

Analysis of Critical Success Factors in Information Technology Project Management: A Literature Review

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Abstract

This study examines the factors influencing the success of information technology (IT) project management through a literature study approach. The high failure rate of IT projects, characterized by schedule delays, cost overruns, and unmet objectives, highlights the importance of effective project management practices. The objective of this research is to analyze and synthesize key factors that contribute to the success of IT project management based on existing academic literature. The research method employed is a literature study, involving the review and analysis of relevant national and international journals, textbooks, and scholarly publications related to IT project management. The findings indicate that several critical factors consistently influence IT project success, including comprehensive project planning, competent human resources, effective risk management, clear communication among project stakeholders, and the use of project management support tools. These factors are interrelated and collectively determine the ability of organizations to manage IT projects efficiently and effectively. The implications of this study provide a conceptual framework that can be used by practitioners to improve IT project performance and by academics as a reference for future empirical research in the field of information technology project management.

Keywords: communication; IT project management; project planning; project success; risk management

1. Introduction

The rapid development of information technology has encouraged organizations, both in the public and private sectors, to implement various information technology projects in order to improve operational efficiency and competitiveness [1]. Information technology projects include software development, information systems, and technological infrastructure that require systematic planning and management [2]. However, in practice, many information technology projects experience problems such as delays in completion, cost overruns, and failure to meet user requirements [3]. These conditions indicate that the success of information technology projects is not solely determined by technical aspects, but also by the effective implementation of project management practices [4].

Various previous studies have examined factors influencing project success, including project planning, human resource competence, risk management, team communication, and the utilization of project management support technologies [5]. Nevertheless, the findings of these studies remain scattered and have not yet provided an integrated conceptual overview of the success factors in information technology project management [6]. In addition, most studies emphasize empirical approaches within specific locations or organizations, indicating the need for a comprehensive literature review to systematically summarize and synthesize existing findings [7].

The research gap lies in the lack of literature studies that specifically examine and classify the success factors of information technology project management based on previous research findings [8]. Such a study is important to provide a more comprehensive understanding of the key factors contributing to the success of information technology projects and to serve as a conceptual foundation for future research [9]. Therefore, this study aims to analyze the factors influencing the success of information technology project management through a literature review approach, with the expectation of contributing theoretically to the development of project management knowledge and practically to organizations in improving the success of information technology project implementation.

Information technology project management is a discipline that integrates management principles with the specific characteristics of information technology [10]. According to the Project Management Institute, project management is the application of knowledge, skills, tools, and techniques to project activities to meet project needs and objectives [11]. Kerzner (2022) emphasizes that information technology projects involve higher levels of complexity compared to conventional projects due to changing user requirements, technological dependencies, and environmental uncertainties [7]. Therefore, managing information technology projects requires a systematic and adaptive approach to ensure optimal achievement of project objectives.

The success of information technology project management has become a major focus in project management studies [12]. According to Mir and Pinnington (2014), project success is not only measured by the achievement of time, cost, and scope, but also by the project's ability to deliver added value to the organization [13]. Zwikael and Gilchrist (2025) state that stakeholder satisfaction is an important indicator in assessing project success, particularly for information technology projects whose outcomes are directly used by end users. Thus, the success of information technology project management reflects a balance between achieving technical targets and fulfilling the strategic needs of the organization [14].

Project planning is a fundamental factor in the success of information technology project management [15]. According to Papke-Shields et al. (2021), comprehensive project planning helps organizations establish clear objectives, manage resources efficiently, and reduce potential risks during project implementation [16]. Sulistyorini (2009) explains that inadequate planning is often the main cause of project delays and cost overruns, particularly in information technology projects that are characterized by high dynamics and frequent changes [17].

Human resource competence also plays a crucial role in determining the success of information technology projects (Tarumasely & Astuti, 2023). Berssaneti and Carvalho (2021) state that the competence of project managers and project teams, which includes technical expertise, managerial skills, and work experience, has a significant influence on project performance. Ajmal and Koskinen (2020) add that competent human resources are able to manage project knowledge effectively and enhance the team's capability to address problems that arise during project execution.

Risk management is a critical aspect of information technology projects that are characterized by high levels of uncertainty [18]. According to Berssaneti and Carvalho (2015), effective risk management enables organizations to identify, analyze, and control risks from the early stages of a project. Alami and Hilali (2021) emphasize that the systematic implementation of risk management can minimize the potential for failure in information technology projects and increase the likelihood of achieving project objectives.

