

**Tracking the Lil Miquelas of our world: A systematic review of the
influence of Artificial Intelligence on advertising and marketing
communication**

Chatzilazaridou Olga^a, Ktisti Evangelia^a, Syropoulos Fotis C.^b, Vlachopoulou
Elli^a, Hatzithomas Leonidas^b, Boutsouki Christina^a

*^aDepartment of Economics, Aristotle University of Thessaloniki, Thessaloniki, Greece; ^bDepartment
of Business Administration, University of Macedonia, Thessaloniki, Greece*

*Correspondence: ektistid@econ.auth.gr

Tracking the Lil Miquelas of our world: A systematic review of the influence of Artificial Intelligence on advertising and marketing communication

As individuals, whether they're consumers, researchers, or industry practitioners, humans encounter numerous challenges, ranging from keeping up with virtual influencers like Lil Miquela to delving into research papers co-authored by language models such as ChatGPT. Artificial intelligence AI is rapidly transforming advertising and marketing communication and is increasingly linked to improved performance and customer engagement, loyalty, and retention. This systematic literature review examines the latest AI breakthroughs and trends in advertising and marketing communications. We used PRISMA to review 72 publications from 2004 to 2024. Descriptive analysis includes article, author, and journal citations, publication year, and names. The thematic analysis discusses current trends, research gaps, and future directions.

Keywords: advertising; artificial intelligence; technology; marketing communication tools; artificial intelligence tools

Introduction

Artificial Intelligence (AI) has evolved from a speculative concept to a pervasive force reshaping industries across the globe. Originating in the 1950s with theoretical discussions and future-oriented explorations, AI has now become an integral part of various sectors, including advertising (Kaplan & Haenlein, 2019). The integration of AI in advertising has sparked significant transformations, leading to a paradigm shift from conventional methodologies to AI-driven approaches (Campbell et. al, 2022).

This systematic review aims to explore the dynamic shifts occurring within advertising, with a particular focus on the integration and impact of AI. As brands increasingly adopt AI-powered tools and strategies, the relationship between advertisers and consumers undergoes fundamental changes, necessitating a reevaluation of traditional practices and principles (Kietzmann, Mills, & Plangger, 2021).

One of the notable advancements facilitated by AI in advertising is the unparalleled level of personalization and targeting (Deng et. al, 2019). BMW has launched its newest iX2 campaign, showcasing virtual influencer Lil Miquela, aiming to offer an engaging experience for its target demographic. The campaign portrays Lil Miquela venturing into reality alongside the new BMW iX2, as she gradually discovers and embraces the human existence (BMW Makes It Real With Virtual Creator Lil Miquela in Latest Campaign, 2023). AI algorithms enable advertisers to analyze extensive datasets with precision, resulting in highly tailored and contextually relevant advertisements. Moreover, AI-driven recommendation systems have revolutionized consumer decision-making processes, necessitating a deeper understanding of evolving consumer behaviors and preferences (Luo et. al, 2019).

As the advertising industry navigates the AI era, it emphasizes real-time engagement and automated ad placements (Kaplan & Haenlein, 2019). However, alongside opportunities, the integration of AI poses ethical challenges, including concerns regarding transparency, authenticity, and the cultivation of parasocial relationships between consumers and AI entities (Lou et. al, 2023).

While significant strides have been made in understanding the transformative effects of AI on advertising, numerous research gaps remain. This systematic review seeks to address these gaps by investigating the multifaceted impacts of AI on advertising practices and aims to contribute to a comprehensive understanding of the evolving dynamics of advertising in the digital age, providing insights into emerging trends, challenges, and opportunities.

The review is structured along and attempts to address the following questions:

RQ1: What are the primary themes in current research on advertising and marketing communication in the context of artificial intelligence?

RQ2: What are the primary AI marketing communication tools used by firms to engage customers?

RQ3: How much attention has artificial intelligence in advertising garnered in current literature?

RQ4: What are the under-researched areas that could highlight potential avenues for future research?

Search Strategy

To gather all pertinent data that align with predefined eligibility criteria and fulfill the research objectives, we undertook a comprehensive evaluation of the literature. This review adhered to the PRISMA methodology for systematic reviews and meta-analyses. The PRISMA technique ensures clear and transparent reporting of systematic literature reviews using an evidence-based checklist and a four-phase flow diagram. The PRISMA method reduces bias, decreases random variations, enhances the accuracy of data analysis, and improves the reliability and replicability of results.

[Figure 1 near here]

Data Collection

For the systematic review, we utilized the Scopus database owing to its extensive coverage and interdisciplinary nature. To locate pertinent articles, a diverse set of keywords associated with the core topics was employed using a specific algorithm. The search concentrated on articles featuring the terms "advertising" or "artificial intelligence" or "artificial" or "intelligence" within their titles or abstracts, alongside the inclusion of "marketing communication" or

"communication" or "artificial intelligence" or "artificial" or "intelligence" within the main text. This led to a total of 1292 publications being collected from Scopus. Prior to monitoring and screening the publications 128 duplicate research papers were removed. The screening process resulted in an additional 100 manuscripts being excluded as they were not included in the "ABS 2021 Journal List" (Wang, 2022). Only peer reviewed studies authored in English were considered in the systematic literature review. Additionally, 360 articles were excluded as they did not pertain to the designated fields, while 208 articles were deemed beyond the scope of the review. Finally, 76 articles were eliminated for focusing on marketing rather than advertising or marketing communication. This process resulted in 72 publications being selected for thorough analysis to address the study's research questions and pinpoint gaps and areas for future research.

Data synthesis and analysis

The pertinent papers were examined through both descriptive and thematic analysis. The production approach in descriptive analysis categorizes data based on year, journal of publication, country of publication, number of references, and methodology used. Descriptive analysis discusses information and analytics on the flow of articles and current research themes. The thematic analysis uses an inductive approach to examine the impact of artificial intelligence on advertising, and marketing communication. It integrates insights from previous studies, contemporary trends, and issues being investigated by journals, along with examples to elucidate definitions and offer more comprehensive explanations.

