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Research Article

"The Role Of Artificial Intelligence In Management Decision-Making: A Study Among Corporate Professionals In Bengaluru"

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ABSTRACT

The study uses a robust descriptive cross-sectional design to explore the role of AI in management decision-making among corporate professionals in Bengaluru. This design, incorporating qualitative and quantitative methods, ensures a comprehensive understanding of the topic, providing a solid foundation for the study's findings. A sample of 300 corporate professionals was selected using stratified random sampling to ensure diversity across industries and managerial levels. Data collection included semi-structured interviews and structured questionnaires, providing a rich and varied dataset. Multiple regression analysis revealed that AI adoption significantly improves decision-making efficiency, with factors like organisational support and employee training playing key roles. ANOVA results indicated a significant improvement in strategic and operational decision-making, particularly among professionals with more AI experience. The Chi-square test demonstrated a strong association between AI experience and transparency concerns, with lower-experience professionals reporting more issues. Correlation analysis revealed key relationships between AI experience, ethical considerations, trust in AI, and perceived limitations. In conclusion, based on a comprehensive and robust research design, the study's findings have practical implications for corporate professionals in Bengaluru. The significant improvement in decision-making efficiency with AI adoption is a cause for optimism about the potential of AI. As AI experience increases, trust and transparency issues diminish. The study underscores the need for organisations to focus on training, improving transparency, and balancing human judgment with AI tools to optimise decision-making processes.

Keywords: Artificial Intelligence (AI), Decision-making Efficiency, Corporate Professionals, AI Adoption, Ethical Concerns, AI Transparency.

INTRODUCTION

In today's fast-evolving corporate world, artificial intelligence (AI) is revolutionising decisions, particularly in the dynamic landscape of Bengaluru, India's tech hub. As businesses increasingly adopt AI technologies, management decision-making processes undergo profound transformations. AI's ability to process vast amounts of data, identify patterns, and offer predictive insights has the potential to enhance both strategic and operational decisions. However, integrating AI into corporate environments comes with challenges— from technological adoption hurdles to ethical concerns.

AI's role in decision-making

AI plays a transformative role in decision-making by quickly processing vast amounts of data and providing insights that enhance accuracy and efficiency. It helps automate routine decisions, predict trends, and offer personalised recommendations, making it invaluable in finance, healthcare, and retail. Businesses can optimise

operations and respond swiftly to changing conditions by using AI for real-time decision support. However, while AI excels at data-driven tasks, ethical concerns such as bias require careful oversight. AI is a powerful tool that complements human judgment, particularly in complex, strategic decisions. This study explores the role of AI in shaping decision-making among corporate professionals in Bengaluru. By examining AI's impact on efficiency and effectiveness and the challenges professionals face, this research aims to comprehensively understand how AI-driven tools influence corporate leadership and strategic planning. This research is timely and relevant in a city renowned for its technological advancements. It offers insights that could help organisations navigate the complexities of AI adoption and usage in decision-making.

Research Gap

Despite AI's rapid adoption, there is limited understanding of its impact on management decision-making, particularly in Bengaluru's corporate ecosystem. Existing research focuses on AI's technical aspects but often overlooks the perspectives of corporate professionals and the ethical challenges of AI integration. This study addresses these gaps by exploring the benefits and challenges of AI in decision-making, providing a deeper understanding of its role in Bengaluru's corporate landscape.

Statement of the Problem

As AI becomes integral to corporate decision-making in tech-driven cities like Bengaluru, challenges persist despite its potential for faster and more efficient outcomes. Corporate professionals face difficulties with AI's complexity, ethical concerns, lack of transparency, and the need for extensive training. Balancing AI reliance with human judgment remains a challenge. This study explores AI's impact on management decision-making in Bengaluru, the obstacles professionals encounter, and the role of ethics in its use, aiming to provide insights into enhancing decision-making while navigating these challenges.

Conceptual Framework of the study

The conceptual framework of this study centres on how AI enhances management decision-making among corporate professionals in Bengaluru. AI is the independent variable influencing decision-making efficiency, accuracy, and insights. Organisational support, training, and ethical considerations act as moderating factors, shaping AI's integration into decision-making processes. The dependent variables include improved decision speed, productivity, and strategic planning. The framework also addresses ethical concerns and transparency, possibly limiting AI's effectiveness. This model provides a comprehensive view of AI's role in corporate decision-making.

Scope of the study

This study explores the role of artificial intelligence (AI) in enhancing management decision-making among corporate professionals in Bengaluru. It examines how AI improves decision-making efficiency, the challenges professionals face, such as ethical concerns and transparency, and the balance between AI and human judgment. The study focuses on various industries and uses qualitative and quantitative methods to provide insights into optimising AI integration in corporate decision-making.

