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An integrative review of the theory that reformulates the concept of CSFs as a hierarchical and interdependent mechanism of success.

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Abstract

Among the most mature research streams in project management is the Critical Success Factors (CSFs). Despite the vast body of research, research on CSF remains theoretically fragmented, largely descriptive, and not particularly cumulative with factors frequently being viewed as independent predictors of project outcomes. It is here that this paper comes to redefine this limitation by repositioning CSFs as an idea of hierarchical and interdependent success mechanisms built into project systems of complexity.

The study builds upon the Project Success Theory, the Systems Theory, and the Contingency Theory to conduct a theory-integrative systematic literature review on 74 peer-reviewed studies concerning construction projects. In its application, nine higher-order CSF mechanisms are determined and organized using inductive thematic synthesis and analysis of salience and consensus, into core enabling mechanisms, secondary conditioning mechanisms, and contextual moderators.

The findings indicate that managerial and relational mechanisms, in particular, planning, leadership, and communication constitute a powerful enabling core, and the financial, contractual, technological, and environmental mechanisms depend on it. This hierarchy is what causes cross-context stability and contextual variability between CSFs. The research contributes to project management theory by moving the CSF research to mechanisms explanation, which allows the development of theories cumulatively in complex projects.

Keywords: Critical Success Factors, Projects Success Mechanism, Systematic Literature Review, Construction Project Management.

Introduction

One of the widely known and most well-researched concepts in project management is Critical Success Factors (CSFs). Since its official entry into the field of management research, the use of CSFs has been rampant in an effort to explain the success of certain projects and the failure of others. The CSF research, especially in construction project management, has produced a considerable number of empirical studies over the past decades, all pointing at similar managerial, organisational, technical, and contextual antecedents linked to the success of a project. Nonetheless, this level of maturity notwithstanding, the theoretical value of CSF research is still debated even in the most prominent project management journals.

The major weakness of the CSF literature lies in its rather descriptive and cumulative position. Most of the research available has been done on the identification, listing or ranking of success factors with little effort being put on the interaction of the CSFs to create project success. CSFs are typically addressed as the independent predictors which are theoretically equal in their positions, which is becoming a growingly problematic as the nature of projects is perceived as complex, interdependent and dynamic systems. As a result, the study of CSF has been criticised due to the lack of theoretical coherence, cumulative development, and lack of integration with central theories in project management.

This is a weakness especially in construction project research. Research done in various geographical settings and project-types consistently reports the same CSFs, that is, project planning, leadership, communication, stakeholder engagement, and risk management. Even though this consistency indicates the existence of consistent success drivers, it also poses a serious theoretical question: what further theoretical payoff does CSF research have, in case the same CSFs are repeated? To answer this question, the issue of factor enumeration must be set aside and focus more on understanding of functions, interactions, and relative significance of CSFs in project systems.

Currently, the study of CSF has been hesitant to access the background theories in project management. The conceptualization of the Project Success Theory views the dimension of success as multidimensional and dynamic throughout the project lifecycle, but offers very little information regarding how success outcomes are generated. The Systems Theory sees projects as non-linear, socio-technical systems that are interdependent and has hardly been operationalized in CSF research to understand the relationship between success drivers. Equally, the Contingency Theory stresses the contingency of the managerial effectiveness, but CSF studies tend to have a hard time balancing the statement of universal success factors and the empirical evidence specific to the context. Consequently, the theoretical possibilities of CSF research are not well developed.

The purpose of this paper is to argue that what seems to be a stagnation in CSF research is not due to exhaustion of the topic, but due to the lack of conceptualization of the theoretical concepts. The study hypothesises the re-conceptualization of CSFs as a hierarchical and mutually reinforcing success process within the complex project systems rather than regarding CSFs as fixed and equivalent predictors of success. There are core enabling mechanisms which are CSFs involved in the activation, structure, or constraint of other processes; and there are the secondary conditioning mechanisms or contextual moderators. This way of thinking may help CSF research to leave behind the descriptive association and proceed to explanatory theory.

This paper adopts a theory-integrative systematic literature review of the studies on construction projects to build this re-conceptualisation. Construction projects also offer an appropriate empirical area because of the high degrees of complexity, institutional diversity, participation of multiple stakeholders, and continuing performance problems. It is not aimed at suggesting new success factors, but at cumulative reorganisation of the existing knowledge in a way that will help to develop the theory and address old criticism of the CSF research.

