iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** IV **Month of publication:** April 2026

DOI: https://doi.org/10.22214/ijraset.2026.79279

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue IV Apr 2026- Available at www.ijraset.com

Role of AI in Marketing Analytics and Business Decision Making

Asst Prof. Ashwini Kende
PES's Modern College of Commerce and Computer Studies, Yamuna Nagar, Nigdi , Pune-411044

Abstract: ***Artificial intelligence (AI) has become a game-changing technology in the areas of commercial decision-making and marketing analytics. Traditional data analysis techniques are no longer adequate to extract valuable insights due to the exponential development of digital data from social media, e-commerce, customer interactions, and online platforms. AI technologies such as machine learning, natural language processing, predictive analytics, and deep learning enable organizations to analyze large volumes of structured and unstructured data efficiently and accurately. AI improves marketing campaign optimisation, demand forecasting, consumer behaviour prediction, customer segmentation, and personalisation. Additionally, AI-driven analytics boosts operational effectiveness, lowers human error, facilitates real-time decision making, and offers competitive benefits. Businesses use AI tools such as recommendation systems, chatbots, and automated marketing platforms to improve customer engagement and increase profitability This research paper studies the role of AI in marketing analytics and its impact on business decision making. It also reviews relevant literature, identifies key applications, benefits, challenges, and future implications of AI in marketing. The study concludes that AI significantly improves marketing effectiveness, supports strategic decision making, and enables organizations to achieve sustainable growth in a competitive business environment.***

Keywords: Artificial Intelligence, Marketing Analytics, Business Decision Making, Machine Learning, Predictive Analytics, Customer Behavior, Personalization, Data Analytics, Digital Marketing, Business Intelligence.

I. INTRODUCTION

In today's digital economy, organisations create massive amounts of data from consumer contacts, online transactions, social media platforms, mobile applications, and digital marketing channels. This data gives useful information about customer preferences, purchasing patterns, and market trends. Traditional marketing analytics systems, on the other hand, have limitations in their capacity to quickly process massive amounts of complicated data in real time.

Artificial Intelligence (AI) has emerged as a powerful solution to overcome these limitations. AI refers to computer systems capable of performing tasks that normally require human intelligence, such as learning, reasoning, problem-solving, and decision making. AI technologies, including machine learning (ML), natural language processing (NLP), computer vision, and predictive analytics, allow businesses to analyze massive datasets, identify patterns, and provide actionable insights.

AI in Marketing Analytics

Marketing analytics involves collecting, measuring, analyzing, and interpreting marketing data to improve marketing effectiveness and business performance. AI enhances marketing analytics by automating data analysis, identifying hidden patterns, predicting customer behavior, and optimizing marketing strategies.

A. Background of the Study

In the modern digital economy, organizations generate vast amounts of data through customer interactions, online transactions, social media platforms, mobile applications, and digital marketing channels. This data provides valuable insights into customer preferences, buying patterns, and market trends. However, traditional marketing analytics tools are limited in their ability to process large, complex, and real-time data efficiently.

Artificial Intelligence (AI) has emerged as a powerful solution to overcome these limitations. AI refers to computer systems capable of performing tasks that normally require human intelligence, such as learning, reasoning, problem-solving, and decision making. AI technologies, including machine learning (ML), natural language processing (NLP), computer vision, and predictive analytics, allow businesses to analyze massive datasets, identify patterns, and generate actionable insights.

©IJRASET: All Rights are Reserved

B. AI in Marketing Analytics

Marketing analytics involves collecting, measuring, analyzing, and interpreting marketing data to improve marketing effectiveness and business performance. AI enhances marketing analytics by automating data analysis, identifying hidden patterns, predicting customer behavior, and optimizing marketing strategies.

AI applications in marketing analytics include:

1) Customer segmentation and targeting
2) Predictive analytics for sales forecasting
3) Customer churn prediction
4) Personalized marketing recommendations
5) Sentiment analysis of customer reviews
6) Marketing campaign optimization

AI enables marketers to understand customers more accurately and deliver personalized experiences, which improves customer satisfaction and loyalty.

C. AI in Business Decision Making

Business decision making involves selecting the best course of action based on data, analysis, and strategic objectives. AI supports data-driven decision making by providing accurate insights, forecasts, and recommendations. AI systems can analyze historical data, identify trends, and predict future outcomes, helping managers make informed decisions.

AI improves decision making in areas such as:

1) Product development
2) Pricing strategies
3) Market expansion
4) Customer relationship management
5) Inventory management
6) Advertising and promotion strategies

AI reduces uncertainty and risk, enabling organizations to make faster and more accurate decisions.

