

Artificial Intelligence as A Strategic Tool for Business Decision-Making: Evidence from Vellore Region

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Abstract-- Artificial Intelligence (AI) is increasingly emerging as a strategic technology for improving business decision-making through data analysis, predictive insights, personalised services and automated processes. The present study examines consumer perceptions of AI as a strategic tool for business decision-making in the Vellore region. The study adopts a descriptive research design and is based on primary data collected from 100 consumers who have exposure to AI-enabled business services and digital platforms. Respondents were selected using the purposive sampling technique. Percentage analysis, mean score and ranking techniques were used to analyse consumer awareness, factors influencing perceptions, perceived effectiveness and trust in AI-supported business decisions. The findings indicate that accuracy of information is the most important factor influencing consumer perceptions of AI-based decision-making, followed by decision-making speed and decision quality. AI-based customer service, product recommendations and personalised marketing are among the AI applications most familiar to consumers. The findings further reveal that consumers perceive AI as effective in improving decision-making speed, providing useful business information and enhancing decision accuracy. A considerable proportion of respondents also express confidence in AI-supported business decisions. The study concludes that AI can provide significant strategic value to businesses by improving responsiveness, analytical capability and customer-oriented decision-making. However, successful adoption requires accurate data, strong security, transparency, human oversight and responsible implementation. The study recommends integrating AI capabilities with managerial judgement and consumer expectations to achieve sustainable and trustworthy business decision-making.

Keywords-- Artificial Intelligence, Business Decision-Making, Consumer Perception, Strategic Tool, AI Applications

I. INTRODUCTION

Artificial Intelligence (AI) has emerged as an important strategic technology that is transforming the way businesses collect information, analyse markets, identify opportunities and make decisions.

Unlike traditional decision-making, which often depends heavily on historical information and managerial experience, AI can process large volumes of data, identify patterns and generate predictive insights within a short period. Consequently, businesses are increasingly using AI in areas such as marketing, customer relationship management, financial analysis, demand forecasting, inventory management, risk assessment and strategic planning.

Recent research demonstrates the growing strategic importance of AI in business decision-making. Csaszar, Ketkar, and Kim (2024) found that AI can enhance the speed, quality and scale of strategic analysis and can support the generation and evaluation of business strategies. Similarly, Giachino et al. (2024) found a positive relationship between AI-driven decision-making and firm performance, particularly where firms develop capabilities to manage big-data-powered AI.

AI capabilities can also influence organisational performance through improvements in decision-making speed and quality. Evidence from a study involving 230 organisational respondents indicates that AI capabilities positively affect decision-making speed, decision quality and organisational performance. For small and medium-sized enterprises, AI and strategic foresight can support predictive analysis, risk identification, scenario planning and responses to market disruptions, although financial, technical and organisational barriers may restrict adoption.

In the Vellore region, businesses operate in an increasingly competitive environment characterised by digital transformation, changing consumer expectations and growing availability of data-driven technologies. Understanding how consumers perceive AI-enabled business decisions is therefore important because consumer trust, perceived usefulness, transparency and responsiveness can influence the success of AI-based business strategies.



Against this background, the present study examines consumer perceptions of AI as a strategic tool for business decision-making in the Vellore region, focusing on awareness, perceived benefits, influencing factors, trust and the perceived effectiveness of AI-supported business decisions.

II. FACTORS INFLUENCING AI-BASED BUSINESS DECISION-MAKING

The following factors are considered important in influencing the effectiveness and acceptance of AI as a strategic business decision-making tool:

- Accuracy of AI-generated information
- Speed of decision-making
- Quality of decisions
- Availability of reliable data
- Cost of AI technology
- Managerial knowledge and digital skills
- Ease of use
- Consumer trust
- Data privacy and security
- Transparency of AI decisions
- Personalised customer insights
- Predictive capability
- Integration with existing business systems
- Organisational readiness
- Technical infrastructure

III. RECENT REVIEWS

Csaszar, Ketkar and Kim (2024) examined the role of Artificial Intelligence in strategic decision-making using evidence from entrepreneurs and investors. The study found that AI has the potential to enhance the speed, quality and scale of strategic analysis. It also demonstrated that AI can support the generation and evaluation of entrepreneurial strategies. The study highlights the potential of AI to augment existing strategic decision-making processes and create new approaches to strategic analysis.

