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Impact of Artificial Intelligence on Market Behavior Analysis: A Comprehensive Approach to Marketing

Shilda Lilibiana Chimbolema Castro¹, Del Pozo Durango Rodrigo Humberto¹, Vizcarra Armijos Charles Paúl¹, Albán Trujillo Paola Estefanía¹

Abstract

The capacity of Artificial Intelligence (AI) to process and analyze large volumes of data from different sources has enabled the anticipation and prediction of potential future events. When applied to marketing, specialists can obtain valuable insights into consumer behavior, allowing for improved customer segmentation and optimized strategies. This research is based on a literature review process conducted in scientific databases. The results revealed the significance of AI in marketing, highlighting its potential and applications in customer acquisition and market behavior analysis. AI enables personalized marketing, enhances customer experience, and anticipates market trends. Thus, AI possesses transformative power in shaping future marketing strategies, offering competitive advantages and improving efficiency.

Keywords: *Artificial intelligence, Marketing, market behavior, customer acquisition*

Introduction

In the current context, companies are immersed in intense global competition due to the effects of globalization. Transformations in competitive conditions and the environment require companies to adopt various approaches. Those who act proactively prepare for these changes by anticipating upcoming processes (Yeke, 2023). AI and 5G connectivity have been recognized as driving forces of what is known as the Fourth Industrial Revolution (FIR). These advanced technologies, along with others such as blockchain, gene editing, Internet of Things sensors, nanotechnology and 3D printing, are accelerating the process of merging the boundaries between the digital, biological and physical realms. (Fernández-Rovira et al., 2021; Krafft et al., 2020).

In recent years, the field of marketing has witnessed significant advances and transformations driven by the emergence of AI, revolutionizing various aspects of marketing, especially in the realm of understanding and analyzing market behavior. (Valentín-Bravo et al., 2023). AI's ability to process and analyze large volumes of data from different sources has made it possible to anticipate

¹ Programa de Maestría en Administración de Empresas. Dirección de Posgrado y Educación Continua. Universidad Estatal de Bolívar

Corresponding author: Shilda Lilibiana Chimbolema Castro (shilda1989.sc@gmail.com)

and predict possible events in the future, opening new doors for marketers to gain valuable insights into consumer behavior, improve customer segmentation, and optimize marketing strategies. (Kramcsák, 2023; Mustak et al., 2021).

The advent of AI has brought innovative developments in market research. Researchers have increasingly focused on harnessing its power, to understand consumer behavior and effectively segment customers by analyzing large data sets. (Verma et al., 2021). By quickly analyzing this information, AI allows marketers to extract relevant insights and insights about customer needs, to plan their marketing strategies. (Vlačić et al., 2021). The integration of AI into the realm of business marketing (B2B) has been particularly noteworthy, empowering organizations to improve their understanding of customer behavior, market data identification, and operational optimization. (Sarath Kumar Boddu et al., 2022). The acquisition of AI skills has become essential for companies to adapt to the various applications of this technology and gain a competitive advantage by focusing more on customer satisfaction in real time. One of AI's main contributions to market behavior analysis is to simplify the customer profiling process and understand their journey. (Dumitriu & Popescu, 2020). This capability enables brands to deliver personalized content and improve the overall customer experience. In addition, the use of AI-enabled predictive marketing analytics makes it possible to predict the success of marketing initiatives and tailor user experiences. The indirect impact of AI competencies on organizational performance is evident in the realm of B2B marketing, where information management capabilities are more easily developed and implemented using AI compared to other competencies. AI has proven instrumental in addressing various challenges in marketing campaigns, such as programmatic advertising, accurate identification of target customers, and process automation. (Akdeniz et al., 2023). By speeding up the process of marketing campaigns, AI reduces costs and improves overall efficiency. The accessibility of AI systems has also increased for medium and small businesses, allowing them to be used in popular products and services. Personalization of offers and real-time analytics are now fundamental in contemporary digital marketing.

