We'Ken- International Journal of Basic and Applied Sciences
DOI: 10.18311/weken/2026/v11/i1/55781
Volume 11, Issue 1, June 2026, pp. 61-66

Use of Artificial Intelligence and Data Analytics in Modern Marketing Decision-Making: An Empirical Study

Abhishek D. Abhani

Department of MBA, SRK Institute of Management, Anjar Kachchh - 370105, Gujarat, India; aabhani.sim@gmail.com

Abstract

The increasing availability of big data and rapid advancements in Artificial Intelligence (AI) have significantly transformed marketing decision-making processes. Organisations are progressively adopting AI-driven tools and data analytics to gain deeper insights into customer behaviour, forecast market trends, and optimise marketing strategies.

This study examines the role of artificial intelligence and data analytics in enhancing the effectiveness of marketing decision-making within a competitive business environment. Primary data were collected from 120 marketing professionals and managers using a structured questionnaire based on a five-point Likert scale. A snowball sampling technique was employed due to the specialised nature of the respondents, who have expertise in AI-based marketing applications.

The collected data were analysed using descriptive statistics, percentage analysis, and correlation analysis. The findings reveal that AI and data analytics significantly improve decision accuracy, enable precise customer targeting, and enhance strategic responsiveness.

This study contributes to the existing marketing literature by providing empirical evidence from an emerging market context and offers valuable managerial insights into the effective adoption of AI-enabled decision support systems.

Keywords: *Artificial Intelligence, Data Analytics, Digital Marketing, Marketing Decision-Making; Predictive Analytics*

Received: 25-03-2026; **Revised:** 30-03-2026; **Accepted:** 7-04-2026

1.0 Introduction

1.1 The integration of AI and data analytics has revolutionised how organizations approach marketing decisions

AI technologies enable marketers to analyse vast amounts of structured and unstructured data collected from multiple sources such as social media, customer transactions, online behaviour, and market trends. Through machine learning algorithms and predictive modelling, AI systems can identify hidden patterns, forecast future outcomes, and provide actionable insights that enhance decision quality[1]. This shift from intuition-based to evidence-based decision-making has significantly improved organisational efficiency and effectiveness[1].

1.2 AI and data analytics are extensively applied across various marketing functions

In customer segmentation, AI helps identify distinct customer groups based on behaviour and preferences,

allowing for targeted marketing strategies[2]. Personalised marketing, driven by AI algorithms, enables firms to deliver customised content and recommendations, thereby enhancing customer engagement and satisfaction[3]. Similarly, predictive analytics assists in demand forecasting, helping organisations optimise inventory and supply chain decisions[4]. Pricing strategies are also increasingly influenced by AI, where dynamic pricing models adjust prices in real time based on demand, competition, and customer behaviour[5]. Additionally, AI-driven campaign optimisation tools enable marketers to evaluate campaign performance continuously and make necessary adjustments to maximise return on investment[5].

1.3 One of the key advantages of AI-driven marketing decision-making is its ability to reduce uncertainty and improve accuracy

By leveraging data-driven insights, organisations can make informed decisions that align with market dynamics and customer expectations. This not only enhances competitiveness but also supports strategic agility in rapidly changing business environments[6]. Moreover, AI-powered decision support systems facilitate faster decision-making by automating complex analytical processes, thereby allowing managers to focus on strategic planning and innovation[6].

1.4 Despite the growing adoption of AI and data analytics in marketing

Empirical research on their impact on decision-making effectiveness remains limited, particularly in emerging economies. Most existing studies focus on developed markets, where technological infrastructure and data availability are relatively advanced. Emerging economies present unique challenges such as data quality issues, limited technological adoption, and skill gaps, which may influence the effectiveness of AI-driven marketing decisions[7]. Therefore, there is a need for empirical investigations that explore how AI and data analytics contribute to marketing decision-making in such contexts[7].

1.5 This study aims to address this research gap by examining the role of AI and data analytics in enhancing marketing decision-making effectiveness

By providing empirical evidence from an emerging market perspective, the study contributes to both academic literature and managerial practice. It offers insights into how organisations can leverage AI-enabled tools to improve decision accuracy, customer targeting, and overall marketing performance.

