

Final Project 1

Risk management in construction projects

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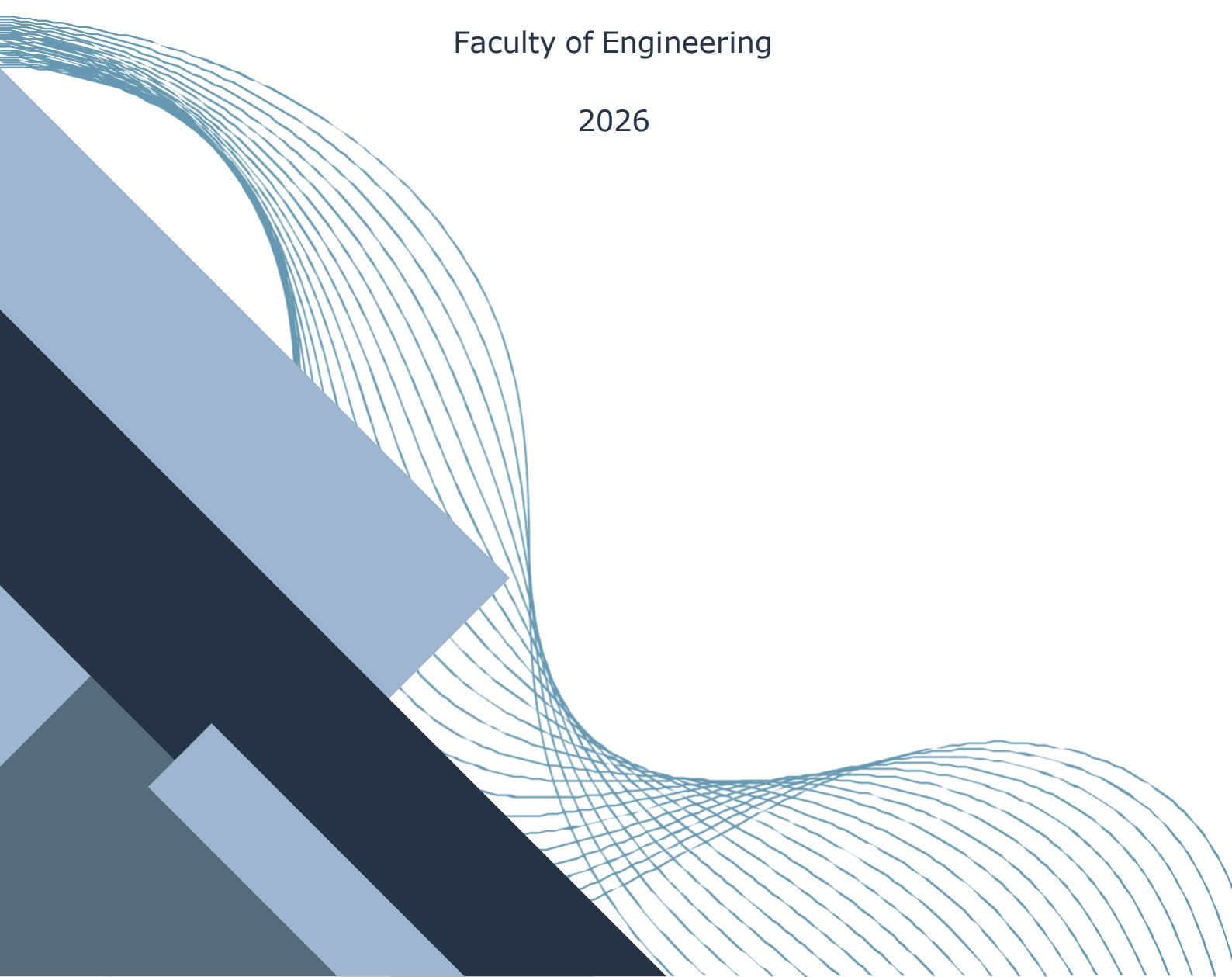
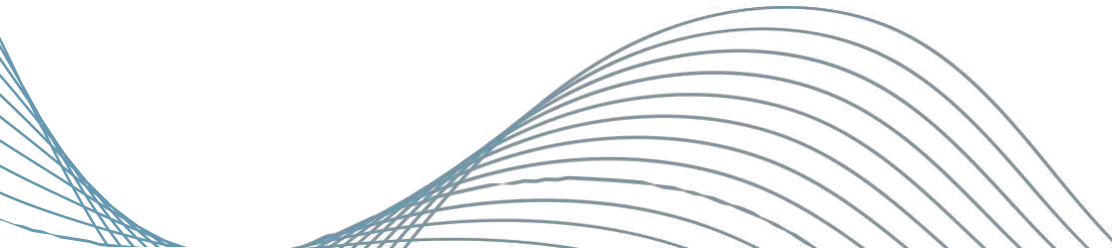




