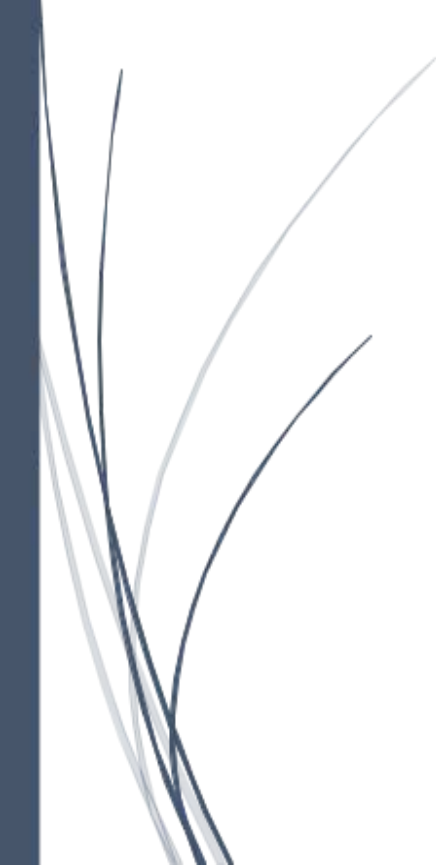


Final Project 2

PMG 497



The Impact of Project Management Practices on Procurement Efficiency in Saudi IT Organizations

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Chapter 1: Introduction

1.1 Research Background

Project management has become a cornerstone of modern organizational success, providing structured methods to plan, execute, and monitor projects efficiently. Within today's dynamic business environment—especially in the Saudi IT sector—project management practices are no longer limited to scheduling or budgeting; they have evolved into a strategic discipline that integrates multiple business functions, including procurement, to ensure organizational efficiency and sustainable performance.

Procurement is one of the most critical components in the success or failure of IT projects. Effective procurement ensures the timely availability of hardware, software, consulting services,

and infrastructure necessary to deliver complex technology projects. However, many organizations face challenges such as cost overruns, supplier delays, and poor coordination between technical teams and procurement departments. These inefficiencies often stem from the absence of structured project management practices governing the procurement process (Kerzner, 2017).

The growing complexity of IT projects in Saudi Arabia—driven by national initiatives such as Vision 2030 and the rapid pace of digital transformation—has heightened the need for disciplined integration between project management frameworks (PMBOK, PRINCE2, Agile) and procurement efficiency metrics (Thai, 2001). The interdependence between these two domains forms a critical success factor: strong project planning, risk control, and communication management enhance the efficiency, speed, and reliability of procurement operations (PMI, 2021).

Despite this importance, limited research has examined how project management practices influence procurement performance within Saudi IT organizations, where large-scale digital and cybersecurity projects are common. This study aims to fill that gap by empirically analyzing the effect of project management practices on procurement efficiency in this unique context.

1.2 Research Problem

Although many Saudi IT organizations have adopted project management methodologies, procurement inefficiencies remain a recurring issue. Delays in supplier onboarding, weak stakeholder coordination, and misaligned timelines between project execution and procurement planning often undermine project success.

The key problem lies in the limited integration of project management practices with procurement processes, resulting in operational inefficiencies and missed performance targets.

While project management emphasizes structured planning, risk mitigation, and stakeholder communication, procurement departments frequently operate independently, guided by transactional or compliance-driven approaches.

1.2.1 Theoretical Gap

Existing project management literature has widely explored success factors such as cost, time, and scope (Atkinson, 1999; Kerzner, 2017), but few studies have explicitly linked these factors to procurement outcomes. Most frameworks treat procurement as a supporting process rather than a performance variable. The absence of empirical models connecting project management maturity and procurement efficiency represents a significant theoretical gap that this study aims to address.

1.2.2 Practical Gap

In practice, Saudi IT firms often experience vendor delays, poor risk assessment in sourcing, and inadequate forecasting in procurement planning. While these organizations invest heavily in project management tools (e.g., MS Project, Primavera), they rarely apply them systematically to procurement cycles. Consequently, procurement remains reactive rather than predictive. Bridging this gap requires an integrated understanding of how project management practices can enhance procurement outcomes.

1.3 Research Significance

Theoretically, this study contributes to the growing body of literature exploring the integration between project management practices and procurement efficiency, particularly within technology-intensive environments. Traditional project management research has focused primarily on the “iron triangle” of cost, time, and scope (Atkinson, 1999; Kerzner, 2017). However, the procurement function—although essential to project success—has often been treated as a peripheral support process rather than a core determinant of performance outcomes. This research challenges that assumption by empirically testing how project management practices directly influence procurement efficiency in Saudi IT organizations.

By linking variables such as planning, risk management, communication, and monitoring to procurement outcomes (cost savings, timeliness, and supplier performance), this study extends the theoretical understanding of project success factors beyond traditional boundaries. It integrates the Project Management Body of Knowledge (PMBOK) with procurement management theories such as Thai’s (2001) Value-for-Money Framework and Telgen et al.’s (2010) Efficiency Model. The resulting conceptual model provides an evidence-based foundation that future researchers can use to examine how project management maturity correlates with procurement outcomes in other industries or countries.

Moreover, this research adds value to the academic discussion surrounding project–procurement alignment in the context of emerging economies. While studies in developed markets (Prajogo & Sohal, 2013; Turner, 2014) have validated the impact of structured project governance on supply chain performance, few have done so in the Middle East—particularly in the Saudi IT sector. This context offers a unique testing ground where modernization, digital transformation, and Vision

2030 initiatives are actively reshaping corporate project structures. Therefore, this study bridges a clear theoretical gap and contributes a localized model that captures how structured project management frameworks can improve procurement efficiency in rapidly evolving economic systems.

1.3.2 Practical Significance

From a practical standpoint, the study has considerable implications for organizational performance, decision-making, and policy development within Saudi IT firms. The results are expected to guide project managers and procurement officers in adopting evidence-based strategies to align their operations and enhance cross-departmental coordination. Inefficient procurement processes—such as delayed supplier responses, misaligned timelines, and poor communication between project and sourcing teams—are among the most common causes of project delays and budget overruns (Carter & Narasimhan, 2006). By identifying which project management practices have the greatest impact on procurement efficiency, this research provides actionable insights for practitioners to improve process design and performance outcomes.

In practice, integrating project management methodologies such as PMBOK, PRINCE2, or Agile frameworks can streamline procurement planning, enhance forecasting accuracy, and improve supplier collaboration. IT project managers can leverage structured communication management to reduce specification errors, risk management to anticipate vendor-related issues, and monitoring systems to detect early deviations from procurement plans. Executives and policymakers can also use the findings to design training programs, internal policies, and performance metrics that align with global best practices in project procurement governance.

At a broader level, the study supports Saudi Arabia's Vision 2030 initiatives by promoting efficiency, transparency, and accountability in IT-related projects—key elements of the national digital transformation strategy. As government entities and private organizations increasingly invest in large-scale digital infrastructure, adopting integrated project management and

procurement frameworks can significantly enhance national productivity, cost-effectiveness, and service delivery standards.

Ultimately, this research not only deepens theoretical understanding but also provides a practical roadmap for Saudi IT organizations to achieve sustainable performance improvements through disciplined project–procurement integration.

1.4 Research Questions

A well-formulated set of research questions and objectives is essential to guide the direction, methodology, and focus of any academic inquiry. The main purpose of this research is to investigate how the application of project management practices—such as planning, risk management, communication, and monitoring—affects procurement efficiency within Saudi IT organizations. These practices are widely recognized in global project management standards (PMI, 2021; Kerzner, 2017), yet their influence on procurement processes remains underexplored in the context of Saudi Arabia’s rapidly evolving information technology sector.

The overarching research question that this study seeks to answer is:

To what extent do project management practices influence procurement efficiency in Saudi IT organizations?

From this central question, several sub-questions emerge to help clarify the relationship between specific project management dimensions and procurement outcomes:

1. What are the dominant project management practices currently applied within Saudi IT organizations?
2. How do project management practices influence procurement efficiency in terms of cost, time, and supplier performance?
3. Which specific project management dimensions—planning, risk management, communication, or monitoring—have the strongest impact on procurement efficiency?
4. How can project management frameworks be effectively integrated into procurement processes to improve performance and decision-making?

Each of these questions serves a unique purpose. The first aims to describe the existing project management environment in Saudi IT organizations, establishing a baseline for comparison. The second and third examine the causal or correlational relationships between the independent and dependent variables. The fourth question is prescriptive, seeking to translate the findings into actionable recommendations that can improve managerial practice.

In alignment with these research questions, the following objectives are formulated to provide a structured pathway for achieving the study's purpose:

1. To identify and analyze the key project management practices adopted in Saudi IT organizations and assess their maturity levels in relation to industry standards.
2. To evaluate the effect of project management practices on procurement efficiency, focusing on measurable outcomes such as cost control, delivery timelines, and supplier reliability.
3. To determine which dimensions of project management (planning, risk management, communication, and monitoring) exert the greatest influence on procurement performance.
4. To develop strategic recommendations that help organizations integrate project management methodologies into their procurement frameworks for improved coordination, accountability, and efficiency.

These objectives are both descriptive and analytical in nature. They are designed to provide insight into current practices while empirically testing the relationships between project management processes and procurement outcomes. Achieving these objectives will not only validate theoretical assumptions but also offer practical guidance for decision-makers and policy developers in Saudi IT organizations.

