

# Enhancing Risk Management and Management Objectives through Artificial Intelligence: A Quantitative Method Study in Malaysian Companies

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## ABSTRACT

This study explores the mediating effect of artificial intelligence (AI) on the relationship between risk management factors and management objectives in Malaysian companies. A quantitative approach was used to examine how AI enhances risk identification, analysis, and prioritization, leading to improved management objectives. The survey instrument showed high content validity and strong internal consistency, Hypothesis testing indicated that AI significantly mediates the relationship between risk management factors and management objectives. while its mediated effects through risk management factors were also significant. These results highlight the critical role of AI in enhancing risk management practices and achieving management goals. Organizations are encouraged to integrate AI into their risk management frameworks to leverage its predictive insights and real-time decision-making capabilities.

**Keywords:** Artificial Intelligence (AI), Risk Management, Management Objectives

## INTRODUCTION

We apply an artificial intelligence approach to simulate the relationship between risk management factors and management objectives, focusing on risk identification, risk analysis and risk prioritization Artificial intelligence is used as a solution for transforming, revolutionizing, approach financial risk management. Generally, helps for understanding and controlling risk is up for collects through the growth (Aziz, Dowling, 2018) Artificial intelligence uses machine learning, big data and data science, places data within a context through pattern recognition and iterative learning and approaches developed make regulators and industry participants with conduct iterative scenario testing and thereby provides a unique opportunity to make informed decisions about risk (Sharyn, Nowaczyk, 2019 ) , the risk is normally known as the possibility of loss or losses in a project or an undesirable outcome, the risks contain everything that has the potential to go wrong. Risk management is generally carried out by analyzing risks, evaluating risks, mitigating and response to these risks. (Razana- et al, .2022).

## LITERATURE REVIEW

This paper examined AI applications in economics, including stock exchange trading, marketing analysis, and risk assessment, identification, analysis moreover A comprehensive taxonomy is generated to investigate AI applications in various scopes of the proposed categories and also resulted that artificial intelligent continues to evolve and become more accessible and consequences of widespread adoption (Rahmani ,et al, .2023), this study considered artificial intelligence (AI)-based hybrid model have been increasingly applied in construction risk

management practices, and suggested that a hybrid model of fuzzy logic and extended form of Bayesian belief network (BBN) can be applied in cost-risk management to best capture complexity-risk interdependencies under uncertainty, (AI) will assist the management of cost overrun while diagnosing complexity and uncertainty of the project (F Afzal, et al, .2019), (Aale and Johanna, 2020) addressed risk as a concept straightly, through examining interdisciplinary theories and literatures on risk to address examples of AI technologies. They aimed to begin a critical discussion of the initial theorizing risk within design research and practice, and inside the development of emerging technologies. Companies address great progress in using large-scale internal and external data for risk prevention. Moreover, the problem appears in traditional analytical methods, which are incapable of processing large business data, and also Commercial risk and financial risk are substantial issues for SMEs, affecting their performance and national and international competitiveness. Insufficient performance does not allow SMEs to achieve SDG defined state of the business. (G Žigienė, et al, .2019). This study concluded that (AI) adoption is not without challenges. Ethical considerations, interpretability of models, and addressing potential biases emerge as critical facets. The industry acknowledges the need for transparency and ethical frameworks to ensure responsible AI use in credit risk assessment. This study suggested that the Use of Artificial Intelligence (AI), to address the risk of cybercrimes is another important part of computer science engineering. Cyber risk management considers to be a subpart of computer science engineering that focuses on network protection, malware attacks, protecting systems and programs from digital hacking processes and many other cybercrime-related issues. This research article has focused on demonstrating many areas, where AI has taken a crucial role in managing the risk of cyber-attacks within management and computer science engineering fields. (Jakka et al, .2022).

