

Generative Artificial Intelligence in Marketing Capabilities and Customer Engagement: A Systematic Literature Review

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Abstract: *The recent spread of generative artificial intelligence (GAI) is transforming how companies form marketing competencies and interact with their clients, but current literature is still disjointed between fields and views. The present research is based on the systematic literature review in order to synthesize the work that was done on GAI in marketing previously, explain its role in improving marketing attributes and customer relationships, and find out uncovered issues and research directions. The review covers the necessity of an integrative synthesis supporting cumulative theory progression and informed managerial decision-making. Adopting a systematic literature review method, the study reviews peer-reviewed journal articles devoted to the generative AI application in marketing. The review summarizes both conceptual and empirical research in various methodological traditions to analyze prevailing themes, theoretical underpinnings, technology enablers, organizational influences, and governance concerns defining AI-based marketing practices to reinforce customer engagements. Nonetheless, the results of adoption are largely determined by data governance, ethical issues, organizational preparedness, and human-AI collaboration systems. This paper presents a unified framework of connections between generative AI, marketing capacities, and customer participation, in addition to emphasizing important gaps in the research and providing an ordered agenda on the direction of future investigation.*

Keywords: Generative Artificial Intelligence, Marketing Capabilities, Customer Engagement, AI Marketing, Online Consumer Behaviour, Innovativeness, Systematic Literature Review

Introduction

Generative Artificial Intelligence (GAI) has become a revolution in modern marketing by quickly changing the way companies formulate marketing capacities and connect with customers through digital and physical channels. In contrast to the traditional AI that is analytics-based, GAI enables personalized content, communications, predictiveness, and interactive customer interfaces to be created autonomously, thus improving the capabilities of firms to sense markets, customize offerings, and co-create value with customers in real-time (Dwivedi et al., 2023; Puntoni et al., 2021; Akdere et al., 2022). Recent contributions in the marketing field emphasize the fact that GAI-driven applications, including large language models, generative recommendation systems, and chatbots are transforming the nature of customer engagement by manipulating cognitive, emotional, and behavioral reactions through hyper-personalized and immersive customer experiences (Belk et al., 2022; Dacko, 2017). In terms of ability, GAI enhances strategic marketing powers such as content production, customer analytics, relationship management, brand communication, and allows companies to attain high engagement results and long-lasting competitive edge in the evolving markets (Chen et al., 2021; Hammada, 2024; Alam et al., 2024; Alam et al., 2025). Though the body of empirical and conceptual research in the intersection of GAI, marketing capabilities, and customer engagement is rapidly expanding, the literature is still rather divided across disciplines and methods and cannot be unified into an integrative synthesis that will make the existing knowledge

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coherent and determine the direction of the future research. As a result, the systematic review of literature is necessary to critically evaluate the importance of GAI to marketing capability enhancement and customer engagement and shed light on the prevailing themes, theoretical premises, methodological trends, and gaps in the existing literature to inform future academic research.

Problems in AI Adoption in Marketing

Although Generative Artificial Intelligence (GAI) is increasingly being considered as a strategic tool in marketing, there are a number of serious threats that limit the implementation and value potential. Among the most significant issues is the quality of data and its management because GAI systems entirely depend on the presence of huge amounts of high-quality and unbiased and ethically sourced data; data integrity problems may cause misleading conclusions, biased content creation, and reputational risks (Ray, 2023). Ethical and regulatory issues, especially in data privacy, transparency in algorithms, intellectual property rights, and responsible usage of AI-generated messages in customer-facing messages and marketing are also major barriers (Giebelhausen and Poehlman, 2024). Also, there are commonly gaps in capability and readiness, such as lack of AI-competent marketing specialists, opposition to AI-informed decision-making, and challenges related to combination of GAI tools and already in place marketing systems and processes (Frank et al., 2023). In strategic terms, over-automation and over-dependence on AI can negatively affect human creativity, brand authenticity, and trust to customers unless it is properly balanced with human control and principles of relation marketing. Together with these technological, ethical, organizational, and strategic issues, it is necessary to have strong governance systems, the development of capabilities, and hybrid human-AI marketing solutions so that the adoption of GAI can create better marketing abilities and enhance customer interaction without any negative impact on trust and brand value in the long term.

