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# Brand Anthropomorphism: A Bibliometric Analysis

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## ABSTRACT

In recent years, the concept of anthropomorphism—attributing human qualities to non-human agents—has attracted considerable attention from academics and practitioners. Despite the growing number of studies, research on anthropomorphism in the branding context is relatively fragmented, with little effort to evaluate current trends or consolidate existing knowledge. This paper aims to provide a holistic overview of brand anthropomorphism by employing co-citation and bibliographic coupling analysis on 368 research articles retrieved from the Web of Science between 1994 and June 2023. The co-citation findings revealed three prior research streams of brand anthropomorphism, constituting existing knowledge-building in the given research area. The results of the bibliographic coupling analysis further unveiled six current clusters of the study domain. The comparison of co-citation and bibliographic coupling themes contributed to the detection of emerging trends in the selected field, the identification of research gaps, and the suggestion of future explorations. This paper promises to offer valuable insights that will provide both theoretical contributions and practical implications for marketers seeking to enhance the effectiveness of their branding messages.

**Keywords:** Bibliometric analysis, Brand anthropomorphism, Brand relationships

## INTRODUCTION

Research on anthropomorphism has garnered increasing attention from scholars since the twenty-first century (Zhang et al., 2020). This concept was derived from two Greek words: Anthropos, meaning "human," and Morphe, meaning "shape" (Ding et al., 2022). Anthropomorphism occurs when people perceive nonhuman agents as human. Epley et al. (2007) further conceptualized anthropomorphism as the natural human tendency to ascribe human features, desires, goals, and sentiments to inanimate agents (Huang et al., 2020). For example, people sometimes name their cars and see them as true friends or loyal companions (Epley et al., 2007).

Anthropomorphism has been widely utilized in marketing and branding disciplines. There is a growing consensus on the definition of brand anthropomorphism, which is rooted in the belief that a brand is viewed as a human being with various emotions, thoughts, and volition (Ding et al., 2022; Guido & Peluso, 2015; Kwak et al., 2015; Puzakova et al., 2009; Zhang et al., 2020). Marketers might adopt visual cues to encourage audiences to think of their branded products imbued with humanlike features. Marketing managers also use verbal cues to persuade consumers to interact with brands through first-person narration (e.g., "I am a Superman" or a spokesperson) (Fleck et al., 2014; Han et al., 2019). Remarkably, many authors stated anthropomorphic perception drives consumers to exhibit more favorable attitudes toward brands, resulting in higher loyalty (Hart & Royne, 2017).

Despite the increasing application of anthropomorphism, especially in the branding context, the existing literature lacks theoretical and synthetic studies that explore these issues (MacInnis & Folkes, 2017). According to Portal et al. (2018), the appeal of adopting anthropomorphism in marketing is not well comprehended. Research on brand anthropomorphism and its meaning for consumers is highly fragmented and lacks integration (Bagozzi et al., 2021). To the best of our knowledge, three relevant review papers (Avis & Aitken, 2015; MacInnis & Folkes, 2017; Portal et al., 2018) and one meta-analysis article (Velasco et al., 2021) have been published to date. The limited number of article reviews leads to a call for more conceptual research that offers a unified perspective on the given topic. Our paper offers a more comprehensive and nuanced understanding of brand anthropomorphism by consolidating related publications in a structured format and synthesizing their key insights. Specifically, the bibliographic analysis was conducted using relevant articles extracted from the Web of Science database. The findings obtained from our study visualize the conceptual structure and evolution of research themes and propose possible directions for future research.

Bibliometrics refers to the statistical analysis of research based on citation counts and patterns (Kim & McMillan, 2008). This approach encompasses a range of

techniques, but two well-established methods are co-citation analysis and bibliographic coupling analysis (Phan Tan, 2022). The application of these techniques has been beneficial to many scholars, as they provide an in-depth understanding of the research topics (Chang et al., 2015). In this work, the VOSviewer software (version 1.6.15) was selected to conduct the bibliometric analysis because it can measure probabilistic linkage between the most cited publications (Garfield, 2009), offering a "more satisfactory representation of the underlying data set" than other MDS approaches (van Eck & Waltman, 2010). As discussed, the research questions of this study are as follows:

RQ1. Which channels (scholars, publications, journals, research areas, and countries) influence brand anthropomorphism research most?
RQ2. How are the research clusters of brand anthropomorphism, and which research streams will likely appear as emerging trends?
RQ3. Which research streams associated with brand anthropomorphism have received the most attention?
RQ4. What new avenues can be derived for future researchers?

## THEORETICAL BACKGROUND

### Anthropomorphism

Anthropomorphism has been described as a psychological process of inductive inference about the unobservable qualities of inanimate agents (Epley et al., 2007). Building on the Three-Factor Model Theory, anthropomorphism is mainly formed by cognitive factors that activate and apply knowledge about humans (i.e., self-concept) when inferring about inanimate objects (MacInnis & Folkes, 2017). This perspective aligns with the person construal theory, which provides a cognitive explanation for how people become aware of anthropomorphized products. From this perspective, observers accumulate concrete information and create general meaning that is attributed to the target objects; the entire process of making these judgments can be characterized as a process of abstraction (Han et al., 2019).

The strength of anthropomorphism beliefs is contingent on specific features (Portal et al., 2018). People do not activate and apply identical anthropomorphic representations to nonhuman agents in response to social stimuli (Ha et al., 2022). Aggarwal and McGill (2007) found that an object's movement might prompt consumers to think of being alive. Significantly, objects moving at a speed similar to humans' pace are more likely to be anthropomorphized, whereas things moving very slowly seem absent from humankind. MacInnis and Folkes (2017) also postulated that the more nonhuman agents appear like humans, the more willing people are to anthropomorphize such properties. Therefore, a bottle of Coca-Cola might be more easily

anthropomorphized than a can of Coke (Aggarwal & McGill, 2007).

Furthermore, Guthrie and Guthrie (1995) proposed three types of anthropomorphism: partial, literal, and accidental. The partial anthropomorphism draws more attention from previous research. This phenomenon occurs when inanimate entities exhibit human-like shapes, display human characteristics, or mimic human behaviors (Bergner et al., 2023). People recognize such agents as resembling humans without viewing them as real people (Ding et al., 2022). In contrast, the literal type happens if people believe inanimate objects are actual humans. This belief might result from some mistaken perception, for instance, "when someone mistakes stacked garbage bags in dim light for a person crouching in wait" (Aggarwal & McGill, 2007). Finally, accidental anthropomorphism occurs when people inadvertently attribute human characteristics to inanimate entities. For example, someone occasionally imagines a human face in a rock (Ha et al., 2022).

**Brand Anthropomorphism**

As shown in Table 1, several definitions of brand anthropomorphism have been proposed. Fournier (1998) mentioned brand anthropomorphism as a form of animism and believed that such a humanlike brand can perform as a relationship partner. Similarly, Freling and Forbes (2005) suggested that anthropomorphism refers to the natural human tendency of seeing brands as entities with personalities. However, many social psychologists (Ding et al., 2022; Kwak et al., 2015; Puzakova et al., 2009) have further differentiated anthropomorphism from animism (i.e., the psychological process of attributing personalities to brands). These scholars debated that anthropomorphism entails more than simply attributing life to the nonliving. Deeply anthropomorphizing a brand involves imbuing it with humanized features, motives, or passions (Patterson & O Malley, 2006; Zhang et al., 2020). Based on the assumption that consumers perceive anthropomorphized brands as complete humans, Puzakova et al. (2009, p. 413) defined such brands as “actual human beings with various emotional states, mind, soul, and conscious behaviors that can act as prominent members of social ties.”

**Table 1.** *Definitions of Brand Anthropomorphism*

| Definitions | Sources |
|---|---|
| Anthropomorphizing a brand is defined as a form of animism (i.e., the psychological process of imbuing brands with personalities). | Fournier (1998) |
| Anthropomorphism refers to the natural human tendency to see brands as entities that have personalities. | Freling and Forbes (2005) |
| Anthropomorphized brands are perceived as human beings with various emotional states, mind, soul, and conscious behaviors. | Ding et al. (2022)<br>Guido and Peluso (2015)<br>Puzakova et al. (2009) |
| Brand anthropomorphism is the process of imbuing brands with humanized characteristics that arouse people's attributions of mind to the brands. | Puzakova et al. (2013)<br>Puzakova and Aggarwal (2018) |
| Brand anthropomorphism strategies included endowing brands with humanlike features, motivations, and intentions. | Kwak et al. (2015)<br>Zhang et al. (2020) |
| The complete anthropomorphization of a brand involves attributing humanlike characteristics to it, including emotions, thoughts, and volition. | Patterson and O Malley (2006) |

The ascription of human qualities to a brand is manifested through three dimensions: the attribution of human features/physiognomy, the attribution of human personality/traits, and the attribution of mind (MacInnis & Folkes, 2017). Similarly, scientific researchers have employed three approaches to measure brand anthropomorphism. The first category of the anthropomorphism scale focuses on asking participants whether they perceive the brand/product as alive (Aggarwal & McGill, 2007). The second type of anthropomorphism examines how brand characters are created and endowed with human-like personality or physical features, such as human bodies (Guido & Peluso, 2015). Finally, the third type of anthropomorphism measurement assesses the extent to which consumers attribute human-like qualities to brands and perceive them as autonomous entities that exhibit cognitive thoughts and emotions (Huang et al., 2020).

Marketers have employed several tactics to design anthropomorphized representations of the brand. They may thus enhance anthropomorphism by establishing mascots and characters associated with their brands (e.g., the Green Giant or the Geico Gecko). Marketing managers also encourage consumers to refer to their branded products using human pronouns, such as "he" or "she," rather than "it" (Aggarwal &

McGill, 2007). In addition, brands may be imbued with emotional states and perceived as real people (e.g., Mrs. Fields and Mr. Clean) (Ha et al., 2022). Recently, anthropomorphism has been applied in marketing robotic services, receiving considerable attention from scholars and practitioners alike (e.g., automated servers in Southeast Asia or hotel porters in the USA) (Murphy et al., 2019).

