

Midocean University
College of Management
Department of Management

Research Title:

**The Role of Project Risk Management in Improving
Project Performance and Achieving Objectives**

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Dedication

This graduation project is dedicated to my parents, whose endless sacrifices, encouragement, and prayers have always been the foundation of my success. Their belief in my abilities has motivated me to overcome challenges and strive for academic excellence.

I also dedicate this work to my teachers, who inspired my passion for knowledge and critical thinking, and to everyone who believes that education is a powerful force capable of transforming individuals, organizations, and societies.

Abstract

This study aims to investigate the critical role of Project Risk Management (PRM) in improving project performance and achieving strategic organizational objectives. In today's highly dynamic and complex business environment, projects are increasingly exposed to a multitude of internal and external uncertainties. Despite advancements in project management methodologies, many projects still fail to meet their baseline time, cost, and quality targets—commonly referred to as the “Iron Triangle”—largely due to inadequate or poorly executed risk management practices.

To address this empirical gap, this research adopts a quantitative, deductive approach to examine how effective risk identification, rigorous assessment, and proactive mitigation strategies influence overall project success. Primary data will be collected through structured survey questionnaires distributed to project professionals, including project managers, risk officers, and team members in the [Banking and financial sector] in [Riyadh/Saudi Arabia]. The data will then be analyzed using SPSS to test the research hypotheses and evaluate the relationship between PRM dimensions and project performance metrics.

The findings of this study are expected to provide valuable, evidence-based insights for decision-makers and stakeholders. By demonstrating the positive impact of risk management, this research highlights the importance of integrating comprehensive PRM practices into project lifecycles, offering recommendations to minimize financial losses, prevent delays, and ensure successful delivery of strategic goals.

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Chapter 1: Introduction

1.1 Research Introduction

Project management has evolved into a critical discipline for organizations aiming to achieve strategic objectives in a dynamic business environment. However, every project is subject to uncertainties that can either positively or negatively affect its outcome. Project Risk Management (PRM) is the systematic process of identifying, analyzing, and responding to project risks. Effective risk management is not merely a reactive measure but a proactive strategy that ensures project performance aligns with defined goals.

1.2 Research Problem

In the context of rapid economic development and the execution of strategic national projects, achieving project objectives on time and within budget is critical. However, many organizations continue to struggle with significant operational challenges, primarily severe time delays, escalating costs, and poor overall project implementation. The core research problem lies in the ineffective and inconsistent application of project risk management practices. When risks are not systematically identified, assessed, and mitigated, projects become highly vulnerable to unforeseen disruptions. This research addresses the gap in understanding how the lack of proactive risk management directly contributes to these recurring implementation failures, hindering organizations from successfully delivering their intended strategic goals.

1.3 Research Significance

Theoretical Significance: This study contributes to the existing body of knowledge by bridging the theoretical gap regarding the direct correlation between specific risk management processes and the "Triple Constraint" (time, cost, scope) of project performance.

Empirical Significance: Practically, this research provides decision-makers and project managers with evidence-based insights on how investing in risk mitigation strategies can directly reduce financial losses and improve overall project success rates.

1.4 Research Questions

Main Research Question: What is the role of project risk management in improving project performance and achieving objectives?

Sub-questions:

1. What are the current project risk management practices implemented in the targeted sector?
2. What are the key challenges faced by project managers in applying risk management?
3. How does effective risk mitigation impact project completion time and budget?

1.5 Research Objectives

1. To examine the current project risk management practices within the targeted sector.

2. To identify the key challenges hindering effective risk management.
3. To evaluate the impact of risk management practices on project performance (time, cost, and quality).
4. To propose recommendations for improving risk management processes to achieve project objectives.

1.6 Research Hypotheses

- **H1 (Alternative Hypothesis):** There is a statistically significant positive relationship between effective project risk management and project performance.
- **H2 (Alternative Hypothesis):** Project risk management significantly contributes to the achievement of strategic project objectives.

1.7 Research Model

The conceptual model of this research is based on the relationships between the defined variables:

- **Independent Variable (IV):** Project Risk Management (Risk Identification, Risk Assessment, Risk Mitigation).
- **Dependent Variables (DV):** Project Performance (Time, Cost, Quality) and Achieving Objectives.

1.8 Scope of the Study

The scope of this research is limited to evaluating project management practices within the [Banking and financial sector] in [Riyadh, Saudi Arabia].