Table 1

Challenge	Description	Impact on Businesses	Solution Strategies
Technological Readiness (Kaggwa et al., 2023)	Businesses face difficulties in integrating AI with legacy systems and ensuring proper infrastructure for large-scale AI implementation.	Insufficient infrastructure can hinder AI’s ability to deliver results, causing delays, inefficiencies, and loss of competitive advantage.	Invest in scalable cloud infrastructure, upgrade legacy systems, and ensure high-quality data processing capabilities.
Data Privacy and Security (Ho et al., 2022)	Concerns about safeguarding sensitive customer data in AI-driven marketing applications.	Data breaches may lead to regulatory fines, loss of consumer trust, and reputational damage.	Develop robust data governance frameworks, comply with regulations like GDPR, and use encrypted storage solutions.
Ethical Considerations (Kumar et al., 2023)	Ethical issues such as algorithmic bias, lack of transparency, and unintended consequences of AI-driven decisions.	Ethical mishandling can alienate customers, lead to lawsuits, and tarnish the organization’s reputation.	Establish AI ethics committees, adopt responsible AI frameworks, and enhance transparency in AI decisions.
Organizational Culture Readiness (Chowdhury et al., 2023)	Companies need to foster a culture that embraces innovation, with employee training and leadership aligned to AI goals.	Resistance to change, fear of job displacement, and lack of AI skills can slow down the adoption and integration of AI into business processes.	Upskill employees, cultivate an AI-ready culture through leadership, and provide continuous learning opportunities.

Table 1 Key challenges and strategies for successful AI adoption in marketing.

The Role of AI in Shaping Business Strategies

Generative AI is now a key catalyst to business strategy in the modern era because it can help companies re-architecturize the value generation process, competitive positioning, and decision-making within an ever-changing business environment. In recent research, AI has been shown to increase the level of strategic agility by improving the accuracy of forecasts and market sensing, as well as enabling organizations to react to emerging customer demands and competitive pressures (Dwivedi et al., 2023; Obschonka and Audretsch, 2020; Zaman et al., 2024; Zaman et al., 2025). Strategically, AI supports personalization in the data-driven way, dynamic pricing, and optimization of customer engagement, enhancing the marketing potential of firms and competitive edge in the long term (Kumar et al., 2025). Furthermore, AI transforms strategic planning by assisting with scenario analysis, routine strategic work automation, and incorporation of predictive and prescriptive analytics into the decisions made by the top-management (Ray, 2023; Ahmed et al., 2024; Ahmed et al., 2025). Nevertheless, recent articles also focus on the fact that the strategic value of AI depends on alignment of organizations, governance procedures, and the capability of the firm to combine AI outcomes with human judgments to eliminate strategic inflexibility and over-dependence on algorithmic results (Giebelhausen and Poehlman, 2024). Taken altogether, these conclusions indicate that AI is not just an operation tool anymore, but an instrumental component of contemporary business strategy, which can be used to shape the competitive environment of firms, their ability to innovate and maintain a high level of performance in the digitally intensive environment.

Purpose of the Review

The main goal of such a systematic literature review is to combine and critically appraise the available research on the role of Artificial Intelligence (AI), specifically the generative AI in the market capacity improvement and the customer engagement outcomes. Even though the recent research continues to stress the opportunities of AI to bring change to marketing strategy, customer engagement, and value co-creation, the literature remains divided between disciplines, methodologies and theoretical approaches to knowledge, which inhibits the development of knowledge (Puntoni et al., 2021; Belk et al., 2022; Ahmed et al., 2023; Khan et al., 2024). The purpose of the review is to summarize the previous empirical and theoretical studies to determine the themes, theoretical basis, methodology, and the challenges surrounding AI-based marketing practices (Frank et al., 2023; Chen et al., 2021).

Scope of the Review

The proposed systematic literature review aims at considering the academic studies that explore the use of Artificial Intelligence (AI), and generative AI in particular, in the building of marketing capabilities, and the improvement of customer engagement in various business environments. The limitations of the review include peer-reviewed journal articles addressing AI-enabled marketing practices including personalization, content generation, customer analytics, relationship management, and interactive customer interfaces and excluding technically-oriented or non-marketing-oriented AI research (Dacko, 2017; Lim et al., 2024). To be relevant in the present-day context, the review will focus on recent articles discussing strategic, operational, and customer-focused implications of AI introduction to marketing, and ethical, governance, and organizational factors that may affect the results of its introduction (Errida and Lotfi, 2021). Moreover, the review encompasses various approaches to the methodology: conceptual, qualitative, quantitative, and mixed-methods, to obtain a clear understanding of the conversion of AI-driven marketing capabilities into customer engagement outcomes (Akdere et al., 2022). Limiting the review to these dimensions, this study will show a narrow but comprehensive synthesis of the knowledge available in the intersection of AI and marketing capabilities and customer engagement at present.