2. Review of Literature

The growing integration of artificial intelligence (AI) and data analytics into marketing has attracted significant scholarly attention in recent years. Researchers have increasingly focused on understanding how AI-driven systems influence marketing decision-making, customer engagement, and overall organizational performance.

Thomas H. Davenport, Abhijit Guha, Dhruv Grewal, and Timna Bressgott (2020) examined the transformative role of artificial intelligence in marketing and emphasised its potential to enhance customer insights, automate decision-making processes, and improve marketing performance[8]. Their study highlighted that AI-powered analytics enables organisations to process large volumes of customer data efficiently, thereby improving the speed and precision of marketing decisions. The authors further noted that AI applications such as chatbots, recommendation systems, and predictive models contribute significantly to customer experience and strategic decision-making.

Similarly, Michel Wedel and P.K. Kannan (2016) explored the concept of marketing analytics in data-rich environments and found that the use of advanced analytics allows organizations to transition from descriptive analytics (what happened) to predictive (what will happen) and prescriptive analytics (what should be done)[9]. Their work underscored the strategic importance of analytics-driven decision-making in improving marketing effectiveness and resource allocation. The study also emphasized that firms leveraging analytics gain

a competitive advantage by making more informed and proactive marketing decisions.

Further extending this perspective, Shouvik Chatterjee, Nripendra P. Rana, Karthik Tamilmani, and Arun Sharma (2021) investigated the adoption of AI in marketing contexts and reported that data analytics capabilities play a crucial role in enhancing decision quality and customer engagement[10]. Their findings suggested that organisations implementing AI-supported decision systems are better equipped to analyse customer preferences, predict behaviour, and deliver personalised marketing strategies. The study also highlighted that AI adoption positively influences organisational performance by improving responsiveness and decision accuracy.

In addition to these studies, other scholars have also contributed to understanding the broader impact of AI and big data on marketing decision-making. For instance, Davenport and Ronanki (2018) emphasised the practical applications of AI in business processes and highlighted its role in augmenting human decision-making rather than replacing it[11]. Likewise, Chen, Chiang, and Storey (2012) discussed the evolution of business intelligence and analytics, noting that big data technologies enable organisations to derive meaningful insights from complex datasets, thereby supporting better strategic decisions[12]. Akter and Wamba (2016) further demonstrated that big data analytics capabilities significantly influence firm performance and decision-making effectiveness, particularly in dynamic business environments[13].

Despite the substantial contributions of prior studies, most research has been conducted in developed economies where technological infrastructure and data accessibility are relatively advanced. There remains a lack of empirical evidence examining how AI and data analytics influence marketing decision-making effectiveness in emerging markets. Factors such as limited technological readiness, data quality issues, and skill gaps may affect the adoption and impact of AI-driven systems in such contexts[14]. Therefore, this study seeks to address this research gap by providing empirical insights into the role of AI and data analytics in enhancing marketing decision-making in an emerging economy setting.

3. Research Objectives

The present study is undertaken with the following objectives:

1. To examine the extent of adoption and usage of artificial intelligence (AI) and data analytics in marketing activities, as organisations increasingly integrate advanced technologies to enhance customer insights and operational efficiency.
2. To analyse marketers' perceptions of AI-enabled decision-making tools, particularly in terms of usability, reliability, and their contribution to improving decision quality and responsiveness.
3. To assess the impact of AI and data analytics on marketing decision effectiveness, including improvements in accuracy, speed, and overall performance of marketing strategies.
4. To examine the relationship between AI-driven analytics and strategic marketing decisions, focusing on how predictive and prescriptive analytics influence long-term planning and competitive advantage.

4. Research Methodology

4.1 Research Design

The study adopts a descriptive and empirical research design.

4.2 Sampling Technique and Sample Size

Snowball sampling was used to identify marketing professionals and managers familiar with AI and analytics tools. A total of 120 respondents were included in the study.

4.3 Data Collection

Primary data were collected through a structured questionnaire using a five-point Likert scale (Strongly Disagree to Strongly Agree). Secondary data were sourced from academic journals, industry reports, and digital marketing studies.

