



Artificial Intelligence with a Human Touch: A SPAR-4-SLR on AI Anthropomorphism in Consumer and Business Research

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Abstract. The objective of this investigation is to conduct an overarching literature review that examines the effect of “Artificial Intelligence (AI) Anthropomorphism” on consumer behaviour, with particular emphasis on the fields of “business management and accounting”. This paper strives to examine the authors’ worldwide contributions to this particular field and their affiliations. This paper endeavours to address four Review Questions (RQ1 - RQ4), specifically the present circumstance of AI Anthropomorphism in the context of only the “business management and accounting” subject. In the existing literature, the most frequently used keywords, the most relevant contributors in the field from the perspective of authors, countries, and institutions, and primarily to pinpoint the future directions for the development of AI Anthropomorphism. The study has implemented the SPAR-4-SLR framework, with a specific emphasis on Scopus-indexed journals that were published between 2019 and 2025, a period of precisely 5.3 years. This study comprises 515 initial documents, which were subsequently filtered using SPAR-4-SLR protocols and criteria, resulting in 152 documents. The data analysis and visualisation of these documents were conducted using bibliometric tools, including R, Biblioshiny, VOSviewer, and Microsoft Excel. The discovery indicates that the extant literature review is overpowered by advanced countries such as the United States of America and China, as evidenced by the significant increase in interest in this subject from two publications in 2019 to 152 by early 2025. As AI continues to develop, the anthropomorphism component will continue to expand, as will the scope of research.

Keywords: Artificial Intelligence, Anthropomorphism, Chatbots, Consumer Behaviour, Technology, Human-Computer Interaction.

1. Introduction

The propensity to give nonhuman entities human-like traits or qualities is called anthropomorphism [22]. In the late 2000s, the concept of giving human characteristics to non-humans started to receive more attention in the literature on consumer behaviour [24]. Research has shown that when products start depicting human characteristics, consumers’ attention to that particular product will increase [13; 15; 2], because of which the concept of anthropomorphism is now even used by the government to grab the attention of the consumer. This phenomenon has been notably leveraged in commercial advertising, for instance, in a recent commercial advertisement by the Reserve Bank of India (RBI) that used anthropomorphised ads for its consumers to make them aware of online scams. The public is inundated with advertisements that mimic human characteristics, such as a recent advertisement featuring the Bollywood lead actress and generative AI (Gemini AI). In the advertisement, the actress converses with the AI, which responds to her as if it were a companion and requests assistance. These human-like forms, behaviours, and characters are usually used to last longer and can have a powerful impact on the day-to-day lifestyle of consumers. These instances demonstrate the profound impact of anthropomorphism in

shaping consumer behaviour and engagement [1; 55]. With the advancement of Artificial Intelligence (AI), specifically in the field of conversational AI, the effect of anthropomorphism or the uncanny valley on humans will be more pronounced. Because of the rapid growth of AI in our world, it has become a significant part of a consumer's life [20; 35; 45; 52].

Conversational artificial intelligence (AI) and generative AI are weak and strong AI that provide users with interactive, cognitive, emotive, and social experiences. As an outcome, users are more inclined to retain AI in their lives and see it as a human [6; 12]. Emerging applications of conversational AI and generative AI with a blend of anthropomorphism are differentiating the way companies communicate with their clientele [2; 13]. Chatbot-like systems or virtual assistants are called conversational agents; these conversational AI stimulate human conversation because of “Natural Language Processing (NLP)”, which allows the systems to process linguistic communication [42]. These systems are trained with a large amount of data, like text and speech, which helps these systems to understand the human language, process it, and interact accordingly [51]. The advanced versions of chatbots emerge as AI social companions (ASCs); these AIs have the specific conversational ability as they provide a free form of social conversations of friendly or romantic variety to the users [8]. These are Siri, Alexa, Google Assistant, and Mitsuku, which are conventional AI whereas Replika, ChatGPT, deepseek, etc. are generative AIs [6; 12]. These have evolved beyond simple task execution to social championship, fostering deep emotional connection with users [13; 40]. Replika and Mitsuku have animated avatars that will have a conversation with the user. These anthropomorphic characters will allow users to build a bond with AI [13; 14], and these AIs have the power to develop an attitude that can influence the buying decision of today's consumer [15].

The development of artificial intelligence (AI) facilitates customers' daily decision-making, which in turn enables people to make better and faster judgements by optimising workflows and data use [54; 56]. Due to anthropomorphism, the consumers are influenced by the AI, which significantly influences consumers' decision-making by enhancing information accessibility, differentiated choices, personalised recommendations, and streamlining the purchase process [56]. The e-commerce sector seeks to enhance customer satisfaction, personalisation, recommendation systems, uncover deception, stockpile management, and optimising logistics and operations by utilising AI, thereby delivering highly customised and efficient services that result in heightened customers' happiness and sector-wide growth [25; 49]. Major AI products which have anthropomorphic appearances improve the consumers' purchase intention, which means these products have the power to influence the buying decision of consumers [58; 59]. The objective of this investigation is to conduct a panoptic literature review that examines the effect of “Artificial Intelligence (AI) Anthropomorphism” on consumer behaviour, with special emphasis on the fields of “Business Management and Accounting”. This paper strives to examine the authors' worldwide contributions in this field and their affiliations.