Ultimately, the answers derived from these questions and objectives will form the foundation for the subsequent chapters of this research—particularly in developing the research model, designing the methodology, and interpreting the findings. Through this structured inquiry, the study aims to bridge the existing knowledge gap and establish a clear link between disciplined project management practices and enhanced procurement efficiency in the Saudi IT sector.

1.5 Research Objectives

- To identify the dominant project management practices applied in Saudi IT procurement projects.
- To evaluate the relationship between project management practices and procurement efficiency.
- To determine which project management dimensions most significantly improve cost, time, and supplier performance.
- To provide recommendations for integrating project management methodologies into procurement frameworks.

1.6 Research Hypotheses

Formulating hypotheses provides the analytical foundation for testing relationships between the independent and dependent variables of this study. Based on the literature reviewed in Chapter 2 and the theoretical frameworks outlined by Kerzner (2017), Thai (2001), and PMI (2021), this research assumes that specific dimensions of project management practices—planning, risk management, communication, and monitoring—have measurable effects on procurement efficiency in Saudi IT organizations.

The hypotheses are designed to be directional, reflecting an expectation of a positive influence of effective project management on procurement performance outcomes such as cost, time, and supplier reliability.

Theoretical Rationale

Project management theory suggests that structured planning and control mechanisms improve coordination and resource allocation (Kerzner, 2017). Likewise, procurement management theory emphasizes that early planning and risk anticipation reduce cost overruns and delays (Telgen et al., 2010). Integrating these perspectives, this study assumes that higher levels of project management maturity translate into higher procurement efficiency. Each hypothesis below is therefore grounded in a specific theoretical logic linking a managerial practice to a procurement outcome.

H1: Effective project planning has a positive impact on procurement efficiency.

Project planning establishes the roadmap for project execution, including timelines, budgets, and resource needs. According to PMI (2021), comprehensive planning ensures that procurement activities—such as vendor selection, contract scheduling, and delivery milestones—are synchronized with overall project objectives. When organizations apply structured planning methods, procurement cycles become predictable, reducing lead times and avoiding last-minute purchasing that inflates costs. This hypothesis therefore posits that better project planning practices are associated with higher levels of procurement efficiency, measured through cost and time performance indicators.

H2: Risk management practices significantly reduce procurement delays and cost overruns.

Risk management involves identifying, assessing, and mitigating uncertainties that can disrupt project delivery (Hillson, 2019). In procurement contexts, risks include supplier default, quality deviations, and logistical delays. Proactive risk assessment allows project teams to establish contingency plans, diversify suppliers, and allocate risk budgets. The theoretical linkage draws from project risk theory, which argues that uncertainty management directly enhances performance stability (Pinto & Slevin, 2008). Therefore, organizations that implement systematic risk management are expected to experience fewer procurement disruptions and better budget adherence.

H3: Strong communication management enhances supplier collaboration and procurement performance.

Communication is a cornerstone of project integration, ensuring that information flows effectively among stakeholders. Miscommunication between project and procurement teams often leads to specification errors, rework, and schedule conflicts. As Nicholas and Steyn (2017) note, transparent communication frameworks improve inter-departmental understanding and supplier coordination. In procurement, this translates into more accurate purchase orders, faster approval cycles, and higher supplier satisfaction. Hence, this hypothesis assumes that effective communication management positively influences procurement performance by improving collaboration, responsiveness, and trust.

H4: Monitoring and control mechanisms improve procurement transparency and compliance.

Monitoring and control enable project managers to track progress, measure deviations, and enforce accountability. According to Kerzner (2017), regular performance monitoring—supported by dashboards, audits, and key performance indicators—facilitates early detection of procurement issues, such as delivery delays or cost overruns. From a governance perspective, monitoring reinforces transparency and ensures adherence to contractual and regulatory standards. This hypothesis therefore asserts that organizations with strong monitoring and control systems achieve greater procurement efficiency through continuous oversight and data-driven decision-making.

Summary of Hypotheses:

Hypothesis	Statement	Expected Direction
H1	Effective project planning positively affects procurement efficiency.	Positive
H2	Risk management practices significantly reduce procurement delays and cost overruns.	Positive

H3	Strong communication management enhances supplier collaboration and procurement performance.	Positive
H4	Monitoring and control mechanisms improve procurement transparency and compliance.	Positive

Analytical Implications

Each hypothesis will later be tested using quantitative statistical methods—specifically, correlation and regression analyses—based on data collected through a Likert-scale questionnaire administered to professionals in Saudi IT organizations. Confirming these hypotheses would validate the proposed conceptual model and demonstrate empirically that robust project management practices lead to measurable improvements in procurement efficiency. Conversely, if the hypotheses are not supported, it would suggest that additional organizational or contextual factors mediate the relationship between project management and procurement performance.

Thus, this set of hypotheses serves as the logical bridge between the theoretical foundation and the empirical analysis that will follow in Chapters 3 and 4, guiding both the research design and the interpretation of findings.

1.7 Research Model

A research model serves as the conceptual blueprint that illustrates how key variables interact within a study. It visually and logically links the independent variable—Project Management Practices—to the dependent variable—Procurement Efficiency. The purpose of this model is to translate the theoretical foundations and hypotheses outlined in previous sections into a structured analytical framework that can be empirically tested.

The conceptual basis of this study draws from the Project Management Body of Knowledge (PMBOK) (PMI, 2021), procurement performance frameworks (Thai, 2001; Telgen et al., 2010), and systems theory, which emphasizes interdependence between organizational subsystems. Within an IT organization, project management and procurement are not isolated processes; they function as interconnected components of a single system, where deficiencies in one area directly affect outcomes in the other. Hence, the model assumes that improving project management practices leads to higher procurement efficiency through enhanced planning, coordination, and control.

1.7.1 Variables of the Study

- Independent Variable (IV): Project Management Practices

This variable represents the managerial and procedural activities that ensure project objectives are achieved efficiently. For this study, it encompasses four major dimensions widely recognized in the literature:

1. Project Planning – Defining clear objectives, timelines, and procurement schedules.
2. Risk Management – Identifying and mitigating potential disruptions in procurement.
3. Communication Management – Establishing effective information flow between project and procurement teams.
4. Monitoring and Control – Tracking project and procurement performance against set baselines.

- Dependent Variable (DV): Procurement Efficiency

This variable measures how effectively an organization's procurement processes achieve desired outcomes with minimal cost and time. It is evaluated through three core dimensions:

1. Cost Efficiency – Achieving financial savings without compromising quality.
2. Time Efficiency – Completing procurement activities according to project schedules.
3. Supplier Performance – Ensuring reliability, responsiveness, and adherence to contractual terms.

1.7.2 Conceptual Framework

The proposed framework is designed to test how variations in project management practices influence procurement efficiency within Saudi IT organizations. The model assumes a direct and positive relationship between the independent and dependent variables, meaning that improvements in project management practices lead to measurable gains in procurement performance.

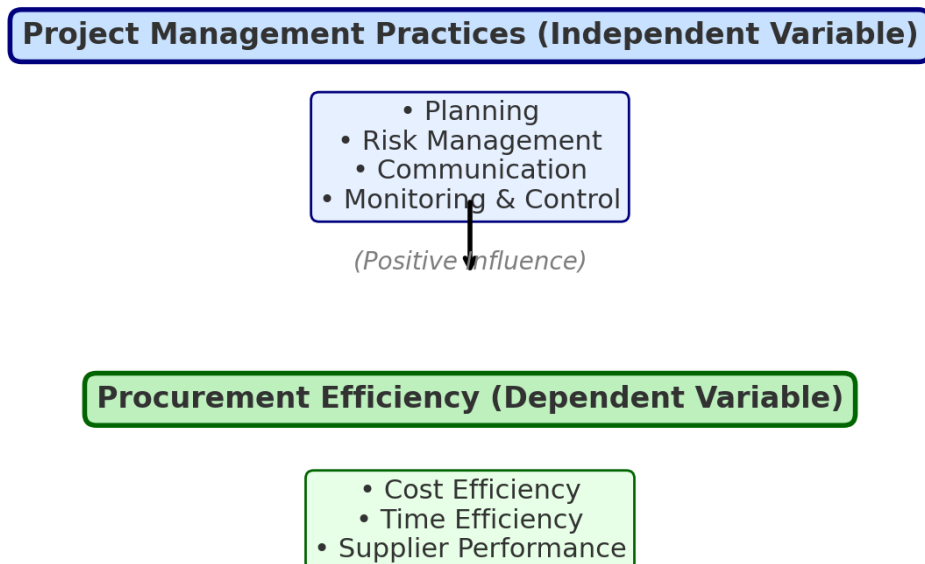
Each dimension of project management contributes differently to procurement outcomes:

- Planning aligns procurement timelines with project goals, ensuring resource availability.

- Risk Management mitigates disruptions that can cause cost or time overruns.
- Communication promotes transparency and alignment between departments and suppliers.
- Monitoring and Control maintain accountability and early detection of deviations.

These four dimensions collectively shape procurement efficiency by optimizing operational workflows and decision-making processes.

1.7.3 Diagram of the Conceptual Model



1.7.4 Theoretical Justification

This model is theoretically justified by the systems integration perspective of project management, which holds that project success is the result of effective coordination among

interdependent components (Kerzner, 2017). In IT organizations, procurement activities depend heavily on project-level planning, scheduling, and control mechanisms. Studies such as those by Turner (2014) and Prajogo & Sohal (2013) confirm that cross-functional project governance enhances supply chain responsiveness and reduces inefficiencies.