Descriptive Analysis

The 72 selected papers were assessed with respect to the year of publication, journal, field of study, country of publication, and citations.

Year, Journal, and Geographic Distribution of the Literature

All analyzed papers were released between 2004 and 2024. Sixty-six studies on the topic were published between 2020 and 2024. Between 2004 and 2018 only 2 articles were retrieved. From 2022, the interest in artificial intelligence and advertising skyrocketed as posts on the topic have reached double digits (Figure 2).

[Figure 2 near here]

Initially, the distribution of pertinent articles across multiple journals was analyzed to understand the circulation of knowledge among experts. Table 1 presents the journals according to the number of papers published, and their impact factor (data computed in January 2024). Only fourteen journals published two or more papers, suggesting significant fragmentation within the literature. The Journal of Advertising and the Journal of Retailing and Consumer Services had the highest circulation, with eleven and ten articles respectively.

Table 2 summarizes the ten most-cited publications. Of them, the discussion of the impact of artificial intelligence chatbot disclosure on customer purchases by Luo X, Tong S, Fang Z., and Qu z, emerged as the most influential, with 369 citations. Kietzmann, Paschen and Treen's study on how marketers can leverage artificial intelligence along the consumer journey followed with 152 citations.

[Tables 1, 2 near here]

The geographic origin of publications and their authors indicate the distribution of studies on AI in advertising and communication. Studies originate from twenty-three different nations (Figure 3), with the United States of America leading with (17 articles), followed by China with ten, and Australia with seven publications.

[Figure 3 near here]

Thematic Analysis

A bottom-up approach was used in the thematic analysis. The two principal thematic categories that emerged and are directing the thematic analysis are (a) AI Marketing Communication Tools and (b) AI Advertising (Figure 4).

[Table 3, Figure 4 near here]

The AI marketing communication tools encompass a range of solutions aiming to improve customer experience, lower customer acquisition expenses, and enable enterprises to automate their processes. A total of fifty-two (52) articles identified at least one of the following: chatbots, deepfake apps, virtual or AI influencers, AI agents/assistants, ChatGPT, and voice assistants. The second thematic area discusses advertising and artificial intelligence based on twenty articles. Digital advertising, AI advertising, Charity advertising, Transforming, and programmatic advertising seem to be the associated emerging trends in advertising research.

AI Marketing Communication Tools

Recent literature highlights the surge in AI marketing tools, meeting the increased demand for digital customer service amidst e-commerce growth (Cheng & Jiang, 2020a; Chen et al., 2023). Brands adopted AI agents and bots to build engagement, prompting discussions on the uncanny valley theory regarding human-like interactions (Mori et al., 2012; Lu et al., 2019). Prior studies (Albogami, 2023; Alabed et. Al, 2024; Chen et. Al, 2023; Cheng & Jiang, 2022; Hu et. Al, 2023) examine their capabilities, user interactions, impact on trust and social presence and highlight five main AI communication tools: AI influencers, AI agents, voice assistants, chatbots and ChatGPT.

AI influencers endorse products with decreased expenses increased success and minimized risks of scandals (Thomas & Fowler, 2021). The influential AI personality Lil Miquela, who boasts over 3 million Instagram followers (Baklanov, 2019), underscores the significance of the tool. Despite consumers' ambivalence, they attract brands like Nike and Prada (Balkanov, 2019), offering novel marketing avenues for niche branding and innovation (Franke et al., 2023).

AI Agents/ Assistants emulate authentic personalities to efficiently endorse products, thereby reducing costs and mitigating scandal risks (Wang, 2021; Zarouali et al., 2018). They contribute to heightened satisfaction in finance and e-commerce, where their diverse appearances impact trust (Chattaraman, 2014). Despite their ability to enhance engagement, their effectiveness is debatable (Monteiro et al., 2018). Lingering concerns pertain to their limitations and their impact on decision-making processes (Crolic et al., 2022).

Voice Assistants offer both functional and emotional advantages across professional and social spheres (Yang & Lee, 2019). Platforms such as Alexa and Siri enable e-commerce activities, notwithstanding apprehensions regarding user discomfort and privacy (Ortega & Lucia-Palacios, 2023). While perceived benefits might surpass risks for some, other users remain cautious (Wirtz, 2018).

AI Chatbots emulating human dialogues have swiftly progressed, providing diverse functionalities within e-commerce (Ciechanowski et al., 2019). They enrich marketing interactions through automated customer service infused with humor and empathy, nurturing involvement, and brand loyalty (Yang Cheng & Hua Jiang, 2022). Despite challenges, they employ strategies to maintain consumer satisfaction, albeit occasional misunderstandings may necessitate emotional recalibration (Zhang et al., 2021; Huang & Dootson, 2022).

Chat Generative Pre-Trained Transformer (Chat GPT), the most prominent AI natural language processing model, generates personalized responses to the benefit of both consumers

and businesses (Van Dis et al., 2023). It enhances consumer engagement and improves customer service through personalized recommendations and marketing messages (Atlas, 2023). Yet, apprehensions regarding privacy and the potential spread of misinformation contribute to user hesitancy (Baird & Maruping, 2021; Paul, 2023).

AI Advertising

Recent research on AI's influence in advertising has explored consumer behavior, the customization of experiences, and the attainment of desired outcomes. AI as a component of digital advertising, has supported advertising processes, streamlined manpower utilization, and facilitated programmatic advertising, thereby guiding customers towards greater acceptance of advertising via personalized brand encounters. Concurrently, it has propelled businesses towards increased conversions (Lee and Cho, 2020).