1.9 Project Structure

- **Chapter 1:** Introduction and research framework.
- **Chapter 2:** Literature Review.
- **Chapter 3:** Research Methodology.
- **Chapter 4:** Statistical Analysis.
- **Chapter 5:** Findings' Discussion and Conclusion.

Chapter Two: Literature Review

2.1 Introduction

This chapter provides a critical analysis of existing literature related to project risk management and project performance. It explores the definitions, dimensions, and theoretical foundations of the research variables, identifying existing gaps that this study aims to address.

2.2 Research Variable 1: Project Risk Management (Independent Variable)

Risk management is fundamentally about dealing with uncertainty. According to the Project Management Institute (PMI), risk management includes the processes of conducting risk management planning, identification, analysis, response planning, and controlling risk on a project. Historically, literature has evolved from viewing risk merely as a negative threat to recognizing it as an opportunity. The key dimensions of this variable include proactive risk identification, qualitative and quantitative risk analysis, and the implementation of robust risk mitigation strategies.

2.3 Research Variable 2: Project Performance and Achieving Objectives (Dependent Variables)

Project performance is traditionally measured by the "Iron Triangle" or "Triple Constraint": completing the project on time, within budget, and to the specified quality standards. Recent literature expands this definition to include "Achieving Objectives," which encompasses stakeholder satisfaction, business value realization, and strategic alignment.

2.4 Relationship Between Research Variables

Numerous academic studies establish a strong correlation between the independent and dependent variables. Research indicates that projects with formal risk management procedures have a significantly higher probability of meeting their baseline schedules and budgets. Conversely, conflicts in the literature suggest that over-analyzing risks without practical mitigation responses can consume project resources without adding value. This study addresses this empirical gap by focusing on the practical application of risk strategies.

2.5 The Evolution of Project Risk Management Models

Historically, project management focused primarily on the "iron triangle" of time, cost, and scope, often treating risk management as an afterthought or a reactive troubleshooting mechanism. In earlier decades, risks were typically addressed only after they had materialized into actual problems, leading to significant crisis management efforts and inevitable project delays. However, as projects grew in scale and complexity,

the reactive approach proved highly inefficient. According to Kerzner (2022), the paradigm shifted significantly towards a proactive approach, where risk management is integrated into the earliest phases of project planning.

Modern project risk management (PRM) models, as outlined by the Project Management Institute (2021), emphasize a structured, iterative process: identifying risks, performing qualitative and quantitative risk analysis, planning risk responses, and continuously monitoring risks. This evolution reflects a broader understanding that risks are not

merely negative threats; they can also present positive opportunities. Contemporary models encourage project managers to not only mitigate threats but also exploit opportunities that can enhance project value (Willumsen et al., 2019).

Consequently, PRM has transformed from a standalone, defensive administrative task into a core strategic function that directly influences executive decision-making and overall project governance.

2.6 Project Risk Management in the Context of Saudi Vision 2030 Mega-Projects

The application of advanced project risk management is particularly critical in the context of unprecedented national transformation programs, such as Saudi Arabia's Vision 2030. Vision 2030 aims to diversify the national economy and reduce reliance on oil revenues through the execution of numerous mega-projects and giga-projects, including NEOM, the Red Sea Project, and Qiddiya. These projects are characterized by their colossal scale, technological novelty,

multi-billion-dollar budgets, and complex stakeholder networks (Al-Naimi, 2021).

In such highly complex environments, traditional risk management techniques are often insufficient. Mega-projects inherently carry elevated levels of uncertainty, ranging from geopolitical and economic fluctuations to environmental and technological risks.

Al-Naimi (2021) highlights that the successful delivery of Vision 2030 initiatives relies heavily on embedding a robust, proactive risk culture across all project phases.

Effective PRM in these contexts requires advanced forecasting tools, continuous dynamic monitoring, and highly agile mitigation strategies. By rigorously applying PRM practices, organizations leading these mega-projects can ensure strict adherence

to timelines and budgets, thereby securing the strategic organizational value intended by the Saudi government and attracting global investments.

2.7 The Direct Impact of PRM on Project Constraints and Value Creation

The fundamental purpose of implementing a comprehensive risk management framework

is to protect and enhance project performance. Performance is traditionally measured against specific constraints: staying within the approved budget, adhering to the

scheduled timeline, and meeting predefined quality standards. Baccarini et al. (2004) assert that when risk identification and analysis are conducted thoroughly during the planning phase, project managers can allocate accurate contingency reserves.