1.1 Overview

AI Anthropomorphism

Social psychology, cognitive psychology, developmental psychology, and neuroscience have all contributed to our understanding of anthropomorphism [51; 56]. It is an idea that has accumulated the attention of researchers and which is extensively studied [24]. Numerous researchers have examined this concept from the perspective of multidisciplinary subject areas, including management, advertising, journalism, branding, robotics, theology, and psychology [7; 44; 22; 34]. Xenophanes was a Greek philosopher who lived in the early 5th and late 6th centuries. He was the precursor to use the term anthropomorphism while explaining how gods and other supernatural agents resemble humans. He described the phenomenon in the book Leshner 1992 [57]. So, building human-like attributes in the minds of consumers has always been an interesting topic, and with the evolution of AI this concept has regained its attention in all sectors [51; 22; 23]. AI has had an impact on the cognitive and behavioral insights of individuals, and it will evolve and adapt in accordance with the evolving environment, enabling humans to become more resilient to change and to life [41]. Whereas anthropomorphism has consistently been present in the market, either as a result of the market's strategy to attract or retain customers or because consumers perceive the brand or product as human [1; 3; 26; 28; 59]. In the minds of consumers, the AI anthropomorphism has acquired a distinctive status as a result of the increasing popularity and adoption of AI agent utilisation among consumers, as an outcome of the progress of conventional and generative AI [6; 12; 54]. In order to accomplish the organization's objectives, businesses have been compelled to adjust to the evolving environment and incorporate AI into their operations [34]. Marketers can optimise their reach and conversion strategies by utilising AI tools, which are more dynamic in nature, to comprehend consumer satisfaction demands [30]. Consequently, an ordinary interaction with AI agents can be transformed into a more captivating experience [9; 29; 31].

Consumers will experience self-congruence as a result of the alignment between the ideal self and the actual character of anthropomorphised AI [5; 36]. In the midst of the proliferation of AI, the anthropomorphized AI provides a pathway for the researcher to further investigate it.

Therefore, a thorough systematic assessment of anthropomorphism in AI is required. This review article critically analyses existing research to provide an understanding of the capability of AI agents and their anthropomorphic impact on buying behaviour. Various studies have been conducted on how anthropomorphism in AI helps consumers make their decisions and how anthropomorphism is helping organisations fulfil the needs of the consumers [7; 10; 39]. These studies are scattered among diverse fields (marketing science and information, psychology, computer science, and social sciences), which will be complex for the marketing researcher [19]. Lastly, this article aims to serve as a treasure for future scholars and practitioners for their upcoming study, which is based on the "Business Management and Accounting" subject field.

2. Methodology

The study's objective is to thoroughly assess every germane work on AI anthropomorphism from the fields of "business management and accounting". The SPAR4 procedure is the review method that was employed to follow the review paper developed by Paul et al. (2021), which is also used by many other researchers in their studies [13; 45; 38; 16]. "Scientific procedure and rationales for systematic literature

reviews”, or “SPAR4 SLR”, is an organised method for performing literature reviews that aids in providing better clarity, and guides the researcher through the process and supports the researcher's choice, and helps to address the objective [48]. This study is also employed by numerous researchers in their research [13; 46; 47; 48]. It is the most up-to-date, meticulous, and robust review procedure [13]. With this technique, researchers seek to deliver a panoramic and unbiased summary of existing research [38; 44; 46].

Assembling

Identification

★ **Research Question**

- RQ1: To evaluate the present state of publication in AI anthropomorphism in the context of business management and accountancy.
- RQ2: To ascertain the most prolific contributions to the literature from authors, countries, and institutions.
- RQ3: To investigate the most frequently employed keywords and essential themes in the field
- RQ4: To suggest a potential future research direction that could facilitate progress

★ **Domain:** AI Anthropomorphism

★ **Source Type:** Journal

★ **Source Quality:** Scopus

Acquisition

★ **Search Mechanism & Material acquisition:** Scopus

★ **Search Period:** 2019 - 2025

★ **Search Keywords:** AI, Anthropomorphism, Conventional AI, Virtual Influencers, Chatbots, Customer Satisfaction, Service Robots.

★ **Source Quality:** Scopus

Arranging

Organisation

★ **Organisation Code:** Language, Document Type, Keywords, Subject Area, Source Type

Purification

★ **Language:** English

★ **Document Type:** Article

★ **Source Type:** Journals

★ **Subject Area:** Business Management and Accounting

Total Documents retained after the arranging stage: 152

Assessing
Evaluation ★ Total Documents for Analysis: 152 Documents ★ Performance: Top contributor (Authors, Country, Affiliations), Top publication (Articles, Journals) ★ Software: Microsoft Excel, R, Bibloshiny, VOSviewer Reporting ★ Convention: Figure, Tables & Words ★ Limitation: The accuracy and completeness of the document are Scopus only ★ Source support: No financial support was received for conducting the study

Fig. 1. Article selection process using SPAR-4-SLR: (46)

It encapsulates the process for assembling, arranging, and assessing. All have two sub-stages: “Assembling” has “Identification and Acquisition” of literature as its sub-stages, “Arranging” includes “Organisation and Purification” of literature, and lastly, “Assessing” incorporates “Evaluation and Reporting” of literature [48]. With this respective study, researchers will make efforts to address the following few queries in this area.

RQ1: To evaluate the present state of publication in AI anthropomorphism in the context of business management and accountancy.

RQ2: To ascertain the most prolific contributions to the literature from authors, countries, and institutions.

RQ3: To investigate the most frequently employed keywords and essential themes in the field

RQ4: To suggest a potential future research direction that could facilitate progress

This research will provide an extensive study of the current state of publication in AI Anthropomorphism (RQ1). We will be able to determine the most prolific contribution to the literature by author, countries, and institutions (RQ2) and extract the most frequently employed keywords (RQ3), which will act as a reference for future research (RQ4), through a detailed analysis using Microsoft Excel, R, biblioshiny, and VOSviewer.

