



Organizational and Project-Management Factors in Capital-Project Delivery Performance: A Conceptual Framework

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ABSTRACT

Capital-intensive projects often face cost overruns, schedule delays, and coordination problems because of complex organizations and interdependent tasks. While research examines individual factors that affect project outcomes, we still need a clearer understanding of how governance, organizational capabilities, and stakeholder relationships shape delivery performance. This paper adopts a theory-informed conceptual approach to develop an integrated framework linking seven organizational and project-management factors to Project Delivery Performance (PDP): Project Governance, Project Risk Governance, Digital Project Management Capability, Front-End Planning Quality, Contract and Procurement Governance, Stakeholder Coordination, and Project Management Competency. Drawing on Institutional Theory, Dynamic Capability Theory, Stakeholder Theory, and Contingency Theory, the framework proposes Organizational Decision-Making Effectiveness (ODME) as a potential mediating mechanism. ODME is conceptualized through decision quality, timeliness, implementation, and cross-functional alignment, while PDP encompasses schedule, cost, quality, scope fulfilment, and stakeholder satisfaction. The framework specifies direct relationships between the seven factors and PDP alongside potential indirect relationships through ODME. Project complexity, institutional environments, contractual arrangements, and organizational maturity establish contextual boundaries for interpreting these propositions. The paper contributes a conceptual explanation of how organizational conditions may translate into delivery outcomes through effective decision-making. It also clarifies construct boundaries and develops research propositions to guide future investigation. The proposed relationships remain theoretical and require empirical validation.

Keywords: Capital-Project Delivery; Project Delivery Performance; Project Governance; Digital Project Management Capability; Organizational Decision-Making Effectiveness

1.0 INTRODUCTION

Capital-intensive projects, particularly megaprojects, face persistent delivery challenges arising from technical and organizational complexity, substantial financial commitments, long implementation periods, interconnected risks, and multiple stakeholders. These conditions complicate coordination and increase the likelihood of cost overruns, schedule delays, and unmet performance objectives (Luo et al., 2017; Rolstad & Schiefloe, 2017; Denicol et al., 2020; Greiman, 2013). Achieving satisfactory outcomes therefore requires more than technical expertise. Governance arrangements, planning quality, managerial capabilities, stakeholder relationships, and organizational decision-making also shape how projects respond to uncertainty and translate resources into delivery outcomes (Caldas & Gupta, 2017; Joslin & Müller, 2016; Denicol et al., 2020).

These challenges are particularly relevant to oil and gas, energy, infrastructure, and industrial construction. Projects in these sectors involve complex engineering activities, extensive procurement networks, interdependent contracts, and coordination across organizational boundaries (Dehghan et al., 2022; El-Reedy, 2016). Digital information further changes how project participants exchange knowledge, monitor progress, and coordinate delivery, creating opportunities that depend on organizational capabilities and working practices (Whyte, 2019). Although cost and schedule remain central performance criteria, project evaluation also considers quality, scope fulfilment, and stakeholder satisfaction. These delivery outcomes should be distinguished from broader project success, which may include strategic benefits and longer-term value beyond project completion (Shenhar et al., 2001; Serrador & Turner, 2015). This paper uses Project Delivery Performance (PDP) to describe performance across schedule, cost, quality, scope fulfilment, and stakeholder satisfaction.

Project governance research examines authority, oversight, accountability, and alignment with organizational objectives (Müller & Lecoivre, 2014; Joslin & Müller, 2016). Risk-management research highlights the importance of identifying uncertainty, assigning responsibilities, and incorporating risk information into organizational responses (Teller & Kock, 2013). Studies of digital project delivery address information integration and coordination, while front-end planning research emphasizes project definition, execution readiness, and the evaluation of alternatives before major commitments (Edkins et al., 2013; Hansen et al., 2018; Koseoglu et al., 2018; Whyte, 2019). Research on procurement, collaboration, stakeholder relationships, and project-management competencies provides further insight into contractual arrangements, interface management, leadership, and practical managerial capabilities (Aaltonen & Kujala, 2010; Eriksson & Westerberg, 2011; Mok et al., 2015; Suprpto et al., 2015; Takey & Carvalho, 2015).

Despite these contributions, integrating the different explanations remains challenging. Governance arrangements, organizational capabilities, managerial competencies, and stakeholder relationships are frequently examined through different theoretical perspectives and performance measures. Consequently, their connections and the mechanisms through which they may jointly influence delivery remain insufficiently clarified (Musawir et al., 2017; Derakhshan et al., 2019; Kujala et al., 2021; Denicol & Davies, 2022). Existing integrative research provides an important foundation, but further conceptual development is needed to explain how these organizational conditions translate into coordinated project decisions and actions.

Organizational Decision-Making Effectiveness (ODME) offers a potential explanation for this connection. Strategic decision-making research examines how decision processes, participation, commitment, and implementation relate to decision outcomes (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007). Within capital-intensive projects, decisions concerning design changes, procurement, resource allocation, risk responses, and stakeholder requirements connect organizational arrangements with project execution. Governance may establish decision authority, digital capabilities may improve information availability, and managerial competencies may strengthen the interpretation and implementation of decisions. However, these conditions do not necessarily produce effective decisions or improved delivery outcomes.

This paper conceptualizes ODME through four dimensions: decision quality, timeliness, implementation, and cross-functional alignment. These dimensions represent a proposed synthesis informed by strategic decision-making literature rather than an established measurement scale.

Cross-functional alignment concerns consistency among decisions and implementation responsibilities within the project organization; stakeholder coordination concerns the broader management of relationships and interfaces among project participants. Maintaining this distinction helps clarify the proposed mediator's boundaries. ODME may explain part of the relationship between organizational factors and PDP, while direct relationships may also remain. Its mediating role is therefore advanced as a theoretical proposition requiring empirical investigation.

The conceptual framework focuses on seven factors: Project Governance (PG), Project Risk Governance (PRG), Digital Project Management Capability (DPMC), Front-End Planning Quality (FEPQ), Contract and Procurement Governance (CPG), Stakeholder Coordination (SC), and Project Management Competency (PMC). These factors are selected as theoretically relevant domains rather than presented as an exhaustive or statistically established set of determinants. PG concerns overarching authority and accountability, whereas PRG and CPG address risk-related and commercial governance arrangements, respectively. DPMC, FEPQ, and PMC concern organizational and managerial capabilities, while SC addresses relationships and coordination across project interfaces.

