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The Impact of Artificial Intelligence Strategies on Enhancing Strategic Decision-Making in Educational Institutions: A Survey of the Opinions of a Sample of University Leaders in Dhi Qar Governorate

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Abstract: This study sought to identify the effect of employing artificial intelligence strategies on improving the efficacy and efficiency of administrative leaders to wards the formulation of strategic decisions. The research enquiry sought to answer these questions: what role can artificial intelligence play towards supporting and strengthening strategic choices in educational institutions? There are two main variables in this study; the independent variable consists the artificial intelligence plans which comprises the data and human resources and the dependent variable, is the strategic choices including external ecosystem and the organizational set-up. The inductive approach was applied, and a set of questionnaires was chosen and examined with the use of SPSS software. Some of the most important findings were.

Keywords: Artificial Intelligence, Strategic Decision-Making.

1. Introduction

The world is experiencing a radical change in business managing and decision-making approaches as a result of rapid progression in artificial intelligence (AI), which becomes one of the most vital tools to support competitiveness and excellence in a tricky and constantly dynamic world. With the huge volume of information and the diversification of its sources, the demand has arisen for efficient strategies capable of explaining this data and the extraction patterns and insights that can contribute to support the strategic decisions. With the use of AI to provide accurate and predictive perspectives, this paper aims to analyse the impact of AI plans to the enhancement of the quality of strategic decisions in an organization through the analysis of the connection amongst the adoption of AI innovations and the efficacy of choices made with regards to organizational performance and innovative principles.

Problem of the study :

Despite the swift progresses in the use of artificial intelligence (AI) and its huge possibility for data collection, and analysis as well as trends in future predictions, many institutions still face the challenges of applying these technologies to improve the quality of their strategic choices. The key problems are in the insufficiency to clarify its process with regards to the procedure by which AI will support decision makers at the peak level of their institutions and also to the precision of their outputs as well as the ethics regarding its usage. This study, therefore, becomes necessary to clarify the function of AI in the improvement of the efficacy of strategic decisions and the constraints that

prevent this function in various organizations.

1. What effect can artificial intelligence (AI) have towards the support and enhancement of strategic decisions in educational institutions?
2. What are the possible challenges and obstacles that could limit the application of AI in strategic decision-making?

The Importance of the Study :

The scientific vitality of this study is in the enrichment of the academic literature and theoretical framework with regards to the existence of artificial intelligence and strategic plans. This can be attained through the efficacy and effectiveness of strategic decision-making within an organization particularly, the educational institutions.

Practically, this research has the ability to offer various educational institutions and related administrative leaders the practical model that can assist them to utilize AI innovations to enhance the quality and precision of their strategic decisions. They can use it to examine big data and to decrease the risks connected with decision-making. The study also can offer a perception of the practicality and ethical challenges linked with the use of AI, that can help them to formulate genuine plans to contribute in the enhancement of competitiveness of educational organizations and the attainment of their sustainable goals.

Study Objectives

1. To clarify the concept of artificial intelligence (AI) strategies and its most prominent techniques related to strategic decision-making.

2. To analyze the role of AI in supporting the quality and accuracy of strategic decisions within educational institutions.

3. To identify the impact of using AI strategies on enhancing the efficiency and effectiveness of administrative leaders in formulating strategic decisions.

4. To explore the most prominent challenges and obstacles facing the application of AI in strategic decisions.

5. To highlight the ethical and organizational dimensions associated with using AI strategies in strategic management.

Study Hypotheses :

Main Hypothesis: There is a statistically significant effect at the 0.05 level of significance for the independent variable, artificial intelligence strategies, with its dimensions (data, human resources), on the dependent variable, strategic decisions, with its dimensions (external environment, organizational structure). The sub-hypotheses identified here are derived from the main hypotheses:

1. The (data) breadth been an impact on the identified dependent variable (strategic choices).

2. The (human resources) breadth has an impact on the dependent variable (decision choices).

2. Methodology

For the theoretical component of the study, the researchers adopted a descriptive approach, reviewing Arabic and foreign books, articles, and research papers.

