A Review of Brand Anthropomorphism : Analysis of Trends and Research

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Abstract

In recent years, it could be observed that the anthropomorphism of products and brands offered a unique transformative opportunity for marketing managers. Researchers found that when products or brands were anthropomorphized (i.e., when human-like features were given to non-human entities), they acquired a positive consumer attitude, which ultimately increased purchase intentions. As a result, the available literature on brand anthropomorphism matured over the period. This study tried to map the research done in brand anthropomorphism across the globe from 2000 to 2021 in various Scopus-indexed journals, using tools such as Advanced Excel, VOS Viewer, and Biblioshiny—a bibliometric analysis tool. The results suggested that *The Computers in Human Behaviour* was the leading journal that published the most articles related to brand anthropomorphism. Also, the study indicated that the authors and journals from the United States contributed the most in this area. The study was relevant from the managerial perspective as many companies were anthropomorphizing their products and brands, thus strengthening the consumer-brand relationship. In conclusion, this study intended to provide valuable insights to scholars and marketing managers about the present and future scope of research in this area.

Keywords : brand anthropomorphism, anthropomorphism, advertising, marketing, bibliometric analysis, citation analysis

JEL Classification Codes : M300, M310, M370

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Marketers often give human-like features to their products and services to get a positive response from consumers. This phenomenon is called anthropomorphism. Anthropomorphism is the universal tendency affecting consumers' everyday judgments (Mithen & Boyer, 1996). Specifically, when anthropomorphism is applied to brands, consumers perceive them as actual human beings with the mind, souls, emotional states, and conscious behaviors (Puzakova et al., 2009). Brand anthropomorphism can be defined as the extent to which branded objects are perceived as actual human beings (Guido & Peluso, 2015). One of the key reasons that the brands are anthropomorphized is that it triggers an emotional relationship between consumers and products (Chandler & Schwarz, 2010), hence increasing product or brand likeability (Aggarwal & McGill, 2007) and developing a positive relationship between brands and consumers (Aggarwal & McGill, 2012). Therefore, researchers have started paying close attention to brand anthropomorphism and its impact on products and service-related outcomes (Kim & Kramer, 2015).

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Consumers encounter many anthropomorphized products and brands daily (Hur et al., 2015). Many studies have examined the unidirectional interaction between products and consumers where the objects are not expected to interact with consumers, for example, cars with eyes and facial expressions (Landwehr et al., 2011) or an orange juice bottle with a hat and relaxing on a chair (Puzakova et al., 2013). Rapid technological advancements have formed interactive relationships between consumers and their products. The products are given one prominent interactive feature, i.e., "Voice" (Kim & Mcgill, 2018), that helps them communicate. With the popularity of products like "Alexa," "Siri," and virtual assistants in cars, marketers and researchers are increasingly interested in understanding and strengthening this relationship between consumers and products. Given the issue's importance, the number of studies on brand anthropomorphism is expected to increase over the period.

Originality of this Study

Academic research in a particular domain improves knowledge in a particular area over time (Mahadevan & Joshi, 2021). Typical literature on brand anthropomorphism is descriptive and aims to study the field's different aspects.

In light of the growing literature on brand anthropomorphism, there exists a need for a study that provides a comprehensive overview of the field. Therefore, this paper aims to provide a synthesized review of brand anthropomorphism. Furthermore, as this area has a vast intellectual structure, it will help identify emerging trends and future research areas.

Structure of the Research

This paper is structured in the following manner. Section one focuses on the introduction of the concept of brand anthropomorphism. Section two discusses the literature review. Sections three and four explore research methodology and data collection methods, respectively. Finally, section five highlights the results obtained, and then the last section suggests the conclusion, managerial implications, limitations, and the future scope of research.

Literature Review

The process or tendency of seeing human-like forms and shapes in the environment and attributing human-like features (such as hands, legs, etc.) and characteristics (such as feelings, thoughts, and human characteristics) to brands, abstract concepts, natural and supernatural phenomena is known as anthropomorphism (Epley et al., 2007). Research on anthropomorphism has found that the process goes beyond the observable actions and behaviors of products and brands, where interpretations are made about their personalities, motivations, and intentions (Delgado-Ballester et al., 2020). Also, the anthropomorphism of products and brands triggers consumers' motivational, cognitive, and affective responses. Anthropomorphized brands have seen a positive effect on the consumers' tendency to evaluate products and brands (Aggarwal & McGill, 2012; Delbaere et al., 2011; Hart et al., 2013).