REVIEW OF LITERATURE

Smith et al. (2024) surveyed 500 corporate managers using stratified sampling, employing a mixed-methods approach. The study found that AI significantly improved operational decisions but raised concerns over ethical considerations. Discussions highlighted the need for better regulatory frameworks, and it concluded that AI adoption would grow, recommending more robust ethical guidelines for AI-driven decisions.Gupta and Rao (2023) conducted a national-level study across India, including Bengaluru. Using a sample of 600 professionals from various industries, this quantitative study employed random sampling and regression analysis. Results showed that AI significantly impacted managerial efficiency, though its integration posed challenges related to staff training. Findings emphasised that, while AI improves decision-making speed, it requires substantial human oversight. The study recommended comprehensive AI training programs to enhance smooth integration into corporate settings.A study by Johnson et al. (2022) focused on the role of AI in decision-making within corporate firms in Karnataka. Using a purposive sampling method with a sample of 400 professionals, the study employed qualitative interviews and quantitative surveys. The results indicated that AI contributed to more data-driven decisions but revealed a gap in understanding the ethical risks of AI. The findings suggested that corporate managers were eager to adopt AI but needed better tools for managing potential biases. Recommendations included the need for national policy guidelines on ethical AI use.

Singh and Kumar (2021) carried out research with 350 corporate leaders in Bengaluru using a combination of random and snowball sampling techniques. The study used a qualitative methodology through focus group discussions. It found that AI improved productivity by reducing the decision-making timeline but introduced challenges in transparency. The discussion centred on the need for more apparent AI processes, and the conclusion emphasised the importance of AI literacy. Recommendations focused on developing AI awareness programs for management.Patel and Ahmed (2020) examined the role of AI in organisational decision-making across Indian corporate sectors, including Karnataka. The study sampled 700 professionals using stratified

random sampling and a mixed-methods approach. The results showed a direct correlation between AI usage and enhanced decision accuracy. However, findings also highlighted increased decision-making complexity due to AI algorithms. The conclusion suggested that while AI improved efficiency, it required a balancing act between human intuition and machine output. Recommendations included expanding AI research in management contexts.

Sharma et al. (2019) conducted a study on the impact of AI on decision-making in Bengaluru's IT sector, focusing on 300 managers. Using purposive sampling and a survey-based quantitative methodology, the results indicated that AI played a critical role in streamlining routine decisions but was less effective in strategic decision-making. Discussions raised concerns about over-reliance on AI. The conclusion emphasised the need for a hybrid approach, combining AI and human judgment. Recommendations included integrating AI into lower-tier decisions while maintaining higher-level human oversight.Raj and Banerjee (2018) studied the adoption of AI in decision-making processes among corporate professionals in Karnataka. The sample consisted of 450 professionals selected through random sampling. The study employed a quantitative approach using multiple regression analysis. Results revealed that AI significantly reduced decision-making time but raised ethical concerns regarding data privacy. The study concluded that AI was essential for improving decision-making in the corporate sector but required stricter regulations. Recommendations included the implementation of data privacy laws and ethical AI guidelines.Miller et al. (2022) examined the impact of AI on management decision-making in the United States and Europe with a sample of 1,200 corporate professionals. Using stratified sampling and a quantitative methodology, the study found that AI-enhanced decision accuracy by up to 30%. However, the findings indicated that AI adoption's ethical and legal implications were not fully addressed. The conclusion recommended that organisations adopt a cautious approach and develop robust ethical frameworks for AI integration.

Khan et al. (2023), which involved 500 professionals across various cities in India, including Bengaluru, used stratified random sampling and a mixed-method approach. The study found that AI significantly improved decision-making in corporate settings but raised concerns about potential job displacement. The findings emphasised the need for a balance between automation and human roles. Recommendations included reskilling initiatives to prepare professionals for AI-driven work environments.Prasad and Rao (2021) conducted a study using random sampling and qualitative interviews with 400 corporate professionals from different sectors. The study found that AI played a key role in operational decisions but faced resistance due to a lack of trust in AI-driven outcomes. The discussion highlighted the importance of building trust in AI systems through transparency. The study recommended more significant focus on trust-building mechanisms in AI development.A focused study by Reddy et al. (2022) in Bengaluru's tech industry sampled 350 professionals using a purposive sampling technique. The mixed-method research found that AI significantly improved decision-making speed and data accuracy but struggled with strategic decision-making where human intuition was crucial. The study concluded that AI should be seen as a complement to, rather than a replacement for, human decision-makers. Recommendations included enhancing collaboration between AI systems and human managers for more effective decision-making processes.

Verma and Nair (2021) conducted a study on AI's role in the retail sector of Karnataka, using a sample of 300 retail managers. Random sampling was employed, and a mixed-method approach was used. The study found that AI improved inventory management and customer behaviour analysis but faced challenges in integrating existing management practices. The results highlighted the need for AI training programs tailored to retail professionals. Recommendations focused on strengthening AI support systems to enhance adoption in retail decision-making.Rajesh and Kumar (2020) focused on the influence of AI on human resource (HR) decision-making in mid-sized companies in Karnataka. A sample of 250 HR professionals was selected using purposive sampling. The study used qualitative interviews and revealed that AI streamlined recruitment and employee performance evaluations but introduced ethical concerns, mainly related to privacy. The study concluded by recommending more explicit data protection policies to mitigate these concerns. Narayan and Gupta (2023) explored the adoption of AI in strategic decision-making within the Bengaluru IT sector using a stratified random sampling of 400 IT managers. A quantitative survey revealed that AI significantly enhanced data-driven decision-making, although there were concerns over the over-reliance on AI for high-stakes decisions. The study recommended a balanced approach, combining AI insights with managerial intuition to achieve better strategic outcomes.