Four theoretical perspectives inform the framework. Institutional Theory helps explain how rules, expectations, and legitimacy pressures shape organizational arrangements (DiMaggio & Powell, 1983). Dynamic Capability Theory provides a perspective on how organizations integrate and reconfigure resources when project conditions change; its application requires distinguishing adaptive capabilities from routine operational practices (Teece, 2007; Laaksonen & Peltoniemi, 2018). Stakeholder Theory explains the relevance of diverse interests and relationships to collective project action (Donaldson & Preston, 1995). Contingency Theory supports the argument that the effectiveness of organizational arrangements depends on their fit with project conditions (Levitt et al., 1999). Together, these perspectives inform the proposed mechanisms without implying that their assumptions are interchangeable.

The framework also recognizes potential tensions. Formal governance may strengthen accountability while slowing approvals; stakeholder participation may improve decision information while increasing coordination demands. Similarly, digital information may support decision-making without ensuring that information is reliable, interpreted appropriately, or acted upon. These possibilities warrant examining the conditions under which the proposed relationships hold rather than assuming uniformly positive effects. Accordingly, this conceptual paper addresses two research questions:

RQ1: How can governance arrangements, organizational capabilities, and stakeholder coordination be integrated into a conceptual explanation of capital-project delivery performance?

RQ2: Through what mechanisms might organizational decision-making effectiveness mediate the relationships between the seven proposed factors and project delivery performance?

The paper develops a theory-informed framework and research propositions by interpreting and connecting relevant literature. It does not report a systematic literature review, estimate pooled effects, or empirically test the proposed relationships. Its intended relevance extends across capital-intensive sectors, while recognizing that institutional environments, project complexity, contractual arrangements, and organizational maturity may limit transferability. These conditions establish boundaries for interpretation rather than additional constructs in the proposed model. The paper contributes by organizing seven organizational and project-management domains within a common explanatory framework, proposing ODME as a mechanism connecting these domains to PDP, and identifying construct boundaries and propositions for future investigation. The framework provides a

basis for examining both direct and indirect relationships while preserving the distinction between theoretical expectations and empirically established findings.

2.0 RESEARCH METHODOLOGY

This paper adopts a theory-informed conceptual approach to develop a framework explaining relationships between organizational and project-management factors, Organizational Decision-Making Effectiveness (ODME), and Project Delivery Performance (PDP). The purpose is to integrate relevant concepts, clarify explanatory mechanisms, and formulate propositions for future empirical investigation. The literature provides the basis for theoretical reasoning rather than a dataset for statistical analysis.

2.1 Literature Scope and Selection Rationale

The conceptual discussion draws on literature addressing capital-intensive projects, project governance, risk management, digital project delivery, front-end planning, procurement, stakeholder relationships, project-management competencies, and strategic decision-making. Sources are considered for their relevance to construct definitions, proposed relationships, theoretical explanations, and the conditions affecting their application.

The literature combines foundational theoretical contributions with research on project organization and delivery. Studies of governance, stakeholder relationships, and megaproject performance inform the organizational dimensions of the framework (Joslin & Müller, 2016; Musawir et al., 2017; Derakhshan et al., 2019; Denicol et al., 2020). Research on planning, digital information, collaboration, and competencies supports the examination of project-management capabilities and practices (Edkins et al., 2013; Takey & Carvalho, 2015; Suprpto et al., 2015; Hansen et al., 2018; Whyte, 2019). Strategic decision-making studies inform the proposed role of ODME (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007). The scope encompasses capital-intensive sectors, including infrastructure, energy, oil and gas, and industrial construction. Findings from different settings are interpreted with attention to their original context rather than assumed to apply uniformly across projects. The selected literature supports conceptual development without claiming exhaustive coverage or a reproducible systematic-review sample.

2.2 Theoretical Integration and Construct Development

Four theoretical perspectives organize the framework. Institutional Theory informs the consideration of organizational rules, expectations, and legitimacy pressures (DiMaggio & Powell, 1983). Dynamic Capability Theory informs the examination of resource integration and adaptation under changing conditions (Teece, 2007; Laaksonen & Peltoniemi, 2018). Stakeholder Theory supports the analysis of relationships and competing interests among project participants (Donaldson & Preston, 1995). Contingency Theory informs the interpretation of organizational effectiveness in relation to project conditions (Levitt et al., 1999). These perspectives guide the examination of seven domains: Project Governance (PG), Project Risk Governance (PRG), Digital Project Management Capability (DPMC), Front-End Planning Quality (FEPQ), Contract and Procurement Governance (CPG), Stakeholder Coordination (SC), and Project Management Competency (PMC). The domains are treated as theoretically relevant components of the proposed framework rather than an exhaustive set of empirically established determinants. Construct development emphasizes definitions, boundaries, and explanatory roles. PG concerns overarching authority and accountability, while PRG and CPG address

risk-related and contractual governance arrangements. DPMC concerns the organizational application of digital information and tools; FEPQ concerns project definition and readiness before major commitments; and PMC concerns the capabilities required to manage project activities. SC addresses relationships and interfaces among project participants. These distinctions provide a basis for considering related constructs without treating them as interchangeable.

2.3 Framework Development and Proposition Formulation

The conceptual analysis connects the seven domains to PDP through direct relationships and potential indirect relationships involving ODME. For each domain, the discussion considers how organizational arrangements or capabilities could affect project execution and how they could support decision quality, timeliness, implementation, and cross-functional alignment. These four dimensions constitute the paper's proposed conceptualization of ODME, informed by strategic decision-making research rather than adopted as an already validated measurement scale (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007).

The framework distinguishes organizational conditions, decision-making mechanisms, and delivery outcomes. For example, governance may establish decision authority, while ODME concerns how effectively decisions are made and implemented. Similarly, digital capability may improve access to project information, but its contribution to delivery depends partly on how that information informs action. Direct relationships are retained because organizational factors may also influence execution through processes not captured by ODME.

Propositions express theoretically expected relationships. Their development considers alternative explanations and potential trade-offs, including the possibility that formal controls delay decisions or that stakeholder participation increases coordination demands. Project complexity, institutional environments, contractual arrangements, and organizational maturity are considered contextual boundaries rather than additional constructs or formal moderators.

2.4 Interpretation and Analytical Boundaries

The framework distinguishes findings reported in existing studies from interpretations and propositions advanced in this paper. Evidence concerning individual relationships does not establish the validity of the complete framework or demonstrate mediation. The proposed relationships therefore represent an agenda for empirical investigation rather than confirmed causal effects. The conceptual approach is subject to selective literature coverage, differences in terminology and measurement, and variation across project settings. Future research should examine construct distinctiveness, establish suitable measures, and test direct and indirect relationships using designs that address temporal ordering and alternative explanations. These requirements are particularly relevant to determining whether ODME explains the relationships between organizational factors and PDP.