D. Importance of the Study

The importance of AI in marketing analytics and decision making is increasing due to:

1) Growth of big data
2) Increasing competition in global markets
3) Need for personalized customer experiences
4) Demand for real-time decision making
5) Digital transformation of businesses

Organizations that adopt AI-driven marketing analytics gain competitive advantages through improved efficiency, better customer understanding, and enhanced business performance.

E. Objectives of the Study

The main objectives of this research are:

1) To examine the role of AI in marketing analytics.
2) To analyze the impact of AI on business decision making.
3) To identify applications of AI in marketing.
4) To evaluate the benefits and challenges of AI in marketing analytics.
5) To review existing research on AI in marketing and decision making.

II. RESEARCH REVIEW (LITERATURE REVIEW)

A. Overview of Literature on AI in Marketing

Artificial Intelligence has gained significant attention in marketing research over the past decade. Researchers have explored the use of AI technologies such as machine learning, predictive analytics, and natural language processing to improve marketing efficiency and decision making.

According to Davenport, Guha, Grewal, and Bressgott (2020), AI is transforming marketing by enabling firms to automate processes, personalize customer interactions, and improve decision making. The study identified three key areas of AI application in marketing: customer insights, customer engagement, and marketing strategy.

Chaffey and Ellis-Chadwick (2019) emphasized that AI enables marketers to analyze customer data more effectively and improve targeting accuracy. AI helps organizations deliver personalized marketing messages, increasing customer engagement and conversion rates.

B. AI and Customer Analytics

Customer analytics is one of the most important applications of AI in marketing. AI helps organizations analyze customer behavior, preferences, and purchase patterns.

Wedel and Kannan (2016) stated that AI improves customer segmentation by analyzing large datasets and identifying distinct customer groups. This allows marketers to develop targeted marketing strategies.

Huang and Rust (2021) explained that AI enables firms to predict customer needs and provide personalized recommendations. For example, companies like Amazon and Netflix use AI-based recommendation systems to suggest products and content based on customer preferences.

AI also supports sentiment analysis, which helps businesses understand customer opinions from social media, reviews, and feedback.

C. AI and Predictive Analytics

Predictive analytics is a major contribution of AI in marketing. It uses historical data and machine learning algorithms to predict future outcomes.

According to Kumar, Dixit, Javalgi, and Dass (2016), predictive analytics helps businesses forecast customer demand, identify potential customers, and reduce customer churn.

AI enables marketers to answer important questions such as:

- Which customers are likely to buy a product?
- Which customers may stop using the service?
- What is the expected sales performance?

Predictive analytics improves marketing planning and reduces uncertainty.

D. AI and Personalization

Personalization is one of the most significant benefits of AI in marketing.

Rust and Huang (2014) stated that AI enables one-to-one marketing by delivering personalized messages, product recommendations, and advertisements.

Examples include:

- Amazon product recommendations
- Netflix content recommendations
- Personalized email marketing

Personalization improves customer satisfaction, engagement, and loyalty.

E. AI in Marketing Automation

AI enables marketing automation, which improves efficiency and reduces manual work.

According to Jarek and Mazurek (2019), AI-powered chatbots help organizations provide customer support, answer queries, and improve customer experience.

Marketing automation tools use AI to:

- Send automated emails
- Optimize advertising campaigns
- Analyze marketing performance

This improves productivity and reduces operational costs.

F. AI and Business Decision Making

AI supports data-driven decision making by providing accurate insights and predictions.

Shrestha, Ben-Menahem, and von Krogh (2019) explained that AI improves decision making by analyzing large amounts of data and providing recommendations.

AI helps managers make decisions related to:

- Pricing strategies
- Product development
- Market entry
- Customer targeting

AI reduces human bias and improves decision accuracy.

G. Benefits of AI in Marketing Analytics

Researchers have identified several benefits of AI in marketing:

- Improved accuracy of data analysis
- Faster decision making
- Better customer understanding
- Increased marketing efficiency
- Personalized customer experience
- Competitive advantage

According to Davenport and Ronanki (2018), companies using AI achieve better business performance and improved customer satisfaction.

H. Challenges of AI in Marketing

Despite its benefits, AI also has challenges.

According to Wilson and Daugherty (2018), major challenges include:

- High implementation cost
- Data privacy and security concerns
- Lack of skilled professionals
- Integration with existing systems
- Ethical concerns

Organizations must address these challenges to successfully implement AI.

I. Research Gap

Although many studies have examined AI in marketing, there is still a need for research on:

- AI adoption in small and medium enterprises
- AI impact on marketing decision quality
- Challenges in AI implementation in developing countries
- Role of AI in real-time marketing decision making

This research aims to address these gaps.

III. RESEARCH METHODOLOGY

A. Research Design

Research design refers to the overall strategy used to conduct the research and collect relevant data. This study adopts a descriptive and analytical research design, as it aims to describe the role of Artificial Intelligence (AI) in marketing analytics and analyze its impact on business decision making.