2.1 Assembling

The Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR) protocol begins with the assembling phase (48), which further comprises two substages: identification and acquisition [19]. It encompasses the following: “Research Questions, Domain, Source Type, and Source Quality”. This article includes the “Research Questions (RQ1 - RQ4)”, which are rooted in the AI Anthropomorphism domain and as the benchmark for source quality Scopus journals were shortlisted, as they have been recommended by many researcher over web science as it offer necessary high quality research material, ease to use and holds direct connection to the articles for previewing and understanding

[13; 24]. The time frame for this study is from 2019 to 2025 because there is no research has been conducted on this topic from the “Business Management and Accounting” subject background. The keywords used in “Scopus” for this study are AI, Anthropomorphism, Conventional AI, Virtual influencers, Chatbots, Customer satisfaction, and service robots. In total, there were 515 documents were found (without using any filters).

2.2 Arranging

The subsequent phase of SPAR-4-SLR is called arranging. This study comprises two substages, “Organisation and Purification”. The Organisation Code for this study is “Language, Type of the Document , Keywords, Knowledge Area, Resource Type”, which will be the base for the purification process. In the purification stage, English language and document type as article were the 1st step of purification, following keywords, Knowledge area as “Business Management and Accounting”, and fountainhead type as journal; scrutinizing the research articles from 515 documents to 152 documents. This research is clarified by the examination of those 152 documents.

2.3 Assessing

The Assessing phase, which includes dual substages, examining and reviewing, is the concluding stage of the SPAR-4-SLR. Out of 515 articles, 152 documents were analysed in total. The analysis of these 152 documents was enhanced with the help of Microsoft Excel, R, Biblioshiny, and Vosviewer software, derived in a more affirmative and streamlined process. The graph was created using Microsoft, the data for the analysis was extracted using R and Biblioshiny, and the connection of citations used by the authors in their research was visually represented using Vosviewer. All of these were presented and reported using figures, tables, and words, which improved the research's depth and clarity.

3. Analysis of AI anthropomorphism in purchase decision

This session will analyse the data of 152 journals published from 2019 to 2025. After using all the filtration processes, it will be calculated using the R tool, specifically the bibliometric, and Microsoft Excel. The session will include figures, tables, and virtual representations to provide future researchers with clear information specifically related to the "business management and accounting" subject area. Outlined below are the analyses done by the researcher:

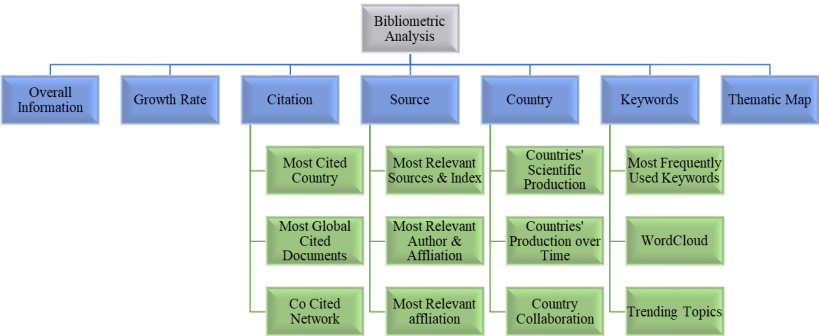


Fig. 2. Source: Authors' Interpretation

This SLR will employ Microsoft Excel, R, Biblioshiny, and Vosviewer to perform a bibliometric analysis, thereby allowing researchers to address the proposed query. The research inquiry will be resolved by utilising descriptive research data.

3.1 RQ1: To evaluate the present state of publication in AI anthropomorphism in the context of business management and accountancy.

3.1.1. Overall Information. A broad range of intellectual contributions from 2019 to 2025 are included in the current study's scope.

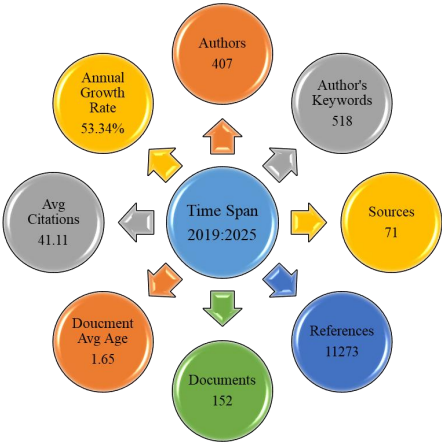


Fig. 3. Source: Authors' Interpretation Using Biblioshiny

The dataset's 152 Scopus-indexed texts from 71 distinct publication sources demonstrate a reasonably diverse base of academic distribution. These articles have been contributed to by 407 writers from a variety of countries. The dataset contains 518 unique author keywords, which suggests a wide range of subjects that have been investigated in the region. To be more precise, 11,273 references are listed in all

publications, which suggests a comprehensive examination of the Scopus of existing research that has occurred over the past five years and continues to do so. This serves as a firm foundation for the framing of these investigations. This discipline has begun to exhibit a significant annual growth rate of 53.34%, which indicates that academicians are increasingly interested in and expanding it over time. The dataset predominantly consists of recent and contemporary research, as evidenced by the average of 41.11 citations per document and the average age of 1.65 years. This is essential for documenting the most recent advancements.

3.1.2 Growth Rate. Fig. 4 below indicates that scholars have been demonstrating interest in the field since 2019, and this interest has continued to increase in tandem with the simultaneous emergence and growth of artificial intelligence, which has bolstered the study.

