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Artificial Intelligence and Consumer Purchase Behavior: A Bibliometric Analysis of Research Trends and Emerging Directions

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Abstract: This study maps the academic research landscape on artificial intelligence (AI) and consumer purchase through a bibliometric analysis of Scopus-indexed journal articles from 2020 to 2025. A structured search of titles, abstracts and keywords in Scopus yielded 343 journal articles after excluding conference proceedings, book chapters and other source types. We examined the corpus along five dimensions: document and source types, the evolution of published studies since 2020, the distribution of subject areas, keyword co-occurrence, and citation metrics for highly cited articles. The publication output grew gradually from 2020 to 2023 and increased significantly from 2024 onwards, with 2025 recording the highest number of publications. This growth coincides with the mainstreaming of conversational AI and the advent of generative AI. The field is interdisciplinary, spanning business and management, computer science, the social sciences, psychology and decision sciences. Keyword co-occurrence analysis indicates that purchase intention, consumer behavior, marketing and sales are the conceptual anchors and the most cited articles focus on technology acceptance, trust, chatbot purchase intention, virtual influencer marketing and environmental sustainability. This study provides a quantitative map of the literature on AI and consumer purchase for 2020-2025 and highlights the dominant role of trust and perceived value in the literature, as well as open questions about long-term effects and cross-cultural generalizability.

Keywords: *Artificial intelligence, consumer behavior, purchase decision*

1. Introduction

The intersection of artificial intelligence (AI) and consumer behavior has become an increasingly important area of marketing research. In the last two decades, machine learning, natural language processing, and more recently, generative AI have revolutionized how firms interact with consumers and how consumers form purchase intentions, from personalized recommender systems and conversational chatbots to virtual influencers and AI generated material (Davenport et al., 2020). Traditionally, consumer purchase behavior is understood through rational and effective decision-making models. However, purchase behavior is mediated by algorithms that predict needs, personalize offers, and even act on behalf of consumers (Dellaert et al., 2020). In the Malaysian context, the integration of AI into the digital sphere has become increasingly important, particularly in e-commerce and customer interaction. Previous studies have explored various ways in which AI influences consumer purchasing behaviour. Abdullah et al. (2024) examined how consumer purchase intentions are impacted by AI tools and personalisation marketing in the Malaysian e-commerce industry. Similarly, Kanapathipillai et al. (2024) explored how AI can help improve personalisation, trust, convenience and service quality for Malaysian consumers. This shows the increasing academic interest in AI powered technologies and how they will impact consumer purchasing behaviour. Understanding the global research landscape surrounding AI and consumer purchasing behaviour can help identify new trends, key contributions and potential research areas within this field. The academic response has been rapid and interdisciplinary.

AI and consumer purchase research are now dispersed across marketing, consumer psychology, information systems, human-computer interaction and business ethics, resulting in a vast and fragmented collection of published work (Dwivedi et al., 2021). Growth accelerated sharply from 2020 onwards, driven by advances in conversational and generative AI and the rapid expansion of digital commerce. However, the breadth and speed of publication make it difficult to understand the overall structure of the field through a conventional narrative review. Bibliometric analysis helps to overcome this problem by quantitatively mapping the intellectual and social structure of a research domain to identify its most influential works, thematic clusters and the evolution of its vocabulary over time (Donthu et al., 2021). This research performs a bibliometric analysis of AI and consumer purchase research. The analysis limits the corpus to journal articles indexed in Scopus from 2020 to 2025 and excludes conference proceedings, book chapters, and other source types. A structured query of titles, abstracts, and keywords led to a final set of 341 documents, which form the analytical basis of this paper. The

findings are classified into five analytical sections: (i) types of documents and sources, (ii) evolution of publications from 2020, (iii) subject areas, (iv) keyword co-occurrence analysis and (v) citation metrics of highly cited articles. Together, the components give a general map of the academic landscape of AI and consumer purchase research for the period.

2. Literature Review

Artificial Intelligence and Consumer Purchase Behavior

The application of artificial intelligence (AI) in marketing and consumer-related contexts has revolutionized the way customers seek information, evaluate alternatives, engage with organizations, and make purchase decisions. The use of artificial intelligence (AI) in marketing and consumer-related contexts has transformed the way consumers search for information, evaluate alternatives, interact with firms and make purchase decisions. The early work conceptualized AI as a generic technological development with implications for marketing strategy and consumer behavior. The effect of AI on marketing depends on variables such as the level of intelligence, the task accomplished, and whether the technology is incorporated into a physical product, claim Davenport et al. (2020). They also expressed concern about privacy, bias and ethics. Likewise, Dwivedi et al. (2021) defined AI as an interdisciplinary field of business, management, social science, government and technology. These studies provided an important basis for future research on the influence of AI-enabled technologies on consumer decision-making and purchase outcomes.