The review is a systematic review where 74 peer-reviewed articles on the topic of construction project success were analysed applying a transparent and rigorous systematic review protocol. Inductive

thematic analysis is used to synthesise frequently identified CSFs to higher-order constructs. Such constructs then are categorised in theory into functional roles in project systems as core enabling mechanisms, secondary conditioning mechanisms as well as contextual moderating mechanisms. Composite salience -consensus method is used to combine the frequency of CSFs present in the literature and their declared significance to allow cumulative and theory-oriented knowledge formation. This paper is not a taxonomic one, but rather theoretical. It makes four contributions to project management research. First, it alters the conceptualization of CSFs to hierarchical and interdependent success mechanisms, as opposed to addition or synonymies. Second, it builds upon Project Success Theory by explaining how interacting processes of managers and organisation create multidimensional success effects. Third, it combines both Systems Theory and Contingency Theory into one, thus resolving the issue of universal and context-specific CSFs that has been long-standing. Lastly, it offers a framework based on conceptual grounding that facilitates cumulative and comparative research of CSFs in complex project environments.

The rest of the paper is structured in the following way. Section 2 provides the theoretical background where research on CSF is reviewed in the context of the Project Success Theory, Systems Theory, and Contingency Theory. Section 3 presents the research methodology comprising of systematic review protocol and analyses. Section 4 reports and discusses the findings in hierarchical success mechanism. Section 5 explains the theoretical implications to the research in project management and Section 6 explains the future research and theory development directions.

2. Theoretical Background and Conceptual Repositioning of Critical Success Factors

2.1 Critical Success Factors in Project Management Research

The importance of Critical Success Factors (CSFs) in project management has been at the centre of the research over the decades. CSF concept started in strategic management and it was transferred to project management as an explanation of the differences in project outcomes through the associations of managerial, organizational, technical, and environmental conditions to success. Early research involved the use of CSFs as major diagnostic instruments on basis of cost, time, and quality whereas recent research added to the success parameters stakeholder satisfaction, sustainability, and long-term value, especially in construction and infrastructure projects. Though having a broad usage, CSFs are still immature in conceptual development, with them being usually considered to be discrete and independent variables. These methods create empirical relationships but explain little as to how success arises in project systems that are complex and interdependent.

2.2 Weaknesses of Traditional CSF Approaches.

Many of the current CSF literature has three theoretical limitations that are interconnected.
The first one is that CSFs are usually assumed to be equal in reference to the theoretical status, i.e. all the factors mentioned are implicitly regarded as equal drivers of success. This presupposition is inconsistent with empirical findings that specific factors (as such leadership, planning, and communication) are always prevailing over others in a situation.

Second, CSF research is mostly based on the additive logic according to which the more success factors the project is considered to be successful and better managed. This type of reasoning ignores the fact that in some cases, certain CSFs only have effects under some condition, which implies the effects of interaction, mediation or hierarchical dependency.
Third, there is a consistent conflict between literature claims of universal CSFs and context-specific results. Although there is research that claims that some members of CSFs are applicable to all projects,

there is research that makes an emphasis on the impact of national culture, institutional settings, project size or delivery procedures. The CSF research that has been done till now has been unable to bring these positions into a consistent theoretical structure.

These constraints imply that the problem with CSF research is not scarcity of empirical studies, but insufficient integration and explanatory capabilities, on the theoretical level.

2.3 Project Success Theory and the Missing "How" Question

Project Success Theory is an essential resource that can be used to comprehend CSFs. The pioneering work on this topic defines success in project as a multidimensional and dynamic concept, which goes beyond the conventional iron triangle to encompass the contentment of the stakeholders, business gains, and strategic long-term value. This theoretical change has played a major role in the expansion of the evaluation of success in project management.

Nevertheless, although the Project Success Theory provides a clear understanding of what constitutes success, it does not provide much information on the production of success. CSFs are commonly placed in the forefront of the concept of successes, but the processes by which managerial behaviours lead to successful performances are under-specified. The consequence of this is that CSFs are often typically applied as descriptive counterparts of success, and not as causal constructs within a causal logic.

This paper holds that the way forward to fill this gap is by reconceptualizing CSFs not as inputs, but as success mechanisms that facilitate, precondition, or limit the achievement of project success outcomes.

2.4 Systems Theory and Interdependence of CSFs.

The Systems Theory is the conceptualization of the projects as open and interdependent systems, which includes the interacting subsystems of technical, social, organizational, and environmental systems. In this view, project results are arrived at as the result of the interplay of many things, as opposed to individual choices. Transferred to the CSF research, this means that success factors cannot be considered separately, and their impact on the project will be determined by their role in the system of mechanisms and their interrelationship. As an example, planning in advance, leadership skills and communication governance are essential in risk management whereas adoption of technology can only enhance performance in the presence of managerial capacity and organizational preparedness. In spite of this topicality, Systems Theory is hardly operationalized in CSF studies. It is against this gap that this study adopts a system-based approach that has focused on interdependence, hierarchy, and conditional behaviour among CSFs.

2.5 Contingency Theory and Conditional Boundary Condition.

According to Contingency Theory, the efficacy of managers is pegged on the correspondence between the organizational practices and environmental conditions like environment, technology and institutional structures. This approach in project management implies that there are no universal practices and factors that can ensure success in every situation.