Giachino, Cepel, Truant and Bargoni (2024) investigated the relationship between AI-driven decision-making and firm performance using responses from 346 managers. The study found that AI-driven decision-making is positively associated with firm performance and that big-data-powered AI contributes to the development of AI capabilities.

The findings indicate that organisations can obtain greater value from AI when they develop appropriate capabilities to manage data and integrate AI into decision-making processes.

Neiroukh, Emeagwali and Aljuhmani (2024) examined the relationship between AI capability, decision-making processes and organisational performance using data from 230 organisations. The study found that AI capabilities positively influence decision-making speed, decision quality and organisational performance. It further showed that decision-making processes play a mediating role in the relationship between AI capabilities and organisational performance.

Carayannis et al. (2025) examined the integration of AI and strategic foresight for improving SME resilience and competitiveness. The study highlighted the usefulness of predictive analytics, scenario planning and risk identification for improving operational efficiency and strategic decision-making. However, financial constraints, technical limitations and organisational challenges may restrict AI adoption among SMEs.

Molina-Abril, Calvet, Juan and Riera (2025) reviewed the application of machine learning, heuristics and optimisation techniques in SME strategic decision-making. The review identified AI and related analytical technologies as useful for supporting strategic decisions under uncertainty and resource constraints. The study also identified high costs, limited training and restricted technological resources as important barriers to AI adoption.

Research Gap

The reviewed studies establish that AI can improve decision-making speed, quality, predictive capability and organisational performance. However, much of the existing research focuses on managers, organisations and SMEs. Limited attention has been given to consumer perceptions of AI-supported business decision-making at the regional level, particularly in Vellore. The present study addresses this gap by examining consumers' awareness, perceptions, trust and assessment of AI as a strategic business tool in the Vellore region.

IV. IMPORTANCE OF THE STUDY

Artificial Intelligence is increasingly becoming a strategic component of modern business management. Its ability to analyse large volumes of data, identify patterns, forecast future trends and provide timely insights enables businesses to make faster and potentially more informed decisions.

However, technological capability alone does not guarantee successful implementation. The acceptance and trust of consumers are equally important because business decisions relating to pricing, product recommendations, customer service, promotions and personalised marketing directly affect consumers.

The present study is important because it examines the issue from the consumer perspective. Understanding consumers' perceptions can help businesses determine whether AI-supported decisions are viewed as accurate, useful, transparent and trustworthy. Such knowledge can help organisations develop customer-oriented AI strategies rather than adopting technology solely for operational efficiency.

The study is particularly relevant to businesses in the Vellore region, where traditional businesses and emerging digitally enabled enterprises coexist. The findings can help local businesses understand the benefits and concerns associated with AI adoption. They can also assist managers in identifying factors such as data quality, decision accuracy, speed, privacy, security and transparency that influence consumer acceptance.

From an academic perspective, the study contributes to the growing literature connecting Artificial Intelligence, strategic management and consumer behaviour. From a practical perspective, it can provide guidance for businesses seeking to integrate AI into decision-making while maintaining consumer trust. Thus, the study highlights the importance of combining technological capability with human judgement and customer expectations for effective strategic decision-making.

V. STATEMENT OF THE PROBLEM

Business decision-making is becoming increasingly complex because organisations operate in rapidly changing markets characterised by intense competition, changing consumer preferences, large volumes of information and technological disruption. Traditional decision-making methods based primarily on managerial experience and historical information may not always provide sufficient speed or analytical depth. Artificial Intelligence offers businesses an alternative approach by processing large datasets, identifying patterns, predicting future outcomes and supporting managerial decisions.

However, the adoption of AI also creates several challenges. Businesses must consider the accuracy and reliability of AI-generated information, the quality of available data, implementation costs, technical expertise, privacy, security and transparency.

More importantly, consumer acceptance may influence the effectiveness of AI-supported business strategies. Consumers may hesitate to trust decisions or recommendations generated by AI if they perceive the technology as inaccurate, intrusive or lacking transparency. Research has also identified resistance to AI advice, particularly when decisions involve higher perceived risk or personal consequences. For businesses, therefore, the challenge is not simply whether AI can technically support decision-making, but whether its use creates decisions that consumers perceive as useful, reliable and trustworthy. This issue is particularly relevant for businesses in regional markets such as Vellore, where digital adoption is developing alongside traditional business practices.

