

A Survey on Critical Success Factors Influencing Project Success Across Multiple Industries

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Abstract

The complex nature of contemporary projects in various industries has raised a need to know most influential Critical Success Factors (CSFs) in projects. Although these factors have been widely researched, they remain a challenge to the organizations as a result of changing dynamics in the industry, the differing expectations of the various stakeholders; and inconsistency in performance measurement. The present work presents an extensive review to study the key CSFs influencing the project success of construction, information technology, banking, supply-chain management, and startup settings. The paper brings together research findings of various studies to pinpoint cross industry themes such as leadership support, effective communication, organizational alignment, team competence, and technical preparedness. Sector-specific CSFs are also emphasized like regulatory compliance in the banking sector, safety in construction, and innovation in startups to show the contextuality of project success. Recently, the development of data-driven analytics, adaptive frameworks of CSF and digital decision-support tools are discussed to demonstrate how organizations can more effectively measure and incorporate CSF in strategic planning. The conclusions of this research will offer a cohesive basis to practitioners and researchers to learn, focus, and use CSFs to improve project performance across a range of sectors.

Keywords: Multi-Industry Analysis, Project Success, IT Project Management, Critical Success Factors.

I. Introduction

Project practitioners may find "success" to be the most enjoyable phrase. When discussing projects, the two main success concepts are project management success and project success. There are differences and similarities between these two project success dimensions. The main difference is that whereas project success is linked to the assessment of overall project goal achievement, project management success is linked to traditional metrics of time, cost, and quality performance [1]. Yet, since there are so many different models of project and project management success available, it is challenging to draw a clear distinction between them, in part because of their mutual interconnections. The notion of project success has changed over time. varied stakeholders have varied ideas on what constitutes a successful project, which has led to disagreements about whether or not a project is successful [2]. Project success

and project management success are positively correlated. Effective project management will help projects succeed, but it won't prevent a project from failing. Determining success variables is useless unless the success criteria have been established. Without the success criterion, project success would not be ideal.

Because the majority of businesses rely on IT systems and because these businesses' activities are becoming more automated and computerized, IT systems have grown in importance. Large sums of money have been spent on IT projects to create, enhance, and maintain these systems [3]. It is vitally crucial for firms to be able to handle IT projects properly. Because the construction business is inherently risky, CSFs are often considered one of the most crucial tactics to improve project delivery effectiveness. The project management

strategies adopted by organizations in construction industry do not essentially ensure project success. The management and regulation of a building project are the main factors that determine its success [4]. Planning, project execution, time and cost overruns, and quality non-achievement have historically been recognized as the main issues with project management techniques. There should be more player-based research investigations since the key success factors (CSFs) are more helpful in supporting decision-making.

SMEs should have an efficient supply chain strategy since a successful SCM implementation can be crucial in overcoming these obstacles. SMEs should have an efficient supply chain strategy since a successful SCM implementation can be crucial in overcoming these obstacles. CSFs are useful in multi-industries and include the supply industry, banking, and construction [5]. The performance measures covered are satisfaction and service to customers, creativity and expansion, financial performance, and internal business. The success of a building project is critical for most users, governments, and communities, and this is where the CSFs also apply. Modern construction projects create substantial hurdles for both contractors and customers to effectively conclude the project because of the rising complexity of design and the engagement of stakeholders. Risk management, customer trust, digital service quality, and regulatory compliance are examples of critical CSFs in the banking industry to stay stable and competitive. These are some of the reasons why banks are able to secure their operations, retain more customers and keep abreast with changing technologies. The successful use of CSF enhances the performance of both long-term and operational efficiency in the financial industry.

A. Structure of the paper

The structure of the study is following: Section II showing the insights of Critical Success Factors. Section III explains the importance of CSFs in different industries. Section IV discusses the challenges of Critical Success Factors across different industries. Section V reviews related literature, and Section VI shows the conclusion of study with future insights

II. Overview of Critical Success Factors (CSFS)

Key success factors (CSFs) are characteristics, situations, or variables that can significantly affect a project's success when properly managed, controlled, or maintained. There is dispute among academics over criteria for evaluating project success and variables which impact it, and numerous studies have identified distinct CSFs. CSFs have observed how context affects what is deemed most important and whether some CSFs are actually associated with success [6]. The majority of construction organizations can benefit from researching key success factors to improve building project's performance.

