

# Artificial Intelligence Adoption in Marketing

Heditia Umi Ismulyani<sup>1</sup>, Satria Bangsawan<sup>2</sup>, Dorothy Rouly Haratua Pandjaitan<sup>3</sup>

{[heditia@usn-lampung.ac.id](mailto:heditia@usn-lampung.ac.id)<sup>1</sup>, [satria.bangsawan@feb.unila.ac.id](mailto:satria.bangsawan@feb.unila.ac.id)<sup>2</sup>, [dorothy.rouly@feb.unila.ac.id](mailto:dorothy.rouly@feb.unila.ac.id)<sup>3</sup>}

Doctoral Program in Economics, University of Lampung<sup>1</sup>  
Department of Management, University of Lampung<sup>2,3</sup>

**Abstract.** This article delves into the concept of artificial intelligence in marketing, transformative role of Artificial Intelligence (AI) in marketing, highlighting its rapid advancements and the significant impact on various sectors, particularly in marketing. As organizations navigate the era of Big Data and sophisticated analytical techniques, the integration of AI technologies has become essential for deriving critical insights about customers and enhancing operational efficiency. The benefits of AI in personalizing marketing strategies and improving customer engagement, while also addressing the heightened risks of cyber security threats. By leveraging AI for real-time data analysis and decision-making, businesses can optimize their marketing efforts, ensuring alignment with customer needs and preferences.

**Keywords:** Artificial Intelligence, marketing strategy, transformation, cyber security

## 1 Introduction

AI is becoming increasingly popular throughout the world and has already transformed many areas of business, including marketing, customer service, and interactions with consumers [1]. Machine learning, an AI capability, allows for the rational and creative solution of issues. Marketers and consumers alike are enthusiastic about artificial intelligence (AI) because of the advantages it offers to both [2]. Thanks to Big Data and improved analytical methods, financial institutions may now incorporate cutting-edge tech into their systems to understand their customers better and keep a close eye on their every move [3]. An increasing number of organizations are realizing the advantages that new technology provide, thanks to the ongoing digital transformation. Cybersecurity risks and assaults are on the rise, though, due to the widespread use of technology. Consequently, increasingly sophisticated safeguards are required to counter ever-evolving dangers. The application of artificial intelligence might be a possible answer (AI) [4].

AI-powered digital marketing services, such as intelligent email marketing, interactive site design, and conversational AI chatbots, may point users in the direction of the company's objectives [5]. Technology taking center stage as the product that improves the firm in all its facets. The marketing of commercial products has been greatly simplified by the advent of artificial intelligence. AI is seen as an emerging technology capable of gathering real-time data, which can be transformed, after analysis, to fulfil customers' needs and demands [6].

## **2 Literature Review**

### **2.1. Theory of Planned Behavior**

According to the Theory of Planned Behavior, there are three categories of beliefs that people use to direct their actions: behavioral, normative, and control [7]. An individual's standpoint, subjective standards, and sense of behavioral agency are all impacted by these belief categories. The intention to behave is greatly influenced by one's attitude and subjective standards [8]. Perceived behavioral control, or the regulator of one's environment, moderates the association between these characteristics and intention [9]. As a result, behavior is predicted by intention, which is seen as a direct factor preceding action, and TPB can stand in for real control [10].

The Theory of Planned Behavior (TPB) is a widely used model for predicting human behavior, as artificial intelligence (AI) continues to advance, researchers are exploring how AI can enhance our understanding and application of TPB. AI's capacity to predict consumer behavior with high accuracy forms a crucial component of the grand theory. This predictive power allows for more targeted and effective marketing strategies [11]. The capacity to provide massively customized experiences is central to the AI marketing grand theory. By analyzing massive volumes of consumer data, marketers can now craft personalized marketing messages and offers with the help of AI [12]. AI will increasingly automate marketing decisions and operations, from content creation to campaign optimization, allowing marketers to focus on higher-level strategy [13].

### **2.2. Artificial Intelligence**

Artificial intelligence (AI) has found usage in many different fields, such as healthcare (clinical decision support systems), e-commerce (personalized user experience-driven apps), finance (fraud detection systems), and the automotive industry (automotive sector) [14]. AI driven approaches enable unprecedented levels of personalization and customer segmentation, allowing marketers to tailor their strategies to individual preferences and behaviors with remarkable precision [15]. AI facilitates the processing and interpretation of vast amounts of data, providing insights that were previously unattainable [11]. This data-driven approach is revolutionizing areas such as predictive modeling, customer lifetime value estimation, and real-time decision making in marketing campaigns [12].