Several prominent theories have been adopted in the research on brand anthropomorphism, including the Stereotype Content Model, the Brand as Intentional Agent Framework, and the Mind Perception Theory. Authors have explored these theories to map critical dimensions of brand perception (e.g., warmth and competence, intention and ability, agency and experience) and predict consumers' positive attitudes and reactions toward brands (Sharma & Rahman, 2022). On the other hand, applying anthropomorphism to brands might lead to mixed effects on users' evaluations and behaviors (Chi et al., 2020). The Uncanny Valley Theory suggests that consumers may experience both positive and negative emotional responses when viewing a product that exhibits human-like qualities. Adopting other theories such as implicit theories (Han et al., 2019; Kim & McGill, 2018), justice reasoning theory (Kwak et al., 2015), equity theory, and social exchange theory (Kwak et al., 2017), researchers indicated that people's values and goals could range in focus from self-interests (i.e., agency orientation) to other-oriented (i.e., communion orientation), which in turn regulated the real-world consequences of brand anthropomorphism.

## METHODOLOGY

In this article, we conducted a systematic, quantitative, and qualitative assessment based on a literature review of 368 publications related to brand anthropomorphism. Quantitatively, we employed two types of bibliometric analysis using VOSviewer software: co-citation analysis and bibliographic coupling analysis. We apply these approaches to examine the conceptual structure and evolution of the research themes. Furthermore, we combined systematic reviews to identify the primary content of each theme, detect gaps, and suggest possible directions for future research.

### Bibliometric Analysis

This study is primarily inspired by the methodology employed by Shah et al. (2020) and Phan Tan (2022) in their bibliometric analyses of specific journals. Bibliometrics refers to the statistical analysis of research based on citation counts and patterns (Nicolaisen, 2010). This approach encompasses various techniques, including bibliographic coupling, co-citation, and co-word analysis (Leung et al., 2017). Combining different techniques in bibliometrics gives an in-depth understanding of the research topics (Chang et al., 2015). The two well-known methods are co-citation

analysis and bibliographic coupling analysis (Ferreira, 2018). The former calculates a relationship between two papers based on the number of citations they receive. That means the co-citation technique builds up the structure of research themes by measuring the frequencies of articles co-cited by a third publication. The latter determines a connection between two papers through "coupling strength." In other words, the two articles are linked to the same topic when they simultaneously cite one or more publications in their reference lists. The more identical citations these documents share, the higher the coupling strength represents (Phan Tan, 2022). Some scholars reveal that co-citation analysis might be more suitable for visualizing a science map of the study domain. Meanwhile, bibliographic coupling analysis can better explore the future directions of the research topic (Zhao & Strotmann, 2008). In our study, we leverage the advantages of both mentioned techniques to provide valuable insight into the development of brand anthropomorphism literature.

**Data Collection and Screening**

Figure 1 illustrates the data collection and screen. The data were taken through the Web of Science (WoS), a top-quality database (Shah et al., 2020). Based on the extant literature on brand anthropomorphism, keywords such as "brand anthropomorphism," anthropomorphism in branding," "brand humanization," "humanlike brand," and relevant words (shown in Table 2) were used as the search terms. These proposed terms are frequently used interchangeably (Avis & Aitken, 2015; MacInnis & Folkes, 2017; Portal et al., 2018). In this work, “Articles” and “Review articles” in English, which were published before June 2023, were collected (excluding book chapters and conference proceedings). Initially, 407 results were found for the given research field in the WoS.

**Figure 1** *Bibliometric Data Collection and Screening Process*

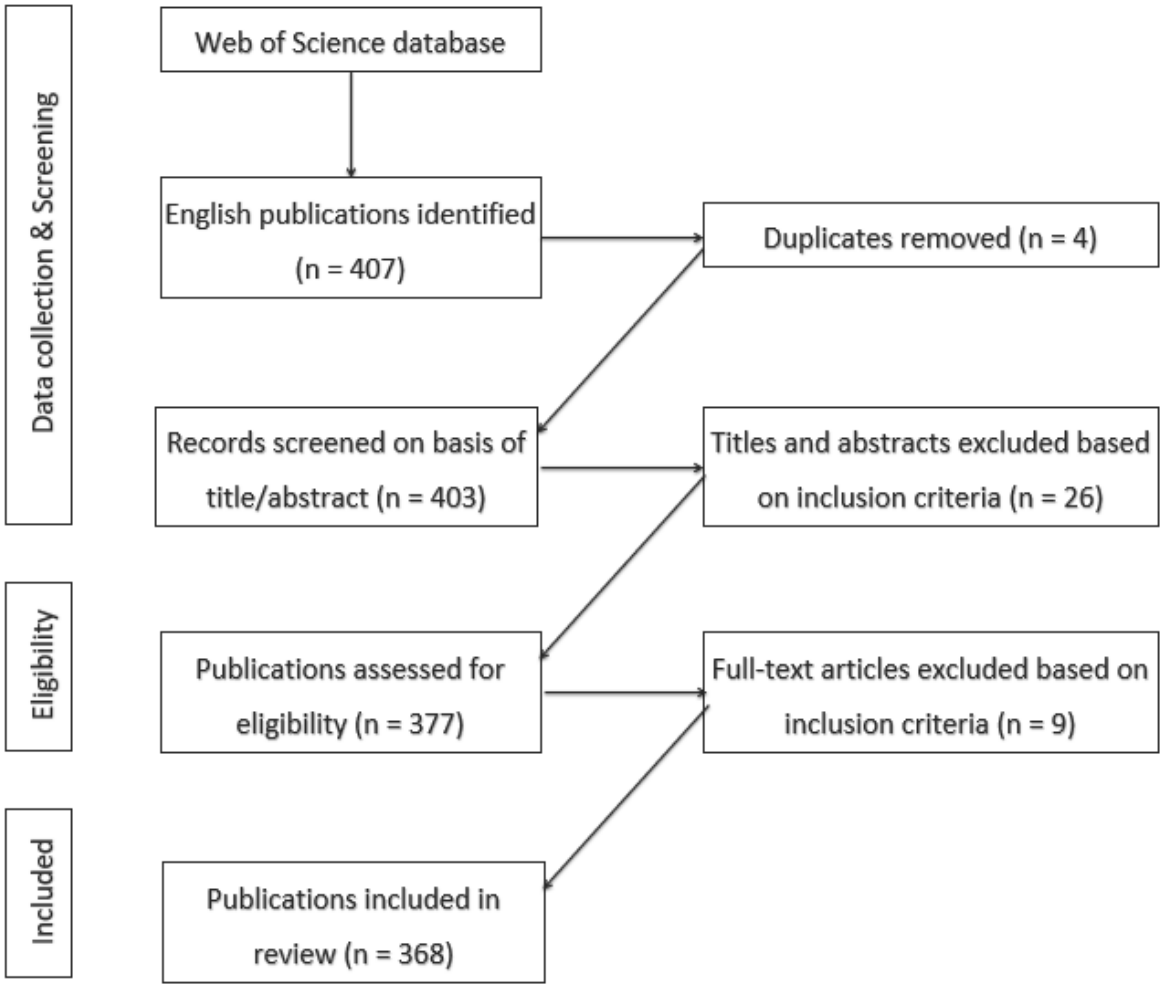



**Table 2** *Key Search Terms*

| Search terms | Search String |
|---|---|
| Generic terms | Brand* Anthropomorph*<br>OR<br>Brand* AND “person like,” “humanness,” “mind perception,” “mental state ascription,” and “intentional agents.” |
| Related terms | OR "brand humanization," "humanized brands," "humanizing brands," "humanlike brand," “human-like brand,” “human-like brand,” and "human brands."<br>OR “brand personification,” “brand as a person,” “brand as a human,” “living brands.” |

Next, we conducted the second manual qualitative check based on the exported Excel data to ensure that duplicated or unrelated papers were excluded from the sample (Hoang et al., 2023). Titles and abstracts, as well as full texts of downloaded publications,

were carefully reviewed (e.g., pure literature reviews, data series/ methodological, or not relevant to categories of branding/marketing/business/ management/economics/ hospitality and tourism/ communication/ psychological social). Our research focused solely on anthropomorphized brands; therefore, papers on robotic and intelligent objects were excluded from our dataset. The screening process eliminated 39 articles, leaving the final sample of 368 results retained for the next stage.

### Data Analysis Procedure

The data analysis required three steps. First, descriptive statistics were examined to illustrate the number of relevant papers published annually, the distribution of selected publications by geographical jurisdiction, areas of research in brand anthropomorphism, and the distribution of publications by journal. Second, the co-citation network and bibliographic coupling analysis were built using VOSviewer software to visualize patterns in research fields (van Eck & Waltman, 2010). Research themes were unveiled in this stage to explore insights into the knowledge structure and thematic evolution of the brand anthropomorphism literature. Finally, for major representative publications (i.e., those with high co-citation or high coupling strength), we applied systematic reviews to identify the primary content of each theme, uncover research gaps, and provide possible perspectives for future studies.

The co-citation process assumes that two articles that receive a citation from the same third publication are highly related and should be positioned in a cluster of visualization maps (Mas-Tur et al., 2021). Each color illustrates each cluster to which the published articles are relatively connected. The distance between two publications determines the strength of the link (van Eck & Waltman, 2010). The names of authors and years of publication are shown in each bubble. This analysis is based on a minimum citation threshold of 20. The co-citation results reveal three primary research clusters related to brand anthropomorphism, as illustrated in Figure 4.