A. Critical Success Factors and its Importance

assistance and direction from upper management. In addition to its importance, the fact that this factor was ranked highest suggests that it should be addressed before the other CSFs [7]. Promoting a corporate mindset which prioritizes collaboration and knowledge exchange throughout company should be the focus of top management or executives. In addition to this, strong leadership involvement helps ensure that resources, budgets, and priorities are aligned with project goals as shown in Figure 1. It is also an effective way of enhancing communication between departments, lessening resistance to

change, and offering a clear vision on how to deliver strategic outcomes. The active support of top management towards CSFs will make the organization more accountable and promote the culture of continuous improvement and long-term organizational prosperity.



Fig 1: Critical Success Factors Overview.

- **Origin of Critical Success Factors:** The CSF's goal was to talk to important members of the organization about its strategy and mission. By identifying the most crucial business operations and connecting them to IS needs, the introduction workshop produced a managerial viewpoint for systems development [8]. Additionally, the workshop provided a venue for discussion of the research approach and encouraged key executive members to actively participate in the research effort. The purpose of the CSF Interviews is to ask managers to directly identify the things that are important for the organization and for themselves.
- **CSFs in Project Performance:** The idea of CSF has been examined in many different situations; however it seems that there hasn't been much focus on how CSFs affect project success and performance outcomes. A factor can only be called a CSF if attention to this element in a sufficient manner results in performance gains [9]. Consequently, a CSF cannot be formed by just identifying a potentially significant element. Determining if a CSF is actually vital is made more difficult by the various settings in which "success" and "performance" can be measured, such as user satisfaction or project completion success, or through the physical and intangible advantages to a company.
- **Identifying CSFs Early in Projects:** These days, building projects are getting harder and more complicated. The project team is going through a lot of changes. Building operation is more important than other components of building upkeep. Furthermore, a number of things affect how well the building research and development process works [10]. The earlier strategy for success in construction business lays tremendous importance on the capacity to plan and implement projects.

A. Common Dimensions of CSFs Across Industries

Based on the state of a development project's various success factors, the scale would enable managers to identify the various objectives and motivations of direct stakeholders, including clients, consultants, and contractors involved in the project, in addition to indirect stakeholders, including local government and the community surrounding it. Managers would therefore be able to make a thorough judgment that is vital to a project's

success, which would lead to balancing the somewhat competing interests of many stakeholders [11]. The scale would allow managers to oversee the particular needs of a project, such as an healthcare, educational, industrial estate, or agricultural market project, carried out in a particular geographic area according to the region's development status and the varied needs of the project's various stakeholders.

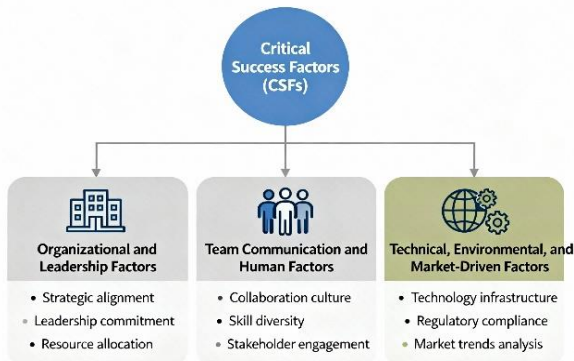


Fig 2: Dimensions of Critical Success Factors.

• **Organizational and Leadership Factors:** Organizational elements are those relating to the features of the business environment in where the projects are carried out. The organizational structure, which affects numerous factors like resource allocation ease and decision-making agility, is another crucial component for project success [12]. The organizational structure might range from a standard functional structure, tailored to continuing activities, to a wholly projectized structure, in which the capacity to adapt to the project's requirements is best. These are the support of top management, strategic alignment, resource commitment, and effective ability by the leaders to lead change.

