

Anthropomorphism in Marketing

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Abstract— This study examines the concept of anthropomorphism from a bibliometric perspective, as it has become increasingly important in the field of marketing alongside advances in digital technologies. Virtual influencers, robots, mascots, and chatbots have started to display more human-like characteristics, leading to important changes in consumer-brand relationships. Anthropomorphism stands out as an important factor that shapes and transforms consumer responses through the attribution of human-like emotions and characteristics to non-human entities. The study presents the current state of academic research on anthropomorphism within the marketing literature. In this context, publications indexed in the Scopus database were analyzed through bibliometric analysis to identify publication trends, citation structures, country distributions, and thematic clusters within the field. The findings show that studies focusing on anthropomorphism have increased rapidly, particularly after 2019, together with the growing role of artificial intelligence in marketing. The results also indicate that anthropomorphism has become a multidimensional area of research within the marketing discipline. Chatbot interactions, brand personality, virtual influencers, and service robots are among the most prominent themes in the literature, while strong relationships are also observed with variables such as social presence, consumer engagement, and parasocial interaction. At the same time, issues such as perceptions and biases toward artificial intelligence, consumer vulnerability, ethical risks, and cross-cultural differences appear to receive relatively limited attention in the literature. This study aims to systematically map research on anthropomorphism within the marketing discipline, identify current research gaps, and provide guidance for future studies. In today's rapidly evolving digital environment, understanding the effects of human-like entities on individuals is important from both academic and managerial perspectives.

Keywords— *Anthropomorphism, Marketing, Bibliometric Analysis.*

1. INTRODUCTION

Digital technologies have significantly transformed the field of marketing. As AI-powered technologies become more widespread, human-like digital entities such as virtual assistants, influencers, avatars, chatbots, and service robots are playing an increasingly central role in contemporary marketing strategies [1,2]. Anthropomorphism, defined as the attribution

of human-like characteristics to non-human entities, has emerged as a significant factor shaping consumer experiences, particularly within digital marketing environments [2]. The incorporation of human-like facial expressions, conversational abilities, empathy, and social interaction capabilities into AI-powered service agents encourages consumers to perceive these systems as more social, lifelike, and trustworthy [1,3].

Within the marketing literature, anthropomorphism is widely associated with stronger consumer-brand relationships. Previous studies suggest that digital entities with anthropomorphic characteristics can enhance customer engagement, trust, purchasing decisions, and brand loyalty [1]. Similarly, virtual influencers, brand mascots, and avatars are argued to increase consumer interaction, reinforce brand awareness, and generate stronger social influence on consumers [4,5]. The rapid expansion of generative AI technologies has further intensified scholarly and managerial interest in the role of anthropomorphic elements in marketing communication and consumer behavior [2].

Despite these positive outcomes, the literature also highlights several critical concerns regarding anthropomorphism. Excessive attribution of human-like qualities to digital entities may contribute to feelings of alienation, discomfort, identity related concerns, ultimately reducing consumer well-being [6,7].

The anthropomorphism literature has expanded rapidly in recent years, although the field remains fragmented across different research contexts. Existing studies have examined anthropomorphism across various contexts, including chatbots, virtual assistants, service robots, virtual influencers, avatars, and metaverse applications. However, the literature still exhibits substantial differences in theoretical perspectives, methodologies, variables, and research settings [2]. The literature further demonstrates that anthropomorphism may generate both positive and negative outcomes depending on the context and the characteristics of the technology involved [2]. In addition, prior research suggests that the concepts of anthropomorphism and animism are frequently conflated, creating conceptual ambiguities within the field [8]. This fragmented structure complicates the systematic evaluation of the literature and highlights the need to identify current research trends, thematic developments, and existing research gaps.

Accordingly, this study investigates the anthropomorphism literature from a marketing perspective using bibliometric analysis methods. To achieve this objective, academic studies indexed in the Scopus database are analyzed to map the

development of the field, publication trends, prominent themes, citation structures, and potential research gaps. In doing so, the study provides the current state of the anthropomorphism literature while identifying potential directions for future research.

II. MARKETING AND ANTHROPOMORPHISM

Brands increasingly use human-like traits in their products and digital touchpoints to build stronger relationships with consumers and increase engagement. Anthropomorphism refers to attributing human-like characteristics, behaviors, and emotions to non-human entities and is widely discussed in marketing through elements such as brand mascots, chatbots, service robots, virtual assistants, avatars, and virtual influencers [3]. As digital technologies continue to evolve, the use of anthropomorphic service agents has expanded rapidly, with these systems being designed to deliver more personalized consumer experiences [2].