Subsequently, bibliographic coupling is applied as the type of analysis, and publications are selected as the unit of analysis. Eleven citations were chosen as a threshold value. The final sample comprises 162 articles (out of 368 publications) that achieved this threshold. Larger circles illustrate the greater importance of a publication (Shah et al., 2020). The findings of the bibliographic coupling analysis indicate that research on brand anthropomorphism is organized into six clusters, as shown in Figure 5.

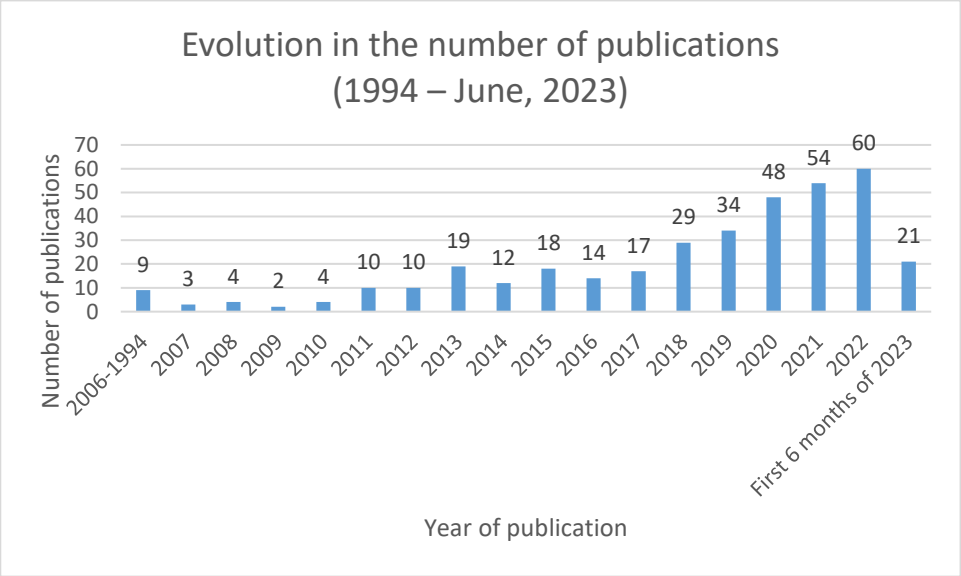
## RESEARCH FINDINGS

### Year of Publication

Figure 2 represents the annual trends of growing interest in the research topic of

brand anthropomorphism. In particular, the graphic image displays the number of studies published during the period from 1994 to June 2023. The development of the research field was remarkably split into two stages. Between 1994 and 2017, the early stage was when brand anthropomorphism received less attention from scholars and practitioners. However, the "booming" phase lasted from 2018 to recently, with an increasing number of articles being published in more interdisciplinary areas.

**Figure 2** *Evolution in the Number of Publications (1994 - June 2023)*




**Most Influential Countries, Journals, and Areas**

Figure 3 illustrates the top 11 countries that contribute to publications on the selected topic. According to this, most articles were published by first authors from the USA (43%), followed by China (12%), England (8%), and Canada (7%). We also observed the corresponding rate of brand anthropomorphism implications of the countries mentioned above. Then, we found that the top contributing countries were among the top nations, with many firms that commonly applied anthropomorphism to their marketing/ advertising campaigns.

**Figure 3** *Frequency of Publications by Some Countries*

As shown in Figure 4, studies on brand anthropomorphism have been published across various fields, including Business, Management, Communication, Psychology, Environment, and Tourism. Among these disciplines, Business and Management are the most prominent research areas, with 55% and 21%, respectively. The overview results also identified the most influential journals on the chosen topic, with the highest number of publications since 1994, as shown in Table 3. Generally, these statistical findings confirm that brand anthropomorphism has been a growing research interest, as reflected in a wide range of journals, business fields, and geographies.

**Figure 4** *Key Research Areas in the Topic of "Brand Anthropomorphism."*

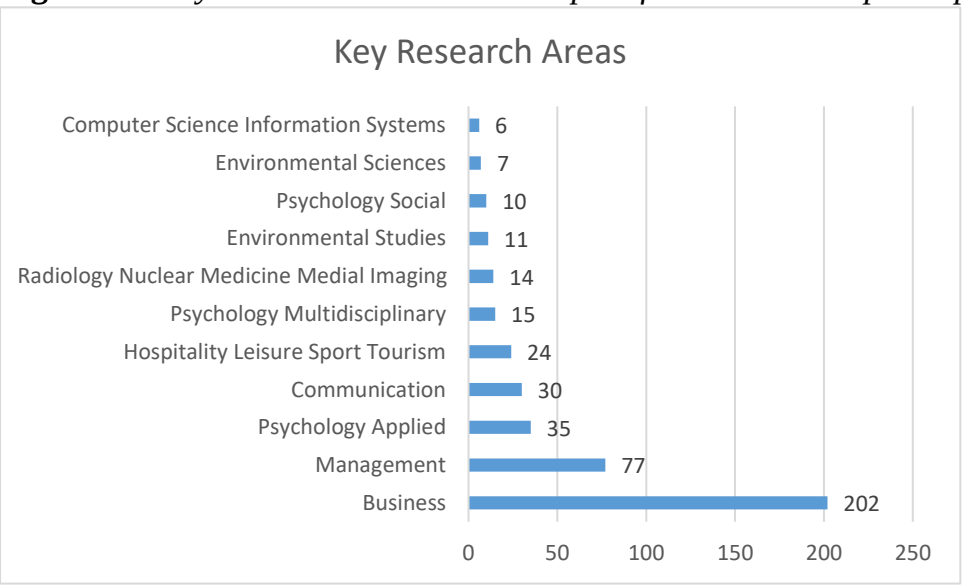


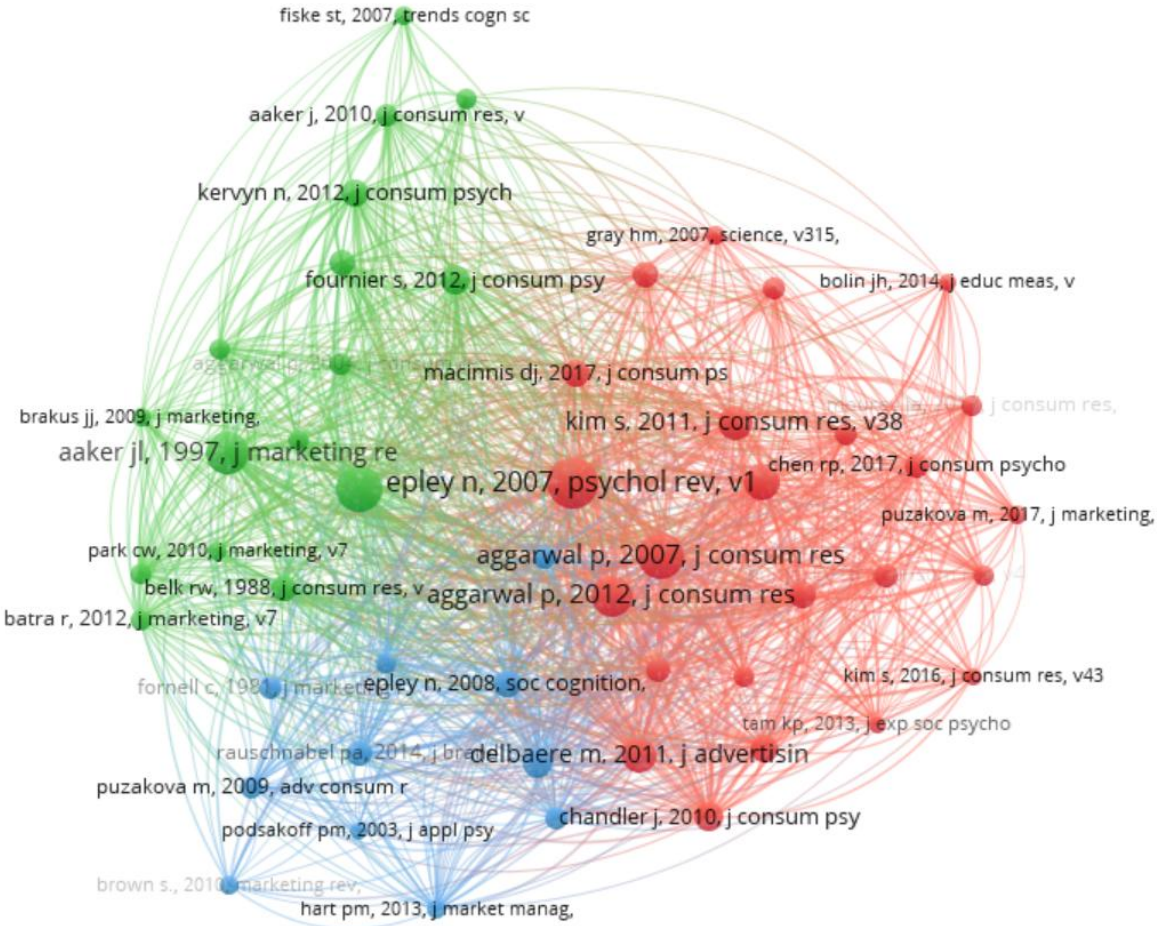
**Table 3** *Most Influential Journals on the Topic of "Brand Anthropomorphism."*

| Journal | Number of focal articles | Journal | Number of focal articles |
|---|---|---|---|
| Psychology Marketing | 18 | Journal of Marketing | 5 |
| Journal of Brand Management | 16 | Sustainability | 5 |
| Journal of Business Research | 15 | Journal of The Academy of Marketing Science | 4 |
| Journal of Consumer Psychology | 14 | International Journal of Research in Marketing | 4 |
| Journal of Marketing Management | 13 | Journal of Advertising | 4 |
| Journal of Consumer Research | 11 | Journal of Interactive Marketing | 4 |
| Journal of Product and Brand Management1 | 11 | Tourism Management | 4 |
| European Journal of Marketing | 8 | International Journal of Advertising | 3 |
| Frontiers in Psychology | 6 | Journal of Consumer Behavior | 3 |

## Co-citation analysis

As shown in the results of the co-citation analysis, Figure 5 highlights the publications on brand anthropomorphism, organized into three numbered clusters. The main content of each cluster is thoroughly considered by analyzing selected authors and their influential articles that reflect each theme (shown in Table 4). The first cluster (red) is anchored by leading authors, including Aggarwal, Epley, Puzakova, and Kim, who have achieved the highest number of citations for their publications. These scholars focused on research topics involving the mixed effects of brand anthropomorphism on customer behavior. The second cluster (green) is anchored by significant academicians such as Aaker, Fournier, Kervyn, and Belk. Authors in this cluster tend to research the multi-dimensions of consumer-brand relationships. Epley, Waytz, Guido, and Hart anchor the third one (blue). These researchers put their efforts into developing conceptual frameworks that explain the underlying mechanism of brand anthropomorphism. More details will be discussed in the next section.

