

# Role of AI in marketing and consumer decision making process

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**Abstract—** *In past few years, the mixing of artificial intelligence (AI) and marketing has led to a new era of innovation and transformation in the way businesses engage with customers and drive growth. This research based file offers a complete review of the multiple roles of AI in modern marketing methods. Beginning with an explanation of AI's definition and its relevance in the marketing context, the file investigates into the various types of AI technologies applied in marketing strategies, including machine learning, natural language processing, predictive analytics, and more. By reviewing the growth of AI in marketing from traditional to advanced techniques, readers gain insight into the evolutionary journey of AI-powered marketing solutions.*

**Index Terms—** *Artificial Intelligence, marketing, machine learning, natural language*

## I. INTRODUCTION

The area of marketing has undergone a deep evolution with the advent of Artificial Intelligence (AI), declaring a model shift in how businesses interact with consumers and drive strategic initiatives. In recent years, AI has appeared as a strong force, encouraging marketers with advanced tools and techniques to unlock unmatched insights, personalize experiences, and enhance campaign performance. This introduction sets the stage for a comprehensive exploration of the role of AI in modern marketing practices.

Traditionally, marketing strategies were mainly manual, depending on intuition, past experiences, and limited data analytics. However, the expansion of digital channels, joined with the rapid growth of data, has required a more complex approach to marketing. Enter AI – a innovative technology that tackle the power of data and methods to systematic processes, uncover hidden patterns, and deliver pin-pointed messaging to consumers.

The purpose of this research-based file is to explore deep into the varied landscape of AI in marketing, providing a fine understanding of its applications, implications, and future directions. By explaining the

various types of AI technologies employed in marketing, from machine learning and natural language processing to predictive analytics and chatbots, this file aims to equip readers with a complete toolkit for utilizing AI-driven solutions in their marketing aims.

Moreover, this introduction highlights the importance of AI in stating key challenges faced by marketers, such as segmentation and targeting, content customization, and campaign enhancement . Through real-world case studies and examples, the innovative impact of AI on marketing campaigns across diverse industries will be highlighted, explaining its efficiency in driving business outcomes and enhancing customer engagement.

However ,the promise of AI lies a countless challenges and ethical examinations. From data privacy concerns to methods and procedure and the ethical implications of AI-driven decision-making, marketers must direct a complex landscape loaded with traps. This introduction will clarify on these challenges while also exploring potential solutions and best methods for lessening risks and increasing the benefits of AI in marketing.

## II. OBJECTIVES

The objective for consumer buying process and decision-making process is to revolutionize the consumer experiences. By leveraging AI algorithms, businesses aim to offer personalized recommendations, streamline purchasing journeys and enhance customer satisfaction. Through data analysis and predictive modelling, AI can anticipate individual preferences, providing tailored product suggestions and optimizing pricing strategies in realm time. Different use of artificial intelligence, ML and big data and how they help in personalization and segmentation of targeted customer. The use of AI is also done in predictive analysis for customer behaviour and trend identification. Here we try to identify how AI helps in engaging with consumer buying process and decision makings. Another

objective for conducting this research if to find up to what limit AI is helping in organizing campaign and testing market. This research will also cover various ways AI can enhance analysis for customer engagement. By using artificial intelligence in different sizes of businesses including MSMEs, small businesses and big and advanced companies. Newly developed AI also helps in content creation which is more efficient, creative and faster way.

This research also aims to provide maximum benefits to the younger generations on how the changing AI, Big Data can improve overall business conducts. Moreover, the advantages and disadvantages for adopting AI in business and marketing in particular. Along the advantages there are always some disadvantages which will always be complemented in AI transformation, and these disadvantages for AI are also being discussed in the research.

### III. LITERATURE REVIEW

Arco et al. (2019), analysed the crucial role taken by artificial intelligence (AI) and big data to many marketing functional areas in present days. The theoretical paper's primary goal was to gain a deeper understanding of the interplay of Big Data, AI, and customer journey mapping, based on this premise. The authors' goal was to show how these data analytics technologies can improve marketing performance and customer behavior patterns by reviewing the body of existing literature on the effects of AI and Big Data on marketing practices. For marketing managers, the research's findings provide some thought-provoking suggestions. Effective customer journey management and exploration may be achieved by combining Big Data and AI analytics tools, as demonstrated by the suggested methodology.

