



DOI: <https://doi.org/10.38035/dit.v1i2>

Received: 28 November 2023, Revised: 05 December 2023, Publish: 27 December 2023

<https://creativecommons.org/licenses/by/4.0/>

Artificial Intelligence (AI) in Support of Marketing

Helena Louise Panggabean^{1*}, Ryan Firdiansyah Suryawan², Indra Sani³, Didin Sjarifudin⁴

¹ Universitas Mohammad Husni Thamrin, Jakarta, Indonesia, helenalouisepanggabean@gmail.com

² Sekolah Tinggi Penerbangan Aviassi, Jakarta, Indonesia, ryan.firdiansyah.1979@gmail.com

³ ITB Asia Malang, Malang, Jawa Timur, Indonesia, indrasani77@gmail.com

⁴ Universitas Bhayangkara, Jakarta Raya, Jakarta, Indonesia, didin.sjarifudin@dsn.ubharajaya.ac.id

*Corresponding Author: helenalouisepanggabean@gmail.com

Abstract: The purpose of this paper can be more focused and informative to provide a better understanding of the concept of AI in the context of marketing, references derived from related literature. This paper uses qualitative methods by providing findings from various existing journal literature related to the topic, after that the findings are discussed and provide a view in the discussion in this paper. A search of the papers used in support of this paper dozens of articles related to the topic. The use of AI in supporting marketing strategies, such as increased efficiency, personalization, and campaign optimization. Describes how AI can be used to analyze consumer data at scale, including preferences, online behavior, and purchasing patterns. AI can help in identifying and solving marketing problems, as well as achieving business goals through in-depth data analysis and intelligent recommendations. challenges associated with implementing AI in marketing, including privacy concerns, data security, and ethical concerns. In addition, we also provide a second perspective, namely that this paper provides deep insight into how AI plays a supporting role in the marketing realm and its impact on business strategy and outcomes. Recommendations for the findings in this paper in addition to providing benefits and contributions to other researchers, can be developed into a follow-up research.

Keyword: Artificial Intelligence, Marketing

INTRODUCTION

Technological advances in this era have resulted in fundamental changes in various aspects of human life, including in the realm of business. One very significant development is the emergence of artificial intelligence (AI). AI is no longer just an imagination in the world of science fiction, but has become a reality that affects work patterns in various sectors, including in the field of marketing (Boobier, 2018). Along with the evolution of technology, marketing is no longer limited to conventional strategies that involve only market research and advertising. Artificial Intelligence has entered the marketing world with a very innovative role, opening the door to a more efficient, smart, and data-driven marketing era (P. Kiran, 2021).

The use of artificial intelligence (AI) in marketing is not only a momentary trend, but a revolutionary step that opens a new chapter in the era of digital marketing (Cherukuri et al., 2020). As a step towards understanding and embracing these technological advancements, companies today seek to make AI a loyal partner in designing innovative and impactful marketing strategies. In this context, these efforts not only include the implementation of advanced technologies, but also consider aspects of ethics, privacy, and social impacts that may arise.

The presence of artificial intelligence (AI) in the marketing domain presents new dynamics that enrich business strategies (Jabeen, 2022). Increasingly sophisticated machine learning algorithms enable AI to perform consumer data analysis at scale. This process not only involves demographic data, but also involves online behavior, preferences, and purchasing patterns (Pathak & Sharma, 2022). This phenomenon brings a deeper understanding of the target market, helps companies produce more relevant content, and aim for promotion more effectively. AI also provides capabilities to personalize customer experience (Mahakal, 2023). With accurate data analysis, companies can present content that matches individual preferences, improve customer interactions, and build more solid relationships.

In an era where digital content is abundant, personalization has become the key to marketing success. AI brings a new dimension to the concept of personalization, allowing companies to serve highly relevant content based on individual preferences (May, 2023). By understanding consumer behavior patterns and preferences, companies can create more engaging experiences and make customers feel valued. In addition to the impact on the business world, the presence of AI in marketing also has social implications to consider (Lee, 2021). These include questions about the role of human workers, ethical considerations in using AI to influence consumer behavior, and environmental impacts. Long-term thinking and corporate social responsibility are crucial in facing this challenge (Mahakal, 2023).