Contextual variation is not a new concept in CSF researches especially in international and construction projects. Nevertheless, contingency has been approached more on a descriptive approach as opposed to a theoretical approach resulting in a disjointed finding and inconsistent conclusion.

This study integrates Contingency Theory by distinguishing between:

- Countless stable CSFs that are always encouraging of success in any setting and
- CSFs that are context-dependent and have an impact that differs according to the type of project, institutional condition, or technological maturity.

The study balances both universal and contingent views of the same explanatory framework by placing some of the CSFs as moderators or conditioning circumstances.

2.6 Reconceptualization of CSFs as Hierarchy Success Mechanisms.

The rationale behind this study rests on the conceptualization of the CSFs as an equal measure of success predictors, as this conceptualization raises doubts about the underlying project success theory, which is the Systems Theory, and the Contingency Theory, but this study will focus on the hierarchical structures of CSFs as success mechanisms.

Under this framework:

- **Core enabling mechanisms** (e.g., planning, leadership, communication) bring the conditions under which other mechanisms will be able to work.
- **Secondary conditioning mechanisms** (e.g. risk management, financial control, contractual arrangements) make project implementation stable and operational.
- **Contextual moderating mechanisms** (e.g., technology adoption, external environment) shape the strength and direction of relationships between enabling mechanisms and success outcomes.

This hierarchical perception explains why particular CSFs will always be at the top of empirical rankings and others will show inconsistent significance in different studies. Notably, it also moves the CSF research beyond the factor listing level to the level of mechanism explanation allowing theory to be more profound and create knowledge in a cumulative way.

2.7 Conceptual Framework for CSF Mechanisms in Project Success

According to the theoretical synthesis part, there is a proposed conceptual framework within which the CSFs would fit in an interdependent and hierarchical system of a project. The framework demonstrates the way that primary managerial mechanisms trigger secondary mechanisms, and contextual factors mediate their success in delivering the outcomes of project success.

This framework offers the theoretical framework of the next systematic review and analysis, which will be used to classify and interpret the CSFs found in the literature.

3. Research Methodology

3.1 Research Design and Philosophical Positioning

The proposed study follows a theory-combined systematic literature review (SLR) design as a way of contributing to the existing knowledge about Critical Success Factors (CSFs) in project management. The current study is specifically constructed to form the explanatory understanding by integrating existing evidence based on the existing project management theories as opposed to descriptive or aggregative reviews which are mainly aimed at presenting the previous research findings. In line with the theoretical repositioning of CSFs in the study as hierarchical and interdependent success mechanisms, the study methodological approach is based on an interpretivist-analytical orientation. It is an orientation that acknowledges CSFs as not only objective variables, but constructs whose meaning and influence arise both in their inter-interpretation, interaction and contextualization within complex project systems. The application of the SLR approach is hence not to discover new aspects, but conceptualise and synthesise existing knowledge in a theoretically significant manner.

3.2 Justification for a Systematic Literature Review

Mature areas of research, e.g., CSFs, are the ones where a systematic literature review is specifically important, since theoretical fragmentation is relatively more of a problem with empirical paucity. Earlier CSF research in project management has produced a broad range of results regarding contexts, methodologies, and project types but these results are a poor accumulation and theorization is inconsistent.

The SLR approach enables:

1. Public and reproducible identification of the pertinent studies,
2. Comparison of Constructs of CSF across contexts,
3.Theory based synthesis of recurrent patterns and relationships.

Under the traditional systematic review protocols utilized in management and project research, this review is devoted to the synthesis of theories, not the aggregation.

3.3 Search Strategy and Review Protocol.

The review protocol was to facilitate rigor, transparency and reproducibility. The process of literature identification employed a search strategy based on structured search involving the use of ResearchGate as the main database. ResearchGate was chosen because it has a wide range of peer reviewed journal articles and conference papers in the field of construction and project management and it is easy to replicate it.

The main search query was:

"Critical success factors" AND "construction projects"

This was complemented with some related terms such as project success, success determinants, and construction project performance. Boolean operators, and quotes were used to narrow down the search results and minimize irrelevant returns.

The first search resulted in 720 publications that were filtered using a multi-stage filtering process as shown below.

3.4 Inclusion and Exclusion Criteria

Explicit inclusion and exclusion criteria were used to achieve the conceptual relevance and methodological consistency.

Inclusion Criteria

- Peer-reviewed journal and conference papers.
- Published between 2000 and 2024
- Laid down on CSFs or determinants of success in construction or infrastructure projects.
- Written in English
- Empirical, conceptual or review studies.
- Full-text articles which are freely available.

Exclusion Criteria

- Studies published prior to 2000
- Articles that deal specifically with project failure or disaster related disruptions (e.g., COVID-19).
- Non-project or non-structure studies.
- Opinion, non-scholarly reports, and editorials.
- Articles that have limited/subscribed access.

Having used these criteria, 74 studies were included in a completed analysis. The last data set represents a broad geographical setting that encompasses Asia, Africa, Europe, and the Middle East which justifies the intention of the study to provide the theoretical generalization of the project environment.