Gaps and Opportunities in Research

Even with the increasing research on Artificial Intelligence (AI) and its application in marketing, there are still several gaps in the literature that create significant chances to be addressed in the future. To begin with, the current literature tends to focus on AI adoption or performance performance separately, which provides little information about how AI specifically creates marketing capabilities and how the created capabilities will subsequently result in long-term customer engagement (Hammoda, 2024). Second, the existing literature is predominantly based on cross-sectional research and conceptual arguments, which

has led to a research gap on longitudinal and causal studies that could effectively reflect the temporal and changing nature of AI-based marketing strategies (Fox et al., 2024). Third, empirical focus on moderating and contextual variables, including organizational culture, governance-related mechanisms, and ethical protection factors that can mediate the efficacy of AI-enabled marketing solutions and customer engagement outcomes is lacking (Chen et al., 2022). Lastly, the absence of integrative theoretical frameworks to balance technological capabilities and human judgment, creativity, and trust in AI-driven customer interactions is noted in the recent scholarship, which represents a chance to build theories at the intersection of marketing, strategy, and digital ethics. Sealing these loopholes can help not only improve theoretical knowledge but can also be used as a guide to how AI regarding marketing should be deployed responsibly and strategically.

The History of AI in Marketing

The development of Artificial Intelligence (AI) in marketing is characterized by a transition to automation and descriptive analytics based on rules to more sophisticated, generative, and adaptive systems that actively form the marketing strategy and customer interaction. Generally speaking, over recent years, the application of generative AI, including large language models, generative recommendation engines and conversational agents, has widened the scope of use of AI to autonomous content creation, real-time personalization and interactive customer communication (Dwivedi et al., 2023; Kietzmann et al., 2023). More recent studies indicate that AI-based marketing has advanced in the area of capability improvement and allows companies to improve the ability to sense the market, customer insights, and customer relationships in the highly dynamic world of the internet (Verma et al., 2023). In addition, the inclusion of AI in big data, cloud computing, and omnichannel systems has also facilitated the speed of its strategic applicability, enabling marketers to develop data-driven, customer-focused, and scalable engagement tactics (Wamba et al., 2024). Nevertheless, recent research also underlines that such a quick evolution warrants the new models of governance and integrating human and AI solutions to provide transparency, innovativeness, and trust in AI-enabled marketing practices (Rietz et al., 2024). Taken together, these changes depict the way AI in marketing has transformed into an auxiliary analytical aid to a fundamental strategic asset that influences the modern marketing ecosystems.

State of AI in Marketing

The present condition of Artificial Intelligence (AI) in marketing is marked with its extensive product penetration across the main marketing services, such as personalization, customer analytics, content-generating, and engagement management across the digital platform. Recent reports show that companies are starting to use generative AI applications including conversational agents, recommendation engines, and content generation bots to provide real-time and personalized customer experiences and increase the efficiency of marketing to scale (Dwivedi et al., 2023; Puntoni et al., 2021). AI-based analytics have become the key to market sensing and customer insight generation, making it possible to make decisions and be adaptive to the market when it is highly competitive (Ray, 2023). In addition, the overlap between AI and omnichannel marketing and social media networks and customer relationship management has further increased the capacity of companies to maintain uninterrupted contact with their customers and improve the quality of interaction with them (Dacko, 2017; Frank et al., 2023). Nevertheless, the modern literature also points out that despite the swift growth of AI use in marketing, some of the concerns that persistently affect the maturity and efficiency of AI-based marketing practices are their governance, transparency, ethical use, and organizational readiness (Giebelhausen and Poehlman, 2024).

Table 2

AI Focus Area	Key Insights & Applications	Emerging Trends	Challenges & Solutions
Personalization (Gupta et al., 2020)	Generative AI enhances marketing by delivering personalized messages, product recommendations, and customer experiences at scale.	Advancements in generative models enable hyper-personalization using real-time behavioral and contextual data.	Balancing personalization with data privacy concerns. Solution: Transparent data usage policies and consent-based personalization.