The consumer-brand relationship is widely accepted by consumers, as when a non-human object is perceived as a human, there is an observable difference in the consumer's attitude and behaviors towards that object (Chandler & Schwarz, 2010). Consumers get emotionally attached to anthropomorphized objects (Delbaere et al., 2011) and show fewer intentions to replace them (Chandler & Schwarz, 2010) as they believe that products or brands are now mindful (Waytz et al., 2010). They can think and feel (Huang et al., 2020), so the rules of the social world are now applied to them (Epley et al., 2007 ; MacInnis & Folkes, 2017), and they deserve a lot of respect and care (Chandler & Schwarz, 2010).

The perception of brand anthropomorphism in the consumers' minds depends on the design of managerial activities. It not only includes giving a human-like shape to the brands (Golossenko et al., 2020 ; Guido & Peluso, 2015) but also giving free will, intention (Kim & McGill, 2011), mindfulness, and personality (Epley et al., 2008). Many companies are nowadays working on advanced technologies such as voice-based intelligent systems (Puntoni et al., 2021 ; Vernuccio et al., 2021), such as AI-based devices (Pelau et al., 2021) and chatbots (Roy & Naidoo, 2021; Tsai et al., 2021), which are received positively by the consumers. Now consumers are treating devices like computers and mobile phones as more reliable partners as compared to human companions (Burgoon et al., 2000). Hence, anthropomorphizing technological devices creates a positive attitude toward the product or brand (Van Esch et al., 2019). This practice has led to positive purchase intention (Gupta & Jain, 2019).

The roles of these brands are also studied, indicating that consumers are looking for servant brands or assistants rather than partners (Hsieh et al., 2021 ; Kim & Kramer, 2015). Even brands, when presented with hero characters, are positively received by consumers (Laksmidewi et al., 2017). However, for the specific roles and personalities, it is interesting to note that sometimes giving half face to the brands effectively triggers anthropomorphism (Ning et al., 2020).

The above literature suggests the different directions in which anthropomorphism has been studied, and this study intends to map the existing literature on brand anthropomorphism.

Methodology

The bibliometric analysis can be defined as the method which includes the application of maths and mathematical tools and statistics on various other media communications, including books, journals, etc. (Pritchard, 1969). It has been found that bibliometric analysis is identified as an effective tool for studying the impact of papers (Mahajan & Gadekar, 2021). The bibliometric analysis is divided into two main types:

- Citation analysis
- Content analysis

The process which helps identify the core literature, journals, countries, etc., and implies the relations of the cited works in a particular research area is known as citation analysis. On the contrary, content analysis investigates the author's keywords and other distributions and identifies the current research areas. Hence, bibliometric analysis acts as a useful tool that identifies research from micro (at the institute and scientist level) to macro (at the global and national levels) (Pilkington & Meredith, 2009). Furthermore, research trends and popular issues can also be analyzed with the help of bibliometric analysis. For this paper, content and citation analysis have been used to analyze the literature on brand anthropomorphism.

Data Collection

This research is conducted to map the existing literature on brand anthropomorphism, which will identify the gaps, thus providing the foundation for future research (Tranfield et al., 2003). The five-step methodology for conducting the bibliometric analysis has been used. The following are five steps that are used for the data analysis:

Defining the Search Database

The Scopus database, as managed by Elsevier's publishing, is used to explore the number of research on brand anthropomorphism. It is one of the largest citation and abstract databases for peer-reviewed literature on technology, science, arts, humanities and sciences, and social sciences.

Defining the Search Terms

Due to the versatility of the concept of brand anthropomorphism, this concept is searched through a variety of keywords. For this study, keywords used for the data collection included "Brand Anthropomorphism" and "Anthropomorphism." The OR String separated these keywords in the search function of the Scopus database. The purpose of adding both keywords was to include all the studies related to anthropomorphism.

Initial Search Results

After applying the title, abstract, and keyword options in the search bar of the Scopus database, the initial result consisted of 2,242 research papers.