• **Team Communication and Human Factors:** The human-related CSFs underline the value of the level of communication, team cohesion, competency and stakeholder involvement(as shown in Figure 2). Good communication channels help in minimizing misunderstandings, improving coordination, and identifying the problem at an early stage. Human elements in the project like motivation of the team, conflict management, sharing of knowledge and involvement of the user are very important in sustaining the project momentum. Several industries record that projects that have good communication practices and well trained highly engaged teams stand a higher chance of attaining schedule, cost and quality goals.

• **Technical, Environmental, and Market-Driven Factors:** Technical and environmental aspects comprise the complexity of the system, the technological maturity, the quality of the infrastructure and the capacity to adapt to the changing demands [13]. These are combined with external forces like regulatory conditions, competition in the market, customer demands and economic forces. CSFs that are market-driven are aimed at comprehending the needs of customers, the trends in the industry, and innovation needs. Companies that do not lose their technical strength to adjust to external market and environmental changes are in a better position to sustain the performance, overcome risks and successful project delivery across different industries.

In Table I, a brief overview of the major concepts and dimensions of Critical Success Factors (CSFs) and their significance, their source, and their impact on project performance, as well as, why they should be identified early, and what types of categories they usually belong to across the industries is provided. It gives a brief description on how these factors, when used together, lead to the success of projects.

TABLE I: SUMMARY OVERVIEW OF CRITICAL SUCCESS FACTORS (CSFs) ACROSS PROJECT CONTEXTS.

Section	Focus Area	Key Concept	Main CSFs	Impact on Success	Context
CSFs Overview	Definition	CSFs refer to factors or elements that have a great impact on the outcomes of projects.	In industries the factors of Context-dependency.	Helps identify the cause of success or failure of projects.	Common in the construction and project management studies.
Importance of CSFs	Leadership Role	The most ranked CSF is top management support.	Participation of leadership, allocation of resources, communication culture.	Meets objectives, minimizes opposition, increases coordination.	Develops long-term performance within the organization.
Origin of CSFs	Foundational Basis	CSFs were developed as a strategy to reveal mission-critical activities.	Managerial interviews, strategic priorities, workshops.	Guarantees timely transparency and management.	Connections business to system development.
CSFs & Performance	Success Measurement	A factor is a CSF only if it improves performance when addressed.	Customer satisfaction, project delivery, corporate gains.	Determines the real motivators of project performance.	Success is not a unidimensional phenomenon.

Early Identification	Planning Stage	Identifying CSF early in the project is useful in managing the increasing complexity of the project.	Strategy quality, service requirements, research.	Helps to make improved decisions and minimize risks.	Significant in complicated construction areas.
Common CSF Dimensions	Cross-Industry	Cross-Industry The CSFs are categorized as organizational, human, and technical.	Leadership, communication, technical preparation, market.	Helps deal with the needs of different stakeholders.	Reliable in any industry, such as IT, construction, medical etc.

III. CSFS Across Multiple Industries

The Critical Success Factors (CSF) differ according to industries, but there exist common themes that cut across many industries that have an impact on the project outcomes. Classified either in the construction sector, information technology, healthcare or manufacturing, organizations always count on issues related to influential leadership, outstanding team communication as well as strong technical readiness that will bring the desired success. To make sure such advantages are really used, they must carefully oversee and monitor technology transfer process and its outcomes [14]. Our comprehension of certain industrial values, such as new product development, new service methods, new technology transfer, and new service business models, will grow as a result of ongoing technology transfer.

A. Sector-Specific Critical Success Factors

The CSFs sector-specific are the considerations of the conditions, challenges, and priorities of the particular industries.