3.0 LITERATURE REVIEW AND THEORETICAL FOUNDATIONS

This section integrates literature relevant to organizational and project-management factors in capital-project delivery. Its purpose is to establish the conceptual foundations of the proposed framework by examining governance arrangements, organizational capabilities, stakeholder relationships, and decision-making processes.

Research on project governance, stakeholder management, and megaproject performance provides complementary perspectives on how organizational conditions relate to delivery outcomes (Joslin & Müller, 2016; Musawir et al., 2017; Derakhshan et al., 2019; Denicol et al., 2020). The discussion distinguishes findings reported in existing research from the theoretical relationships proposed in this paper. Differences in project settings, research designs, and performance measures limit direct comparisons across sources. Consequently, the literature informs construct definitions and explanatory mechanisms without establishing the validity of the integrated framework.

3.1 Organizational and Project-Management

The framework organizes relevant literature into seven domains: Project Governance (PG), Project Risk Governance (PRG), Digital Project Management Capability (DPMC), Front-End Planning Quality (FEPQ), Contract and Procurement Governance (CPG), Stakeholder Coordination (SC), and Project Management Competency (PMC). These domains represent theoretically relevant organizational conditions and capabilities rather than categories derived from a systematic screening process. Governance research provides a basis for examining authority, oversight, accountability, and alignment between project activities and organizational objectives (Müller & Lecoeuvre, 2014; Joslin & Müller, 2016; Musawir et al., 2017). Related risk-management literature informs the consideration of risk responsibilities, monitoring, and organizational responses to uncertainty, although evidence at the project-portfolio level requires careful interpretation when applied to individual capital projects (Teller & Kock, 2013). Contract and procurement research adds a commercial and interorganizational perspective by examining procurement arrangements and owner–contractor collaboration (Eriksson & Westerberg, 2011; Suprpto et al., 2015). PG, PRG, and CPG are therefore related but distinguishable: they concern overarching project authority, risk-related governance, and contractual governance, respectively.

A second group concerns capabilities that support project preparation and execution. Digital project-delivery research examines how information and technologies affect coordination and delivery practices (Koseoglu et al., 2018; Whyte, 2019). Front-end planning literature emphasizes project definition and preparation before major execution commitments (Edkins et al., 2013; Hansen et al., 2018). Competency research addresses the knowledge and practical capabilities required to undertake project-management responsibilities (Takey & Carvalho, 2015). Together, these perspectives support examining DPMC, FEPQ, and PMC as distinct contributors to project execution. Their potential contribution depends on how capabilities are applied within organizational processes. Stakeholder research complements these domains by addressing influence, interests, engagement, and relationships throughout project delivery (Aaltonen & Kujala, 2010; Mok et al., 2015; Derakhshan et al., 2019). SC concerns the management of communication and interfaces among project participants. It differs from stakeholder satisfaction, which is treated as an outcome within PDP, and from ODME’s cross-functional alignment, which concerns consistency among organizational decisions and implementation responsibilities.

3.2 Theoretical Perspectives and Contextual Boundaries

Four theoretical perspectives inform the relationships proposed in this paper. Institutional Theory supports examining how rules, expectations, and legitimacy pressures shape organizational arrangements (DiMaggio & Powell, 1983). Dynamic Capability Theory provides a perspective on resource integration and reconfiguration under changing conditions (Teece, 2007; Laaksonen & Peltoniemi, 2018).

Stakeholder Theory explains the relevance of relationships and competing interests to organizational action (Donaldson & Preston, 1995). Contingency Theory supports considering whether organizational arrangements fit the conditions under which projects operate (Levitt et al., 1999). These perspectives serve different explanatory purposes. Formal governance arrangements cannot be assumed to improve delivery simply because they exist, and routine planning or managerial competence does not automatically constitute a dynamic capability. Similarly, stakeholder participation may contribute information and cooperation while also creating demands for negotiation and coordination. The framework therefore considers how organizational arrangements operate rather than treating their presence as sufficient evidence of effectiveness.

Project complexity, institutional environments, contractual arrangements, and organizational maturity establish boundaries for interpreting the proposed relationships. Literature on project complexity and governance supports attention to differences in organizational requirements and project settings (Luo et al., 2017; Rolstadås & Schiefloe, 2017; Kujala et al., 2021). These contextual conditions inform the framework's interpretation without being introduced as additional constructs or formal moderators.

3.3 Organizational Decision-Making Effectiveness as an Explanatory Mechanism

Strategic decision-making research provides a foundation for examining how organizational conditions translate into decisions and implementation. Studies address decision processes, commitment, implementation speed, and decision effectiveness, offering relevant explanations for the connection between organizational arrangements and outcomes (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007). Building on these contributions, this paper conceptualizes ODME through decision quality, timeliness, implementation, and cross-functional alignment. This combination represents the paper's proposed conceptual synthesis rather than an established four-dimensional measurement scale.

ODME may connect the seven domains to PDP through several mechanisms. PG may clarify decision authority; PRG may support the consideration and escalation of risk information; DPMC may improve access to project information; and FEPQ may strengthen the basis for evaluating project alternatives. CPG may clarify commercial responsibilities, SC may integrate participant perspectives, and PMC may support managerial judgment and implementation. These mechanisms provide the theoretical rationale for proposing relationships between the seven factors and ODME.

Direct relationships with PDP are also retained because organizational arrangements and capabilities may influence project execution through mechanisms beyond decision-making. ODME is therefore proposed as a potential mediator, without assuming that it fully explains the relationships or that mediation has already been demonstrated. Consistent with the introduction, PDP encompasses schedule, cost, quality, scope fulfilment, and stakeholder satisfaction. Broader project success may additionally involve strategic benefits and longer-term value, and is therefore distinguished from delivery performance rather than included as a separate PDP dimension (Shenhar et al., 2001; Serrador & Turner, 2015).

Table 1 summarizes the conceptual domains, their definitions, and supporting literature. It serves as a conceptual mapping rather than an inventory of systematically included studies. The relationships developed from this mapping remain theoretical propositions requiring empirical investigation.