The descriptive approach helps in understanding how AI is used in marketing analytics, while the analytical approach examines the relationship between AI adoption and business decision effectiveness.

This study uses a quantitative research approach, supported by primary and secondary data, to ensure objective and measurable results.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue IV Apr 2026- Available at www.ijraset.com

B. Nature of the Study

The study is empirical in nature, relying on real-world data collected from marketing professionals, business managers, and active users of artificial intelligence technologies.Focused on examining AI tools used in marketing analytics and their influence on business decisions

The study evaluates variables such as:

- Use of AI in marketing analytics
- Decision-making efficiency
- Customer insights accuracy
- Marketing performance improvement
- Business competitiveness

C. Sources of Data

The study uses both primary data and secondary data.

1) Primary Data

Primary data was collected through a structured questionnaire distributed among:

- Marketing managers
- Business executives
- Digital marketing professionals
- Data analysts
- Entrepreneurs

The questionnaire included both closed-ended and Likert scale questions to measure respondents' perceptions of AI in marketing analytics and decision making.

2) Secondary Data

Secondary data was collected from:

- Research journals
- Books on AI and marketing
- Company reports
- Websites
- Google Scholar
- Research databases such as Springer, Elsevier, and IEEE

Secondary data helped in understanding existing research, concepts, and industry practices.

IV. SAMPLING DESIGN

A. Target Population

The target population includes:

- Marketing professionals
- Business managers
- Digital marketing experts
- Companies using AI tools

B. Sampling Method

The study uses convenience sampling method, as respondents were selected based on availability and relevance to the research topic.

C. Sample Size

A total of 100 respondents were selected for the study.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue IV Apr 2026- Available at www.ijraset.com

Sample distribution example:

Category	Number of Respondents
Marketing Managers	25
Business Owners	20
Digital Marketing Professionals	30
Data Analysts	15
Entrepreneurs	10
Total	100

V. DATA COLLECTION INSTRUMENT

A structured questionnaire was used as the main data collection tools. The questionnaire consisted of three sections:

Sr.No.	Demographic Information	Use of AI in Marketing Analytics	Impact on Business Decision Making
1	Age	Use of AI tools	Decision accuracy
2	Gender	Frequency of AI usage	Marketing performance
3	Education	Types of AI tools used	Customer understanding
4	Occupation	Areas of AI application	Efficiency improvement
5	Work Experience	__	__

A 5-point Likert Scale was used:
1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

A. Data Analysis Tools and Techniques

The collected data was analyzed using statistical tools such as:

- Percentage analysis
- Mean score analysis
- Frequency distribution
- Tables and charts
- Interpretation of results

Statistical software such as Excel or SPSS can be used.

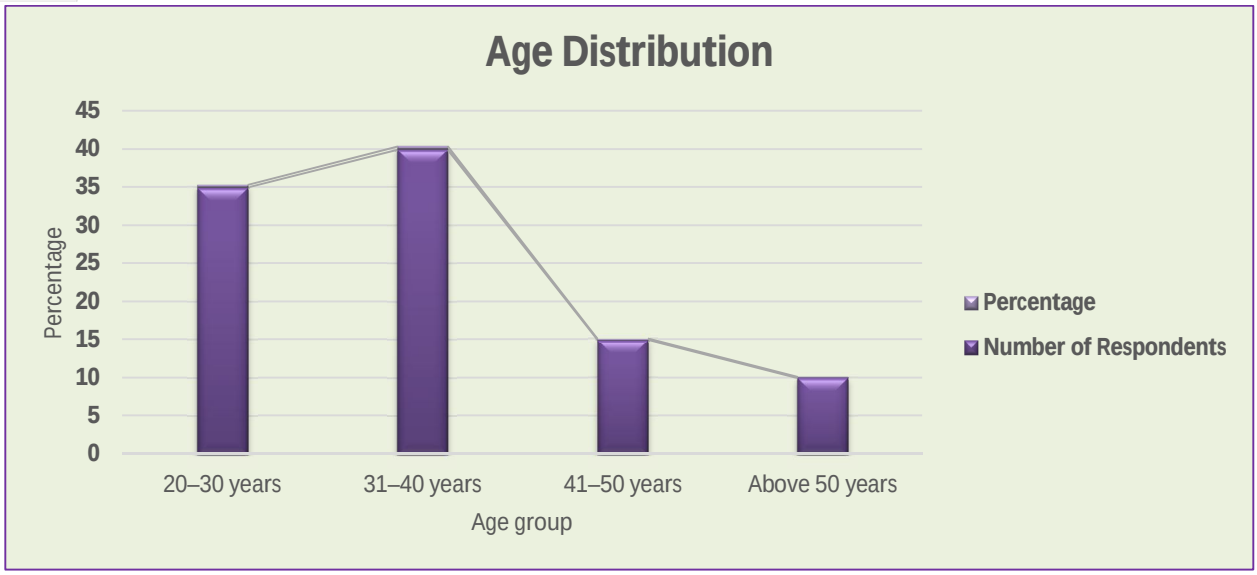
VI. DATA ANALYSIS AND INTERPRETATION

A. Demographic Profile of Respondents

Table 1: Age Distribution

Age Group	Number of Respondents	Percentage
20–30 years	35	35%
31–40 years	40	40%
41–50 years	15	15%
Above 50 years	10	10%
Total	100	100%