**Figure 5** *Visualized Co-Citation Network*




Source: authors based on VOSViewer software

**Table 4** *Most Influential Articles of Co-Citation Analysis*

| Cluster | Most cited articles | No. of citations |
|---|---|---|
| **The multidimensions of consumer-brand relationships and their predictive power over consumers' moral judgments** | Epley et al. (2007) | 156 |
| | Aggarwal and McGill (2007) | 129 |
| | Aggarwal and McGill (2012) | 99 |
| | Puzakova et al. (2013) | 79 |
| | Kim and McGill (2011) | 74 |
| | Delbaere et al. (2011) | 74 |
| | Waytz, Morewedge, et al. (2010) | 52 |
| | Landwehr et al. (2011) | 49 |
| | MacInnis and Folkes (2017) | 46 |
| | Kim and Kramer (2015) | 44 |
| | Hur et al. (2015) | 38 |
| | Chen et al. (2017) | 34 |
| | Puzakova and Aggarwal (2018) | 33 |
| | Kwak et al. (2015) | 25 |

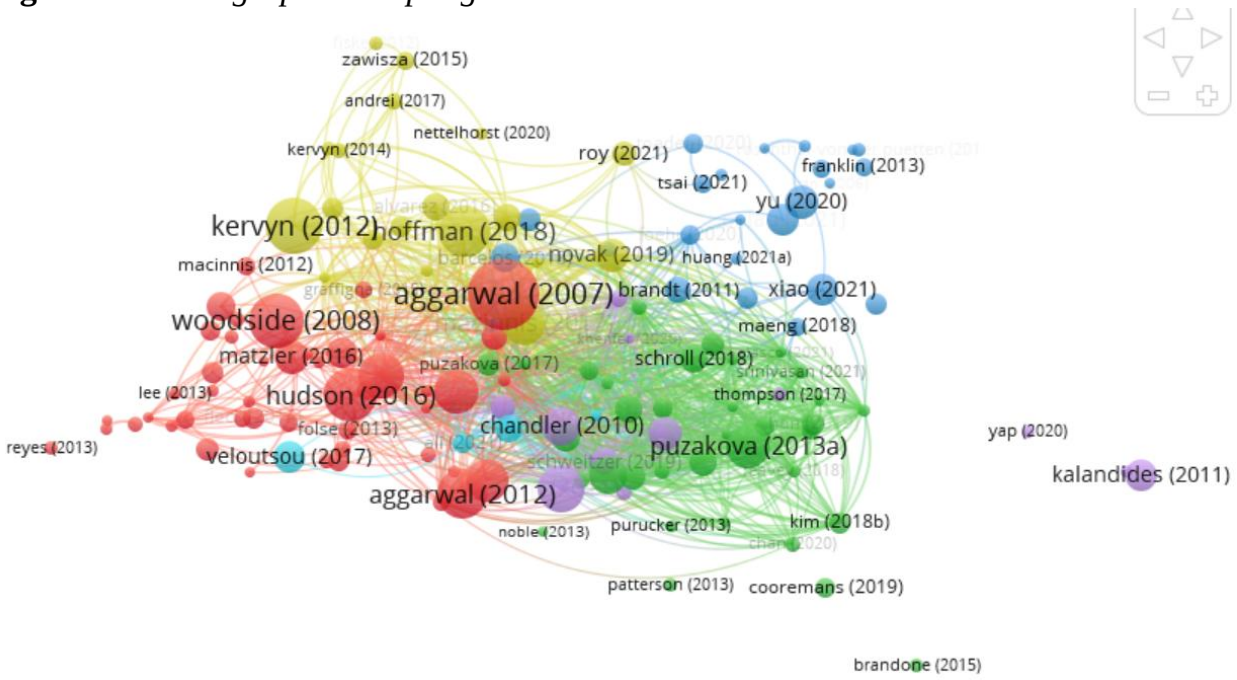
**Table 4** *Most Influential Articles of Co-Citation Analysis (cont.)*

| Cluster | Most cited articles | No. of citations |
|---|---|---|
| **The mixed effects of brand anthropomorphism on consumer responses** | Aaker (1997) | 113 |
| | Fournier and Alvarez (2012) | 52 |
| | Kervyn et al. (2012) | 49 |
| | Aaker et al. (2004) | 40 |
| | Belk (1988) | 39 |
| | Aggarwal (2004) | 33 |
| | Escalas and Bettman (2005) | 25 |
| **Developing conceptual frameworks explaining the underlying mechanism of brand anthropomorphism** | Epley et al. (2008) | 48 |
| | Waytz, Cacioppo, et al. (2010) | 37 |
| | Guido and Peluso (2015) | 32 |
| | Puzakova et al. (2009) | 30 |
| | Hart et al. (2013) | 24 |

## Bibliographic coupling analysis

According to the bibliographic coupling analysis results, Figure 6 indicates that research on brand anthropomorphism was conducted in six clusters. In addition, the influential authors and their articles of each cluster are systematically examined to find their main themes (shown in Table 5). First, the largest cluster of Figure 5 is indicated by red coloration, anchored by leading authors such as Aggarwal and McGill, Hudson et al., and Fournier and Alvarez, with the central concept focusing on the impact of brand anthropomorphism and brand personality on consumer-brand connections. Secondly, the green cluster comprises prominent academicians such as Puzakova, Rauschnabel, and Ahuvia, as well as Kim and Kramer, who concentrate on the diverse effects of brand anthropomorphism on consumer behavior. Thirdly, the blue cluster is anchored by Xiao and Kumar, Pelau et al., and Perez-Vega et al., expressing the central theme of brand anthropomorphism adopted in digital contexts. Fourthly, the yellow cluster, which includes influential scholars such as Kervyn et al., Hoffman and Novak, MacInnis and Folkes, is related to research on anthropomorphized brands as relationship partners. Fifthly, the purple cluster highlights major studies by authors such as Kim and McGill, Chandler and Schwarz, and Chen et al., which explore potential mediators and moderators of brand anthropomorphism. The sky-blue cluster comprises prominent publications by Hegner et al., Ali et al., and Sarkar et al. (2019), which focus on consumer emotions toward anthropomorphized brands (e.g., brand love vs. brand hate). More details will be discussed in the next section.

**Figure 6** *Bibliographic Coupling Network*




Source: authors based on VOSViewer software

**Table 5** *Most Influential Articles of Bibliographic Coupling Analysis*

| Cluster | Most cited articles | No. of citations |
|---|---|---|
| **Brand anthropomorphism, brand personality, and their effects on consumer-brand connections** | Aggarwal and McGill (2007) | 488 |
| | Hudson et al. (2016) | 267 |
| | Aggarwal and McGill (2012) | 250 |
| | Fournier and Alvarez (2012) | 208 |
| | Delbaere et al. (2011) | 187 |
| | Landwehr et al. (2011) | 176 |
| | MacInnis (2012) | 171 |
| | Freling and Forbes (2005) | 89 |
| | Keller (2012) | 83 |
| | Tuskej and Podnar (2018) | 66 |
| | Huang and Mitchell (2014) | 37 |
| | Aguirre-Rodriguez (2014) | 30 |
| | Huang and Guo (2021) | 17 |
| | Deng et al. (2021) | 16 |
| | Chu et al. (2019) | 15 |
| | Heine et al. (2018) | 11 |
| | Kim et al. (2018) | 11 |
| | Kara et al. (2020) | 11 |

**Table 5** *Most Influential Articles of Bibliographic Coupling Analysis (cont.)*

| Cluster | Most cited articles | No. of citations |
|---|---|---|
| **The mixed effects of brand anthropomorphism on consumer responses** | Puzakova et al. (2013) | 194 |
| | Rauschnabel and Ahuvia (2014) | 138 |
| | Kim and Kramer (2015) | 83 |
| | Puzakova and Aggarwal (2018) | 76 |
| | van Esch et al. (2019) | 76 |
| | Kwak et al. (2015) | 68 |
| | Puzakova and Kwak (2017) | 52 |
| | Han et al. (2019) | 51 |
| | Kim and McGill (2018) | 44 |
| | Cooremans and Geuens (2019) | 41 |
| | Letheren et al. (2017) | 40 |
| | Golossenko et al. (2020) | 34 |
| | Letheren et al. (2016) | 27 |
| | Kwak et al. (2017) | 25 |
| | Chan (2020) | 25 |
| | Lee and Oh (2021) | 22 |
| | Srinivasan and Sarial-Abi (2021) | 21 |
| | Zhang et al. (2020) | 16 |
| | Wan and Chen (2021) | 14 |
| | Han et al. (2020) | 13 |
| | Chen et al. (2020) | 12 |
| **Adopting brand anthropomorphism in the digital context** | Xiao and Kumar (2021) | 103 |
| | Pelau et al. (2021) | 97 |
| | Perez-Vega et al. (2018) | 53 |
| | Sreejesh et al. (2020) | 44 |
| | Foehr and Germelmann (2020) | 42 |
| | Tsai et al. (2021) | 35 |
| | Kim et al. (2019) | 22 |
| | Amelia et al. (2022) | 16 |
| | Huang and Liu (2021) | 16 |
| | De Keyser and Kunz (2022) | 13 |
| | Jin and Youn (2021) | 12 |