Table 1. Thematic Mapping of Literature Across Construct Domains

Construct Domain	References	Focus
Project Governance	Müller & Lecoivre (2014); Joslin & Müller (2016); Haq et al. (2018); Luo et al. (2017); Musawir et al. (2017).	Steering committees, stage-gate assurance, authority delegation, and formal accountability structures.
Project Risk Governance	Teller & Kock (2013); Khadem et al. (2018)	Risk ownership, escalation pathways, systematic risk monitoring, and enterprise risk integration.
Digital PM Capability	Whyte (2019); Koseoglu et al. (2018)	BIM, Common Data Environments (CDE), real-time progress analytics, and data-driven decision tools.
Front-End Planning Quality	Merrow (2024); Edkins et al. (2013); Hansen et al. (2018); Awolusi et al. (2022)	Scope definition maturity, Front-End Loading (FEL), pre-sanction alignment, and constructability reviews.
Contract & Procurement Governance	Eriksson & Westerberg (2011); Suprpto et al. (2015); Tirmizi & Arif (2023)	Contractor selection, commercial risk sharing, relational contracting, and contract administration.
Stakeholder Coordination	Aaltonen & Kujala (2010); Mok et al. (2015); Bahadorestani et al. (2020); Kujala et al. (2021); Corazza et al. (2024); Gil & Fu, (2022).	Interface management, inter-organizational communication, and cross-boundary alignment.
Project Management Competency	Takey & Carvalho (2015); Badiru & Osisanya (2016); Sirisomboonsuk et al. (2018); Abdulla (2026).	Technical project control skills, leadership, communication, and adaptive problem-solving.
Organizational Decision Making Effectiveness	Dean & Sharfman (1996); Dooley et al. (2000); Elbanna & Child (2007) Shepherd & Rudd (2014)	Decision quality, decision timeliness, decision implementation, and cross-functional alignment.
Project Delivery Performance	Shenhar et al. (2001); Serrador & Turner (2015); Denicol et al. (2020); Al-Bdairi et al. (2025); Merrow (2024)	Schedule performance, cost performance, quality performance, scope fulfilment, and stakeholder satisfaction.

3.4 Theoretical Explanations and Organizational Mechanisms

Four principal theoretical perspectives explain how organizational factors influence Project Delivery Performance (PDP). Institutional Theory examines how formal structures, accountability mechanisms, and rules shape Project Governance (PG), Project Risk Governance (PRG), and Contract and Procurement Governance (CPG) through decision authority, risk oversight, and contractual control (DiMaggio & Powell, 1983; Müller & Lecoivre, 2014; Teller & Kock, 2013; Joslin & Müller, 2016; Suprpto et al., 2015). Dynamic Capability Theory addresses how Digital Project Management Capability (DPMC), Front-End Planning Quality (FEPQ), and Project Management Competency (PMC) facilitate resource integration, information management, execution readiness, and adaptability (Edkins et al., 2013; Takey & Carvalho, 2015; Hansen et al., 2018; Laaksonen & Peltoniemi, 2018; Koseoglu et al., 2018; Whyte, 2019; Sirisomboonsuk et al., 2018; Teece, 2007). Stakeholder Theory underscores the significance of Stakeholder Coordination (SC) and supports CPG by emphasizing stakeholder engagement, communication, conflict resolution, and inter-organizational cooperation (Donaldson & Preston, 1995; Aaltonen & Kujala, 2010; Mok et al., 2015; Derakhshan et al., 2019; Kujala et al., 2021). Contingency Theory emphasizes the need to align governance, capabilities, and coordination with project complexity, uncertainty, and institutional context, as their effectiveness may vary across projects (Levitt et al., 1999; Aaltonen & Turkulainen, (2022); Denicol et al., 2020; Denicol & Davies, 2022).

Synthesizing these perspectives, the study proposes Organizational Decision-Making Effectiveness (ODME) as a potential intermediary between the seven key factors and various PDP dimensions, including schedule, cost, quality, scope, stakeholder satisfaction, and overall project success (Shenhar et al., 2001; Serrador & Turner, 2015). ODME encompasses decision quality, timeliness, implementation, and cross-functional alignment (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007; Shepherd & Rudd, 2014). For instance, PG establishes decision authority, PRG facilitates risk-based decisions, DPMC enhances information accessibility, FEPQ supports improved planning, CPG clarifies contractual roles, SC aligns stakeholders, and PMC reinforces management judgment and implementation (Joslin & Müller, 2016; Hansen et al., 2018; Whyte, 2019; Derakhshan et al., 2019). These factors can transform organizational strengths into coordinated project actions and improved outcomes. However, the mediating role of ODME remains largely theoretical and has not been empirically validated across all factors; its influence may also vary by project and organization. Consequently, the framework posits both direct relationships between determinants and PDP and potential indirect relationships mediated by ODME, which warrant further investigation (Denicol et al., 2020; Denicol & Davies, 2022).

3.5 Evidence Gaps

The literature identifies four principal research gaps in capital project delivery performance. First, most studies examine Project Governance (PG), Project Risk Governance (PRG), Digital Project Management Capability (DPMC), Front-End Planning Quality (FEPQ), Contract and Procurement Governance (CPG), Stakeholder Coordination (SC), and Project Management Competency (PMC) as independent factors. This isolated approach limits comprehensive understanding of how these elements collectively influence Project Delivery Performance (PDP) (Denicol et al., 2020; Denicol & Davies, 2022). Second, inconsistent research methodologies, construct measurement, and sectoral or institutional contexts impede comparability and limit the ability to draw generalizable conclusions, underscoring the need for context-sensitive analyses (Derakhshan et al., 2019; Aaltonen & Turkulainen, 2022). Third, while strategic decision-making research emphasizes decision quality, timeliness, implementation, and coordination, the mediating role of Organizational Decision-Making Effectiveness (ODME) between the seven determinants and performance remains underexplored (Dean & Sharfman, 1996; Elbanna & Child, 2007). Fourth, additional research is necessary to distinguish project delivery efficiency from overall project success, as dimensions such as schedule, cost, quality, scope, stakeholder satisfaction, and overall success may respond differently to organizational influences (Shenhar et al., 2001; Serrador & Turner, 2015).

Addressing these research gaps necessitates an integrated conceptual framework. This framework draws upon Institutional Theory, Dynamic Capability Theory, Stakeholder Theory, and Contingency Theory to explain how governance, adaptability, stakeholder relationships, and contextual factors influence project outcomes. It distinguishes direct relationships between determinants and PDP from potential indirect effects mediated by ODME, laying a foundation for future research without presupposing causal or mediating relationships.

3.6 Critical Appraisal and Contextual Limitations

A detailed examination of organizational and project-management factors reveals several limitations in interpreting Project Delivery Performance (PDP). Cross-sectional studies cannot establish causality, and self-reported data may introduce bias, rely on memory, and yield subjective judgments. Variations in research design, conceptual definitions, and selected performance indicators hinder comparability, especially when governance, digital skills, and project success are measured differently.