Furthermore, contingency theory supports the model's adaptability to different organizational contexts. It posits that the effectiveness of project management practices depends on situational variables such as project type, team capability, and technology environment. In the Saudi IT sector, where projects are highly technical and deadline-driven, the integration of project management and procurement is not optional—it is essential for maintaining competitive advantage and meeting national digital transformation goals.

Thus, the research model provides a clear visual and conceptual roadmap for hypothesis testing. It will serve as the foundation for the quantitative analysis presented in Chapter 4, where the relationship between project management practices and procurement efficiency will be statistically examined using data collected from Saudi IT professionals.

1.8 Scope of the Study

The scope of this study establishes the context, boundaries, and limitations within which the research is conducted, ensuring clarity regarding what the investigation includes and excludes. Defining these parameters is essential to maintain focus on the relationship between project management practices and procurement efficiency in the specific environment of Saudi information-technology (IT) organizations.

This study is situated within the broader context of Saudi Arabia's Vision 2030, which positions the digital economy and technological innovation as pillars of national transformation. Saudi IT organizations—ranging from government technology agencies and cybersecurity centers to private digital-solution providers—manage numerous complex projects that rely heavily on timely, cost-effective procurement. Within these organizations, the effective integration of project management principles is increasingly recognized as a determinant of performance. Therefore, the study's organizational scope is limited to IT entities that operate structured project-based environments where project management and procurement departments coexist and interact.

At the functional level, the research focuses on departments responsible for project delivery, procurement, and supply-chain management. The study targets professionals such as project managers, category managers, procurement officers, sourcing specialists, and supply-chain analysts. Their collective experience and involvement in project execution make them ideal respondents for evaluating how planning, risk management, communication, and monitoring practices influence procurement efficiency.

The geographical scope is confined to Riyadh and other major Saudi cities that serve as technology and governance hubs. These locations host the headquarters of most leading IT firms and governmental digital-transformation programs, providing access to participants who reflect

the operational realities of the sector. Although insights from these regions may be indicative of trends across the Kingdom, the study does not claim nationwide generalization beyond comparable organizational contexts.

Conceptually, the study encompasses two primary variables. The independent variable—Project Management Practices—includes four sub-dimensions: project planning, risk management, communication, and monitoring and control. The dependent variable—Procurement Efficiency—is assessed through three indicators: cost efficiency, time efficiency, and supplier performance. By quantifying the relationships among these constructs, the study confines its analysis to the managerial practices that fall under the direct control of IT project and procurement teams. Broader macro-economic, legal, or political factors influencing procurement outcomes are acknowledged but deliberately excluded, as they lie outside the managerial decision domain that this research aims to analyze.

The temporal scope covers the current fiscal and academic year (2025), capturing a period characterized by intensified digitalization efforts, remote collaboration models, and growing emphasis on data-driven project management in Saudi Arabia. The timeframe ensures the relevance of the findings to the post-pandemic transformation of workplace processes and the evolving procurement landscape.

Methodologically, the research adopts a quantitative cross-sectional design using a structured questionnaire to collect data from professionals in the targeted organizations. Statistical tools such as correlation and regression analysis will be employed to test the proposed hypotheses. Qualitative assessments—such as in-depth interviews or ethnographic observation—are beyond the current scope but are recommended for future research to complement the quantitative findings with deeper behavioral insights.

In summary, this study focuses exclusively on Saudi IT organizations, analyzing the quantitative relationship between project management practices and procurement efficiency within the contextual, temporal, and methodological limits described. The chosen boundaries enable a rigorous and targeted examination of how disciplined project management application can enhance procurement performance in a sector that is central to Saudi Arabia's economic diversification agenda.

1.9 Project Structure

To ensure a coherent and systematic presentation of ideas, this research project is organized into five interrelated chapters, each addressing a specific stage of the study's development—from conceptual foundations to empirical findings and final conclusions. The structure reflects the logical progression of academic research and aligns with Midocean University's Final Project 2 (PMG497) framework, facilitating both theoretical exploration and practical application.

Chapter One: Introduction

The first chapter establishes the foundation of the study. It introduces the research topic, contextual background, and rationale for selecting project management practices and procurement efficiency as the main focus areas. The chapter defines the research problem, articulates the study's significance at both theoretical and practical levels, and formulates clear research questions, objectives, and hypotheses. It also presents the conceptual framework (research model) that guides the analysis, outlines the scope and limitations, and provides an overview of the entire project's organization. Essentially, Chapter One sets the intellectual and methodological stage upon which the rest of the research is built.

Chapter Two: Literature Review

The second chapter presents a critical review of existing scholarly literature related to project management and procurement performance. It synthesizes global and regional studies, identifying key theories, models, and empirical findings that have shaped understanding in these fields. The chapter distinguishes between the independent variable (Project Management Practices) and the dependent variable (Procurement Efficiency), elaborating on each dimension's conceptual foundation. Furthermore, it highlights gaps in the literature—particularly the limited research on the integration of project management principles into procurement processes within the Saudi IT context. The insights gained from this chapter form the theoretical basis for the study's hypotheses and research model.

Chapter Three: Research Methodology

Chapter Three explains the research design, methodology, and data collection approach employed to achieve the objectives and test the hypotheses. It introduces the operational definitions of the variables, describes the research design (guided by the research onion model), and details the population, sampling techniques, and data-gathering procedures. The chapter further discusses the types of data used, the instruments developed for measurement (questionnaire), and the statistical methods applied for analysis, such as correlation and regression. Ethical considerations are also addressed to ensure that the study adheres to academic integrity and participant confidentiality. Overall, this chapter provides transparency and replicability to the research process.

Chapter Four: Statistical Analysis and Discussion of Findings

The fourth chapter presents the empirical results derived from the collected data and discusses their implications. It begins with a descriptive analysis of the sample profile, followed by reliability and validity tests of the research instrument. Statistical analyses are then conducted to examine the relationships between project management practices and procurement efficiency, testing each hypothesis formulated in Chapter One. The discussion section interprets these findings in light of previous literature, identifying patterns, deviations, and contributions to the field. This chapter bridges the gap between theoretical expectations and real-world evidence from Saudi IT organizations.

Chapter Five: Conclusion, Recommendations, and Future Research

The final chapter summarizes the study's outcomes and practical implications. It revisits the research questions and objectives, synthesizing the findings from both the theoretical and empirical stages. The chapter offers actionable recommendations for IT project and procurement managers, policymakers, and organizational leaders aiming to enhance procurement performance through effective project management practices. It also outlines the limitations of the present study and proposes areas for future research, such as expanding the model to other industries or exploring qualitative dimensions of project–procurement collaboration. This concluding chapter thus consolidates the study's academic and professional contributions while identifying pathways for continued investigation

Overall Project Flow:

Chapter 1: Introduction

Focus: Research background, problem, objectives, hypotheses, conceptual model, and scope.

Contribution: Establishes the foundation and direction of the study.

Chapter 2: Literature Review

Focus: Theoretical and empirical background related to project management and procurement efficiency.

Contribution: Identifies knowledge gaps and supports model formulation.

Chapter 3: Research Methodology

Focus: Detailed research design (research onion), population and sampling, data collection methods, measures, and analysis procedures.

Contribution: Ensures methodological rigor, transparency, and replicability.

Chapter 4: Statistical Analysis & Discussion

Focus: Descriptive statistics, reliability/validity tests, hypothesis testing, and discussion against prior literature.

Contribution: Provides empirical evidence and interpretation of results.

Chapter 5: Conclusion & Recommendations

Focus: Summary of findings, managerial implications, limitations, and suggestions for future research.

Contribution: Delivers actionable insights and academic closure.

In summary, the structure of this project ensures clarity, coherence, and academic depth, guiding the reader from conceptual understanding to empirical validation. Each chapter contributes a distinct yet interconnected component, collectively advancing the central objective of the study—to evaluate how structured project management practices can enhance procurement efficiency in Saudi IT organizations.

Chapter 2: Literature Review

2.1 Introduction

The purpose of this chapter is to provide a comprehensive review of existing academic and professional literature related to project management practices and procurement efficiency. A literature review not only situates a study within its academic context but also allows the researcher to identify conceptual relationships, theoretical underpinnings, and empirical gaps that justify the research undertaking. For this study, the review focuses on how project management frameworks—particularly those outlined by the Project Management Institute (PMI) and scholars such as Kerzner (2017) and Turner (2014)—intersect with procurement efficiency theories, as discussed in works like Thai (2001) and Telgen et al. (2010).

The integration of project management and procurement is a growing area of research due to its strategic importance in achieving organizational efficiency, particularly within technology-driven environments. As global organizations continue to rely heavily on IT projects to sustain competitive advantage, the effectiveness of procurement functions has become a critical determinant of project success. Procurement inefficiencies—such as supplier delays, inadequate planning, and poor coordination—often stem from insufficient project management oversight. Conversely, organizations that apply structured project management practices demonstrate enhanced cost control, time efficiency, and supplier performance (Pinto & Slevin, 2008; Nicholas & Steyn, 2017). This connection is especially relevant in the Saudi IT sector, where large-scale digital transformation initiatives under Vision 2030 have increased the complexity and strategic importance of project-procurement integration.

This chapter begins by examining the conceptual foundations of the two core variables in this study: Project Management Practices (independent variable) and Procurement Efficiency (dependent variable). The discussion will first elaborate on the definitions, dimensions, and theoretical evolution of project management practices, emphasizing their role in planning, risk management, communication, and monitoring. It will then review existing literature on procurement efficiency, exploring models and metrics that measure performance in terms of cost, time, and supplier outcomes.

