

Impact of AI-Assisted Decision Making on Managerial Effectiveness: An Empirical Study of Indian Organizations

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Abstract: *During the years, Artificial Intelligence (AI) is continuously becoming an important aspect of management activities in many modern organizations. Recent times it is been noticed that, Artificial Intelligence has become an essential technology that is changing how Indian organizations carry out their daily activities and make important business decisions. This has gained increasing interest amongst both researchers and business professionals as; more and more organizations adopt AI in management. AI technologies such as-machine learning, predictive analytics, and decision-support systems, allow managers of Indian companies to understand data in a better way and make well-informed decisions. Their overall effect on the quality and success of managerial decision-making is still not completely clear and needs further research because these technologies offer several advantages. Based on the existing research work, this paper suggests that Artificial Intelligence (AI) helps managers to make better decisions by improving the speed and accuracy of the decision-making process. Present research work will also let to understand how it supports strategic planning and reduces risks through processing large amounts of information efficiently, minimizing human bias, providing valuable decision support, and allowing managers to evaluate different possible situations before making final decisions. 372 people from Indian Organizations were surveyed to explore the factors that determine the impact of AI-assisted decision making on managerial effectiveness in Indian Organization. The study finds a significant impact of AI-assisted decision making on managerial effectiveness.*

Keywords: Artificial Intelligence, Organizations, Business professionals, Machine learning, Predictive analytics.

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Introduction

In today's digital economy, most of the organizations increasingly depend on advanced information technologies to improve the speed, accuracy, and quality of managerial decision-making. Among such technologies, Artificial Intelligence (AI) is continuously emerging as, one of the most important innovations. "Artificial Intelligence (AI) is bringing about a major change to the way modern institutions function." Therefore, it is being observed that technologies such as-machine learning, predictive analytics, natural language processing, and intelligent decision-support systems have turned into an important part of everyday management activities. It has revamped the way organizations consistently carry-out their operations, expand business strategies, and strengthen their competitive position in the market. These technologies allow organizations to analyze large amounts and complex sets of data to identify useful insights that will support managerial decision-making. According to Vudugula et.al. (2023), with the usage of such advanced algorithms and powerful computing capabilities, AI enables managers to consider more accurate, informed and timely decisions. Rapid growth of digital infrastructure and advancements taking place in big data analytics have encouraged the wider use of Artificial Intelligence (AI) technologies across many industries. Today, AI is being widely applied in sectors such as-finance, healthcare, manufacturing, retail, and logistics to improve the efficiency, support decision-making, and enhance overall business performance. Sinnaiah et.al. (2023), stated that managerial decision-making is considered to be one of the most important responsibilities among organizational leaders. This involves selecting of the most suitable course of action from several available options to achieve the organization's goals effectively. Previously, in the past managers mainly relied on their personal judgement, previous experience, and limited statistical analysis while making important decisions. Present study will also introduce how it helps managers identify meaningful patterns, forecast future trends, and assess potential risks more accurately than traditional decision-support methods. Rane et.al. (2024), mentioned Artificial Intelligence (AI) enables organizations to use real-time data analysis by allowing managers to continuously monitor business operations and respond quickly when changes are needed. This helps organizations to improve their performance and adapt their business strategies at the right time. It supports managers in making more accurate and effective decisions while, reducing the risk of errors that may result from human judgement. Recent research work suggests that, "AI is becoming an essential tool for improving the quality of managerial decision-making."

Literature Review

During the recent years, it is being noticed that there has been a significant increase in research on the use of Artificial Intelligence (AI) in management. Previously, mainly studies focused to examine on how AI could automate routine tasks and process large amounts of data. Although, many recent research work has shifted its focus on understanding how Artificial Intelligence (AI), helps to make effective decisions to improve organizational performance. AI has become one of the key technologies which is driving digital transformation amongst modern organizations. Over the few decades companies in many industries have started using Artificial Intelligence (AI) more and more in their daily work and long-term plans. This is to make things run smoother come up with ideas and stay ahead of the competition. Many organizations have