**Table 5** *Most Influential Articles of Bibliographic Coupling Analysis (cont.)*

| Cluster | Most cited articles | No. of citation |
|---|---|---|
| **Anthropomorphized brands as relationship partners** | Kervyn et al. (2012) | 314 |
| | Hoffman and Novak (2018) | 264 |
| | MacInnis and Folkes (2017) | 171 |
| | Novak and Hoffman (2019) | 107 |
| | Bernritter et al. (2016) | 78 |
| | Alvarez and Fournier (2016) | 74 |
| | Wu et al. (2017) | 49 |
| | Portal et al. (2018) | 39 |
| | Bagozzi et al. (2021) | 11 |
| | Huang et al. (2020) | 11 |
| **Investigating potential mediators and moderators of brand anthropomorphism** | Kim and McGill (2011) | 218 |
| | Chandler and Schwarz (2010) | 144 |
| | Chen et al. (2017) | 107 |
| | Schweitzer et al. (2019) | 66 |
| | Guido and Peluso (2015) | 62 |
| | Kim (2020) | 31 |
| | Khenfer et al. (2020) | 11 |
| **Consumer Emotions Toward Anthropomorphized Brands** | Hegner et al. (2017) | 73 |
| | Ali et al. (2021) | 37 |
| | Sarkar et al. (2019) | 13 |
| | Brandao and Popoli (2022) | 11 |

## Comparison of co-citation themes and bibliographic coupling themes

In this part, we aim to compare the co-citation and bibliographic coupling findings (shown in Table 6). There is a certain similarity between the first, second, and third themes in the co-citation analysis and the first, second, fourth, and fifth themes in the bibliographic coupling analysis. The mixed effects of brand anthropomorphism continue to receive considerable attention from scholars. The upcoming research should focus on the influence of brand anthropomorphism on consumers' subjective experiences (e.g., feelings of happiness and sadness) and its negative impacts. Furthermore, developing conceptual frameworks to explain the implicit mechanisms of brand anthropomorphism should merit further investigation. Hence, future studies may uncover valuable antecedents of brand anthropomorphism and investigate its potential mediators and moderators.

**Table 6** *The Comparison of Co-Citation and Bibliographic Coupling Themes*

| Themes | Co-citation themes | Bibliographic coupling themes |
|---|---|---|
| **Theme 1** | Cluster 1 (Red) - The mixed effects of brand anthropomorphism on consumer responses | Cluster 2 (Green) - The diverse effects of brand anthropomorphism on consumer behaviors |
| **Theme 2** | Cluster 2 (Green) - Multidimensional relationships between consumers and anthropomorphized brands | Cluster 1 (Red) - The impact of brand anthropomorphism and brand personality on self-brand connections |
| | | Cluster 4 (Yellow) - Anthropomorphized brands as relationship partners |
| **Theme 3** | Cluster 3 (Blue) - Developing conceptual frameworks explaining the implicit mechanism of brand anthropomorphism | Cluster 5 (Purple) - Investigating potential mediators and moderators of brand anthropomorphism |
| **Emerging trends** | | Cluster 3 (Blue) - Brand anthropomorphism adopted in the digital context |
| | | Cluster 6 (Sky blue) - Consumer Emotions Toward Anthropomorphized Brands |

It is worth noting that consumer-brand relationships, through which brands are imbued with human personalities, remain a research direction. Consumers are more likely to form self-brand connections with humanized brands, resulting in more favorable effects. Consumers embrace anthropomorphism because such brands link to human traits that match their values and personalities. While some authors view the brand as a passive object with symbolic meanings, others argue that the brand is an active partner in mutual interactions with the consumer. Future research should highlight critiques about brand relationships and their development dynamics.

The bibliographic coupling analysis significantly considers two emerging topics: brand anthropomorphism adopted in the digital context and consumer emotions toward anthropomorphized brands. Various discussions should be held regarding the integration of brand anthropomorphism and technologies. Additionally, investigating diverse consumer emotions (e.g., brand love vs. brand hate) toward anthropomorphized brands might provide more opportunities for future researchers.

## DISCUSSION AND FUTURE RESEARCH AGENDA

We conducted co-citation and bibliographic coupling analyses of the existing literature to provide a comprehensive overview of brand anthropomorphism. The results of our study revealed that the adoption of anthropomorphism in branding has attracted considerable attention from many scholars and practitioners in recent years. This domain is still in its early stages but is developing rapidly, with an increasing number of articles and interdisciplinary topics. By conducting thematic reviews of influential papers related to brand anthropomorphism, we also attached a meaningful concept to each research cluster. In this section, we present the main results of co-citation analysis and focus on the findings of bibliographic coupling analysis, then suggest possible directions for future researchers. Discussion details will be exhibited as follows.

### Research Streams of Co-Citation Analysis

#### Cluster 1- The mixed effects of brand anthropomorphism on consumer responses

Our findings reported that the primary view of this cluster concentrates on the diverse impacts of brand anthropomorphism on consumer responses. The extant literature has exhibited a growing interest in understanding the effects of anthropomorphism in consumer research. Many scholars stated that anthropomorphic perception drives more favorable attitudes toward products, resulting in higher brand loyalty. On the other hand, applying anthropomorphism might lead to mixed effects on customers' evaluations and behavior (Chi et al., 2020). The Uncanny Valley Theory posits that consumers may have varying emotional responses when encountering a product that exhibits human-like qualities. In particular, the more inanimate objects appear to resemble human beings, the more people are likely to exhibit positive emotions toward them. This positive feeling reaches a point beyond which people perceive anthropomorphic objects as weird or creepy. Then, their sentiment toward such entities falls markedly. People's positive emotions grow again when anthropomorphic objects are almost lifelike (Murphy et al., 2019).

#### Cluster 2 - Multidimensional relationships between consumers and anthropomorphized brands

This cluster offers insightful research on critical dimensions of consumer-brand relationships, through which brands are imbued with intentional agency. Fiske et al. (2002) conducted one of the most noteworthy studies, which identified the two crucial components of the Stereotype Content Model (SCM) - 'warmth' and 'competence.' These factors are closely linked to Aaker's research, in which consumers attribute humanlike personality traits to brands. The warmth dimension encompasses attributes such as "friendliness, tolerance, sincerity, and trustworthiness," while the competence

dimension refers to features including "confidence, skill, intelligence, and creativity" (Zhang et al., 2020, p. 5). The combination of two factors differently drives consumer evaluations and behaviors. Building on the SCM, Kervyn et al. (2012) proposed the Brands as Intentional Agents Framework (BIAF), which enriches the understanding of brand relationships by redefining two critical aspects in terms of 'intentions' and 'ability' (Zhang et al., 2020). These scholars argue that consumers interact with brands using the same approach, which is to connect with other people. There is a consensus that anthropomorphism might enhance the perceived intention (i.e., the warmth) of the brand, which substantially explains consumer-brand relationships (Zhang et al., 2020).

### Cluster 3 - Developing conceptual frameworks explaining the implicit mechanism of brand anthropomorphism

Our results found that the central concept of this cluster concentrates on conceptual frameworks that explain the tendency to anthropomorphize nonhuman agents. By facilitating social interactions between humans and nonhumans, anthropomorphism can meet two fundamental human motivations: the desire for social connection and the wish to influence and interpret the surrounding environment (Blut et al., 2021). In the same direction, the Three-Factor Model Theory emphasizes the role of sociality motivation and effectance motivation as determinants of anthropomorphism. Sociality refers to the aspiration to build social relationships with other humans. The likelihood of anthropomorphism increases when people feel lonely, isolated, or lacking social connection, and decreases when people feel connected to others (Epley et al., 2007). Effectance entails the ambition to interact with the outside world effectively and the need to accurately comprehend and predict the behavior of nonhuman agents (Zhang et al., 2020). The propensity to anthropomorphize should be heightened by human incentives to deal with uncertainty, seize control, and feel efficacious. In sum, anthropomorphism should be reinforced as a means to high sociality motivation and effectance motivation (Aggarwal & McGill, 2007).

Some prominent authors, such as Aggarwal and McGill (2007) and Puzakova et al. (2009), have also developed a conceptual framework that describes the underlying mechanism of brand anthropomorphism. They posited that the congruity between self-concept and brand image is robustly believed to be a predictive factor of anthropomorphized brands. In this sense, the likelihood of anthropomorphism and its subsequent evaluation of branded products is contingent on the degree to which such products are endowed with features that fit the aroused human schema (van den Hende & Mugge, 2014).

## Research Streams of Bibliographic Coupling Analysis

### Cluster 1 - The impact of brand anthropomorphism and brand personality on self-brand connections

Based on the content analysis, our results indicate that the central concept of this cluster centers on brand anthropomorphism, brand personality, and their impact on self-brand connections. Fournier and Alvarez (2012) highlighted three approaches enlivening the brand as an intentional agent: animated (e.g., M&M Guys), personalized (e.g., the Fruit of the Loom Guys), and humanized (e.g., Tiger Woods for Accenture). The effect of these strategies on brand relationships will vary depending on individual dispositions and anthropomorphic propensities that customers adopt (Fournier & Alvarez, 2012).