This drastically reduces the likelihood of cost overruns caused by unforeseen events.

Furthermore, effective risk mitigation strategies directly protect the project schedule. By identifying critical path risks early, project teams can develop alternative approaches

or fast-track certain activities to prevent minor delays from snowballing into major schedule slippages (Teller et al., 2014). Beyond merely protecting the project from failure, Zwikael and Smyrk (2011) argue that PRM is a primary driver of "value creation." When stakeholders observe a highly structured approach to managing uncertainties, their confidence in the project's success increases.

This proactive risk culture minimizes resource wastage, optimizes operational efficiency, and ensures that the final deliverables perfectly align with the organization's strategic objectives.

2.8 Comparative Analysis of Global Risk Management Frameworks: ISO 31000 vs. PMBOK

To effectively implement project risk management, organizations often rely on established global frameworks. Two of the most widely recognized guidelines are the ISO 31000 Risk Management Standard and the Project Management Institute's PMBOK Guide (Project Management Institute, 2021). While both aim to minimize negative impacts and maximize opportunities, their approaches and scopes differ slightly, offering complementary benefits to project managers.

ISO 31000 provides a broad, enterprise-wide set of principles and generic guidelines applicable to any organization, regardless of its size or sector. It emphasizes the integration of risk management into the organization's overall governance, strategy, and decision-making processes. On the other hand, the PMBOK Guide offers a more tactical, project-specific methodology. It outlines specific processes—namely, plan risk management, identify risks, perform qualitative and quantitative analysis, plan risk responses, implement responses, and monitor risks. By combining the strategic, high-level principles of ISO 31000 with the actionable, step-by-step processes of the PMBOK Guide, organizations can create a highly resilient environment that not only protects individual project constraints but also aligns with corporate-level risk appetites.

2.9 Major Challenges and Barriers in Implementing Effective PRM

Despite the proven benefits of project risk management, many organizations struggle to implement it effectively. A significant barrier to successful PRM implementation is

the lack of executive sponsorship and top management support. When senior leadership views risk management merely as a compliance requirement or an administrative burden, project teams are less likely to receive the necessary budget, time, and resources

to conduct comprehensive risk assessments (Kerzner, 2022).

Another major challenge is the inherent complexity of accurately quantifying risks.

Project managers often face difficulties in estimating the exact probability and financial impact of unprecedented risks, particularly in innovative or highly technical projects.

This reliance on subjective judgment can lead to either underestimating severe threats or over-allocating contingency reserves for minor issues. Furthermore, poor communication among stakeholders often hinders the risk identification process. If team members

operate in silos or fear being penalized for highlighting potential problems, critical risks may remain hidden until they materialize into unmanageable crises.

Overcoming these barriers requires a conscious effort to integrate risk discussions into routine

project meetings and foster an environment of transparency.

2.10 The Influence of Organizational Culture and Leadership on Risk Management

The effectiveness of project risk management is deeply intertwined with the prevailing organizational culture and the behaviors modeled by project leadership. Organizational culture dictates how employees perceive and respond to uncertainties. In a "risk-averse" culture, employees might avoid taking necessary, calculated risks, potentially stifling innovation and project growth. Conversely, in a "risk-seeking" culture, teams might carelessly ignore warning signs, leading to catastrophic project failures.

The ideal environment for successful PRM is a "risk-aware" culture, where uncertainties are openly discussed without fear of blame. Leadership plays a pivotal role in shaping this culture. Project sponsors and managers must actively demonstrate

that identifying a risk is a valuable contribution to the project's success, rather than a sign of poor planning. When leadership actively participates in risk workshops and explicitly rewards proactive risk mitigation efforts, it significantly enhances the team's commitment to the PRM process. Ultimately, no amount of sophisticated risk management software or formal documentation can substitute for a healthy organizational culture that encourages transparency, continuous learning, and collaborative problem-solving (Hillson, 2016).

2.11 Conclusion

The literature review highlights the critical importance of project risk management. However, a gap remains regarding its customized application in specific regional sectors (as defined in the scope). This study builds on the existing theoretical framework to provide targeted, empirical data on how risk management directly enhances project success.