adopted AI to improve efficiency. They use it to encourage innovation. It helps them strengthen their advantage. Artificial Intelligence (AI) enable machines and computer systems to perform tasks which normally require human intelligence. According to Shahid & Sheikh. (2021), managers of organizations are required to process large volumes of information within the short period of time as; business environments are becoming more competitive and increasingly dependent on data. In these circumstances Shukla & Agnihotri. (2024), stated Artificial Intelligence (AI) assists managers by enhancing predictive future outcomes, data analysis, and fabricating the decision-making process swifter and more effective. Effective managerial decision-making is regarded to be one of the most vital factors that influences the accomplishment of an organization. Decisions which involve business strategy, resource distribution, risk management, human resource management (HRM), and market position have a direct impact towards organizational performance and competitive advantage. In the past, managers of organizations mainly to be dependent on their experience, knowledge, and personal judgement when making decisions. While these qualities continue to be valuable, human decision-making can be affected through limited time, large amounts of information, and personal biases which may reduce the quality of decisions. According to Kozioł-Nadolna & Beyer. (2021), managerial decision-making is generally a process which involves several steps that allows to help managers to choose the most suitable course of action. These steps include the identification of problems, collection of relevant information, developing different possible solutions, evaluating each alternative, and finally selecting and implementing the most appropriate decision. Gama & Magistretti. (2025), acknowledged Artificial Intelligence (AI) assisted technologies, allowed managers of an organization to examine organizational data, and identify patterns or unusual changes that may indicate potential problems. Predictive analytics tools can help to detect trends such as-declining of sales or operational in-efficiencies at an early stage by allowing managers to take timely action before these issues become more serious. Such technologies help organizations to collect and analyze large amounts of data from different sources. Managers are also able to gain a better understanding of market trends, customer preferences, operational performance, and competitor's activities. The above-mentioned gained information assists managers to make more informed and effective business decisions. Jelonek & Kumar. (2025), stated that among the Indian organizations one of the most valuable applications of Artificial Intelligence (AI) in organizational management is the use of AI-powered decision support systems (DSS). Through, such systems managers are able to examine complex problems, compare different options, and make informed, accurate, and provide logical decisions based on the available data. According to some reports published by the McKinsey Global Institute, Artificial Intelligence (AI) is expected to contribute around 15 trillion US dollars to the global economy by the year 2030. Therefore, significant share of this growth is likely to come from better and more effective business decision-making. AI-based decision support systems (AI-DSS) provide practical and affordable solutions such as-demand forecasting, inventory management, customer behavior analysis, credit-risk evaluation, and marketing strategy development amongst all micro, small, and medium-sized enterprises (MSMEs) and startups of India. Among Indian organizations these business functions were often, difficult for smaller organizations to manage because the traditional enterprise software was expensive and complex. One of the major advantages of using the AI-based decision support systems is their ability to improve the quality of managerial decisions. By analyzing large amounts of data and identifying hidden patterns and relationships, these systems provide

valuable insights that are often difficult for people to recognize through traditional methods. Narne et.al. (2024), mentioned AI-based decision support systems also provide the managers with real-time decision support. Indian organizations are able to continuously collect, process, and analyze data from their business operations as well as external sources with the integration of technologies such as cloud computing and the Internet of Things (IoT). According to some reports, one more primary advantage of AI-enabled decision support systems is their ability to provide predictive insights. Machine learning algorithms could estimate future events and trends through analyzing historical data and identifying patterns. According to Zong & Guan. (2025), results obtained from these predictive analyses may offer organizations opportunities to plan, respond, and adapt to the market and its risks and manage resources optimally. AI-based decision support tools are being widely used across different functional areas of organizations. In financial management, such AI-assists with tasks such as investment evaluation, risk analysis, and financial forecasting through helping them to make more accurate and informed decisions. Organizations in India must need to only ensure that the data used by Artificial Intelligence (AI) systems should be accurate, reliable, and of higher quality. Incomplete and poor-quality of data could lead towards incorrect predictions and ineffective recommendations. Vudugula et.al. (2023), stated AI-based decision support systems have been proved to be an essential part of managerial decision making in modern organizations. Ali & Anwar. (2021), asserted strategic decision making is one of the crucial responsibilities of organizational leaders to influence growth, competitive standing, and long-term sustainability of the business. In the recent times, as global markets have become more complex and technology and competition have continued to grow, many Indian organizations have recently begun recognizing the need for better analytical methods that assist with effective decisions. Previously, decisions were mostly influenced by the experience of managers, their intuition, and few other tools of analysis. The use of AI-based tools and technologies has increasingly come into play as a means of aiding in making strategic decisions through data analysis, prediction, and evaluation of various scenarios. Ramya et.al. (2024), mentioned AI-based predictive analytics allows organizations to estimate future product demand and identify potential opportunities for market growth in different regions of India. Insights drawn through such methods allows managers to develop effective long-term strategies for product development, marketing, and investment, leading towards better planning and more informed business decisions. As per the Startup Genome Report, it has been observed that most of the startups established in India fail in their first five years due to wrong decision-making, inefficient use of resources, and lack of a proper strategy. According to Siddiqui. (2025), AI-powered decision support systems (DSS) have the potential to address these challenges by helping organizations to make data-driven, predictive, and real-time decisions. But the use of AI-based systems within Indian start-ups and micro, small, and medium enterprises (MSMEs) continues to be relatively low due to various reasons including high cost, complexity of technology, and lack of access to cutting-edge technologies. Artificial Intelligence (AI) technologies have advanced rapidly and have also shown great potential to improve decision-making in many industries, start-ups and micro, small, and medium-sized enterprises (MSMEs) often left behind in adoption of these technologies. Many of these organizations are still in the early stages of digital transformation and are unable to fully receive assistance from AI-driven solutions. Therefore, organizations of India need to develop effective strategies for adoption of Artificial Intelligence (AI) technologies while ensuring that data is used in an ethical,