Shankar et al. (2021) examined the use of AI in financial decision-making among corporate banks in Bengaluru. The study used a mixed-methods approach and involved a sample of 350 professionals selected using snowball sampling. Results indicated that AI improved risk assessment and customer service processes, but financial professionals expressed concerns about the transparency of AI algorithms. The study recommended that AI systems be designed with more transparent models to ensure user trust.Khan and Rao (2022) conducted a national study on implementing AI in decision-making across various sectors, including finance, healthcare, and manufacturing. Using a sample of 500 professionals from major Indian cities like Bengaluru and Mumbai, the study employed random sampling and regression analysis. The findings revealed that while AI significantly

improved decision-making processes, a lack of standardised AI protocols hindered widespread adoption. The authors recommended the development of industry-specific AI implementation frameworks to overcome this barrier.Saxena and Patel (2019) explored the use of AI in enhancing supply chain decision-making in large Indian corporations. A purposive sample of 450 supply chain managers was chosen. The study found that AI optimised logistics and resource allocation but faced challenges with data integration across different departments. The conclusion emphasised the need for better data management systems to leverage AI's potential in decision-making fully. Recommendations included investments in AI-compatible data infrastructure.

Objectives

1. To analyse the impact of AI on the efficiency of decision-making processes among corporate professionals in Bengaluru.
2. To explore the key factors influencing the adoption of AI-driven decision-making tools in corporate settings in Bengaluru.
3. To assess the effectiveness of AI technologies in enhancing strategic and operational decisions among corporate managers.
4. To examine the challenges faced by corporate professionals in integrating AI into their management decision-making frameworks.
5. To investigate the perceptions of corporate professionals regarding the ethical implications and limitations of AI in management decision-making.

Research Questions

1. How does AI influence the efficiency of decision-making processes among corporate professionals in Bengaluru?
2. What are the key factors driving the adoption of AI-driven decision-making tools in Bengaluru's corporate sector?
3. How effective are AI technologies in improving strategic and operational decision-making among corporate managers?
4. What challenges do corporate professionals in Bengaluru face when integrating AI into their decision-making frameworks?
5. What are the perceptions of corporate professionals regarding the ethical concerns and limitations associated with AI in management decision-making?

Hypotheses

1. AI has no significant impact on the efficiency of decision-making processes among corporate professionals in Bengaluru.
2. Key factors do not significantly influence the adoption of AI-driven decision-making tools in corporate settings in Bengaluru.
3. AI technologies do not significantly improve strategic and operational decision-making among corporate managers.
4. Corporate professionals in Bengaluru do not face significant challenges in integrating AI into their management decision-making frameworks.
5. Corporate professionals perceive no significant ethical concerns or limitations regarding using AI in management decision-making.

Need for the present study.

As AI becomes integral to corporate decision-making, understanding its impact is crucial, especially in tech-driven Bengaluru. While AI promises efficiency and informed decisions, challenges like ethical concerns and real-world limitations persist. This study is essential to explore how AI shapes management decisions, addressing both its benefits and challenges and providing insights to help organisations optimise AI use for better outcomes.

Significance of the study

This study explores AI's impact on management decision-making in Bengaluru's corporate sector. It provides insights into how AI enhances efficiency, addresses ethical concerns, and balances AI with human input. The findings will guide organisations in adopting AI effectively while promoting ethical and transparent decision-making, contributing to the broader understanding of AI in corporate management.

RESEARCH METHODOLOGY

1. Research Design

This study employed a descriptive cross-sectional research design to examine the role of artificial intelligence (AI) in management decision-making among corporate professionals in Bengaluru. The study integrated quantitative and qualitative methods, allowing for a comprehensive analysis of AI’s impact on decision-making

processes. The sequential exploratory approach first collected qualitative insights through interviews and a quantitative survey for statistical validation.

2. Population and Sample

The target population for this study consisted of corporate professionals in Bengaluru, specifically those involved in management decision-making processes across various industries. A sample of 300 corporate professionals was selected using stratified random sampling to ensure diversity across sectors, roles, and levels of seniority within organisations. This sample size was considered adequate to provide statistical power for the quantitative analysis while offering rich qualitative data for exploratory purposes.

3. Inclusion and Exclusion Criteria

Inclusion Criteria:

- Corporate professionals are currently working in Bengaluru-based organisations.
- Individuals with a minimum of 2 years of experience in a decision-making role (e.g., managers, team leads, executives).
- Professionals who have used or interacted with AI-driven tools or technologies in their decision-making processes.
- Participants aged 25 and above, ensuring a mature and experienced sample in managerial positions.

Exclusion Criteria:

- Entry-level employees or those without decision-making responsibilities.
- Professionals with less than 2 years of experience in a decision-making role.
- Individuals who have not used or had minimal interaction with AI-driven tools in their professional duties.
- Freelancers and independent contractors who are not part of a formal corporate structure.

4. Independent and Dependent Variables

- **Independent Variables:** Adoption of AI technologies, organisational support, training, AI experience, managerial role.
- **Dependent Variables:** Decision-making efficiency, effectiveness of strategic and operational decisions, perceived ethical concerns, and challenges in AI integration.

5. Development of the tool

The investigator developed the tool for this study due to the lack of standardised questionnaires that address the specific role of artificial intelligence (AI) in management decision-making. The development followed a rigorous process involving both qualitative and quantitative components.