Within the marketing literature, anthropomorphism is widely regarded as a strategic mechanism for enhancing consumer experience. Digital agents equipped with human-like characteristics are argued to create a stronger sense of social presence and foster more natural and emotionally close relationships between consumers and brands. Research focusing on chatbots further suggests that AI-powered systems designed with anthropomorphic traits can increase customer engagement and influence consumer decision-making processes. Similarly, anthropomorphic elements in AI-powered marketing communication have been associated with higher perceptions of social presence and trust, which may positively influence purchase intention [3].

Anthropomorphic tools extend beyond service agents to include brand mascots and animal figures. Brown's study demonstrates that brand icons such as Coca-Cola's polar bears, Lacoste's crocodile, and Andrex's dog are extensively employed to establish emotional connections with consumers. Historical patterns of both admiration and fear toward animals have contributed to animal figures becoming powerful symbolic elements in marketing communication. Brand icons are also argued to enhance memorability and promote warmer brand perceptions among consumers [10].

In recent years, studies on anthropomorphism have increasingly focused on virtual influencers and metaverse applications. Research on virtual influencers suggests that digital characters with highly anthropomorphic features can enhance consumer engagement and interaction.

On social media platforms, virtual influencers are becoming important communication tools through which brands can shape consumer perceptions and social influence. Similarly, anthropomorphic avatars in metaverse environments appear to strengthen perceptions of social presence, trust, and experiential realism. Human-like avatars also help create closer connections between brands and consumers while supporting the adoption of digital marketing technologies [3,5,12].

However, the effects of anthropomorphism in marketing are

not always positive. Excessively human-like technologies may trigger the uncanny valley effect, generating feelings of discomfort and unease among consumers [3]. Research on digital assistants further suggests that while human-like digital agents can foster emotional closeness, they may also contribute to alienation, disconnection from the real world, and the weakening of interpersonal relationships. In some cases, virtual assistants that communicate with human-like voices have been associated with psychological distress and feelings of dependency among consumers [6,7].

Similarly, research on the social aspects of AI-mediated marketing interactions suggests that anthropomorphism can enhance perceptions of empathy, personalization, and authenticity. Nevertheless, when implemented inappropriately, anthropomorphic strategies may also create feelings of alienation and emotional detachment among consumers. Within this context, concepts such as belonging, identity, and social connection have become increasingly important in understanding the relationships consumers establish with AI systems [7,8].

Critical perspectives in the literature argue that anthropomorphic marketing strategies should not be interpreted merely as entertaining or innocuous representations. Instead, they may reproduce cultural patterns and ideological structures related to gender, nature, consumption, and exploitation.

In particular, the use of animal figures in marketing communication may obscure the reality of animals as living beings by transforming them into symbolic images circulating within consumer culture.

In doing so, such representations can contribute to the normalization and reproduction of ideological narratives surrounding consumption, exploitation, and human dominance over nature [9].

Conceptual debates surrounding anthropomorphism also continue within the literature. Anthropomorphism and animism are frequently conflated despite referring to distinct psychological processes. Whereas animism involves perceiving an object as alive, anthropomorphism refers to perceiving or evaluating an object as human-like. Scholars argue that the simultaneous use of these concepts in experimental manipulations may produce conceptual ambiguities in marketing research [8]. Moreover, existing findings regarding the effects of anthropomorphism on consumer experience remain inconsistent, as factors such as consumer characteristics, cultural differences, service contexts, and technology design appear to shape these outcomes [1].

Overall, anthropomorphism in marketing is viewed not only as a way of humanizing brands, but also as a broader framework for understanding consumer experience, social presence, trust, customer engagement, brand relationships, and digital interactions. The rapid expansion of artificial intelligence, metaverse technologies, and digital marketing environments further shows the growing relevance of anthropomorphism in contemporary marketing research.

III. METHODOLOGY

Bibliometric analysis is a computer-assisted method used to quantitatively examine publications, citations, authors, institutions, and research trends within a specific scientific field. It enables the systematic evaluation of influential studies, prominent authors, productive institutions, countries, and emerging research themes. Bibliometric studies are generally conducted using bibliographic data obtained from databases such as Scopus and Web of Science, while visualization tools such as VOSviewer and CiteSpace are commonly used to present scientific networks and relationships. Especially in broad and rapidly growing research areas, bibliometric analysis is considered an important approach for identifying the development of the literature, major research trends, and potential research gaps [11].