Subsequent research has demonstrated that the relationship between AI and consumer buying is influenced by both the technology's capabilities and how consumers respond to AI interactions. Artificial intelligence can help reduce the effort of information search, provide product recommendations, offer personalized assistance and support consumers through different stages of decision-making. Dellaert et al. (2020) argued that AI-enabled voice assistants are changing traditional online decision-making by introducing conversational and voice-based interactions. Other empirical studies have found that consumers' responses to AI-mediated purchasing can be related to usefulness, ease of use, trust, interactivity and social presence. Hsieh and Lee (2021) used data from 391 smart-speaker users to find that media richness and parasocial interaction had a significant positive effect on trust, perceived usefulness, and perceived ease of use, which in turn were associated with continuance intention and online purchase intention. Yen and Chiang (2021) also found that credibility, competence, anthropomorphism, social presence, and informativeness affected trust in chatbots, which in turn affected purchase intention. These studies suggest that the influence of AI on purchasing is not limited to automation. The characteristics and quality of the interaction between consumers and AI agents also matter.

Another strand of research considers AI as a social and relational agent rather than simply a tool for processing information. AI technologies can provide human-like interaction as well as emotional, social, and informational support. Kim et al. (2022) found that human likeness and attachment were associated with perceived interactivity and purchase intention among users of AI speakers. Lee et al. (2022) found that social support from the chatbot was related to interactant satisfaction, affective attachment, and purchase intention. These findings indicate that consumers may respond to AI partly according to how socially interactive and relational technology appears to be. Similar patterns have been reported in research on voice-assisted shopping. Kautish et al. (2023) found that functional, hedonic, social, and cognitive motivations were associated with purchase-related outcomes, while experiences such as awe and electronic word-of-mouth may also help explain these relationships. The effects of AI on consumer purchasing can also vary according to consumer and contextual factors. Zhu et al. (2022) found that certainty about consumer needs influenced chatbot acceptance through perceived effectiveness, with the relationship varying across product types. In the travel context, Zhu et al. (2023) examined how AI chatbot interactivity and information quality influence consumer trust and purchase intention.

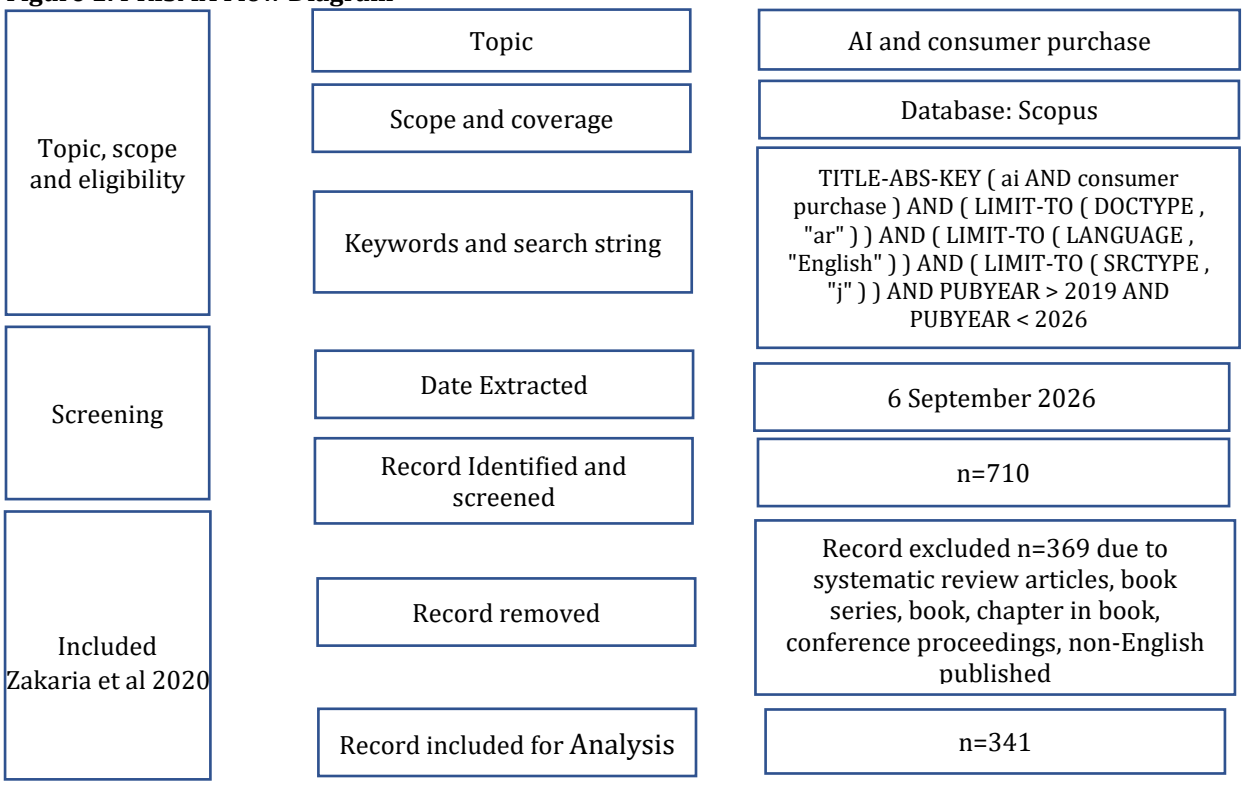
The most recent research expands into virtual influencers and generative AI. Kim et al. (2024) examined how virtual influencers' form realism and behavioral realism shape consumer ambivalence and marketing performance. Gerlich (2023) found that virtual influencers are increasingly perceived as trustworthy and credible, raising purchase intention among 357 survey respondents. In the fashion domain, Sohn et al. (2020) showed that consumers are willing to pay a premium for GAN-generated fashion products, and that this is most pronounced when the use of GAN technology is not disclosed, raising a question about transparency. Two more