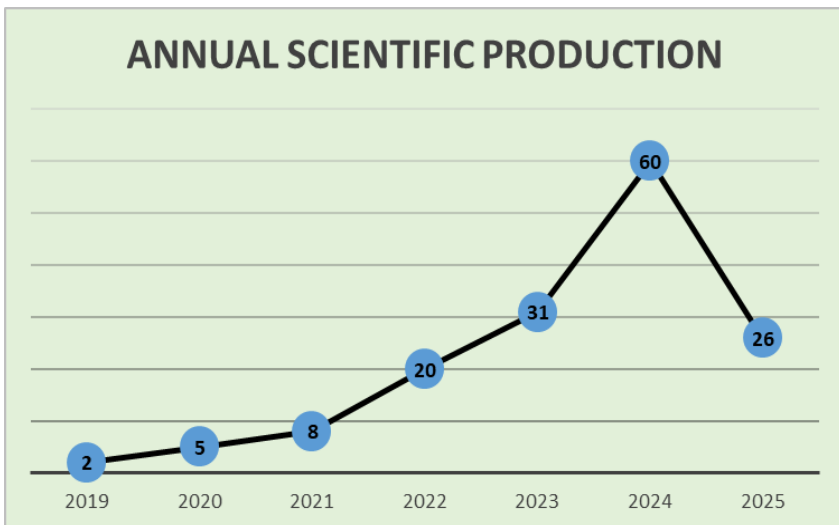


Fig. 4. Source: Authors' Interpretation Using Biblioshiny

The dataset commenced in 2019 with only two articles, which suggests that there is a growing interest in the domain for research. A gradual increase was observed in 2020 and 2021, with 5 and 8 articles, respectively, indicating early-stage growth. However, a significant increase occurred in 2022, with 20 articles, which strengthened the research. This increase has continued in 2023, with 31 articles, demonstrating a 55% increase from 2022. The topic has garnered significant attention and pervasive scholarly engagement in 2024, with 60 articles published worldwide, which is nearly double the output of 2023. The graph is anticipated to increase as the month progresses, as the data was collected as of April 2025, and 26 articles have been published. The researcher anticipated a zenith in this sector by the end of the year. Additionally, the growth of Conventional, Generative, Visual, and other AI technologies will result in the conduct of additional studies in the future.

3.2 RQ2: To ascertain the most prolific contributions to the literature from authors, countries, and

institutions.

3.2.1 Citation This session has 3 subcategories, which are as follows:

- **Most Cited Country:** This will enable us to determine which country's work is most favoured by the researchers.
- **Most Globally Cited Documents:** This will enable us to identify the documents that researchers have most frequently consulted over the past five years.
- **Co-Cited Network:** It will be beneficial to determine which documents are cited in conjunction with other documents, thereby establishing a network of interconnected documents in this field.

Most Cited Country. The top 10 most-cited countries are illustrated in the below mentioned figure 5.

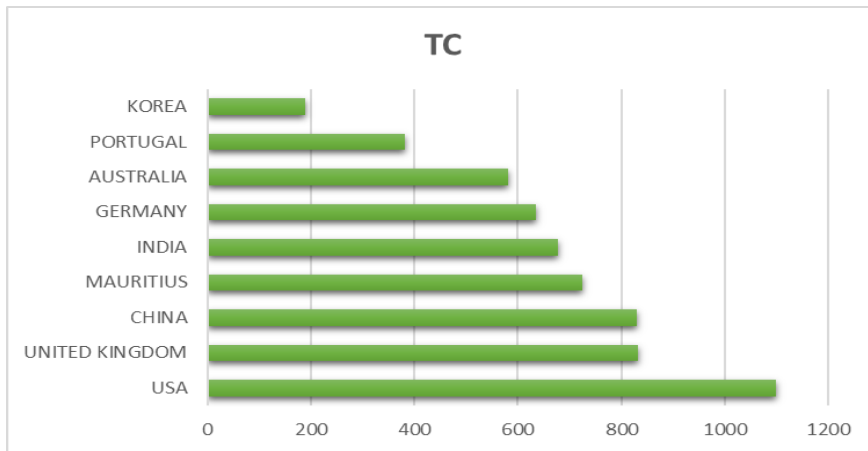


Fig. 5. Most Cited Country. Source: Authors' Interpretation Using Biblioshiny

The USA has emerged as the most influential contributor to the global research landscape, as evidenced by its well-established research infrastructure, significant funding, and strong academic collaborations. However, various countries have also contributed their valuable insights. The United Kingdom and China, with a total citation count of 831 and 830, respectively, followed, demonstrating virtually identical citation counts and underscoring their competitive research output. Mauritius, with a total citation of 725, is ranked higher than the majority of research hubs, including India (678 total citations), Germany (634 total citations), and Australia (581). This is an intriguing observation. Despite Mauritius's low GDP in comparison to India, Germany, and Australia [17], they prioritise quality, which distinguishes them from other nations. India, Germany, and Australia have consistently contributed to academic research in this field, which provides an opportunity for Indian researchers to conduct research in this field. Portugal and Korea, with 382 and 189 citations, respectively, occupy the ninth and tenth positions. The most notable point is that Uzbekistan is the least cited country, with less than 10 citations. Georgia, on the other hand, has 0 citations; Indonesia and Canada have 1 citation each, Spain has 2 citations, and South Africa has 8.

Most Globally Cited Documents. The top 10 articles in the field of AI anthropomorphism in the business management and accounting subject field that have received the greatest scholarly attention are listed in Table 1.

