

# “ARTIFICIAL INTELLIGENCE IN BUSINESS DECISION MAKING”

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## **Abstract:**

Artificial Intelligence (AI) has become an important technological innovation that supports business organizations in improving decision-making processes. The objective of this study is to examine the role of artificial intelligence in business decision making and to analyze how AI tools help organizations make accurate, fast and data-driven decisions. The research is based on primary data collected through an online questionnaire from different respondents. Statistical tools such as Chi-square test, Mann–Whitney U test, Kruskal Wallis test and Factor Analysis were used to analyze the data. The findings of the study indicate that artificial intelligence significantly improves the efficiency, speed and accuracy of decision making in organizations. The study also highlights that AI works more effectively when combined with human judgment rather than replacing human decision makers completely. The research concludes that the adoption of artificial intelligence can help organizations achieve better strategic and operational decisions in the modern digital economy.

## **Introduction:**

Artificial Intelligence (AI) is one of the most rapidly growing technologies in the modern digital world. AI refers to computer systems and machines that are capable of performing tasks that normally require human intelligence such as learning, reasoning, problem solving and decision making. With the advancement of technology, organizations are increasingly using artificial intelligence to analyze large amounts of data and support effective decision making.

In the modern business environment, companies face complex challenges and large volumes of data that require quick and accurate decisions. Artificial Intelligence helps managers analyze data, identify patterns and generate insights that improve the quality of decisions. AI technologies such as machine learning, deep learning and natural language processing help organizations improve productivity, efficiency and competitive advantage.

Artificial Intelligence is widely used in different sectors including finance, healthcare, marketing and information technology. In business organizations, AI assists in forecasting demand, customer analysis, risk management and strategic planning. Therefore, AI has become an important tool for improving business decision-making processes.

## **Review Of Literature**

**Ahmad, A. (2024) A Study on “Ethical Implications of Artificial Intelligence in Business Decision-making: A Framework for Responsible AI Adoption”**

The increased use of Artificial Intelligence (AI) in international businesses as a result of the rapid advancement of AI in accounting has raised significant ethical concerns. The focus

of this study is on international corporations operating in Jordan and the ethical implications of using AI in accounting practices. The target of this exploration is to give an extensive system to the moral and dependable incorporation of simulated intelligence inside the bookkeeping space. The exploration utilized a study strategies approach while 379 respondents were chosen utilizing bunch and relative inspecting. The subjective part of the exploration researches the perspectives and worries of people relating to the utilization of man-made intelligence. The review results give huge commitments to the improvement of a setting explicit worldview for computer based intelligence morals that focuses on ideas like straightforwardness, reasonableness, anal responsibility. The discoveries of this study have significant incentive for worldwide companies took part in business tasks in Jordan and comparable areas. The outcomes give associations the fundamental devices to capably address the moral situations that arise because of involving man-made reasoning in bookkeeping strategies.

**Smith (2023) A study on “AI in Decision Making: Transforming Business Strategies”**

Analyzes the ethical dimensions of AI, investigating both the benefits and the potential problems that accompany its integration into decision-making processes. While AI offers various advantages, such as better efficiency and improved decision accuracy, Smith warns of possible drawbacks, including data privacy problems and algorithmic prejudice. These ethical considerations are crucial, as the use of AI in decision-making typically involves sensitive data and might lead to unforeseen effects if not properly managed. For example, algorithmic discrimination can occur when AI systems, unintentionally or otherwise, prefer certain groups over others based on biased data inputs.

**Charitha and Hemaraju (2023) A Study On “The Impact of Artificial Intelligence On Business Decision-Making Processes”**

Investigated the broad implications, difficulties, and transformative possibilities of AI in corporate decision-making. The researchers discovered how applying data analysis, pattern recognition, and AI can increase decision-making accuracy using an integrated strategy. Real world examples from various industries demonstrated how AI-driven decision-making can boost productivity, lower risk, and encourage innovation.

**Rajagopal et al. (2022) A Study on “Impact of Artificial Intelligence Systems on Organizational Decision-Making”**

Their research focuses on understanding the human reliance on AI in joint decision-making scenarios. By developing a cognitive model, they infer the latent reliance strategies of humans on AI assistance, providing insights into how AI influences human decision-making processes. The study reveals that while AI assistance is becoming ubiquitous in decision-

making applications, there is a need to understand and manage the dynamics of human-AI collaboration. This understanding is crucial for businesses to leverage AI effectively without undermining human judgment and intuition.