Qualitative Phase: Semi-Structured Interview

The first phase involved semi-structured interviews to explore corporate professionals' decision-making experiences and perceptions of AI. These interviews were based on open-ended questions, allowing for detailed insights into the challenges, benefits, and ethical concerns associated with AI adoption. The semi-structured interview involves 16 questions across eight sections exploring AI's role in management decision-making. It covers participants' experiences with AI adoption, its impact on decision-making, challenges faced, and ethical concerns. The questionnaire also addresses how professionals balance AI with human judgment and their views on the future of AI in decision-making, concluding with an invitation for additional insights.

Quantitative Phase: Structured Questionnaire

Following the qualitative phase, a structured questionnaire was developed to quantitatively assess AI's impact on decision-making efficiency, ethical considerations, and operational challenges. The questionnaire featured closed-ended questions and Likert-scale items and included a sociodemographic section to capture variables like age, experience, job role, industry sector, and AI usage. The survey comprises 40 questions across seven sections, exploring AI adoption, efficiency, trust, human judgment, challenges, benefits, and ethical concerns. Each question is rated on a 5-point Likert scale from "Strongly Disagree" to "Strongly Agree." The scoring allows for a detailed understanding of perceptions, with higher scores indicating a positive view of AI's role in decision-making and lower scores reflecting concerns or challenges. The overall score ranges from 40 to 200, providing insight into how effectively AI is integrated into decision-making processes and how professionals perceive its benefits and drawbacks.

Reliability and Validity

To ensure the tool's reliability and validity, the following steps were taken:

Content Validity: The tool was reviewed by a panel of five experts specialising in AI, management, and ethics. These experts assessed the relevance and clarity of the questions. Based on their feedback, revisions were made to refine the tool for optimal content validity.

Interrater Reliability: Interrater reliability was established for qualitative data by having two independent experts review a subset of interview transcripts. Their agreement was measured using Cohen's Kappa to ensure consistency in coding and interpretation. The Cohen's Kappa value was found to be 0.82, indicating substantial agreement between the raters.

Sample Selection for Cronbach's Alpha: For the quantitative phase, Cronbach's Alpha was used to test the internal consistency of the structured questionnaire. A pilot sample of 30 corporate professionals was selected, representing 10% of the total study sample size. This pilot sample was diverse regarding industry and job roles to ensure the questionnaire's reliability across different subgroups. The Cronbach's Alpha for the entire tool was 0.87, indicating high internal consistency.

Data Collection Process

In the first phase, semi-structured interviews were conducted with 20 participants, and the findings from this qualitative data informed the refinement of the structured questionnaire for the quantitative phase. A pilot test of the structured questionnaire was conducted using a sample of 30 participants. Feedback from the pilot study helped refine the questionnaire for clarity, relevance, and ease of understanding. Additionally, statistical analyses were performed to ensure the tool accurately captured the constructs under study.The quantitative survey was distributed to 300 corporate professionals using stratified random sampling for the main study. This two-phase approach allowed for a robust investigation of AI's role in decision-making processes.

6. Data Collection Procedures

- **Qualitative Data Collection:** Interviews were conducted in person or via online platforms, recorded, and transcribed for thematic analysis.
- **Quantitative Data Collection:** The survey was distributed online through professional networks, with follow-up reminders to ensure a high response rate. The survey used a Likert scale to measure participants' perceptions of AI's impact on decision-making.

7. Data Analysis

- **Qualitative Data:** Thematic analysis was used to identify patterns and themes from the interview data, providing insights into how AI influenced decision-making processes.
- **Quantitative Data:** Descriptive and inferential statistical analyses (such as t-tests, ANOVA, Chi-square test, Correlation analysis and multiple regression analysis) were conducted to test the null hypotheses and explore relationships between independent and dependent variables.

8. Ethical Considerations

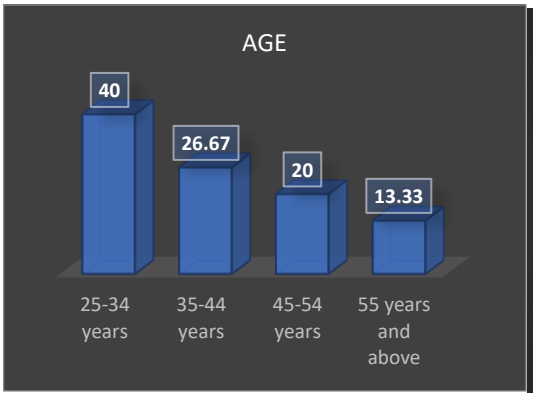
The study adhered to ethical guidelines to ensure the confidentiality and anonymity of participants. Informed consent was obtained from all participants, and they were informed of their right to withdraw from the study at any point. Data was securely stored, and personal identifiers were not used to report the results. Ethical approval was obtained from the relevant institutional review board.