According to Dellaert B.G.C et al. (2020) AIVAs perform a wide range of routine functions and are helping customers make purchases more frequently, which makes AIVAs a fascinating subject for marketing academics. In an effort to stimulate more academic thought and research in this fast evolving, highly significant area of consumer-firm interaction, they formulate a number of hypotheses about how consumers decision-making processes might alter when the transition from traditional online purchase environments to voice-based dialogs powered by AI. They also offered recommendations on key considerations for marketing managers and

policymakers in their reactions to the influence of AIVAs on consumer choices.

Kumar M et al. (2022) focused on the use of artificial intelligence (AI) by different sizes of businesses. According to their findings, among an array of industries, artificial intelligence (AI) has been utilized but MSMEs are not utilizing AI as widely. Several job losses related to the covid-19 pandemic had been documented. Therefore, intelligent workforce management (WEM) driven by artificial intelligence may be essential for controlling the massive employment in MSMEs during or after the pandemic. They developed and assessed a conceptual framework in the study based on three areas where the adoption of AI-powered WEM for MSMEs revenue development has been highlighted. They are information sharing, business and marketing, and risk management (employee).

Abrokwah-Larbi K and Avuku-Larbi Y,(2023) explored the connection between business performance and artificial intelligence (AI) in marketing (AIM), researchers examined 225 small and medium-sized businesses (SMEs) registered with the Ghana Enterprise Agency in the Eastern Region of Ghana. The findings revealed that AIM had a significant positive impact on various aspects of business performance, including financial performance, customer satisfaction, internal business processes, and overall growth. This underscores the importance of AIM in helping businesses improve both customer outcomes and financial results.

Similarly, Gurjar et al. (2020) looked into how AI influences business processes, focusing on its applications, challenges, limitations, current trends, and future potential. Their research highlighted AI's impact in multiple sectors such as customer service, marketing, finance, healthcare, manufacturing, logistics, and human resources. They pointed out the benefits and successful applications of AI, but also stressed the need to consider ethical issues when implementing AI in business practices. Klaus P and Zaichkowsky J (2020) talk about how artificial intelligence (AI) is changing the way people make decisions when they buy things. Instead of spending lots of time thinking about what to buy, people are letting AI programs, like chatbots, make choices for them. This makes things more convenient. Right now, AI is mostly used for simple decisions, but it's starting to be used for bigger ones too. This means that business needs to change how they think about selling things and managing services instead of

focusing on traditional things like brand reputation, they need to pay more attention to factors like how high a product ranks in search results. The paper shows why it's important for businesses to adopt to this new way of shopping and decision making driven by AI.

Stone M et al. (2020) focused on the application of artificial intelligence (AI) in strategic situations, focusing on strategic marketing decisions. It identified a gap in research in this area and emphasizes the need for further investigation, highlighting the shift of AI application from operational to strategic-decision making across management domains. Despite the limited availability of data due to commercial sensitivity, the paper stresses the importance of deploying AI in strategic marketing decisions, especially in competitive industries where failure to do so could pose risks. The study suggests significant implications for businesses, particularly large ones, and emphasizes the relevance of AI development in strategic decision-making for the public sector as well. Overall, the paper presents original insights and value by delving into the deployment of AI strategic marketing decision making marking a contribution to the field.

Ljepava N (2022) examined how artificial intelligence (AI) is transforming the way marketing decisions are made across five key stages: analysis, strategy, tactics, customer relations, and value proposition creation. By reviewing research articles from 2020 to 2022, the study found that AI is mainly used to better understand customer behavior and to develop marketing strategies and tactics. The research concluded by offering recommendations for marketers and suggestions for future studies, highlighting the increasing importance of AI in the marketing field.

#### IV. RESEARCH HYPOTHESIS AND FRAMEWORK.

Hypothesis 1: AI-driven personalization and predictive analytics significantly enhance customer experience by providing tailored recommendations and real-time pricing adjustments, positively influencing the consumer buying process.

Hypothesis 2: The integration of AI, machine learning, and big data improves customer segmentation accuracy, enabling more effective

targeted marketing and optimizing campaign performance.

#### V. RESEARCH METHODOLOGY

1. Research Approach: This study uses quantitative research approach to orderly measure the effect of AI on marketing and consumer decision-making process. A quantitative approach is appropriate because it allows for objective data collection and statistical analysis, allowing the research to test hypotheses and identify patterns related to AI's effect on consumer behavior.

2. Research Design: A descriptive research design is used to capture detailed knowledge into how AI driven customization, predictive analytics, and customer segmentation effect consumer decision making and improve marketing effectiveness. Descriptive design is appropriate here because it focuses on understanding current circumstances as they are, providing a complete picture of the role of AI in marketing.