AI also finds specific applications in product management, price management, location management and promotion management. Content personalization, price optimization, improving operational efficiency and providing assistance to the buyer when making decisions, are some of the benefits that AI brings to these areas (Gołąb-Andrzejak, 2023). In content marketing and experiential marketing, extreme personalization of content and the use of interactive technologies have been enabled to engage consumers more deeply and meaningfully. (De Bruyn et al., 2020). The impact of AI on marketing is an ongoing transformation that offers endless opportunities to improve decision-making processes, operational efficiency and customer experience. As technology advances and matures, it is crucial that companies harness its potential and acquire the necessary skills to use AI effectively. (Volkmar et al., 2022).

In later sections of this article, we'll delve into specific categories of customer acquisition through AI-powered marketing automation. We will explore the research conducted on AI in the analysis

of market behavior, its implications for marketing, and emerging trends and opportunities in this ever-evolving field. Through a comprehensive examination of scientific articles, we seek to provide a comprehensive understanding of the impact on market behavior analysis and its importance in modern marketing practices.

This article aims to provide a comprehensive exploration of the impact of AI on market behavior analysis, emphasizing its role in shaping modern marketing practices.

Methodology

In this study, a methodological approach based on qualitative data analysis using data mining with QDA Miner software was employed. The relevant information of a selection of eight scientific articles published since 2020 was analyzed, which addressed the topic of AI and its application in the field of marketing. These articles were carefully selected in order to represent diverse perspectives and approaches within this field of study. The selection process of the articles was carried out following a specific criterion. We conducted extensive searches of academic and scientific databases, using relevant keywords such as "artificial intelligence", "marketing", and "consumer behaviour". Filters were applied to restrict the search to articles published since 2020, considering the importance of recent research in this field. Obtaining the results presented in **Table 1**.

Table 2 Selected articles

Code	Title	Appointment
MKT 1	Artificial intelligence (AI) competencies for organizational performance: A B2B marketing capabilities perspective	(Mikalef et al., 2023)
MKT 2	Artificial intelligence (AI) applications for marketing: A literature-based study	(Haleem et al., 2022)
MKT 3	Metaverse as a disruptive technology revolutionising tourism management and marketing	(Buhalis et al., 2023)
MKT 4	The evolving role of artificial intelligence in marketing: A review and research agenda	(Vlačić et al., 2021)
MKT 5	Artificial intelligence in marketing: Topic modeling, scientometric analysis, and research agenda	(Mustak et al., 2021)
MKT 6	Artificial intelligence in marketing: Systematic review and future research direction	(Verma et al., 2021)
MKT 7	Artificial intelligence in marketing: A bibliographic perspective	(Feng et al., 2020)
MKT 8	Artificial intelligence in marketing: A systematic literature review	(Chintalapati & Kumar, 2022)

Own source. Information pre-selection process.

Once the search results were obtained, a thorough review of the titles and abstracts of the articles

was carried out in order to identify those that met the inclusion criteria. Those that were not directly related to the application of artificial intelligence in marketing or that did not provide relevant information for qualitative analysis were excluded.

After selecting the eight articles, data analysis was carried out using QDA Miner software. This software allows efficient organization of data and facilitates coding and qualitative analysis. Each article was imported into the software, and thematic categories and subcategories were created to organize the relevant information. These categories were flexibly established and adjusted based on similarities and relationships that emerged from the data.