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Abstract

The construction industry is widely recognized as one of the most dynamic yet risk-prone sectors worldwide.

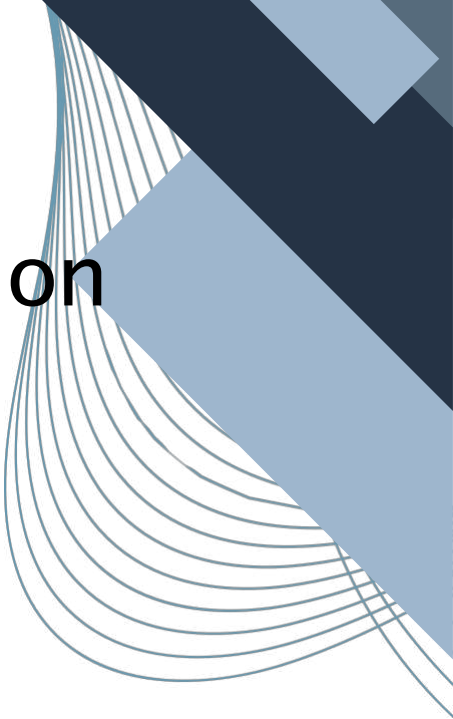
Construction projects are characterized by uncertainty arising from technical complexity, financial volatility, contractual frameworks, environmental factors, and stakeholder involvement. The failure to manage risks effectively remains a major cause of cost overruns, schedule delays, quality deficiencies, and contractual disputes.

This research investigates the principles and practices of Project Risk Management (PRM) within construction projects. It examines risk identification, qualitative and quantitative analysis, response planning strategies, and monitoring mechanisms based on internationally recognized standards such as the PMBOK Guide.

Furthermore, the study evaluates the impact of systematic risk management on project performance indicators including cost efficiency, time control, quality assurance, and stakeholder satisfaction.

A practical case study of a mid-scale residential building project is presented to demonstrate the real-world application of structured risk management. The findings indicate that proactive and systematic risk management significantly enhances project predictability, minimizes financial losses, and increases the likelihood of successful project delivery.