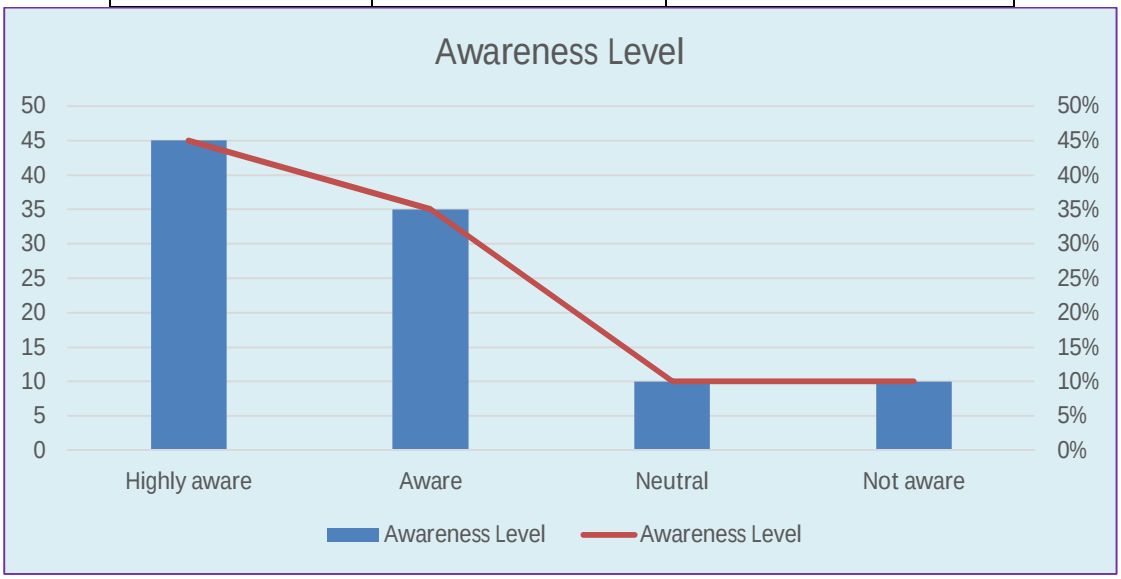
©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



- Interpretation: The majority of respondents (40%) belong to the 31–40 years age group, indicating that mid-career professionals are more involved in AI-based marketing analytics.

B. Awareness of AI in Marketing Analytics

Awareness Level		
Response	Number	Percentage
Highly aware	45	45%
Aware	35	35%
Neutral	10	10%
Not aware	10	10%
Total	100	100%

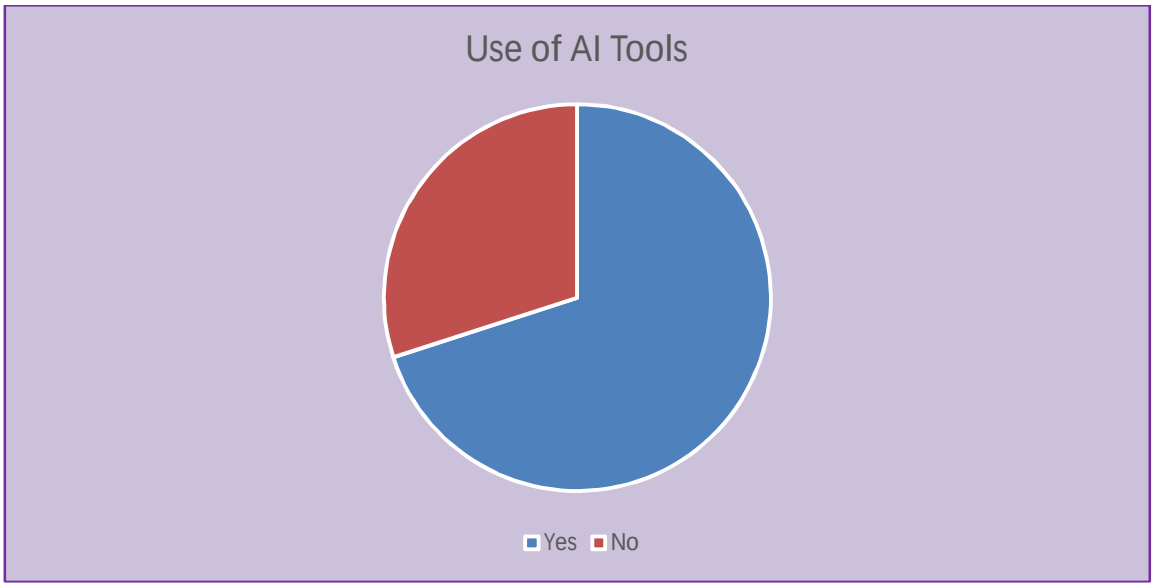


- Interpretation: 80% of respondents are aware of AI in marketing analytics, indicating high awareness among professionals.