3.5 Data Extraction and Coding Procedure

The structured protocol was used to extract data and make them consistent across studies. The information used regarding each paper was:

Bibliographic information and geographical setting.

- Analytical methods and research design.
- CSFs definitions and operationalizations.
- Reported measures of importance (e.g. Relative Importance Index, mean scores)

In the case of explicit statements, theoretical framing.

The open coding method was first utilized to record CSFs in language in which original writers spoke. It was then found that similar constructs (e.g., information flow and communication effectiveness) were then combined to prevent semantic redundancy. Conceptual meaning was preserved, but was permitted to be cross-studied.

3.6 Construct Development and Thematic Synthesis.

Qualitative thematic analysis was used to derive patterns occurring in the literature of CSF. The analysis was conducted in accordance with the existing procedures of thematic synthesis and included familiarization, initial coding, theme development, review, and refinement.

Instead of using pre-determined categories, CSF constructs were inductively clustered into themes of higher-order and this led to nine consolidated CSF mechanisms. Such induction strategy is consistent with the theoretical goal of the research of uncovering the underlying structures of the literature, as opposed to affirming taxonomies.

The corresponding themes are conceptual processes, not independent variables but the foundation of the further theory interpretation.

3.7 CSF Mechanisms Theoretical Classification.

The identified CSF mechanisms were identified as theoretical categories based on the functional functions of the project systems. Based on the Systems Theory and Contingency Theory, the CSFs were classified as:

- Basic empowerment processes (e.g., planning, leadership, communication),
- Common examples of such systems are secondary conditioning systems (e.g., risk management, financial control, contractual arrangements).
- Contextual moderating mechanisms (e.g. adoption of technology, external environmental conditions).

This categorization was not considered to be a statistical difference, but a modelling decision of theory, which made it possible to interpret CSFs as interacting mechanisms, but not independent predictors. This is the main step of the study which contributes to the theoretical view and distinguishes the study amongst the traditional CSF reviews.

3.8 Operationalizing CSF Salience and Consensus

In order to justify the theoretical generalization and the cumulative knowledge advancement, the study conceptualizes the CSF significance in the following two complementary dimensions:

1. **Theoretical stability, indicated by the frequency of CSF identification across the studies, was literature consensus.**
2. **Empirical salience, which is determined by the mean importance values described in quantitative research, indicates the perceived practical significance.**

The importance measures were brought to the percentage scale to enable comparison with other rating scales. Among the 74 reviewed studies 44 studies gave quantifiable data on importance that could be used in this study.

3.9 Analysis of Salience-Consensus in Composites.

The composite approach to analysis was used to combine both the literature consensus and the empirical salience into one interpretable measure. This method is not to be used as a ranking exercise per se, but as a theory supporting mechanism, which would help to emphasize on dominant mechanisms in the CSF system.

The composite score in each CSF mechanism was determined as:

$$\text{Composite Score} = 0.5 \times \left(\frac{F}{F_{\max}}\right) + 0.5 \times \left(\frac{I}{100}\right)$$

where:

- F represents the frequency of occurrence,
- $F_{\max}$ represents the maximum observed frequency,
- I represent the average standardized importance score.

The importance of each of the two academic consensus and practitioner perception was given equal consideration so as not to benefit one over the other. The scores that are obtained allow comparing the CSF mechanisms without losing the theoretical connotation that they are hierarchical and mutually dependent.

3.10 Reliability, Validity, and Transparency

A number of steps were implemented in order to guarantee methodological rigor:

- Transparency and replicability through explicit documentation of search strategy, inclusion criteria, and analytical steps.
- Triangulation of methods using both qualitative thematic synthesis and quantitative aggregation methods.
- Standardization of importance measures and consolidation of semantically similar CSFs through construct validity.
- Theoretical coherence Theoretical consistency was maintained by consistent correspondence of analytic steps and the conceptual framework**.**

All these procedures help the findings improve the credibility and strength of the findings.

3.11 Methodological Limitations

Just like any other review-based study, there are some limitations. The use of free access to publications might also make some high-impact journal articles impossible. Differences in the quality of methodologies used in different studies and the methods used to measure the same heterogeneity existing in the importance ratings. Also, the equal weighting of the composite analysis is a theoretical decision that can be improved in future studies.

These weaknesses do not deter the theoretical contribution of the study, but rather offer guidelines on how the study can be enhanced on methodology and replicated.

3.12 Summary of Methodological Approach

Overall, this paper uses a theory-integrative systematic literature review to conceptualize CSFs as interdependent and hierarchical success processes. The methodology aids explanatory perceives, cumulative building of knowledge and theoretical progress in the research of project management through the combination of inductive thematic synthesis and theoretically informed composite analysis.