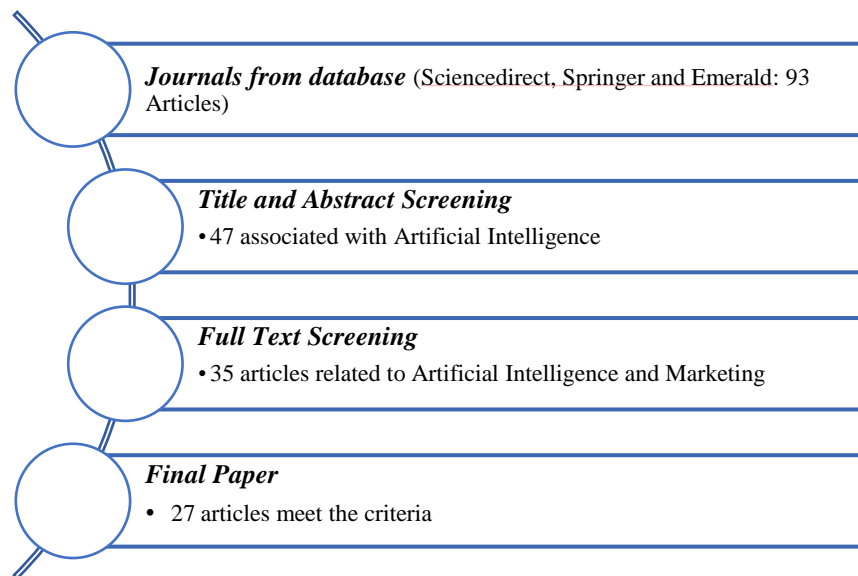
Additionally, AI in marketing refers to the idea of automating and improving certain marketing processes. This involves using chatbots powered by AI to handle customer support inquiries. By incorporating AI into these processes, productivity is increased and the customer experience is improved through the provision of more relevant and timely interactions, ultimately leading to an enhanced overall experience [16].

Additionally, the concept examines the potential of AI to bridge the gap between online and offline marketing channels, creating seamless omnichannel experiences for customers [17]. By leveraging AI to analyze customer behavior across various touchpoints, marketers can create more cohesive and effective marketing strategies. Ultimately, this concept of AI in marketing

represents a fundamental reimagining of marketing practices, promising increased efficiency, enhanced customer experiences, and improved marketing performance in an increasingly digital and data-driven business landscape [18].

### 3 Research Method

This article is a conceptual paper on Artificial Intelligence in Marketing by a review of previous research results. The database used is sourced from ScienceDirect, Springer and Emerald. This database is to identify publications that match the criteria set. The author conducts several stages, from identification, screening and eligibility to clustering articles that include as many as 30 articles, as presented in Figure 1. In addition, the author presents a graph that groups the number of articles based on journal identity. “Graphic 1 shows that the journals most referenced are the Journal of Open Innovation: Technology, Market and Complexity, International Journal of Information Management Data Insights and Journal of Business Research”.



**Fig. 1.** Research Flow Diagram



making. The cognitive, sensory, emotional, and physical elements of AI contribute to how consumers interact with marketing strategies, making it essential for marketers to understand these dimensions to effectively engage their target audiences [2] .

In the context of customer relationship management, Ledro [25] draw attention to the significance of ML and DL principles. Companies may now examine client data, spot trends, and make educated decisions with little to no human involvement by utilizing these AI approaches. Marketers may improve the effectiveness of their initiatives by gaining insights on consumer habits and preferences through the use of ML. DL further enhances this capability by utilizing neural networks to analyze complex data sets, allowing for more nuanced understanding and prediction of customer needs, which is crucial for developing personalized marketing campaigns.

The operational aspects of marketing are significantly enhanced by AI technologies. AI automates various marketing processes, including content creation, customer interactions through chatbots, and campaign management. Marketers are able to devote more time and energy to making strategic decisions thanks to this automation, which also boosts operational efficiency. By providing insights derived from data analysis, AI supports better decision-making in marketing strategies, allowing organizations to adapt quickly to market dynamics and improve overall customer engagement [26].

However, the integration of AI in marketing also raises important ethical considerations. The implications of data usage in AI-driven marketing, highlighting concerns related to privacy, security, and the potential for biased algorithms that may perpetuate existing inequalities. As businesses increasingly rely on AI to drive their marketing efforts, it is crucial to ensure that these technologies are used responsibly and transparently. Marketers must navigate these ethical challenges to maintain consumer trust and uphold their brand reputation [27].

Finally, Stone et. al [28] stress how AI is changing market knowledge. Artificial intelligence (AI) is an essential part of knowledge management because it can transform massive volumes of data into useful insights. In B2B settings, this skill is crucial for better strategic planning and decision-making. Artificial intelligence (AI) helps businesses expand by revealing patterns in consumer actions, tastes, and preferences, which in turn allows for more targeted marketing campaigns.