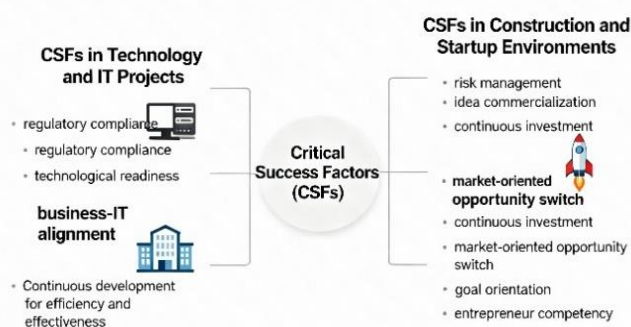


Fig 3: Sectors of CSFs.

While general CSFs apply across many project types, each sector such as construction, IT, Banking, or manufacturing has distinct requirements that shape which factors are most critical for success as shown in Figure 3. They can be in the form of regulatory compliance within the healthcare sector, technological preparedness within the IT sector, supply-chain efficiency within the manufacturing sector or safety and environment within the construction sector.

1) CSFs in Technology and IT Projects

The CSFs have been examined by numerous sources and expressed in distinct meanings, phrases and under various subjects, which needed rigorous investigation of these sources to identify the most significant and linked factors. The efficiency and efficacy of information technology (IT) must be continuously improved due to recent developments in the industry as well as the advent of new political and economic ideas and ideologies [15]. To maximize benefits and reduce

project risks, long-term success in businesses requires strong connections between business and IT.

2) CSFs in Construction and Startup Environments

Construction is a perilous since there is always the possibility of failure, consequently, construction companies must assess the factors that may directly impact their building project performance [16]. A startup is sometimes described as a brand-new business that entrepreneurs create by fusing thoughts and business resources. Blank characterizes a startup as "a temporary organization established to search for a repeatable and scalable business model." This indicated that the most crucial factors influencing a startup company's performance are idea commercialization, ongoing investment, and market-oriented opportunity switching. [17]. Design companies in particular need to focus goal orientation and entrepreneurial competency in order to steer their business to success.

A. Common CSFs Shared Across Industries

In various industries, there are a number of CSFs which are always at play in the project outcomes. Irrespective of industry variations, the quality of leadership, communication, customer orientation and organizational support have been identified to be key success factors influencing the success of a project time and again. These common CSFs bring out the universal nature of collaboration, strategic fit, and organised planning in the delivery of smooth projects:

3) Leadership, Communication, and Team Competence

In an extremely broad industry base, it is strong leadership, competence in communication and effective work together that regularly appear to be pre-eminent CSFs. The role of leadership is a source of strategic direction, timely decisions, and collaboration as a culture that helps teams to work together. Proper communication minimizes the miscommunication, enhances coordination and aids the faster identification of problems. Also, the competence of team as skills, experience, and adaptation ability helps to boost the execution of any project and improve the overall performance. A combination of these CSFs forms a stable environment where teams are able to respond to issues, to align themselves to the project objectives and to achieve successful results despite the sector.

4) Customer Focus, Planning, and Organizational Support

Customer-focused thinking, effective planning, and effective organizational support are also well-known CSFs that have cuts across various industries. Customer focus makes projects respond to customer's need, market expectations and quality of service provision resulting in increased levels of customer satisfaction and long-term value. Good planning gives structure and clarity and realistic schedules which help the team to control risks and use resources in a sensible manner. In the meantime, organizational support provided in the form of policies, availability of resources as well as cross-functional interaction provides the environment in which implementation

of the project can occur easily. A combination of these can assist organizations to stay in line with the expectations of the stakeholders, adapt to change effectively, and realize success in the project in different fields.

IV. Challenges and Advances in CSF Exploration

Research into CSFs poses significant challenges in the form of the dynamic and changing environment of an industry, intersectoral variations, and the inability to define and quantify what actually makes a company successful [18]. Organizations have a difficulty in standardizing CSFs because things that may be important in one area may not be applicable in a different area, and limitations in data make precise assessment even more complicated. Nevertheless, a range of new developments have been made, such as data-based analytics [19], responsive CSF models, and digital decision-support systems that can assist organizations in updating, validating, and applying CSFs in a more efficient way. These novelties have enhanced the credibility of CSF identification and enhanced their inclusion in strategic planning and performance management.