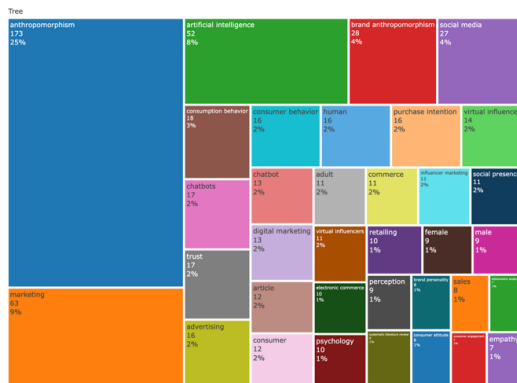
This study aims to systematically examine the anthropomorphism literature within the marketing discipline to identify major trends and research gaps in the field. To achieve this objective, bibliometric analysis was adopted as the primary descriptive research method. Through this approach, the study identifies the main themes addressed in the literature from the emergence of the field to the present and highlights existing gaps within the literature. For this purpose, a search was conducted in the Scopus database using the English keywords anthropomorphism and marketing.

The initial search produced 370 academic studies, and after excluding 12 studies that were considered outside the scope of the research, the final analysis was conducted on 358 studies.

One limitation of this study is that the data were obtained solely from the Scopus database. The bibliographic data retrieved from Scopus were analyzed and visualized using the R programming language and the Biblioshiny package. In this context, the study presents analyses of prominent research themes, publication distributions by year, influential authors, keyword structures, and topics with future research potential.

IV. FINDINGS AND ANALYSIS

This section presents the analysis and visualization of the data obtained from the Scopus database.



Şekil 1. Treemap Analysis

According to the treemap analysis, the high frequency of the terms Marketing (9%, n = 63) and artificial intelligence (8%, n = 52) demonstrates that anthropomorphism research is primarily concentrated within the domains of marketing and artificial intelligence. The prominence of concepts such as brand anthropomorphism, social media, chatbots, virtual influencers, digital marketing, and e-commerce further suggests that the literature is largely centered on digital marketing environments and human-like digital agents.

The frequent appearance of consumer-oriented concepts including trust, social presence, purchase intention, consumer behavior, consumer engagement, and consumer attitude demonstrates that the anthropomorphism literature has mainly evolved around consumer perceptions, consumer-brand relationships, and behavioral outcomes.

In addition, the strong visibility of concepts such as virtual influencers, social media, and influencer marketing highlights the growing importance of AI-powered digital characters and virtual influencers within contemporary marketing research.

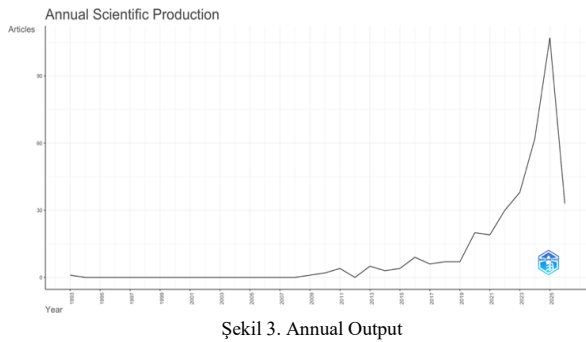
Overall, the findings suggest that anthropomorphism literature has developed into an interdisciplinary research field positioned at the intersection of artificial intelligence, digital marketing, and consumer behavior.



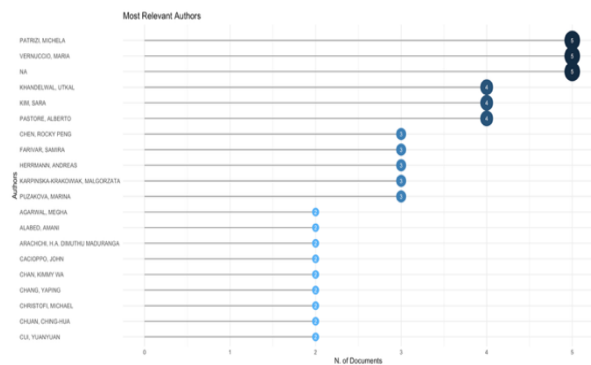
Şekil 2. Descriptive Statistics

According to the bibliometric analysis findings, the anthropomorphism literature demonstrated substantial growth between 1993 and 2026, with 358 academic studies published across 180 different sources. The annual growth rate of 11.18% suggests that anthropomorphism has evolved into a rapidly expanding and increasingly prominent research field, particularly in recent years.