AI Focus Area	Key Insights & Applications	Emerging Trends	Challenges & Solutions
Customer Engagement (Dwivedi et al., 2023)	AI-driven tools improve customer interaction through chatbots, virtual assistants, and interactive content across touchpoints.	Growing adoption of conversational AI and immersive engagement technologies in omnichannel marketing.	Ensuring authenticity and trust in AI-mediated interactions. Solution: Hybrid human–AI engagement models.
Content Generation (Verma et al., 2023)	Generative AI automates the creation of marketing content such as advertisements, social media posts, and brand communications.	Increased use of large language models for scalable and adaptive content production.	Risk of generic or biased content. Solution: Human oversight and AI content governance frameworks.
Customer Analytics (Wamba et al., 2024)	AI enhances customer analytics by identifying patterns, predicting behavior, and supporting data-driven decision-making.	Integration of AI with big data and predictive analytics for real-time customer insights.	Complexity in interpreting AI outputs. Solution: Explainable AI and advanced analytics training.
Relationship Management (Rietz et al., 2024)	AI supports long-term relationship management through sentiment analysis, churn prediction, and engagement optimization.	Shift toward AI-enabled relationship marketing and continuous engagement strategies.	Over-reliance on automation may weaken emotional bonds. Solution: Maintain relational marketing principles.

Table 2 Emerging trends and challenges in AI-Driven marketing

Factors Influencing Adoption and Implementation

The success of making and subsequently using use of Artificial Intelligence (AI) in marketing is influenced by interplay between technology, organization and environmental factors that dictate how much companies can get strategic value with regard to AI-led projects. According to the recent literature, technological preparedness, such as data quality, system compatibility, and scalability of the infrastructure, is one of the underlying determinants of the successful implementation of AI in a marketing environment (Khanfar et al., 2024; Merhi, 2023). Organizational-level factors such as leadership support, AI-related skills, and a culture of encouragement of experimentation and data-driven decision-making play a prominent role in determining the use of AI and integrating it in the marketing processes of the firm (Giuggioli and Pellegrini, 2023). Moreover, legal mechanisms, including ethical standards, transparency measures, and accountability frameworks are important in influencing the establishment of trust and the elimination of risks related to AI-based customer interactions (Hermann, 2022). The outside environmental conditions such as regulatory pressure, the intensity of rivalry, and customer desires of customized yet accountable marketing treatment are additional influencing elements in implementation results and the pace of taking them up (Ghani et al., 2022). All these aspects emphasize the idea that the implementation of AI in marketing is not only a technological choice but a strategic and organizational change that has to be unified on many levels.

Technological Infrastructure

Strong technological background is an essential facilitator of successful Artificial Intelligence (AI) implementation in marketing because it dictates whether an organization can implement, spin, and integrate AI-driven solutions in marketing operations. According to the recent literature, cloud-based architectures, high-performance computing, and enhanced data management systems are needed to support generative AI applications, including real-time personalization, automated generation of content, and predictive customer analytics (Tehrani et al., 2024; Keegan et al., 2024). Furthermore, the smooth connection of AI technologies with the current marketing systems, including customer relationship

management systems, social media analytics, and the omnichannel interface, improves the level of data interoperability and allows engaging customers in identical ways and channels (Gao et al., 2024). Research also emphasizes that to deliver reliable, fast, and accurate outputs of AI-based marketing, data pipelines, application programming interfaces (APIs), and scalable storage networks are important (Hee Lee and Yoon, 2021). Nonetheless, current studies warn that the lack of proper infrastructure, the limitation of legacy systems, and cybersecurity risks can negatively affect AI performance and restrict the strategic advantages, which highlights the importance of ongoing investment in infrastructure and its regulation (Merhi, 2023).

Hardware and Software Requirements

The successful implementation of Artificial Intelligence (AI), especially the generative AI, in marketing is necessitated by strong hardware and software capabilities that may assist in information-intensive computation, real-time analysis, and scalability. The recent articles point out that it requires the use of high-performance computing infrastructure such as cloud servers, graphical processing units (GPU), and scalable storage systems to train, deploy, and maintain AI-based marketing applications, including personalization engines and conversational agents (Tehrani et al., 2024; Shepherd and Majchrzak, 2022). Software-wise, companies are moving to superior AI platforms, application programming interfaces (APIs), machine learning frameworks, and data analytics products that allow them to integrate seamlessly with the existing marketing software, such as their customer relationship management and digital marketing platform (Keegan et al., 2024). Besides, model management, data security, explainability, and system interoperability software functions are essential to making sure that AI is used reliably and ethically in face-to-customer marketing (Hermann, 2022). The recent literature also emphasizes that lack of compatibility between hardware capacity and software advancedness may limit AI efficiency and restrict strategic value, and integrating investment in both of the technological elements is crucial in enabling sustainable AI-based marketing, as well as practice (Merhi, 2023).