C. Use of AI in Marketing Analytics

Table 3

Use of AI Tools		
Response	Number	Percentage
Yes	70	70%
No	30	30%
Total	100	100%

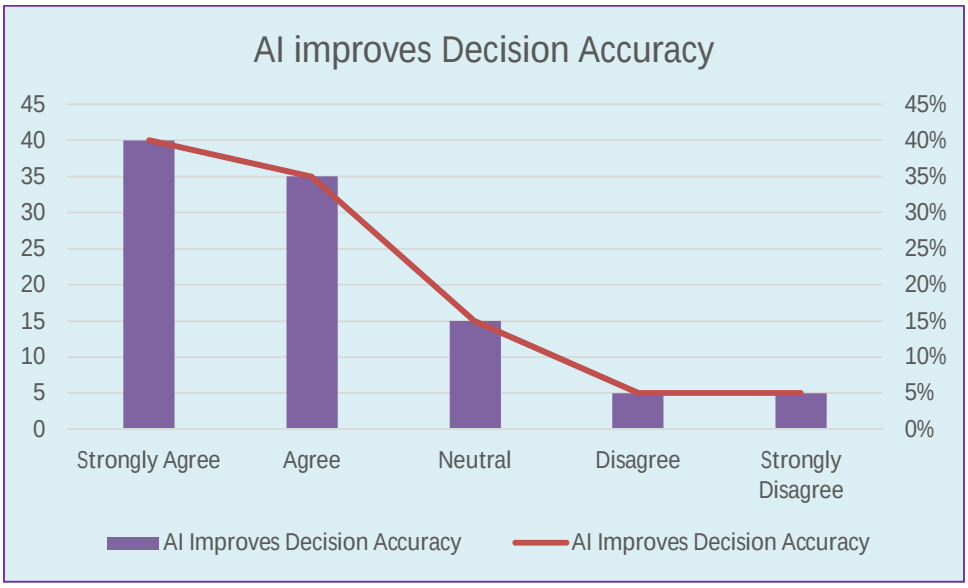


- Interpretation: 70% of respondents use AI tools in marketing analytics, showing widespread adoption of AI.

D. AI Improves Marketing Decision Making

Table 4

AI Improves Decision Accuracy		
Response	Number	Percentage
Strongly Agree	40	40%
Agree	35	35%
Neutral	15	15%
Disagree	5	5%
Strongly Disagree	5	5%
Total	100	100%

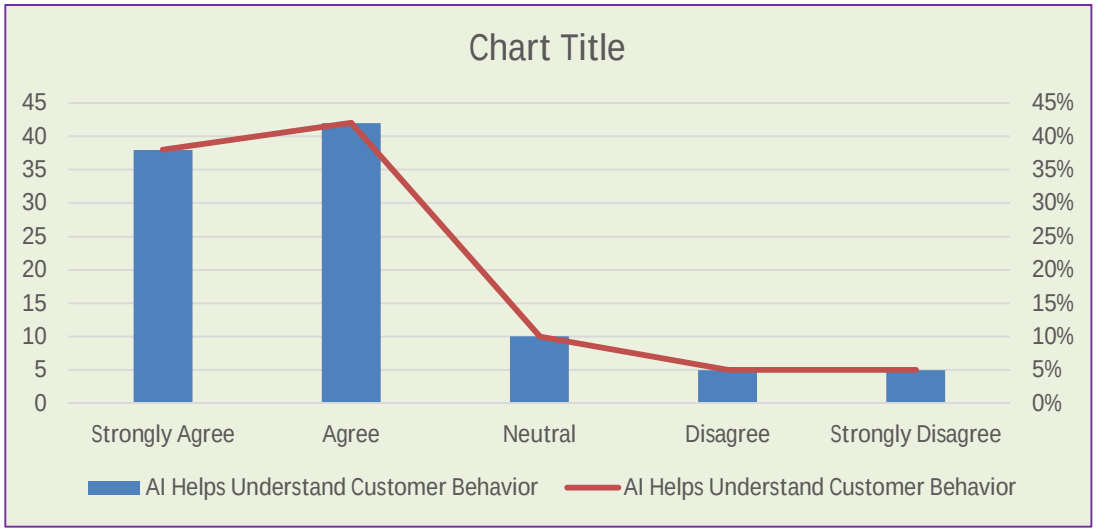


- Interpretation: 75% of respondents agree that AI improves business decision making, showing a strong positive impact.