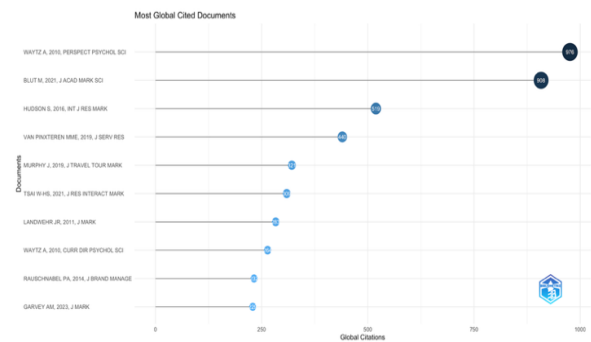
The analysis shows that the studies involved contributions from 1,000 authors, while the international co-authorship rate of 26.54% reflects the global and collaborative nature of anthropomorphism research. In addition, the use of 40,801 references and an average of 36.33 citations per source point to a strong theoretical grounding and considerable academic influence within the literature. The relatively low average source age of 3.4 years also demonstrates that anthropomorphism research remains a highly current and dynamic area of scholarly inquiry.



The annual scientific output graph shows that the anthropomorphism literature has grown significantly, particularly after 2020. While there were only a limited number of studies in the early years, a significant increase in the number of publications has been observed with the widespread adoption of artificial intelligence, digital marketing, virtual influencers, and chatbot technologies. In particular, the rise during the 2023–2025 period indicates that anthropomorphism has transformed into a current and rapidly evolving research area within marketing literature.

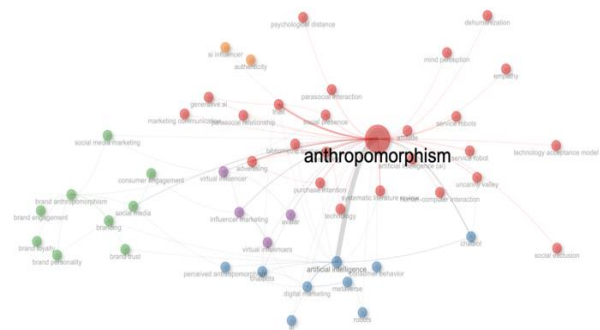


The prominence of authors such as Patrizi Michela and Vernuccio Maria in terms of publication output highlights their significant contributions to the development of the field. At the same time, the presence of many authors with similar publication counts suggests that the literature is not shaped by a single dominant research group, but rather by contributions from a diverse and expanding scholarly community.



According to the analysis of globally cited studies, Adam Waytz et al. (2010) emerges as the most influential study within the anthropomorphism literature. Highly cited works by researchers such as Blut (2021), Hudson (2016), and Van Pinxteren (2019) further demonstrate that anthropomorphism research has developed extensively across areas including consumer psychology, service marketing, artificial intelligence, and digital interaction.

In addition, the publication of these influential studies in high-impact journals such as Journal of Marketing, Journal of Service Research, Journal of Interactive Marketing, and Journal of the Academy of Marketing Science reflects the growing academic significance and contemporary relevance of anthropomorphism within marketing literature.



Keyword network analysis positions anthropomorphism as a central concept within the literature and demonstrates its strong associations with a wide range of research themes. Dense connections with concepts such as artificial intelligence, service robots, chatbots, virtual influencers, social presence, trust, and purchase intention indicate that anthropomorphism research is primarily concentrated on AI-enabled digital interactions and consumer behavior.

The analysis also reveals the emergence of several thematic clusters. The green cluster primarily represents brand-oriented studies focusing on brand anthropomorphism, brand loyalty, brand personality, and brand trust. In contrast, the blue cluster represents technology-oriented themes related to chatbots, digital marketing, the metaverse, and robots. The purple cluster is associated with virtual influencers and influencer marketing, whereas the red cluster encompasses themes associated with consumer psychology and human–technology interaction, including social presence, parasocial interaction, empathy, the uncanny valley, and the technology acceptance model.