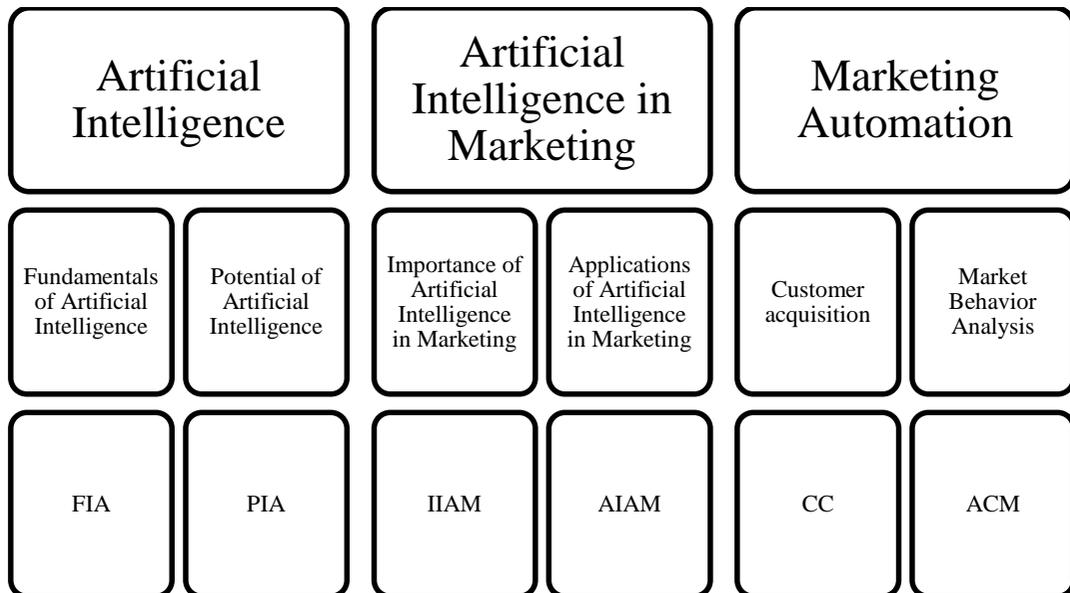


Figure 1 Categories of analysis

Own source. Codes generated to perform the analysis with the QDAMiner.

Once the categories and subcategories were established, a systematic analysis of the articles was carried out. Patterns, trends and relationships between the findings of the different studies were identified. A cross-comparison of the coded data was performed to identify similarities and discrepancies in the results and conclusions of the selected articles.

The qualitative analysis was based on the interpretation of the coded data and the identification of emerging themes and trends. Summaries and synthesis of the main findings and conclusions of each article were made, highlighting the most relevant contributions in the field of study of artificial intelligence and marketing.

Results and Discussion

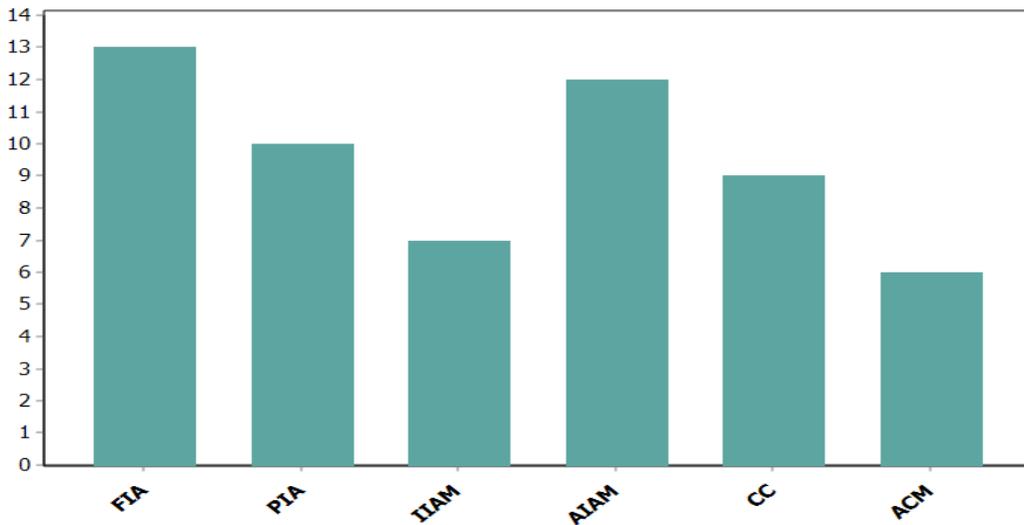


Figure 2 Distribution of words obtained from the documentary analysis of selected articles

Own source. From the encoding made with QDA Miner. According to the coding presented in **Figure 1**

Within the category "Artificial Intelligence in Marketing", two important codes stand out. The first is "IIAM", which refers to the importance of Artificial Intelligence in Marketing. This code is present in several cases, indicating that the relevance of artificial intelligence in the field of marketing is recognized.

