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Faculty of Management
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Project title

**Impact of Risk Management on Project Performance in Saudi Construction:
Case of Nesma & Partners Co.**

Student name

IMAN MAJZOUB

Graduation Project – 1

Faculty of Management - Midocean University

Supervisor

Dr. ABED ALRAHIM NADER

Faculty member- Faculty of management- Midocean University

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**Impact of Risk Management on Project Performance in Saudi Construction:
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ABSTRACT

Risk management is a critical governance function in construction projects, aimed at identifying and mitigating uncertainties that affect performance outcomes. This qualitative case study examines the relationship between

risk management practices and project performance in the Saudi construction sector.

Secondary data and literature analysis reveal that structured risk governance improves cost control, schedule reliability, and quality outcomes. However, practical challenges such as incomplete risk identification and limited stakeholder communication reduce effectiveness.

The study contributes to project management knowledge and provides recommendations for strengthening risk governance in construction projects.

Keywords: Risk management, construction projects, qualitative case study, Saudi Arabia, project performance.



Chapter 1: Introduction

1.1 Research Background

The construction industry is characterized by complexity, long project durations, and exposure to multiple risk factors. Projects require coordination among stakeholders, technical precision, and significant financial investment. These conditions increase vulnerability to:

- Cost overruns
- Schedule delays
- Quality deviations
- Safety incidents
- Contractual disputes

In Saudi Arabia, the construction sector plays a strategic role in infrastructure development and economic diversification under Vision 2030. Large-scale projects require advanced governance frameworks to ensure successful delivery.

Risk management provides a structured approach to uncertainty. It involves:

- Risk identification
- Risk assessment
- Mitigation strategies
- Continuous monitoring

Effective governance enhances decision-making and operational stability.

This study explores the impact of risk management practices on project performance in the Saudi construction sector.

1.2 Research Problem

Despite established risk frameworks, construction projects frequently experience performance challenges. Organizations document risks but may fail to translate governance into measurable outcomes.

The core research problem is:

To what extent do risk management practices influence project performance in the Saudi construction sector?

This problem reflects:

- Gaps between theory and practice
- Persistent cost and schedule deviations
- Limited empirical research in the Saudi context

Understanding this relationship supports governance improvement and operational efficiency.

1.3 Research Objectives

The objectives of this study are:

1. To examine risk management practices in construction projects

2. To analyze relationships between risk identification and performance
3. To evaluate the impact of risk assessment on schedule reliability
4. To assess the influence of risk mitigation on quality outcomes
5. To provide recommendations for governance improvement

1.4 Research Questions

1. How does risk identification influence project performance?
2. How does risk assessment affect schedule reliability?
3. How does risk mitigation improve quality outcomes?
4. What challenges hinder effective risk governance?

1.5 Research Significance

Theoretical Significance

This research contributes to project management literature by linking risk governance with performance outcomes in the Saudi construction sector.

Practical Significance

Findings provide insights for organizations to strengthen risk strategies and enhance project outcomes.

Chapter 2: Literature Review

2.1 Concept of Risk Management

Risk management is a structured process of identifying, analyzing, and responding to uncertainties. It reduces the likelihood of negative outcomes and supports decision-making.

Key components include:

- Risk identification
- Risk analysis
- Response planning
- Monitoring and control

Effective governance enhances project predictability and performance (Project Management Institute, 2021).

Chapman and Ward (2011) emphasize integration of risk strategies into project planning rather than treating them as documentation requirements.

2.2 Types of Construction Risks

Construction projects face multiple risk categories:

Financial Risks

- Inflation
- Material price volatility

- Currency fluctuations

Operational Risks

- Equipment failure
- Labor shortages
- Technical errors

Contractual Risks

- Disputes
- Scope changes
- Contract interpretation issues

Safety Risks

- Workplace accidents
- Health hazards

Environmental Risks

- Weather conditions
- Regulatory compliance

Early identification reduces project failure rates (Zou et al., 2007).

Table 1: Classification of Construction Risks

Risk Category	Description	Potential Impact
Financial	Economic fluctuations	Cost overruns
Operational	Execution challenges	Schedule delays
Contractual	Disputes and claims	Performance issues
Safety	Workplace hazards	Operational disruptions
Environmental	Regulatory constraints	Compliance risks

Source: Developed by the Researcher

2.3 Project Performance Indicators

Project performance is measured using the triple constraint model:

- Cost performance
- Time performance
- Quality performance

Balanced achievement of these dimensions defines success (Atkinson, 1999).