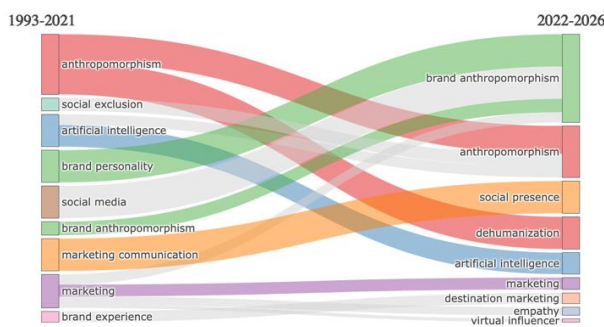
Moreover, the presence of concepts such as the uncanny valley, dehumanization, and social exclusion within the network structure suggests that the anthropomorphism literature has increasingly begun to address not only the positive outcomes of technological humanized technologies, but also their potential negative consequences.



Şekil 7. Word cloud analysis

The word cloud analysis identifies artificial intelligence, brand anthropomorphism, and virtual influencer as the most dominant concepts within the literature. This pattern suggests that anthropomorphism research has become increasingly concentrated around AI-supported digital marketing applications. The visibility of concepts such as chatbot, trust, purchase intention, social presence, consumer engagement, and digital marketing further indicates that the literature is largely centered on consumer behavior, consumer-brand interaction, and digitally mediated experience processes.

The strong visibility of concepts related to virtual influencers, social media, and influencer marketing also highlights the growing importance of social media-based anthropomorphic marketing strategies in recent years. At the same time, the inclusion of concepts such as the uncanny valley, dehumanization, and mind perception suggests that the field has gradually expanded beyond the positive effects of anthropomorphism to address its potential psychological and ethical risks.

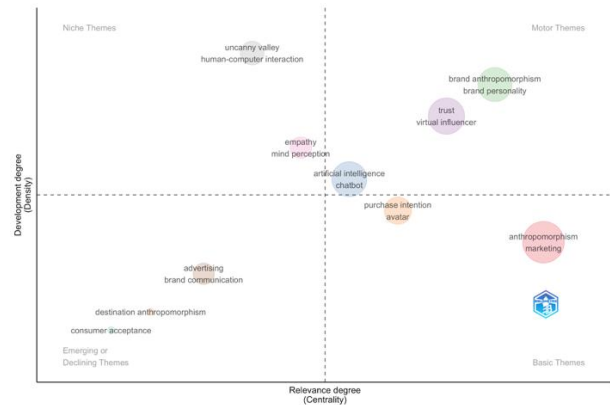


Şekil 8. Thematic evolution analysis

Thematic evolution analysis demonstrates that the anthropomorphism literature has undergone substantial transformations over time. Between 1993 and 2021, studies were largely centered on broader concepts such as

anthropomorphism, brand personality, social media, marketing communication, and artificial intelligence. In contrast, the literature produced between 2022 and 2026 appears to have shifted toward more specialized and digitally oriented themes, including brand anthropomorphism, social presence, dehumanization, virtual influencers, and empathy.

The growing prominence of brand anthropomorphism suggests that recent studies have increasingly focused on brand-consumer relationships rather than on general discussions of anthropomorphism. Similarly, the rise of concepts such as social presence and virtual influencers reflects the expanding importance of AI-powered digital characters and social media-based interactions within the literature. The emergence of themes related to dehumanization and empathy further demonstrates that anthropomorphism research has begun to address not only positive consumer outcomes, but also broader psychological and ethical dimensions.



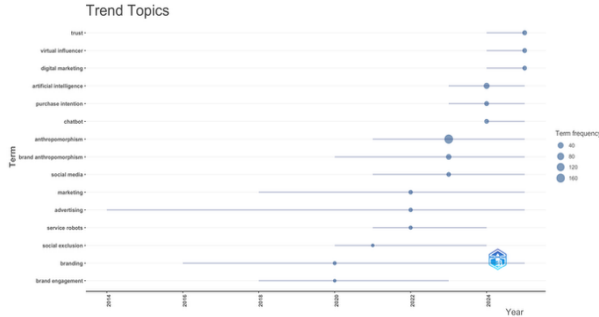
Şekil 9. Thematic map analysis

The thematic map analysis illustrates the level of development and centrality of research themes within the anthropomorphism literature. According to the findings, concepts such as brand anthropomorphism, brand personality, trust, and virtual influencers emerge as driving themes, suggesting that these topics are both highly developed and central to the literature. The prominence of virtual influencers and trust particularly highlights the growing importance of digital marketing and AI-supported consumer interactions within contemporary research.