AI has advanced the way advertisers understand and consult consumers (Kietzmann et al., 2018). Advertisers leverage AI-driven search capabilities to identify, target, and deliver accurate results, while also predicting customer potential across three distinct stages: (1) the pre-purchase phase, where active evaluation occurs with AI-powered persuasive techniques and affective AI software to comprehend customer emotions and thoughts, (2) the purchase phase, and (3) the post-purchase phase, utilizing chatbots to offer assistance in post-purchase service. Creative advertising systems provide more resources, test high-quality transformational advertisements, improve their performance, and reduce human errors (Vakratsas and Wang, 2020). AI-driven advertising is characterized by increased accuracy, synchronization, and efficiency and assists media planning and purchasing, ad creation, discovery, and ad impact assessment (Qin and Jiang, 2019). In their study of AI advertising posts on Twitter, Wu et al. (2021) underline AI advertising's impact. Twitter users predominantly discussed AI-driven

advertising targeting, its integration in social media campaigns, its methodologies, and its application in business contexts.

AI-enabled programmatic advertising enhances personalized services but also raises concerns due to big data utilization (Chen et al., 2019). Increased personalization raises customer privacy concerns or feelings of vulnerability (Campbell et al., 2021).

Conclusion

AI has evolved from a speculative concept in 2004 to a pervasive force reshaping industries across the globe, becoming an integral part of various sectors, including advertising. Despite studies being identified since 2004, there has been a more pronounced focus following the coronavirus era, particularly as businesses were compelled to adopt novel customer service techniques. This trend coincided with the heightened utilization of online stores, notably from 2019 onwards. Our systematic review analysis confirms that the adoption of AI in marketing and advertising strategies has contributed to improved campaign performance and increased ROI.

Two principal thematic categories emerge from the analysis of seventy-two publications and focus on Tools and AI Advertising approaches. The five primary AI communication tools identified; AI influencers, AI agents or assistants, voice assistants, chatbots, and ChatGPT seem to have enhanced customer behavior analysis, personalized experiences and result-driven campaigns. Personalized advertising has become standard practice, and programmatic advertising automates real-time auctions, optimizing placements and pricing. AI-driven chatbots and virtual assistants provide personalized recommendations, serving as advertising channels. Visual recognition technology allows targeted placements within relevant contexts. AI is transforming the advertising industry through content generation, dynamic pricing, and sentiment analysis. However, privacy concerns persist, and ethical issues must be addressed.

Research gaps, future research, and implications.

Even though studies on the applications of AI in advertising are increasing, surveys on the implementation rates of companies would help identify their level of implementation and outcomes, shedding light on companies' readiness to update their content in alignment with new technologies. Exploring the social norms and cultural tendencies of countries regarding the adoption of new technologies, and especially AI, would be intriguing. This investigation could unveil whether specific cultures are more open and ready to embrace such advancements. Looking into customer preferences for AI advertising and identifying customer segments that embrace such communication approaches and delving into the social impact of AI advertising usage on target audiences, such as individuals with visual and auditory impairments, warrants further research.

When considering the AI communication tools employed by companies to engage customers, it is important to examine the tools yet to be adopted and pinpoint potential obstacles to implementation in specific domains. Exploring the various categories of companies utilizing AI tools and scrutinizing any disparities they demonstrate in implementation and outcomes could also provide valuable insights.

This systematic literature review has further identified references to the disadvantages and dangers of AI (Keranen and Joona, 2020; Keegan et al., 2023; Gaczek et al., 2023). Attention is drawn to the potential drawbacks stemming from the integration of artificial intelligence, which warrant further investigation, urging enterprises to mitigate risks and enhance AI utilization. However, there are no studies on the training, information and protection measures that firms should take to eliminate negative effects. Thus, future research could provide a useful guide for businesses wishing to adopt AI in marketing communication and advertising strategies.

References

- Ahn, R. J., Cho, S. Y., & Sunny Tsai, W. (2022). Demystifying computer-generated imagery (CGI) influencers: The effect of perceived anthropomorphism and social presence on brand outcomes. *Journal of interactive advertising*, 22(3), 327-335.
- Alabed, A., Javornik, A., Gregory-Smith, D., & Casey, R. (2024). More than just a chat: a taxonomy of consumers' relationships with conversational AI agents and their well-being implications. *European Journal of Marketing*, 58(2), 373-409.
- Alboqami, H. (2023). Trust me, I'm an influencer!-Causal recipes for customer trust in artificial intelligence influencers in the retail industry. *Journal of Retailing and Consumer Services*, 72, 103242.
- Arango, L., Singaraju, S. P., & Niininen, O. (2023). Consumer Responses to AI-Generated Charitable Giving Ads. *Journal of Advertising*, 1-18.
- Atlas, S. (2023). "ChatGPT for Higher Education and Professional Development: A Guide to Conversational AI." University of Rhode Island.
https://digitalcommons.uri.edu/cba_facpubs/548 (Accessed: 14 March 2024)
- Baek, T. H. (2023). Digital advertising in the age of generative AI. *Journal of Current Issues & Research in Advertising*, 44(3), 249-251.
- Baird, A., & Maruping, L. M. (2021). The next generation of research on IS use: A theoretical framework of delegation to and from agentic IS artifacts. *MIS Quarterly*, 45(1), 315–341.
- Baklanov, N. (2019). The Top Instagram Virtual Influencers in 2019. HypeAuditor Blog.
<https://hypeauditor.com/blog/the-top-instagram-virtual-influencers-in-2019/>

- Ballestar, M. T., Martín-Llaguno, M., & Sainz, J. (2022). An artificial intelligence analysis of climate-change influencers' marketing on Twitter. *Psychology & Marketing*, 39(12), 2273-2283.
- Blösser, M., & Weihrauch, A. (2024). A consumer perspective of AI certification—the current certification landscape, consumer approval and directions for future research. *European Journal of Marketing*, 58(2), 441-470.
- BMW makes it real with virtual creator Lil Miquela in latest campaign. (2023, October 13). Marketing-Interactive. <https://www.marketing-interactive.com/bmw-makes-it-real-with-virtual-creator-lil-miquela-in-latest-campaign> (Accessed: 14 March 2024)
- Campbell, C., Plangger, K., Sands, S., & Kietzmann, J. (2022). Preparing for an era of deepfakes and AI-generated ads: A framework for understanding responses to manipulated advertising. *Journal of Advertising*, 51(1), 22-38.
- Campbell, C., Plangger, K., Sands, S., Kietzmann, J., & Bates, K. (2022). How deepfakes and artificial intelligence could reshape the advertising industry: The coming reality of AI fakes and their potential impact on consumer behavior. *Journal of Advertising Research*, 62(3), 241-251.
- Campbell, C., Sands, S., Montecchi, M., & Jensen Schau, H. (2022). That's so instagrammable! Understanding how environments generate indirect advertising by cueing consumer-generated content. *Journal of Advertising*, 51(4), 411-429.
- Carlson, K., Kopalle, P. K., Riddell, A., Rockmore, D., & Vana, P. (2023). Complementing human effort in online reviews: A deep learning approach to automatic content generation and review synthesis. *International Journal of Research in Marketing*, 40(1), 54-74.