The main goal of AI-based marketing is to strike a balance between technological innovation and social responsibility. The company not only pursues increased profitability, but is also committed to providing added value to customers and society as a whole (Yusuf et al., 2023). By analyzing paradigm shifts, optimization through machine learning, deep personalization, and ethical integration, AI-based marketing has the potential to be a positive force in achieving sustainable business goals and positively impacting society (Jabeen, 2022).

Although it brings a number of benefits, marketing that adopts artificial intelligence also faces some problems. One of the main issues is privacy-related inconveniences. With the extensive collection and analysis of data by artificial intelligence, safeguarding customers' personal information carefully and in compliance with applicable privacy regulations has become very important. In addition, technical challenges such as data integrity and cybersecurity are also a major focus. In implementing artificial intelligence, companies must ensure that the data used is accurate and not contaminated. Cybersecurity is key in protecting this valuable information from potential threats.

The purpose of this paper can be more focused and informative to provide a better understanding of the concept of AI in the context of marketing, references derived from related literature.

According to (Truong & Diep, 2023) Artificial intelligence is a term that refers to the ability of computers or robotic systems enabled by computers to process information and produce outputs comparable to human cognitive processes in learning, decision making, and problem solving. The term first appeared in 1956 and has since experienced several ups and downs in terms of interest and research. Artificial intelligence, commonly abbreviated as AI, has become a striking field in computer science and technology.

AI technology allows companies to analyze large amounts of data to gain insights into customer behavior, preferences, and demands (Mao & Huang, 2021). As a result, they are able to build more targeted and individualized marketing efforts that resonate with their target demographic (Cui et al., 2022). In addition, AI-powered chatbots and virtual assistants provide valuable support to customers throughout their buying journey, improving their overall experience (Perret & Heitkamp, 2021). By leveraging AI technology for marketing purposes, companies can stay ahead of their competition and maximize their business opportunities (Dgermani & Hajimia, 2021). In addition, AI technology can optimize forecasting and pricing strategies, identify customer trends and patterns, and improve customer relationship management systems (Zvaigzne et al., 2023).

METHODS

This paper uses qualitative methods by providing findings from various existing journal literature related to the topic, after that the findings are discussed and provide a view in the discussion in this paper. A search of the papers used in support of this paper dozens of articles related to the topic.

RESULT AND DISCUSSION

The results of a paper from (Xie & He, 2022) relating to artificial intelligence and marketing state that more adequate and deep integration between rural tourism with artificial intelligence or big data is needed to provide a better tourist experience and marketing strategies of rural tourist attractions in order to get better effects and revenues. AI has evolved into an ideal enabler for marketing and sales professionals. It processes and utilizes large amounts of data. It automates the construction of analytical models, uncovers hidden insights, and adjusts program actions using cognitive reasoning (Haleem et al, 2022).

Findings from (Rekha et al., 2016) state the application of new low-complexity SVDD methods to direct marketing, experiments on real-world datasets related to direct marketing campaigns have shown that SVDD-based methods can provide promising accuracy compared to other approaches. In addition, the accuracy achieved by the proposed low-complexity method is comparable to classic SVDD and has significant advantages in terms of execution time. Relational database systems are able to predict the best potential market for future products, appropriate data is not always available, and new product lines cannot take advantage of such systems. Therefore, relational systems often lack the ability to predict the best market. The more promising and relatively successful technologies are Expert Systems, Fuzzy Logic, and Artificial Neural Networks (ANN) (Crunk & North, 2007).

According to the results of a paper from (Kreutzer & Sirrenberg, 2019) states the trade of conversation towards going from voice first to voice only, using AI systems for sentiment analysis and content creation and distribution. The detection of fake accounts and fake news is a major challenge for AI processes. The combination of AI and Machine Learning has the potential to improve e-commerce operations by presenting new perspectives, increase productivity, and improve overall customer experience (K. N. R. Kiran et al., 2023).

The findings of the paper belong (Gil et al., 2019) states that supporting managerial tasks and functions such as strategy planning, marketing, and customer support. Their also discusses some key considerations for business leaders interested in leveraging AI to improve business performance. The elements that drive the unification of AI in marketing, along with the advantages and challenges of integrating AI in marketing, including AI marketing strategies before and after, ethical issues, and the use of AI in marketing business (Shaik, 2023).