Despite growing research on AI capabilities and organisational decision-making, limited empirical attention has been given to consumer perceptions of AI-supported business decisions in the Vellore region. Hence, the present study seeks to examine consumers' awareness, perceptions, trust and assessment of AI as a strategic tool for business decision-making.

VI. OBJECTIVES OF THE STUDY

1. To examine the level of consumer awareness regarding the use of Artificial Intelligence in business decision-making.
2. To identify the major factors influencing consumer perceptions of AI-enabled business decisions.
3. To assess consumers' perceptions regarding the effectiveness, trustworthiness and strategic usefulness of AI in business decision-making.

VII. LIMITATIONS OF THE STUDY

- The study is restricted to 100 consumers in the Vellore region; therefore, the findings cannot be generalised to all consumers or businesses in Tamil Nadu.
- The study is based on consumer perceptions, which may differ from the actual technical effectiveness of AI systems used by businesses.
- Since AI technology is rapidly evolving, consumer awareness, attitudes and perceptions may change over time as businesses introduce more advanced AI applications.

VIII. COMPARATIVE STUDY (OF PRIOR RESEARCH VS. THIS STUDY)

Study	Focus	Sample	Key Finding
Csaszar, Ketkar & Kim (2024)	AI in strategic decision-making	Entrepreneurs & investors	AI enhances speed, quality, and scale of strategic analysis
Giachino et al. (2024)	AI-driven decisions vs. firm performance	346 managers	Positive link between AI-driven decisions and firm performance; big-data capability matters
Neiroukh, Emeagwali & Aljuhmani (2024)	AI capability, decision process, performance	230 organisations	AI capability improves decision speed/quality; decision process mediates performance
Carayannis et al. (2025)	AI + strategic foresight for SMEs	SME-focused	Useful for predictive analytics, scenario planning; adoption limited by cost/technical barriers
Molina-Abril et al. (2025)	ML, heuristics, optimisation in SME decisions	Review-based	AI useful under uncertainty; high cost and limited training are barriers
Present Study (Deviprya & Murugan)	Consumer perception of AI in business decisions	100 consumers, Vellore	Fills the gap — prior studies focus on managers/organisations; this looks at consumers at a regional level

Comparative insight (Research Gap): Existing literature is manager/organisation-centric; this study is distinctive for examining the **consumer side** of AI-supported decisions in an under-studied regional market (Vellore).

IX. DECISION-MAKING AREAS HIGHLIGHTED

1. *Business functions where AI supports decisions:*

- Marketing & personalised marketing
- Customer relationship management/customer service
- Financial analysis
- Demand forecasting & inventory management
- Risk/fraud assessment
- Strategic planning
- Product recommendations

2. *Factors influencing AI-based decision-making (ranked by mean score):*

1. Accuracy of information (4.42)
2. Speed of decision-making (4.34)
3. Quality of decisions (4.29)
4. Data security (4.21)
5. Trust in AI (4.16)

6. Personalised services (4.08)
7. Predictive capability (4.02)
8. Ease of use (3.94)
9. Transparency (3.88)
10. Cost of AI implementation (3.71 — least important)

3. *Perceived effectiveness of AI in decision-making (ranked):*

1. Improves decision-making speed (4.36)
2. Provides useful business information (4.31)
3. Improves decision accuracy (4.25)
4. Helps understand customers (4.18)
5. Improves personalised services (4.12)
6. Predicts market trends (4.06)
7. Reduces decision-making errors (3.98)
8. Improves overall business performance (3.94)

4. *Trust dimension:* 67% of respondents trust AI-supported decisions (28% strongly agree + 39% agree), only 16% distrust it.

5. *Core conclusion on decision-making:* AI is positioned as a **decision-support tool**, not a replacement for managerial judgment — effective decision-making requires combining AI insights with human oversight, data accuracy, transparency, and security.

X. RESEARCH METHODOLOGY

Research Design

The study adopts a descriptive research design.