responsible, and secured manner. This approach will help organizations to gain the benefits of AI while maintaining trust, protecting privacy, and following ethical standards.

Objective

1. To explore the factors that determines the impact of AI-assisted decision making on managerial effectiveness in Indian Organization.

Methodology

372 people from Indian Organizations were surveyed to explore the factors that determine the impact of AI-assisted decision making on managerial effectiveness in Indian Organization. “Random sampling method” and “Exploratory Factor Analysis” statistical tools are used.

Findings

Male are 53.0 and rest 47.0% are females. 26.1% among them are below 35 years of age, 44.9% are in the age group of 35-45 years, and rest 29.0% are above 45 years of age. 19.1% respondents are managers, 19.9% are team leaders, 25.8% are specialists, 22.3% are analysts and rest 12.9% are working at other positions at managerial level in Indian organizations.

“Table 1 General Details of Respondents”

“Variables”	“Respondents”	“Percentage”
Gender		
Male	197	53.0
Female	175	47.0
Total	372	100
Age		
Below 35 years	97	26.1
35-45 years	167	44.9
Above 45 years	108	29.0
Total	372	100
Designation		
Manager	71	19.1
Team Leader	74	19.9
Specialist	96	25.8
Analyst	83	22.3
Others	48	12.9
Total	372	100

“Exploratory Factor Analysis”

“Table 2 KMO and Bartlett's Test”

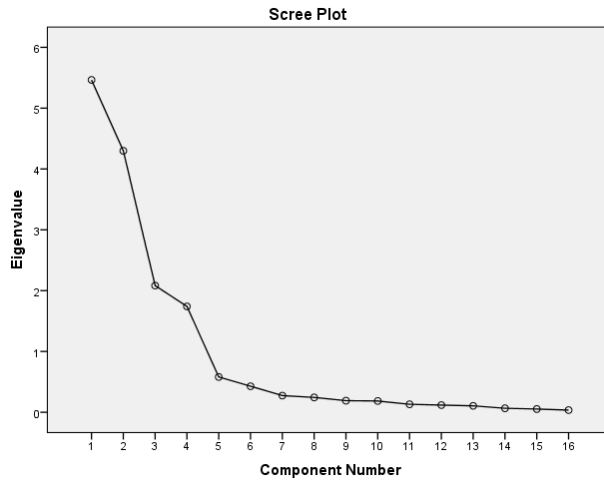
“Kaiser-Meyer-Olkin Measure of Sampling Adequacy”		.775
“Bartlett's Test of Sphericity”	“Approx. Chi-Square”	6706.452
	“df”	120
	“Sig.”	.000

“KMO value” is 0.775 and the “Barlett’s Test of Sphericity” is significant.