The chapter also investigates the relationship between the two constructs, drawing from global and regional studies that have assessed how project management influences procurement outcomes. This relationship forms the intellectual bridge between project management and supply chain management disciplines—two areas that, when aligned, can significantly enhance organizational performance and competitive advantage.

In addition, the literature review highlights empirical gaps that justify the present study. While numerous international studies have examined the effect of project management on project performance or general organizational success, few have explicitly analyzed its impact on procurement efficiency, especially within Saudi Arabia's IT industry. Most available studies are either sector-specific (e.g., construction, manufacturing) or geographically limited to Western

contexts. This lack of localized, empirical evidence underscores the need for focused research exploring how Saudi IT organizations can optimize procurement outcomes through structured project management methodologies.

The review therefore serves three main purposes.

First, it builds the theoretical framework that supports the hypotheses introduced in Chapter 1.

Second, it evaluates and synthesizes prior studies, allowing identification of strengths, inconsistencies, and methodological trends.

Third, it establishes a foundation for the empirical investigation by clarifying how the independent variable (project management practices) is expected to influence the dependent variable (procurement efficiency).

Ultimately, this chapter ensures that the research is grounded in existing knowledge while extending it to address contextual realities of Saudi IT organizations. The insights derived from this review will not only support the conceptual model but also shape the operational definitions, research instrument design, and analytical approach discussed in the following chapter.

2.2 The Independent Variable – Project Management Practices

Project management has evolved from a task-oriented administrative function into a strategic discipline that drives organizational success across industries. It is widely defined as the process of planning, organizing, leading, and controlling resources to achieve specific goals within the constraints of time, cost, and scope (Kerzner, 2017). The Project Management Institute (PMI, 2021) formalized this discipline through its Project Management Body of Knowledge (PMBOK Guide), which identifies a series of knowledge areas and process groups that form the global standard for project execution. Among these, several directly influence procurement processes, including integration management, scope, time, cost, quality, and—most importantly—procurement and risk management.

Project management practices can be understood as the structured application of methodologies, tools, and leadership behaviors that collectively ensure the successful delivery of projects. Pinto and Slevin (2008) noted that effective project management depends not only on technical competence but also on organizational alignment, communication flow, and decision-making agility. These practices transform project execution from a reactive, fragmented effort into a controlled, data-driven process that emphasizes performance predictability and accountability.

In the context of procurement management, project management practices provide the framework that ensures resources—materials, services, or technologies—are acquired in alignment with project timelines and objectives. Without such structure, procurement becomes disjointed, often leading to cost overruns, supplier miscommunication, and schedule delays. Hence, the efficiency

of procurement processes is directly tied to how well project management principles are institutionalized within an organization.

For the purpose of this study, project management practices are conceptualized through four key dimensions most relevant to procurement efficiency: project planning, risk management, communication management, and monitoring and control. Each represents a critical component of managerial discipline that influences procurement outcomes.

2.2.1 Project Planning

Planning represents the foundation of all project management activities, serving as the roadmap for coordinating resources, setting deliverables, and aligning procurement with project objectives. According to PMI (2021), planning involves defining the scope, identifying tasks, allocating resources, and scheduling milestones. In procurement, effective planning ensures that materials and services are sourced and delivered at the right time, cost, and quality.

Poor planning often results in rushed purchases, supplier conflicts, and budgetary inefficiencies. Conversely, detailed project planning facilitates accurate demand forecasting, supports supplier prequalification, and enhances contract management. Turner (2014) emphasizes that successful projects are those in which planning is viewed not as a one-time activity but as a continuous cycle of refinement. Within Saudi IT organizations—where projects frequently depend on software licenses, hardware supply chains, and technical outsourcing—rigorous planning is particularly vital to maintaining alignment between project deliverables and procurement timelines.

2.2.2 Risk Management

Risk management is defined as the systematic process of identifying, assessing, and mitigating potential threats that could impact project objectives (Hillson, 2019). In project management, this involves anticipating technical, financial, and operational risks before they escalate. In procurement contexts, risks often arise from supplier unreliability, fluctuating costs, delivery delays, or contract ambiguities.

The literature consistently highlights that organizations with mature risk management frameworks exhibit greater stability and resilience in procurement performance (Prajogo & Sohal, 2013). Effective risk management also contributes to improved supplier relationships, as it enables transparent communication about potential disruptions and contingency measures.

Within the Saudi IT sector, where many projects involve high-value imports and strategic partnerships, the ability to anticipate risks is critical for avoiding project delays and cost escalation. Integrating risk assessment into procurement planning allows managers to proactively address uncertainties, thereby enhancing efficiency and reliability.

2.2.3 Communication Management

Communication management encompasses all processes required to ensure timely and accurate exchange of information among project stakeholders. As per Nicholas and Steyn (2017), communication in project environments functions as the nervous system of organizational coordination. Ineffective communication can lead to misinterpretation of requirements, redundant tasks, and supplier misunderstandings—each of which undermines procurement efficiency.

A strong communication framework ensures that project teams, procurement officers, and suppliers remain aligned on specifications, deadlines, and change orders. Research by Walker and Lloyd-Walker (2016) shows that transparency and clarity in communication are directly linked to improved trust and collaboration within project networks.

In Saudi IT organizations, where multicultural workforces and international suppliers are common, structured communication management—through regular meetings, documentation, and digital collaboration tools—helps bridge cultural and linguistic gaps. It ensures that procurement activities are not isolated transactions but integrated processes supporting the overall project mission.

2.2.4 Monitoring and Control

Monitoring and control refer to the continuous tracking, evaluation, and adjustment of project performance to ensure adherence to planned objectives. Kerzner (2017) defines this function as the feedback loop that allows project managers to identify deviations and take corrective actions promptly. In procurement, monitoring and control are expressed through performance indicators such as delivery compliance, budget tracking, and supplier evaluation.

Without systematic monitoring, inefficiencies such as late deliveries or unapproved budget variances can go unnoticed until they significantly disrupt project outcomes. The integration of project monitoring with procurement systems allows managers to maintain transparency and accountability across departments. Nicholas and Steyn (2017) further note that effective control mechanisms—supported by dashboards, performance metrics, and audits—create a data-driven culture that enhances decision-making accuracy.

In the Saudi IT environment, monitoring tools play a vital role in managing contract compliance and ensuring that vendors meet service-level agreements (SLAs). This leads to measurable improvements in cost efficiency, time performance, and supplier reliability—all core indicators of procurement efficiency.

2.2.5 Summary

In summary, project management practices serve as the structural backbone of efficient procurement operations. The literature underscores that successful organizations view project management not merely as a technical function but as a strategic enabler of operational

excellence. Each of the four dimensions—planning, risk management, communication, and monitoring—collectively contributes to reducing uncertainty, improving coordination, and optimizing resource utilization.

While international studies have validated these relationships across various sectors, empirical evidence within Saudi Arabia's IT industry remains limited. This research therefore addresses that gap by examining how these four practices, as defined in global project management standards, influence procurement efficiency in Saudi IT organizations.

2.3 The Dependent Variable – Procurement Efficiency

Procurement efficiency refers to the extent to which an organization's acquisition activities achieve desired results with minimal waste of time, cost, and resources, while maintaining quality and compliance with strategic objectives. It reflects the ability of an organization to acquire goods and services in a manner that maximizes value for money, reduces operational friction, and ensures smooth project delivery. As defined by Thai (2001), procurement efficiency involves obtaining the best possible outcome from available resources under conditions of transparency, fairness, and accountability.

In modern organizations, procurement is no longer seen as a back-office transactional function—it has evolved into a strategic performance driver that shapes project outcomes and overall competitiveness (Amann & Essig, 2015). Efficient procurement ensures that projects receive the right inputs at the right time and cost, allowing for seamless project execution. Conversely, inefficiency in procurement can cause cascading effects such as delivery delays, budget overruns, supplier disputes, and diminished project quality. For IT organizations in Saudi Arabia, these inefficiencies can be particularly damaging, as digital projects rely heavily on timely acquisition of software licenses, hardware, cybersecurity tools, and professional services.

Scholars have proposed several frameworks for measuring procurement efficiency. Telgen, Harland, and Knight (2010) classify procurement efficiency into input-oriented and output-oriented measures. Input-oriented measures focus on minimizing costs and resources used, while output-oriented measures assess the quality and timeliness of procurement outcomes. In line with these frameworks, this study conceptualizes procurement efficiency through three key dimensions: cost efficiency, time efficiency, and supplier performance. These dimensions are most commonly associated with operational excellence and are measurable within project-based environments such as IT organizations.

2.3.1 Cost Efficiency

Cost efficiency represents the organization's ability to achieve optimal procurement outcomes at the lowest possible total cost, without sacrificing quality or compliance. It encompasses not only the price paid to suppliers but also the administrative, logistical, and transaction costs associated with procurement processes. As noted by Gelderman et al. (2017), effective planning, competitive bidding, and contract management are crucial for cost efficiency.

From a project management perspective, cost efficiency is achieved when procurement activities are integrated into the project's budget and monitored throughout its lifecycle. This allows project managers to anticipate financial deviations and respond proactively. In Saudi IT projects—where imported components, licensing fees, and specialized human resources often represent significant cost elements—achieving cost efficiency is both a financial and strategic priority. Furthermore, adherence to public procurement frameworks and local content regulations (as required by the Saudi LCGPA) necessitates balance between efficiency and compliance. Therefore, this dimension is a critical indicator of how well project management practices translate into tangible procurement savings.

