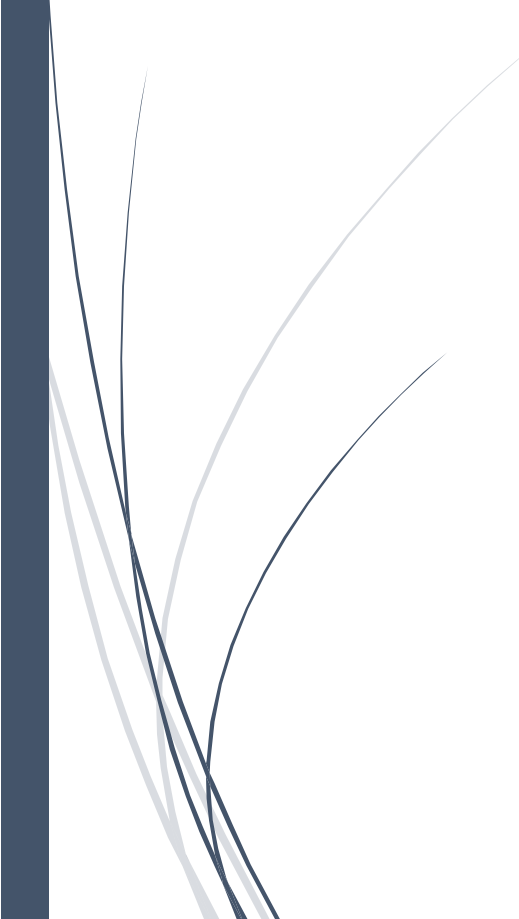




Final Project 2

PMG 497

Project Template



Project title

**The Role of Artificial Intelligence in Managing Project
Risks in Companies**

Student name

ALI HASSAN ALSAFADI

232002309

Final Project - 2

Faculty of Management - Midocean University

Supervisor

Dr. Abdulrahim Nader

Faculty member- Faculty of management- Midocean University

11/4/2026 – First Trimester 2026

Table of Contents

1. Chapter 3: Research Methodology	3
1.1. Introduction.....	4
1.2. Operational definitions for research variables	4
1.3. Research design (research onion)	5
1.4. Research population & Sampling methods and technique.....	5
1.5. Data collection method	5
1.6. Types of data	6
1.7. Statistical analysis procedures	6
1.8. Conclusion	6
References – Section 3.....	6

1. Chapter 3: Research Methodology

1.1. Introduction

This chapter presents the research methodology adopted to examine the role of artificial intelligence in managing project risks in companies. The methodology provides a structured framework that guides the process of data collection, measurement, and analysis to ensure the validity and reliability of the research findings. The selected methodology is aligned with the research objectives and hypotheses and is designed to provide empirical evidence on the effectiveness of artificial intelligence in project risk management.

The chapter outlines the operational definitions of the research variables, research design, population and sampling techniques, data collection methods, types of data used, and statistical analysis procedures. Together, these elements ensure a systematic and objective approach to addressing the research problem.

1.2. Operational definitions for research variables

Operational definitions clarify how the research variables are measured and examined within the study.

- **Artificial Intelligence (Independent Variable):**

Artificial intelligence refers to the use of intelligent systems and technologies, such as machine learning algorithms, predictive analytics, and automated decision-support tools, to support project risk identification, analysis, and mitigation processes. In this study, artificial intelligence is measured through employees' and managers' perceptions of its effectiveness in enhancing project risk management activities.

- **Project Risk Management (Dependent Variable):**

Project risk management refers to the systematic process of identifying, analyzing, responding to, and monitoring project risks to minimize their negative impact on project objectives. In this study, project risk management effectiveness is measured by the extent to which artificial intelligence contributes to improved risk identification accuracy, risk analysis, and risk mitigation decisions.

1.3. Research design (research onion)

This study follows the research onion framework to explain the methodological choices made throughout the research process. The research philosophy adopted is positivism, which emphasizes objectivity and the use of empirical data to test hypotheses. A deductive research approach is employed, whereby hypotheses are developed based on existing theory and literature and then tested using collected data.

The research strategy used is a survey strategy, as it allows the collection of quantitative data from a relatively large number of respondents. The research choice is quantitative, focusing on numerical data and statistical analysis. A cross-sectional time horizon is adopted, meaning that data are collected at a single point in time. Statistical analysis techniques are applied using SPSS software to analyze the data and test the research hypotheses.

1.4. Research population & Sampling methods and technique

The research population consists of employees and managers working in companies that apply project management practices and utilize, or intend to utilize, artificial intelligence technologies in managing project risks. This population is considered appropriate for the study because these individuals are directly involved in project activities and decision-making processes related to risk management.

A probability sampling technique is employed to ensure representative participation. Specifically, a simple random sampling method is used, giving all members of the population an equal chance of being selected. This approach enhances the generalizability of the research findings and minimizes sampling bias.

1.5. Data collection method

Primary data for this study are collected using a structured questionnaire designed to measure perceptions related to artificial intelligence and project risk management. The questionnaire consists of closed-ended questions measured using a Likert scale. The survey is distributed electronically to respondents to facilitate efficient data collection.

Secondary data are collected from academic journals, books, and industry reports related to artificial intelligence and project risk management. These sources support the theoretical foundation of the study and assist in interpreting the empirical findings.

1.6. Types of data

The study uses two main types of data. Primary data consist of quantitative responses obtained from the questionnaire distributed to employees and managers. Secondary data include published academic literature and professional reports that provide contextual and theoretical support for the research.

1.7. Statistical analysis procedures

The collected data are analyzed using SPSS software. Descriptive statistics are used to summarize respondents' demographic characteristics and overall responses. Reliability analysis is conducted using Cronbach's Alpha to assess the internal consistency of the measurement scales. Inferential statistical techniques, including correlation and regression analysis, are employed to examine the relationships between artificial intelligence and project risk management effectiveness and to test the proposed research hypotheses.

1.8. Conclusion

This chapter presented the research methodology adopted in the study. It explained the operational definitions of the research variables, research design, population and sampling methods, data collection procedures, and statistical analysis techniques. The selected methodology ensures the reliability and validity of the research findings and provides a solid foundation for the statistical analysis and discussion presented in the next chapter.

References – Section 3

- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson Education.
- Sekaran, U., & Bougie, R. (2020). *Research methods for business: A skill-building approach* (8th ed.). Wiley.