- Caruelle, D., Shams, P., Gustafsson, A., & Lervik-Olsen, L. (2022). Affective computing in marketing: practical implications and research opportunities afforded by emotionally intelligent machines. *Marketing Letters*, 33(1), 163-169.
- Chan, K. W., Septianto, F., Kwon, J., & Kamal, R. S. (2023). Color effects on AI influencers' product recommendations. *European Journal of Marketing*, 57(9), 2290-2315.
- Chattaraman, V., Kwon, W., Gilbert, E.J. and Li, Y. (2014), "Virtual shopping agents: persona effects for older users", *Journal of Research in Interactive Marketing*, Vol. 8 No. 2
- Chen, G., Xie, P., Dong, J., & Wang, T. (2019). Understanding programmatic creative: The role of AI. *Journal of Advertising*, 48(4), 347-355.
- Chen, S., Li, X., Liu, K., & Wang, X. (2023). Chatbot or human? The impact of online customer service on consumers' purchase intentions. *Psychology & Marketing*, 40(11), 2186-2200.
- Chen, X., Wei, S., Davison, R. M., & Rice, R. E. (2020). How do enterprise social media affordances affect social network ties and job performance?. *Information Technology & People*, 33(1), 361-388.
- Cheng, Y. and Jiang, H. (2020a), "AI-powered mental health chatbots: examining users' motivations, active communicative action, and engagement after mass-shooting disasters", *Journal of Contingencies and Crisis Management*, Vol. 28, pp. 339-354,
- Cheng, Y. and Jiang, H. (2020b), "How do AI-driven chatbots impact user experience? Examining gratifications, perceived privacy risk, satisfaction, loyalty, and continued use", *Journal of Broadcasting and Electronic Media*, Vol. 65 No. 4, pp. 592-614

- Cheng, Y., & Jiang, H. (2022). Customer–brand relationship in the era of artificial intelligence: understanding the role of chatbot marketing efforts. *Journal of Product & Brand Management*, 31(2), 252-264.
- Ciechanowski, L., Przegalinska, A., Magnuski, M. and Gloor, P. (2019), “In the shades of the uncanny valley: an experimental study of human–chatbot interaction”, *Future Generation Computer Systems*, Vol. 92, pp. 539-548.
- Coffin, J. (2022). Asking Questions of AI Advertising: A Maieutic Approach. *Journal of Advertising*, 51(5), 608-623.
- Crolic, C., Thomaz, F., Hadi, R. and Stephen, A.T. (2022), “Blame the bot: anthropomorphism and anger in customer-chatbot interactions”, *Journal of Marketing*, Vol. 86 No. 1, pp. 132-148
- Cui, G., & Wong, M. L. (2004). Implementing neural networks for decision support in direct marketing. *International Journal of Market Research*, 46(2), 235-254.
- Cui, Y. (2022). Sophia Sophia tell me more, which is the most risk-free plan of all? AI anthropomorphism and risk aversion in financial decision-making. *International Journal of Bank Marketing*, 40(6), 1133-1158.
- Dellaert, B. G., Shu, S. B., Arentze, T. A., Baker, T., Diehl, K., Donkers, B. & Steffel, M. (2020). Consumer decisions with artificially intelligent voice assistants. *Marketing Letters*, 31, 335-347.
- Deng, S., Tan, C. W., Wang, W., & Pan, Y. (2019). Smart generation system of personalized advertising copy and its application to advertising practice and research. *Journal of Advertising*, 48(4), 356-365.

- Diwanji, V. S., Lee, J., & Cortese, J. (2022). Deconstructing the role of artificial intelligence in programmatic advertising: at the intersection of automation and transparency. *Journal of Strategic Marketing*, 1-18.
- Dong, B., Zhuang, M., Fang, E., & Huang, M. (2024). Tales of two channels: digital advertising performance between AI recommendation and user subscription channels. *Journal of Marketing*, 88(2), 141-162.
- Feng, C. M., Park, A., Pitt, L., Kietzmann, J., & Northey, G. (2021). Artificial intelligence in marketing: A bibliographic perspective. *Australasian Marketing Journal*, 29(3), 252-263.
- Franke, C., Groeppel-Klein, A., & Müller, K. (2023). Consumers' responses to virtual influencers as advertising endorsers: novel and effective or uncanny and deceiving?. *Journal of Advertising*, 52(4), 523-539.
- Garvey, A. M., Kim, T., & Duhachek, A. (2023). Bad news? Send an AI. Good news? Send a human. *Journal of Marketing*, 87(1), 10-25.
- Hernández Ortega, B. I., & Lucia-Palacios, L. (2023). Trust in word of voice communication: why consumers adhere to purchase recommendations made by smart voice assistants. *Marketing Intelligence & Planning*, 41(8), 1093-1120.
- Hu, P., Gong, Y., Lu, Y., & Ding, A. W. (2023). Speaking vs. listening? Balance conversation attributes of voice assistants for better voice marketing. *International Journal of Research in Marketing*, 40(1), 109-127.
- Huang, Y. S. S., & Dootson, P. (2022). Chatbots and service failure: When does it lead to customer aggression. *Journal of Retailing and Consumer Services*, 68, 103044.