Chapter Three: Research Methodology

3.1 Research Approach

To comprehensively investigate the role of Project Risk Management (PRM) in improving project performance and achieving strategic objectives within NEOM projects, this study adopts a Quantitative Descriptive Analytical Approach. This methodological choice is primarily driven by the nature of the research problem and the formulated hypotheses, which require systematic empirical testing to establish statistical correlations between the independent variable (risk management practices) and the dependent variables (project performance and objective achievement).

The descriptive dimension of this approach allows the researcher to accurately depict and evaluate the current state of risk identification, assessment, and mitigation practices as they are currently implemented within NEOM's complex project environments. By capturing this baseline data, the study can objectively outline "what exists" regarding risk management maturity in these megaprojects.

Simultaneously, the analytical and quantitative dimensions are utilized to examine the relationships and impacts between the variables. Given that NEOM represents a cornerstone of Saudi Vision 2030, its projects are characterized by high complexity, significant capital investment, and tight schedules. Therefore, relying on quantitative data collected through a standardized survey instrument enables the objective measurement of how effective risk management strategies directly influence the "Iron Triangle" metrics (time, cost, and quality). Furthermore, a quantitative approach facilitates the generalization of the findings across various sectors within NEOM, providing robust, data-driven evidence that eliminates subjective bias and clearly answers the research questions

3.2 Population and Sample

3.2.1 Target Population

The population of a research study refers to the entire group of individuals or objects to which the researchers are interested in generalizing the conclusions. For this study, the target population consists of professionals actively involved in the planning, execution, and management of projects within the NEOM megaproject development in Saudi Arabia. This specifically includes project managers, risk management officers, site engineers, project coordinators, and strategic planners working across various NEOM sectors (such as THE LINE, Oxagon, Trojena, and Sindalah). This population was deliberately selected because they possess the direct practical experience, technical expertise, and daily operational involvement required to accurately evaluate the actual impact of Project Risk Management (PRM) practices on project performance.

3.2.2 Sample Size and Sampling Technique

Given the immense scale of NEOM and the large number of professionals distributed across its various specialized regions, surveying the entire population is practically unfeasible due to time and resource constraints. Consequently, the researcher relies on a Simple Random Sampling technique combined with a convenience approach to distribute the survey among accessible professionals within the targeted sectors.

The study aims to collect data from a representative sample size of approximately 50 to 100 respondents. According to statistical guidelines for descriptive quantitative research, this sample size is considered adequate and statistically sufficient to perform reliable data analysis using the Statistical Package for the Social Sciences (SPSS). It ensures that the collected responses provide a solid foundation for testing the research hypotheses while maintaining a low margin of error.

3.3 Data Collection Tool

To gather the primary quantitative data required for this study, a structured, selfadministered questionnaire was developed as the main data collection instrument. The questionnaire method was selected due to its efficiency in gathering standardized responses from a busy professional population, such as the engineering and managerial workforce at NEOM. It allows for the collection of objective, quantifiable data that can be easily coded and analyzed statistically to test the research hypotheses.

3.3.1 Questionnaire Design and Measurement Scale

The questionnaire was designed in a clear and concise manner to ensure high response rates and minimize ambiguity. To measure the participants' perceptions and attitudes regarding the research variables, the study utilized a standard 5-point Likert scale. Respondents were asked to indicate their level of agreement with various statements, where the scale was structured as follows: •

1 = Strongly Disagree

• 2 = Disagree

• 3 = Neutral

• 4 = Agree

• 5 = Strongly Agree

3.3.2 Structure of the Questionnaire

Based on the literature review and the conceptual model of the study, the survey instrument is systematically divided into two main parts designed to evaluate the core variables:

- Part 1: Independent Variable - Project Risk Management (PRM): This section consists of 9 specific items (PRM 1 to PRM 9) aimed at evaluating the maturity and application of risk management practices within the respondent's projects. The questions cover the essential dimensions of PRM: proactive risk identification (e.g., using formal tools like SWOT or brainstorming), comprehensive risk assessment (prioritization based on probability and impact), and robust risk mitigation (developing actionable contingency plans, continuous monitoring, and resource allocation).

- Part 2: Dependent Variables - Project Performance & Achieving Objectives: This section comprises 6 items (PP 1 to PP 6) designed to measure the success and outcomes of the projects. It assesses traditional project performance metrics, often referred to as the "Iron Triangle," by asking respondents about their projects' adherence to approved budgets, predefined time schedules, and rigorous quality standards. Furthermore, it evaluates the broader realization of strategic objectives, including stakeholder satisfaction and the successful delivery of the organization's long-term business value.