The positioning of anthropomorphism and marketing within the core themes category further indicates that these concepts remain foundational to the literature while continuing to offer broad opportunities for future development. Likewise, the central placement of themes such as artificial intelligence, chatbot, purchase intention, and avatar reflects the increasing scholarly focus on the effects of AI technologies and digital agents on consumer behavior.

In contrast, themes including the uncanny valley, human-computer interaction, destination anthropomorphism, and consumer acceptance appear within niche or emerging areas, suggesting that these topics currently occupy more specialized

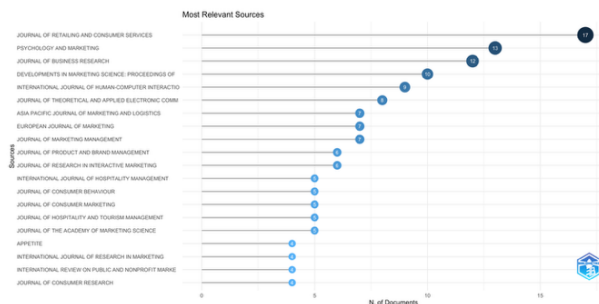
positions in the literature but hold considerable potential for future research. Moreover, the relatively central positioning of empathy and mind perception points to the growing scholarly interest in the psychological dimensions of anthropomorphism.



Şekil 10. Trend topics

An analysis of trending topics demonstrates that the anthropomorphism literature has experienced a substantial transformation over time, particularly in relation to digitalization and artificial intelligence. Earlier stages of the literature were primarily dominated by more traditional marketing-oriented themes such as advertising, marketing, branding, and brand engagement. In subsequent years, however, research attention increasingly shifted toward themes related to social media, brand anthropomorphism, and anthropomorphism itself.

Since 2023, concepts such as artificial intelligence, chatbots, virtual influencers, digital marketing, and trust have gained considerable prominence within the literature. This development reflects the growing concentration of anthropomorphism research on AI-supported digital consumer interactions. At the same time, the visibility of concepts such as purchase intention and trust suggests that the effects of anthropomorphic elements on consumer behavior have become an increasingly important area of scholarly inquiry.



Şekil 11. Most relevant sources

An analysis of the most relevant sources shows that the anthropomorphism literature is primarily concentrated in journals focusing on marketing, consumer behavior, and human-technology interaction. According to the findings, the largest number of publications appears in Journal of Retailing and Consumer Services, Psychology and Marketing, and Journal of Business Research.

The literature also features influential journals in the fields of consumer behavior and brand management, including Journal of Consumer Research, Journal of Consumer Behaviour, Journal of Product and Brand Management, and Journal of the Academy of Marketing Science. In addition, the visibility of journals such as International Journal of Human-Computer Interaction and Journal of Research in Interactive Marketing reflects the growing connection between anthropomorphism research and topics related to artificial intelligence, chatbots, and digital interaction.

Overall, the findings suggest that although anthropomorphism research has developed as an interdisciplinary field, it has established a particularly strong position within the marketing and consumer behavior literature.

V. CONCLUSION

This study examined academic research on anthropomorphism within the marketing literature through bibliometric analysis. Publications retrieved from the Scopus database using the keywords anthropomorphism and marketing were analyzed through the Biblioshiny program to map the development of the field over time, identify prominent research themes, and determine influential authors and major research areas.

The findings demonstrate that the anthropomorphism literature has expanded considerably, particularly in recent years. The widespread diffusion of artificial intelligence technologies, digital marketing applications, and virtual interaction tools appears to have substantially accelerated the growth of the field. Concepts such as anthropomorphism, brand anthropomorphism, artificial intelligence, chatbot, virtual influencer, social media, and trust emerge among the most prominent research themes within the literature.

Thematic analyses further show that anthropomorphism research is largely concentrated around brand management, consumer behavior, digital marketing, and human-technology interaction. The effects of virtual influencers, chatbots, service robots, and AI-powered digital agents on consumer perceptions have become especially prominent areas of scholarly inquiry. In addition, variables such as trust, purchase intention, social presence, and brand personality appear to maintain strong relationships with anthropomorphism.

At the same time, themes including the uncanny valley, dehumanization, empathy, and consumer acceptance remain relatively underexplored within the literature. This suggests the existence of important research opportunities concerning the psychological, ethical, and cultural dimensions of anthropomorphism.

Overall, anthropomorphism represents a rapidly expanding and increasingly interdisciplinary research domain within marketing literature. In the context of accelerating digital transformation, understanding how consumers perceive and respond to human-like entities has become critically important for both academic inquiry and managerial decision-making.

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