### **Research Methodology**

This study examines the impact of Artificial Intelligence on business decision making. The research is based on a descriptive research design to understand how AI technologies influence business decisions in different sectors. Both primary and secondary data are used in this study. Primary data is collected through a structured questionnaire from respondents belonging to different age groups, genders, education levels, and business backgrounds. Secondary data is collected from research papers, journals, books, and reliable online sources related to artificial intelligence and business decision making. For data analysis, Descriptive statistics are used to summarize the data through percentages, tables, and charts. Statistical tools such as Chi-Square Test, Kruskal–Wallis Test, and Mann–Whitney U Test are used to examine the relationship between demographic factors and the use of artificial intelligence in business decision making. Factor analysis is applied to identify the key factors influencing the use of artificial intelligence in business decision Making. The analysis is conducted using SPSS software. Artificial intelligence helps in improving business decisions and to understand the influence of demographic variables on the adoption of AI in business activities.

#### **Statement of the problem:**

While AI has shown great potential in optimizing business performance, many organizations are yet to realize its full benefits due to limited awareness, insufficient training, and unclear implementation strategies. There is a lack of empirical evidence that clearly links AI awareness to its perceived impact on business decision-making. This research seeks to answer the question: "**How does Artificial Intelligence influence business decision making and to what extent does it improve the quality of business decisions?**"

#### **Scope of the Research :**

This research focuses on analyzing the **awareness, adoption, and impact** of AI in business decision-making. The study examines how individual understanding and organizational exposure to Artificial Intelligence influence perceptions of its effectiveness. The research includes professionals from various sectors, such as IT Technology, Marketing, Finance, Education, Healthcare and Media. By studying these sectors, the Research aims to understand How AI adoption affects decision-making performance across various Business. Overall, the study provides insights into the role of AI in improving the efficiency and quality of business decisions across various industries.

## Objective of the Study

- To identify the challenges in the adoption of Artificial Intelligence in organizations.
- To examine how Artificial Intelligence can help solve decision-making problems in organizations.
- To analyze the role of Artificial Intelligence in business decision making.
- To analyze the adoption and utilization of Artificial Intelligence tools in business organizations to support decision-making processes.

## Hypothesis

### Hypothesis 1

H<sub>0</sub> : There is No Significant difference between Mean Rank of age groups with Respect to factors of Use of AI in Business Decision Making.

H<sub>1</sub>: There is Significant difference between Mean Rank of age groups with respect to factors of Use of AI in Business Decision Making.

### Hypothesis 2

H<sub>0</sub>: There is no association between Demographic Profile and perception towards AI Helps in Business Decision Making.

H<sub>1</sub>: There is association between Demographic Profile and perception towards AI Helps in Business Decision Making.

## Limitation Of Study

Convenience Sampling method used to select participants may not fully represent the entire population being studied Sample selected may not represent whole population, as sample size selected is very small in proportion to population due to time and cost constraints.

## Factor Analysis

### HYPOTHESIS:

There is no significant underlying factor structure among the variables related to AI perception and adoption.

### H1 (Alternative Hypothesis):

There exists a significant underlying factor structure among the variables related to AI perception and adoption.

**Table 1 KMO and Bartlett's Test of sampling Adequacy**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.661
Bartlett's Test of Sphericity	Approx. Chi-Square	252.18 3

	df	120
	Sig.	.000

In Table Above KMO value (0.661) indicates adequate sampling, Bartlett's Test is significant ( $p < 0.05$ ), meaning variables are correlated.