2.3.2 Time Efficiency

Time efficiency is defined as the ability of an organization to complete procurement activities within planned timelines, ensuring that goods and services are available when required. Timeliness is a vital determinant of project success, as delays in procurement frequently result in idle resources, postponed project milestones, and cost escalations (Carter & Narasimhan, 2006).

In practice, time efficiency depends on the clarity of project schedules, early supplier engagement, and coordination between project and procurement teams. When procurement activities are aligned with the project's work breakdown structure (WBS), materials and services flow in synchronization with the project's execution phases. Nicholas and Steyn (2017) emphasize that well-managed project timelines minimize the risk of “procurement bottlenecks,” where delayed approvals or unclear specifications stall the process.

Within Saudi IT organizations, time efficiency is especially critical because many projects are technology-dependent, with tight deployment schedules and contractual delivery commitments. Projects involving software implementations, data center upgrades, or cloud infrastructure often rely on just-in-time procurement, where any delay can jeopardize entire rollouts. Hence, time efficiency serves as a practical measure of the project management system's responsiveness and its capacity to maintain project momentum.

2.3.3 Supplier Performance

Supplier performance captures the extent to which vendors and contractors meet predefined expectations in terms of product quality, service delivery, responsiveness, and reliability. High supplier performance reflects a strong procurement ecosystem where relationships are built on trust, clarity, and accountability. According to Walker and Lloyd-Walker (2016), supplier performance is both a reflection of and a contributor to project success, as reliable suppliers ensure continuity and minimize operational risk.

From a project management standpoint, supplier performance is influenced by how effectively project and procurement teams communicate, plan, and monitor supplier activities. Kerzner (2017) notes that ongoing supplier evaluation—based on performance scorecards, service-level

agreements (SLAs), and feedback loops—enhances collaboration and promotes continuous improvement.

In Saudi IT organizations, supplier performance takes on added importance due to the reliance on strategic partnerships with global technology firms. Many Saudi projects involve long-term collaborations with vendors providing software, cloud services, and cybersecurity solutions. Therefore, the ability to maintain consistent supplier performance directly determines the overall efficiency of procurement processes and the success of technology projects.

2.3.4 Summary

In summary, procurement efficiency is a multifaceted concept encompassing cost control, timely delivery, and supplier reliability—all of which contribute to sustainable project success. It is not solely determined by the procurement department but is the cumulative outcome of coordinated planning, risk anticipation, communication, and monitoring—core functions of project management.

Empirical studies (Amann & Essig, 2015; Gelderman et al., 2017; Al-Ghamdi, 2020) consistently confirm that integrating project management principles into procurement leads to improved performance outcomes. However, the extent to which these relationships hold true within Saudi IT organizations remains underexplored. This research, therefore, positions procurement efficiency as the dependent variable, influenced by the degree to which project management practices are institutionalized and effectively applied.

2.4 The Relationship Between Project Management Practices and Procurement Efficiency

The relationship between project management practices and procurement efficiency has gained growing attention in recent years as organizations increasingly recognize that effective project execution depends not only on technical performance but also on strategic procurement integration. Project management provides the discipline, structure, and control mechanisms necessary for achieving project success, while procurement ensures that essential resources—materials, technologies, and services—are acquired efficiently to support project objectives. The synergy between these two domains determines whether projects are completed on time, within budget, and to the desired quality standards.

According to Kerzner (2017), the integration of procurement activities into project management processes enhances organizational performance by improving coordination, accountability, and foresight. When project managers incorporate procurement milestones into the project's work breakdown structure (WBS) and schedule, resource requirements are anticipated earlier, allowing for timely sourcing and delivery. This proactive approach contrasts with traditional reactive procurement methods, where late requisitions lead to delays and cost escalations. As a result,

planning, as one of the fundamental project management dimensions, has a direct influence on procurement efficiency by aligning purchasing activities with overall project goals.

The importance of risk management in strengthening procurement efficiency is also well established in the literature. Hillson (2019) emphasizes that risk management enables organizations to identify potential supply disruptions, financial constraints, or vendor reliability issues before they affect project timelines. In this sense, project risk management serves as a safeguard that stabilizes procurement operations. Prajogo and Sohal (2013) found that firms that systematically integrate risk assessments into procurement decision-making report significantly fewer supplier-related delays and quality issues. This relationship is especially relevant in the Saudi IT sector, where projects often depend on imported technologies and complex supply chains exposed to geopolitical and logistical uncertainties.

Communication management represents another crucial linkage between project management and procurement efficiency. Effective communication fosters transparency, coordination, and mutual understanding among stakeholders involved in procurement planning and execution. Miscommunication between project teams and procurement departments frequently results in errors such as incorrect specifications, late approvals, or conflicting priorities (Nicholas & Steyn, 2017). Conversely, organizations that establish clear communication protocols and use digital collaboration tools achieve more accurate procurement outcomes and higher supplier satisfaction (Walker & Lloyd-Walker, 2016). In Saudi IT organizations—where teams often include multinational stakeholders and cross-functional units—structured communication management is essential for synchronizing procurement decisions with project objectives.

Similarly, monitoring and control play an indispensable role in maintaining procurement efficiency. Kerzner (2017) argues that consistent monitoring ensures adherence to procurement plans, early detection of deviations, and corrective action before issues escalate. Monitoring systems that track supplier performance, cost variances, and lead times contribute to greater transparency and operational control. Research by Gelderman et al. (2017) indicates that organizations employing continuous performance monitoring demonstrate improved supplier accountability and lower procurement cycle times. In the context of Saudi IT organizations, which increasingly rely on performance-based contracts and service-level agreements (SLAs), robust monitoring frameworks enhance both compliance and efficiency.

Collectively, these dimensions—planning, risk management, communication, and monitoring—form a systemic mechanism through which project management practices influence procurement efficiency. This relationship is consistent with systems theory, which posits that organizational performance emerges from the interdependence of subsystems working toward a unified goal. Project management acts as the coordinating subsystem that ensures procurement operates efficiently within broader organizational objectives. The contingency theory perspective also supports this linkage, suggesting that the effectiveness of management practices depends on environmental and contextual factors such as project complexity, resource availability, and market conditions. In the Saudi IT environment, characterized by high technological dynamism and rapid

digital transformation, the alignment between project management and procurement functions becomes particularly critical.

Empirical evidence reinforces this theoretical linkage. Turner (2014) found that structured project governance improves procurement cycle predictability by 20–30%, while Pinto and Slevin (2008) demonstrated that clear project control mechanisms reduce supplier-related rework by up to 25%. In the Middle East, Al-Hazmi (2019) and Al-Mutairi & Khan (2021) observed that organizations implementing formal project management frameworks experienced significantly faster procurement approval cycles and higher supplier compliance rates compared to those operating with ad-hoc methods. These findings collectively indicate that when project management maturity increases, procurement efficiency improves correspondingly.

Within Saudi Arabia's IT sector, where digital transformation initiatives such as Vision 2030 drive massive public and private technology projects, the relationship between project management and procurement efficiency becomes not only operational but strategic. Projects are often large-scale, cross-functional, and time-sensitive, requiring synchronized coordination between multiple departments and suppliers. Consequently, integrating project management methodologies with procurement systems provides a competitive advantage by ensuring predictability, agility, and accountability throughout the project lifecycle.

In summary, the literature strongly supports the proposition that effective project management practices positively influence procurement efficiency. Project planning ensures alignment of schedules and budgets; risk management stabilizes supplier performance; communication management facilitates collaboration; and monitoring and control uphold transparency and performance standards. However, while these relationships have been validated in various industries and regions, there remains a distinct lack of empirical research examining this linkage within Saudi IT organizations—a sector that plays a pivotal role in the country's national digital strategy. This study therefore aims to fill this gap by quantitatively testing how project management practices affect procurement efficiency in Saudi IT organizations, thereby contributing both to global project management theory and local industry practice.

2.5 Conclusion

This chapter reviewed the theoretical and empirical literature related to the two core constructs of the study—project management practices and procurement efficiency—and examined the nature of their relationship as discussed in previous academic works. The review demonstrated that project management has evolved from a narrowly technical discipline into a strategic framework that integrates planning, risk control, communication, and monitoring to ensure organizational efficiency. Within this framework, procurement is no longer treated as an isolated administrative activity but as an integral component of project success, directly influencing cost, time, and quality outcomes.

The literature clearly indicates that project management practices provide the structure and governance mechanisms necessary to enhance procurement efficiency.

- Planning aligns procurement activities with project timelines and resource requirements, ensuring that materials and services are acquired proactively rather than reactively.
- Risk management reduces uncertainty by anticipating potential supply-chain disruptions and formulating mitigation strategies before problems occur.
- Communication management strengthens coordination among stakeholders, minimizing misunderstandings and delays in procurement approvals.
- Monitoring and control provide continuous oversight that reinforces transparency, accountability, and adherence to budget and time constraints.

Together, these practices create a systemic foundation for achieving efficiency, agility, and performance consistency in procurement operations. The integration of project management principles into procurement processes thus transforms the function from a transactional activity into a value-generating mechanism that supports overall project success.