Refinement of the Search Results

For the refinement of the results, the following filters were applied:

↬ Articles from academic journals were only used for this study (conference proceedings, book chapters, etc., were excluded).

↬ Articles published between 2000 and 2021 were included only (this period was selected because relevant papers on anthropomorphism in the management field were written after 2000).

↬ Selected areas: Business, management and accounting, psychology, social sciences, and art and humanities.

↬ The language selected is English.

After applying the above filters, the final results consisted of 795 papers. The papers were then downloaded in dot CSV format and Bib text for further processing.

Data Analysis

Several analytical tools are available for conducting bibliometric analysis. Each tool has its strengths and limitations. For this study, the Biblioshiny app of the bibliometric software "Bibliometrix — an R-tool for comprehensive science mapping analysis" (Aria & Cuccurullo, 2017) was used. In some cases, the Scopus database and advanced excel were used to analyze the results. For the network and keyword co-occurrence analysis, VOS Viewer software was used.

Analysis and Results

Initial Data Statistics

The primary database is collected from the Scopus website, and the initial data is outlined in Table 1. This study is restricted to the articles published between 2000 and 2021. The research period is thus selected as the topic of brand anthropomorphism evolved after 2000 due to changes in consumer behavior.

In total, 795 papers published in 431 journals are the selected sample size. The subject of brand anthropomorphism has seen collaboration among researchers and acclamations, which can be seen from Table 1. Of 1,541 authors, 1,256 are multi-authored documents, and 285 are single-author documents. From Table 1, it can be identified that we used 2,373 author keywords to study the various aspects of brand anthropomorphism.

Table 1. *Initial Data Statistics*

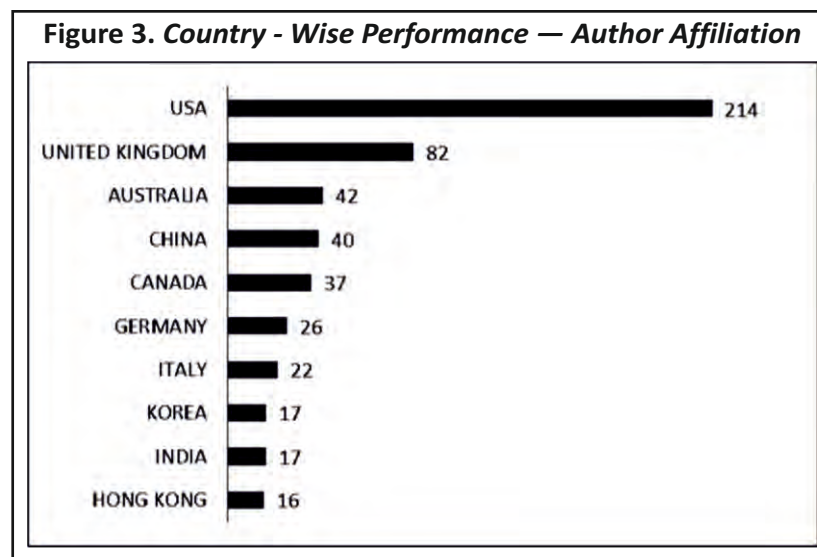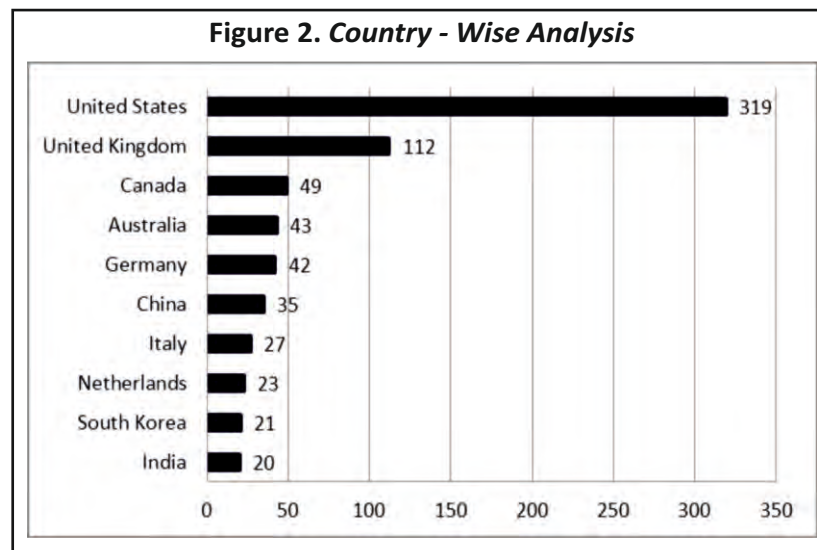| Description	Results
Main Information about the Data	
Timespan	2000 : 2021
Sources (Journals, Books, etc.)	431
Documents	795
Author's Keywords	2373
Authors	
Authors	1541
Author appearances	1835
Authors of single-authored documents	285
Authors of multi-authored documents	1256