Area of the Study

The study is confined to the Vellore region.

Population

The population consists of consumers who have experience with or exposure to AI-enabled business services, digital platforms or AI-supported recommendations.

Sample Size

A total of 100 consumers were selected for the study.

Sampling Technique

Purposive sampling technique was adopted to select consumers who had sufficient exposure to digital business services and AI-enabled applications.

Sources of Data

- Primary Data: Structured questionnaire administered to 100 consumers.
- Secondary Data: Research journals, books, reports and relevant academic publications.

Statistical Tools

The collected data were analysed using:

- Percentage Analysis
- Mean Score
- Ranking Technique
- Chi-square Test, where appropriate

XI. DATA ANALYSIS

Table 1. Demographic Profile of the Consumers

Demographic Variable	Category	No. of Respondents	Percentage
Age	Below 30 years	22	22
	31–40 years	31	31
	41–50 years	27	27
	Above 50 years	20	20
Educational Qualification	School Level	24	24
	Undergraduate	34	34
	Postgraduate	28	28
	Other	14	14
Monthly Income	Below ₹20,000	21	21
	₹20,001–₹40,000	36	36
	₹40,001–₹60,000	27	27
	Above ₹60,000	16	16
Total		100	100

The table shows that the largest proportion of respondents are aged **31–40 years (31%)**, while **34% are**

undergraduates. In terms of monthly income, **36% earn ₹20,001–₹40,000**, representing the largest income group.

Table 2. Awareness of AI Applications in Business Decision-Making

AI Application	Aware & Used	Aware but Not Used	Not Aware	Total
AI-based product recommendations	48	34	18	100
Personalised marketing	45	36	19	100
Predictive analytics	29	38	33	100
AI-based customer service	51	31	18	100
AI-based fraud/risk detection	25	37	38	100

AI-based customer service has the highest usage (51%), followed by AI-based product recommendations

(48%) and personalised marketing (45%). Awareness of AI-based fraud and risk detection is comparatively low.

Table 3. Factors Influencing Perception of AI-Based Business Decision-Making

Factors	Mean Score	Rank
Accuracy of information	4.42	I
Speed of decision-making	4.34	II
Quality of decisions	4.29	III
Data security	4.21	IV
Trust in AI	4.16	V
Personalised services	4.08	VI
Predictive capability	4.02	VII
Ease of use	3.94	VIII
Transparency	3.88	IX
Cost of AI implementation	3.71	X

Accuracy of information ranks first with a mean score of **4.42**, followed by decision-making speed (4.34) and decision quality (4.29).

Cost of AI implementation ranks last, indicating that consumers give greater importance to the quality and reliability of AI-supported decisions.

Table 4. Perceived Effectiveness of AI in Business Decision-Making

Perception Statement	Mean Score	Rank
AI improves decision-making speed	4.36	I
AI provides useful business information	4.31	II
AI improves decision accuracy	4.25	III
AI helps businesses understand customers	4.18	IV
AI improves personalised services	4.12	V
AI helps predict future market trends	4.06	VI
AI reduces decision-making errors	3.98	VII
AI improves overall business performance	3.94	VIII

Consumers perceive **improved decision-making speed** as the major benefit of AI, with a mean score of **4.36**,

followed by useful business information (4.31) and improved decision accuracy (4.25).

Table 5. Consumer Trust in AI-Supported Business Decisions

Response	No. of Respondents	Percentage
Strongly agree	28	28
Agree	39	39
Neutral	17	17
Disagree	10	10
Strongly disagree	6	6
Total	100	100

The table shows that **67% of respondents agree or strongly agree** that they trust AI-supported business decisions. Only 16% disagree or strongly disagree, indicating a generally positive level of consumer trust in AI-enabled decision-making.

XII. MAJOR FINDINGS

- The largest proportion of respondents belongs to the 31–40 years age group (31%).
- Undergraduate consumers constitute the largest educational group (34%).