- Kamoonpuri, S. Z., & Sengar, A. (2023). Hi, May AI help you? An analysis of the barriers impeding the implementation and use of artificial intelligence-enabled virtual assistants in retail. *Journal of Retailing and Consumer Services*, 72, 103258.
- Kaplan, A., & Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business horizons*, 62(1), 15-25.
- Karimova, G. Z., & Goby, V. P. (2021). The adaptation of anthropomorphism and archetypes for marketing artificial intelligence. *Journal of Consumer Marketing*, 38(2), 229-238.
- Kerr, G., Valos, M., Luxton, S., & Allen, R. (2023). Understanding the link between an IMC technology capability and organisational integration and performance. *European Journal of Marketing*.
- Kietzmann, J., & Pitt, L. F. (2020). Computerized content analysis of online data—opportunities for marketing scholars and practitioners. *European Journal of Marketing*, 54(3), 473-477.
- Kietzmann, J., Mills, A. J., & Plangger, K. (2021). Deepfakes: perspectives on the future “reality” of advertising and branding. *International Journal of Advertising*, 40(3), 473-485.
- Kietzmann, J., Paschen, J., & Treen, E. (2018). Artificial intelligence in advertising: How marketers can leverage artificial intelligence along the consumer journey. *Journal of Advertising Research*, 58(3), 263-267.
- Kim, H., & Park, M. (2024). When digital celebrity talks to you: How human-like virtual influencers satisfy consumer's experience through social presence on social media endorsements. *Journal of Retailing and Consumer Services*, 76, 103581.

- Kim, J., Kang, S., & Bae, J. (2022). The effects of customer consumption goals on artificial intelligence driven recommendation agents: evidence from Stitch Fix. *International Journal of Advertising*, 41(6), 997-1016.
- Laszkiewicz, A., & Kalinska-Kula, M. (2023). Virtual influencers as an emerging marketing theory: A systematic literature review. *International Journal of Consumer Studies*, 47(6), 2479-2494.
- Le, H. T. P. M., Park, J., & Lee, S. (2023). Emotion and trust in virtual service assistant design for effective service recovery. *Journal of Retailing and Consumer Services*, 74, 103368.
- Lee, H., & Cho, C. H. (2020). Digital advertising: present and future prospects. *International Journal of Advertising*, 39(3), 332-341.
- Lee, K. W., & Li, C. Y. (2023). It is not merely a chat: Transforming chatbot affordances into dual identification and loyalty. *Journal of Retailing and Consumer Services*, 74, 103447.
- Li, M., & Wang, R. (2023). Chatbots in e-commerce: The effect of chatbot language style on customers' continuance usage intention and attitude toward brand. *Journal of Retailing and Consumer Services*, 71, 103209.
- Lou, C., Kang, H., & Tse, C. H. (2022). Bots vs. humans: how schema congruity, contingency-based interactivity, and sympathy influence consumer perceptions and patronage intentions. *International Journal of Advertising*, 41(4), 655-684.
- Lou, C., Kiew, S. T. J., Chen, T., Lee, T. Y. M., Ong, J. E. C., & Phua, Z. (2023). Authentically fake? How consumers respond to the influence of virtual influencers. *Journal of Advertising*, 52(4), 540-557.

- Lu, L., Cai, R., & Gursoy, D. (2019). Developing and validating a service robot integration willingness scale. *International Journal of Hospitality Management*, 80, 36-51.
- Luo, X., Tong, S., Fang, Z., & Qu, Z. (2019). Frontiers: Machines vs. humans: The impact of artificial intelligence chatbot disclosure on customer purchases. *Marketing Science*, 38(6), 937-947.
- Lv, L., & Huang, M. (2024). Can personalized recommendations in charity advertising boost donation? The role of perceived autonomy. *Journal of Advertising*, 53(1), 36-53.
- Miao, F., Kozlenkova, I. V., Wang, H., Xie, T., & Palmatier, R. W. (2022). An emerging theory of avatar marketing. *Journal of Marketing*, 86(1), 67-90.
- Monteiro, D., Liang, H.N., Wang, J., Wang, L., Wang, X. and Yue, Y. (2018), "Evaluating the effects of a cartoon-like character with emotions on users' behaviour within virtual reality environments", 2018 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR), IEEE Computer Society, Taichung. pp. 229-236.
- Mori, M., MacDorman, K. F., & Kageki, N. (2012). The uncanny valley [from the field]. *IEEE Robotics & Automation Magazine*, 19(2), 98–100
- Mostafa, R. B., & Kasamani, T. (2022). Antecedents and consequences of chatbot initial trust. *European journal of marketing*, 56(6), 1748-1771.
- Nasr, R. S., & El-Deeb, S. (2023). How customers perceive voice shopping and its potential uses. *International Journal of Technology Marketing*, 17(3), 256-275.
- Noor, N., Rao Hill, S., & Troshani, I. (2022). Recasting service quality for AI-based service. *Australasian Marketing Journal*, 30(4), 297-312.

- Paas, L. J. (2023). Marketing analytics stages: Demystifying and deploying machine learning. *International Journal of Market Research*, 65(6), 687-707.
- Padigar, M., Pupovac, L., Sinha, A., & Srivastava, R. (2022). The effect of marketing department power on investor responses to announcements of AI-embedded new product innovations. *Journal of the Academy of Marketing Science*, 50(6), 1277-1298.
- Paul, J., Ueno, A., & Dennis, C. (2023). ChatGPT and consumers: Benefits, pitfalls and future research agenda. *International Journal of Consumer Studies*, 47(4), 1213-1225.
- Pentina, I., Xie, T., Hancock, T., & Bailey, A. (2023). Consumer–machine relationships in the age of artificial intelligence: Systematic literature review and research directions. *Psychology & Marketing*, 40(8), 1593-1614.
- Pitt, C., Paschen, J., Kietzmann, J., Pitt, L. F., & Pala, E. (2023). Artificial intelligence, marketing, and the history of technology: Kranzberg's laws as a conceptual lens. *Australasian Marketing Journal*, 31(1), 81-89.
- Pizzi, G., Vannucci, V., Mazzoli, V., & Donvito, R. (2023). I, chatbot! the impact of anthropomorphism and gaze direction on willingness to disclose personal information and behavioral intentions. *Psychology & Marketing*, 40(7), 1372-1387.
- Qin, X., & Jiang, Z. (2019). The impact of AI on the advertising process: The Chinese experience. *Journal of Advertising*, 48(4), 338-346.
- Rajaobelina, L., Prom Tep, S., Arcand, M., & Ricard, L. (2021). Creepiness: Its antecedents and impact on loyalty when interacting with a chatbot. *Psychology & Marketing*, 38(12), 2339-2356.