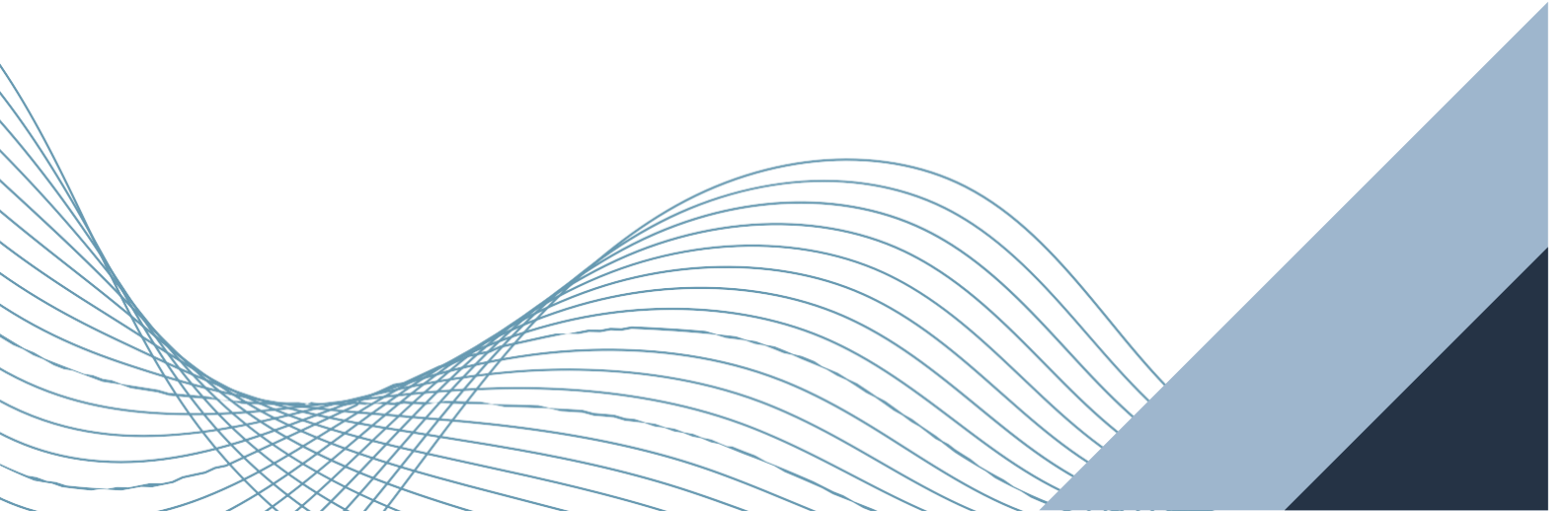
Chapter 1 : Introduction



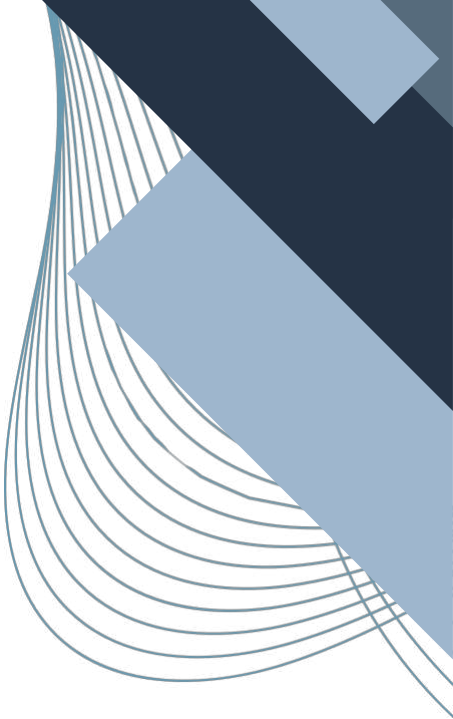
The construction industry is widely recognized as one of the most dynamic yet risk-prone sectors worldwide.

Construction projects are characterized by uncertainty arising from technical complexity, financial volatility, contractual frameworks, environmental factors, and stakeholder involvement.

This means that every construction project operates under conditions that cannot be predicted with complete accuracy. The combination of high capital investment, long project duration, and involvement of multiple parties increases exposure to risk. If these uncertainties are not properly managed, they may negatively influence project objectives such as cost, time, and quality.