Table 1. Most Global Cited Documents

Article	Quartiles & ABDC Ranking	Surname of Author	Year	TC
[32]	Q1 & A*	Gursoy D	2019	725
[2]	Q1 & A*	Adam M	2021	581
[49]	Q1 & A	Pillai R	2020	528
[25]	Q1 & A	Fernandes T	2021	382
[37]	Q1 & A	Lin H	2020	232
[55]	Q1 & A*	Schanke S	2021	160
[60]	Q1 & A	Yang Y	2022	151
[15]	Q1 & A*	Chi Oh	2022	147
[42]	Q1 & A	Moriuchi E	2021	134
[8]	Q1 & A	Aw Ec-X	2022	129

They are the most influential articles that have been cited the most in this subject field. Dogan Gursoy and three other co-authors, Oscar Hengxuan Ch, Lu Luc, and Robin Nunkoo, are the authors of the article [32], which has been cited the most, with 725 mentions. They created a theoretical framework known as “Artificially Intelligent Device Use Acceptance (AIDUA)”, which investigates the customers' readiness to accept AI devices, particularly in the context of service encounters. They have developed a conceptual AI device acceptance framework that has been empirically tested and is accessible to researchers [32]. Numerous studies have illustrated that anthropomorphic design elements, including social presence and human characteristics, can improve transaction outcomes and user compliance. Nevertheless, the impact is contingent upon the design context [32; 2]. Some studies have even emphasised the moderating effects of variables such as the need for human intentions, customer experience, and service domains such as airline services and hospitality [15; 33; 37]. The future of AI promises a transformative advancement across various sectors, including the enhancement of the personalised experience, despite the fact that these AI fail to establish long-term engagement and contentment [43; 44].

Co-Cited Network. The Vosviewer software was employed to create the figure below, which visualises the co-cited network.

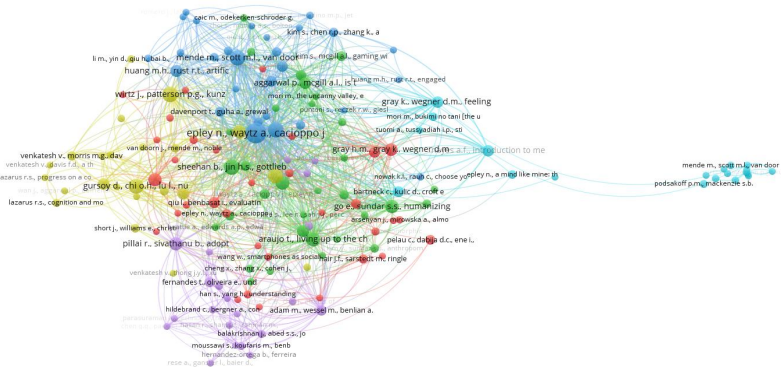


Fig. 6. Co-Cited Network - Cited references (Unit of analysis)

This network illustrates the frequency with which pairs of references are cited in scholarly literature. It highlights the key authors, thematic clusters, and interdisciplinary connections in the research field. Prominent figures whose work underpins the theories of anthropomorphism, moral cognition, and human AI interaction [23], which dominate the network, and the density is high in those areas. Interestingly, a small set of turquoise clusters on the far right are less integrated into the core theoretical discussions, but they have contributed to the foundational work on measurement theory and structural equation modeling, and they ensured rigorously how variables like trust, anthropomorphism, and engagement are validated (50).

Additionally, it emphasises the key authors, thematic clusters, and interdisciplinary connections within the research field. The network is dominated by prominent studies such as behavioural theories [28; 50], mediation analysis [33], studies in areas of cognition, anthropomorphism, and ethics [4; 23], and structural equation modelling and validity assessment [27].

3.2.3 Most Relevant Sources. Table 2 below displays the most pertinent and influential journals, which are presently ranked in order of citation score in the field of AI Anthropomorphism on purchase behaviour.

Table 2. Most Relevant Sources & Index (Source: Authors' analysis.)

Journal	Country	TC	h	SJR	TP
Electronic Markets	Germany	675	57	1.67	4
Journal Of Business Research	United States	538	265	3.13	9

Journal Of Hospitality Marketing And Management	United States	473	79	3.35	4
Technological Forecasting And Social Change	United States	366	179	3.12	11
Journal Of Retailing And Consumer Services	United Kingdom	323	143	2.99	8
Psychology And Marketing	United States	247	143	2.76	8
International Journal Of Advertising	United Kingdom	102	80	2.58	4
International Journal Of Hospitality Management	United Kingdom	83	169	2.96	5
Asia Pacific Journal Of Marketing And Logistics	United Kingdom	57	63	0.96	5
Journal Of Consumer Marketing	United Kingdom	30	117	0.88	4

Abbreviations: Tc: Total Citation; h: h Index; SJR: SCImago Journal Rank

The above table encompasses the Total Citation (TC) h index (h), SCImago Journal Rank (SJR), and Total Production (TP). The US journals with the highest h index and total production in the field are “Journal Of Business Research” (h index 265) and “Technological Forecasting And Social Change” (11 total production). Additionally, they have the high SJR ratings as well. But, “Journal of Hospitality Marketing and Management” has the highest SJR rankings. Notably, at present, the German journal Electronic Markets has the most citations.

3.2.4 Most Relevant Author. In the field of AI, anthropomorphism, below are the top 10 most cited or referred authors who are affiliated with different universities and across different geographical regions.