The second code in this category is "AIAM", which represents the Applications of Artificial Intelligence in Marketing. This code is observed in a significant proportion of the cases analyzed, suggesting that specific applications of artificial intelligence in the field of marketing are widely discussed.

The category "Artificial intelligence" covers broader concepts related to this technology. Here, the code "PIA" refers to the Potential of Artificial Intelligence. This code appears in several cases, indicating that the potential of artificial intelligence is a relevant topic in the discussion.

Likewise, the code "FIA" in the category of "Artificial Intelligence" relates to the Fundamentals of Artificial Intelligence. This code appears in a significant proportion of cases, suggesting that understanding the fundamentals of artificial intelligence is essential in the discussion of this topic.

As for the category "Marketing Automation", two relevant codes stand out. The code "CC" refers to Customer Acquisition and is present in several cases, indicating that customer acquisition is an important aspect in marketing automation.

Finally, the code "ACM" represents Market Behavior Analysis. This code is also observed in several

cases, indicating that the analysis of market behavior is a relevant topic in the context of marketing automation.

Artificial intelligence

Throughout the different studies cited, several fundamental aspects related to artificial intelligence (AI) are mentioned. According to Mikalef et al. (2023), AI has had a long history in the field of computer science, but has recently moved from being a theoretical domain to practice due to advances in data generation and computing. In this sense, AI has been described as a tool to solve complex problems and as a system that mimics human intelligence and cognitive processes. For its part, (Gilardini, 2022) believes that the development of AI has been aligned with the needs of consumers and the requirements of the systems, increasing their efficiency. In the field of marketing, its implementation is an advantage for companies by changing the customer experience and making them more competitive by optimizing processes.

Authors Enholm et al. (2021) also refer to the ability of AI technologies to learn from previous experiences and make inferences through data analysis. They highlight the role of machine learning as a key subfield within AI, where technologies can modify their processing based on newly acquired information. I agree (Zhang et al., 2023) with the data they turn out to be the cornerstone of AI, because based on them this technology can be implemented in different processes after its analysis.

Haleem et al. (2022) note that AI is being widely adopted in various industries, including marketing, and mention that it can improve the customer experience by enabling more effective personalization of content and providing actionable data analytics. In this regard, the research carried out by (Yang et al., 2021) indicates that the preparation, storage and management of the data collected before developing the algorithms are the driving force behind AI.

Buhalis et al. (2023) highlight the impact of information and communication technologies, including AI, on the tourism industry. They mention how AI has transformed strategic and operational practices in this field, facilitating the direct distribution of tourism services and enabling competition through technological platforms.

Vlačić et al. (2021) emphasize that AI in marketing refers to the development of artificial agents that suggest and/or take marketing actions based on data about consumers, competitors and the company. They highlight the role of content analysis and multiple correspondence analysis as methods for understanding the intellectual structure of the AI research field in marketing.

Mustak et al. (2021) mention that AI has received considerable attention in marketing research due to its potential to generate superior value outcomes. They highlight the application of AI in areas such as big data analytics, machine learning and robotics, and how these applications are transforming marketing and sales strategies.

Verma et al. (2021) highlight that AI finds applications in several sectors, including marketing, and

mention how this technology can improve the customer experience, facilitate real-time data analysis and help in decision-making based on consumer behavior.

Chintalapati and Kumar (2022) broadly define AI as the intelligence exhibited by machines and highlight that it uses sensors to perceive and effectors to react to the environment.

Potential of Artificial Intelligence

Mikalef et al. (2023) note that although AI has the potential to improve B2B marketing activities, many organizations still struggle to leverage their AI investments in ways that add value. They highlight the importance of considering AI as a core competency within organizations and ensuring that key operations are enabled or enhanced by appropriate AI applications.