The study emphasizes the importance of AI and ML in defining the future of digital marketing. This highlights the need for organizations to adapt and embrace modern

technology in order to remain competitive in an increasingly data-driven and customer-oriented market (Chaitanya et al, 2023). The findings of the paper belong to (Vrublevskaia, 2021) Including artificial intelligence technology in marketing proves its effectiveness. Artificial intelligence significantly enhances a company's marketing combination and attracting clients along with their leads increase.

AI-powered tools increase understanding of consumer behavior, enabling the creation of more personalized marketing initiatives, leading to increased consumer engagement and higher conversion rates, AI can automate marketing processes, such as lead generation and customer support, freeing up resources for more complex tasks (Mahakal, 2023). The integration of AI in marketing has led to a paradigm shift from standardization to customization and personalization of customer service, customer engagement, and customer experience (Rahman et al., 2020)

The use of AI in marketing raises ethical issues, such as data privacy and algorithmic bias, which need to be carefully addressed to ensure responsible and sustainable marketing practices (Talaat et al., 2023). AI has the potential to be a positive force in achieving sustainable business goals and making a positive impact on society (Haag et al., 2022).

Discussion

Artificial Intelligence (AI) support to support Marketing

Some key aspects that reflect how artificial intelligence (AI) can be used and provide support in the context of marketing, artificial intelligence and marketing state that more adequate and deep integration of rural tourism with artificial intelligence or big data is needed to provide a better tourist experience and marketing strategies of rural tourist attractions in order to get better effect and revenue (Xie & He, 2022). AI has evolved into an ideal enabler for marketing and sales professionals (Haleem et al, 2022).

The perspectives and views in this paper provide a complete answer as a form of contribution from the findings in the paper supporting such as concrete benefits of using AI in supporting marketing strategies, such as increased efficiency, personalization, and campaign optimization. Describes how AI can be used to analyze consumer data at scale, including preferences, online behavior, and purchasing patterns. AI can help in identifying and solving marketing problems, as well as achieving business goals through in-depth data analysis and intelligent recommendations. challenges associated with implementing AI in marketing, including privacy concerns, data security, and ethical concerns.

In addition, we also provide a second perspective, namely that this paper provides deep insight into how AI plays a supporting role in the marketing realm and its impact on business strategy and outcomes.

CONCLUSION

The use of AI in supporting marketing strategies, such as increased efficiency, personalization, and campaign optimization. Describes how AI can be used to analyze consumer data at scale, including preferences, online behavior, and purchasing patterns. AI can help in identifying and solving marketing problems, as well as achieving business goals through in-depth data analysis and Smart recommendations. Challenges associated with AI implementation in marketing, including privacy issues, data security, and ethical concerns. In addition, we also provide a second perspective, namely that this paper provides deep insight into how AI plays a supporting role in the marketing realm and its impact on business strategy and outcomes.

Recommendations for the findings in this paper in addition to providing treasures and contributions to other researchers, can be developed into a follow-up research.