4. Findings: Interdependent and Hierarchical CSF Mechanisms.

4.1 Summary of Analysis Results.

This section provides the results of the systematic review and synthesis in the context of the suggested hierarchical framework of the CSF mechanism. Instead of presenting the results as a mere ranking of factors, the results are taken to reflect evidence of differentiated functional roles of CSFs in project systems.

On the 74 studied reviewed, nine higher-order CSF mechanisms were consistently found. These mechanisms when analysed through composite salience- consensus analysis were clearly stratified meaning that CSFs do not play equal roles in project success. Rather, the findings are in favour of a

hierarchical arrangement that comprises of core enabling mechanisms, secondary conditioning mechanisms, and contextual moderating mechanisms.

This framework presents empirical evidence to the theoretical argument in the study that project success develops as a result of the interaction and dependency among mechanisms, and not through the aggregative effect of discrete factors.

4.2 Core Enabling Mechanisms

4.2.1 Project Planning and Scheduling

The most prominent core enabling mechanism was found to be project planning and scheduling that portrays both the greatest literature agreement and the most considerable empirical salience. This mechanism forms the basis of project execution through organising task sequencing, resource allocation and monitoring of performance throughout the project lifecycle.

Planning as a structural integrator in systems perspective allows coordination between project actors and alignment of operational processes with business goals. The fact that this mechanism is predominant in a variety of project situations shows that it is a structural universality, which makes it be classified as a first-order facilitator of project success.

4.2.2 Leadership and Managerial Competence

The second core enabling mechanism was found to be leadership and managerial competence with high salience throughout the studies. The findings suggest that leadership is not simply an individual quality, but a relational mechanism and a coordinating mechanism that influences the quality of decisions made, conflict resolution and team integration.

Empirical evidence indicates that leadership competence crystallizes the efficacy of other mechanisms especially communication, risk management and stakeholder engagement. The fact that it has a high and reliable presence in contexts makes it be a system coherence driver, which is essential in complex projects.

4.2.3 Communication and Coordination

The third facilitating mechanism is communication and coordination. The results reveal that effective communication systems can facilitate the flow of information across organizational and functional boundaries leading to uncertainty and misalignment reduction.

This process is highly interdependent with planning and leadership as it is a connecting system that converts managerial will into action. These findings suggest that communication shortcomings are a critical limiting factor to the operation of secondary mechanisms, which underlines that it is facilitative in the CSF system.

4.3 Secondary Conditioning Mechanisms

4.3.1 Stakeholder Engagement

Another secondary conditioning mechanism that became eminent was stakeholder engagement. It is not as structurally dominant as core enablers but its impact is pivotal in stabilizing project relationship and aligning stakeholder expectation with the project goals.

The findings suggest that stakeholder engagement is especially strong in those projects that are institutional in nature which includes public infrastructure and public-private partnerships. Its success depends on the existence of good enabling mechanisms particularly leadership and communication.

4.3.2 Financial and Resource Control

Financial and resource control as a conditioning mechanism is a form of continuity in operations as well as stability of execution. The evidence reveals that proper cost management, cash management, and resources availability plays a major role in the outcome of the project, especially when market is volatile.

The effects of this mechanism are however mediated by the quality of planning and managerial competence which further lends credence to the fact that this is a supporting and not an initiating mechanism in the system.

4.3.3 Risk Management

Risk management was one of the auxiliary mechanisms that help in project resilience through identification, evaluation, and reduction of uncertainty. The findings show that proactive risk management enhances the schedule reliability and cost performance especially in uncertain and complex environments.

Notably, risk management needs to be conditional in the CSF hierarchy due to the strong reliance on the existence of sound planning and communication mechanisms to be effective.

4.3.4 Contract Structure and Procurement

Contract structure and procurement arrangements constitute an institutional conditioning procedure that is used to identify accountability, incentives, and risks sharing. The findings indicate moderate yet consistent impact of study to study with greater applicability in those projects where there are multiple contractual interfaces.

This mechanism acts in an indirect manner when it organizes the patterns of interaction amongst the stakeholders instead of actually defining the results in terms of performance.

4.4 Contextual Moderating Mechanisms

4.4.1 Technology Adoption

The use of technology became a moderating context of success, as opposed to a major driver of success. Although it is becoming more and more topical in the recent research, its impact is highly diversified in the contexts and the level of maturity of a specific project.

The findings suggest that the use of technological tools improves coordination, decision-making and accuracy of information only in case of good managerial and organizational capabilities. Without this support, the adoption of technology has a low degree of influence on the success of projects.

4.4.2 External Environmental Factors

Macro-level moderators within the CSF system are external environmental factors such as regulatory frameworks, political stability and economic conditions. The findings indicate that these variables influence the operating environment of the projects but can hardly be controlled by the managers.

Their influence is manifested by restrictions or possibilities that enhance or hinder the power of internal mechanisms reiterating their position as boundary conditions and not direct drivers of success.