Haleem et al. (2022) explain that AI is a computer technology that teaches computers to understand and emulate human communication and behavior. They highlight that AI can perform technical and specialized activities, such as speech and image recognition, natural language processing, and problem solving. They mention that AI has a fundamental role in the success of marketing campaigns, from planning to customer loyalty, and can provide a competitive advantage to companies.

Vlačić et al. (2021) highlight that AI has great potential in the field of marketing, especially in improving marketing channels and analyzing data to understand and meet customer needs. AI can help companies profile customers, predict their choices, and improve the distribution of goods. There has been an increase in academic and business attention towards AI applications in marketing. In this regard, the study developed by Alzahrani et al. (2022) highlights that AI plays an important role in the different stages of the marketing process, analyzing the market, evaluating customers and using the customer database for the promotion of products and services.

Verma et al. (2021) emphasize that AI and machine learning play a crucial role in big data analytics to anticipate and provide personalized experiences to customers. They mention that leveraging AI in marketing is key to delivering customer experiences that generate loyalty and competitive advantage. They highlight that event-driven architectures, combined with AI and predictive analytics, are the future in this field.

Chintalapati and Kumar (2022) define AI in marketing as the development of artificial agents that suggest and/or take marketing actions based on information about consumers, competitors and the company. They mention that the fusion between AI and marketing will continue to grow in importance and that AI is already affecting various aspects of marketing, from customer experience to business decision making.

Artificial intelligence in Marketing

Mikalef et al. (2023) highlight that AI competencies can affect the ability to manage marketing information. AI enables more effective market research, diverse data analysis, and intelligence to

make better marketing decisions.

Haleem et al. (2022) point out that AI in digital marketing helps filter large amounts of data and provides accurate information for decision making. In addition, AI personalizes marketing, improves the customer experience, and brings efficiency and creativity to the process. The study of (Toorajipour et al., 2021) establishes that in the field of marketing the use of AI favors sales management helping to promote products, segmenting the market and customers, allows to meet customer needs, in addition to monitoring production and solving problems automatically.

Vlačić et al. (2021) highlight that AI has become increasingly important in strategic marketing. Its adoption allows to improve the interaction with customers through marketing channels, foresee the market and automate tasks. In addition, AI is considered one of the top labor trends in marketing.

Chintalapati & Kumar (2022) mention that AI spending globally is expected to increase significantly in the coming years. AI in marketing has been proven to increase the customer experience and transform the sales process in B2B marketing. In addition, the use of social media data and intelligent algorithms allows for deeper analysis and effective automated marketing.

Applications of Artificial Intelligence in Marketing

Artificial intelligence (AI) has generated a great deal of interest in the field of business-to-business (B2B) marketing. According to Mikalef et al. (2023), the promising benefits of AI in B2B marketing have been highlighted, such as obtaining relevant insights into customer behaviors, identifying critical market data, and optimizing operational inefficiencies. In addition, Mikalef et al. (2023) point out that the adoption and use of AI-based marketing is driven by internal and external processes, and mention information management, marketing planning and implementation capabilities as key aspects in this context. In this regard, the research work carried out by (Grewal et al., 2021) indicate that AI is very beneficial for B2B companies, favoring the efficiency and effectiveness of marketing, helping buyers and analyzing sales in real time.

On the other hand, Haleem et al. (2022) mention that AI has simplified the creation of customer profiles and the understanding of the customer journey process. Through AI applications in digital marketing, they can determine what content is most likely to attract customers and how to improve the customer experience. In addition, AI enables the personalization of offers and the prediction of the success of marketing initiatives, giving companies a competitive advantage.

In the study by Verma et al. (2021), it is highlighted that AI can help marketers in the strategy and planning of marketing activities, as well as in the management of products, prices, places and promotions. For example, through data analytics and machine learning, AI can contribute to customer segmentation, product recommendation, dynamic pricing, distribution management, and ad campaign optimization. Regarding the above (Chinchanchokchai et al., 2021), consider that AI improves the capacity of companies and services, by providing more personalized attention,

increasing sales by predicting the interests of customers by segmenting them according to their characteristics

In relation to the impact of AI on marketing, Feng et al. (2020) mention that AI will change marketing strategies and customer behavior. However, they also emphasize the importance of enabling AI to improve rather than replace managers, ensuring the reliability of AI systems for both managers and customers.