E. AI Improves Customer Understanding

Table 5

AI Helps Understand Customer Behavior		
Response	Number	Percentage
Strongly Agree	38	38%
Agree	42	42%
Neutral	10	10%
Disagree	5	5%
Strongly Disagree	5	5%
Total	100	100%

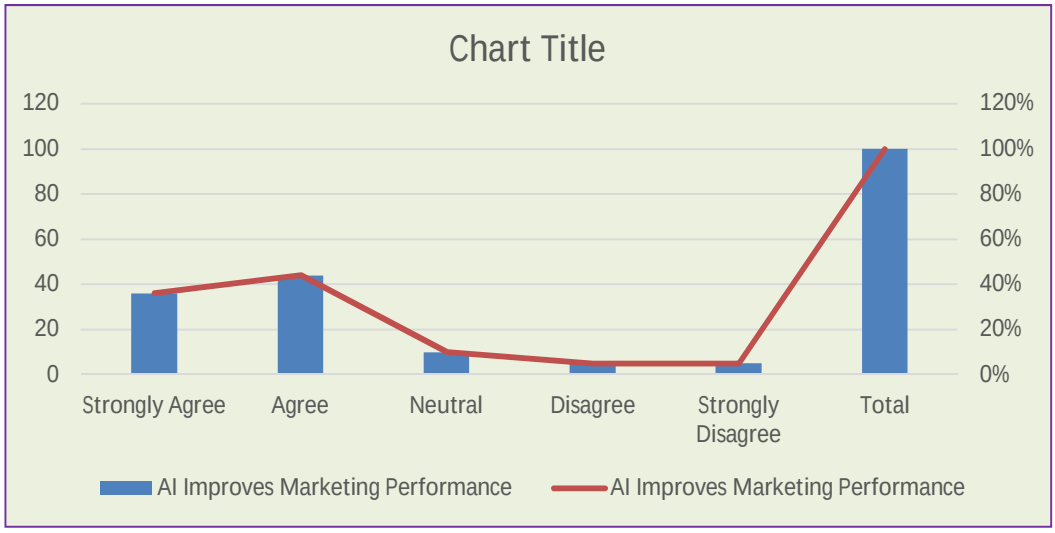


- Interpretation: 80% of respondents believe AI improves customer understanding, which helps businesses develop effective marketing strategies.

F. AI Improves Marketing Performance

Table 6:

AI Improves Marketing Performance		
Response	Number	Percentage
Strongly Agree	36	36%
Agree	44	44%
Neutral	10	10%
Disagree	5	5%
Strongly Disagree	5	5%
Total	100	100%



- Interpretation: 80% of respondents agree that AI improves marketing performance.

G. AI Helps in Faster Decision Making

Table 7

AI Improves Decision Speed		
Response	Number	Percentage
Strongly Agree	42	42%
Agree	38	38%
Neutral	10	10%
Disagree	5	5%
Strongly Disagree	5	5%
Total	100	100%

- Interpretation: 80% of respondents agree that AI enables faster decision making.

The overall findings from the data analysis indicate that there is a high level of awareness among professionals regarding the use of artificial intelligence (AI) in marketing analytics.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue IV Apr 2026- Available at www.ijraset.com

VII. FINDINGS OF THE STUDY

Based on the analysis of primary and secondary data, several important findings were identified regarding the role of Artificial Intelligence (AI) in marketing analytics and business decision making.

A. High Level of Awareness of AI in Marketing

The study found that the majority of respondents are aware of AI and its applications in marketing analytics. Approximately 80% of respondents reported that they are either aware or highly aware of AI tools such as machine learning, chatbots, predictive analytics, and recommendation systems. This indicates that AI has become an integral part of modern marketing practices. The reasons for this changes due to Digital transformation of businesses, Increased use of digital marketing platforms, Availability of AI-powered tools, Competitive business environment etc.

B. Significant Adoption of AI in Marketing Analytics

The study revealed that around 70% of organizations are currently using AI tools in marketing analytics. Businesses are using AI for customer segmentation, Customer behavior analysis, Sales forecasting, Marketing campaign optimization personalized recommendations etc. This shows that AI adoption is increasing across different industries

C. AI improves Business Decision Accuracy

One of the major findings of the study is that AI improves the accuracy of business decisions. Approximately 75% of respondents agreed that AI helps managers make better and more accurate decisions. AI helps decision making by Providing data-driven insights, reducing human errors, Identifying patterns and trends, providing predictive insights etc This enables businesses to make strategic and operational decisions more effectively.