4.5 Pyramidal Organization of CSF Processes.

The composite salience consensus analysis empirically justifies a three-level hierarchical structure of CSF mechanisms:

1. Core enabling mechanisms, which are structurally stable and universally influential;
2. Mechanisms of secondary conditioning, operationalizing and stabilizing project execution;
3. Contextual moderating mechanisms, which determine the strength of relationships among mechanisms and the direction taken.

The structure is used to explain why some CSFs remain constant over decades of research and explain observed contextual variation. The findings show that project success is most appropriately defined as emergent as a result of the interaction of mechanisms, but not as cumulative as a result of the independent factors.

4.6 Synthesis of Results

On the whole, the findings justify the main theoretical assumption of the study: CSFs are the mechanisms of interdependent success incorporated into the project system. The basic enabling mechanisms are the basis of succeeding project governance, whereas the secondary and contextual enabling mechanisms determine the execution stability and flexibility.

By exposing this hierarchical and interdependent structure, the findings take CSF research out of the field of descriptive classification and into the field of explanatory theory, which forms the foundation to cumulative knowledge development in any project management research.

5. Discussion and Theoretical Contributions

5.1 Reconceptualising CSFs Via a Mechanism-Based Prism.

This research was not aimed at establishing more CSFs, but reflected on rethinking the theorization of CSFs in project management research. The findings prove that CSFs cannot be considered independent or additive predictors of success. Rather, they are self-dependent success mechanisms, the impact of which lies in their hierarchical location and mutual contact with complex project systems.

The discovery fills a historical research gap in the study of CSF as empirical saturation of similarities has been reached through repeated discoveries, without a theoretical development to match. The research offers an explanation as to why some factors, including planning, leadership and communication, remain dominant on the basis of empirical evidence in all settings, whereas others have contingent or variable effects.

Notably, this interpretation, which is premised on mechanisms, shifts the CSF research out of the descriptive correlation into the explanatory logic, which fits the modern perspectives of projects as dynamic and systemic phenomena.

5.2 Theoretical Contribution 1: Extending Project Success Theory

Project Success Theory has made an enormous contribution to the project management research through conceptualizing the concept of success as being multidimensional and temporal dynamic but does very little to explain the process through which success outcomes are achieved. Even though Critical Success Factors (CSFs) are frequently considered as the antecedents of the levels of success, their causal relationships are poorly theorized. The paper builds an extension of the Project Success Theory by discovering hierarchically ranked success mechanisms which connect managerial action to the outcomes of success. The enabling mechanisms are core planning and scheduling of projects, leadership competence, communication and coordination which create the environment under which efficiency, stakeholder satisfaction, and long-term value are achieved by engaging secondary mechanisms. These cause-and-effect relationships fill the gap existing between the criteria of success and success achievement and enhance the explanatory capacity of the Project Success Theory.

5.3 Theoretical Contribution 2: Operationalizing Systems Theory in CSF Research

Although the Systems Theory has been widely applied in researches on project management, it has mostly been used in a theoretical manner but not practically. The current research further develops the idea of systems thinking since the interactions between CSFs are empirically proven through the exposition of the project system as a whole.

The hierarchical structure that has been discovered in the findings depicts that:

- Structure system behaviour Core mechanism,
- Secondary mechanisms stabilize execution processes, and
- Contextual mechanisms are the boundary conditions.

This concrete System Theory of operationalization gives a tangible way to discuss interdependencies and effect of interaction between CSFs, instead of linear and additive models that prevail in the literature of the topic.

5.4 Theoretical Contribution 3: Make peace between Universality and Contingency.

One issue that has consistently arisen in the study of CSF is whether or not the success factors are universal in nature. The results of this research can provide a solution because it can be seen that the concepts of universality and contingency exist in the same hierarchical system.

Core enabling mechanisms are stable in their structure across situations and this is why they reappear in the literature of empirical studies. By comparison, technology adoption and external environmental condition mechanisms are contextual moderators, meaning they determine the strength and direction of connections between core and secondary mechanisms.

This contribution brings Contingency Theory into the research of CSF in a non-trivial manner, which makes it clear that contingency does not imply the absence of universality, but circumstances assure its manifestation.

5.5 Theoretical Contribution 4: Enabling Cumulative CSF Research

The research on CSF has been accused of having little cumulative development due to the inconsistency of definitions, measurement techniques, and analytical models. This research offers a basis on which theoretical accumulation can be achieved by merging various CSF constructs into nine higher-order processes and operationalizing their relevance with a composite salience consensus strategy.

Significantly, the composite analysis is not placed as a tool of ranking, but as a process of defining theoretical pre-eminence and consistency throughout the literature. Such a method is a direct response to the challenges of the project management literature to be more comparative, replicable, and synthesized in a theory-oriented manner.

5.6 Implications for Future Project Management Theory

The results of the research point out various avenues in which the theory of project management needs to proceed.To begin with, future studies must go beyond merely identifying CSFs to also test the effects of interactions, as well as the mediation processes between the mechanisms of success within a specific system that might employ structured equation modelling, system dynamics, or configurational analysis.