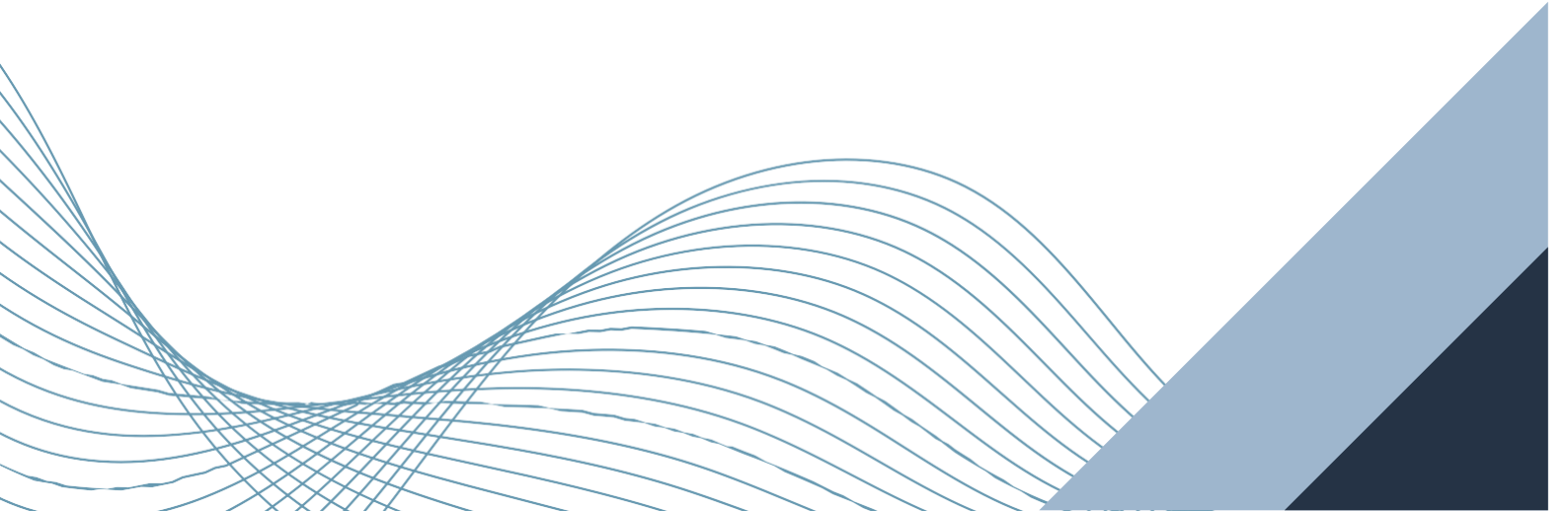


Introduction



The failure to manage risks effectively remains a major cause of cost overruns, schedule delays, quality deficiencies, and contractual disputes.

In many cases, projects begin with optimistic budgets and timelines. However, unexpected changes such as material price increases or regulatory approvals can disrupt progress. Therefore, implementing a structured risk management framework is not optional but necessary for project success.