- Salminen, J., Mustak, M., Corporan, J., Jung, S. G., & Jansen, B. J. (2022). Detecting pain points from user-generated social media posts using machine learning. *Journal of Interactive Marketing*, 57(3), 517-539.
- Sands, S., Campbell, C. L., Plangger, K., & Ferraro, C. (2022). Unreal influence: leveraging AI in influencer marketing. *European Journal of Marketing*, 56(6), 1721-1747.
- Shumanov, M., Cooper, H., & Ewing, M. (2022). Using AI predicted personality to enhance advertising effectiveness. *European journal of marketing*, 56(6), 1590-1609.
- Silva, E. S., & Bonetti, F. (2021). Digital humans in fashion: Will consumers interact?. *Journal of Retailing and Consumer Services*, 60, 102430.
- Song, M., Zhang, H., Xing, X., & Duan, Y. (2023). Appreciation vs. apology: Research on the influence mechanism of chatbot service recovery based on politeness theory. *Journal of Retailing and Consumer Services*, 73, 103323.
- Taylor, C. R., & Carlson, L. (2021). The future of advertising research: New directions and research needs. *Journal of Marketing Theory and Practice*, 29(1), 51-62.
- Thomas, V.L. and Fowler, K. (2021), "Close encounters of the AI kind: use of AI influencers as brand endorsers", *Journal of Advertising*, Vol. 50 No. 1, pp. 11-25.
- Uysal, E., Alavi, S., & Bezençon, V. (2022). Trojan horse or useful helper? A relationship perspective on artificial intelligence assistants with humanlike features. *Journal of the Academy of Marketing Science*, 50(6), 1153-1175.
- Vakratsas, D., & Wang, X. (2020). Artificial intelligence in advertising creativity. *Journal of Advertising*, 50(1), 39-51.

- Van Dis, E. A. M., Bollen, J., Zuidema, W., van Rooij, R., & , C. (2023). ChatGPT: Five priorities for research. *Nature*, 614, 224–226.
- Wang, W. (2022, July 27). *ABS SCOB-Journal-List-2021-2022*. studylib.net. <https://studylib.net/doc/25893448/abs-scob-journal-list-2021-2022> (Accessed: 14 December 2023)
- Wang, C.L. (2021), “New frontiers and future directions in interactive marketing: inaugural editorial”, *Journal of Research in Interactive Marketing*, Vol. 15 No. 1, pp. 1-9
- Whittaker, L., Letheren, K., & Mulcahy, R. (2021). The Rise of Deepfakes: A Conceptual Framework and Research Agenda for Marketing. *Australasian Marketing Journal*, 29 (3), 204–214.
- Wirth, N. (2018), “Hello marketing, what can artificial intelligence help you with?”, *International Journal of Market Research*, Vol. 60 No. 5.
- Wu, L., & Wen, T. J. (2021). Understanding AI advertising from the consumer perspective: What factors determine consumer appreciation of AI-created advertisements?. *Journal of Advertising Research*, 61(2), 133-146.
- Wu, L., Dodoo, N. A., Wen, T. J., & Ke, L. (2022). Understanding Twitter conversations about artificial intelligence in advertising based on natural language processing. *International Journal of Advertising*, 41(4), 685-702.
- Yang, H. and Lee, H. (2019), “Understanding user behavior of virtual personal assistant devices”, *Information Systems and e-Business Management*, Vol. 17, pp. 65-87.

- Yao, Q., Kuai, L., & Jiang, L. (2023). Effects of the anthropomorphic image of intelligent customer service avatars on consumers' willingness to interact after service failures. *Journal of Research in Interactive Marketing*, (ahead-of-print).
- Yu, J., Dickinger, A., So, K. K. F., & Egger, R. (2024). Artificial intelligence-generated virtual influencer: Examining the effects of emotional display on user engagement. *Journal of Retailing and Consumer Services*, 76, 103560.
- Yuan, C., Zhang, C., & Wang, S. (2022). Social anxiety as a moderator in consumer willingness to accept AI assistants based on utilitarian and hedonic values. *Journal of Retailing and Consumer Services*, 65, 102878.
- Zarouali, B., Van den Broeck, E., Walrave, M., & Poels, K. (2018). Predicting consumer responses to a chatbot on Facebook. *Cyberpsychology, Behavior, and Social Networking*, 21(8), 491-497.
- Zhang, M. and Dholakia, N. (2018), "Conceptual framing of virtuality and virtual consumption research", *Journal of Global Scholars of Marketing Science*, Vol. 28 No. 4, pp. 305-319.
- Zhang, W., & Rodgers, S. (2023). Linking Ethnicity Targeting with Artificial Intelligence and Data Collection: Perceptions and Behavioral Responses of Black Consumers. *Journal of Current Issues & Research in Advertising*, 44(3), 373-391.
- Zhang, Y., Yuan, Y., Su, J., & Xiao, Y. (2021). The effect of employees' politeness strategy and customer membership on customers' perception of co-recovery and online post-recovery satisfaction. *Journal of Retailing and Consumer Services*, 63, 102740.
- Zierau, N., Hildebrand, C., Bergner, A., Busquet, F., Schmitt, A., & Marco Leimeister, J. (2023). Voice bots on the frontline: Voice-based interfaces enhance flow-like consumer experiences & boost service outcomes. *Journal of the Academy of Marketing Science*, 51(4), 823-842.