Project communication is also an important factor in the success of information technology project management [18]. According to Ajmal and Koskinen (2020), effective communication among project team members and stakeholders enhances coordination, reduces conflict, and ensures alignment in understanding project objectives. Joseph Teguh Santoso (2022) further states that the use of project management support technologies can improve the effectiveness of communication, monitoring, and control in information technology projects.

Based on various previous studies, it can be concluded that project planning, human resource competence, risk management, project communication, and the use of supporting technologies are the main factors influencing the success of information technology project management. The synthesis of theories and research findings serves as the conceptual foundation of this study to comprehensively understand the success of information technology project management.

2. Methods

This study employs a qualitative research design using a literature review approach [19]. The literature review method was selected because this study aims to examine, analyze, and synthesize various concepts and findings from previous studies related to the success of information technology project management. This approach enables researchers to obtain a comprehensive conceptual understanding of the factors influencing the success of information technology projects without conducting primary data collection.

2.1. Data Sources and Sampling

Data collection was conducted through systematic searches of academic databases using relevant keywords such as information technology project management, project success, and project success factors [20]. The collected data were then screened and classified based on topical relevance and substantive content. The research instrument used in this study was a literature review matrix or data extraction sheet, which was utilized to identify key concepts, variables, and major findings from each analyzed source.

2.2. Data Collection Technique

The data analysis technique employed in this study is qualitative descriptive analysis by comparing, categorizing, and synthesizing findings from various literature sources [21]. The analysis was conducted to identify patterns, similarities, and differences among previous research results, thereby providing insights into factors that consistently influence the success of information technology project management. The analytical results were then systematically organized to develop the conceptual framework of the study.

2.3. Research Model

The research model in this study illustrates the conceptual relationships between information technology project management factors and project success, as synthesized from previous literature. The model is developed to provide a structured representation of the key factors that consistently influence the success of information technology projects based on the findings of prior studies.

Figure 1 presents the proposed research model, which integrates five main factors of information technology project management, namely project planning, human resource competence, risk management, project communication, and the use of project management support technologies. These factors are conceptualized as critical success factors that collectively influence the achievement of information technology project success.

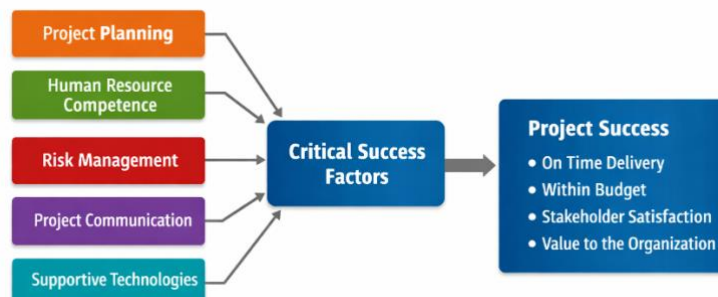


Fig. 1: Research Model

As illustrated in Figure 1, project planning, human resource competence, risk management, project communication, and supportive project management technologies play an essential role in shaping critical success factors that lead to successful information technology project outcomes. Project success in this study is reflected through key performance dimensions, including timely project completion, adherence to budget constraints, stakeholder satisfaction, and the value delivered to the organization.

The relationships depicted in the research model are explained conceptually based on the synthesis of previous empirical and theoretical studies. This model serves as a conceptual foundation for understanding how information technology project management factors contribute to project success and provides a basis for future empirical validation.

3. Results and Discussion

This study was conducted using a literature review approach by collecting and analyzing various scholarly sources relevant to information technology project management. The data sources consisted of national and international scientific journals, reference books, and academic publications that discuss factors influencing the success of information technology projects.

The results of the literature review indicate that the success of information technology project management is influenced by several key factors that are consistently discussed in previous studies. These findings are in line with Wijoyo et al. (2023), who state that information technology projects tend to achieve higher success rates when managed through an integrated approach based on critical success factors. The analyzed literature also reveals similarities in research findings across different studies, despite variations in organizational contexts and research methodologies [8].

3.1. Project Planning

Kharisma and Santoso (2020) found that organizations with a high level of project planning have a greater likelihood of achieving project success compared to organizations with weak planning practices [11]. This finding is reinforced by Garnida et al. (2023), who emphasize that failures in information technology projects are generally caused by inadequate planning and project control from the early stages [4].