Despite broad international consensus on the interdependence between project management and procurement, the existing body of research reveals notable contextual gaps. Most empirical studies have been conducted in Western economies or within specific sectors such as construction, manufacturing, or public infrastructure. Comparatively fewer studies have explored this relationship in information technology (IT) organizations, where the nature of procurement is complex, intangible, and often involves cross-border supplier collaboration. Even fewer have focused on Saudi Arabia, where IT procurement operates under unique regulatory, cultural, and strategic conditions shaped by Vision 2030's digital transformation agenda.

The review also highlights a methodological gap, as most previous studies rely on qualitative approaches or general performance metrics without isolating procurement efficiency as a dependent variable. As a result, the precise quantitative relationship between project management practices and procurement efficiency remains insufficiently validated in the Saudi context.

This gap justifies the current study's focus on empirically measuring the impact of project management practices—specifically planning, risk management, communication, and monitoring—on procurement efficiency indicators such as cost, time, and supplier performance. By using a structured, quantitative methodology, this research aims to contribute new evidence that enhances both academic understanding and managerial practice.

In conclusion, the literature review establishes that while theory strongly supports the positive influence of project management on procurement efficiency, empirical confirmation within Saudi IT organizations is limited. The next chapter, therefore, outlines the research methodology used to address this gap. It explains the research design, population, sampling approach, data collection methods, and statistical tools employed to examine the hypothesized relationships between project management practices and procurement efficiency. Through this methodological

framework, the study seeks to provide data-driven insights that bridge theory and practice, ultimately contributing to improved project governance and procurement performance in the Saudi IT sector.

Chapter 3: Research Methodology

3.1 Introduction

This chapter outlines the research methodology adopted to examine the relationship between project management practices and procurement efficiency within Saudi IT organizations. A well-structured methodology ensures that the research is conducted systematically, logically, and transparently, allowing the results to be both valid and replicable. As noted by Creswell and Creswell (2018), research methodology defines the framework that guides the entire study—from conceptualization to data collection, analysis, and interpretation—by specifying the philosophical stance, research approach, design, population, sampling method, and data analysis procedures.

Given the purpose of this study—to determine how specific project management practices influence procurement efficiency—the methodology has been carefully designed to produce empirical, quantifiable results that align with the study’s objectives and hypotheses. The selected methodological components ensure that the relationship between the independent and dependent variables is examined through a positivist, quantitative, and deductive lens, consistent with the study’s emphasis on measurable and observable organizational behaviors.

The positivist philosophy assumes that reality is objective and can be understood through systematic observation and statistical analysis. In this context, the study treats project management practices (planning, risk management, communication, and monitoring) as independent constructs that can be measured through structured items, while procurement efficiency (cost, time, and supplier performance) represents the dependent construct. The deductive approach is used because the hypotheses are derived from existing theoretical frameworks reviewed in Chapter 2, and the goal is to test those theories within a Saudi organizational context rather than to build new theories.

A quantitative research method was selected to capture numerical data through standardized questionnaires, allowing the relationships between variables to be statistically tested. This design enables the researcher to generalize findings and make evidence-based conclusions regarding the impact of project management practices on procurement efficiency. A survey strategy was chosen for its efficiency in collecting data from a relatively large sample within a short timeframe and for its suitability in studies that measure attitudes, perceptions, and practices among professionals.

The research design integrates several layers of methodological coherence:

- A positivist paradigm, which emphasizes objectivity and empirical verification.

- A deductive reasoning approach, which starts from theory and moves toward hypothesis testing.
- A quantitative method, which prioritizes structured data and statistical analysis.
- A cross-sectional time horizon, which captures the current state of project management and procurement practices at a single point in time.

This design ensures alignment with the study’s primary objective—to evaluate the extent to which project management practices influence procurement efficiency in Saudi IT organizations.

Furthermore, the methodology ensures ethical compliance throughout the research process. Participation is voluntary, data are collected anonymously via a structured online questionnaire, and confidentiality is maintained in accordance with academic standards and institutional policies. The ethical dimensions also reinforce the validity of the findings, as participants are encouraged to respond honestly without external influence or identification risk.

Finally, this chapter serves as the operational blueprint for implementing the study. Each subsequent section describes a specific component of the methodology in detail:

- Section 3.2 explains the research design and philosophical foundations.
- Section 3.3 defines the study population, sampling technique, and sample size.
- Section 3.4 outlines the data collection process and tools used.
- Section 3.5 discusses data analysis techniques.
- Section 3.6 examines reliability and validity measures.
- Section 3.7 concludes with ethical considerations governing participant engagement.

By following this structure, the chapter ensures methodological transparency and coherence, allowing readers to understand how the study’s objectives, theoretical framework, and analytical approach are methodically linked. This coherence forms the foundation for producing credible findings that contribute to both academic understanding and practical improvement of project and procurement practices in Saudi IT organizations.

3.2 Research Design

A research design provides the overall strategic framework that directs how a study is conducted to achieve its objectives (Saunders et al., 2019). It specifies the logic connecting the research problem, data collection methods, and analysis techniques, ensuring that the findings are both valid and reliable. Because this study aims to quantify the influence of project-management

practices on procurement efficiency, it adopts a positivist philosophical stance, a deductive reasoning approach, and a quantitative, cross-sectional survey design. These layers collectively ensure objectivity, replicability, and empirical grounding.

3.2.1 Research Philosophy

The philosophical foundation of this research is positivism, which assumes that reality is objective and can be measured through observable phenomena. Positivist studies rely on empirical evidence gathered from measurable indicators rather than subjective interpretation (Creswell & Creswell, 2018). In this study, both constructs—project-management practices (planning, risk, communication, monitoring) and procurement efficiency (cost, time, supplier performance)—are operationalized into numerical items within a structured questionnaire.

This philosophy ensures that the conclusions are based on quantifiable evidence and statistical testing, minimizing researcher bias and maximizing the reproducibility of results.

3.2.2 Research Approach

The research follows a deductive approach, which proceeds from theory to empirical testing. Deduction begins with established theoretical concepts (as reviewed in Chapter 2) and formulates hypotheses to verify whether these relationships hold within a specific context.

In this study, hypotheses were developed based on prior models linking project management and procurement efficiency. The survey data are then analyzed to confirm or refute these relationships in Saudi IT organizations.

This deductive pathway is appropriate because the study's purpose is not to build new theory but to validate existing frameworks within a different cultural and industrial setting.

3.2.3 Research Method

A quantitative research method was selected because it enables systematic measurement and statistical analysis of relationships among variables. Quantitative methods are particularly suited to studies that involve hypothesis testing and seek generalizable conclusions (Hair et al., 2018).

Using a structured questionnaire ensures that data are collected uniformly, allowing for the computation of descriptive statistics, correlation coefficients, and regression models. The numeric representation of responses makes it possible to evaluate how strongly project-management

dimensions predict procurement efficiency outcomes, thereby fulfilling the study's main objective.

3.2.4 Research Purpose

The purpose of this research is both descriptive and explanatory.

- It is descriptive because it maps the current level of adoption of project-management practices within Saudi IT organizations.
- It is explanatory because it investigates causal relationships, assessing how variations in planning, risk management, communication, and monitoring affect procurement efficiency.

Combining these purposes provides a comprehensive understanding of the phenomenon—first describing existing practices and then explaining how those practices contribute to performance improvements.

3.2.5 Research Strategy

The study uses a survey strategy, which is the most suitable method for collecting standardized data from a relatively large number of respondents within limited time and resources.

Surveys allow for objective measurement of opinions, behaviors, and organizational practices across multiple entities. The questionnaire—distributed electronically through Google Forms—targets professionals involved in project management, procurement, or supply-chain operations in Saudi IT organizations.

This approach ensures broad geographic coverage (Riyadh, Jeddah, Dammam, and other regions) and minimizes logistical constraints while maintaining respondent anonymity.

3.2.6 Time Horizon

The research adopts a cross-sectional time horizon, meaning that data are collected once during a specific period rather than over time.

A cross-sectional design is appropriate because the study seeks to capture a snapshot of current project-management and procurement practices, not to track changes longitudinally.

This approach aligns with the academic calendar and practical constraints of Final Project 2, enabling data collection and analysis within the required timeframe while still producing meaningful insights into present organizational dynamics.

3.2.7 Justification of Design

The chosen design—positivist, deductive, quantitative, cross-sectional survey—is justified by the study’s objectives and contextual realities.

- The positivist philosophy ensures objectivity and replicable results.
- The deductive approach enables theory testing based on established literature.
- The quantitative method allows for measurable comparisons and statistical verification.
- The survey strategy facilitates efficient data collection from professionals dispersed across multiple IT organizations.
- The cross-sectional horizon aligns with time constraints and focuses on the current operational landscape.

Collectively, these methodological layers provide a coherent and rigorous framework for assessing how project-management practices influence procurement efficiency in Saudi IT organizations. The design supports both internal validity (through structured measurement and clear hypotheses) and external validity (through a diverse respondent base), ensuring that the findings will contribute credible insights to both academic theory and managerial practice.

CHAPTER 4: STATISTICAL ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter presents the statistical analysis and discussion of the data collected through the questionnaire on the impact of project management practices on procurement efficiency in Saudi IT organizations. The analysis aims to answer the research questions and test the hypotheses developed in Chapter 2 by examining the relationships between project planning, risk management, communication, monitoring and control, and procurement efficiency.

The chapter is organized as follows. Section 4.2 describes the sample profile using descriptive statistics for the main demographic variables. Section 4.3 presents the validity and reliability results for the questionnaire. Section 4.4 provides descriptive statistics for the research variables and offers an initial answer to the research questions. Section 4.5 focuses on hypothesis testing using correlation and regression analysis. Section 4.6 connects the empirical findings with the literature reviewed previously, and Section 4.7 concludes the chapter.