For the practical component, the researchers relied on questionnaires, which were deemed the most suitable and effective method for this study.

Artificial intelligence :(AI) is a computational concept that helps machines think and solve complex problems [1]. It is a scientific field that seeks to mimic human-like intelligent behavior in machines to assist humans in performing their work. AI represents a valuable addition to many business applications and enhances the competitiveness of organizations [2].

It can be said that artificial intelligence helps humans understand information in huge

quantities, as it shifts the boundaries between human resources and computers in management from the operational side to the strategic side. In terms of the role of artificial intelligence in making administrative decisions, it is referred to as supporting basic business decisions and not a decision maker at present, but in the future there are great possibilities for increasing the capacity and speed of future artificial intelligence, which may make it a participant in the process of formulating basic business decisions[3], [4].

To understand the impact of artificial intelligence on strategic decision-making, one can look at how organizations process data and generate insights in the current highly competitive and complex environment. AI strategies can analyze large amounts of data and provide evidence-based recommendations, and can help in making the right decisions in a timely manner, improve operational efficiency, and stimulate innovation [5], [6].

The real-world application of artificial intelligence (AI) can be evidently noticed in the strategic decision-making, in which AI-inclined prediction and optimizing mechanisms are applied to improve institutional plans, to mitigate risks and to contribute to higher institutional resilience. Despite the essence and greater benefits of the AI with regards to strategic decision making, it still needs cautious alignment with organizational targets and good governance models [7], [8].

Dimensions of Artificial Intelligence Strategies

1. Data: Collecting, verifying, processing, storing and the governance of data, further to its protection, privacy and compliance with national and international guidelines and policies can be ensured. One of the foundations to affirm the application of artificial intelligence is the organizational data strategy which needs to be aligned with its artificial intelligence approach [9].

Human Resources: Planning for human resources and development capabilities in such a way that will aligns with the basic requirements of the artificial intelligence plan. This strategy is dependent on the study of human genitive tendencies and the act of identifying ways to include this attitude into the artificial machines. This many comprise the analysis of the impact of employing the artificial intelligence and the management of change at the organizational stages, while affirming that all important employees at different levels to obtain awareness and training to effectively execute the basic changes [10].

Strategic Choices

Strategic decisions are those that can be considered as external options and threats, and internal capabilities, to improve the long-term success of the organization (Ibrakat, Issa, 2024:7)

These are also unconventional decisions, linked to multi-dimensional strategic problems and characterized by a high degree of depth and complexity. This type of decision requires in-depth research and study that addresses all future scenarios and possible outcomes. (Al-Yameen, 121:2013)

A set of essential elements is necessary for strategic decisions to be effective and achieve their objectives. These elements include the following: [11].

1. Availability of information related to the decision problem
2. Foresight and vigilance regarding future events
3. Sufficient time to formulate the decision more effectively
4. The existence of a system for monitoring the implementation of different decisions

A decision cannot be considered strategic unless it is made by senior management and the success or failure of the organization depends on it. Furthermore, it is linked to the vital and fundamental aspects of the organization. Strategic decisions therefore require an analysis of the external environment to identify opportunities and threats; thus, they rely on forecasting and are characterized by a high degree of uncertainty [12].

Characteristics of Strategic Decisions

The most important characteristics of strategic decisions can be formulated and categorized in

the following table: [13].

Table 1. Characteristics of Strategic Decisions.

Researcher/Year/Page	Characteristics of strategic decisions	
[13]	Central	It is taken at the highest administrative levels.
	Duration	It covers a long period of time
	Risks	It has significant risks
	Information	Decisions are made based on unconfirmed information.
	Resources	Many resources need to be allocated
	Environmental conditions	It works to align the organization's activity with the external environment.
	impact	It relates to long-term goals and problems.