In the realm of digital marketing, Chintalapati and Kumar (2022) highlight how AI has transformed this field. Research has been conducted on specific areas, such as programmatic advertising, customer experience, content marketing, experiential marketing, and marketing operations. These studies explore the impact of AI in each of these areas, from content personalization to the use of chatbots, marketing automation, and digital adoption.

Marketing Automation

Customer acquisition

Marketing automation has proven to be an effective tool for customer acquisition. According to Haleem et al. (2022), artificial intelligence (AI) is used in digital marketing to retain users and convert leads. Through the use of intuitive AI chatbots, smart email marketing, interactive web design, and other digital marketing services, AI guides users in the direction that aligns with the company's goals. In addition, AI collects data from various sources, such as social media accounts, online reviews, and websites, to produce and deliver relevant content to the audience, which improves customer engagement. The study of (El Bakkouri et al., 2022), indicate that in today's digital marketing the role of AI has improved the experience of customers when they use the chatbot when making the decision to purchase a product

AI is also used to increase customer demand. Haleem et al. (2022) mention that marketers can use AI to track customer purchases and analyze the data to provide personalized marketing messages. This includes using suggestions and special offers to improve the average value of the customer's order. AI in marketing also enables decision-making and customer micromanagement, giving businesses a competitive advantage by personalizing and optimizing customer interactions. The research of (Huang & Rust, 2022) indicates that AI in general has been gaining popularity among consumers by having friendly applications that greet the customer, analyze consumer data, make personalized recommendations about products and services, in addition to analyzing feelings of satisfaction.

When it comes to capturing customers through ad targeting, AI plays a crucial role. Haleem et al. (2022) mention that AI can use machine learning (ML) to distinguish between purchases, actual conversions, and exploratory behavior, allowing marketers to retarget prospects with a higher likelihood of converting them. In addition, technologies such as facial recognition and intelligent notifications powered by AI allow personalized offers and messages to be sent in real time,

improving the user experience and facilitating customer acquisition.

Vlačić et al. (2021) also highlight the role of AI in customer engagement through customer relationship management (CRM). AI can aid in segmentation, targeting and positioning (STP), allowing companies to better serve different segments and anticipate changes in customer profile. In addition, AI contributes to turning big data into information and knowledge, which helps develop more effective marketing and sales strategies and improve performance in terms of competitive advantage, efficiency, sales forecasting and value creation for customers.

Market behavior analysis

Market behavior analysis benefits from the use of AI-driven marketing. Haleem et al. (2022) point out that digital marketing with AI offers a pleasant experience for customers, using platforms such as Facebook and Instagram to evaluate user information and direct offers appropriate to their desires. In addition, AI helps identify and forecast market trends, preventing companies from spending on digital advertising inefficiently.

AI also plays an important role in market research. Haleem et al. (2022) mention that AI combined with high-quality research data allows companies to perform tasks such as target group segmentation faster and more efficiently than humans. This makes it possible to offer more personalized offers to target audiences and stay ahead of the competition.

Vlačić et al. (2021) highlight the importance of understanding consumer behavior in the context of marketing. AI and data analytics enable marketers to gain valuable insights into consumers' digital footprints and their online behaviors. This helps in designing successful products and services, making strategic decisions and reducing the churn rate.

Chintalapati & Kumar (2022) also highlight the importance of market research in the field of AI and marketing. Previous studies have explored the application of AI in customer segmentation, understanding consumer behavior, and evaluating marketing strategies. AI complements the skills of human managers and enables deeper research in areas such as consumer behavior and business-to-business concepts.

Conclusions

The use of marketing in market behavior analysis benefits from the application of AI. The authors analyzed in this research emphasize the ability of AI to provide personalized experiences to customers, identify market trends, segment target groups, and understand consumer behavior. AI enhances the efficiency and effectiveness of marketing strategies in market behavior analysis.