Year-Wise Distribution

Figure 1 illustrates the historical development of the number of articles published on the concept of brand anthropomorphism from the year 2000 – 2021. As depicted, only eight articles were published in the year 2000, after which a lesser number of articles were published in the area of brand anthropomorphism till the year 2006. However, a steady rise in the number of research studies on anthropomorphism can be seen after the year 2006, where studies on the evolution of computers (Farzanfar, 2006) and anthropomorphism on animal behaviors (Ennaceur et al., 2006; Fox, 2006) were published, which has laid the foundation for various contemporary research. Furthermore, recent years have seen a dramatic rise in the number of studies on anthropomorphism with consumers' engagement in online behavior through anthropomorphism and with the popularity of robotics and chatbots (Letheren et al., 2021; Singh et al., 2021). This demonstrates that academics and scholars are paying attention to brand anthropomorphism, and studies are valued within academia.

Figure 1. *Year - Wise Publication Data*
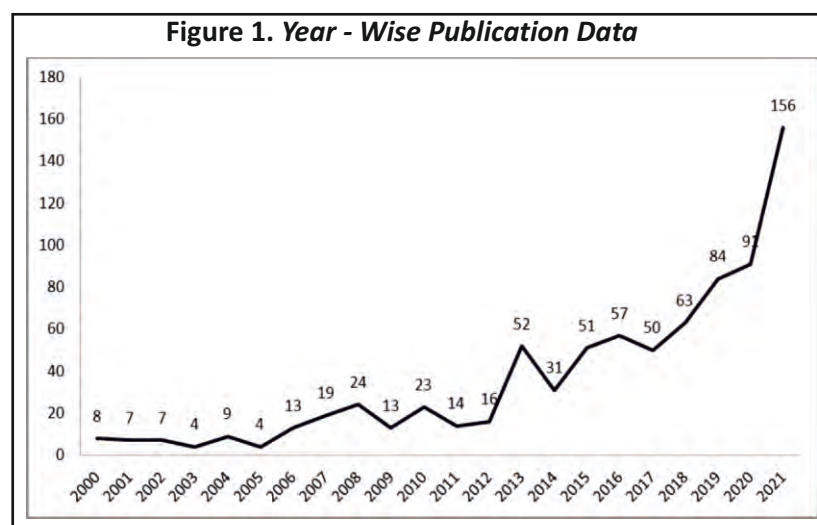
Country-Wise Analysis

The country-wise analysis depicts the attention and strength of that particular country in the related search area. Figure 2 shows the top 10 most productive countries that have contributed the most in the area of brand anthropomorphism. These top 10 countries contribute to 86% of the total contribution in the area of anthropomorphism. As can be seen from Figure 2, the USA has contributed the most, with 319 publications, followed by the United Kingdom and Canada, with 112 and 49 publications, respectively, in the area of brand anthropomorphism. Hence, we can conclude that maximum research concerning brand anthropomorphism has been carried out in the United States and the UK, and there is a scope of research in this area in the countries like India, Spain, and France.

Figure 3 shows the most productive countries when the nationality of the first author is considered. Again, the

Figure 2. *Country - Wise Analysis*

Country	Value
United States	319
United Kingdom	112
Canada	49
Australia	43
Germany	42
China	35
Italy	27
Netherlands	23
South Korea	21
India	20

Figure 3. *Country - Wise Performance — Author Affiliation*

Country	Value
USA	214
UNITED KINGDOM	82
AUSTRALIA	42
CHINA	40
CANADA	37
GERMANY	26
ITALY	22
KOREA	17
INDIA	17
HONG KONG	16

top countries account for 91.31% of the total publications. Of the top publishing countries, the US is the largest contributor with 214 articles, followed by the UK and Australia with 82 and 42 publications, respectively.