Dimensions of Strategic Decisions

Risks: Strategic decisions are characterized by a high degree of risk because they are made in an environment of uncertainty. Therefore, strategic decision-makers in universities must pay close attention to the quality of information upon which the strategic decision is based, conduct thorough studies on decision alternatives, and choose the most appropriate one [14].

Organizational Structure: Strategic decisions have a real impact on the organizational structure of educational institutions, breaking down rigidity and routine by reorganizing the leadership apparatus and building modern organizational structures that believe in individual participation in leading education and directing educational outcomes towards quality and excellence [15].

Pratical Aspect

Table 2. Shows the value of the Waccharombbach constant, which reached (0.86) for all axes as shown in the table below :

Table 2. Value of the reliability coefficient.

Crombach's alpha coefficient	Axes
0.93	Data
0.76	Human Resources
0.93	Risks

0.77	Organizational structure
0.86	Research themes as a whole

Presenting the results related to the second part of the questionnaire concerning artificial intelligence strategies and strategic decision-making, as shown below :

This section focuses on presenting the arithmetic means and standard deviations of the dimensions of the current study to determine the extent of dispersion in the responses of the surveyed sample, through which the importance of each dimension of the study can be ,determined as shown in **Table 2.**

Table 2. Shows the arithmetic mean and standard deviations of the research variables.

Standard deviations	arithmetic means	Main and sub-variables
1.85	4.56	AI strategies
1.113	3.42	Data
1.913	4.19	Human Resources
1.104	3.12	Strategic decisions
1.095	3.62	External environment
1.97	4.81	Organizational structure

Prepared by the two researchers according to the results of SPSS24

Second: Testing the main and sub-research hypotheses as follows Statistical tests were conducted to determine the validity of the study hypotheses and to ascertain the impact of artificial intelligence strategies on strategic decisions. We will begin by testing the sub-hypotheses and then the main research hypothesis :

The first sub-hypothesis states: "There is a statistically significant effect of the data dimension on the dependent variable, strategic decisions, and their dimensions," as shown in **Table 3.**

$$Y=a + B(x)$$

$$Y = 1.46 + 0.40 (x)$$

Table 3. The effect of the data dimension on the dependent variable strategic decisions in its dimensions.

Sig*	The value of favoritism F	regression coefficient B	Coefficient of determination R	Value of the fixed limitA
0.000	6.59	0.40	1 0.6	**1.46**

Prepared by the two researchers according to the results of SPSS24

Is clear from the table above that the value of the nepotistic f was (6.59) This value is greater than the critical F- value of (4.18) at a significance level of 0.05. This indicates a significant effect of the independent variable, data, on the dependent variable, strategic decisions, with its dimensions

of external environment and organizational structure. Furthermore, the regression curve is well-suited to describing the relationship between the two variables, as the coefficient of determination (R) reached (0.61). This confirms that the independent variable can explain approximately (61%) of the variables affecting the dependent variable, strategic decisions. The remaining (39%) represent variables not included in the research model. Based on the above, the sub-hypothesis, which states that " there is a statistically significant effect of the data dimension on the dependent variable, strategic decisions, with its dimensions," was accepted.

Second sub-hypothesis: It states that "there is a statistically significant effect of the human resources dimension on the dependent variable, strategic decisions, in its dimensions," as shown in **Table 4.**

$$Y=a + B(x)$$

$$Y = 1.43 + 0.56 (x)$$

Table 4. The effect of the human resources dimension on the dependent variable, strategic decisions, and its dimensions.