- **Environment in CSF:** The relationship among the vendor and the implementing organisation was not regarded critically crucial by both external and internal participants, since in most of the projects listed, the principal engagement was with an official consultancy partner of the vendor. However, a vendor can provide their own consultation services, making them the direct point of contact for the implementation firm.
- **Difficulty in Standardization Across Sectors:** The diversity in the structure, the risk exposure of industries, and their operations processes makes the development of universal standardized CSF difficult. As an illustration, CSFs in banking are more concerned with compliance and data security, and construction with the project planning and safety. The new developments in the direction of this are sector-adaptive CSF, which integrates generic organizational CSFs with industry-specific indicators to enhance its applicability.
- **Data Limitations and Measurement Issues:** The quality of measurements of CSFs is also challenging because of poor data quality and subjective interpretations, as well as performance measures. The use of qualitative judgments is still common in many organizations, and it may result in prejudice. The new developments, including AI-powered analytics, automated data gathering, and performance dashboards, have enhanced the accuracy and objectivity of the CSF measure so that more evidence-based decision-making can be made.
- **CPS Security:** The other issue is the translation of CSF findings into action plan. Success factors are usually pointed out by organizations but fail to incorporate them in their operational plans, resource allocation as well as performance evaluation. New developments are strategic alignment models, balanced scorecards, and digital decision-support systems that incorporate CSF outputs directly into planning and governance processes and making them more practical.

V. Literature Review

As this literature review demonstrates, identification and prioritization of CSFs is beneficial in enhancing the project results and making decisions. Nevertheless, there are still certain problems with a lack of generalizability, small samples, and dependence on subjective evaluation.

Priambodo, Handayani and Pinem (2019) identified the crucial success factor for IT projects in the banking sector, which should boost the number of successful IT projects when put into practice. 15 CSFs were found when the study started by gathering CSFs from earlier exams. The client, team, organization, and project are the four categories into which these elements fall. The entropy method was used to prioritize the tasks. 51 respondents completed the surveys after they were distributed [20].

Raharjo et al. (2018) identified the order of importance of the elements affecting PMO performance in Indonesian IT projects. First, a literature review and expert reviews were used in a qualitative manner to determine the PMO success elements. Second, the PMO success criteria and CSF were modelled quantitatively using the Analytic Hierarchy Process (AHP). The findings show that while project performance is the most important success criterion, top-level management support is the most critical aspect for PMO implementation [21].

Nalintippayawong, Waiyawatpattarakul and Chotipant (2018) examined important success factors and how they relate to Thai startups. The structural equation model uses multivariable regression analysis and factor analysis to examine causal links between factors. The findings, which are based on sixteen observable variables, indicate that company model, market opportunity, support partners, and customer perspective are the four key components of Thai startups' success. The potential and success of businesses are directly impacted by the business model and support partner in particular [22].

Sun and Watanabe (2017) used key CSFs, that are specifically designed for e-commerce businesses, to determine key factors' impact on cross-border freight forwarders. Every important success factor's degree of influence is determined using the Analytic Hierarchy Process (AHP). By employing this strategy, the organization will discovered the relevance of vital success variables and its implications [23].

Meyliana et al. (2017) supplied Jakarta, Indonesia's higher education institutions with the essential success criteria for putting in place a social CRM system. Fifty-eight private universities in Jakarta were handed a questionnaire. To discover the crucial success characteristics required to develop a social CRM model, a questionnaire consisting of 113 questions was issued to senior higher education officials. After seventeen universities responded, a statistical method known as PCA was used to identify sixteen significant success indicators as core components [24].

Kalumbu, Mutingi and Mbohwa (2016) developed a grading system for building maintenance CSFs in Namibia's Part I municipalities. Using a questionnaire survey and interviews, managers, supervisors, and maintenance planners were asked to rank the importance of CSFs discovered during a literature review. The ranked CSFs were reduced from 37 to 13 manageable components using factor analysis, including top management support, knowledge of local building maintenance procedures, and other maintenance-related tactics [25].