All the above analysis indicates that authors from various countries are making a significant contribution to brand anthropomorphism, and the contributions are expected to increase in the coming years.

Journal-Wise Performance

Brand anthropomorphism is spread among different journals. Table 2 represents the top-performing journals in the field of brand anthropomorphism. The *Computers in Human Behaviour* (H - index 23) is the principal contributor in the area of brand anthropomorphism. The second-highest publishing journal is *Anthrozoo* (H - index 56) which has contributed 27 papers in this area. Apart from the above, many other reputed journals like *Frontiers in Psychology* (H - index 133, papers 23), *Society and Animals* (H - index 45, papers 22), *Journal of Consumer Research* (H - index 194, papers 16), and *Journal of Business Research* (H - index 217, papers 15) have contributed significantly to the area.
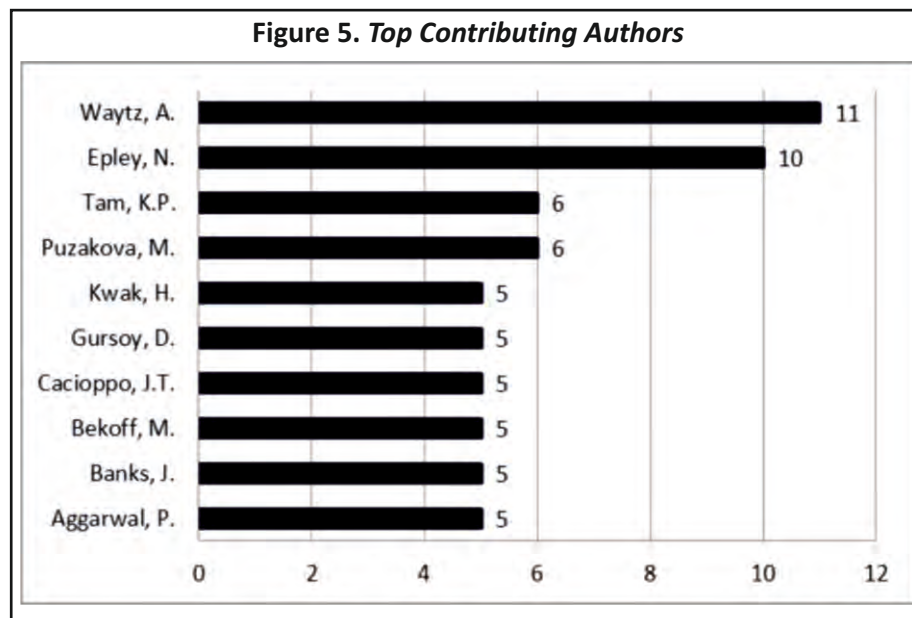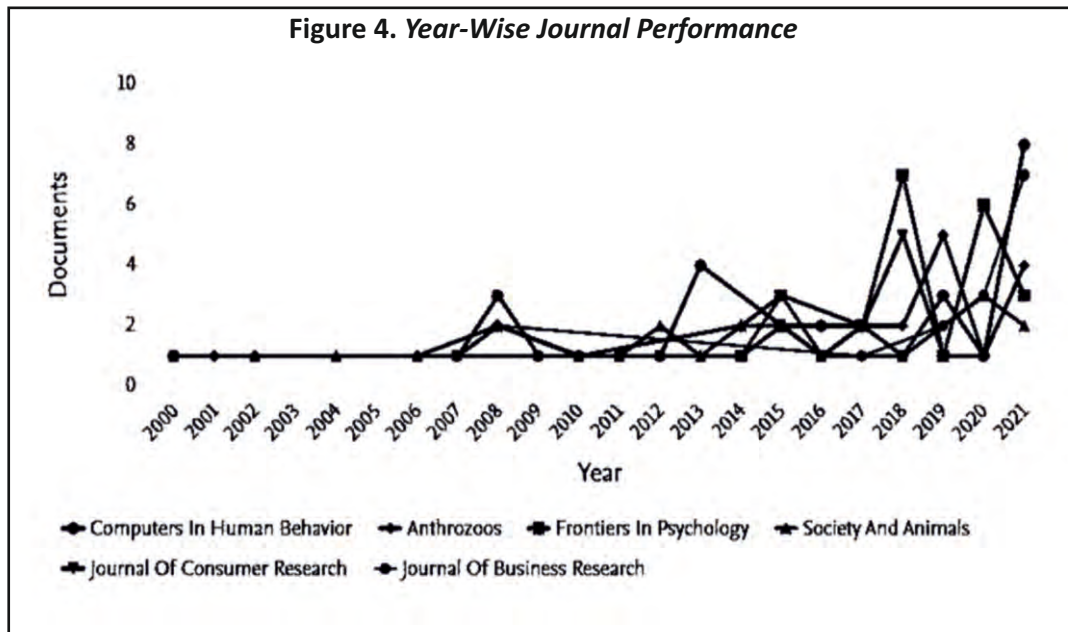
Figure 4 represents year-wise journal performance for the top six journals. It can be seen that over the years, *Society and Animals* have constantly contributed to the field of brand anthropomorphism. On the contrary, other journals like *Journal for Consumer Research* and *Journal for Marketing Management* have been contributing for the past decade. This revelation concludes that anthropomorphism in psychology has always been an area of concentration. However, the topic of anthropomorphism has evolved in consumer behavior and marketing in the past decade.

