

**Midocean University**  
**College of Management**  
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## **A Research Proposal**

# **The Impact of The Artificial Intelligence on The Risk Management of the Organizations at the Private Sector in Saudi Arabia**

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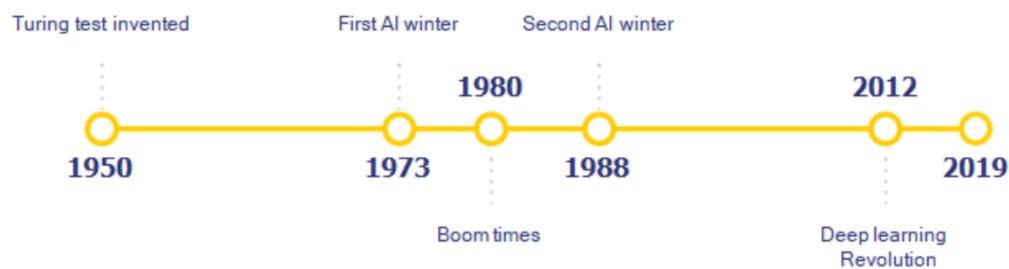
## 1. Abstract

This current research aims to identify the impact of the artificial intelligence on the risk management of the organizations at the private sector in Saudi Arabia. The research conceptual model developed for this research, whereas the independent variable (IV): “Artificial Intelligence (AI)”. Also, the dependent variable (DV) “Risk Management”. The deductive quantitative approach will be used to understanding the relationships between the research variables. The main data for the research will gather using a Google Forms survey. It will use the non-probability sampling technique through using a convenience sampling for all employees at the private sector in Saudi Arabia via an online questionnaire. The research data will be analyze using SPSS software. The research analysis will be done quantitatively. Hence, the expected result is that hypotheses (H1) will be satisfied.

**Keywords:** “*Artificial Intelligence (AI)*”, “*Risk Management*”.

## 2. Introduction

In the current technological development, Artificial Intelligence (AI) has seen rapid growth and application in a variety of domains. AI has a major impact on institutions, and policies. AI is playing increasingly important roles in different sectors as a result of the growth and applications of AI (Naim, 2022). AI is based on the replication of human intelligence concepts (Aldahwan & Alsaeed, 2020). The goal of AI is to create machines that can perform tasks that are normally performed by humans. There are many well-known and advanced areas of AI, including Expert Programs, Fuzzy Logic, Genetic Analytics, Language Analysis, and Logic Programming (Castaño et al., 2020). As a result of AI's innovative and strong applications and benefits, (AI) is presented as the most effective and innovative tool for other disciplines. In the present scenario, this technology is the only one that can be compared with the intelligence of humans and can be trusted for its results (Naim, 2022).



**Figure (1): Growing role of AI, taken from (Naim, 2022).**

Using AI enables the integration of technology and concepts and provides a better return on investment, as well as other tangible and intangible benefits. The advantages may include risk assessment. Through the application of AI, Risk Management's (RM's) competencies have been enhanced. Moreover, AI has many benefits, but there are also some concerns as well. The rise of artificial intelligence has exacerbated ethics issues, increased digital divide, and led to biased decisions. AI should also be monitored for strategic planning at organizational and industrial levels (Naim, 2022). By analyzing large amounts of data, identifying patterns and trends, and making predictions based on historical data, AI can provide valuable insights and improve risk management. It's important to note, however, that AI is not a silver bullet, and must be used alongside human expertise and judgment to be effective (Velibor Bozic, 2023).

Father, risk managers should position themselves as value drivers within their organizations and as AI risk advisers to the board and senior management. Risk managers are typically not

technical experts. By combining risk management skills with an understanding of the organization and broad digital understanding, this person will be able to add value. A risk manager will also require a minimum level of digital knowledge, which will need to be updated on a regular basis. Risk management across various industries relies heavily on artificial intelligence (AI). Organizations can identify, analyze, and mitigate risks more efficiently and effectively by using advanced algorithms and machine learning techniques (Naim, 2022). Additionally, risk management is among the most critical factors affecting the competitiveness of small and medium-sized enterprises (SMEs) (Žigienė et al., 2019). In spite of the potential benefits AI can bring to Saudi Arabia, there are also potential risks, such as job displacement, discrimination, and cybersecurity threats that may impede Saudi Vision 2030's economic progress (Al Anezi, 2021).

Therefore, the Saudi Data AI Authority (SDAIA) and international companies could establish partnerships to support AI research by continuing to employ AI applications in their businesses. The scope of AI will almost certainly increase after 2030 when it affects the economy and society. The contributions of AI to the Saudi Arabia's economy will reach USD 135.2.2 billion by 2030. All future projects and cities in the Kingdom of Saudi Arabia will be based on AI technologies, and the Kingdom intends to invest heavily in this promising field with high profits (Aljohani & Al bilwi, 2022). The use of artificial intelligence has been demonstrated in a variety of fields in South Africa, including engineering, economics, manufacturing, education, and medicine (Ashehri, 2019).