D. AI Enhances Customer Understanding

The study found that AI significantly improves customer understanding. Around 80% of respondents agreed that AI helps businesses understand customer needs, preferences, and buying behavior. AI technologies such as machine learning and data analytics helps to analyze customer purchase history, Online browsing behavior, Social media activity and customer feedback and reviews.This helps businesses design effective marketing strategies.

E. AI Improves Marketing Performance

The study found that AI improves marketing performance by increasing efficiency and effectiveness. AI helps in making targeted advertising, Personalized marketing, Campaign optimization and Customer engagement. Organizations using AI reported improved marketing outcomes such as:

- Higher sales
- Better customer satisfaction
- Increased customer retention

F. AI Supports Faster Decision Making

AI enables real-time data analysis, which helps managers make faster decisions. Approximately 80% of respondents agreed that AI improves the speed of decision making.This is especially useful in Dynamic market environments, Online marketing campaigns, Customer service etc

G. AI Provides Competitive Advantage

Organizations using AI gain competitive advantages through: Better customer insights, Improved operational efficiency, Faster decision making and Improved marketing effectiveness. Businesses that use AI can respond quickly to market changes and customer needs.

H. Challenges in AI Implementation

Despite its benefits, the study identified several challenges:

- High cost of implementation

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

- Lack of skilled professionals
- Data privacy and security concerns
- Technical complexity
- Resistance to change

These challenges may affect AI adoption, especially in small and medium enterprises.

VIII. RECOMMENDATIONS

Based on the findings of the study, the following recommendations are suggested:

1) Organizations Should Adopt AI in Marketing Analytics

Businesses should adopt AI technologies like AI-powered analytics tools, Predictive analytics software, Marketing automation tools to improve marketing efficiency and decision making. AI helps organizations analyze large volumes of data and generate accurate insights.

2) Provide Training and Skill Development

Organizations should provide training programs to employees to improve AI-related skills.Training should focus on AI tools and application, Data analytics, Machine learning basics, Digital marketing analytics etc. This will help employees effectively use AI tools.

3) Integrate AI with Existing Marketing Systems

Organizations should integrate AI with their existing marketing systems such as:

- Customer Relationship Management (CRM)
- Marketing automation platforms
- Business intelligence tools

Integration improves efficiency and effectiveness.

4) Ensure Data Privacy and Security

Organizations must ensure proper data protection measures to protect customer information.
They should implement Data encryption, Secure data storage, Privacy policies and Compliance with data protection regulations.
This helps build customer trust.

5) Encourage Data-Driven Decision Making

Organizations should use AI insights to support decision making instead of relying only on intuition. AI-based decision making improves:

- Accuracy
- Efficiency
- Business performance

6) Small and Medium Enterprises Should Adopt AI Gradually

Small businesses can start with affordable AI tools such as: Chatbots, Email marketing automation and Basic analytics tools.
Gradual adoption reduces cost and complexity.

7) Government and Educational Institutions Should Support AI Adoption

Government and educational institutions should promote AI education and awareness through: Training programs, Workshops and AI courses. This will help develop skilled professionals

IX. CONCLUSION

Artificial Intelligence has become a powerful tool in marketing analytics and business decision making. The study shows that AI helps organizations analyze large amounts of data, understand customer behavior, and make accurate business decisions.AI improves marketing performance by enabling personalized marketing, customer segmentation, and predictive analytics. It helps businesses improve efficiency, reduce costs, and gain competitive advantages.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

The findings confirm that AI significantly enhances decision making by providing real-time insights and predictive capabilities. Organizations using AI can respond quickly to market changes and customer needs.