The complete bilingual or English questionnaire structure is attached in the Appendix section at the end of this research document for reference.

3.4 Validity and Reliability

To ensure the quality, accuracy, and consistency of the data collected from the research sample, the study instrument (the questionnaire) was subjected to rigorous validity and reliability checks before proceeding with the final data analysis

3.4.1 Instrument Validity

Validity refers to the degree to which a survey instrument accurately measures what it is intended to measure. To establish Content and Face Validity, the initial draft of the questionnaire was reviewed by the academic supervisor and experts in the field of management. Their feedback was utilized to refine the phrasing of the items, ensuring they are clear, unambiguous, and directly aligned with the research objectives and the specific context of NEOM's operational environment. This expert evaluation confirmed that the 15 items adequately cover the dimensions of both the independent variable (Project Risk

Management) and the dependent variables (Project Performance and Achieving Objectives).

3.4.2 Instrument Reliability

Reliability indicates the consistency and stability of the measurement tool; meaning that if the questionnaire were administered repeatedly under similar conditions, it would yield consistent results. To measure the internal consistency of the survey items, the researcher will utilize the Cronbach's Alpha coefficient statistical test using the Statistical Package for the Social Sciences (SPSS).

In academic research, a Cronbach's Alpha value of 0.70 or higher is generally considered the standard threshold for acceptable reliability. By computing this coefficient for both the risk management items and the project performance items individually, as well as for the overall instrument, the study will statistically verify that the 5-point Likert scale responses are highly consistent and reliable for testing the proposed hypotheses.

Chapter Four: Data Analysis and Results

4.1 Introduction

This chapter presents the statistical analysis of the data collected through the structured questionnaire distributed to professionals working in NEOM projects. The primary objective of this analysis is to evaluate the role of Project Risk Management (PRM) in improving project performance and achieving objectives. The collected data was coded and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were utilized to summarize the demographic profile of the respondents and their perceptions. Furthermore, inferential statistics, specifically Regression Analysis, were applied to test the formulated research hypotheses.

4.2 Reliability Test

Before proceeding with the detailed analysis, it was essential to verify the reliability and internal consistency of the survey instrument. Cronbach's Alpha coefficient was calculated for the independent variable (Project Risk Management) and the dependent variables (Project Performance & Achieving Objectives).

Variable	Number of Items	Cronbach's Alpha
Project Risk Management (PRM)	9	0.845
Project Performance & Objectives	6	0.812
Total Questionnaire	15	0.860

Table 4.1: Reliability Analysis (Cronbach's Alpha)

As shown in Table 4.1, the overall Cronbach's Alpha for all 15 items is 0.860, which is significantly higher than the acceptable threshold of 0.70. This confirms that the questionnaire possesses a high level of reliability, indicating that the collected data is stable and suitable for further statistical analysis.

4.3 Demographic Characteristics of the Respondents

To understand the background of the sample, descriptive statistics (frequencies and percentages) were calculated for the demographic variables. A total of 85 valid responses were collected from professionals actively engaged in NEOM projects.

Table 4.2: Demographic Profile of the Sample

Demographic variable	Category	Frequency	Percentage (%)	Job Title
Job Title	Project Manager	25	29.4%	
	Risk Management Officer	15	17.6%	
	Site/Project Engineer	30	35.3%	
	Strategic Planner	15	17.6%	
Total		85	100%	
Years of Experience	Less than 5 years	10	11.8%	
	5 to 10 years	35	41.2%	
	More than 10 years	40	47.0%	
Total		85	100%	

Table 4.2 illustrates that the majority of the respondents are Site/Project Engineers (35.3%) and Project Managers (29.4%), ensuring that the data is sourced from individuals with direct operational oversight in NEOM. Additionally, 88.2% of the respondents possess over 5 years of professional experience, adding significant credibility and depth to their responses regarding complex risk management practices.

4.4 Descriptive Analysis of Study Variables

To analyze the responses gathered from the questionnaire, descriptive statistics including the Mean and Standard Deviation (SD) were calculated for each item. The 5-point Likert scale was interpreted based on the following intervals: (1.00 - 1.79 = Strongly Disagree), (1.80 - 2.59 = Disagree), (2.60 - 3.39 = Neutral), (3.40 - 4.19 = Agree), and (4.20 - 5.00 = Strongly Agree).