The extant literature also reveals that humanlike branding is related to brand personality (Lee, 2013; MacInnis & Folkes, 2017). Brand personality conveys a " symbolic or self-expressive function" (Zhang et al., 2020, p. 4). Marketers build their brands with solid, positive personalities that match consumers' values and traits. Consumers develop meaningful connections with such brands and become loyal to them (Freling & Forbes, 2005). Regarding this stream of research, Aaker (1997, p. 347) provided a valuable premise in which consumers imbue brands with human-like personality traits, such as "sincerity, competence, excitement, sophistication, and ruggedness." Inspired by Aaker's study, several scholars, including Caprara et al. (2001), Grohmann (2009), and Sweeney and Brandon (2006), have continued to explore other possible personality traits that consumers use to characterize brands (Bagozzi et al., 2021). Researchers additionally debated that brand personality and brand anthropomorphism are distinct constructs. The former represents how branded products are rendered as actual human beings. The latter refers to metaphoric reasoning embedded in brands and products (Guido & Peluso, 2015).

In line with previous studies, authors in this cluster highlighted that anthropomorphism is an underlying mechanism through which a brand may be perceived in the relationship. Kara et al. (2020) demonstrated that consumers are more likely to form self-brand connections with humanized brands (via personified brand names), resulting in more favorable branding evaluations. Consumers tend to embrace brands that express specific personalities and develop meaningful associations with them, due to a natural human propensity to anthropomorphize non-human entities (Freling & Forbes, 2005).

Further content analysis revealed that most theories applied in this cluster focus on social perceptions and brand relationships (Fournier & Alvarez, 2012). Several prominent theories were adopted in the research, including the Stereotype Content Model, Brand as Intentional Agent Framework, and Mind Perception Theory. Scholars

have explored these theories to map critical dimensions of brand perception (e.g., warmth and competence, intention and ability, agency and experience) and predict consumer attitudes and reactions toward brands (Sharma & Rahman, 2022).

We expect several issues emerging from this cluster to be a fruitful area for future research. Firstly, researchers will achieve more impressive results by measuring variations in anthropomorphism due to different personality traits (Sharma & Rahman, 2022). Secondly, anthropomorphic brands could be applied to physical products and intangible offerings such as services, experiences, ideas, and celebrities (Bagozzi et al., 2021; Chen et al., 2021). Thirdly, psychologists may find it interesting to examine how brands define the self and influence self-brand connections, thereby affecting consumers' judgments (Bagozzi et al., 2021). Fourth, investigating the negative side of consumer-brand integration promises to provide an in-depth understanding of brand-related behaviors such as addiction, indulgent consumption, and spurious loyalty. Fifth, future work could combine multiple theories to explore consumer psychological processes. For example, further discussion is needed on studying the intersection between the dimensions of SCM/BIAF and the facets of mind perceptions (Sharma & Rahman, 2022).

### Cluster 2 - The diverse effects of brand anthropomorphism on consumer behaviors

In this cluster, various consequences of anthropomorphism can be considered. The first perspective investigates how anthropomorphism impacts consumers' judgments and behaviors toward brands (Qian et al., 2023). The second viewpoint explores how anthropomorphism influences consumers' subjective experiences (Chen et al., 2018). For example, Chen et al. (2020) empirically argue that people anthropomorphize sadness as a person, resulting in less intense experiences of sadness. In other cohorts, anthropomorphic thinking also attenuates a feeling of happiness. This phenomenon might be explained by a sense of detachment, which refers to the perceived distance between the self and the anthropomorphized emotion (Chen et al., 2020). While most studies under this cluster have primarily focused on the former perspective, much less attention has been paid to the latter.

Recently, there has been a turn to understanding the adverse effects of anthropomorphism (Zhang et al., 2023). Puzakova et al. (2013) debated that consumers are more likely to evaluate negatively anthropomorphized brands that perform product wrongdoings. Puzakova and Aggarwal (2018) further argued that adopting brand anthropomorphism when consumers' distinctiveness motives are salient will dilute consumers' sense of agency. As a result, anthropomorphizing a distinctive brand is causing a detrimental effect on consumer identity expression. Kwak et al. (2015) extend

the work of Puzakova et al. (2013) and examine the impact of brand humanization on consumers' price sensitivity. Notably, he found that when consumers are self-focused (i.e., agency-oriented), they are more likely to perceive the unfairness of price increases from the anthropomorphized brands. Recently, Herak et al. (2020) demonstrated that pairing an object with a person in an advertisement leads to superior evaluations of the anthropomorphized object, whereas the same pairing results in inferior assessments of the person through dehumanization.

Highly influential theories of relevant articles in this cluster were additionally examined. For example, implicit theories refer to how consumers attribute behaviors to the stability of personality traits rather than contextual aspects (Puzakova et al., 2013). Studies on implicit theories (Han et al., 2019; Kim & McGill, 2018) reveal that consumers' distinct beliefs (i.e., entity theorists versus incremental theorists) strongly influence individuals' attitudes and behaviors toward anthropomorphic brands. Adopting other theories, such as justice reasoning theory (Kwak et al., 2015), equity theory, and social exchange theory (Kwak et al., 2017), researchers indicated that people's values and goals could range in focus from self-interests (i.e., agency orientation) to other-oriented (i.e., communion orientation), which in turn regulated the real-world consequences of brand anthropomorphism.

In identifying future lines of research, we found that although brand anthropomorphism represents a crucial role in the consumer behavior literature, its actual impact has remained largely unexplored. Researchers may desire to investigate the downstream consequences of anthropomorphizing, which not only depend on humanlike characteristics but also involve types of anthropomorphism (i.e., partial, literal, and accidental) (Aggarwal & McGill, 2007) and /or types of brands (e.g., corporate brands, endorsed brands, individual brands). In addition, we suggest that scholars observe the non-traditional outcomes of brand anthropomorphism, such as pride, happiness, and life satisfaction, which facilitate customer well-being (Bagozzi et al., 2021; Blut et al., 2021). Future studies also consider the influence of brand anthropomorphism on stakeholders other than consumers (Sharma & Rahman, 2022). Additionally, transformative research can examine the role of consumers and employees in co-creating anthropomorphic brand meaning (Sharma & Rahman, 2022).

Regarding the detrimental effects of brand anthropomorphism, psychologists should assess novel and untested factors, such as consumer vulnerability or loss of self-control, that hinder customer well-being (Blut et al., 2021). Moreover, studying the impacts of brand anthropomorphism on customer responses to branded product failures should merit further attention from academic authors (Blut et al., 2021). In some cases, researchers may find it interesting that the essential factors of anthropomorphism theory related to sociality, effectance, and elicited agent knowledge possibly drive consumers

from detaching to re-attaching to a brand (MacInnis & Folkes, 2017).

**Cluster 3 - Brand anthropomorphism adopted in the digital context**

The third cluster of bibliographic coupling centers on adopting brand anthropomorphism in the digital context. The current discourse reveals that anthropomorphizing brands/messages in social media settings (e.g., Facebook fan pages) positively influences consumers' attention and engagement (Perez-Vega et al., 2018; Sreejesh et al., 2020). Brand anthropomorphism in chatbots has led to more favorable consumer evaluations (Tsai et al., 2021). Moreover, the perceived personality of smart devices (i.e., anthropomorphism) is one crucial path driving high trust and acceptance of these innovative technologies (Foehr & Germelmann, 2020). Remarkably, some impactful factors that mediate the relationship between anthropomorphic features and consequent outcomes have been highlighted, such as perceived empathy, interaction quality (Pelau et al., 2021), perceived dialogue, and prosocial interaction (Tsai et al., 2021).

Additionally, it is worth noting that many studies draw more attention to emerging research on humanizing interactive experiences in online environments. Individuals anthropomorphize their interactive experiences when they perceive a connection between themselves and a digital agent (e.g., a mouse or an augmented reality device), much like people form interpersonal relationships (Huang & Liu, 2021). These humanized experiences encourage individuals to purchase products and foster a close consumer-brand relationship (van Esch et al., 2019). Previous studies have reported that anthropomorphizing brands primarily shape humanizing experiences (MacInnis & Folkes, 2017). However, contemporary research indicates that a sense of humanizing technologies can successfully form interactive experiences. For example, consumers might perceive smart objects as being able to think or control their behaviors and have a close relationship with those agents (Huang & Liu, 2021).

The dominant theories widely used in this cluster are the Computers as Social Actors Theory (Foehr & Germelmann, 2020; Pelau et al., 2021), Social Response Theory (Perez-Vega et al., 2018), and Social Presence Theory (De Keyser & Kunz, 2022). Building on these theories, researchers believe that people treat digital agents (e.g., computers, robots, AI devices, or social media websites) as social actors. In such a way, individuals apply similar social rules (e.g., trust and interpersonal connections) to interact with these anthropomorphized objects. Additionally, relevant papers have explored various theoretical models and paradigms related to technology acceptance and rejection, including the Unified Theory of Acceptance and Use of Technology, the Service Robot Acceptance Model, the Uncanny Valley Theory, and the Algorithm Aversion Model. Based on these theories, authors identified a subset of related drivers

and/ or combined them with other variables (De Keyser & Kunz, 2022).

Given the growth of papers in this field, the roles of brand anthropomorphism in a digital context merit further exploration. From the consumer perspective, researchers should investigate the impact of brand anthropomorphism promoted through technological platforms on brand image and brand experience (Blut et al., 2021). From the company perspective, scholars could consider the intersection of novel and untested outcomes of brand anthropomorphism combined with technologies, such as firm performance (Blut et al., 2021) or stakeholders' perceptions (Ding et al., 2022). The future work also raises the question of whether innovative technologies, combined with societal changes, might allow people to perceive brands as humanlike (MacInnis & Folkes, 2017). Moreover, the digital world with intelligent branding of things as smart objects (e.g., robots, AI devices) offers a basis for further research (Bagozzi et al., 2021). Researchers may focus more on the moderating effects at the individual level, for example, males' interaction with female robots and vice versa (Blut et al., 2021). Despite the advantages of brand anthropomorphism - technologies' intersection, the potential drawback of given issues becomes necessary for further research, such as uncertainty, tricked feelings (De Keyser & Kunz, 2022), or unwanted stereotypic biases (Ding et al., 2022), or anthropomorphized technology failure (Lteif & Valenzuela, 2022).