3. Research Instrument: The primary research instrument is a structured questionnaire, conducted through Google Forms. The questionnaire consists of multiple-choice questions, mainly using a rating scale to capture responses on the degree of control AI has on consumer's experiences and buying decision making process. Questions are designed to collect data on consumer's view point of AI-driven customization, division, and forecast-based pricing.

4. Sampling Technique: A convenience sampling technique is applied to select participants for the survey. Convenience sampling is chosen for easy and quick reach at a large number of respondents, as the study aims to collect data from a broad consumer base which is familiar with AI-driven marketing strategies and techniques.

5. Sample Size: The sample size for this study consists of 100 individuals. This sample was chosen to represent different consumer groups and backgrounds, making sure that the findings collect a broad range of consumer view points on AI in marketing.

6. Data Collection Method: Data was collected through an online Google Form survey, which was circulated to the selected 100 participants. The online format makes sure reachability and ease in

completing the response, allowing for efficient data collection among different groups.

7. **Data Analysis Tools & Techniques:** The collected data will be analyzed using Microsoft Excel and statistical tool. Descriptive statistics (mean, median, mode) will be used to highlight responses, while analytical statistics will help to identify relationships between AI-driven marketing methods and consumer decision-making. This combination of analysis techniques allows for both summarization and deeper investigation of the data to handle the research objectives.

## VI. RESULTS & FINDINGS

### Demographics of Participants:

**Age group:** The respondents were primarily aged between 18-25 (77.5%). This reflects a younger group is more likely to represent the tech-savvy generation which is more familiar with the use of AI and its applications.

**Occupation:** A large proportion of the respondents were identified as students which is 83%. This is likely to reflect the age group, as many individuals within the 18-25 range are engaged in academic pursuits.

### Familiarity with AI:

**General familiarity with AI:** A major portion of respondents that is 60% indicated being either very or slightly familiar with AI. Only 29% were neutral, and a smaller portion reported not being very familiar or not familiar at all. This reflects a strong awareness of AI, even among younger groups.

### Use of AI in Online Marketing:

**Awareness of AI in marketing:** 56% of respondents noted that they frequently notice the use of AI in online marketing, with 25% reporting occasional exposure. This suggests that AI in marketing has become fairly visible, at least to younger, tech-savvy consumers.

**Types of AI-powered marketing:** Personalized recommendations and dynamic pricing were likely the most commonly encountered forms of AI-powered marketing, but the exact breakdown wasn't provided. The general sense, however, is that AI-driven recommendations (both for products and ads) are a primary mode of interaction in digital marketing.

### Perceptions of AI-driven Recommendations:

**Helpfulness of AI-generated recommendations:** Over half of respondents (51%) found AI-generated product suggestions somewhat helpful, while 22% were neutral. A smaller proportion (20%) found them very helpful. This suggests that while many consumers appreciate the convenience, the effectiveness of the recommendations could still be improved.

**Trust in AI-generated recommendations:** 29% of respondents were slightly likely to trust AI-generated recommendations, while 54% were neutral. This reflects a lack of strong trust, and doubt about AI's ability to understand personal preferences.

**AI-driven ads vs. traditional ads:** A majority of 63% from the survey found AI-generated ads were slightly more relevant than traditional ads. This suggests that AI has a clear advantage over traditional advertising in terms of suitability, likely due to its customized nature.

### Privacy and Transparency:

**Comfort with AI assessing browsing/purchase history:** 68% of respondents from the survey were either comfortable to some extent or neutral with AI assessing their purchase history. While this indicates a moderate level of comfort with AI's ability to customize experiences, it also points towards potential concerns regarding privacy.

**Concerns about data privacy:** A major portion of respondents about 62% from the survey stated concern about data privacy in AI-generated marketing, with about 32% being very concerned about data privacy. This states the stress between the convenience of customized marketing and the risks of personal privacy.

**Transparency of AI algorithms:** 69% of respondents from the survey conducted were feeling more comfortable if AI methods and procedures were more transparent about the data they use for generating preferences. This highlights the need for brands to provide clearer and more transparent declarations regarding the data usage to enhance consumer trust.

### Influence of AI on Consumer Behavior:

**AI's influence on purchasing decisions:** 46% of respondents from the survey stated that AI-generated recommendations sometimes affected their buying

decisions, while 30% respondents reported that they were hardly affected. This suggests that while AI has a visible effect on consumer choices and decisions, it is not a leading factor for many users.

AI's future role in influencing behaviour : A large majority about 91% of respondents believe that AI will play a more vital role in affecting consumer behaviour in the future, while 43% believing it will definitely happen and other 48% considering it as a possibility. This states encouragement about the ongoing growth and fusion of AI in marketing.