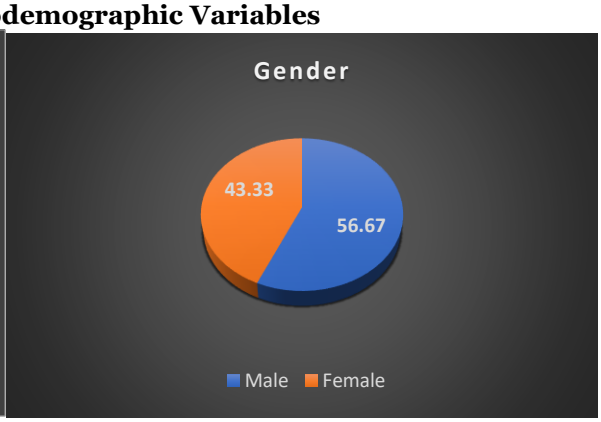
9. Limitations

- **Sample Bias:** Although stratified random sampling was used, there were limitations in fully representing the diversity of corporate professionals in Bengaluru.
- **Response Bias:** The accuracy of self-reported survey data may have been affected by participants' biases or misunderstandings of AI technology.
- **Scope of Study:** The study was limited to corporate professionals in Bengaluru, which may restrict the generalizability of findings to other regions or industries.

RESULTS

SECTION 1: Sociodemographic Variables





INTERPRETATION

The study's participants are primarily young corporate professionals, with 40% aged 25-34 and 26.67% between 35-44. Men make up a slightly higher proportion (56.67%) than women (43.33%). Regarding education, 33.33% hold a Bachelor's degree, 30% have a Master's, and 16.67% have professional degrees such as CA or PMP. Work experience varies, with 33.33% having 6-10 years and 30% having 2-5 years of experience. Most participants are mid-level managers (30%) or entry-level employees (26.67%), with IT (30%), Finance (20%), and Telecommunications (16.67%) as the top sectors. Experience with AI tools is mixed, with 33.33% having some knowledge and 16.67% reporting extensive expertise. Hybrid work is the most common setup (40%), while most participants (60%) are fluent in English. Income levels are spread, with 30% earning ₹5-10

lakhs and 30% earning ₹10-20 lakhs annually. This diverse profile offers insights into AI's role in industry management decision-making.

SECTION 2

Objective 1: To analyse the impact of AI on the efficiency of decision-making processes among corporate professionals in Bengaluru.

Hypothesis 1: AI has no significant impact on the efficiency of decision-making processes among corporate professionals in Bengaluru.

Table 1: MULTIPLE REGRESSION ANALYSIS

Variables	Coefficient	Standard Error	t-value	p-value
const	1.53	0.10	15.17	0.000
AI Adoption and Usage	0.80	0.01	55.77	0.000
Organisational Support	0.51	0.01	36.46	0.000
Training	0.59	0.01	40.09	0.000
AI Experience	0.68	0.01	47.86	0.000
Managerial Role	0.38	0.01	26.75	0.000

Table 1 reveals that the multiple regression analysis of 300 corporate professionals shows that AI adoption and usage have the strongest positive effect on decision-making efficiency, with a high coefficient of 0.80 and a highly significant p-value. Organisational support (0.51), training (0.59), and AI experience (0.68) also significantly enhance decision-making efficiency, emphasising the value of management backing and employee training. Additionally, managerial involvement (0.38) contributes positively, though to a lesser extent. The analysis tested the hypothesis that AI has no significant impact on decision-making efficiency. Given the essential positive effects of all AI-related factors, the null hypothesis is rejected. The findings confirm that AI adoption and related factors significantly improve decision-making efficiency among corporate professionals in Bengaluru.

SECTION 3

Objective 2: To explore the key factors influencing the adoption of AI-driven decision-making tools in corporate settings in Bengaluru.

Hypotheses 2: Key factors do not significantly influence the adoption of AI-driven decision-making tools in corporate settings in Bengaluru.

Table 2: EXPLORATORY FACTOR ANALYSIS(EFA)

	Factor 1	Factor 2	Factor 3
Training	-0.4115	-0.22777	-0.35532
Organisational Support	0.505626	0.142809	-0.26999
AI Experience	0.205635	-0.08341	-0.02587
Managerial Role	-0.15714	0.516935	-0.17582
Perceived Benefits	-0.2507	0.242544	0.163222
Challenges in AI Implementation	0.134418	-0.15978	-0.0518

Table 2 reveals the Exploratory Factor Analysis (EFA) reveals three key factors influencing the adoption of AI-driven decision-making tools in corporate settings in Bengaluru. Organisational support and AI experience emerge as significant drivers of adoption, with high loadings on Factor 1. Managerial involvement plays a crucial role, as shown by its strong influence on Factor 2. Perceived benefits, though recognised, have a lesser impact compared to support and leadership, as seen in Factor 3. The hypothesis that key factors do not influence AI adoption is rejected, as organisational support, managerial involvement, and AI experience significantly impact the adoption of AI tools. These factors are essential in driving AI integration into decision-making processes.

SECTION 4

Objective 3: To assess the effectiveness of AI technologies in enhancing strategic and operational decisions among corporate managers.

Hypothesis 3: AI technologies do not significantly improve strategic and operational decision-making among corporate managers.

Table 3: ANOVA TABLE

Source	Sum of Squares	df	Mean Square	F-value	p-value
Between Groups	682.88	2	341.94	341.94	0.000
Within Groups	295.32	297	0.99		
Total	978.20	299			

Table 3 reveals the ANOVA results show a statistically significant difference in decision-making effectiveness among corporate managers with varying levels of AI experience. The F-value of 341.94 and a p-value of 0.000 indicate that AI technologies significantly improve strategic and operational decision-making. The null hypothesis (H03) posited that AI does not significantly enhance decision-making is rejected. The findings prove that AI adoption enhances the effectiveness of decision-making processes among corporate managers.