Top Authors

Figure 5 presents the most prolific authors in the area of brand anthropomorphism. As seen in the figure, Waytz et al. (2010) have published 11 papers in the area and have received 433 citations. The next most contributing author is Epley et al. (2007), who have published 10 papers in this area and have received 103 citations. The next contributing authors are Tam (2015) and Puzakova et al. (2009), who have published six papers in this field. Hence, it can be concluded from Figure 5 that research in the area of brand anthropomorphism is increasing, and its impact is also growing.

Table 2. *Journal-Wise Performance Along with h-index*

Index	Index	H - Index
Computers in Human Behaviour	32	203
Anthrozoos	27	56
Frontiers in Psychology	23	133
Society and Animals	22	45
Journal of Consumer Research	16	194
Journal of Business Research	15	217
Journal of Marketing Management	14	75
Psychology and Marketing	10	124
Social Cognition	10	80
Zygon	8	26

Figure 4. Year-Wise Journal Performance

Legend: Computers In Human Behavior, Anthrozoos, Frontiers In Psychology, Society And Animals, Journal Of Consumer Research, Journal Of Business Research

Figure 5. Top Contributing Authors

Author	Value
Waytz, A.	11
Epley, N.	10
Tam, K.P.	6
Puzakova, M.	6
Kwak, H.	5
Gursoy, D.	5
Cacioppo, J.T.	5
Bekoff, M.	5
Banks, J.	5
Aggarwal, P.	5

Top Performing Articles

The top 10 pieces of research on brand anthropomorphism are mentioned in Table 3. The "citations" mentioned in Table 3 refer to the number of global citations, which is the total number of citations in the Scopus database. In terms of citations, Nass and Moon's (2000) research on the impact of anthropomorphism on machines is cited 1,397 times. The research suggesting the three-factor of anthropomorphism titled "On Seeing Human: The Three-Factor Theory of Anthropomorphism" by Epley et al. (2007) is cited 1,289 times. Another research titled "Is That Car Smiling at Me? Schema Congruity as a Basis for Evaluating Anthropomorphized Products" by Aggarwal and