In summary, AI is reshaping the marketing landscape by enabling more personalized, efficient and data-driven approaches. However, it also emphasizes the importance of addressing ethical considerations to ensure that AI is used responsibly in marketing practices. It stresses that AI is a revolutionary force that improves decision-making, operational efficiency, and customer engagement; it's more than just a technical development. The integration of AI into marketing processes allows businesses to leverage data analytics for better customer insights, enabling personalized marketing efforts and improved customer experiences.

## 5 Conclusion

Artificial Intelligence (AI) has been integrated into marketing practices, changing how companies interact with their customers and optimize strategies. Marketers can leverage AI technologies to make better decisions by receiving actionable insights from an extensive data analysis. With AI systems in place, marketers are able to understand market dynamics and customer preferences in more effective manner. Its ability to automate processes, personalize marketing efforts and enhance customer experience makes AI a crucial tool for attaining competitive advantage.

However, the use of AI also comes with ethical considerations and challenges such as manipulation of consumers and increased market share concentration among larger firms. It is important for organizations to responsibly navigate these challenges by ensuring that the utilization of AI benefits all stakeholders involved. As businesses look forward to thriving in today's data-dominated environment, embracing AI will be a must. In the end, a marketing strategy that effectively integrates AI not only improves operational efficiency but also cultivates stronger customer relationships, opening the door for creative marketing approaches that adapt to the market's shifting demands.

## Reference

- [1] D. E. Bock, J. S. Wolter, and O. C. Ferrell, "Artificial intelligence: disrupting what we know about services," *J. Serv. Mark.*, vol. 34, no. 3, pp. 317–334, 2020, doi: 10.1108/JSM-01-2019-0047.
- [2] M. Bilal, Y. Zhang, S. Cai, U. Akram, and A. Halibas, "Artificial intelligence is the magic wand making customer-centric a reality! An investigation into the relationship between consumer purchase intention and consumer engagement through affective attachment," *J. Retail. Consum. Serv.*, vol. 77, no. September 2023, p. 103674, 2024, doi: 10.1016/j.jretconser.2023.103674.
- [3] A. Amato, J. R. Osterrieder, and M. R. Machado, "How can artificial intelligence help customer intelligence for credit portfolio management? A systematic literature review," *Int. J. Inf. Manag. Data Insights*, vol. 4, no. 2, 2024, doi: 10.1016/j.jjime.2024.100234.
- [4] I. Jada and T. O. Mayayise, "The impact of artificial intelligence on organisational cyber security: An outcome of a systematic literature review," *Data Inf. Manag.*, no. December, p. 100063, 2024, doi: 10.1016/j.dim.2023.100063.
- [5] A. Haleem, M. Javaid, M. Asim Qadri, R. Pratap Singh, and R. Suman, "Artificial intelligence (AI) applications for marketing: A literature-based study," *Int. J. Intell. Networks*, vol. 3, no. August, pp. 119–132, 2022, doi: 10.1016/j.ijin.2022.08.005.
- [6] S. Chintalapati and S. K. Pandey, "Artificial intelligence in marketing: A systematic literature review," *Int. J. Mark. Res.*, vol. 64, no. 1, pp. 38–68, 2022, doi: 10.1177/14707853211018428.
- [7] I. Ajzen, "The Theory of Planned Behavior," *Organ. Behav. Hum. Decis. Process.*, vol. 50, no. 1, pp. 179–211, 1991, doi: 10.1016/0749-5978(91)90020-T.
- [8] C. J. Armitage and M. Conner, "Efficacy of the Theory of Planned Behaviour : A Meta-Analytic