Table II provides a summary of seminal research in critical success factors, including the aim of the study, methodology, results, and constraints. All in all, the findings indicate that

defining and prioritizing CSFs enhance success of the project and decision-making. Nevertheless, the majority of studies have constraints like limited samples, sector-specific as well as

subjective judgments. Further research must expand the industry validation and enhance the methods of analysis.

TABLE II: SUMMARY OF RECENT STUDIES ON CRITICAL SUCCESS FACTORS (CSFs) IN IT AND RELATED DOMAINS.

Reference	Study on	Approach	Key Findings	Challenges / Limitations	Future Directions
Priambodo, Handayani & Pinem (2019)	CSFs in IT projects in the banking industry	CSF identification from literature; entropy method for prioritization; questionnaire with 51 respondents	Identified 15 CSFs grouped into four categories: organization, customer, team, and project	Limited to banking sector; relies on subjective responses	Validate CSFs across other industries and larger samples
Raharjo et al. (2018)	Factors influencing PMO success in IT projects in Indonesia	Qualitative review + expert interviews; Analytic Hierarchy Process (AHP)	Top management support is the most critical PMO success factor; project success ranks highest among criteria	Depends heavily on expert judgment; limited generalizability	Apply AHP to broader PMO environments and cross-country datasets
Nalintipayawong, Waiyawatpattarakul & Chotipant (2018)	CSFs and their relationships in Thai startups	Structural Equation Modeling (SEM), factor analysis, and multivariable regression	Identified four CSFs: support partner, market opportunity, business model, customer perspective; business model has strongest direct effect	Limited to Thai startups; uses 16 observed variables which may not cover broader dimensions	Expand model to Southeast Asia and include additional entrepreneurial factors
Sun & Watanabe (2017)	CSFs affecting cross-border e-commerce freight forwarding	CSF framework; Analytic Hierarchy Process (AHP)	AHP identifies influence levels of each CSF; helps organizations understand priority of factors affecting operations	CSFs specific to e-commerce freight sector; may not generalize to other logistics areas	Broaden assessment to global supply chains and integrate digital logistics indicators
Meyliana et al. (2017)	CSFs for implementing social CRM in higher education institutions	Questionnaire to 58 universities; PCA used for factor extraction	Identified 16 CSFs crucial for social CRM implementation in higher education	Only 17 universities responded; results limited to Jakarta region	Conduct broader national studies and evaluate CRM implementation outcomes
Kalumbu, Mutingi & Mbohwa (2016)	CSFs for building maintenance in municipalities of Namibia	Survey and interviews; factor analysis reducing 37 CSFs to 13	Key CSFs include top management support, local practice familiarity, and maintenance planning	Limited participant diversity; context-specific to Namibian municipalities	Apply CSF model to other public infrastructure sectors and refine factors

VI. Conclusion and Future Work

The appreciation of CSFs has gained more significance in a world where projects in different industries are becoming more complex, diverse in their stakeholder expectations, and technologically transformed faster. CSFs enable companies to determine the conditions, practices, and capabilities which directly impacted by the greatest success of construction projects, IT initiatives, banking operations, startups, and supply-chain systems. Being aware of these drivers, industries will be better placed in strategies, enhance performance, and minimize the risks entailed in the implementation of large-scale projects. The review emphasizes the significance of timely CSF detection, leadership, communication skills, organizational support, and technical preparedness to improve project

performance. It also exposes challenges such as lack of consistency in measurement, lack of standardization, and subjective assessments. Those problems and the need to implement data-driven and adaptive CSF frameworks can enhance the decision-making process and lead to successful outcomes in various fields.

The future studies are to be aimed at validating CSFs with larger and more heterogeneous sets of data in different industries to enhance generalizability. The CSF identification and the measurement can be improved further through the integration of AI-based analytics and real-time performance monitoring. Also, the creation of common CSF structures that can be used across diverse project settings would contribute to the minimization of

differences in existing models. The effects of the emerging technologies and changing expectations of stakeholders will also be more insightful to the enhancement of the project success.

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