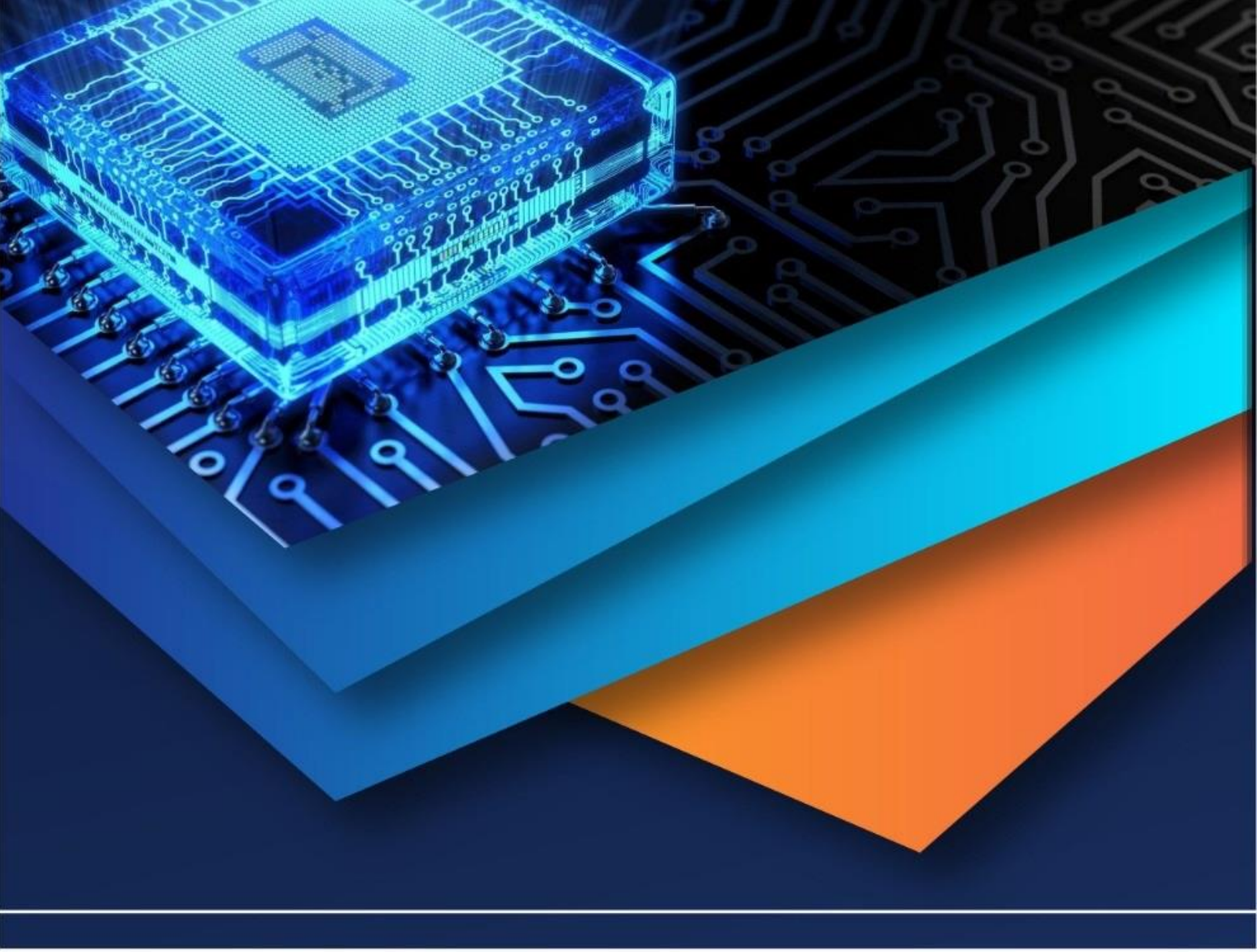
However, AI implementation also faces challenges such as high costs, lack of skills, and data security concerns. Organizations must address these challenges through proper planning, training, and investment.

Overall, AI plays a crucial role in transforming marketing analytics and business decision making. The future of marketing will increasingly depend on AI technologies, and organizations that adopt AI will achieve better performance and sustainable growth.

REFERENCES

[1] Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review*, 96(1), 108–116.
[2] Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the* Academy of Marketing Science, 48(1), 24–42.
[3] Chaffey, D., & Ellis-Chadwick, F. (2019). Digital Marketing: Strategy, Implementation and Practice. Pearson.
[4] Wedel, M., & Kannan, P. K. (2016). Marketing analytics for data-rich environments. Journal of Marketing, 80(6), 97–121.
[5] Huang, M. H., & Rust, R. T. (2021). Artificial intelligence in service. Journal of Service Research, 24(1), 3–24.
[6] Kumar, V., Dixit, A., Javalgi, R., & Dass, M. (2016). Research framework, strategies, and applications of intelligent agent technologies. Journal of the Academy of Marketing Science, 44(1), 24–45.
[7] Jarek, K., & Mazurek, G. (2019). Marketing and artificial intelligence. Central European Business Review, 8(2), 46–55.
[8] Shrestha, Y. R., Ben-Menahem, S. M., & von Krogh, G. (2019). Organizational decision-making structures in the age of artificial intelligence. California Management Review, 61(4), 66–83.
[9] Rust, R. T., & Huang, M. H. (2014). The service revolution and artificial intelligence. Service Science, 6(3), 206–221.
[10] Wilson, H. J., & Daugherty, P. R. (2018). Collaborative intelligence. Harvard Business Review, 96(4), 114–123.
[11] George, G., Haas, M. R., & Pentland, A. (2014). Big data and management. Academy of Management Journal, 57(2), 321–326.
[12] Brynjolfsson, E., & McAfee, A. (2017). Machine, Platform, Crowd: Harnessing Our Digital Future. W. W. Norton & Company.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)