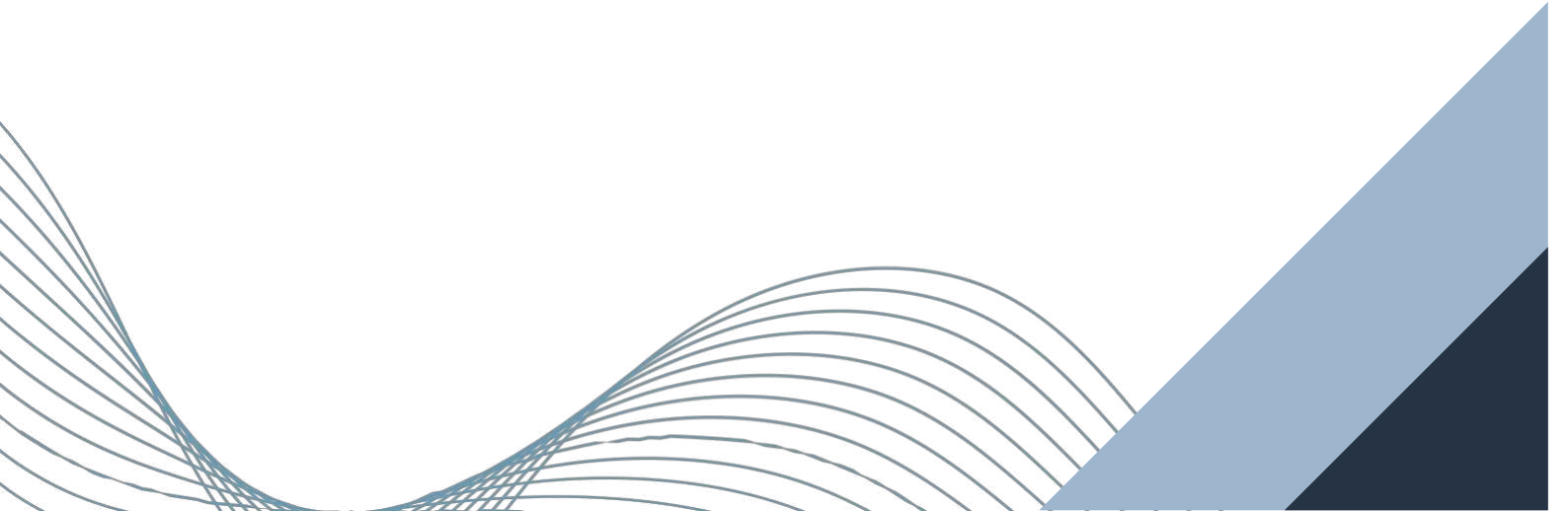




1.1 Problem Statement

Many construction firms rely on reactive management approaches rather than structured risk planning frameworks.

Instead of identifying potential risks at the beginning of the project, some organizations wait until problems occur before taking action. This reactive behavior increases financial losses and reduces control over project performance. As a result, projects often experience delays, increased costs, and reduced stakeholder satisfaction.



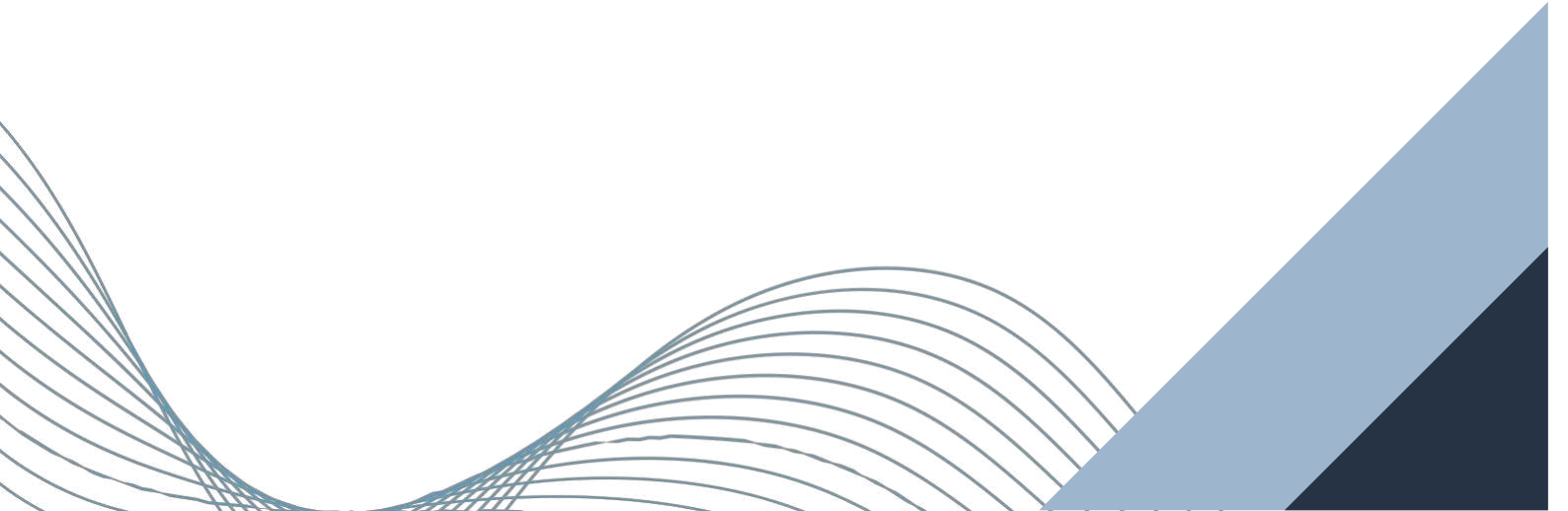


1.2 Research Objectives

The main objectives of this research are:

- To define and conceptualize project risk management in construction.
- To identify major risk categories affecting construction projects.
- To analyze risk management processes and tools.
- To evaluate the relationship between risk management and project performance.

These objectives aim to create a clear understanding of how systematic risk practices contribute to improving construction outcomes and reducing uncertainty.





References

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