Sig*	The value of favoritism F	regression coefficient B	Coefficient of determination R	Value of the A fixed limit
0.001	7.72	56.0	0.73	**1.43**

Prepared by the two researchers according to the results of SPSS24

From the table above that the value of the nepotism f was (7.72) This value is greater than the critical F- value of (4.18) at a significance level of 0.05. This indicates a significant impact of the independent variable, human resources, on the dependent variable, strategic decisions, with its dimensions of external environment and organizational structure. Furthermore, the regression curve is well-suited to describing the relationship between the two variables, as the coefficient of determination (R) reached (0.73). This confirms that the independent variable can explain approximately (73 %) of the variables affecting the dependent variable, strategic decisions. The remaining (27%) represent variables not included in the research model. Based on the above, the sub-hypothesis, which states that " there is a statistically significant impact of the human resources dimension on the dependent variable, strategic decisions, with its dimensions," was accepted.

Main hypothesis It states: "There is a statistically significant effect between the independent variable, artificial intelligence strategies, with its dimensions of data and human resources, and the dependent variable, strategic decisions, with its dimensions of the external environment and organizational structure," as shown in **Table 5.**

$$Y=a + B(x)$$

$$Y = 1.56 + 0.65 (x)$$

Table 5. The effect of the independent variable, artificial intelligence strategies and its dimensions , on the dependent variable, strategic decisions and their dimensions.

Sig*	The value of favoritism F	regression coefficient B	Coefficient of determination R	Value of the fixed A limit
0.003	14.87	0.65	0.66	**1.56**

Prepared by the two researchers according to the results of SPSS24

Nepotistic f was (14.87) This value is greater than the critical F- value of (4.18) at a significance level of 0.05. This indicates a significant relationship between the independent variable, artificial intelligence (with its dimensions of data and human resources), and the dependent variable, strategic decisions (with its dimensions of the external environment and organizational structure). Furthermore, the regression curve is well-suited to describing the relationship between the two variables, as the coefficient of determination (R) reached (0.66). This confirms that the independent variable can explain approximately (66%) of the variables affecting the dependent variable, strategic decisions. The remaining (34%) represent variables not included in the research model. Based on the above, the hypothesis stating " There is a statistically significant effect between the independent variable, artificial intelligence strategies (with its dimensions of data and human resources), and the dependent variable, strategic decisions (with its dimensions of the external environment and organizational structure)" was accepted.

Research conclusions

1. Artificial intelligence (AI) strategies have proven pivotal in enhancing the quality of strategic decision-making by their ability to analyze massive amounts of data with speed and accuracy surpassing traditional methods, thus reducing uncertainty in critical decisions.
2. AI strategies improve institutional competitiveness through the improvement of speed of responding to environmental demands and the identification various opportunities and threats, which may positively impact on the sustainability of institutional performance.
3. The deployment of AI may help reduce human interruption and manipulation that may influence planned decisions by depending on objective, data-inclined analytic models against personal instinct.
4. The successful execution of planned AI depends on the institution's readiness o adopt digital infrastructure, competence and data availability and of personnel availability towards managing smart technologies.
5. AI will not replace human leadership completely, but it will serve as a tool that will support the efficiency of planned decisions. The role of human beings in this context is to interpret results and implement final decision.is not a complete.
6. The findings indicate a numerical significance as well as positive connection between the adoption of AI strategies and enhancing the efficacy of strategic decisions in various situations.

Research Recommendations

1. Organizations must learn to adopt artificial intelligence strategies that are connected with the general objectives and to ensure that innovations are applied to support various decisions.
2. Investment in digital set-up should be reinforced through the formation of data systems and various databases, given their fundamental function towards enhancing the efficacy and precision of AI outputs.
3. Administrative leadership and distinct decision-makers as well as stakeholders should be trained to perceive the procedure of AI towards contributing to the optimum usage of these technologies in planned decision making.
4. Clear governance models and regulatory laws should be founded to guide the use of AI in planned decision-maing and to emphasize ethical observations, transparency and data protection.
5. Researchers should be stimulated to conduct apply AI and to make impact on their future studies within the purview of governance and education.

6. Clear routine indicators should be considered to assess the efficacy of AI strategies to support strategic decision-making, and to reduce related risk

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