Integration Challenges

The application of Artificial Intelligence (AI) and specifically generative AI into the existing marketing ecosystems is fraught with challenges that may impede value creation and organizational alignment. According to recent studies, incompatibility with legacy systems, division of sources, and interoperability of AI tools with the central marketing platforms like CRM, ERP, and omnichannel systems are common barriers to the seamless integration and slow implementation (Keegan et al., 2024; Giuggioli and Pellegrini, 2023). Furthermore, data integration is complicated by the ineffective standards and insufficiently prepared APIs and challenges in aligning real-time data streams needed to personalize and interact with customers via AI (Tehrani et al., 2024). These issues are further complicated by organizational aspects, when the coordination of IT, marketing, and data teams across organizational boundaries is insufficient, the misalignment of technical implementation and strategic marketing may emerge (Errida and Lotfi, 2021). The lack of governance and change management in the integration process may lead to a higher level of operational risk and less user acceptance, which is a key emphasis of the recent literature as organized integration roadmaps, modular architectures, and continuous monitoring would help facilitate successful AI-enabled marketing transformation (Kinnula et al., 2024).

Organizational Culture

The organizational culture is a key determinant of successful implementation and use of Artificial Intelligence (AI) in marketing because it determines how employees feel about it, their decision-making habits, and how willing they are to be innovated by AI. Recent research highlights that an organizational culture that promotes supporting the use of data to make decisions, experimentation, and continuous learning increases organizational readiness to integrate generative AI in marketing efforts (Jeremiah, 2025; Davidsson and Sufyan, 2023). Especially important cultural factors are the leadership commitment and cross-functional collaboration, which will instill trust in AI systems and lead to the alignment of the marketing goals with the technological potential (Frank et al., 2023). On the other hand, the fear of job loss, the unwillingness to change, and the lack of trust in AI-based marketing efforts may impede the adoption of AI and decrease the success of AI-powered marketing efforts (Chen et al., 2024). Recent sources

also emphasize the necessity to develop a hybrid human-AI culture that is able to balance the process of automation with human innovation and moral judgment, where AI-based marketing practice improves but does not affect customer loyalty and brand authenticity (Jeremiah, 2025).

Change Management

The successful adoption and institutionalization of Artificial Intelligence (AI) in marketing requires effective change management because the implementation of AI practices usually involves massive changes in processes, functions, and decision-making practices. Recently, it was noted that structured change management tactics like the ability to communicate clearly, leadership sponsorship, and individual participation are essential in minimizing resistance and allowing acceptance of the AI-based marketing efforts (Davidsson and Sufyan, 2023; Lesinskis et al., 2023). Change initiatives are also supported by training and capability development programs, which increase the knowledge of AI tools and its strategic applicability among employees, which raises their confidence and willingness to use it in the marketing environment (Chen et al., 2024). Moreover, the organization can achieve AI implementation and ongoing customer expectations and marketing goals through adaptive change management practices facilitating iterative learning and constant feedback (Duong et al., 2024). More recent findings also emphasise that lack of proper change management may result in technology-strategy mismatch, low employee engagement, and limited use of AI, which is why holistic change structures combining the technological, cultural, and strategic aspect must be implemented (Jeremiah, 2025).

Training and Skill Development of the Employees

The training of employees and skills development are the key factors to successful Artificial Intelligence (AI) implementation in marketing because the efficient implementation of generative AI tools presupposes technical competence and strategic knowledge in marketing specialists. The latest studies emphasize that the organization needs to invest in employee upskilling around data analytics, AI-assisted decision-making, and human-AI interaction in order to maximize the AI-driven marketing abilities (Gupta et al., 2020; Chen et al., 2024). The combination of technical learning and knowledge of the marketing domain is it that the training programs contribute to the increased capacity of employees to comprehend AI results, use them creatively and preserve brand authenticity when interacting with customers (Frank et al., 2023). Besides, constant learning and reskilling courses are needed to sustain the accelerating evolution of AI technologies and changes in marketing activities, eliminating reliance on external knowledge (Lesinskis et al., 2023). Other recent research also highlights that lack of training and skills gap may result in resistance, mishandling of AI tools, and poor performance of AI-enhanced marketing programs, which is why well-organized capability development models in line with organizational strategy are required (Duong et al., 2024).