Table 3. Most Relevant Author in the field of AI Anthropomorphism

Author’s Full Name	Author’s Affiliation	NP	TC	h Index
Dogan Gursoy	Washington State University, Pullman	5	20,689	76
Adam Duhachek	College of Business Administration, USA	3	4,000	29

Eugene Cheng-Xi Aw	UCSI University, Kuala Lumpur, Malaysia	2	2,968	30
Tae Hyun Baik	Sungkyunkwan university, seoul, republic of Korea	2	2,659	27
Oscar Hengxuan Chi	University of Florida, Gainesville, FL, USA	4	2,115	16
Debarun Chakraborty	Indian Institute of Management, Nagpur	2	1,641	23
Tae Woo Kim	University of Technology Sydney, Australia	3	333	5
Shizhen Bai	School of Management, Harbin University of Commerce, Harbin, China	2	487	11
Jungyong Ahn	Korea University, seoul, republic of Korea	2	212	4
Amani Alabed	University of Doha for Science and Technology, Doha, Qatar	2	90	2

Among all Dogan Gursoy from Washington State University, Pullman is the most impactful scholar, with 5 publications in the AI anthropomorphism field (As per scopus data he has published 220 documents) with a total 76 h index and 20,696 citations. Adam Duhachek from the College of Business Administration, USA has 3 publications in this field (as per Scopus data, he has published 44 documents), 4000 citations, and h index of 29. Eugene Cheng-Xi Aw from UCSI University, Kuala Lumpur, Malaysia, and Tae Hyun Baik from Sungkyunkwan University, Seoul, Republic of Korea (as per Scopus data, 87 and 55 documents each are published by the authors), both have only 2 publications in this field and still have the high citations of 2968 and 2659 respectively, which shows the quality and reach of the paper. In the top 10 most cited papers, Indian researcher Debarun Chakraborty from the Indian Institute of Management, Nagpur, has 2 publications on this field (as per Scopus data, 96 documents are published), has 1641 citations, and a 23 h-index.

3.2.5 Most Relevant Affiliation. The fig.7. shows that the institutions listed below are the most active in the field of AI anthropomorphism research when compared to other institutions.

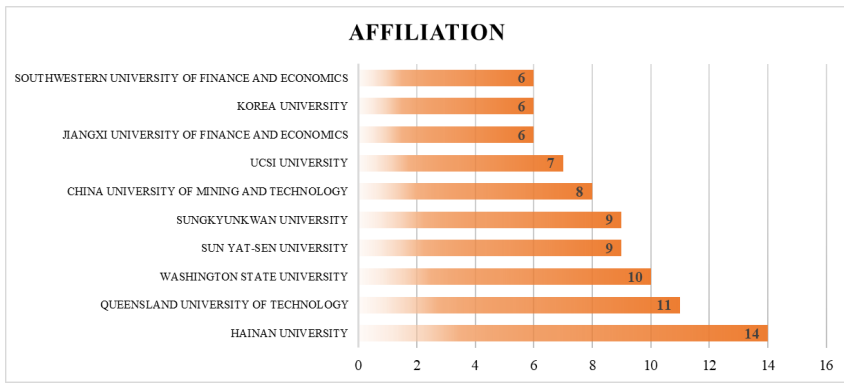


Fig. 7. Most Relevant Affiliation

As per, Hainan University leads with the most publications (14), followed by Queensland University of Technology (11), and Washington State University (10), indicating a strong research engagement. The following graph shows significant contributions from institutions such as Sun Yat-Sen University, Sungkyunkwan University (both with nine papers), and China University of Mining and Technology (both with eight). The statistics also indicate a regional preponderance of experts from South Korea and China. Consequently, it illustrates the interest and involvement of nations in the rapidly expanding field of AI Anthropomorphism.

3.2.6 Countries' Scientific Production. The figure below represents the countries' scientific production from 2019 to early 2025.

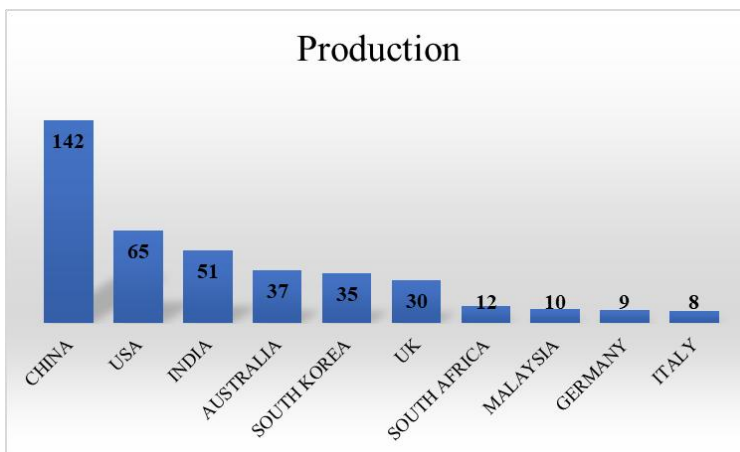


Fig. 8. Countries' Scientific Production

Table 4. Countries' Production over Time

Country	2019	2020	2021	2022	2023	2024	2025
China	0	1	2	21	65	116	142
USA	2	3	7	20	33	55	65
India	0	6	6	7	16	39	51
Australia	1	7	11	15	23	35	37
Korea	0	0	4	7	10	27	35

It is evident from the aforementioned Fig. 8 that China is investing more in AI anthropomorphism than any other country. In comparison to the United States and India, China has produced over twice as many publications (142). The United States has 65 publications, while India has 51 publications, suggesting that there is a growing interest in AI research. After examining the production of the various countries over time (Table 4), the researcher can infer that the increase in the number of articles published by China in comparison to other countries is due to the fact that they began investing more in this field in 2023 (65) than other countries. This investment began with the publication of 1 article in 2020, followed by 2 articles in 2021, and 22 articles in 2022. In contrast, the United States began its research in 2019 and published it. However, China's production of 114 articles in this discipline surpassed that of all other countries. India has experienced substantial development over the past two years and is expected to continue to expand.