Tables and Figures

Table 1. Journals- Impact factor

Journal Title	No Articles	Impact Factor
Journal of Advertising	11	5.7
Journal of Retailing & Consumer Services	10	10.4
European Journal of Marketing	8	5.181
International Journal of Advertising	5	6.7
Psychology and Marketing	5	6.7
Australasian Marketing Journal	4	6.0
Journal of Advertising Research	3	2.5
Journal of Marketing	3	12.09
Journal of the Academy of Marketing Science	3	18.2
International Journal of Consumer Studies	2	9.9
International Journal of Market Research	2	3.0
Others	17	-

Table 2. Classification of the ten most-cited articles.

Article	Authors	Year	No of citations	References
Frontiers: Machines vs. humans: The impact of artificial intelligence chatbot disclosure on customer purchases	Luo X.; Tong S.; Fang Z.; Qu Z.	2019	369	Luo X. et al. 2019

Artificial intelligence in advertising: How marketers can leverage artificial intelligence along the consumer journey	Kietzmann, J., Paschen, J., & Treen, E.	2018	152	Kietzmann, J., Paschen, J., & Treen, E. (2018).
An Emerging Theory of Avatar Marketing	Miao F.; Kozlenkova I.V.; Wang H.; Xie T.; Palmatier R.W.	2022	92	Miao, F., Kozlenkova, I. V., Wang, H., Xie, T., & Palmatier, R. W. (2022).
Digital advertising: present and future prospects	Lee H.; Cho C.-H.	2020	67	Lee, H., & Cho, C. H. (2020).
The Impact of AI on the Advertising Process: The Chinese Experience	Qin X.; Jiang Z.	2019	59	Qin, X., & Jiang, Z. (2019).
Creepiness: Its antecedents and impact on loyalty when interacting with a chatbot	Rajaobelina L.; Prom Tep S.; Arcand M.; Ricard L.	2021	53	Rajaobelina, L., Prom Tep, S., Arcand, M., & Ricard, L. (2021).
Customer–brand relationship in the era of artificial intelligence: understanding the role of chatbot marketing efforts	Cheng Y.; Jiang H.	2022	49	Cheng, Y., & Jiang, H. (2022)
Understanding Programmatic Creative: The Role of AI	Chen G.; Xie P.; Dong J.; Wang T.	2019	47	Chen, G., Xie, P., Dong, J., &

				Wang, T. (2019).
Digital humans in fashion: Will consumers interact?	Silva E.S.; Bonetti F.	2021	44	Silva, E. S., & Bonetti, F. (2021).
Social anxiety as a moderator in consumer willingness to accept AI assistants based on utilitarian and hedonic values	Yuan C.; Zhang C.; Wang S.	2022	42	Yuan, C., Zhang, C., & Wang, S. (2022).

Table 3. Main categories of research

Main Topic	Sample References
AI Marketing Communication Tools	(Santiago, 2023; Huang & Roland,2020; Van & Stewart,2021; Pitt et al. 2023; Feng et al. 2021; Mogaji et al. 2021; Prior & Keränen 2020; Chan et al. 2023; Kerr et al. 2023; Shumanov et al. 2022; Alabed et al. 2023; Mikalef et al. 2021; Keegan et al. 2022; Martinez-Lopez F.J & Casillas J. 2013; Kim J et al. 2022; Malthouse & Copulsky, 2023; Wu L. et al. 2022; Lou C. et al. 2022; Lou C. et al. 2022; Mogaji E. & Nguyen N.P.,2022; Paul J, 2023; Paas L.J., 2023; Chintalapati S. et al., 2022; Carlson K. et al. 2023; Chen G. et al. 2019; Yang C. & Hu J., 2022; Baek T.H.,2023; Tobaccowala R;Jones V.K.,2018; Hoyer W.D. et al. 2020; De Bruyn A. et al., 2020; Taylor C.R. & Carlson L., 2021; Kirkby A., 2023; Li G. et al. 2023; Gao L. et al., 2023; Peltier J.W. et al., 2023; Huang M.H. & Rust R.T., 2022; Kim H. & Park M., 2024; Lee K.W & Li C.Y.,2023; Alboqami H., 2023; Lee et al, 2023; Kamoopuri S.Z & Sengar A., 2023; Li S. et al., 2023; Hult

G.T.M. et al., 2020; Klaus P. & Zaichkowsky J., 2020; Tong S., 2020; Balducci B. & Marinova D., 2018; Zierau N. et al., 2023; Marmol M.,2021; Hernandez Ortega B.I. & Lucia-Palacios L.,2023; Luo X. et al., 2019; Oc Y. et al., 2023; Pizzi G. et al., 2023; Minton E.A. et al., 2022; Rajaobelina L. et al., 2021)

AI Advertising

(Van Esch P. et al., 2021; Bag S. et al., 2021; Kietzmann J. et al., 2021; Kopalle P.K. et al., 2022; Ma L. & Sun B., 2020; Rust R.T, 2020; Nasr R.S. & El-Deeb S., 2023; Arango L. et al., 2023; Campbell C. et al., 2022; Coffin J., 2022; Deng S. et al., 2019; Esch P.V. et al., 2021; Lou C. et al., 2023; Lv L. & Huang M., 2022; Qin X. & Jiang Z., 2019; Wirtz J. & Kowalkowski C., 2023; Paschen J. et al., 2019; Salminen J. et al., 2022; Puntoni S. et al., 2021; Yu J. et al., 2024)

Figure 1. Flow diagram for the selection of literature reviewed based on PRISMA.