This current research aims to identify the impact of the artificial intelligence on the risk management of the organizations at the private sector in Saudi Arabia. Moreover, this research proposal discussed the research background, the research questions, and the objectives. Further, the hypothesis regarding the relationship between the research variables "Artificial Intelligence (AI)", and "Risk Management" are also formulated. Furthermore, the significance of the research is also provided. The research problem statement is also addressed, as well as ethical considerations. Finally, the content of this research is outlined.

### **3. Research Problem**

There is a gap in literature review about the availability of this research topic in Saudi Arabia. The problem statement of this research seeks to identify the impact of the artificial intelligence on the risk management of the organizations at the private sector in Saudi Arabia.

#### **4. Research Importance**

There are main reasons for this research, as outlined below:

- 1- There is a lack of the literature reviews in the research topic in Saudi Arabia, the research's results are important in order to provide a deep understanding for the impact of the artificial intelligence on the risk management of the organizations at the private sector in Saudi Arabia. Further, this research has been tested the conceptual framework in a new context in Saudi Arabia
- 2- This research is crucial for many employees as it will provide the best guide of using artificial intelligence if employees understand its advantages. According to Naim, (2022), there is a growing recognition of AI's potential. A growing number of people are becoming aware of the potential of artificial intelligence. In the context of risk management, key benefits will include: data processing; the use of structured and unstructured data in massive amounts; combining datasets and updating patterns; increasing and enhancing efficiency by automating day-to-day guidance and assistance; a real-time and predictive approach such as being aware of new exposures, increasing risk prevention advices, and responding quickly to critical situations.
- 3- Furthermore, the managers will be able to make better decisions, and keep improving their skills, thus they can perform better. According to (Naim, 2022), risk managers can use AI to identify key areas where AI can be applied. Risk management steps that need to be improved, claims occurring, lines of business, and total cost of risk (TCOR), risk managers can use this matrix in accordance with their organization's specific needs and benefits.

#### **5. Research Questions**

The research main questions are addressed as the following:

**Q1. What is the impact of the artificial intelligence on the risk management in Saudi Arabia's private organizations?**

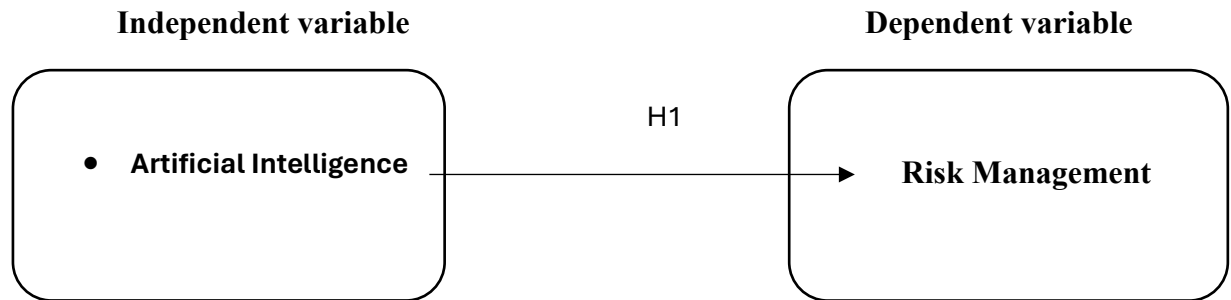
**Q2. What are the challenges faced by organizations while implementing artificial intelligence?**

## 6. Research Objectives

This research has the following objectives:

1. To identify the relationships between artificial intelligence and the risk management.
2. To determine the challenges faced by organizations while implementing artificial intelligence.

## 7. Research Model



**Figure 2.** Research Model has been created for the research's purpose.

## 8. Research Hypotheses

As the following, the research hypothesis is determined below:

**H1: The Artificial Intelligence Has A Positive Impact On The Risk Management**

## 9. Research Methodology

Research approach defined as a strategy for increasing social research validity, research approach is an effective approach (Creswell, 2007). Further, inductive and deductive reasoning are the broad methods of reasoning discussed by Trochiim (2006). A deduction begins with a general and ends with a specific, whereas induction moves from a specific to a general one. It is best to express arguments based on experience or observation inductively, while arguments based on laws, rules, or other widely accepted principles should be expressed deductively (Trochim, 2006). In (Onwuegbuzie & Leech, 2005, p. 267) argument, quantitative and qualitative researchers often consider themselves competitors. Further, It is difficult to generalize findings and draw inferences from quantitative research simply because each individual views the world differently. Qualitative research relies on the epistemological assumption that everyone is different and therefore has a different view of the world (Soiferman, 2010). Moreover, (Watson, 2015), the term quantitative research refers to research that employs statistical procedures and numerical data in evaluating social

phenomena. The result of quantitative research is that it involves measurement and assumes the phenomenon is measurable. In order to verify the measures made, the data are analyzed for trends and relationships.