3.2.7 Country Collaboration. It is evident from figure below 9, that the United States has the highest collaboration frequency among the countries, with a value of 21. This indicates that the country has a robust global research network and strong relationships with other countries, which is indicative of its central role in fostering academic partnerships in this field.

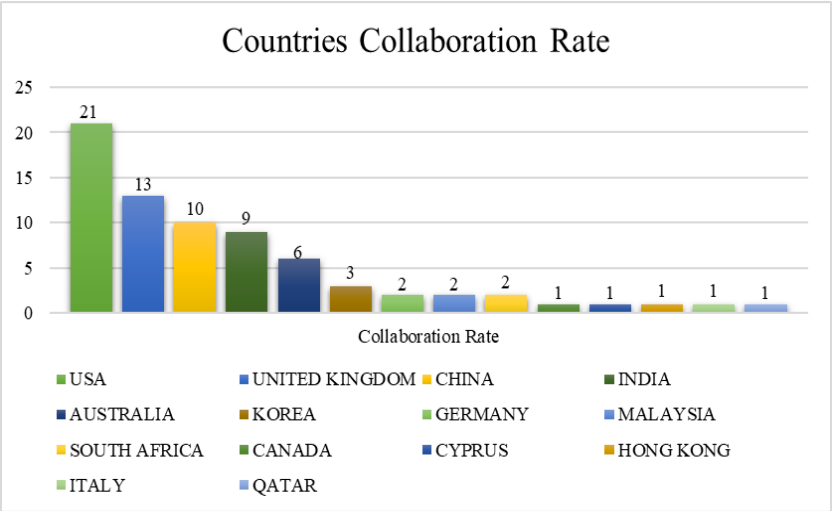


Fig. 9. Country Collaboration

Despite having fewer research publications than China (Fig. 9), the country boasts a more extensive global academic network, particularly in this domain. The United Kingdom and China, each with 13 and 10, show their engagement and active presence in the international research dialogues. Notable India holds 9 network connections (United Kingdom (2), Netherlands (2), France (2), Qatar (1), Malaysia (1), Australia (1)) in this AI anthropomorphism domain. The distribution indicates that, despite the fact that a small number of dominant players are responsible for international collaboration, there is still potential for global inclusion, particularly in the context of the emergent AI environment.

3.3 RQ3: To investigate the most frequently employed keywords and essential themes in the field

3.3.1 Keywords. The following table 5 represents the most frequently used keywords by the authors in this domain. Figure 10 represents the word cloud for the most commonly used keywords.

Table 5. Most Frequently Used Keywords

Word	Occurrence
Artificial Intelligence	40
Anthropomorphism	16
Chatbots	10
Consumption Behavior	9

Technology Adoption	8
Perception	6
Human Computer Interaction	5
Psychology	5
Robotics	5
Service Quality	5

WordCloud



Fig. 10. WordCloud

Based on the analysis conducted using the author’s keywords and biblioshiny, it is evident that the most prevalent keyword is "Artificial Intelligence," followed by “Anthropomorphism”, “Chatbots”, “Consumption Behaviour,” and other keywords.

Trending Topics

Table 6. Trending Topics

Term	Frequency	Year (Q1)	Year (Median)	Year (Q3)
Artificial Intelligence	40	2022	2023	2024
Anthropomorphism	16	2023	2024	2024
Chatbots	10	2023	2024	2024
Consumption Behavior	9	2023	2023	2023
Technology Adoption	8	2024	2024	2024

Perception	6	2022	2023	2023
Human Computer Interaction	5	2021	2022	2024
Service Quality	5	2022	2022	2025

The analysis shows that “Artificial Intelligence” keyword was used with 40 occurrences in the papers chosen for analysis. 25% of the works employed the term "artificial intelligence" in 2022. Next, 25% to 50% of the searches in 2023 utilised the same keyword, and an additional 50% to 75% of the searches in 2024 utilised the same keyword.

This demonstrates the core pillar around which the domain is centred, which is facilitated by the current and future scope of the topic (41). Anthropomorphism was referenced 16 times, underscoring its significance. From 2023 onwards, this subject has been a popular subject, with numerous researchers researching it [16; 14; 13]. This trend is expected to persist in the future [16; 43; 10]. Chatbots (10), consumption behaviour (9), technology adoption (8), and perception (6) are additional noteworthy keywords that emphasise the behavioural and user experience perspective in the field. In the current research field, there are additional interdisciplinary topics, including human computer interaction (5), psychology (5), robotics (5), and service quality (5), which are integrating technology with psychology, marketing, and service sciences and many researchers are actively working in these topics [11; 14; 18; 53].

Thematic Map

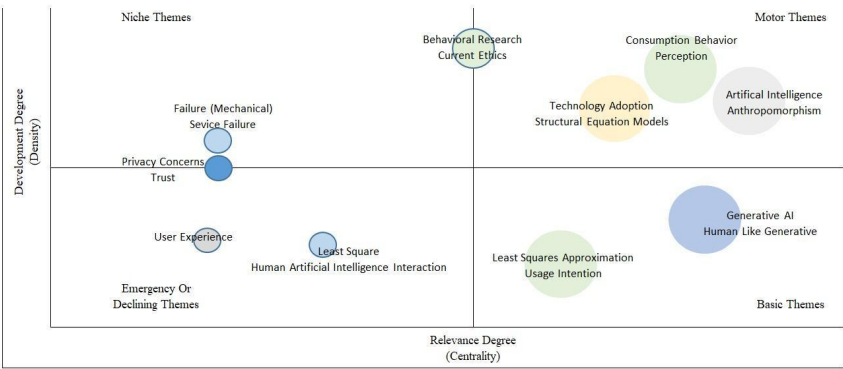


Fig. 11. Thematic Map

The thematic map, which is the graphical depiction displayed above, is a strategic visualisation of the primary research themes in the fields of “business, management, and accounting”. It is a two-dimensional framework that is divided into four distinct quadrants, each of which represents a unique set of thematic significance and maturity.