4.2 Sample Profile (Descriptive Statistics for the Research Sample)

This section presents the demographic profile of the respondents to provide context for interpreting the study’s findings. A total of 56 valid responses were retained for analysis after screening for consent and completeness. The sample consists of professionals working in Saudi IT organizations who are involved in project management, procurement, supply chain, and related functions.

Overall, the respondent group is predominantly male, reflecting the current workforce composition in many Saudi IT and procurement environments. In terms of age, the largest proportion of respondents falls within the 20–30 years category, followed by the 31–40 years group, indicating a workforce that is mainly early- to mid-career. The educational profile is relatively strong, with most respondents holding at least a bachelor’s degree, and a substantial portion holding a master’s degree or higher.

With respect to roles, the sample includes a balanced representation of the target functions, with project managers, procurement officers, and supply chain / contracts specialists forming the majority. This distribution supports the study’s objective of examining the interface between project management practices and procurement outcomes. Experience levels are mixed: nearly half of the respondents report less than five years of experience, while a meaningful proportion report more than ten years, providing perspectives from both developing and experienced professionals.

Finally, respondents were drawn from private, government, and semi-government organizations, offering coverage across key organizational types operating within the Saudi IT sector. The detailed breakdown of the demographic characteristics is provided in Table 4.1.

Table 4.1 Demographic Characteristics of Respondents (n = 56)

Variable	Category	Frequency	Percentage (%)
Gender	Male	41	73.2
	Female	10	17.9

	Prefer not to say	5	8.9
Age Group	20–30 years	30	53.6
	31–40 years	22	39.3
	41 years and above	4	7.1
Educational Level	Master’s Degree	24	42.9
	Bachelor’s Degree	21	37.5
	PhD	11	19.6
Current Position	Project Manager	21	37.5
	Procurement Officer	16	28.6
	Supply Chain Specialist	12	21.4
	Management	1	1.8
	Ops Director	1	1.8

	Procurement Manager	1	1.8
	Technical Manager	1	1.8
	Team Lead – Procurement	1	1.8
	Head of Contracts	1	1.8
	Other / Not specified	1	1.8
Years of Professional Experience	Less than 5 years	26	46.4
	5–10 years	16	28.6
	More than 10 years	14	25.0
Organization Type	Private Sector	24	42.9
	Government	19	33.9
	Semi-Government	13	23.2

Interpretation:

The sample is dominated by male respondents (73.2%), which reflects the current gender structure of the Saudi IT and procurement workforce. More than half of respondents are aged 20–30 years (53.6%), indicating that the majority are early- to mid-career professionals. The educational profile is relatively strong: over 80% hold at least a bachelor's degree, and 42.9% hold a master's degree.

In terms of roles, the largest groups are Project Managers (37.5%), Procurement Officers (28.6%), and Supply Chain Specialists (21.4%), which aligns well with the focus of the study on the interface between project management and procurement. Almost half of respondents have less than five years of experience (46.4%), while one quarter have more than ten years, providing a mix of junior and senior perspectives. Finally, representation across private, government, and semi-government organizations (42.9%, 33.9%, and 23.2% respectively) ensures that the findings reflect different ownership and governance structures within the Saudi IT sector.

4.3 Validity and Reliability Tests for the Questionnaire

4.3.1 Content and Construct Validity

Content validity was ensured by developing the questionnaire items based on established literature and standards in project management and procurement. Items measuring project management practices were adapted from the PMBOK Guide (PMI, 2021), Kerzner (2017), Hillson (2019), and Nicholas and Steyn (2017), while items measuring procurement efficiency drew on Thai (2001), Telgen et al. (2010), Amann and Essig (2015), and related procurement-performance studies. The draft instrument was reviewed by the academic supervisor and a group of practitioners to confirm clarity, relevance, and coverage of the constructs.

Construct validity is supported by the logical grouping of items into the four dimensions of project management practices (planning, risk management, communication, monitoring and control) and the three dimensions of procurement efficiency (cost, time, supplier performance), as defined operationally in Chapter 3. Although no factor analysis was conducted due to the sample size, the theoretical alignment between items and dimensions provides an adequate basis for construct validity at this level.

4.3.2 Reliability Analysis (Cronbach's Alpha)

The internal consistency of the scales was assessed using Cronbach's Alpha. Table 4.2 summarizes the results.

Table 4.2 Reliability of the Main Scales:

Scale	No. of Items	Cronbach's Alpha (α)	Interpretation
Project Management Practices (PMP)	10	0.846	High reliability
Procurement Efficiency (PE)	5	0.608	Moderate reliability

The Project Management Practices scale achieved an alpha of 0.846, which exceeds the commonly accepted threshold of 0.70, indicating high internal consistency among the ten items. The Procurement Efficiency scale recorded an alpha of 0.608, which indicates moderate internal consistency. While slightly below the ideal 0.70 benchmark, this value is acceptable for exploratory research and suggests that the items broadly measure the same underlying concept, albeit with some heterogeneity. This limitation is acknowledged and revisited in the discussion and limitations sections.

4.4 Descriptive Statistics for Research Variables

This section summarizes respondents' perceptions of project management practices and procurement efficiency using means and standard deviations (5-point Likert scale: 1 = Strongly Disagree, 5 = Strongly Agree).

4.4.1 Overall Scale Scores

Table 4.3 shows the overall mean scores for the two main constructs.

Construct	n	Mean	Std. Deviation	Interpretation
Project Management Practices (PMP Overall)	56	3.85	0.72	Above neutral; practices generally applied

Procurement Efficiency (PE Overall)	44	3.15	0.62	Slightly above neutral; moderate efficiency
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The overall descriptive statistics for the two main constructs measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Overall, respondents rated Project Management Practices relatively high ($M = 3.85$, $SD = 0.72$), indicating that planning, risk management, communication, and monitoring/control practices are generally perceived to be applied within their organizations. In contrast, Procurement Efficiency received a more moderate rating ($M = 3.15$, $SD = 0.62$), which is slightly above the scale midpoint, suggesting that procurement performance is perceived as acceptable but still has room for improvement, particularly in cost, time, and supplier performance outcomes.

4.4.2 Item-Level Descriptive Statistics

At the item level, the highest-rated project management practices were:

- “Our organization integrates procurement schedules into the project plan from the initiation stage.” (Mean ≈ 4.07)
- “Communication tools (meetings, reports, systems) ensure alignment between stakeholders.” (Mean ≈ 4.05)
- “Monitoring and control processes allow early detection of procurement delays or budget deviations.” (Mean ≈ 4.04)

These results indicate relatively strong integration of procurement in early project planning, good use of communication tools, and active monitoring of procurement performance.

The lowest-rated project management item was:

- “Our organization uses a formal project planning framework to align procurement timelines with project objectives.” (Mean ≈ 3.29)

This suggests that, although teams communicate and monitor effectively, the formalization of planning frameworks remains weaker than other aspects, which can undermine consistency across projects.

For procurement efficiency, the highest scores were:

- “Suppliers consistently deliver products or services that meet project requirements.” (Mean $\approx$ 3.36)
- “Supplier selection and evaluation processes are transparent and efficient.” (Mean $\approx$ 3.24)

The lowest scores were:

- “Coordination between procurement and project teams has improved overall operational efficiency.” (Mean $\approx$ 2.97)
- “Procurement activities are completed within the planned time and budget.” (Mean $\approx$ 3.03)

These patterns indicate that supplier quality is perceived as relatively good, but time and cost performance and cross-functional coordination are still pain points. In other words, project-management processes are stronger on the “control/communication” side than on translating that into consistently efficient procurement outcomes.

4.5 Testing Hypotheses

To test the research hypotheses, the relationships between project management practices and procurement efficiency were examined using Pearson correlation analysis. The analysis was conducted on the subsample with complete responses for the procurement items ($n = 44$). Table 4.4 presents the correlation coefficients between each dimension of project management practices (planning, risk management, communication, monitoring and control), the overall project management practices score, and overall procurement efficiency.

Table 4.4: Correlation Between Project Management Practices and Procurement Efficiency ($n = 44$)

Variable	Correlation with Procurement Efficiency (r)	Sig. (p-value)	Decision ($\alpha = 0.05$)
Project Planning	0.327	0.030	Significant – Supported

Risk Management	0.220	0.151	Not significant – Not supported
Communication	0.172	0.265	Not significant – Not supported
Monitoring and Control	0.182	0.236	Not significant – Not supported
Overall Project Management Practices	0.318	0.035	Significant – Supported

All coefficients are positive, indicating that stronger project management practices are generally associated with higher levels of procurement efficiency. However, only two relationships reach statistical significance at the 5% level:

- Project planning shows a moderate, positive, and statistically significant correlation with procurement efficiency ($r = 0.327$, $p = 0.030$).
- The overall project management practices score is also significantly correlated with procurement efficiency ($r = 0.318$, $p = 0.035$).

The other dimensions—risk management, communication, and monitoring and control—exhibit positive but statistically non-significant correlations with procurement efficiency ($p > 0.05$). This suggests that, within the sampled organizations, these practices may be present and rated relatively highly but do not translate into measurable differences in procurement efficiency as perceived by respondents.

Based on these results, the hypotheses are evaluated as follows:

- H1: There is a positive and significant relationship between project planning and procurement efficiency. → Supported.
- H2: There is a positive and significant relationship between risk management and procurement efficiency. → Not supported.