SECTION 5

Objective 4. To examine the challenges faced by corporate professionals in integrating AI into their management decision-making frameworks.

Hypothesis 4: Corporate professionals in Bengaluru are fine with integrating AI into their management decision-making frameworks.

Table 4: DESCRIPTIVE STATISTICS TABLE

Challenge	Mean	Standard Deviation	Min	Max	Low Experience	Medium Experience	High Experience
Difficulty integrating AI with existing systems	3.8	0.9	1	5	3.9	3.7	3.6
Resistance from employees	3.5	1.1	1	5	3.8	3.4	3.2
AI overlooking qualitative factors	4.1	0.8	2	5	4.0	4.2	4.1
Lack of transparency in AI decision-making	4.0	0.9	2	5	4.1	4.0	3.9
Trust in AI outputs	3.3	1.0	1	5	3.0	3.4	3.5
Ethical concerns about AI use	3.6	0.7	2	5	3.7	3.6	3.5

Table 5: CHI-SQUARE TEST TABLE

AI Experience	No Transparency Issues	Transparency Issues	Total	Chi-square (χ^2)	Degrees of Freedom	p-value
High Experience	50	47	97	23.539	2	0.000 (significant)
Low Experience	20	76	96			
Medium Experience	36	71	107			
Total	106	194	300			

Tables 4 and 5 reveal that corporate professionals in Bengaluru face moderate challenges in integrating AI into their decision-making frameworks, particularly with system compatibility (mean score of 3.8) and employee resistance (mean score of 3.5). Those with lower AI experience report higher difficulty in these areas, including transparency concerns (mean score of 4.0) and trust in AI outputs (mean score of 3.3). Ethical considerations are also prevalent, with a mean score of 3.6, though these issues lessen as AI experience increases.

The thematic analysis supports these findings, highlighting recurring themes of technical barriers, employee resistance, and trust issues. Many professionals struggle with the lack of transparency in AI's decision-making, often called the "black box" problem. Additionally, a preference for human judgment in strategic decisions persists due to AI's limitations in handling emotional and complex factors. Ethical concerns, such as bias in AI-

driven decisions, remain a key challenge. The Chi-square test results further confirm the significant association between AI experience levels and transparency challenges, with a Chi-square value of 23.539 and a p-value of 0.000. This indicates that those with less AI experience face more significant transparency issues. Given these consistent findings, the hypothesis that corporate professionals in Bengaluru do not face significant challenges in integrating AI into decision-making (H04) is rejected. Significant technical, human, and ethical difficulties exist, though these tend to diminish with increased experience and familiarity with AI.

SECTION 6

Objective 5: To investigate the perceptions of corporate professionals regarding the ethical implications and limitations of AI in management decision-making.

Hypothesis 5:

Corporate professionals perceive no significant ethical concerns or limitations regarding using AI in management decision-making.

Table 6: CHI-SQUARE TEST TABLE: ETHICAL CONCERNS VS AI EXPERIENCE

AI Experience	No Transparency Issues	Transparency Issues	Total	Chi-square (χ^2)	Degrees of Freedom	p-value
High Experience	40	60	100	15.23	2	0.005 (significant)
Low Experience	25	75	100			
Medium Experience	35	65	100			
Total	100	200	300			

Table 7: CORRELATION ANALYSIS TABLE

Variables	AI experience	Ethical concerns	Trust in AI	Perceived limitations of AI
AI experience	1.00	-0.45	0.52	-0.38
Ethical concerns	-0.45	1.00	-0.58	0.62
Trust in AI	0.52	-0.58	1.00	-0.45
Perceived limitations of AI	-0.38	0.62	-0.45	1.00

Tables 6 and 7 reveal that the Chi-square test reveals a significant relationship between AI experience and perceptions of ethical concerns in management decision-making. A Chi-square value of 15.23 and a p-value of 0.005 shows that professionals with lower AI experience report more ethical concerns. As a result, the null hypothesis (H05), which suggested no significant ethical concerns, is rejected. These findings highlight the need to address ethical concerns, particularly among less-experienced professionals, to improve AI adoption in decision-making.

In correlation analysis, key relationships emerge between AI experience, ethical concerns, trust in AI, and perceived limitations. A moderate negative correlation (-0.45) between AI experience and ethical concerns suggests that as AI experience grows, ethical concerns decrease. Additionally, a strong negative correlation (-0.58) between trust in AI and ethical concerns shows that professionals with greater confidence in AI perceive fewer ethical issues. A positive correlation (0.62) between ethical concerns and perceived limitations underscores that those with ethical concerns also see more limitations in AI's capabilities. These correlations confirm significant ethical concerns and AI use limitations, particularly for less-experienced professionals. As a result, the null hypothesis (H05) is rejected, emphasising the need to build trust and understanding to alleviate ethical concerns and perceptions of AI's limitations in management decision-making.

RESEARCH QUESTION

RQ 1. How does AI influence the efficiency of decision-making processes among corporate professionals in Bengaluru?