**Cluster 4 - Anthropomorphized brands as relationship partners**

Our findings reveal that the fourth cluster of the bibliographic coupling analysis focuses on anthropomorphized brands as relationship partners. This research stream explicitly differs from the first cluster's central notion, which mainly stresses the brand as a passive object with symbolic meanings. Supporting the belief in a humanized brand as a relationship partner, consumers treat it as an active person (Alvarez & Fournier, 2016). They develop brand connections in parallel with the ways they form interpersonal associations with others (Kervyn et al., 2012). Previous research also highlighted that an interactive relationship is an equally co-created process in which two parties (i.e., consumers and brands) come together and shape mutual benefits (Fournier & Alvarez, 2012). On the brand side of the relationship, anthropomorphism is viewed as a crucial mechanism that enables human social interaction to be transferred to brands (Alvarez & Fournier, 2016). On the consumer side, attachment styles (i.e., anxiety and avoidance) and relational norms (i.e., exchange and communal orientations) that govern individuals' associations with other people have also emerged to regulate their brand relationships (MacInnis & Folkes, 2017).

The literature review further argues that the brand role indicates an essential dimension of consumer-brand relationships. In some cases, consumers perceive brands

as "servants" and believe themselves to be "masters" (MacInnis & Folkes, 2017). For instance, the Discovery Channel offers information, and Volvo guarantees safety (Bagozzi et al., 2021). In other circumstances, consumers and brands are partners sharing mutual benefits. For example, consumers may view Kellogg's as a partner in promoting a healthy lifestyle (Bagozzi et al., 2021). Different power roles in anthropomorphizing contexts lead to diverse consumer perceptions and behaviors toward the brands. In particular, Ding et al. (2022) found that an anthropomorphic brand presented as a servant elicits more favorable attitudes than one given as a partner. Aggarwal and McGill (2012) further showed that people are more likely to assimilate their behaviors to the image of partner (vs. servant) brands they liked.

Significant articles in the research stream have focused on the positive aspects of the relationship, while the negative aspects of the brand relationship have received less attention from authors (Bagozzi et al., 2021). Positive consumer-brand relationships are closely tied to brand attachment, which encompasses brand-self connection and brand prominence, ultimately leading to pro-brand behaviors (e.g., brand loyalty and brand advocacy) (MacInnis & Folkes, 2017). The opposite of brand attachment is brand aversion/betrayal, which describes a state where prominent brands violate consumers' trust. A few psychologists also explore ambivalent relationships that arise when consumers want the prominent brand but feel controlled by it (Bagozzi et al., 2021).

According to our investigation, the studies in this cluster were primarily derived from a literature review of brand anthropomorphism and attachment. Some consumer psychologists believe that a brand relationship is influenced by two internal working processes: the person thinks of the brand, and the brand thinks of the person (Fournier & Alvarez, 2012). These authors prominently apply attachment theory to enrich the understanding of consumer-brand connections (Wan & Chen, 2021). Others adopt an alternative approach based on the self-expansion theory, which explains meaningful self-brand relationships. In this sense, the brand is intimately connected to the consumer when considered part of the self (MacInnis & Folkes, 2017).

As discussed, future research should highlight critiques about brand relationships and their development dynamics. Consumer-brand relationships vary due to brand-self connection, salience, attachment styles, power, and the type of relationship. As Wan and Chen (2021) found, when consumers recognize a branded product as a casual source of social connection and develop a limited attachment to it, the relationship between the consumer and such a product is relatively weak, and the effect of anthropomorphism in this context is relatively small. Therefore, a promising research direction should focus more on assessing the relative influences of these dimensions on brand relationships and clarifying the most significant effects on consumers' judgments (MacInnis & Folkes,

2017). The field can also investigate more complex interactions that may change over time (Blut et al., 2021). In some cases of brand transgressions, individuals may experience a state of brand attachment (e.g., happiness) transformed into brand betrayal (e.g., unhappiness). Furthermore, scholars should pay considerable attention to the dark side effects of brand relationships, such as ambivalence or aversion (MacInnis & Folkes, 2017).

### Cluster 5 - Investigating potential mediators and moderators of brand anthropomorphism

The content analysis of our study explicitly indicated that a vital notion that is embedded in this cluster is the potential mediators and moderators of brand anthropomorphism. Most authors focus on socio-psychological factors that manipulate the effects of anthropomorphism. For example, Chen et al. (2017) examined the impact of social exclusion on consumer preferences for anthropomorphic brands. Kim and McGill (2011) found that consumers' perceptions of social power have moderate anthropomorphism effects. Supporting this view, scholars have indicated that the more empowered individuals are, the more likely they are to respond favorably to humanlike brands, as such brands prompt them to feel socially dominant (Kim & McGill, 2018). Khenfer et al. (2020) further expand previous research when investigating the moderating role of perceived competence on the connection between brand anthropomorphism and empowered consumers' attitudes. Recently, Kim et al. (2020) found that social presence (primarily related to perceived warmth) mediates the effects of brand anthropomorphism on consumer-brand relationships, a finding applicable in the context of social networking site fan pages.

Further content analysis revealed that the relevant articles of this cluster were mainly derived from the literature on anthropomorphism. Despite the growing number of research papers, few works have applied attribution theory (Chen et al., 2017) and self-extension theory (Schweitzer et al., 2019). As stated, a common feature of this research stream is its lack of a theoretical foundation. Therefore, developing relevant approaches, combining multiple theories in a single article, or further expanding current views must be considered in future research.

Additionally, academicians will find impressive findings by exploring several novel and untested constructs. Future researchers could investigate the non-linear effects of individual moderators, such as proactive versus reactive interactions, preference for personal space (Blut et al., 2021), or introversion versus extroversion (MacInnis & Folkes, 2017). Other authors also access interesting moderators related to culture (Sharma & Rahman, 2022), political ideology (van Esch et al., 2022), cross-national differences (Blut et al., 2021), situational contexts (e.g., time pressure), and

different anthropomorphic brand roles (e.g., leader vs. friend) (Ding et al., 2022). Moreover, one might raise concerns about ownership's position, which can impact brand perception. Whereas brand ownership potentially enhances brand-self connections, we know little about whether people are likely to anthropomorphize an individual branded possession (e.g., my Mac computer) rather than the brand (e.g., Mac's) (MacInnis & Folkes, 2017).

**Cluster 6 - Consumer Emotions Toward Anthropomorphized Brands**

The sixth cluster highlights an emerging stream exploring consumer emotions toward anthropomorphized brands. The central notion of this cluster mainly focuses on brand love and brand hate. An increasing number of empirical studies have investigated the measurement, antecedents, and consequences of these constructs (Bagozzi et al., 2021). In many contexts, brand anthropomorphism is adopted as a powerful means to strengthen brand love and loyalty (Brandao & Popoli, 2022). Furthermore, these close relationships are moderated by various factors, such as consumer involvement (Hegner et al., 2017), experiential cues (Sarkar et al., 2019), or social distancing (Ali et al., 2021). When researchers subsequently examined the outcomes of brand love, they reported analogous effects to those regulated by brand attachment. However, brand love was found to be self-focused, while brand attachment tends to be relationship-oriented (MacInnis & Folkes, 2017). Like brand love, brand hate can predict complaining behavior, negative word of mouth, and protest actions. Brand hate also creates conditions for developing dislike toward competitive brands and reducing hostility toward exclusive brands (Bagozzi et al., 2021).

Scholars tap into several behavioral and psychological theories to explore this research domain. Brand love is primarily derived from Sternberg's (1986) triangular theory of love, which posits that love comprises three underlying aspects of love: intimacy, passion, and commitment. Some studies are also grounded in the theory of reasoned action, the theory of planned behavior, the regulatory focus theory, and the construal level theory to examine associations between brand anthropomorphism and brand love and brand defense, as well as investigate moderators of these relationships (Ali et al., 2021; Hegner et al., 2017). Although some authors combined multiple theories in a single article, there was little to no extension of these theories.

A promising area for future research is the effect of ambivalence, which reflects a state in which a prominent brand causes an approach-avoidance conflict (MacInnis & Folkes, 2017). The existing literature reveals that there are very few studies that consider the potential tensions and ambivalences between brand love and brand hate (Bagozzi et al., 2021). In some cases, consumers desire the brand but feel that it controls them. In other circumstances, people are passionate about their favorite brands despite

receiving disapproval from others. Revealing ambivalence presents an opportunity to examine persuasive communication techniques that promote consumer consumption by regulating love and/or hate toward target brands (MacInnis & Folkes, 2017).

Another interesting direction for future research is the study of neuroscience approaches as they are linked to brand behaviors (Bagozzi & Lee, 2017). Neurocognitive methods have provided a deeper understanding of self-report measures of emotions and validated related measurement scales. Regarding the issues mentioned, Bagozzi et al. (2021) raised concerns about the involvement of brain activation in emotional and cognitive processes, which still receive scant attention.

**Methodological Analysis**

This section systematically reviewed empirical articles related to six bibliographic coupling analysis research clusters. For cluster 1, the quantitative techniques dominate the domain, with most studies focusing on scenario-based experiments (i.e., laboratory settings). Only a few studies have conducted field-based experiments (i.e., in natural environments) or applied real-world archival data to validate experimental research findings (Deng et al., 2021). Several papers adopt other research methods, such as surveys (Tuskej & Podnar, 2018) or qualitative approaches (Gbadamosi, 2015; Kniazeva & Belk, 2010). Very few studies opt for mixed methods (Rutter et al., 2017) or methodological triangulation (i.e., a multi-method qualitative approach) (Freling & Forbes, 2005).