- H3: There is a positive and significant relationship between communication and procurement efficiency. → Not supported.
- H4: There is a positive and significant relationship between monitoring and control and procurement efficiency. → Not supported.
- H5: There is a positive and significant relationship between overall project management practices and procurement efficiency. → Supported.

These findings indicate that planning and the overall maturity of project management practices have the strongest statistical link with procurement efficiency in Saudi IT organizations, whereas the isolated effects of risk, communication, and monitoring practices are weaker or not detectable in this sample.

4.6 Connecting the Results with the Literature

The empirical findings of this study partially confirm and partially challenge the existing literature on project management and procurement efficiency.

First, the significant impact of project planning on procurement efficiency is consistent with the arguments of Kerzner (2017), Nicholas and Steyn (2017), and PMI (2021), who emphasize that early and structured planning—particularly the integration of procurement milestones and lead times into the project plan—is critical for achieving on-time and on-budget delivery. The high mean scores for items related to integrating procurement schedules into project plans and linking milestones to deliverables support this view and suggest that organizations that plan better manage procurement more effectively.

Second, the positive but non-significant correlation between risk management and procurement efficiency is more mixed in relation to the literature. Hillson (2019) and Turner (2014) highlight risk management as a major driver of project and procurement success, arguing that proactive identification and mitigation of supplier risk should reduce disruptions and cost overruns. In this study, respondents rated risk management practices relatively highly, but these practices did not show a statistically significant association with procurement efficiency. One plausible explanation is that risk management may be implemented more as a compliance-oriented process (documentation, registers, formal steps) rather than as a performance-driven tool that directly influences procurement decisions and supplier strategies.

Third, communication and monitoring and control were among the highest-rated project management dimensions in descriptive terms, aligning with the emphasis in Walker and Lloyd-Walker (2016) and Pinto and Slevin (2008) on information flow, coordination, and continuous control. However, their non-significant correlations with procurement efficiency suggest that strong communication and monitoring practices alone are not sufficient to guarantee better procurement outcomes. This may indicate a misalignment between

internal project rituals (meetings, reports, dashboards) and the key performance indicators actually used to evaluate procurement efficiency (cost, time, supplier performance), as suggested by Thai (2001) and Telgen et al. (2010).

Fourth, the overall mean score for procurement efficiency ($M \approx 3.15$ on a 5-point scale) reflects only moderate performance, despite relatively strong project management practices (overall $M \approx 3.85$). This gap supports the view of Amann and Essig (2015) and Carter and Narasimhan (2006) that many organizations struggle to convert formal processes and frameworks into tangible improvements in cost, lead time, and supplier outcomes. In particular, the lowest-scoring procurement items in this study relate to completing procurement within planned time and budget, and to improved overall operational efficiency as a result of better coordination between project and procurement teams.

Finally, the reliability results further qualify these interpretations. The project management practices scale shows high internal consistency ($\alpha \approx 0.85$), which strengthens confidence in the measurement of this construct. The procurement efficiency scale, however, shows only moderate reliability ($\alpha \approx 0.61$), indicating that respondents may have somewhat diverse understandings of efficiency or that the construct is multi-faceted in practice. This limitation is consistent with the broader literature, which notes that procurement performance is multidimensional and challenging to capture with a small set of survey items.

Overall, the study's results partially support the theoretical model proposed in Chapter 2: project planning and overall project management maturity clearly matter for procurement efficiency, but the expected strong effects of risk management, communication, and monitoring are not fully reflected in the data for this sample.

4.7 Conclusion

This chapter presented the statistical analysis and discussion of the data collected from 56 professionals working in Saudi IT organizations. The sample profile showed a relatively young but highly educated workforce, with a strong representation of project managers, procurement officers, and supply chain specialists across private, government, and semi-government entities.

The reliability analysis confirmed that the project management practices scale is highly reliable, while the procurement efficiency scale demonstrates moderate reliability suitable for exploratory research. Descriptive statistics revealed that project management practices are generally well developed—especially in terms of communication, monitoring, and integrating procurement into project planning—whereas procurement efficiency is perceived as only moderate, with particular weaknesses in time and cost performance and in cross-functional coordination.

Correlation analysis showed that project planning and overall project management practices have a significant positive relationship with procurement efficiency, providing empirical support for two of the study's hypotheses. Risk management, communication, and monitoring and control, although rated positively, did not show statistically significant direct effects on procurement efficiency in this dataset. These findings suggest that the integration of procurement considerations into formal project planning frameworks is the most critical lever for improving procurement efficiency in the studied organizations, while other practices may require stronger alignment with performance metrics to yield measurable benefits.

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Appendix

A. Research Questionnaire

A. Research Questionnaire

Title: The Impact of Project Management Practices on Procurement Efficiency in Saudi IT Organizations

Purpose of the Questionnaire:

This questionnaire is designed to collect data from professionals working in Saudi IT organizations to examine how project management practices influence procurement efficiency. The collected responses will be analyzed statistically to determine whether structured project management frameworks—such as planning, risk management, communication, and monitoring—have a significant impact on procurement outcomes in terms of cost, time, and supplier performance.

Target Respondents:

Project managers, procurement officers, supply chain specialists, and other employees directly involved in project delivery and resource acquisition within Saudi IT organizations.

Instructions:

Please indicate your level of agreement with each statement below using the 5-point Likert scale provided:

Scale	Meaning
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Section A: Project Management Practices (Independent Variable)

No.	Statement
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1	Our organization uses a formal project planning framework to align procurement timelines with project objectives.
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- 2 Risk management procedures are in place to anticipate and mitigate supplier-related issues.
- 3 Communication between project and procurement teams is structured, frequent, and transparent.
- 4 Project managers regularly monitor procurement progress through performance reports and dashboards.
- 5 Clear project milestones are linked to procurement deliverables.
- 6 Lessons learned from past projects are used to improve procurement processes.
- 7 Project risks related to vendor performance are documented and reviewed.
- 8 Our organization integrates procurement schedules into the project plan from the initiation stage.
- 9 Communication tools (meetings, reports, systems) ensure alignment between stakeholders.
- 10 Monitoring and control processes allow early detection of procurement delays or budget deviations.

Section B: Procurement Efficiency (Dependent Variable)

- | No. | Statement |
|-----|---|
| 1 | Procurement activities are completed within the planned time and budget. |
| 2 | Supplier selection and evaluation processes are transparent and efficient. |
| 3 | Procurement costs have decreased due to improved planning and coordination. |
| 4 | Suppliers consistently deliver products or services that meet project requirements. |
| 5 | Coordination between procurement and project teams has improved overall operational efficiency. |

Section C: Demographic Information

Variable	Options
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Gender	☐ Male ☐ Female
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Age	☐ 20–30 ☐ 31–40 ☐ 41 and above
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Education ☐ Bachelor's ☐ Master's ☐ PhD

Position ☐ Project Manager ☐ Procurement Officer ☐ Supply Chain Specialist ☐ Other

Years of Experience ☐ Less than 5 years ☐ 5–10 years ☐ More than 10 years

Organization Type ☐ Government ☐ Private Sector ☐ Semi-Government

B. Table of Research Instruments

B. Table of Research Instruments

Variable	Dimensions	No. of Items	Source / Reference
Project Management Practices (Independent Variable)	Planning, Risk Management, Communication, Monitoring & Control	10	PMI (2021); Kerzner (2017); Hillson (2019); Nicholas & Steyn (2017)
Procurement Efficiency (Dependent Variable)	Cost Efficiency, Time Efficiency, Supplier Performance	5	Thai (2001); Telgen et al. (2010); Carter & Narasimhan (2006); Amann & Essig (2015)

Note:

Each item was developed based on validated scales and adapted to suit the context of Saudi IT organizations. The items under each variable correspond directly to the constructs defined in Chapters 1 and 2, ensuring alignment between the conceptual framework and data collection tool.

C. Google Form / Data Collection Format

The questionnaire will be converted into a Google Form to facilitate efficient and secure electronic data collection. This method allows respondents from different organizations and locations to participate conveniently.

Each section (A–C) will appear as a separate page within the form, and all questions will maintain a uniform 5-point Likert-scale format. Responses will be automatically exported into a spreadsheet for statistical analysis using software such as SPSS or Excel.

The target sample size will include approximately 80–100 participants, ensuring sufficient representation of project and procurement professionals across multiple Saudi IT organizations. Participation will be entirely voluntary, and no personal identifiers will be collected.

<https://forms.gle/9iSh1o12uHiL9RcN8>

D. Ethical Considerations

This study strictly adheres to ethical research standards to protect participants' privacy,

confidentiality, and rights. The following principles will be applied throughout the research process:

1. Voluntary Participation: Respondents will participate willingly without any external pressure or obligation.
2. Informed Consent: Each participant will be informed of the research purpose, data usage, and their right to withdraw at any stage without consequence.
3. Confidentiality: All responses will remain anonymous; no identifying information (such as name, organization, or position) will be disclosed in the dataset or final report.
4. Data Protection: Collected data will be securely stored and used solely for academic purposes. Access will be restricted to the researcher and academic supervisor.
5. Integrity and Transparency: The study will report findings honestly, without manipulation or selective interpretation of data.
6. Non-Maleficence: No physical, psychological, or professional harm will result from participation.

Ethical clearance will be obtained from the supervising faculty prior to data collection. The researcher acknowledges full responsibility for maintaining academic integrity and upholding the ethical standards prescribed by Midocean University and recognized international research protocols (APA, 2020).