REFERENSI

- Boobier, T. (2018). *Advanced Analytics and AI: Impact, Implementation, and the Future of Work*. <https://api.semanticscholar.org/CorpusID:67428633>
- Chaitanya, K., Saha, G. C., Saha, H., Acharya, S., & Singla, M. (2023). The Impact of Artificial Intelligence and Machine Learning in Digital Marketing Strategies. *European Economic Letters*, 13(3), 982–992. <https://doi.org/10.52783/eel.v13i3.393>
- Cherukuri, P. A. A., Vududala, S. K., Saraswathi, N., & Sanda, J. (2020). AI-based Strategic Marketing: SMAI Model. *International Conference on Research in Management & Technovation*. <https://api.semanticscholar.org/CorpusID:234366209>
- Crunk, J., & North, M. M. (2007). Decision Support Systems and Artificial Intelligence Technologies in Aid of Information Systems Based Marketing. *International Management Review*, 3, 61. <https://api.semanticscholar.org/CorpusID:107615183>
- Cui, H., Nie, Y., Li, Z., & Zeng, J. (2022). Construction and Development of Modern Brand Marketing Management Mode Based on Artificial Intelligence. *Journal of Sensors*, 2022, 11. <https://doi.org/10.1155/2022/9246545>
- Djermani, F., & Hajimia, H. (2021). Artificial Intelligence Effect on Marketing Mix. *Jurnal Aplikasi Manajemen, Ekonomi Dan Bisnis*, 6(1), 72–76. <https://doi.org/10.51263/jameb.v6i1.132>
- Gil, D., Hobson, S., Mojsilovic, A., Puri, R., & Smith, J. R. (2019). AI for Management: An Overview. *The Future of Management in an AI World*. <https://api.semanticscholar.org/CorpusID:204623521>
- Haag, F., Hopf, K., Vasconcelos, P. M., & Staake, T. (2022). Augmented cross-selling through explainable AI--a case from energy retailing. *ArXiv Preprint ArXiv:2208.11404*.
- Haleem, A., Javaid, M., Asim Qadri, M., Pratap Singh, R., & Suman, R. (2022). Artificial intelligence (AI) applications for marketing: A literature-based study. *International Journal of Intelligent Networks*, 3(August), 119–132. <https://doi.org/10.1016/j.ijin.2022.08.005>
- Indupurnahayu, I., Setiawan, E. B., Agusinta, L., Suryawan, R. F., Ricardianto, P., Sari, M., Mulyono, S., & Sakti, R. F. J. (2021). Changes in Demand and Supply of the Crude Oil Market During the COVID-19 Pandemic and its Effects on the Natural Gas Market. *International Journal of Energy Economics and Policy*, 11(3), 1–6. Retrieved from <https://www.econjournals.com/index.php/ijeeep/article/view/10671>.
- Jabeen, M. (2022). The use of AI in marketing: Its impact and future. *World Journal of Advanced Research and Reviews*. <https://api.semanticscholar.org/CorpusID:255289548>
- Kiran, K. N. R., Kumar, B. H., Mishra, B. S., Yadav, A. S., Y, N., & Tiwari, M. (2023). Artificial Intelligence Integrated with Machine Learning for Enhancing Business in E-World. *2023 5th International Conference on Inventive Research in Computing Applications (ICIRCA)*, 1060–1064. <https://api.semanticscholar.org/CorpusID:261317480>
- Kiran, P. (2021). *Artificial Intelligence in Marketing Welcome to the New Era of Artificial Intelligence in Marketing* –. <https://api.semanticscholar.org/CorpusID:249336196>
- Kreutzer, R. T., & Sirrenberg, M. (2019). Fields of Application of Artificial Intelligence—Customer Service, Marketing and Sales. *Understanding Artificial Intelligence*. <https://api.semanticscholar.org/CorpusID:204497276>
- Lee, J.-H. (2021). Changes in marketing brought by AI. *2021 21st ACIS International Winter Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD-Winter)*, 257–259. <https://api.semanticscholar.org/CorpusID:233332376>
- Mahakal, D. (2023). Impact Of Artificial Intelligence AI in Digital Marketing. *Journal of Global Economy*. <https://api.semanticscholar.org/CorpusID:264181519>