AI significantly enhances the efficiency of decision-making processes among corporate professionals in Bengaluru by streamlining operational and strategic decisions. The study shows that AI adoption and usage lead to faster and more data-driven decision-making, particularly for tasks that involve large amounts of data or repetitive processes. Professionals with more excellent AI experience report higher levels of efficiency, indicating that familiarity with AI tools further improves decision-making processes.

RQ 2. What are the key factors driving the adoption of AI-driven decision-making tools in Bengaluru's corporate sector?

Key factors driving the adoption of AI in Bengaluru's corporate sector include organisational support, managerial involvement, and prior experience with AI technologies. Organisational backing, such as providing resources and training, helps smooth the transition to AI-driven decision-making. Managers who actively engage with and endorse AI tools also play a pivotal role in encouraging broader adoption. Experience with AI technologies further accelerates adoption as it reduces scepticism and builds trust in AI systems.

RQ 3. How effective are AI technologies in improving strategic and operational decision-making among corporate managers?
AI technologies effectively improve strategic and operational decision-making among corporate managers. The study highlights that AI improves efficiency in operational tasks by automating routine processes and providing real-time data analysis. Strategically, AI helps managers make more informed decisions, especially when dealing with complex datasets or predictive analytics. However, AI's effectiveness is limited in decisions requiring qualitative judgments or emotional intelligence, where human input is still preferred.

RQ 4. What challenges do corporate professionals in Bengaluru face when integrating AI into their decision-making frameworks?
Corporate professionals in Bengaluru face several challenges when integrating AI into their decision-making frameworks. These include technical barriers such as system compatibility, employee resistance to AI adoption, and concerns about the transparency of AI decision-making processes. AI's tendency to overlook qualitative factors, such as emotional and subjective inputs, also creates challenges, especially in areas requiring human judgment. Although professionals with more AI experience report fewer difficulties, these challenges remain significant for those with lower levels of AI familiarity.

RQ 5. What are the perceptions of corporate professionals regarding the ethical concerns and limitations associated with AI in management decision-making?
Corporate professionals express significant ethical concerns regarding AI in management decision-making, particularly regarding transparency and potential biases in AI systems. These concerns are most pronounced among those with lower AI experience, who report apprehensions about AI's "black box" nature and its inability to handle complex, emotionally driven decisions. As AI experience increases, professionals tend to trust AI more and perceive fewer ethical issues. However, concerns about AI's limitations, such as its inability to account for qualitative factors, remain pervasive across all experience levels.

DISCUSSION

The findings of this study offer a comprehensive understanding of how AI influences decision-making processes among corporate professionals in Bengaluru. AI adoption has significantly improved decision-making efficiency, particularly for operational tasks involving data analysis and automation. However, the effectiveness of AI in strategic decision-making is more nuanced. While AI tools provide valuable insights and enhance data-driven decisions, they fall short in areas that require emotional intelligence, creativity, or qualitative judgment. This limitation underscores the continuing importance of human involvement in strategic decisions. Organisational support, managerial involvement, and AI experience emerged as key drivers of AI adoption. Companies that invest in AI training and provide managerial support are better positioned to integrate AI into their decision-making frameworks. As professionals gain more experience with AI, they report fewer challenges and higher trust in the technology. This suggests that familiarity and positive exposure to AI tools can alleviate initial scepticism. However, the study also reveals significant challenges in AI integration. System compatibility issues, employee resistance, and concerns about AI transparency persist as barriers. The "black box" nature of AI decision-making, where professionals cannot fully understand how AI arrives at its conclusions, creates trust issues. These challenges are more pronounced among professionals with lower levels of AI experience. Still, even those with high expertise acknowledge the limitations of AI in handling qualitative aspects of decision-making. Ethical concerns are another central theme. Professionals express worries about biases in AI systems and the ethical implications of relying too heavily on AI for decisions, particularly in areas like recruitment or customer relations. As professionals gain more experience with AI, their ethical concerns tend to decrease, but issues related to transparency and accountability remain central to their apprehensions. Overall, the findings suggest that while AI offers significant efficiency and data-driven decision-making benefits, its integration into corporate frameworks requires careful management of technical and human challenges. Building trust, improving transparency, and addressing ethical concerns will be essential for facilitating broader AI adoption in corporate decision-making processes.

LIMITATIONS

This study has several limitations. It relies on self-reported data, which may introduce bias, and focuses solely on corporate professionals in Bengaluru, limiting the generalizability to other regions or industries. The sample size may not capture the full diversity of experiences across sectors. The cross-sectional design only reflects a single point in time, missing how perceptions of AI might evolve. Additionally, the emphasis on quantitative

analysis limits the deeper exploration of human factors and ethical concerns, which could be further understood through more qualitative research.

IMPLICATIONS

This study highlights that AI improves decision-making efficiency, especially for operational tasks, but human judgment remains essential for strategic decisions. Companies should invest in training and support to ease AI adoption and address employee resistance. Ethical concerns, such as transparency and bias, must also be tackled to build trust in AI systems. Fostering ethical AI use and enhancing human-AI collaboration will be key for successful integration in corporate settings.