References

Akdeniz, M. B., Talay, M. B., & Kirca, A. H. (2023). Looking back to move forward: Reviews and analyses of literature in industrial marketing. *Industrial Marketing Management*, 110, A4-A6. <https://doi.org/10.1016/J.INDMARMAN.2023.02.010>

- Buhalis, D., Leung, D., & Lin, M. (2023). Metaverse as a disruptive technology revolutionising tourism management and marketing. *Tourism Management*, 97, 104724. <https://doi.org/10.1016/J.TOURMAN.2023.104724>
- Chinchanachokchai, S., Thontirawong, P., & Chinchanachokchai, P. (2021). A tale of two recommender systems: The moderating role of consumer expertise on artificial intelligence based product recommendations. *Journal of Retailing and Consumer Services*, 61, 102528. <https://doi.org/10.1016/J.JRETCONSER.2021.102528>
- Chintalapati, S., & Kumar, S. (2022). Artificial intelligence in marketing: A systematic literature review. *International Journal of Market Research*, 64(1), 38-68. <https://doi.org/https://doi.org/10.1177/14707853211018428>
- De Bruyn, A., Viswanathan, V., Beh, Y. S., Brock, J. K. U., & von Wangenheim, F. (2020). Artificial Intelligence and Marketing: Pitfalls and Opportunities. *Journal of Interactive Marketing*, 51, 91-105. <https://doi.org/10.1016/J.INTMAR.2020.04.007>
- Dumitriu, D., & Popescu, M. A. M. (2020). Artificial Intelligence Solutions for Digital Marketing. *Procedia Manufacturing*, 46, 630-636. <https://doi.org/10.1016/J.PROMFG.2020.03.090>
- El Bakkouri, B., Raki, S., & Belgnaoui, T. (2022). The Role of Chatbots in Enhancing Customer Experience: Literature Review. *Procedia Computer Science*, 203, 432-437. <https://doi.org/10.1016/J.PROCS.2022.07.057>
- Feng, C. M., Park, A., Pitt, L., Kietzmann, J., & Northey, G. (2020). Artificial intelligence in marketing: A bibliographic perspective. <https://doi.org/10.1016/j.ausmj.2020.07.006>, 29(3), 252-263. <https://doi.org/10.1016/J.AUSMJ.2020.07.006>
- Fernández-Rovira, C., Álvarez Valdés, J., Molleví, G., & Nicolas-Sans, R. (2021). The digital transformation of business. Towards the datafication of the relationship with customers. *Technological Forecasting and Social Change*, 162, 120339. <https://doi.org/10.1016/J.TECHFORE.2020.120339>
- Gilardini, P. (2022). State of the art of artificial intelligence in marketing and consumer behavior. *Journal of Business Sciences*, 7(7), 60-69. <https://revistas.ubp.edu.ar/index.php/revista-ciencias-empresariales/article/view/2468-9785%282022%29005/426>
- Goląb-Andrzejak, E. (2023). AI-powered Digital Transformation: Tools, Benefits and Challenges for Marketers – Case Study of LPP. *Procedia Computer Science*, 219, 397-404. <https://doi.org/10.1016/J.PROCS.2023.01.305>
- Grewal, D., Guha, A., Saturnino, C. B., & Schweiger, E. B. (2021). Artificial intelligence: The light and the darkness. *Journal of Business Research*, 136, 229-236. <https://doi.org/10.1016/J.JBUSRES.2021.07.043>
- 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, 119-132. <https://doi.org/10.1016/J.IJIN.2022.08.005>
- Huang, M. H., & Rust, R. T. (2022). A Framework for Collaborative Artificial Intelligence in Marketing. *Journal of Retailing*, 98(2), 209-223. <https://doi.org/10.1016/J.JRETAI.2021.03.001>
- Krafft, M., Sajtos, L., & Haenlein, M. (2020). Challenges and Opportunities for Marketing Scholars in Times of the Fourth Industrial Revolution. *Journal of Interactive Marketing*, 51, 1-8. <https://doi.org/10.1016/J.INTMAR.2020.06.001>
- Kramcsák, P. T. (2023). Can legitimate interest be an appropriate lawful basis for processing Artificial Intelligence training datasets? *Computer Law & Security Review*, 48, 105765.