Similar to the first cluster, much of the research in the second cluster uses traditional experimentation based on the paper-and-pencil method and application of ANOVA analysis. In the third cluster, it is worth noting that an increasing number of studies are exploring online surveys and qualitative techniques, although many authors still conduct experiments. Most of the fourth and fifth clusters are also performed in experiments set up in laboratory or online environments. Regarding the sixth cluster, various research approaches, such as the mall intercept method (Sarkar et al., 2019) or the 'symbolic netnographic' method combined with interviews (Brandão & Popoli, 2022), are employed in this section to understand brand attitudes and behaviors. Future studies should build on these findings to expand the specific research patterns.

**Table 7** *Suggested Future Research Agendas*

| Research topics | Future research avenues | Supporting references |
|---|---|---|
| **The impact of brand anthropomorphism and brand personality on self-brand connections** | - Measuring different levels of anthropomorphism due to various personality traits.<br>- Examining how anthropomorphic brands define the self and self-brand connections.<br>- Accessing how self-brand connections influence consumers' judgments.<br>- Testing intangible branded products (e.g., services, experiences, ideas, celebrities).<br>- Applying multiple theories (e.g., SCM/BIAF and mind perception theory) to investigate consumer psychological processes.<br>- Exploring the negative side of self-brand connections, leading to brand-related behaviors such as indulgent consumption, addiction, and spurious loyalty. | Bagozzi et al. (2021)<br>Fournier and Alvarez (2012)<br>Sharma and Rahman (2022) |
| **The mixed effects of brand anthropomorphism on consumer behaviors** | - Examining diverse consequences driven by different types of anthropomorphism and/ or kinds of brands.<br>- Observing non-traditional outcomes of BA (e.g., pride, happiness, and life satisfaction).<br>- Studying the impacts of BA on customer responses to branded product failures<br>- Exploring influential factors (e.g., sociality, effectance) that change consumers from detaching to re-attaching towards a target brand.<br>- Accessing the role of consumers and employees in co-creating anthropomorphic brand meaning.<br>- Investigating the effects of BA on other stakeholders and business performances.<br>- Examining detrimental effects of BA (e.g., consumer vulnerability or loss of self-control). | Aggarwal and McGill (2007)<br>Bagozzi et al. (2021)<br>Blut et al. (2021)<br>MacInnis and Folkes (2017)<br>Sharma and Rahman (2022) |

**Table 7** *Suggested Future Research Agendas (cont.)*

| Research topics | Future research avenues | Supporting references |
|---|---|---|
| **Brand anthropomorphism adopted in the digital context** | - Measuring the effects of BA promoted via social media platforms on brand image and brand experience.<br>- Investigating novel and untested outcomes of BA-technologies intersection, such as firm performance or stakeholders' perceptions.<br>- Examining the impact of BA integrated in intelligent objects (e.g., robots, AI devices)<br>- Testing whether innovative technologies combined with societal changes might allow people to see brands as humanlike.<br>- Testing influential moderators related to individual-level (e.g., male person's interaction with female robots and vice versa).<br>- Defining potential drawbacks of BA-technologies intersection (e.g., uncertainty, tricked feeling, unwanted stereotypic biases). | Bagozzi et al. (2021)<br>Blut et al. (2021)<br>De Keyser and Kunz (2022)<br>Ding et al. (2022)<br>MacInnis and Folkes (2017) |
| **Anthropomorphized brands as relationship partners** | - Examining different levels of consumer-brand relationships based on various dimensions (e.g., attachment styles, relationship types) and measuring the most remarkable effects on consumers' judgments.<br>- Investigating more complex interactions that may change over time (e.g., brand attachment turned into brand betrayal)<br>- Accessing the dark side effects of brand relationships (e.g., ambivalence or aversion). | Blut et al. (2021)<br>MacInnis and Folkes (2017)<br>Wan and Chen (2021) |
| **Potential mediators and moderators of brand anthropomorphism** | - Test individual moderators for proactive vs. reactive interactions, preference for personal space, or introversion vs. extroversion.<br>- Access interesting moderators related to culture, cross-national differences, situational contexts (e.g., time pressure), and anthropomorphic brand roles (e.g., leader vs. friend).<br>- Examining the role of ownership (e.g., my Mac computer vs. Mac's) in brand perception. | Blut et al. (2021)<br>Ding et al. (2022)<br>MacInnis and Folkes (2017)<br>Sharma and Rahman (2022) |

**Table 7** *Suggested Future Research Agendas (cont.)*

| Research topics | Future research avenues | Supporting references |
|---|---|---|
| **Consumer Emotions Toward Anthropomorphized Brands** | - Examining the possible tensions and ambivalences between brand love and brand hate.<br>- Exploring persuasive communication techniques to promote consumer consumption by regulating love and/ or hate toward target brands.<br>- Applying neuroscience approaches to explain how brain activation is involved in emotional and cognitive processes. | Bagozzi et al. (2021)<br>Bagozzi and Lee (2017)<br>MacInnis and Folkes (2017) |
| **Methodology** | - Investigate BA using real-life experiments and multi-method research design (e.g., dyadic, triadic, triangulation design methods).<br>- Applying qualitative research methods.<br>- Developing BA scale on formative indicators.<br>- Examining neuroscience (e.g., fMRI, EEG) to study psychological aspects of brand behavior. | Bagozzi et al. (2021)<br>Sharma and Rahman (2022) |

*Notes: BA refers to brand anthropomorphism*

## CONCLUSIONS AND LIMITATIONS

In conclusion, this study examined articles on brand anthropomorphism published from 1994 to June 2023. Based on the WoS database, our findings have portrayed the evolution of the selected research topic and described key journals, contributing nations, and primary research areas. This holistic review contributes to the knowledge of brand anthropomorphism and helps extend the academic debate surrounding these issues. According to the co-citation and bibliographic coupling analysis results, brand anthropomorphism has attracted much attention from scholars and practitioners in recent years. However, this domain is still in its early stages but is developing rapidly.

Additionally, we have proposed several meaningful clusters involving brand anthropomorphism. These findings provide novel insights into the extant literature in the chosen research field. To the best of our knowledge, this is the first attempt to recognize and analyze the key themes that are considered specific values of this study. Then, the paper also suggests potential directions for future researchers. Practically, this offers complementary approaches for marketing managers who desire to enhance their brand performance.

**Theoretical and Practical Contributions**

This work provides a comprehensive understanding of brand anthropomorphism, making a significant theoretical contribution. According to descriptive statistics, the evolution of brand anthropomorphism can be explicitly divided into two stages. The early stage spanned from 1994 to 2017, during which few publications provided a unified perspective on brand anthropomorphism. The "booming" phase has been ongoing since 2018, characterized by an explosion in published papers covering more interdisciplinary topics. Through the co-citation analysis, three central clusters of brand anthropomorphism research are discovered: (1) the mixed effects of brand anthropomorphism on customer behavior; (2) the multi-dimensions of consumer-brand relationships; (3) the conceptual frameworks explaining the underlying mechanism of brand anthropomorphism. These findings contribute to the existing body of knowledge in the given research area.

Our study also employed bibliographic coupling analysis, an effective technique for exploring future research directions (Phan Tan, 2022). From this view, six significant clusters are unveiled: (1) the impact of brand anthropomorphism and brand personality on self-brand connections; (2) the diverse effects of brand anthropomorphism on consumer responses; (3) brand anthropomorphism adopted in digital contexts; (4) anthropomorphized brands as relationship partners; (5) potential mediators and moderators of brand anthropomorphism; (6) consumer emotions toward anthropomorphized brands. These results were compared with the findings of the co-citation analysis to detect emerging trends in the selected field. Besides, the research gaps were thoroughly examined to suggest valuable directions for future studies.

From a practical perspective, an understanding of brand anthropomorphism and the future research directions identified in this study can assist practitioners in adopting early changes to their brand management, enabling them to gain a competitive advantage. According to our findings, consumers tend to embrace anthropomorphized brands because these brands are associated with human traits and personalities (cluster 1 of bibliographic coupling analysis). Consumers often establish self-brand connections with humanized brands, leading to more favorable branding evaluations (Kara et al., 2020). However, there has recently been a shift in understanding the adverse effects of anthropomorphism and its boundary conditions (cluster 2 of bibliographic coupling analysis). Marketing managers should be made aware of these detrimental impacts when integrating anthropomorphism into their brands.

Our results also reveal several emerging research streams that could lead to valuable applications. Adopting brand anthropomorphism in the digital context might enhance consumers' favorable evaluations (cluster 3 of bibliographic coupling analysis).

For instance, anthropomorphizing brands/messages in social media settings (e.g., Facebook fan pages) positively activates consumers' attention and engagement (Perez-Vega et al., 2018). Supporting the belief in a humanized brand as a relationship partner, people develop consumer-brand interactions in the same ways they form interpersonal relationships with others (cluster 4 of bibliographic coupling analysis). From this perspective, attachment styles (i.e., anxiety and avoidance) and relational norms (i.e., exchange and communal orientations) that influence human connections have also been applied to brand relationships (MacInnis & Folkes, 2017). Other issues, such as the link between brand anthropomorphism and brand love, as well as the ambivalence between brand love and brand hate (cluster 6 in the bibliographic coupling analysis), should be thoroughly considered by practitioners seeking to achieve the desired outcomes from branding.

## Limitations and Directions for Future Research

Although our findings offer some interesting insights into the existing literature on brand anthropomorphism, several notable shortcomings are identified in this study. A primary concern involves the data selection criteria. The results might be more reliable if the sample were extracted from WoS and other databases. Another issue is the limited number of keywords we search for relevant publications. Using other groups of keywords may lead to different findings.

Moreover, we selected only articles from English-language journals. Hence, some papers related to the given topic might not be downloaded into the database. However, the most influential journals have already been included in the list. Regarding the bibliometric method, some scholars have debated using this technique as a panoramic approach, which is visualized rather than content-oriented (Ferreira, 2018). In this work, we addressed the given limitation by blending the mixed methods comprising co-citation, bibliographic coupling, and thematic reviews.

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