In this research, it will use a deductive approach, and a quantitative descriptive analysis for the collected data through SPSS software. The primary data is the online survey, while the secondary data will be through online scientific books, articles, journals. The sample size of this research will be determine by using Steven K. Thompson formula: (Robert et al., 1970).

$$n = \frac{N * p(1 - p)}{[(N - 1) * (\frac{d^2}{Z^2}) + p(1 - p)]}$$

Where:

N: Population size, p: probability value = 0.5, d: error = 0.05, Z: Standard normal value =1.96 According to Steven formula the sample size is (200) of employees at the private sector in Saudi Arabia. While the population is all the employees who work in the private sector in Saudi Arabia.

#### 10. Research Limit:

- **Human:** This research will focus on the employees at the private sector in Saudi Arabia.
- **Spatial:** This research will be in Saudi Arabia.
- **Temporal:** This research will be conducted in 2024.

#### 11. Research Structure

There are five chapters in the research as below:

**Chapter One:** It covers an overview of the research, the problem, the objectives, research importance, research model, the research question and hypotheses, the research terminology, the content of the research, and the ethical consideration.

**Chapter Two:** A critical literature review relevant to this research is presented in the second chapter; it summarizes the literature previously published in highly ranked academic journals, identifies gaps, and provided the relationship between the research variables.

**Chapter Three:** Research methods and methodology are discussed in the third chapter. The research design, research approach, research population, research sample, and analysis are discussed.

**Chapter Four:** The results are presented in the fourth chapter. Analyzing the research data and testing hypotheses are described in tables and figures.

**Chapter Five:** In this chapter, it includes a summary of the findings, discussion, implications, limitations for this research, and further recommendations for future researchers.

## **12. Literature Review & Theoretical Framework**

Companies and governments need to identify various models and theories in order to develop risk management strategies. Artificial intelligence assists in managing risk factors by implementing theories and models in the risk management process. The purpose of this paper is to provide an assessment of certain theories and models that businesses can use to develop risk management strategies. An analysis of the iceberg model of risk, stakeholder theory, and agency theory is included. Furthermore, an analysis of AI risk allows an organization to detect fraud processes (Al balooshi, 2018). Additionally, in order to manage risk effectively, organizations must analyze stakeholders based on the stakeholder theory (Citron & Pasquale, 2014). While in this theory, problems or issues relating to agency are assessed. An agency problem occurs when principles and agents have conflicts of interest, as suggested by New et al., (2015).

This paper (Al balooshi, 2018) explores the relationship between AI and risk management as well as developing an understanding of artificial intelligence. This paper examines how businesses and governments are impacted by artificial intelligence and its challenges. A primary qualitative data analysis and a secondary thematic analysis were used for the purposes of this study. As part of the primary data collection method, the researcher interviewed senior level employees of leading organizations, including the research department and risk analytics department. The majority of participants displayed a positive attitude toward artificial intelligence. An organization's risk management framework can be enhanced with artificial intelligence, according to the majority of respondents.

A study by Barta & Görcsi, (2021), the paper analyses the nature of risks AI can bring to corporations and countermeasures that should be implemented using an overview of general IT risk assessment processes and stages of intelligent systems development. Furthermore, the article provided guidelines for implementing business processes to address risks associated with intelligent decision making through frameworks for AI risk management.

A study by (Naim, 2022), this paper also describes three cost modeling methods and challenges using AI techniques. Cost estimation and modelling can be done in three ways: Analog, Analytic, and Parametric. The results suggest strategies and applications of AI for

financial risk management. It has been suggested that there is a need to enhance the application of artificial intelligence to financial risk management by investing in R&D and applications of encryption technology for user information.

### **13. Research Terminologies**

- **Artificial Intelligence:**

As a result of the innovative technological changes taking place on a global scale, artificial intelligence has continued to develop. Instead of natural human intelligence, it is known as intelligent behavior by machines (Kavitha & Lohani, 2019).

- **Risk Management:**

There is a wide range of standards, guides, and other publications that present and describe risk management frameworks in different ways. As a result, successful risk management frameworks are built on a foundation of communications and reporting (architecture), a risk management strategy that is set by the organization (strategy), and protocols that have been established to guide and enforce the process (Hopkin, 2018).

### **14. Ethical Considerations**

In this research, there is no plagiarism. Further, voluntary participation is not required. And confidentiality is maintained.

### **15. Summary**

An overview of the research topic has been provided. Research objectives, research model, research hypothesis, research importance, and research problem statement are discussed. Moreover, the research terminology, the content of the research, and the ethical considerations are explained.

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