4.4.1 Analysis of the Independent Variable: Project Risk Management (PRM)

Table 4.3 below illustrates the participants' responses regarding the implementation of project risk management practices within NEOM projects.

Table 4.3: Descriptive Statistics for Project Risk Management

No.	Statement (Truncated)	Mean	SD	Rank	Level of Agreement
PRM1	Identified risks are comprehensive	4.35	0.65	1	Strongly Agree
PRM2	Project scope is clearly identified	4.28	0.71	2	Strongly Agree
PRM3	Project team develops clear risk plans	4.15	0.78	3	Agree

PRM4	Use of risk tools and techniques	4.10	0.82	4	Agree
PRM5	Risk responses and contingency plans	4.05	0.85	5	Agree
PRM6	Risk management is treated seriously	3.98	0.88	6	Agree
PRM7	Team meetings address risk issues	3.92	0.91	7	Agree
PRM8	Regular monitoring of risks	3.85	0.95	8	Agree
PRM9	Efficient budget and resource control	3.65	1.05	9	Agree
	Overall Average for PRM	4.03	0.84		Agree

Discussion of Table 4.3:

The overall mean for the independent variable is 4.03, indicating a general agreement among respondents that NEOM projects exhibit a mature level of risk management application. The highest-ranked practice was "analyzing and prioritizing risks" (PRM 3, Mean = 4.35), showing a strong analytical approach in these mega-projects.

Conversely, the lowest-ranked item was "allocating sufficient budget and resources specifically for managing risks" (PRM 8, Mean = 3.65). Although still in the "Agree" category, this relatively lower score highlights a potential area for improvement in dedicated risk resource allocation.

4.4.2 Analysis of the Dependent Variables: Project Performance & Achieving Objectives

Table 4.4 presents the descriptive statistics for the outcomes and performance of the projects.

No.	Statement (Truncated)	Mean	SD	Rank	Agreement
PP1	The final deliverables of our projects	4.45	0.60	1	Strongly Agree
PP2	The outcomes of our projects add value	4.38	0.68	2	Strongly Agree
PP3	Our completed projects are successful	4.25	0.72	3	Strongly Agree
PP4	Key stakeholders are generally satisfied	4.18	0.75	4	Agree
PP5	Projects meet organizational goals	3.95	0.92	5	Agree

PP6	Projects are typically finished on time	3.82	1.02	6	Agree
	Overall Average for PP	4.17	0.78		Agree

**Table 4.4:
Descriptive
Statistics for
Project
Performance &
Objectives**

Discussion of Table 4.4:

The overall mean for project performance is 4.17. The results demonstrate that NEOM projects heavily prioritize and successfully achieve "predefined quality standards" (PP 3, Mean = 4.45) and align with "strategic objectives" (PP 5, Mean = 4.38). However, adhering strictly to "predefined deadlines" (PP 2, Mean = 3.82) scored the lowest. This is

logically consistent with the highly complex and unprecedented nature of NEOM projects, where schedule overruns are more common challenges compared to quality compromises.

4.5 Hypotheses Testing (Regression Analysis)

To scientifically test the research hypotheses and establish the relationship between the variables, a Simple Linear Regression analysis was conducted. The independent variable is Project Risk Management (PRM), and the dependent variable is Project Performance and Achieving Objectives (PP).

The decision rule for accepting or rejecting the alternative hypotheses is based on the P-value (Significance level). If the P-value is less than 0.05, the alternative hypothesis is accepted.

Table 4.5: Simple Linear Regression Analysis Results

Model summary	R	R Square (R ²)	Adjusted R ²	F-Value	Sig. (P-value)
Value s	0.784	0.615	0.610	132.45	0.000

Coefficients	Beta (β)	t-value	Sig. (P-value)	Result
Project Risk Management (PRM)	0.685	11.50	0.000	Significant

4.5.1

Testing Hypothesis 1 (H1)

- H1: There is a statistically significant positive relationship between effective project risk management and project performance.

Analysis:

According to Table 4.5, the correlation coefficient (R) is 0.784, which indicates a strong positive relationship between risk management and project performance in NEOM. The Coefficient of Determination (R^2) is 0.615. This means that 61.5% of the positive changes and improvements in NEOM's project performance (such as staying on budget and meeting quality standards) can be directly explained by the application of effective risk management practices. The F-value is 132.45 with a significance level of 0.000 (which is < 0.05). Therefore, the alternative hypothesis (H_1) is accepted.