- 36% of respondents earn ₹20,001–₹40,000 per month, representing the largest income category.
- AI-based customer service has the highest usage level (51%) among the AI applications considered.
- Accuracy of information is the most important factor influencing consumer perceptions of AI-based business decision-making, with a mean score of 4.42.
- Speed of decision-making ranks second, with a mean score of 4.34, indicating that consumers recognise the time-saving capability of AI.
- Decision quality ranks third, with a mean score of 4.29, suggesting that consumers perceive AI as capable of supporting better-informed business decisions.
- Data security and trust are also important considerations, indicating that technological capability alone is insufficient for successful AI adoption.
- Consumers perceive improved decision-making speed as the most important benefit of AI, with a mean score of 4.36.
- 67% of respondents agree or strongly agree that they trust AI-supported business decisions, indicating a generally favourable consumer attitude towards AI.
- The findings suggest that AI is perceived primarily as a decision-support mechanism, rather than a complete replacement for human judgement.
- The overall findings indicate that businesses can obtain greater strategic value from AI when they combine accurate data, technological capability, transparency and human oversight.

XIII. IMPORTANT SUGGESTIONS

1. *Improve Data Quality:* Businesses should ensure that accurate, relevant data support AI systems.
2. *Strengthen Data Security:* Strong cybersecurity and privacy mechanisms should be implemented to increase consumer confidence in AI-enabled business services.
3. *Maintain Human Oversight:* AI should support managerial judgement rather than completely replace human decision-makers, particularly for complex or high-risk decisions.
4. *Increase Transparency:* Businesses should explain, wherever practical, how AI-supported recommendations and decisions are generated.

5. *Invest in Employee Skills:* Employees and managers should receive training in AI tools, data interpretation and responsible AI use.
6. *Use AI for Predictive Decision-Making:* Businesses should use predictive analytics to understand demand, customer preferences, market trends and potential risks.
7. *Adopt AI Gradually:* Small businesses should begin with applications that provide measurable value, such as customer service, marketing analytics and demand forecasting.
8. *Build Consumer Trust:* Businesses should communicate clearly about the use of AI and ensure that AI-enabled services provide consistent and reliable outcomes.
9. *Combine AI with Human Intelligence:* The strongest strategic approach is not “AI instead of humans,” but AI-supported human decision-making.
10. *Develop Responsible AI Policies:* Businesses should establish internal guidelines concerning privacy, bias, accountability, transparency and ethical use of AI.

XIV. SOCIAL CONTRIBUTION

Artificial Intelligence can contribute to society by enabling businesses to provide faster, more accessible and personalised services. AI-supported decision-making can help organisations identify consumer needs, improve service quality, reduce delays and allocate resources more efficiently. Small businesses can also use affordable AI tools to compete more effectively with larger organisations by obtaining data-driven insights without requiring extensive analytical infrastructure.

AI can contribute to better employment opportunities by creating demand for employees with skills in data analytics, digital marketing, AI applications and technology management. At the same time, responsible AI adoption is necessary to minimise risks relating to privacy, misinformation, discrimination and excessive automation. The study therefore emphasises that the social value of AI depends not simply on technological adoption but on responsible, transparent and human-centred implementation. Businesses in the Vellore region can use AI to improve customer service and decision quality while maintaining human accountability and consumer trust.



XV. CONCLUSION

Artificial Intelligence is increasingly emerging as a strategic resource for modern business decision-making. The present study examined consumer perceptions of AI as a strategic tool in the Vellore region and found that consumers generally recognise its potential to improve the speed, accuracy and quality of business decisions. Accuracy of information, decision-making speed and decision quality emerged as the most important factors influencing perceptions of AI. The findings also indicate that consumers increasingly encounter AI through customer service, product recommendations and personalised marketing. The study further shows that 67% of respondents agree or strongly agree that they trust AI-supported business decisions, suggesting a generally favourable attitude towards AI-enabled business practices. However, trust cannot be assumed simply because AI is technologically advanced. Data security, transparency, reliability and human oversight remain essential for sustainable adoption. AI should therefore be viewed as a strategic decision-support tool rather than a complete substitute for managerial judgement. Businesses that combine AI-generated insights with human experience, ethical standards and customer understanding are more likely to achieve sustainable benefits. For businesses in the Vellore region, effective AI adoption can improve competitiveness, responsiveness and customer-oriented decision-making.

Ultimately, the strategic value of AI depends on how responsibly and effectively organisations integrate technology, data and human intelligence.

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