Table 3. *Top Performing Articles*

S. No.	Title	Authors	Year	Citations
1	Machines and mindlessness: Social responses to computers	Nass & Moon	2000	1397
2	On Seeing Human: A three-factor theory of anthropomorphism	Epley et al.	2007	1289
3	Is that car smiling at me? Schema congruity as a basis for evaluating anthropomorphized products	Aggarwal & McGill	2007	471
4	Who sees human? The stability and importance of individual differences in anthropomorphism	Waytz et al.	2010	440
5	The mind in the machine: Anthropomorphism increases trust in an autonomous vehicle	Waytz et al.	2014	433
6	Creating social connection through inferential reproduction : Loneliness and perceived agency in gadgets, gods, and greyhounds : Research article	Epley, Akalis, Waytz, Cacioppo	2008	368
7	When we need a human: Motivational determinants of anthropomorphism	Epley, Waytz, Akalis, Cacioppo	2008	340
8	Too real for comfort? Uncanny responses to computer-generated faces	MacDorman et al.	2009	293
9	The influence of social media interactions on consumer-brand relationships: A three-country study of brand perceptions and marketing behaviours	Hudson et al.	2016	275
10	When brands seem human, do humans act like brands? Automatic behavioral priming effects of brand anthropomorphism	Aggarwal & McGill	2012	255

McGill (2007), which studies the impact of facial expressions on the car, is cited 471 times. From Table 3, it can be seen that several researchers are studying the impact of anthropomorphized technologies on consumers, and such products are preferred compared to other products.

Keyword Performance

Table 4 shows the frequency of keyword occurrences. The most occurring keywords are anthropomorphism and brand anthropomorphism. As expected, the term "anthropomorphism" shows the strongest link with "artificial intelligence," "trust," "anthropocentrism," "brand anthropomorphism," and "social cognition." From the keywords, two specific domains can be easily identified where this field is expanding, which are robotics and advertising. On the contrary, some areas which can be further studied are purchase intentions, warmth, and religion.

Figure 6 shows the network maps of author keywords created using VOS Viewer software. The map includes items and links, where the link shows the connection between the two items. Each link has strength. The higher the strength, the stronger the relationship. For example, the network map suggests that "anthropomorphism" has the strongest connection with "brand anthropomorphism," "trust," "theory of mind," and "empathy." Also, linkages of brand anthropomorphism with other items, such as "artificial intelligence," "human-robot interaction," "anthropocentrism," and "advertising," can be seen. In the future, stronger relation of brand anthropomorphism with other keywords, such as "social behavior," "purchase intentions," and "brand loyalty," can be identified.

Table 4. *Treemap for Frequently Used Author Keywords*

Figure 6. *Keyword Performance*
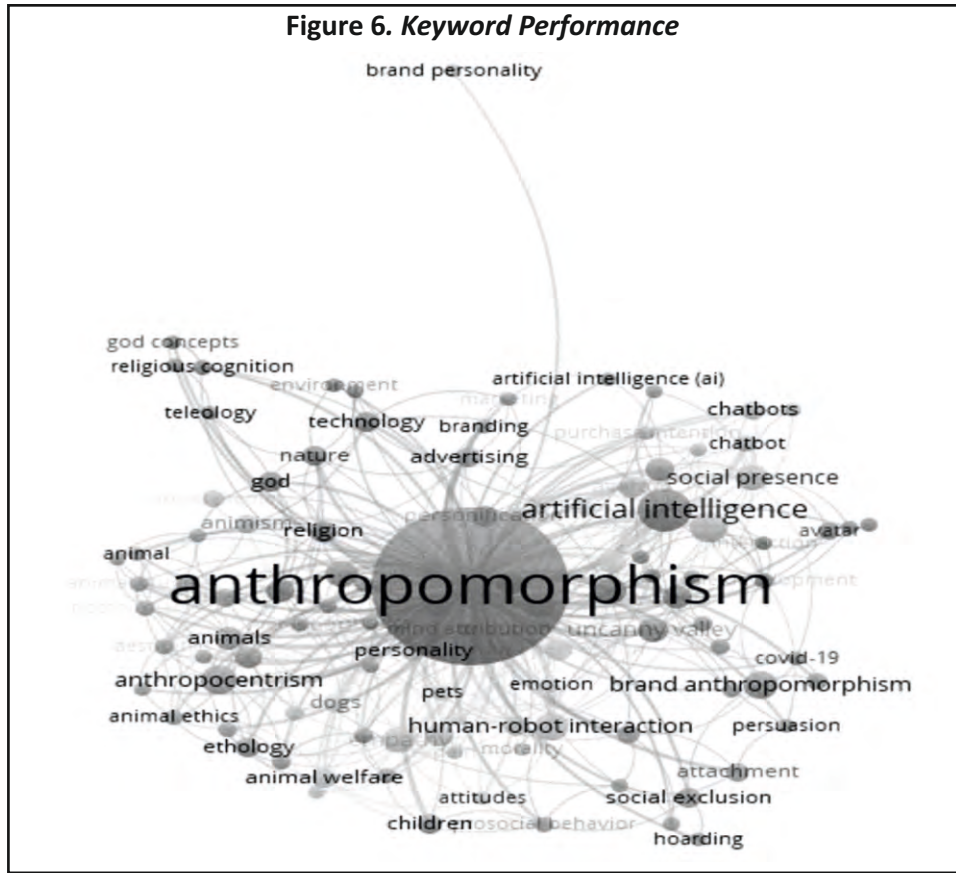
Conclusion