4.4 Tools of Analysis

The following statistical tools were applied:

- Percentage analysis
- Descriptive statistics
- Correlation analysis

5. Data Analysis and Results

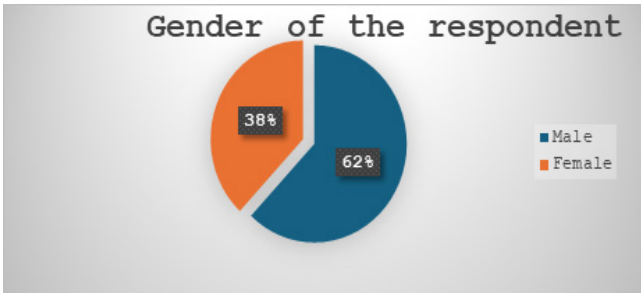


Figure 1. Gender of the Respondents.
Source: Based on Scholar data analysis.

Table 1. Age Group of the Respondents

Sr. No.	Age Group	Response	Percentage
1	20–30	20	20%
2	30–40	42	42%
3	40–50	23	23%
4	50–60	10	10%
5	60 & above	5	5%

Source: Based on Scholar data analysis.

Table 2. Awareness of AI and Data Analytics Tools

Awareness Level	Response	Percentage
Strongly agree	28	28%
Agree	40	40%
Neutral	18	18%
Not agree	9	9%
Strongly disagree	5	5%

Source: Based on Scholar data analysis

Table 3. Use of AI in Marketing Decision-Making

Application Area	Response	Percentage
Customer analysis	34	34%
Sales forecasting	26	26%
Campaign optimization	22	22%
Pricing decisions	10	10%
Other	8	8%

Source: Based on Scholar data analysis.

Table 4. Impact of AI on Marketing Decision Accuracy

Impact Level	Response	Percentage
High impact	36	36%
Moderate impact	41	41%
Low impact	15	15%
No impact	8	8%

Source: Based on Scholar data analysis.

6. Result and Discussion

As per the figure 1, most respondents were male (n = 100; 62%). Table 1 depicted the mean age of respondents was approximately 39 years. A majority of respondents were actively involved in marketing decision-making processes and regularly used digital platforms and analytics tools. About 68% of respondents agreed that AI and data analytics significantly support marketing decisions.

As per the output noted in Table 2 the customer analysis and sales forecasting were the most commonly used AI applications in marketing. Around 77% of respondents reported that AI improves decision accuracy and reduces marketing risk. Respondents indicated that data-driven insights help in better targeting, campaign planning, and strategic decision-making. The table 3 and table 4 findings highlight that AI and analytics positively influence marketing effectiveness and decision confidence among professionals.



Figure 2. Enhancing Marketing with AI.

Source: Based on Scholar data analysis.



Figure 2. Enhancing Marketing with AI.

Source: Based on Scholar data analysis.

7. Findings

The findings of the present study clearly indicate that artificial intelligence (AI) and data analytics have become critical enablers of modern marketing decision-making. Figure 2 states that the integration of AI-driven tools into marketing processes enables organisations to move beyond traditional intuition-based approaches toward more data-driven, evidence-based decision-making frameworks. By leveraging advanced analytics and machine learning techniques, firms can process vast volumes of structured and unstructured data, resulting in more accurate, timely, and reliable marketing decisions.

AI-enabled systems significantly enhance customer understanding by identifying behavioural patterns, preferences, and purchase intentions. This enables marketers to design highly personalised strategies, improve customer engagement, and strengthen long-term relationships. Furthermore, predictive analytics supports demand forecasting and trend analysis, allowing organisations to anticipate market changes and respond proactively. As a result, AI contributes not only to operational efficiency but also to strategic agility in a highly competitive business environment.

The findings of the study suggest a progressive impact pathway of AI and data analytics on marketing decision-making. The adoption of AI tools by marketing professionals serves as the foundational stage, enabling organisations to transition toward data-driven practices. As AI adoption increases, it significantly enhances the accuracy of decision-making, reducing uncertainty and improving reliability.