Concerns on Data Security and Privacy

The issue of data security and privacy is also one of the greatest obstacles to the implementation of Artificial Intelligence (AI) in marketing, especially since generative AI systems are based on high amounts of customer information to provide personalised and interactive marketing content. According to the recent sources, the abundance of consumer data, its processing, and storage increase the risks of information breach, illegal usage, and access to sensitive information, as this may compromise customer trust and brand credibility (Habbal et al., 2024; Frank et al., 2023; Iqbal et al., 2023). Data protection-related regulatory requirements like consent management, data minimization, and transparency are also considered complicated since organizations have to comply with all the regulations, yet the effectiveness of AI-based marketing programs has to be maintained (Jeremiah, 2025; Iqbal et al., 2024). Research also states that they are worried about the use of opaque data and a lack of explainability within the AI-based systems that may lead to increased surveillance and customer unwillingness to use AI-based marketing systems (Gupta et al., 2020). The recent studies propose the significance of effective cybersecurity, privacy-by-design, and responsible ethical systems to reduce security risks and establish a responsible AI utilization in marketing applications that interact with customers (Habbal et al., 2024).

Beyond Data Security Fears

The enhanced data security considerations have become the reality as the Artificial Intelligence (AI), specifically the generative AI, becomes more and more deeply integrated into marketing systems that process extensive and multifaceted customer data. According to the latest studies, in addition to the more traditional data breaches, organizations have increased risks of model inversion attacks, data leakage when training the model, and the unauthorized inference of sensitive consumer characteristics based on AI-generated outputs (Habbal et al., 2024; Gupta et al., 2020). There is also the aspect of vulnerability of the sharing of data, cross-border data flows, and reliance on third-party vendors what add to the exposure to cybersecurity risks (Jeremiah, 2025). The relevant literature also notes that little transparency and explainability of AI models can make the identification and response to security risks more challenging, and firms may not be able to ensure accountability and compliance of AI-powered marketing activities (Frank et al., 202). Recent articles indicate that more sophisticated security measures including secure model architecture, continuous monitoring, and strong access controls in connection with organizational governance models are required to mitigate these increased risks to data security and ensure that customers do not lose trust in AI-driven marketing systems (Habbal et al., 2024).

Privacy issues and Regulatory Adherence

The privacy question, as well as regulatory compliance have taken center stage in implementing Artificial Intelligence (AI) in marketing since AI-justified systems are increasingly becoming dependent on a vast amount of consumer data to facilitate personalization and customer interaction. According to recent reports, the regulatory frameworks addressing data protection, including the consent criteria, transparency requirements and data usage restriction, play an important role in shaping the design and implementation of AI-powered marketing activities by organizations (Puntoni et al., 2021; Frank et al., 2023). To align with the changing regulatory landscape, firms need to adopt privacy-by-design concepts, make the AI-driven decisions explainable, and be responsible throughout the data processing process (Ray, 2023).

Openness and AI-Ethical Use

The concept of transparency and ethical use of Artificial Intelligence (AI) has become a rather urgent issue in the marketing context because AI-driven systems are becoming more and more involved in customer relations, decision-making, and value-generation. In recent articles, there is a stress on the importance of transparency in AI processes like the transparent disclosure of AI-generated content, the ability of the algorithm to explain its choices, and the ability to see more clearly how the data is used, which may lead to the formation of customer trust and responsible marketing results (Frank et al., 2023; Hermann, 2022). The issue of algorithmic bias, manipulation, as well as unfair targeting also raises ethical concerns, which also cautions against the requirement of governing mechanisms to make AI applications compatible with societal norms and consumer expectations (Ray, 2023). It is also said that without ethical controls in the field of AI-guided marketing, there is a risk of damage to the reputation, regulatory oversight, and the loss of long-term relationships with customers (Wamba et al., 2024). Recent studies emphasize the need to implement ethical AI systems, human-in-the-loop decision-making systems, and accountability frameworks to ensure the AI-centered marketing practices will be transparent, fair, and based on the ideas of customer-centricity and trust (Jeremiah, 2025).