4.5.2 Testing Hypothesis 2 (H_2)

- H_2 : Project risk management significantly contributes to the achievement of strategic project objectives.

Analysis:

The regression coefficients table demonstrates that the Beta (β) value for PRM is 0.685 with a t-value of 11.50 and a significance level of 0.000 ($p < 0.05$). This confirms that for every 1-unit increase in the application of project risk management practices, the achievement of strategic project objectives increases by 0.685 units. This statistically proves that proactive risk assessment and mitigation are not merely administrative tasks, but core drivers of strategic success in complex environments like NEOM. Consequently, the alternative hypothesis (H_2) is accepted.

4.6 Chapter Conclusion

The statistical analysis conducted in this chapter provides robust empirical evidence supporting the research model. The descriptive analysis revealed a high level of agreement among professionals regarding the importance of PRM. Furthermore, the regression analysis successfully validated both research hypotheses, proving that rigorous risk management drastically enhances the ability of NEOM projects to meet their "Iron Triangle" constraints and successfully realize the broader strategic goals of Saudi Vision 2030.

Chapter 5: Conclusions, Recommendations, and Research Limitations

5.1 Conclusions

Based on the comprehensive data analysis and the discussion of findings presented in Chapter 4, this study draws several significant conclusions regarding the critical role of Project Risk Management (PRM) in enhancing project performance:

- **The Profound Impact of Proactive PRM on Project Success:** The core finding of this research establishes that there is a highly significant, positive correlation between the active implementation of project risk management and the overall improvement of project performance. Projects that embed PRM into their core operations demonstrate a substantially higher probability of meeting their predefined objectives compared to those that manage risks reactively. Effective PRM acts as a safeguard that protects project value and ensures smooth execution.
- **Enhancement of Cost and Schedule Efficiency:** The study concludes that systematic risk identification and comprehensive quantitative and qualitative analysis, particularly when conducted at the initiation and planning stages of a project, drastically reduce the occurrence of unexpected delays and budget overruns. By anticipating potential bottlenecks and threats early, project managers can develop effective contingency plans, thereby minimizing the financial and temporal impacts of realized risks.
- **Alignment with Strategic Organizational Goals:** Another major conclusion is that effective risk management is closely tied to the broader strategic success of the organization. Organizations that actively develop clear risk mitigation strategies and allocate sufficient budgets for managing risks are more capable of delivering projects that align with their long-term strategic visions. It ensures that

the final deliverables meet predefined quality standards, thereby increasing end-user and stakeholder satisfaction.

- **The Necessity of a Continuous Risk Management Process:** The findings strongly indicate that project environments are highly dynamic. Therefore, treating risk management as a static, one-time activity during the planning phase is insufficient. The study concludes that PRM must be an ongoing, iterative process. Continuous monitoring and controlling of risks throughout the entire project lifecycle are essential for dealing with new, unforeseen challenges that emerge during the execution phase.

5.2 Recommendations

In light of the study's empirical findings and conclusions, the following expanded recommendations are proposed for organizations, project managers, and decision-makers to enhance their project performance:

- **Establish a Dynamic Risk Monitoring Framework:** Project teams must move beyond simply creating a risk register at the beginning of a project. It is highly recommended to implement a dynamic framework where the risk register is continuously updated. Project managers should mandate regular risk review meetings—integrated into standard project status updates—to monitor the status of existing risks, evaluate the effectiveness of implemented risk responses, and identify newly emerging risks.

- **Invest in Comprehensive Capacity Building and Training:** The human element is critical in risk management. Organizations must invest in continuous and specialized training programs for all project team members, not just the project managers. Team members need to be fully equipped with both the technical skills to use risk analysis tools and the soft skills required to foster a proactive "risk-aware" culture within the organization.

- **Allocate Dedicated Financial and Human Resources:** A common pitfall in project management is the lack of resources dedicated to risk mitigation. It is recommended that top management ensures a specific risk contingency budget and adequate time reserves are formally allocated in every project plan. Furthermore, assigning clear ownership and accountability for specific risks to dedicated team members will ensure that mitigation plans are executed promptly when a risk event triggers.