This study presents a structured approach to bibliometric analysis on brand anthropomorphism. The area of anthropomorphism has drawn significant attention from researchers, which is evident from the rise in the number of research in this area. With the rise in the number of research, there exists a need to conduct a comprehensive bibliometric analysis identifying the influential authors, pieces of literature, and major contributing countries.

This paper intends to fill this gap by analyzing the number of research on brand anthropomorphism in the past two decades, that is, between 2000 and 2021. The results are as follows:

↳ It has been observed that over the period of two decades, 795 papers have been published in 431 journals. Out of the 1,541 authors who contributed to this area, 1,256 were collaborative, meaning that 81% of the research published in this area is collaborative.

↳ From the above analysis, it is evident that in the last three years, there has been a dramatic increase in the number of research on anthropomorphism. Furthermore, with the popularity of artificial intelligence, chatbot, and robotics, researchers are trying to have an in-depth understanding of the impact of these devices on consumers.

↳ The geographical dispersion suggests that the USA has contributed the most in the area of brand anthropomorphism, both in terms of the number of research published and the number of authors' affiliations. However, India is also one of the emerging countries contributing to the brand anthropomorphism field.

↳ The analysis further indicates research on brand anthropomorphism is published in leading journals like *Computers in Human Behaviour*, *Anthrozoos*, and *Frontiers in Psychology*. The recent increase in the number of publications on consumer behavior and marketing shows the expanded interest of researchers in this field.

↳ By understanding the top-performing articles, it has been observed that articles that study the impact of artificial intelligence, chatbots, and robotics are cited most times. Furthermore, apart from the above studies, research that highlights the role of brands and the impact of facial expressions is cited most times.

↳ In addition to the above, the analysis of keywords shows a stronger connection of the keyword "anthropomorphism" with "artificial intelligence," "human-robot interaction," "anthropocentrism," and "advertising," but a weaker connection can be seen with the keywords such as "social behavior," "purchase intentions," and "brand loyalty," which provides a future scope of research in the given field.

Managerial and Theoretical Implications

Recently, it has been observed that managers are adopting various anthropomorphic strategies like anthropomorphic product design (such as biscuits with smiles), anthropomorphic packaging (like perfume bottles with men's and women's body shapes), brand logo (like Starbucks) to connect emotionally with the consumers. Consumers value anthropomorphic representations in advertisements or technology and get attached to the product or brands. With the development of advanced technologies like artificial intelligence, it is important to study their impact on consumers. This study tries to map the existing literature so that the future scope of research can be identified.

Limitations of the Study and Scope for Future Research

Even though the body of research has many valuable offerings in brand anthropomorphism, this research work has certain limitations. Firstly, the search is only limited to Scopus-indexed journals; hence, the work published in

other important journals might get excluded. Secondly, the study is restricted to brand anthropomorphism, and considering the multidisciplinary nature of anthropomorphism, research in other areas can also be studied.

The future scope of work may include an analysis of brand anthropomorphism in various fields and its impact on consumers. In the future, researchers can also study in detail the impact of voice assistants on consumers and how the process of anthropomorphism triggers when voices are implanted in devices. Finally, the study intends to provide a valuable briefing to scholars and researchers who want to study in detail the field of brand anthropomorphism.

Authors' Contributions

Pritha Nasery Ubgade conceived the idea and fetched the papers based on brand anthropomorphism in the Scopus database using the relevant keywords. She also did data analysis and manuscript writing. Dr. Sujata Joshi contributed to the findings and results analysis. This study was conducted under the guidance and supervision of Dr. Sujata Joshi.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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