“Table 3 Total Variance Explained”

“Component”	“Initial Eigen values”			“Rotation Sums of Squared Loadings”		
	“Total”	“% of Variance”	“Cumulative %”	“Total”	“% of Variance”	“Cumulative %”
1	5.464	34.151	34.151	3.645	22.781	22.781
2	4.299	26.866	61.017	3.484	21.776	44.557
3	2.083	13.016	74.033	3.248	20.300	64.857
4	1.741	10.879	84.912	3.209	20.056	84.912
5	.581	3.628	88.541			
6	.428	2.676	91.217			
7	.274	1.714	92.930			
8	.244	1.526	94.456			
9	.191	1.194	95.650			
10	.185	1.158	96.808			
11	.131	.822	97.630			
12	.118	.739	98.368			
13	.106	.663	99.031			
14	.066	.412	99.443			
15	.053	.333	99.776			
16	.036	.224	100.000			

In a “principal component analysis”, 16 variables were grouped into 4 factors with 22.781%, 21.776%, 20.300% and 20.056% variance respectively and total variance is 84.912%.



“Figure 1 Scree plot of Eigen Values”

Figure 1 shows the “Eigenvalues” derived from the "Total Variance Explained" table, indicating an elbow point at 4 components.

“Table 4 Rotated Component Matrix”

“S. No.”	“Statements”	“Factor Loading”	“Factor Reliability”
	AI decision-support systems		.961
1	AI enables managers to consider more accurate, informed and timely decisions	.934	
2	Generate meaningful insights	.924	
3	Improves the quality and accuracy of their decision-making	.923	
4	Allow managers to take timely action before any issues become more serious	.909	
	Trust in AI systems		.950
5	Managers trust the recommendations generated by AI system	.940	
6	Insights generated by the system is relevant for their decisions	.916	
7	The quality of their decisions is improved by AI system	.899	
8	Actionable insights are provided by the system	.882	
	Human and AI Collaboration		.917
9	AI compliments human managerial expertise	.899	
10	AI and human recommendations are combined for better decisions	.858	
11	AI system improves human’s problem-solving capability	.854	
12	Supports manager’s decision-making process	.839	
	Organizational Support		.916
13	Adequate AI training is provided to employees	.927	

14	Use of AI in decision making is encouraged	.884	
15	Technical support for AI system is provided	.855	
16	Sufficient AI infrastructure is provided by organization	.818	

Factor “AI decision-support systems” includes the variables like AI enables managers to consider more accurate, informed and timely decisions, generate meaningful insights, Improves the quality and accuracy of their decision-making, and Allow managers to take timely action before any issues become more serious. Factor “Trust in AI systems” consist of variables like Managers trust the recommendations generated by AI system, Insights generated by the system is relevant for their decisions, the quality of their decisions is improved by AI system, and Actionable insights are provided by the system. Factor “Human and AI Collaboration” includes the variables like AI compliments human managerial expertise, AI and human recommendations are combined for better decisions, AI system improves human’s problem-solving capability, and supports manager’s decision-making process. Factor “Organizational Support” consist of variables like Adequate AI training is provided to employees, Use of AI in decision making is encouraged, technical support for AI system is provided, and sufficient AI infrastructure is provided by organization.

“Table 5 Reliability Statistics”

“Cronbach's Alpha”	“N of Items”
.865	16

Conclusion

The present research work concludes that Artificial Intelligence (AI) is changing the way managers make decisions in modern organizations. Kumar. (2024), concludes AI technologies are assisting managers of Indian organization to analyze large volumes of data, generate meaningful insights, and improve the accuracy and quality of their decision-making. Therefore, as a result managers are able to make more informed and effective decisions in this rapidly changing business environment. Findings of the discussion also indicate that Artificial Intelligence (AI) assists managers by analyzing large amounts of data, identifying future trends, and offering valuable analytical support for complex decision-making. Study also showed that effective managerial decision-making depends on several key factors, including the speed of decision-making, the accuracy of decisions, alignment with organizational goals, and the ability to make risks. Artificial Intelligence (AI) supports these areas through processing information more efficiently, reducing the workload on managers, and helping them to evaluate different future scenarios for better planning and decision-making.

The study aims to explore the factors that determines the impact of AI-assisted decision making on managerial effectiveness in Indian Organization and found that AI decision-support systems, Trust in AI systems, Human and AI Collaboration, and Organizational Support are the factors that determines the impact of AI-assisted decision making on managerial effectiveness.

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