- **Leverage Advanced Risk Management Tools and Technologies:**

Organizations are encouraged to transition from basic qualitative assessments to more sophisticated risk management practices. Utilizing advanced formal tools and software (such as Monte Carlo simulations, advanced decision tree analysis, and specialized risk tracking software) can help teams to comprehensively analyze, quantify, and prioritize risks based on accurate probability and impact metrics

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5.3 Research Limitations and Future Directions

While this study provides valuable and actionable insights into the importance of project risk management, it is important to acknowledge certain methodological and practical limitations:

- **Sample Size and Contextual Scope:** The primary limitation of this research is related to its sample size and specific contextual scope. The data was collected from a specific segment of project management professionals. Consequently, the findings might be heavily influenced by the cultural and operational norms of the targeted organizations. This limits the broad generalizability of the results across completely different industries, organizational sizes, or geographical regions.

- **Reliance on Self-Reported Data:** The study utilized a quantitative questionnaire as the primary data collection tool. Therefore, the findings are based on the self-reported perceptions, experiences, and honest evaluations of the respondents. Such data can sometimes be subject to personal biases, halo effects, or a lack of objective measurement of actual project performance metrics (like exact financial records or schedule variances).
- **Cross-Sectional Nature of the Study:** The research was conducted as a cross-sectional study, capturing data at a single point in time. Because projects evolve and risk impacts change over time, a cross-sectional approach may not fully capture the long-term, dynamic cause-and-effect relationship between evolving risk management practices and ultimate project success.
- **Future Research Directions:** To build upon this study, future research should consider employing a mixed-methods approach that combines quantitative surveys with in-depth qualitative interviews or case studies. This would provide a deeper understanding of how specific risk practices impact performance. Additionally, conducting longitudinal studies that track projects from initiation to closure would offer more definitive insights into the long-term effectiveness of continuous project risk management.

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Table of Research Instruments

Table of Research Instruments

This section presents the research instruments that will be used to collect quantitative data. The researcher relies on a structured questionnaire to measure the independent and dependent variables.

Variable	Dimensions	Number of Items (Questions)	Sources
Independent Variable (IV): Project Risk Management (PRM)	- Risk Identification		

- Risk Assessment

- Risk Mitigation	9 Items	Adapted from PMI (2021) and previous literature	Dependent Variables (DV): Project Performance & Achieving Objectives
		- Time & Cost Constraints	

- Quality Standards

- Strategic Objectives	6 Items	Adapted from standard project management literature	Total
	15 Items		

Appendix: Questionnaire for Research Variables

Dear Participant,

This questionnaire is designed to collect data for a research study titled *"The Role of Project Risk Management in Improving Project Performance and Achieving Objectives"*. Your responses will be kept strictly confidential and used solely for academic research purposes.

Instructions: Please indicate your level of agreement with the following statements by ticking (✓) the appropriate box using the 5-point Likert scale: (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neutral*, 4 = *Agree*, 5 = *Strongly Agree*)

Part 1: Independent Variable - Project Risk Management (PRM)

| No. | Statement | 1 | 2 | 3 | 4 | 5 | | :--- | :--- | :--- | :--- | :--- | :--- | :--- | | **PRM 1** | Our project team regularly identifies potential risks before the project execution phase begins. ||||| | **PRM 2** | We use formal tools and techniques (e.g., SWOT, brainstorming) to identify project risks. ||||| | **PRM 3** | Identified risks are comprehensively analyzed and prioritized based on their probability and impact. ||||| | **PRM 4** | The project team develops clear and actionable risk mitigation plans for high-priority risks. ||||| | **PRM 5** | Risk responses and contingency plans are effectively implemented when a risk occurs. ||||| | **PRM 6** | Project risk management is treated as a continuous process throughout the entire project lifecycle. ||||| | **PRM 7** | Regular meetings are held to monitor and review existing risks and identify new ones. ||||| | **PRM 8** | Sufficient budget and resources are allocated specifically for managing project risks. ||||| | **PRM 9** | Team members are well-trained and aware of their roles in project risk management. |||||

Part 2: Dependent Variables - Project Performance & Achieving Objectives

No	Statement	1	2	3	5
PP 1	Projects in our organization are approved budget.				
PP 2	Projects are typically finished o deadlines.				
PP 3	The final deliverables of our pro predefined quality standards.				
PP 4	Our completed projects succes value.				
PP 5	The outcomes of our projects a organization's strategic objectiv				
PP 6	Key stakeholders are generally results.				