Organizational practices also involve inherent trade-offs. For instance, formal governance can enhance accountability but may delay approvals. Digital tools may improve information accessibility but do not ensure effective utilization. Early planning can facilitate team preparedness but cannot eliminate all uncertainty. Contracts may provide clarity but can reduce flexibility. Stakeholder involvement may enhance coordination but potentially slow decision-making. These considerations indicate that the relationship between various factors and performance depends on project complexity, the regulatory environment, organizational maturity, contract types, and industry, aligning with the principles of Contingency Theory. A further limitation concerns the proposed mediating role of Organizational Decision-Making Effectiveness (ODME). Identifying associations between organizational factors and PDP does not establish mediation. Demonstrating mediation requires rigorous measurement, consideration of temporal sequencing, and comprehensive analysis of indirect effects and alternative explanations. Consequently, the integrated framework should be regarded as a theory-driven model rather than a validated causal structure. To strengthen the evidence base and inform future research, researchers need to systematically compare studies, assess quality, and consider conflicting findings to determine which relationships are robust and which are context- or theory-dependent.

4.0 DEVELOPMENT OF THE CONCEPTUAL FRAMEWORK

This review presents a framework linking seven key factors to Project Delivery Performance (PDP): Project Governance, Project Risk Governance, Digital Project Management Capability, Front-End Planning Quality, Contract and Procurement Governance, Stakeholder Coordination, and Project Management Competency (Joslin & Müller, 2016; Hansen et al., 2018; Derakhshan et al., 2019; Denicol & Davies, 2022). The framework is grounded in Institutional Theory, Dynamic Capability Theory, Stakeholder Theory, and Contingency Theory, which collectively explain how governance, resource integration, relationships, and contextual factors shape project outcomes (DiMaggio & Powell, 1983; Donaldson & Preston, 1995; Levitt et al., 1999; Laaksonen & Peltoniemi, 2018; Derakhshan et al., 2019; Aaltonen & Turkulainen, 2022). Additionally, the framework posits that Organizational Decision-Making Effectiveness (ODME), defined by decision quality, timeliness, implementation, and cross-functional alignment, may mediate these relationships (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007). PDP encompasses schedule performance, cost performance, quality performance, scope fulfilment, and stakeholder satisfaction, while broader project success is considered separately (Shenhar et al., 2001; Serrador & Turner, 2015). The framework specifies both the direct effects of the determinants on PDP and potential indirect effects through ODME, warranting empirical investigation in future research.

4.1 Project Delivery Performance (PDP)

Project Delivery Performance (PDP) evaluates how well large-scale projects achieve their objectives across operational, technical, and stakeholder domains. Historically, project performance was assessed primarily by schedule, cost, and quality; however, contemporary evaluations incorporate broader criteria that reflect technical complexity, significant investments, and diverse stakeholder requirements (Shenhar et al., 2001; Denicol et al., 2020). Shenhar et al. (2001) showed that project success is multidimensional, while Serrador & Turner (2015) found that although delivery efficiency correlates with overall success, it does not fully explain project outcomes. This paper conceptualizes PDP through five dimensions: schedule performance, reflecting timely completion; cost performance, reflecting adherence to budget; quality performance, reflecting compliance with technical requirements; scope fulfilment, reflecting achievement of intended deliverables; and stakeholder satisfaction, reflecting the extent to which delivery meets stakeholder expectations.

Broader project success, including strategic benefits and longer-term value, is considered separately from PDP (Shenhar et al., 2001; Serrador & Turner, 2015). This framework distinguishes delivery efficiency from overall project success and provides a basis for analyzing how organizational and project management factors influence outcomes.

4.2 Project Governance (PG)

Project Governance (PG) refers to the structures, authority, and oversight that direct projects and align them with strategic objectives. It establishes decision-making responsibilities, accountability, and reporting and oversight mechanisms, distinguishing strategic governance from routine project management (Joslin & Müller, 2016; Derakhshan et al., 2019; Musawir et al., 2017). In large, capital-intensive projects, effective governance helps organizations maintain alignment, ensure transparent reporting, coordinate oversight, and uphold accountability in complex environments (Brunet, 2019; Sankaran et al., 2025). Grounded in Institutional Theory, project governance shows how formal rules, organizational standards, and shared expectations shape authority structures and decision-making in projects (Fu et al., 2024). Key components include defined decision-making authority, transparent reporting, robust oversight, and accountability, each of which contributes to improved Project Delivery Performance (PDP) (Joslin & Müller, 2016; Musawir et al., 2017). Organizations typically regard PG as a distinct domain, separate from risk governance, procurement, digital competencies, stakeholder coordination, and managerial capabilities.

4.3 Project Risk Governance (PRG)

Project Risk Governance (PRG) refers to the structures and processes that direct how organizations identify, assess, own, monitor, report, escalate, and respond to risks. While traditional risk management primarily focuses on technical assessment and mitigation, PRG prioritizes accountability, oversight, and integrating risk information into decision-making (Teller & Kock, 2013; Haq et al., 2018). For projects with significant investments, technical complexity, intricate contracts, and high uncertainty, clear risk roles, systematic monitoring, transparent reporting, and prompt corrective action are critical (Khadem et al., 2018; Erol et al., 2020). PRG is grounded in Institutional Theory and encompasses formal rules, accountability mechanisms, and procedures that influence organizational risk-related decision-making. Although structured risk practices have been associated with improved project outcomes, further research is required to determine their impact on various dimensions of Project Delivery Performance (PDP) (Teller & Kock, 2013; Haq et al., 2018). PRG is a distinct organizational factor that can affect PDP both directly, by enhancing risk control, and indirectly, by improving decision-making in quality, speed, and collaboration.

4.4 Front-End Planning Quality (FEPQ)

Front-End Planning Quality (FEPQ) is the completeness, accuracy, and integration of a project plan before major commitments. FEPQ includes defining project scope, technical requirements, planning assumptions, cost and schedule estimates, execution strategies, and overall project readiness (Edkins et al., 2013; Hansen et al., 2018). In large-scale projects, inadequate planning often leads to design changes, extra work, schedule delays, and budget overruns. Conversely, thorough front-end planning improves project clarity, increases readiness, and supports effective uncertainty management (Edkins et al., 2013; Hansen et al., 2018; Welde & Volden, 2022). Drawing on Dynamic Capability Theory, FEPQ integrates technical and managerial resources to develop robust execution strategies (Laaksonen & Peltoniemi, 2018). By improving information reliability, increasing planning accuracy, and enabling

more effective evaluation of project alternatives, FEPQ can directly improve Project Delivery Performance (PDP) by increasing readiness and indirectly by supporting better Organizational Decision-Making Effectiveness (ODME). Thus, FEPQ is a critical determinant of organizational preparedness and the influence of early planning on subsequent decisions and outcomes.