- <https://doi.org/10.1016/J.CLSR.2022.105765>
- Mikalef, P., Islam, N., Parida, V., Singh, H., & Altwaijry, N. (2023). Artificial intelligence (AI) competencies for organizational performance: A B2B marketing capabilities perspective. *Journal of Business Research*, *164*, 113998. <https://doi.org/10.1016/J.JBUSRES.2023.113998>
- Mustak, M., Salminen, J., Plé, L., & Wirtz, J. (2021). Artificial intelligence in marketing: Topic modeling, scientometric analysis, and research agenda. *Journal of Business Research*, *124*, 389-404. <https://doi.org/10.1016/J.JBUSRES.2020.10.044>
- Sarath Kumar Boddu, R., Santoki, A. A., Khurana, S., Vitthal Koli, P., Rai, R., & Agrawal, A. (2022). An analysis to understand the role of machine learning, robotics and artificial intelligence in digital marketing. *Materials Today: Proceedings*, *56*, 2288-2292. <https://doi.org/10.1016/J.MATPR.2021.11.637>
- Toorajipour, R., Sohrabpour, V., Nazarpour, A., Oghazi, P., & Fischl, M. (2021). Artificial intelligence in supply chain management: A systematic literature review. *Journal of Business Research*, *122*, 502-517. <https://doi.org/10.1016/J.JBUSRES.2020.09.009>
- Valentín-Bravo, F. J., Mateos-Álvarez, E., Usategui-Martín, R., Andrés-Iglesias, C., Pastor-Jimeno, J. C., & Pastor-Idoate, S. (2023). Integrating Artificial Intelligence and new language models in Ophthalmology: Complications of the use of silicone oil in vitreous-retinal surgery. *Archives of the Spanish Society of Ophthalmology*, *98*(5), 298-303. <https://doi.org/10.1016/J.OFTAL.2023.03.010>
- Verma, S., Sharma, R., Deb, S., & Maitra, D. (2021). Artificial intelligence in marketing: Systematic review and future research direction. *International Journal of Information Management Data Insights*, *1*(1), 100002. <https://doi.org/10.1016/J.IJIMEI.2020.100002>
- Vlačić, B., Corbo, L., Costa e Silva, S., & Dabić, M. (2021). The evolving role of artificial intelligence in marketing: A review and research agenda. *Journal of Business Research*, *128*, 187-203. <https://doi.org/10.1016/J.JBUSRES.2021.01.055>
- Volkmar, G., Fischer, P. M., & Reinecke, S. (2022). Artificial Intelligence and Machine Learning: Exploring drivers, barriers, and future developments in marketing management. *Journal of Business Research*, *149*, 599-614. <https://doi.org/10.1016/J.JBUSRES.2022.04.007>
- Yang, Y., Li, R., Xiang, Y., Lin, D., Yan, A., Chen, W., Li, Z., Lai, W., Wu, X., Wan, C., Bai, W., Huang, X., Li, Q., Deng, W., Liu, X., Lin, Y., Yan, P., & Lin, H. (2021). Expert recommendation on collection, storage, annotation, and management of data related to medical artificial intelligence. *Intelligent Medicine*. <https://doi.org/10.1016/J.IMED.2021.11.002>
- Yeke, S. (2023). Digital intelligence as a partner of emotional intelligence in business administration. *Asia Pacific Management Review*. <https://doi.org/10.1016/J.APMRV.2023.01.001>
- Zhang, M., Xu, Y., & Li, X. (2023). The standardized design and application guidelines: a primary-oriented artificial intelligence screening system of the lesion sign in the macular region based on fundus color photography. *Intelligent Medicine*. <https://doi.org/10.1016/J.IMED.2023.05.001>