Project planning is a fundamental foundation in information technology project management. The reviewed literature demonstrates that projects with clear and structured planning tend to achieve higher success rates. Planning activities that include defining objectives, scope, schedules, and budgets help minimize uncertainty during project execution. These findings align with fundamental project management principles that position planning as a critical initial phase determining overall project success.

3.2. Human Resource Competence

Joseph Teguh Santoso (2022) indicates that the competence of project managers and project teams has a significant influence on project performance, particularly in managing technical complexity and dynamic changes in user requirements. This is consistent with the results of the literature review in this study, which reveal that both technical and managerial competencies are dominant factors in achieving project success [5].

Human resource competence, particularly that of project managers and project teams, is widely discussed in the literature as a key success factor. The findings indicate that technical expertise, managerial skills, and work experience contribute significantly to the success of information technology projects. Previous studies also emphasize that competent human resources are better equipped to manage requirement changes, resolve technical issues, and maintain optimal team performance throughout the project lifecycle.

3.3. Risk Management

In the context of risk management, Amien et al. (2024) state that information technology projects involve higher levels of risk compared to non-technology projects, thereby requiring systematic risk management practices. The results of this literature review strengthen this argument by showing that projects implementing structured risk management are more capable of maintaining project stability and reducing the likelihood of failure [22].

Effective risk management enables organizations to identify, analyze, and mitigate potential risks throughout the project lifecycle. The literature indicates that proactive risk management contributes to improved decision-making and enhances the ability of project teams to respond to uncertainties commonly encountered in information technology projects.

3.4. Project Communication

Effective communication among project team members and stakeholders plays a crucial role in ensuring the smooth execution of information technology projects. The literature review reveals that ineffective communication is frequently identified as a primary cause of misunderstandings, conflicts, and project delays. Conversely, open and structured communication improves coordination and ensures a shared understanding of project objectives.

These findings support the view that communication functions as a coordinating mechanism that aligns technical activities with stakeholder expectations, thereby increasing the likelihood of project success.

3.5. Use of Supporting Technologies

Communication and the use of supporting technologies are also widely discussed in previous studies. Ajmal and Koskinen (2020) emphasize that effective communication among stakeholders enhances coordination and reduces conflict during project execution [6]. Meanwhile, Yefiananda et al. (2025) find that the utilization of project management software improves the effectiveness of planning and control in information technology projects. These findings are consistent with the results of the literature synthesis in this study [23].

The use of project management support technologies, such as project management software, contributes significantly to the success of information technology projects. The literature suggests that such technologies facilitate planning, monitoring, and project control processes more effectively. These findings align with the evolution of modern project management practices, which increasingly rely on technology as a decision-support tool.

3.6. Relationship Between Findings and Previous Studies

The synthesis of the reviewed literature demonstrates consistency with numerous previous studies that emphasize the importance of project planning, human resource competence, risk management, communication, and supporting technologies in achieving information technology project success. Although variations exist in research contexts and study objects, the findings of this study largely reinforce prior research and do not reveal significant contradictions [24].

Based on the comparison between the literature review results and previous studies, it can be concluded that this research strengthens and confirms existing findings related to the critical success factors of information technology project management. Therefore, the results of this study are not only descriptive in nature but also provide theoretical reinforcement through the integration and synthesis of prior research findings.

4. Conclusion

Based on the results of the literature review, it can be concluded that the success of information technology project management is influenced by several interrelated key factors, namely project planning, human resource competence, risk management, project communication, and the use of project management support technologies. The synthesis of previous studies indicates that the implementation of structured project management practices supported by competent resources increases the likelihood of achieving information technology project objectives in terms of time, cost, quality, and stakeholder satisfaction. Therefore, the research objective of analyzing the factors influencing the success of information technology project management has been successfully achieved.

This study has limitations due to its reliance on a literature review approach, which means that the findings are conceptual in nature and depend on the quality and scope of the analyzed literature. Consequently, the generalization of the results should be approached with caution and adapted to the specific organizational contexts and characteristics of different information technology projects. Nevertheless, this study provides a comprehensive overview of the key success factors in information technology project management.

Based on these conclusions, it is recommended that organizations and information technology practitioners place greater emphasis on project planning, the development of human resource competencies, risk management practices, effective project communication, and the utilization of supporting technologies in the implementation of information technology projects. Future research is encouraged to extend this study through empirical approaches, such as surveys or case studies, in order to directly examine the influence of these factors on information technology project success within specific organizational contexts.

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