4.5 Digital Project Management Capability (DPMC)

Digital Project Management Capability (DPMC) refers to an organization's ability to leverage digital technologies, information systems, data analytics, and collaborative tools to plan, monitor, coordinate, and control projects. This concept goes beyond simply adopting technology and emphasizes applying these tools effectively within organizational processes (Whyte, 2019; Koseoglu et al., 2018). In large-scale projects, technologies such as Building Information Modeling (BIM), digital twins, and advanced analytics facilitate enhanced information sharing, performance tracking, deviation detection, and coordination among engineering, procurement, and construction teams. However, these tools' effectiveness depends on reliable data, integrated systems, and the organization's proficiency in using them (Koseoglu et al., 2018; Jaskula et al., 2024). According to Dynamic Capability Theory, DPMC enables organizations to integrate resources, respond to evolving project requirements, and adapt management processes accordingly (Laaksonen & Peltoniemi, 2018; Teece, 2007). DPMC is a distinctive capability that can influence Project Delivery Performance (PDP) both directly, by improving monitoring and coordination, and indirectly, by enabling more effective decision-making through more accurate, timely information and stronger cross-functional collaboration.

4.6 Contract and Procurement Governance (CPG)

Contract and Procurement Governance (CPG) refers to the structures, procedures, and controls that guide contracting strategies, contractor and supplier selection, responsibility allocation, risk management, procurement coordination, and performance monitoring throughout a project. Unlike general Project Governance (PG), CPG focuses on the commercial and contractual frameworks that support project delivery (Eriksson & Westerberg, 2011; Suprpto et al., 2015). In projects with significant investments, robust procurement strategies, transparent selection processes, clear contracts, and effective contract administration promote accountability, facilitate supplier collaboration, and improve execution efficiency.

Conversely, unclear contracts and procurement delay often lead to disputes, project disruptions, and reduced performance (Eriksson & Westerberg, 2011; Suprpto et al., 2015). Institutional Theory posits that CPG consists of formal contract rules, organizational procedures, and accountability systems that shape collaboration among project participants. CPG is a distinct factor that can directly improve Project Delivery Performance (PDP) by increasing procurement efficiency, strengthening contract control, and supporting delivery coordination. Furthermore, CPG may indirectly enhance PDP through Organizational Decision-Making Effectiveness (ODME) by clarifying participant roles, improving procurement information, and enabling teams to make timely contract decisions and resolve disputes.

4.7 Stakeholder Coordination (SC)

Stakeholder Coordination (SC) comprises processes that enable internal and external stakeholders, including project owners, contractors, consultants, suppliers, and regulatory authorities, to communicate, share responsibilities, manage relationships, and collaboratively address project issues (Aaltonen & Kujala, 2010; Mok et al., 2015; Derakhshan et al., 2019). In large-scale projects, early

stakeholder identification, clear communication, collaborative problem-solving, and effective conflict resolution enhance cooperation, maintain organizational alignment, and increase project execution efficiency. In contrast, inadequate coordination can lead to communication failures, approval delays, unresolved issues, and project disruptions (Mok et al., 2015; Gil & Fu, 2022; Corazza et al., 2024). Stakeholder Coordination is grounded in Stakeholder Theory, which emphasizes managing relationships, balancing diverse interests, and addressing shared responsibilities that influence project outcomes (Donaldson & Preston, 1995; Freeman et al., 2018). SC is a critical factor that can directly enhance Project Delivery Performance (PDP) by fostering effective teamwork and robust stakeholder relationships. Additionally, SC indirectly improves organizational decision-making by integrating stakeholder knowledge, facilitating conflict resolution, and supporting coordinated decisions and actions.

4.8 Project Management Competency (PMC)

Project Management Competency (PMC) encompasses the knowledge, technical skills, management abilities, leadership, and problem-solving required to plan, control, coordinate, and execute projects effectively. PMC extends beyond formal qualifications by emphasizing practical application (Takey & Carvalho, 2015; Nyarirangwe & Babatunde, 2019). In capital-intensive projects, robust PMC enables teams to coordinate across disciplines, allocate resources efficiently, identify risks, communicate effectively, and implement timely corrective actions. In contrast, insufficient competencies can undermine project control and negatively impact delivery outcomes (Takey & Carvalho, 2015; Sirisomboonsuk et al., 2018; Denicol & Davies, 2022). According to Dynamic Capability Theory, PMC enables organizations to adapt by equipping managers to recognize evolving project conditions, utilize resources efficiently, and respond effectively (Laaksonen & Peltoniemi, 2018; Teece, 2007). PMC is a critical management factor influencing Project Delivery Performance (PDP) by shaping planning, leadership, and execution. Additionally, PMC can indirectly enhance Organizational Decision-Making Effectiveness (ODME) by improving judgment, timely decision-making, communication, and coordinated action.

4.9 Organizational Decision-Making Effectiveness (ODME)

Organizational Decision-Making Effectiveness (ODME) refers to an organization's capacity to make and implement informed, timely, and coordinated decisions that help achieve project objectives (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007). Within capital-intensive projects, ODME encompasses four primary dimensions: decision quality, timeliness, implementation, and cross-functional alignment. This theory-grounded model has not yet been validated through empirical research (Shepherd & Rudd, 2014; Denicol et al., 2020). ODME may serve as a mechanism linking seven organizational factors to Project Delivery Performance (PDP). These factors are: Project Governance (PG), which establishes decision authority and accountability (Müller & Lecoeuvre, 2014; Joslin & Müller, 2016; Musawir et al., 2017); Project Risk Governance (PRG), which facilitates risk-based decision-making and escalation (Teller & Kock, 2013; Haq et al., 2018); Digital Project Management Capability (DPMC), which enhances information sharing and accessibility (Whyte, 2019; Koseoglu et al., 2018). Front-End Planning Quality (FEPQ), which improves project definition and the evaluation of alternatives (Edkins et al., 2013; Hansen et al., 2018; Welde & Volden, 2022); Contract and Procurement Governance (CPG), which clarifies contractual roles and commercial decision-making (Eriksson & Westerberg, 2011; Suprpto et al., 2015); Stakeholder Coordination (SC), which promotes information sharing and alignment among stakeholders (Aaltonen & Kujala, 2010; Mok et al., 2015; Derakhshan et al., 2019; Kujala et al., 2021).