1. Basic Theme

The basic theme is located in the lower right quadrant. Its centrality is high, but its density is minimal. It is essential to the field, but it is still in its infancy due to the lack of research and the current fragmentation of the field's research. This theme includes generative AI, human-like generative adversarial networks, least squares approximation, and usage intention.

2. Motor Themes

This theme is located in the upper right quadrant. It is well-developed and central to the field, as evidenced by its high centrality and density. Additionally, it has a high level of conceptual cohesion and connectivity with other research areas. Artificial intelligence, anthropomorphism, chatbots, consumption behaviour, perception, robotics, technological adoption, structural equation models, information, and communication technology all fall under this umbrella.

3. Niche Themes

The theme is located in the upper left quadrant, indicating that it is conceptually profound and well-developed. However, it is peripheral in terms of connectivity, which means it is less central to the overall research field. Behavioural research, current ethics, and others are included.

4. Emerging Or Declining Themes

This theme is located in the lower left quadrant; it is either in the early stages of development, where researchers are becoming more aware of it, or it is experiencing a decline in scholarly interest. It encompasses of trust, user experiences, human-AI interaction, and others.

3.4 RQ4: To suggest a potential future research direction that could facilitate progress

Future Research Questions And Direction

Based on the significant themes that emerged from the thematic mapping, there are several areas on which future researchers can explore.

Table 7. Future research questions and direction

Q.No	Theme	Direction
FRQ. 1	AI-assisted Brand Anthropomorphism	« Examination of the brand's fundamental values, communication, and decisions in conjunction with the integration of Anthropomorphic AI agents. « The consumer's perception of the brand and the role of anthropomorphism in facilitating brand interaction
FRQ. 2	Culturally Aligned AI Anthropomorphism	« Investigate the influence of culturally compatible AI anthropomorphism on the emotional connection and trust of consumers. « The cultural alignment of AI anthropomorphism in diverse societies worldwide and its influence on consumer

		interactions with AI Agents.
FRQ. 3	AI Anthropomorphism in Metaverse	« Investigation of the psychological effects of virtual avatars that resemble humans in the metaverse. « Study whether over-anthropomorphized AI obscures users' capacity to differentiate between human and machine interaction.
FRQ4	Mental shift caused due to AI Anthropomorphism	« Examine the extent to which the excessive use of AI will stifle the user's creativity. « Mental Consequences of Prolonged Use of Anthropomorphic AI in Personal Life.

4. Managerial Implications

Three categories are used to classify the principal managerial contribution and implications. The current SLR will initially aid the company's manager in comprehending the concept of AI Anthropomorphism, with a particular emphasis on those in the marketing sector who are actively investigating consumers' dynamic behaviour and are engaged in the interactive marketing domain, which includes social media marketing, content marketing, market research, and brand management. Table 2 indicates that this research will assist them in understanding the relevant sources that the authors have selected to employ following their research in the field of AI Anthropomorphism, with a particular emphasis on the domains of business management and accountancy.

By comprehending and integrating AI Anthropomorphism into the organisation, marketers will be able to increase brand recognition, and managers will be able to predict the consumer's dynamic decision-making process. It will assist in determining which topic in the field of AI Anthropomorphism is being extensively researched by researchers. This will ultimately improve the organization's productivity by assisting the marketing researcher in selecting and scrutinizing the articles that the researchers have prioritized in their study, as indicated in Table 1.

The research offers a series of prospective studies, as mentioned in Table 7, that can be addressed by future marketing experts in accordance with their field. The research paper suggests four critical themes and their respective directions for future research. These themes and directions will offer a novel research perspective for the studies, thereby improving the field's literature knowledge.

5. Conclusion and Future Discussion

This research study provides a comprehensive literature review of SPAR-4-SLR and a bibliometric analysis of AI anthropomorphism, with a particular emphasis on the fields of business management and

accounting. The review elucidates the results of AI anthropomorphism derived from a diverse multitude of sources, using journals as a benchmark for quality. Not only are these conventional and generative AI systems practical instruments, but they also serve as emotionally resonant touchpoints that can improve the overall consumer experience, foster rapport, and influence decision-making. The utilization of anthropomorphism has been shown to enhance the overall purchasing experience, improve user engagement, and engender trust, according to research. This has been further exacerbated by the development of generative and conventional AI. This research paper, which is based on the current 5-year time frame, addresses four research questions. It does so by utilizing SPAR-4-SLR and bibliometrics analysis to determine the publication's current status, most prolific contributors, frequently used keywords from authors, and future research directions. Specifically, the bibliometric analysis revealed that there is a rapid proliferation of research in this domain worldwide, with nations such as the USA and China exhibiting supremacy.

Although this paper has provided valuable insights, there are still a few limitations that can be addressed by future research scholars. This investigation has exclusively utilized Scopus-indexed data, which restricts its scope. Consequently, the researcher is able to conduct research on Web of Science data, Dimensions, OpenAlex, PubMed, and other databases. This study is a SPAR-4-SLR, which allows future researchers to conduct studies using a different systematic review procedure, such as the PRISMA protocol and thematic analysis. Additionally, this domain presents substantial opportunities for research, as anthropomorphism will continue to develop in tandem with the advancement of artificial intelligence. This study consolidates extant knowledge and establishes a path for advancement in theoretical and practical implementations within the dynamic domain of AI-driven consumer behaviour.

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