- Mao, S., & Huang, R. (2021). Complexity Construction of Intelligent Marketing Strategy Based on Mobile Computing and Machine Learning Simulation Environment. *Complexity*, 2021. <https://doi.org/10.1155/2021/9910834>
- Mei, Y. (2023). AI & Entertainment: The Revolution of Customer Experience. *Lecture Notes in Education Psychology and Public Media*. <https://api.semanticscholar.org/CorpusID:266070550>
- Pathak, A., & Sharma, S. D. (2022). Applications of Artificial Intelligence (AI) in Marketing Management. *2022 5th International Conference on Contemporary Computing and Informatics (IC3I)*, 1738–1745. <https://api.semanticscholar.org/CorpusID:257667405>
- Perret, J. K., & Heitkamp, M. (2021). On the Potentials of Artificial Intelligence in Marketing – The Case of Robotic Process Automation. *International Journal of Applied Research in Management and Economics*, 4(4), 35–55. <https://doi.org/10.33422/ijarme.v4i4.768>
- Rahman, W. F. W. A., Fauzi, A. A. C., Husain, W. S. W., Hassan, S. H. C., Kamaruzaman, N. U. S. N., & Aziz, W. N. H. W. A. (2020). *The Usage of Artificial Intelligence in Marketing Automation : Potentials and Pitfalls*. <https://api.semanticscholar.org/CorpusID:233490633>
- Rekha, A. G., Abdulla, M. S., & Asharaf, S. (2016). Artificial Intelligence Marketing: An application of a novel Lightly Trained Support Vector Data Description. *Journal of Information and Optimization Sciences*, 37, 681–691. <https://api.semanticscholar.org/CorpusID:62973351>
- Ryan Firdiansyah Suryawan, Evaf Maulina, Karnawi Kamar, Abdul Samad Latuconsina, Budi Safari, Sugiyo, Siti Annisa Wahdiniawati, Lilik Suryaningsih, Indi Nervilia, Arjuna Wiwaha, Endri Endri, WSEAS Transactions on Business and Economics, ISSN / E-ISSN: 1109-9526 / 2224-2899, Volume 20, 2023, Art. #129, Pages: 1463-1476, DOI: 10.37394/23207.2023.20.129
- Ryan Firdiansyah Suryawan*, Basneldi, Mochammad Fatchoelqorib, Renil Septiano, Laynita Sari, Sri Widodo, Sri Yanthy Yosepha, Sugianto, Nurwulan Kusuma Devi, Two Meta-heuristic Algorithms for Solving Multi-objective Model for the Service Quality and Price in the Digital Supply Chain, *Industrial Engineering & Management Systems* Vol.21 No.3 pp.440-448, DOI : <https://doi.org/10.7232/iems.2022.21.3.440>
- Ryan Firdiansyah, Monizaihasra Mohamed, Mohd Yusoff Yusliza, Jumadil Saputra and Zikri Muhammad, A Review of Green Marketing Strategy Literature: MiniReview Approach, Proceedings of the 11th Annual International Conference on Industrial Engineering and Operations Management, Singapore, March 7-11, 2021
- Shaik, M. (2023). Impact of artificial intelligence on marketing. *East Asian Journal of Multidisciplinary Research*, 2(3), 993–1004. <https://doi.org/10.55927/eajmr.v2i3.3112>
- Suharto Abdul Majid*, Prasadja Ricardianto, Yosi Pahala, Euis Saribanon, Sonya Sidjabat, Mochamad Arif Hernawan, Abdullah Ade Suryobuwono, Ryan Firdiansyah Suryawan, Determining Optimal Marketing based on Market Attraction and Market Based Strategies by Considering Customer Life Time Network Value, *Industrial Engineering & Management Systems* Vol.21 No.2 pp.401-408 DOI : <https://doi.org/10.7232/iems.2022.21.2.401>
- Talaat, F. M., Aljadani, A., Alharthi, B., Farsi, M. A., Badawy, M., & Elhosseini, M. A. (2023). A Mathematical Model for Customer Segmentation Leveraging Deep Learning, Explainable AI, and RFM Analysis in Targeted Marketing. *Mathematics*. <https://api.semanticscholar.org/CorpusID:262193034>
- Truong, T. C., & Diep, Q. B. (2023). Technological Spotlights of Digital Transformation in Tertiary Education. *IEEE Access*, 11(April), 40954–40966. <https://doi.org/10.1109/ACCESS.2023.3270340>
- Vrublevskaia, O. (2021). *Effectiveness and Universality of Artificial Intelligence*

Implementation in Marketing Media Industry and Cosmetics Industry.

- Xie, D., & He, Y. (2022). Marketing Strategy of Rural Tourism Based on Big Data and Artificial Intelligence. *Mobile Information Systems*.
<https://api.semanticscholar.org/CorpusID:250193813>
- Yusuf, M., Febrian, W. D., Sinta, A. K., Juminawati, S., Kutoyo, M. S., Simbolon, E., Jumawan, J., Widjaja, A., Zen, A., Rajab, M., Supardi, S., Soesilo, R., Nuraeni, N., Susanto, P. C., Prayoga, R., Tahir, A. M. S., Irzani, I., Suryawan, R. F., Pratikno, Y., & Safariningsih, R. T. H. (2023). Manajemen (Teori & Aplikasi). In S. S. Atmodjo (Ed.), *Eureka Media Aksara*. Eureka Media Aksara.
- Zvaigzne, A., Mietule, I., Kotane, I., Sprudzane, S., & Bartkute-Norkuniene, V. (2023). Digital innovations in tourism: the perceptions of stakeholders. *Worldwide Hospitality and Tourism Themes*, 15(5), 528–537. <https://doi.org/10.1108/WHATT-06-2023-0080>