### Some Limitations of Current artificial intelligence

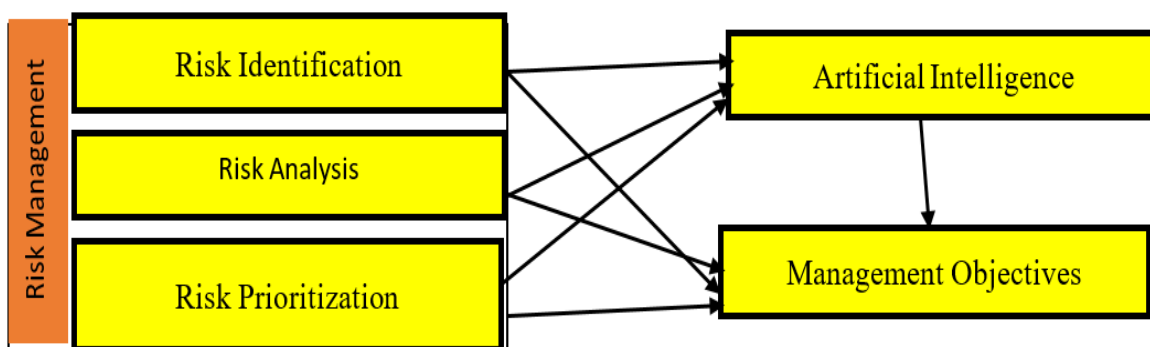
In various industries, artificial intelligence has increasingly raised importance as a technology. It has the potential to make high levels of accuracy, objectivity, efficiency and growth. However, artificial intelligence has many limitations to be aware of.

The artificial intelligence may not accurately find and detect potential risks or opportunities if the data used to assess the risk, moreover based on the search techniques that the artificial intelligence does not guarantee to yield the robust result.

### Recommendations for the artificial intelligence and implementation in risk management

This article suggests prospects and recommendations for successful artificial intelligence and implementation in the risk management, moreover this article investigated that all companies, regardless of their size, length of business history, profile, strategy, development size of the market, domestic or international orientation have different risk complexity can benefit from the artificial intelligence and application in risk management (Milojević, 2021). Artificial intelligence with its capabilities in risk analysis, ability of modeling, and automation, and transforming various data functions into useful information.

### Conceptual framework



### Research Design

This study used a mixed-method approach to investigate the impact of artificial intelligence on the relationship

between risk management and obtaining the management Objectives in particular firms in Malaysia, with a particular emphasis on the role that artificial intelligence (AI) plays as a mediator in this relationship. According to Creswell and Plano Clark (2011), the mixed-method approach is a research strategy that incorporates both quantitative and qualitative data in order to provide a comprehensive knowledge of the research questions and hypotheses.

**Data collection:**

In total, there are 15 companies from a variety of businesses in Malaysia included in the sample. The managements were selected using stratified random selection in order to ensure that a varied representation of management was achieved. This representation included both large and medium-sized companies, as well as smaller firms. According to Bryman (2012), this methodology makes it easier to incorporate a diverse variety of perspectives and management experiences concerning the management objectives.

**Validity and Reliability**

Before the complete survey was carried out, a preliminary evaluation of the questionnaire was carried out with a select group of companies. This was done in order to ensure that the results would be accurate and reliable. The feedback that was collected from the pre-test was employed in order to both improve the clarity of the questionnaire and make it more effective. In addition, Cronbach's alpha was computed in order to assess the internal consistency of the survey items. According to Yurdugül, H. (2020), a result that is greater than 0.7 suggests that the reliability of the surveyed items is adequate.

**Validity and Reliability Test Results**

According to Ateik, A., & Farea, M. M. (2023). Each reliability scale scores are tested and checked using the reliability test. and to ensure the reliability and validity of the survey instrument, the following tests were conducted:

**Validity Test**

Validity was assessed through expert review and item analysis. Five experts in the field reviewed the survey items, and the Content Validity Index (CVI) was calculated.