Figure 1: Triple Constraint Model

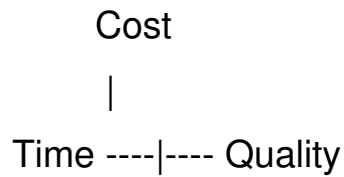


Figure 1: Triple constraint model of performance

Source: Project Management Literature

2.4 Risk Management and Performance

Research demonstrates positive relationships between governance and outcomes:

- Early identification reduces financial impacts
- Assessment improves decision-making
- Mitigation enhances quality

Organizations applying structured frameworks experience fewer deviations (Raz & Michael, 2001).

Chapter 3: Research Methodology

3.1 Research Design

A qualitative case study approach is adopted to explore risk governance in Saudi construction. Qualitative research provides in-depth understanding of organizational processes.

This design is appropriate because it:

- Examines real-world practices
- Provides contextual insights
- Supports theoretical exploration

3.2 Data Collection

Secondary sources include:

- Academic journals
- Industry reports
- Company documentation
- Public information

Secondary data ensures reliability and ethical compliance.

3.3 Data Analysis

Descriptive analysis interprets relationships between governance and outcomes. Themes are identified and discussed in relation to theoretical frameworks.

Qualitative analysis emphasizes:

- Pattern identification
- Contextual interpretation
- Theoretical contribution

3.4 Ethical Considerations

The study uses publicly available information only. No confidential data are included.

Chapter 4: Case Study – Risk Governance in Saudi Construction

4.1 Sector Overview

The Saudi construction sector supports infrastructure development and economic growth. Large projects require advanced governance frameworks to manage complexity.

Success depends on:

- Structured planning
- Risk governance
- Stakeholder coordination

4.2 Risk Governance Practices

Organizations apply:

- Risk registers
- Probability-impact matrices
- Mitigation strategies
- Monitoring systems

These tools enable structured evaluation and decision-making.

Table 2: Risk Management Tools

Tool	Purpose	Benefit
Risk Register	Document risks	Visibility
Probability Matrix	Assess impact	Prioritization
Mitigation Plan	Reduce impact	Performance
Monitoring	Track changes	Control

Source: Developed by the Researcher

4.3 Challenges in Governance

Common challenges include:

- Incomplete identification
- Limited communication
- Reactive strategies
- Resource constraints

Addressing these challenges improves effectiveness.

4.4 Case Context: Nesma & Partners

The company operates large-scale projects in infrastructure and industrial sectors. Governance practices support:

- Performance stability
- Decision-making
- Operational efficiency

However, practical challenges require continuous improvement.

Chapter 5: Analysis and Discussion

5.1 Risk Identification and Performance

Early identification reduces unexpected impacts. Structured processes enable organizations to:

- Detect threats
- Plan mitigation
- Improve outcomes

5.2 Risk Assessment and Reliability

Assessment improves reliability by:

- Evaluating probability
- Prioritizing risks
- Allocating resources

Structured frameworks enhance governance.

5.3 Risk Mitigation and Quality

Mitigation enhances quality through:

- Reduced rework
- Safety compliance
- Quality control

These outcomes improve success.

5.4 Discussion

Findings align with literature, confirming that governance improves performance. Challenges require continuous improvement and stakeholder engagement.

Chapter 6: Risk Analysis

6.1 Risk Matrix (5×5 Probability-Impact Grid)

Probability \ Impact Low Medium High Critical

Very Likely	M	H	C	C
Likely	L	M	H	C
Possible	L	M	H	H
Unlikely	L	L	M	H
Rare	L	L	L	M

Legend: L = Low, M = Medium, H = High, C = Critical

Source: Developed by the Researcher

Figure 2: Risk Prioritization Process

1. Identify Risk
2. Assess Probability
3. Assess Impact
4. Prioritize
5. Mitigate
6. Monitor

Figure 2: Risk prioritization process

Source: Risk Management Literature

Chapter 7: Conclusion and Recommendations

7.1 Conclusion

Risk governance significantly influences construction performance.
Structured practices enhance cost control, reliability, and quality outcomes.

7.2 Recommendations

1. Strengthen governance frameworks
2. Enhance communication
3. Implement monitoring systems
4. Integrate risk strategies
5. Provide training

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