Future Prospects and Future Research Opportunities

Further studies in the area of Artificial Intelligence (AI) in marketing need to go beyond descriptive adoption research to generate integrative concepts that would describe how AI-based marketing functionality can be converted into long-term customer relationships and firm performance. The use of longitudinal and multi-method research designs is recommended (with the lack of relying mainly on cross-sectional evidence) to capture the dynamic nature of AI capabilities, learning impacts, and customer reactions with time, as recent scholarship suggests (Merhi, 2023; Keegan et al., 2024). The possibility of exploring the human-AI collaboration mechanisms, especially the interaction between managerial judgment, creativity, and ethical reasoning with generative AI systems in their impact on marketing outcomes, is also growing (Shepherd and Majchrzak, 2022). Also, the contextual and boundary conditions,

including industry, regulatory conditions, and organizational maturity that moderate AI-enabled marketing strategies should be investigated in future research (Khanfar et al., 2024). The current literature also points to the necessity of theory-building studies that combine marketing, strategy, and digital ethics to resolve the emerging issues of transparency, trust, and responsible use of AI and, thus, promote the growth of scientific knowledge as well as practical recommendations in the context of the transformation of marketing through AI (Jeremiah, 2025).

The New Developments in AI and Marketing

Recent trends in Artificial Intelligence (AI) and marketing suggest that the marketing ecosystem is moving fast towards more autonomous, adaptable and customer-focused through the development of generative AI technologies. According to the recent literature, the utilization of generative AI continues to increase in the areas of hyper-personalization, real-time content, and conversational marketing, as it allows companies to provide customers with context-sensitive and immersive experiences at various touchpoints (Dwivedi et al., 2023; Ray, 2023). The other noteworthy direction is the adoption of AI alongside omnichannel and social media that enables marketers to control the continued, data-driven interaction with the customer and optimize the interactions in a dynamic manner (Keegan et al., 2024). Also, it can be noted that studies suggest that there is a growing focus on the human-AI cooperation when AI is used to complement human creativity and strategic thinking in marketing decisions, but not to substitute them (Shepherd and Majchrzak, 2022). The emergence of ethical and responsible AI practices as the new trend in recent literature is also emphasized, and companies are turning to transparency, explainability, and governance tools to continue investing in customer trust and regulatory compliance in AI-driven marketing communities (Hermann, 2022).

Future Developments in AI Marketing

The future of Artificial Intelligence (AI) marketing can also be described as the further shift in strategy design, the creation of marketing capacities, and the way companies interact with customers through more intelligent and autonomous systems. According to the recent literature, more advanced types of personalization, predictive engagement, and optimal dynamic content across digital ecosystems will be possible with the development of more advanced generative AI, multimodal models, and real-time learning systems (Ray, 2023; Merhi, 2023). There is also the likelihood that AI-based marketing will progress to a more comprehensive integration with platforms of customer experience and allow marketing activities to be continuously adjusted depending on real-time data on behavior and context (Keegan et al., 2024). Furthermore, explainable and responsible AI will become the focus of the future since companies implement governance systems that would balance between automation and transparency, ethical decision-making and customer trust (Hermann, 2022). The recent literature also points out that the future strategic value of AI marketing systems will be based more and more on a successful human-AI interaction where AI-generated knowledge is supplemented by managerial judgment and creativity to maintain a competitive edge in a fast-changing competitive environment (Jeremiah, 2025).

Potential Areas of Further Investigation and Research

Even though the development of Artificial Intelligence (AI)-driven marketing is quite rapid, there are still several uncharted areas that offer important possibilities to be explored further. The recent literature suggests that there are no in-depth empirical studies that can investigate the synergistic relationship between specific AI-enabled marketing capabilities (e.g., generative content creation, real-time personalization, and predictive engagement) to manipulate the long-term customer engagement and loyalty outcomes (Merhi, 2023; Keegan et al., 2024). Furthermore, little emphasis has been placed on contextual and boundary conditions, i.e., industry-specific dynamics, cultural variations, different degrees of digital maturity, which can tone the effectiveness of AI-based marketing tactics (Khanfar et al., 2024). The other under-researched field is the collaboration between humans and AI, and how managerial judgment, creativity, and ethical reasoning can be used to support generative AI systems to generate marketing decisions and customer experiences (Shepherd and Majchrzak, 2022). The necessity of a study of the formation of trust, perceptions of transparency, explainability in interactions between AI and customers is also reflected in the recent scholarship, as these are likely to define the relevance and

sustainability of AI-based marketing processes (Frank et al., 2023). Such gaps will facilitate the development of theory and offer practical information to create responsible and efficient AI-driven marketing ecosystems.