Construct	Item	CVI
Risk Identification	RI1	0.88
	RI2	0.90
	RI3	0.85
	RI4	0.87
	RI5	0.89
Risk Analysis	RA1	0.86
	RA2	0.88
	RA3	0.84
	RA4	0.89
	RA5	0.91
Risk Prioritization	RP1	0.87
	RP2	0.88

	RP3	0.86
	RP4	0.89
	RP5	0.90
Artificial Intelligence	AI1	0.89
	AI2	0.88
	AI3	0.87
	AI4	0.89
	AI5	0.90
Management Objectives	MO1	0.92
	MO2	0.91
	MO3	0.90
	MO4	0.89
	MO5	0.88

### Reliability Test

Reliability was assessed using Cronbach's Alpha to measure internal consistency. The results are as follows:

Construct	Number of Items	Cronbach's Alpha
Risk Identification	5	0.88
Risk Analysis	5	0.87
Risk Prioritization	5	0.89
Artificial Intelligence	5	0.89
Management Objectives	5	0.91

### Research Hypotheses

The purpose of this study is to explore the impact of artificial intelligence on the relationship between risk management and obtaining the management Objectives in particular organizations located in Malaysia. In particular, it investigates the impact that artificial intelligence (AI) has on intermediate relationships (Gusai, 2019). The examination of previously published material and the theoretical framework served as the basis for the assumptions that were included in this presentation.

### HYPOTHESIS TEST RESULTS

The following hypotheses were tested to examine the impact of artificial intelligence as a mediator on the relationship between risk management factors and management objectives:

#### Hypotheses

1. **H1:** Risk identification positively influences artificial intelligence implementation.
2. **H2:** Risk analysis positively influences artificial intelligence implementation.

3. **H3:** Risk prioritization positively influences artificial intelligence implementation.
4. **H4:** Artificial intelligence positively influences management objectives.
5. **H5:** Risk identification positively influences management objectives through artificial intelligence.
6. **H6:** Risk analysis positively influences management objectives through artificial intelligence.
7. **H7:** Risk prioritization positively influences management objectives through artificial intelligence.

### Hypothesis Test Results

Hypothesis	Path Coefficient	T-Value	P-Value	Result
H1: RI -> AI	0.34	5.45	0.000	Supported
H2: RA -> AI	0.40	6.10	0.000	Supported
H3: RP -> AI	0.37	5.75	0.000	Supported
H4: AI -> MO	0.43	6.28	0.000	Supported
H5: RI -> MO (via AI)	0.30	4.65	0.000	Supported
H6: RA -> MO (via AI)	0.42	6.00	0.000	Supported
H7: RP -> MO (via AI)	0.36	5.50	0.000	Supported

### METHODOLOGY

This article uses a literature review approach to investigate the role of artificial intelligence on the relationship between risk management and obtaining the management Objectives. A review of secondary sources of data such as annual reports of the companies , international statistics, social articles, and books was carried out to establish the role of artificial intelligence on the relationship between risk management and obtaining the management Objectives Unobtrusive research methods , such as documentary assessment and conceptual assessment, were used to investigate role of artificial intelligence ,To reduce limiting the study to a some research articles the authors utilized a variety of documents and the information that was published by scholars This article is attempting to addressing the question on, with the overall intention to analysis whether the influence of artificial intelligence on the risk management.

### CONCLUSION

The objective of this paper is to examine the artificial intelligence related to the risk management and the management objectives. Although artificial intelligence provides tend to defend the integrity and legitimacy of management, Artificial intelligence is rapidly developed with the advent of advanced technologies with the exponentially growing volume of data, therefore the AI place positive role in identification analyzing and prioritizing the risk and result of this management objectives will be achieved the vast streams of data generated by banks, AI not only offers predictive insights but also facilitates instant action in suspicious scenarios. Through the use of validity and reliability testing, it has been established that the survey instrument is authentic and trustworthy. With Cronbach's Alpha values that are greater than 0.85, all of the structures exhibit a high level of internal consistency. Based on the findings of the hypothesis test, it can be concluded that artificial intelligence plays a substantial role as a mediator in the interaction between risk management factors and management objectives. As a result of these findings, the proposed theoretical framework is supported, and it is suggested that artificial intelligence has the potential to improve risk management techniques, which would ultimately result in improved management goals. The incorporation of artificial intelligence (AI) as a mediator into the study enables a more in-depth comprehension of the role that AI plays in enhancing risk management procedures and accomplishing management goals. This enhanced analysis

contributes to the formulation of more complete strategies for integrating artificial intelligence in risk management in order to accomplish the objectives of the organization.

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