Project Management Competency (PMC), which strengthens managerial judgment and execution (Takey & Carvalho, 2015; Sirisomboonsuk et al., 2018; Denicol & Davies, 2022). The strength of these relationships may vary depending on project complexity, institutional context, information quality, and organizational maturity. Consequently, ODME may be a context-dependent, partial mediator, alongside direct associations between these factors and PDP. Further research is required to substantiate these direct, indirect, and context-specific effects (Dean & Sharfman, 1996; Elbanna & Child, 2007; Denicol et al., 2020).

4.10 Proposed Conceptual Framework

The proposed framework integrates seven organizational and project-management factors: Project Governance (PG), Project Risk Governance (PRG), Digital Project Management Capability (DPMC), Front-End Planning Quality (FEPQ), Contract and Procurement Governance (CPG), Stakeholder Coordination (SC), and Project Management Competency (PMC). These factors represent complementary organizational arrangements and capabilities that may contribute to Project Delivery Performance (PDP) (Joslin & Müller, 2016; Musawir et al., 2017; Hansen et al., 2018; Derakhshan et al., 2019). Organizational Decision-Making Effectiveness (ODME) is proposed as a potential mediating mechanism through which these factors may influence delivery outcomes. Drawing on strategic decision-making research, this paper conceptualizes ODME through decision quality, timeliness, implementation, and cross-functional alignment (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007). PDP encompasses schedule, cost, quality, scope fulfilment, and stakeholder satisfaction, while broader project success is considered separately (Shenhar et al., 2001; Serrador & Turner, 2015).

Figure 1 presents nine constructs and three sets of relationships: seven pathways from the organizational factors to ODME, one pathway from ODME to PDP, and seven direct pathways from the organizational factors to PDP. Together, these relationships allow examination of seven potential indirect effects through ODME while retaining direct relationships with delivery performance. The framework therefore accommodates potential partial mediation without assuming that ODME explains every pathway to PDP. All relationships are theoretical propositions requiring empirical validation.

4.11 Research Proposition Development

This paper builds on earlier theoretical discussion by presenting 22 research propositions linking seven organizational and project-management factors to Organizational Decision-Making Effectiveness (ODME) and Project Delivery Performance (PDP). These propositions include seven relationships between the factors and PDP, seven between the factors and ODME, one between ODME and PDP, and seven possible indirect effects through ODME. These are theoretical expectations that still need to be tested with data.

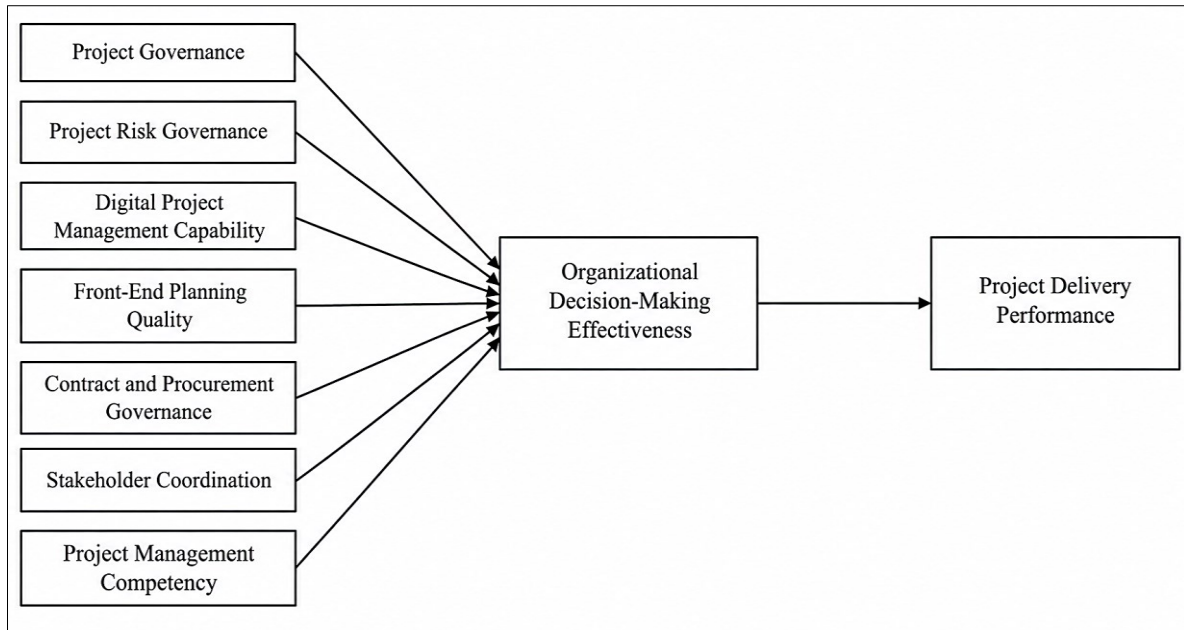


Figure 1: Proposed Conceptual Framework

Direct Relationships Between Organizational Factors and PDP

P1a: Project Governance (PG) is positively associated with Project Delivery Performance (PDP).

P1b: Project Risk Governance (PRG) is positively associated with PDP.

P1c: Digital Project Management Capability (DPMC) is positively associated with PDP.

P1d: Front-End Planning Quality (FEPQ) is positively associated with PDP.

P1e: Contract and Procurement Governance (CPG) is positively associated with PDP.

P1f: Stakeholder Coordination (SC) is positively associated with PDP.

P1g: Project Management Competency (PMC) is positively associated with PDP.

Direct Relationships Between Organizational Factors and ODME

P2a: Project Governance (PG) is positively associated with Organizational Decision-Making Effectiveness (ODME).

P2b: Project Risk Governance (PRG) is positively associated with ODME.

P2c: Digital Project Management Capability (DPMC) is positively associated with ODME.

P2d: Front-End Planning Quality (FEPQ) is positively associated with ODME.

P2e: Contract and Procurement Governance (CPG) is positively associated with ODME.

P2f: Stakeholder Coordination (SC) is positively associated with ODME.

P2g: Project Management Competency (PMC) is positively associated with ODME.

Relationship Between ODME and PDP

P3: Organizational Decision-Making Effectiveness (ODME) is positively associated with Project Delivery Performance (PDP).

Proposed Mediating Role of ODME

P4a: ODME mediates the relationship between PG and PDP.

P4b: ODME mediates the relationship between PRG and PDP.

P4c: ODME mediates the relationship between DPMC and PDP.

P4d: ODME mediates the relationship between FEPQ and PDP.

P4e: ODME mediates the relationship between CPG and PDP.

P4f: ODME mediates the relationship between SC and PDP.

