge might struggle to anticipate challenges or effectively communicate with technical teams (Cheng, Dainty, & Moore, 2005).

Furthermore, companies lack clear guidelines on assessing or developing the technical competencies of project managers. While some industries, such as engineering and IT, recognize the value of technical expertise, practical tools for measuring and enhancing these skills are limited. This gap complicates decision-making for both recruitment and professional development, as organizations may be unsure of the extent to which technical skills should factor into project management competency models (Crawford, 2005; Rezvani et al., 2016). Filling this practical gap could offer organizations actionable strategies to optimize project outcomes by aligning skill requirements with project demands.

The main research question, "How much do the technical skills of the project manager affect project performance?" explores the impact of technical expertise on project success. This study aims to determine whether technical skills give project managers an edge in decision making, problem solving, and communication with technical teams, especially in complex projects.

1.3. Research Significance

The findings of this study are expected to contribute valuable insights for organizations, and project management professionals. For organizations, the research can provide data-driven guidance on whether to prioritize technical skills in the recruitment and training of project managers. For practitioners, understanding the role of technical skills can help in personal skill development, particularly for those managing technologically intensive projects. Lastly, this study will add to the academic discourse on project management competencies, addressing existing gaps and fostering a more nuanced understanding of the skills that drive project success

1.3.1. At the theoretical level

At the theoretical level, this research seeks to contribute to a more comprehensive understanding of the competencies required for effective project management by examining the impact of technical skills on project performance. Traditionally, project management literature, including prominent frameworks such as the Project Management Body of Knowledge (PMBOK), emphasizes managerial, leadership, and interpersonal skills over technical competencies. By focusing on the role of technical skills, this study aims to address a gap in the current theoretical models of project

management competencies. Specifically, it will explore whether technical skills should be regarded as fundamental in project management or if they serve only as supplementary knowledge that can be compensated for by strong managerial abilities.

1.3.2. At the practical level

On a practical level, this study's findings are likely to provide valuable insights for organizations, project management professionals, and human resources departments. If technical skills are shown to have a significant impact on project performance, organizations may need to reconsider their criteria for hiring and developing project managers, especially in technology-driven industries. In many cases, organizations currently prioritize leadership and communication skills over technical competencies due to a perception that technical expertise can be acquired on the job or that it is not essential for a managerial role. This research could inform organizations about the importance of balancing technical and managerial skills in project management teams, especially when dealing with complex, technical projects.

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