- Review E Y cacy of the Theory of Planned Behaviour : A meta-analytic review,” *Br. Psychol. Soc.*, vol. 1, no. 1, pp. 471–499, 2010.
- [9] M. Bosnjak, I. Ajzen, and P. Schmidt, “The Theory of Planned Behavior: Selected recent advances and applications,” *Eur. J. Psychol.*, vol. 16, no. 3, pp. 352–356, 2020, doi: 10.5964/ejop.v16i3.3107.
- [10] M. Mehribioun, “A multi-theoretical view on social media continuance intention: Combining theory of planned behavior, expectation-confirmation model and consumption values,” *Digit. Bus.*, vol. 4, no. 1, p. 100070, 2024, doi: 10.1016/j.digbus.2023.100070.
- [11] M. Wedel and P. K. Kannan, “Marketing analytics for data-rich environments,” *J. Mark.*, vol. 80, no. 6, pp. 97–121, 2016, doi: 10.1509/jm.15.0413.
- [12] M. H. Huang and R. T. Rust, “A strategic framework for artificial intelligence in marketing,” *J. Acad. Mark. Sci.*, vol. 49, no. 1, pp. 30–50, 2021, doi: 10.1007/s11747-020-00749-9.
- [13] T. Davenport, A. Guha, D. Grewal, and T. Bressgott, “How artificial intelligence will change the future of marketing,” *J. Acad. Mark. Sci.*, vol. 48, no. 1, pp. 24–42, 2020, doi: 10.1007/s11747-019-00696-0.
- [14] R. Dwivedi, S. Nerur, and V. Balijepally, “Exploring artificial intelligence and big data scholarship in information systems: A citation, bibliographic coupling, and co-word analysis,” *Int. J. Inf. Manag. Data Insights*, vol. 3, no. 2, 2023, doi: 10.1016/j.ijime.2023.100185.
- [15] V. Kumar, D. Ramachandran, and B. Kumar, “Influence of new-age technologies on marketing: A research agenda,” *J. Bus. Res.*, vol. 125, no. October 2019, pp. 864–877, 2021, doi: 10.1016/j.jbusres.2020.01.007.
- [16] W. D. Hoyer, M. Kroschke, B. Schmitt, K. Kraume, and V. Shankar, “Transforming the Customer Experience Through New Technologies,” *J. Interact. Mark.*, vol. 51, pp. 57–71, 2020, doi: 10.1016/j.intmar.2020.04.001.
- [17] D. Herhausen, D. Miočević, R. E. Morgan, and M. H. P. Kleijnen, “The digital marketing capabilities gap,” *Ind. Mark. Manag.*, vol. 90, no. March, pp. 276–290, 2020, doi: 10.1016/j.indmarman.2020.07.022.
- [18] L. Ma and B. Sun, “Machine learning and AI in marketing – Connecting computing power to human insights,” *Int. J. Res. Mark.*, vol. 37, no. 3, pp. 481–504, 2020, doi: 10.1016/j.ijresmar.2020.04.005.
- [19] C. Collins, D. Dennehy, K. Conboy, and P. Mikalef, “Artificial intelligence in information systems research: A systematic literature review and research agenda,” *Int. J. Inf. Manage.*, vol. 60, no. November 2020, p. 102383, 2021, doi: 10.1016/j.ijinfomgt.2021.102383.
- [20] P. Jorzik, S. P. Klein, D. K. Kanbach, and S. Kraus, “AI-driven business model innovation: A systematic review and research agenda,” *J. Bus. Res.*, vol. 182, no. June, 2024, doi: 10.1016/j.jbusres.2024.114764.
- [21] M. Alawamleh, N. Shammass, K. Alawamleh, and L. Bani Ismail, “Examining the limitations of AI in business and the need for human insights using Interpretive Structural Modelling,” *J. Open Innov. Technol. Mark. Complex.*, vol. 10, no. 3, p. 100338, 2024, doi: 10.1016/j.joitmc.2024.100338.

- [22] V. S. Narwane, B. E. Narkhede, R. D. Raut, B. B. Gardas, P. Priyadarshinee, and M. S. Kavre, "To identify the determinants of the CloudIoT technologies adoption in the Indian MSMEs: Structural equation modelling approach," *Int. J. Bus. Inf. Syst.*, vol. 31, no. 3, pp. 322–353, 2019, doi: 10.1504/IJBIS.2019.101110.
- [23] J. Sipola, M. Saunila, and J. Ukko, "Adopting artificial intelligence in sustainable business," *J. Clean. Prod.*, vol. 426, no. June, p. 139197, 2023, doi: 10.1016/j.jclepro.2023.139197.
- [24] A. Madanaguli, D. Sjödin, V. Parida, and P. Mikalef, "Artificial intelligence capabilities for circular business models: Research synthesis and future agenda," *Technol. Forecast. Soc. Change*, vol. 200, no. December 2023, 2024, doi: 10.1016/j.techfore.2023.123189.
- [25] C. Ledro, A. Nosella, and I. Dalla Pozza, "Integration of AI in CRM: Challenges and guidelines," *J. Open Innov. Technol. Mark. Complex.*, vol. 9, no. 4, p. 100151, 2023, doi: 10.1016/j.joitmc.2023.100151.
- [26] F. D. Weber and R. Schütte, "State-of-the-art and adoption of artificial intelligence in retailing," *Digit. Policy, Regul. Gov.*, vol. 21, no. 3, pp. 264–279, 2019, doi: 10.1108/DPRG-09-2018-0050.
- [27] J. Paschen, J. Kietzmann, and T. C. Kietzmann, "Artificial intelligence (AI) and its implications for market knowledge in B2B marketing," *J. Bus. Ind. Mark.*, vol. 34, no. 7, pp. 1410–1419, 2019, doi: 10.1108/IBIM-10-2018-0295.
- [28] M. Stone *et al.*, "Artificial intelligence (AI) in strategic marketing decision-making: a research agenda," *Bottom Line*, vol. 33, no. 2, pp. 183–200, 2020, doi: 10.1108/BL-03-2020-0022.