Preferences on AI vs. Traditional Marketing:

Preference for AI-based marketing: Only around 17% of respondents selected AI-based marketing, while around 71% were open to both AI-generated and traditional marketing. This states a preference for a mix approach, where AI is merged but not necessarily as the one and only way of marketing.

AI Chatbots for Customer Support:

Satisfaction with AI chatbots: 47% of respondents were likely to satisfied with AI chatbots for customer support, while 28% respondents were being neutral. The responses states a general acceptance of AI chatbots, but there is a possibility for improvement in terms of customer experience.

## VII. CONCLUSIONS

The findings from the survey highlight important understandings into how younger groups, particularly those who were between age 18-25, observe and take part with artificial intelligence (AI) in online marketing. This age group represents the future of consumer behaviour. The role of AI in marketing has become more interesting providing a unique perspective. Since many of these individuals have grown up with technology adapted into daily life, they are highly familiar with technology in general and already familiar to interacting with AI generated tools such as customized ads and preferences in particular. As a result, their opinions offer valuable understanding into how AI can shape marketing strategies in the coming years.

Privacy concerns among different segments of consumers are another important issue identified in the survey. Respondents stated inconvenience with how their personal data is being collected, used, and shared by AI systems for their recommendations. The need for transparency and clarity in data usage is

vital, as consumers are becoming increasingly aware of how their data is being collected and assessed. A key recommendation from the survey is that businesses using AI generated marketing strategies must prioritize and have a clear communication and declaration with consumers, how their data is collected, stored, and used. Transparency and clarity in these methods can help reduce fears and build trust with consumers and improve their overall experience with AI-generated marketing.

Finally, the survey reveals that while there is strong hope about the future role of AI in marketing, many respondents prefer a balanced, mix approach that combines AI-generated techniques with traditional marketing methods. This suggests that while AI offers powerful tools for customizing marketing efforts, there always remain the same value in maintaining human components along the process. A mix strategy allows brands to take advantage of the strengths of both AI and traditional methods, making sure that consumer needs are met while also encouraging trust and loyalty. For businesses, adopting such a mix and complex approach may be key to building long-term relationships with their consumers.

In conclusion, while AI is recognized and considered as a powerful tool in online marketing, stating concerns about trust, privacy, and the accuracy of recommendations is important for its continued success. By focusing on clarity and transparency, enhancing methods and procedure, and combining AI with traditional methods, businesses can promote greater consumer confidence and enhance their marketing strategies for a tech-savvy, privacy concerned audience.

## VIII. IMPLICATIONS

For Marketers: Marketers should prioritize customized AI-generated recommendations while balancing the use of traditional marketing methods. clarity regarding data usage will be important in building trust and improving consumer satisfaction. AI could be maximise further to improve its accuracy in reflecting consumer preferences.

For AI Developers: AI developers should work on improving procedure and methods for product recommendations and customer interactions, making sure that they are exact and arranged with consumer preferences. Adding on, enhancing the clarity of AI systems will help in lessening privacy issues.

For Policy Makers: Given the common issues about data privacy, there may be a need for stricter regulations neighboring the use of AI in marketing. Making sure that AI systems are clear and compliant with privacy standards should be a key focus.

#### IX. LIMITATIONS & FUTURE RESEARCH DIRECTIONS

**Sample Size and Demographics:** This is sample size of 80 responses, is relatively small for generating to a broader population. Moreover, the overstated of students and the 18-25 age group limits the diversity of point of views, particularly from older consumers.

**Geographic Bias:** The questionnaire does not indicate the geo-location where the responses were collected, which could mean that the findings are geographically biased. Region may vary the AI adoption and marketing methods.

**Depth of Insights:** The questionnaire provides quantitative observation but lacks deeper qualitative data that could have been provide more detailed consumer motivations and their issues.

#### X. FUTURE RESEARCH DIRECTIONS

**Broader Demographics:** Future research should mainly aim to secure a more diverse demographic, including older age groups and a mix of employed, to understand how different parts of the population respond to AI in marketing.

**Longitudinal Studies:** To gain a deeper understanding of the changing relationship between consumers and AI, future research could have track consumer behavior over time to observe changes in attitudes and usage for further recommendations and preferences.

**Qualitative Insights:** adding on quantitative data with qualitative data could provide more relevant observations into consumer experiences and specific issue about AI in marketing.

**Cross-Cultural Studies:** Investigating how AI marketing is identified in different cultural contexts would be valuable and helpful, as view points toward privacy and technology can vary significantly across cultures and region.

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