**Table 2 Total Variance Explained**

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.245	20.283	20.283	3.245	20.283	20.283	2.505
2	1.650	10.314	30.597	1.650	10.314	30.597	2.281
3	1.420	8.874	39.471	1.420	8.874	39.471	1.847
4	1.254	7.840	47.311	1.254	7.840	47.311	1.648
5	1.166	7.287	54.597	1.166	7.287	54.597	1.851
6	1.003	6.271	60.869				
7	.930	5.815	66.684				
8	.868	5.424	72.108				
9	.790	4.935	77.043				
10	.692	4.324	81.366				
11	.668	4.177	85.544				
12	.641	4.006	89.550				
13	.552	3.450	93.000				

14	.418	2.614	95.613				
15	.405	2.533	98.147				
16	.297	1.853	100.000				
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

**Table 3 Pattern Matrix**

Pattern Matrix <sup>a</sup>					
	Component				
	1	2	3	4	5
Business decisions are more effective when human judgement and AI based insights are combined	.933				
Collaboration between humans and AI will improve the speed and quality of decisions in the future	.671				
AI technology allows me to focus on High-value tasks by automating repetitive work					
I believe that AI is a powerful tool for the future of my profession		.808			
AI has increased the speed and efficiency of our decision-making processes		.612			
Professionals will need to continuously upgrade their skills to collaborate effectively with AI in future workplace		.511			
Over-dependence on AI systems may reduce human judgement in critical decisions			.815		

Data quality and availability issues are primary challenges in our AI implementation			.6 0 0		
High implementation costs are a major barrier to wider AI adoption in organization			.5 5 7		
I am highly familiar with AI concepts and technologies relevant to business				.6 3 5	
AI use has led to enhanced consistency and reduced human error in decision outcomes				.5 4 7	
Generative AI is treated as a support system rather than final decision authority				.5 3 5	
Our organization has achieved cost reductions through AI automation in decision-making				.5 0 0	
AI will increasingly support human decisions makers rather than completely replacing them in the future					.7 76
Lack of trained employees is a major barrier to successful AI adoption in decision making					- .7 12
I am Aware that AI can be used to Translate languages or explain difficult topics easily					
Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.					
a. Rotation converged in 7 iterations.					

### Development of the Factors

The first factor is Human–AI Collaboration, which includes variables indicating that business decisions become more effective when human judgement and AI-based insights are combined and that collaboration between humans and AI improves the speed and quality of decisions. The second factor is AI Performance Benefits, which includes variables related to

the advantages of AI such as increased speed and efficiency in decision-making, the importance of AI for the future of professions, and the need for professionals to continuously upgrade their skills to work effectively with AI. The third factor is AI Challenges and Risks, which includes variables such as over-dependence on AI systems, data quality and availability issues, and high implementation costs that may act as barriers to AI adoption. The fourth factor is Organizational AI Usage, which reflects the practical use of AI technologies in organizations, including familiarity with AI concepts, improved consistency in decision outcomes, and cost reductions through AI automation. The fifth factor is Future Readiness, which indicates the growing role of AI in supporting human decision-makers and highlights the importance of skilled employees for effective collaboration with AI in the future workplace.

## **Conclusion**

Artificial Intelligence (AI) is a broad and rapidly growing field of technology that enables machines and computer systems to perform tasks that normally require human intelligence. AI plays an important role in analyzing large amounts of data and supporting effective decision-making in different sectors of the economy. In the modern digital environment, organizations are increasingly using Artificial Intelligence and data mining techniques to improve the quality and accuracy of their decisions.

The main objective of this research is to make people aware of how Artificial Intelligence helps in business decision making. AI systems can analyze complex data, identify patterns and provide useful insights that help managers take better and faster decisions. Several AI techniques such as neural networks, machine learning, fuzzy logic and data mining are widely used to support business operations and strategic planning.

Artificial Intelligence is widely used in different industries such as healthcare, information technology and finance. In the healthcare sector, AI helps doctors analyze medical data, detect diseases early and improve treatment decisions. In the IT sector, AI is used for automation, cybersecurity and software development. In the finance sector, AI helps banks and financial institutions detect fraud, analyze risk and improve investment decisions.

Artificial Intelligence also plays an important role in understanding consumer behavior and improving customer services. Through data mining and opinion mining, organizations can analyze customer feedback, preferences and market trends. This helps businesses design better products and provide personalized services to their customers.

Artificial Intelligence systems also help organizations in forecasting demand, reducing operational costs and improving efficiency. By using AI technologies, businesses can make faster, more accurate and data-driven decisions. Therefore, Artificial Intelligence has become

an essential tool for modern organizations to remain competitive in today's dynamic business environment.

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