Further, as per Figure 3, AI-driven analytics generate strategic insights by identifying customer patterns, predicting trends, and supporting proactive planning. These insights empower marketers to design targeted strategies and respond effectively to dynamic market conditions. Ultimately, the integration of AI and analytics leads to enhanced marketing effectiveness, reflected in improved decision confidence, better customer engagement, and superior organisational performance.

8. Conclusions

The study also highlights that organisations adopting AI-based marketing analytics achieve improved decision effectiveness in terms of accuracy, speed, and responsiveness. These capabilities translate into better marketing performance, optimised resource allocation, and enhanced return on investment. Moreover, AI-driven decision support systems enable firms to gain a sustainable competitive advantage by facilitating informed and adaptive strategic planning.

However, the successful implementation of AI in marketing requires more than just technological adoption. Organisations must invest in developing strong data analytics capabilities, including infrastructure, tools, and skilled human resources. Training and upskilling marketing professionals in AI and analytics are essential to ensure effective utilisation of these technologies. Without adequate knowledge and expertise, the potential benefits of AI-driven systems may not be fully realised.

In addition, continuous monitoring and evaluation of AI applications are crucial to ensure their effectiveness and reliability. Organisations should regularly assess the performance of AI models, address data quality and bias issues, and update systems in line with changing market conditions[6]. Ethical considerations, transparency, and data privacy must also be taken into account while implementing AI-based marketing solutions.

In conclusion, AI and data analytics are transforming the landscape of marketing decision-making by enhancing accuracy, enabling deeper customer insights, and supporting strategic innovation. Firms that proactively adopt and effectively manage these technologies are more likely to achieve superior performance and maintain a competitive edge in the evolving digital marketplace.

9. References

1. T.H. Davenport, Ronanki R. Artificial intelligence for the real world. Harv Bus Rev. 2018; 96(1):108-116.
2. Wedel M, P.K. Kannan. Marketing analytics for data-rich environments. J Mark. 2016; 80(6):97-121. https://doi.org/10.1509/jm.15.0413
3. Kumar V, Reinartz W. Creating enduring customer value. J Mark. 2016; 80(6):36-68. https://doi.org/10.1509/jm.15.0414
4. Chaffey D, Ellis-Chadwick F. Digital marketing: strategy, implementation and practice. 7th ed. Pearson; 2019.
5. Chen H, R.H.L. Chiang, V.C. Storey. Business intelligence and analytics: from big data to big impact. MIS Q. 2012; 36(4):1165-1188. https://doi.org/10.2307/41703503
6. Brynjolfsson E, McAfee A. The second machine age. New York: W.W. Norton; 2014.
7. Akter S, S.F. Wamba. Big data analytics in e-commerce. J Bus Res. 2016;69(2):807-814.
8. T.H. Davenport, Guha A, Grewal D, Bressgott T. How artificial intelligence will change the future of marketing. J Acad Mark Sci. 2020; 48(1):24-42. https://doi.org/10.1007/s11747-019-00696-0
9. Wedel M, P.K. Kannan. Marketing analytics for data-rich environments. J Mark. 2016; 80(6):97-121. https://doi.org/10.1509/jm.15.0413
10. Chatterjee S, N.P. Rana, Tamilmani K, Sharma A. The adoption of artificial intelligence in marketing: a review and future research agenda. J Bus Res. 2021; 124:120-137.
11. T.H. Davenport, Ronanki R. Artificial intelligence for the real world. Harv Bus Rev. 2018; 96(1):108-116.
12. Chen H, R.H.L. Chiang, V.C. Storey. Business intelligence and analytics: from big data to big impact. MIS Q. 2012; 36(4):1165-1188. https://doi.org/10.2307/41703503
13. Akter S, S.F. Wamba. Big data analytics in e-commerce: a systematic review and agenda for future research. J Bus Res. 2016; 69(2):807-814. https://doi.org/10.1007/s12525-016-0219-0
14. Y.K. Dwivedi, D.L. Hughes, Ismagilova E, et al. Artificial intelligence (AI): multidisciplinary perspectives on emerging challenges and opportunities. Int J Inf Manage. 2021; 57:101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002 PMCid:PMC11414662