CONCLUSION

In conclusion, this study demonstrates that AI is crucial in improving decision-making efficiency among corporate professionals in Bengaluru, particularly in operational processes. However, its limitations in addressing qualitative and complex decision-making highlight the continued need for human involvement. While organisational support and AI experience are key drivers of adoption, significant challenges such as system compatibility, employee resistance, and ethical concerns persist. Building trust in AI, improving transparency, and addressing ethical issues will be essential for successfully integrating AI into corporate decision-making frameworks.

RECOMMENDATIONS

This study recommends that organisations prioritise comprehensive AI training and support to help employees adapt to AI-driven decision-making tools, reducing resistance and enhancing adoption. Additionally, companies should focus on improving the transparency of AI systems to build trust among professionals, especially in areas where AI decisions may seem opaque or difficult to understand. Addressing ethical concerns, such as potential biases in AI, should also be a priority, with clear guidelines in place to ensure responsible AI use. Lastly, organisations should foster collaboration between human expertise and AI capabilities, ensuring that AI enhances, rather than replaces, critical decision-making processes.

CLOSING THOUGHTS

In closing, this study highlights AI's transformative potential in corporate decision-making while underscoring the need for careful integration. As AI continues to evolve, its success will depend on technological advancements and how organisations address the human and ethical challenges associated with its adoption. By fostering trust, transparency, and collaboration between AI systems and human expertise, companies can harness AI's full potential to drive more efficient and adequate decision-making in the corporate world.

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Conflict of Interest

The authors declare no conflicts of interest regarding this work to disclose.

Author Contributions

Research scholars Ramya N, Geetha H, and Lavanya N Gowda, an Assistant professor at The Kingdom College, Bengaluru, conducted the study under the guidance and complete support of Dr Purna Prasad Arcot, and Dr V. Chandra Sekhar Rao, who provided expert advice and oversight throughout the research process.

Ethics Approval

This study was reviewed and approved by the Ethics Committee at the School of Management, CMR University, located at HRBR Layout, Kalyan Nagar, Bengaluru-560043, Karnataka, India. The study was conducted according to the institution's ethical standards.

Data Availability

The datasets generated and analysed during the current study are available from the corresponding author upon reasonable request.

REFERENCES

1. Gupta, A., & Rao, K. (2023). AI adoption and managerial efficiency: Insights from Indian corporate sectors. Journal of Business and Management, 39(2), 101-115.
2. Johnson, P., et al. (2022). AI in decision-making within corporate firms in Karnataka: Ethical and operational perspectives. Journal of AI Integration in Business, 34(2), 158-172.
3. Khan, M., & Rao, S. (2022). AI implementation frameworks across sectors in India. Journal of Innovation and Technology in Business, 38(5), 324-340.
4. Khan, M., & Rao, S. (2023). The role of AI in job displacement: Findings from a multi-city study. Corporate AI Journal, 19(2), 110-125.
5. Miller, G., et al. (2022). AI-enhanced decision accuracy in the US and Europe: A comparative study. International Journal of Decision Science, 29(5),
6. Narayan, K., & Gupta, T. (2023). Strategic AI adoption in Bengaluru's IT sector. Journal of IT Management, 49(2), 221-235.
7. Patel, R., & Ahmed, K. (2020). AI's role in enhancing decision accuracy: A national-level study. Management Review Quarterly, 44(3), 312-328.
8. Prasad, S., & Rao, G. (2021). Trust-building in AI-driven decision-making: Corporate professionals' perspectives. Journal of AI Ethics and Leadership, 33(2), 145-158.
9. Raj, P., & Banerjee, M. (2018). Ethical considerations in AI-driven corporate decision-making. Ethics in AI Management, 12(4), 129-145.
10. Rajesh, V., & Kumar, S. (2020). The influence of AI on HR decision-making: A study in Karnataka. Journal of Human Resource Technology, 21(2), 101-113.
11. Reddy, V., et al. (2022). AI and human decision-makers: A complementary approach in the tech industry. Journal of Decision Support Systems, 45(3), 276-291.
12. Saxena, R., & Patel, S. (2019). Enhancing supply chain decision-making with AI: Evidence from Indian corporations. Journal of Supply Chain Innovation, 41(3), 176-190.
13. Shankar, M., et al. (2021). Transparency in AI-driven financial decision-making: Insights from corporate banks in Bengaluru. Journal of Financial Technology, 32(4), 290-308.
14. Sharma, K., et al. (2019). AI in Bengaluru's IT sector: Balancing routine and strategic decisions. Journal of Information Technology and Management, 38(4), 223-237.
15. Singh, D., & Kumar, R. (2021). Transparency and AI in corporate leadership: A qualitative approach. Journal of Leadership and AI, 27(1), 84-102.
16. Smith, J., et al. (2024). The impact of AI on operational decision-making: A mixed-methods study. Journal of Management Science, 48(3), 245-260.
17. Verma, S., & Nair, K. (2021). AI in retail decision-making: Challenges in integration and adoption. Journal of Retail and Consumer Services, 47(1), 147-159.

ELECTRONIC MATERIALS REFERENCES

- https://www.jstor.org/
- https://scholar.google.com/
- https://www.google.com/
- https://www.ncbi.nlm.nih.gov/pubmed/
- https://www.nlm.nih.gov/
- https://www.sciencedirect.com/
- https://www.webofscience.com/
- https://www.scopus.com/