P4g: ODME mediates the relationship between PMC and PDP.

Collectively, these propositions specify 15 direct structural relationships and seven potential indirect effects. The proposed mediation is not assumed to be complete, as each determinant may also influence project delivery through mechanisms beyond organizational decision-making. Accordingly, the framework provides a theoretical basis for examining potential partial mediation in subsequent empirical research.

5.0 DISCUSSION

This review examines how organizational governance, project management competencies, and stakeholder relationships affect Project Delivery Performance (PDP). Existing research demonstrates that project outcomes depend on more than technical execution and basic cost or schedule controls (Shenhar et al., 2001; Joslin & Müller, 2016; Derakhshan et al., 2019; Denicol et al., 2020). The proposed framework integrates seven theory-based factors and Organizational Decision-Making Effectiveness (ODME) as a potential explanatory mechanism, while identifying which relationships the literature supports and which require further investigation. Project Governance (PG), Project Risk Governance (PRG), and Contract and Procurement Governance (CPG) facilitate accountability, decision-making, uncertainty management, and contract administration. Empirical studies indicate that governance, risk management, and procurement practices significantly influence project outcomes (Eriksson & Westerberg, 2011; Teller & Kock, 2013; Joslin & Müller, 2016; Derakhshan et al., 2019).

However, excessive central approval, rigid procedures, or ambiguous responsibilities may reduce organizational responsiveness. Therefore, effective governance depends on implementation and contextual fit, not solely on formalized rules (Brunet, 2019; Musawir et al., 2017). Digital Project Management Capability (DPMC), Front-End Planning Quality (FEPQ), and Project Management Competency (PMC) enhance information integration, execution readiness, resource coordination, and managerial judgment (Edkins et al., 2013; Takey & Carvalho, 2015; Hansen et al., 2018; Koseoglu et al., 2018). Dynamic Capability Theory underscores the importance of effectively deploying and adapting these capabilities in response to changing conditions (Laaksonen & Peltoniemi, 2018; Teece, 2007). However, technology adoption does not ensure effective information utilization, planning cannot fully eliminate uncertainty, and professional qualifications do not automatically translate to implementation competence. Therefore, the impact of these capabilities on performance depends on organizational integration and practical application.

Stakeholder Coordination (SC) facilitates communication, manages interactions, resolves conflicts, and keeps participants aligned in multi-stakeholder projects (Aaltonen & Kujala, 2010; Mok et al., 2015; Derakhshan et al., 2019). Stakeholder Theory highlights the need to balance diverse interests to achieve

collective objectives (Donaldson & Preston, 1995; Freeman et al., 2018). However, conflicting priorities or excessive consultation can delay decision-making. SC should be viewed as a process, while stakeholder satisfaction is an outcome; these are distinct concepts.

Organizational Decision-Making Effectiveness (ODME) is proposed as a potential integrative mechanism encompassing decision quality, speed, implementation, and cross-functional collaboration (Dean & Sharfman, 1996; Dooley et al., 2000; Elbanna & Child, 2007). The seven identified factors may enhance ODME by contributing governance authority, risk information, digital tools, comprehensive planning, contract clarity, stakeholder alignment, and sound judgment. Nevertheless, organizational structure may also directly influence PDP, suggesting that ODME may only partially explain the observed relationships. The ODME characteristics and indirect associations discussed are grounded in theory and have not been independently validated within this review.

Project Delivery Performance (PDP) encompasses schedule, cost, quality, scope, stakeholder satisfaction, and overall project success. Efficient delivery does not necessarily equate to broader project success (Shenhar et al., 2001; Serrador & Turner, 2015). Various organizational factors may affect each dimension differently, suggesting that future research should assess whether PDP is a unified construct or should be evaluated through distinct components.

5.1 Theoretical Integration and Research Implications

The framework integrates Institutional Theory (governance and accountability), Dynamic Capability Theory (resource utilization and adaptability), Stakeholder Theory (relationships and coordination), and Contingency Theory (contextual effectiveness) (DiMaggio & Powell, 1983; Donaldson & Preston, 1995; Levitt et al., 1999; Laaksonen & Peltoniemi, 2018; Freeman et al., 2018; Aaltonen & Turkulainen, 2022; Teece, 2007). Its primary contribution is to provide a unified perspective on how organizational factors may interact, rather than to establish causality. Future research should investigate all seven factors collectively, empirically test ODME, examine both direct and indirect relationships, and analyze variations by project complexity, organizational maturity, environment, and sector. Methodological differences, measurement inconsistencies, and reliance on self-reported data may hinder cross-study comparisons and the formulation of definitive conclusions. Accordingly, this framework provides an initial foundation for further research rather than a conclusive model (Denicol et al., 2020; Denicol & Davies, 2022).

6.0 CONCLUSION

This literature review examines organizational and project management factors associated with Project Delivery Performance (PDP) in capital-intensive projects. It presents a framework comprising seven key factors: Project Governance, Project Risk Governance, Digital Project Management Capability, Front-End Planning Quality, Contract and Procurement Governance, Stakeholder Coordination, and Project Management Competency. The framework draws on Institutional Theory, Dynamic Capability Theory, Stakeholder Theory, and Contingency Theory to illustrate how governance structures, organizational capabilities, stakeholder relationships, and contextual variables influence project outcomes. A key contribution is identifying Organizational Decision-Making Effectiveness (ODME)—encompassing decision quality, timeliness, implementation, and cross-functional alignment—as a potential mediator between these factors and PDP. The framework distinguishes direct effects from possible indirect effects mediated by ODME and defines PDP in terms of schedule, cost, quality, scope,

stakeholder satisfaction, and overall project success. These propositions remain theoretical and have not yet been empirically validated.

In practice, project organizations should integrate governance, risk management, digital capabilities, planning, procurement, stakeholder coordination, and management competencies, emphasizing informed, timely, and coordinated decision-making. These recommendations must account for project complexity, institutional regulations, organizational maturity, and industry-specific considerations. However, variations in research methodologies, construct measurement, project contexts, and limited empirical validation of ODME limit the framework's current reliability. Future research should employ robust quantitative, qualitative, longitudinal, and mixed-method approaches to test the framework, investigate direct and indirect relationships, assess partial mediation, and explore contextual influences across industries and settings. In summary, the framework provides a theoretical foundation for understanding capital project delivery and guiding future research, but it has not yet been empirically substantiated.

Declarations

Author Contributions: Faisal Hassan Ali Alfarsi conceptualized the study, reviewed the data, conducted formal analysis, and drafted the manuscript. Yu Hock Oo provided academic supervision and critically reviewed the manuscript.

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