Second, longitudinal research is required to consider the dynamics of the dominance and interaction of CSF mechanisms over the project lifecycle and especially in digitally enabled and sustainability-oriented projects.

Third, the proposed framework opens up construction projects to other types of complex projects, such as megaprojects, innovation projects, and inter-organizational collaborations.

5.7 Application (Practical and Theory-Related)

Even though the main value of this research is a theoretical one, the results are applicable to practice as well. The identification of CSFs as hierarchical mechanisms implies that managerial consideration needs to focus on core enabling mechanisms first and invest in secondary or contextual initiatives later. Technology-only or contractual reform-only interventions, such as one, are never likely to present success without effective planning, leadership, and communication ability.

These implications add to the weight of the alignment of managerial practice with systemic and mechanism-based conceptualizations of project success.

5.8 Summary of Contributions

Overall, the study contributes to project management research in the following ways:

1. Rethinking CSFs in terms of hierarchy and dependence on each other as mechanisms of success,
2. Expanding Project Success Theory through elaborating on how success is created,
3. Systems Theory operationalisation in the field of CSF research,
4. Weaving in Contingency Theory to work out the universality context dilemma, and
5. A platform of cumulative and theory-based CSF research.

The study moves away the focus on factor enumeration and instead on the mechanism-based explanation, answering the criticism of CSF research in more developed areas, and providing the project management literature with a lasting theoretical insight.

6. Theoretical Contributions to Project Management Research

The research contributes significantly to the research on project management through a substantive shift in theoretical understanding of the Critical Success Factor (CSF) studies toward a mature, almost entirely descriptive body of research to a theory-influencing explanatory mechanism. Instead of providing new drivers or refining rankings, the study radically redefines conceptualization, structure, and theorization of CSFs in the project success research.

6.1 Redefining CSFs as Hierarchical Success Mechanisms.

The major theoretical contribution of the research is the re-theorization of Critical Success Factors (CSFs) to be hierarchical and interdependent success processes, as opposed to similar or cumulative predictors of project performance. The current state of CSF research implicitly presupposes that the identified factors have the same theoretical rank, which has generated conceptual stagnation in a full-fledged field. This study shows that there is evidenced functional differentiation among CSFs through synthesizing evidence across various project situations. Managerial and relationship-related aspects such as project planning and scheduling, competence of leaders and communication are first-order enabling mechanisms. Financial control, risk management, stakeholder engagement and contractual arrangement are second-order conditioning mechanisms and the external environmental conditions and adoption of technology are contextual moderators. Such a top-down approach redefines project success as a self-emerging result of exchanging mechanisms of an organized project system.

6.2 Extending Project Success Theory from Outcomes to Causal Explanation

The Project Success Theory has made progress in the area by defining success as a multidimensional and dynamic entity. Nonetheless, it has provided little elucidation of the manner in which the success results are created by managerial action.

This research builds upon the Project Success Theory by directly connecting the dimensions of success to the antecedents of the mechanisms. Results reveal that core enabling mechanisms offer the causal infrastructure on which efficiency, stakeholder satisfaction and value creating in the long term are achieved. By doing this, the study fills the conceptual gap in the long-established success criteria to success realization, enhancing the explicative value of project success studies.

This extension moves the project success theory within the evaluative orientation to the process and mechanism-oriented explanation.

6.3 Operationalizing Systems Theory in CSF Research

Despite the common references to the Systems Theory in the literature of project management, it has seldom been operationalized in the CSF research. This research contributes to the field of the systems thinking because it proves empirically that CSFs are interdependent subsystems of a project system.

The suggested framework outlines the manner in which:

- structure system behaviour of core enabling mechanism,

- secondary conditioning mechanisms stabilize project execution, and
- contextual mechanisms limit performance or enhance performance of systems.

This study will bring CSF research out of metaphorical descriptions of systems and offers a concrete explanatory model to analyse project success in complex environments by translating systems concepts into an explicit and testable structure.

6.4 Integrating Contingency Theory and Resolving the Universality–Context Debate

One of the ongoing theoretical debates in the literature of CSFs revolves around the issue of whether success factors are universal or situational. This work eliminates this dilemma by showing that universality and contingency exist at different levels of the CSF hierarchy.

Core enabling mechanisms show structural stability regardless of type of project and geographical setting and this explains why they recurrently emerge empirically. Conversely, technology adoption and external environmental factors act as contextual moderators, which determine how strong and the direction of relationships between core and secondary mechanisms.

The study explains that there is no contradiction between contextual dependence and the CSF theory; however, it is a condition that predetermines the application of the latter. This gives a logical theoretical answer to one of the historical uncertainties in the area of project management research.

6.5 Enabling Cumulative and Comparative CSF Theory Development

CSF research has been widely criticized for limited cumulative development due to inconsistent constructs, measurement approaches, and analytical frameworks. This study contributes to theory building by offering:

- an integrated group of higher-order CSF processes, a theoretically grounded classification of their functional roles, and
- a methodical strategy of determining theoretical dominance and stability between studies.