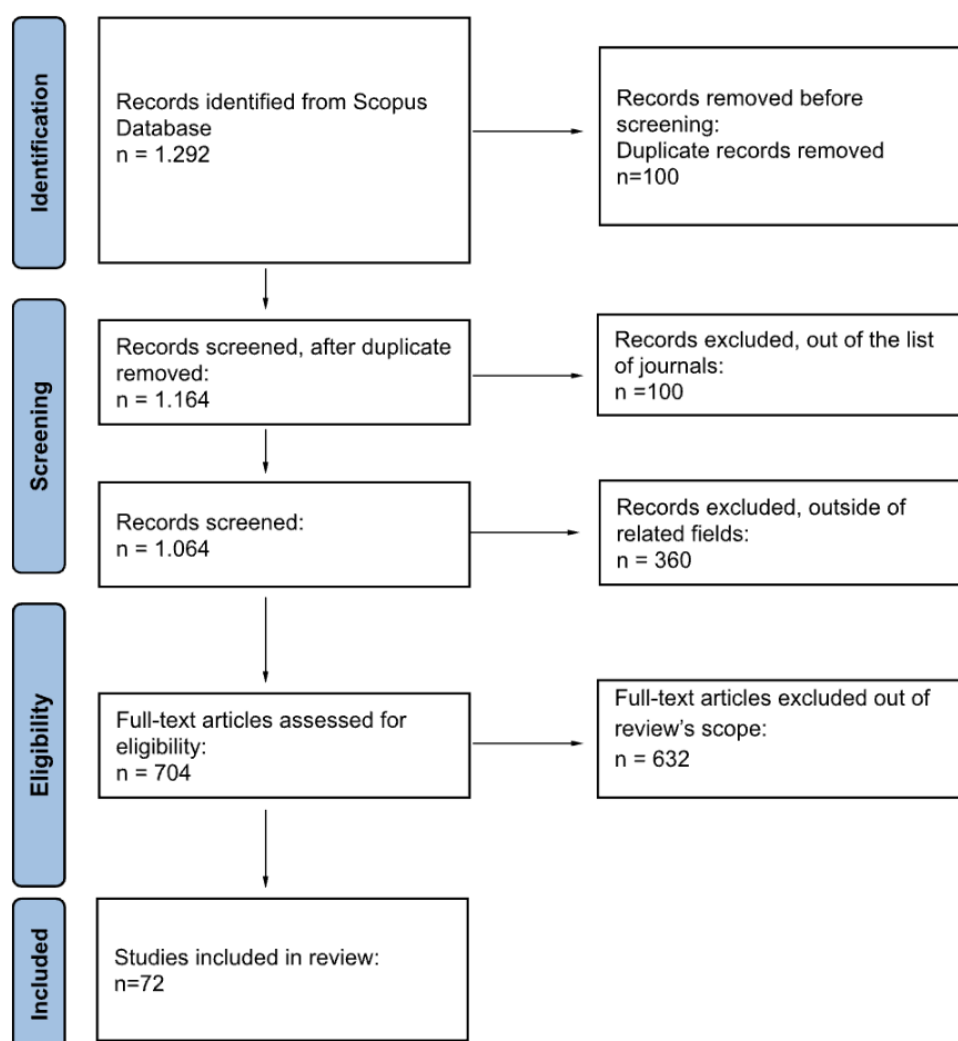


Figure 2. Publication volume in the literature up to 2024.

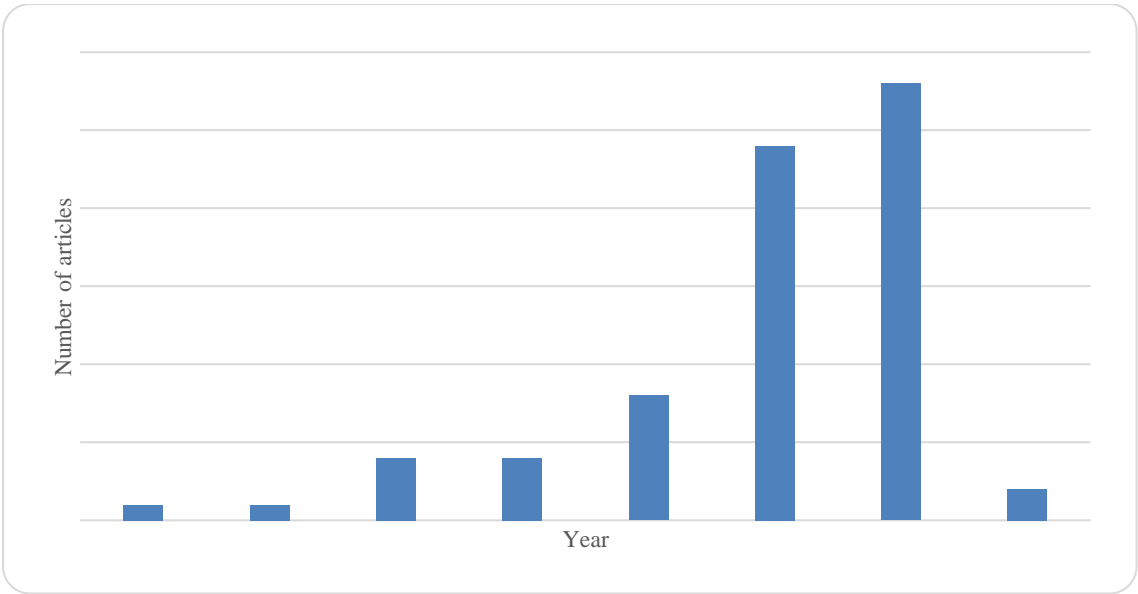


Figure 3. Geographic Distribution of research.

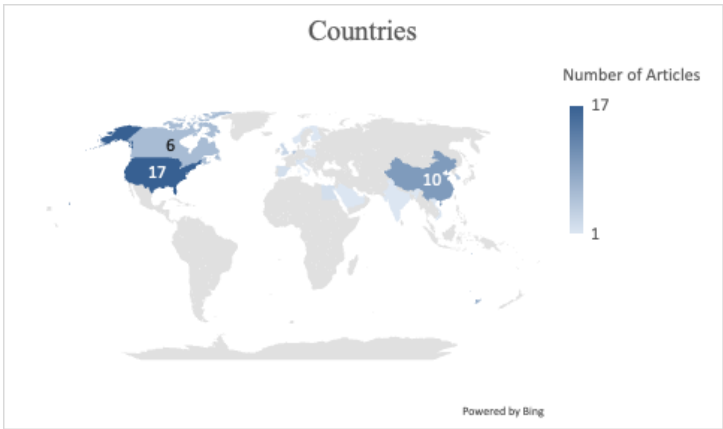


Figure 4. Relevant articles included in the review, classified per topic.