Contribution and Implications Theoretical

This scholarly literature review presents some valuable theoretical implications, contributing to the conceptual framework of how Artificial Intelligence (AI) and generative AI, in particular, redefines the marketing capabilities and consumer interaction in the modern marketing theory. First, the review makes dynamic capability and resource-based viewpoints advance since it shows that AI is not just a technological resource but a higher-order capability that allows sensing, seizing, and reconfiguring marketing operations in real-time (Merhi, 2023; Keegan et al., 2024). Second, the synthesis also adds to the customer engagement theory by elucidating the processes in which AI-based personalization, interactivity, and analytics affect the cognitive, emotional, and behavioral outcomes of engagement (Puntoni et al., 2021). Third, the review combines both the human-AI collaboration and ethical AI literature and demonstrates that transparency, trust, and human oversight are theoretically important in facilitating value co-creation and relational marketing results (Shepherd and Majchrzak, 2022). Lastly, the review offers a unifying theoretical background by integrating fragmented results in the fields of marketing, strategy, and information systems research, which can be used to develop models and test hypotheses in the future of AI-enabled marketing capabilities and customer interactions (Jeremiah, 2025).

Future Research Recommendations

Future research on using Artificial Intelligence (AI) in marketing ought to take on more rigorous and varied research designs to gain a better insight into how AI-driven marketing capabilities impact customer engagement and the long-term firm performance. Recent research presupposes the application of longitudinal, experimental and mixed-method designs to understand the dynamic nature of the AI capabilities formation and the changing customer reactions with time, replacing the prevalent cross-sectional studies (Merhi, 2023; Keegan et al., 2024). The researchers are also challenged to investigate human-AI collaboration processes, the interaction between managerial skills, creativity, and ethical judgment and generative AIs to influence marketing performance (Shepherd and Majchrzak, 2022). Also, contextual moderators should be studied in the future, including industry-specific features, regulatory conditions, and organizational maturity to describe the difference in AI-based marketing performance in different circumstances (Khanfar et al., 2024). Recent research also emphasizes the necessity to lay down and test integrative theoretical models that integrate trust, transparency, and responsible AI application to inform sustainable marketing practices and to further theorize AI-enabled marketing research (Jeremiah, 2025).

Conclusion

This is a systematic literature review, which presents a concise synthesis of the current studies on the topic of exploring the application of the Artificial Intelligence (AI) concept in the marketing sector, with a specific focus on generative AI and its effects on the marketing environment. The analyzed works give an overall indication that AI has experienced a rapid deployment in the fundamental marketing processes, including personalization, content creation, customer analytics, and relationships management, which makes AI a strategic facilitator, but not an operational instrument (Dwivedi et al., 2023; Frank et al., 2023). The results indicate that the AI-driven marketing features contribute to better capabilities of firms to detect the changes in the market, act dynamically to the needs of the customers, and create value via the interactive and data-oriented engagement strategies (Kietzmann et al., 2023). Nonetheless, the review also indicates significant diversity in the conceptualization and operationalization of AI capabilities between studies, indicating the disjointed state of the current knowledge and the need of integrative theoretical lenses (Wamba et al., 2024; Jeremiah, 2025).

In addition to technological improvement, this review highlights the fact that the success of AI-based marketing depends on organizational, ethical, and governance-related aspects. According to the recent literature, such challenges as data security, privacy concerns, complexities of integration, cultural

resistance, and skills gaps play a vital role in influencing the results of AI adoption and customer trust (Dwivedi et al., 2023; Kietzmann et al., 2023). Theoretically, the results can expand the dynamic capability and customer engagement theories by demonstrating how AI can act as a higher-order capability that transforms the marketing processes but needs human control and moral orientation (Verma et al., 2023; Frank et al., 2023). Another critical issue mentioned in the synthesis is that transparency, explainability, and responsible AI practices are becoming the cornerstones of long-term customer relationships in AI-driven marketing settings (Wamba et al., 2024; Jeremiah, 2025).

Altogether, this review adds to the marketing literature by bringing the scattered pieces of evidence together into coherent knowledge on how generative AI affects marketing capabilities and the interactions with the customers, as well as specifying the gaps and those areas that require further investigation. The results indicate that next-generation studies ought to shift towards longitudinal, theory-based, and context-specific studies to facilitate the changing aspect of AI-facilitated marketing ecosystems (Dwivedi et al., 2023; Frank et al., 2023). Furthermore, the further research into the field of human-AI cooperation, ethical regulation, and trust-establishment systems will be necessary to create sustainable and customer-oriented AI marketing practices (Kietzmann et al., 2023; Jeremiah, 2025). This review establishes a framework on which empirical and conceptual studies can be built in the future to enable scholars and practitioners to understand how to harness AI in a responsible manner to establish meaningful and sustainable customer engagement (Wamba et al., 2024; Jeremiah, 2025).

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