The composite salience consensus analysis is not a ranking exercise, but a support tool in theory which makes facilitation of comparison, replication and extension possible. This facilitates the development of CSF research as a cumulative and comparative theory development as opposed to an isolated empirical study.

7. CONCEPTUAL MODEL

Hierarchical and interdependent critical success factor (CSF) mechanism model.

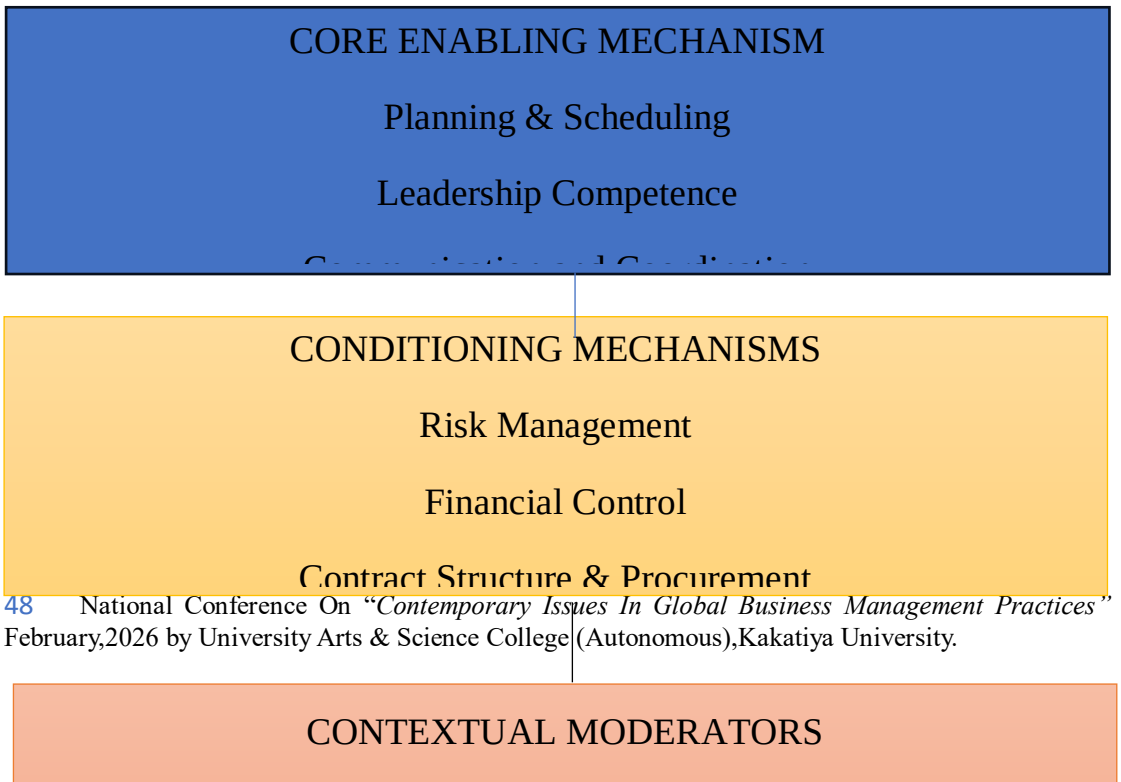

Figure X

Figure X illustrates the hierarchical and interdependent CSF mechanism model proposed in this study. The model explains how core enabling mechanisms activate conditioning mechanisms, while contextual moderators influence the effectiveness of these interactions in producing multidimensional project success.

Conclusion

This study also sought to solve a key problem in project management research namely the enhancement of the theoretical basis of Critical Success Factors (CSFs) in a discipline that is generally viewed as mature. The study does not offer new factors or empirical refinements but instead reconceptualises CSFs as hierarchical and interdependent success processes within complex project systems. According to a theory-integrative systematic literature review, the results indicate that success in a project is not achieved through accrual of the discrete factors but through the interaction and activation of the multi-level mechanisms to work towards a project system.

The findings suggest that managerial and relational CSFs, which include, in particular, project planning and scheduling, leadership and managerial competence, and communication and coordination are the key enabling mechanisms that underlie project success in all settings. These processes build up the environment under which risk management, financial and resource control, and contract structure mechanisms of secondary conditioning take place. The contextual factors such as adoption of technology and external environment act as moderating factors that determine the level and direction of such relationships but not drivers of success. This hierarchy represents the reason behind the continuity of some CSFs in the literature and situational inconsistency of others.

The research contributes to the development of project management theory by moving the CSF research beyond the enumeration of factors to the explanation based on mechanisms, developing Project Success Theory, and using Systems and Contingency theories into a single framework. It also shows the importance of synthesis that is motivated by theories in the development of cumulative knowledge in advanced fields of research.

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