streams extend the field beyond functional purchase drivers. On morality, Garvey et al. (2023) found that consumers are more positive toward negative offers made by an AI, partly because AI agents are perceived as lacking selfish or benevolent intentions. Giroux et al. (2022) found that consumers have lower moral intention, such as reporting errors at checkout, toward machines than toward humans. In terms of sustainability, Frank (2021) discovered that consumers are more likely to buy AI-enabled products that offer both static and autonomous environmental benefits, but that the effects of this vary by product type, geography, and individual consumers.

3. Methodology

The PRISMA flow diagram of the data retrieval procedure used in this bibliometric analysis is presented in Figure 1. The review starts by defining its scope in terms of two key constructs, “artificial intelligence” and “consumer purchase”. These constructs set conceptual boundaries for the study and guide the following phases of the literature search and selection process. The search was conducted using Scopus, a multidisciplinary bibliographic database. The query was applied without field restriction ("all fields"), so records were retained in which the search terms appeared in the title, abstract or keywords of a document. Three further limits were applied; the publication window was restricted to 2020-2025, the document type to journal articles, and the language to English. The following search string was used: TITLE-ABS-KEY (ai AND consumer purchase) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j")) AND PUBYEAR > 2019 AND PUBYEAR < 2026. The search was executed on 6 September 2026 and returned 710 records, all of which advanced to the screening stage. At screening, 369 records were removed, records outside the conceptual scope and non-qualifying document types, leaving the final analytic corpus. Because the query required both constructs to co-occur within the same searchable metadata fields and applied the document-type and language limits at source, the initial retrieval was already tightly focused, and relatively little manual filtering was needed beyond screening. The procedure is made systematic, visible and replicable by presenting the search strategy through a flow diagram, with the volumes at each stage, enabling future researchers to reproduce the analysis under the same criteria or to extend it to other databases.

Figure 1: PRISMA Flow Diagram



4. Results

The findings of the bibliometric analysis are presented across five main areas: document and source types, trends in publications since 2020, the distribution of subject areas, keyword co-occurrence patterns, and citation performance of the most highly cited articles. Collectively, these elements provide a general picture of the academic terrain of AI and consumer purchase research during the study period.

Types of documents and sources

The advantages of restricting the corpus to journal articles indexed in Scopus, in terms of credibility, quality control and topical fit, are clear. Scopus uses formal selection criteria and an ongoing re-evaluation process by an independent advisory board to accept content; therefore, its indexed articles are peer-reviewed, methodologically vetted, and demonstrably citable contributions to the scholarly record (Baas et al., 2020). Journal articles are thus a sound basis for a bibliometric inquiry, as they typically offer the complete reporting of methods and findings required for a focused review. The review is limited to journal articles, excluding grey literature, conference proceedings, industry reports or practitioner commentary; and there is no single index that is comprehensive. Large-scale comparisons of bibliographic databases confirm that all major sources have gaps in their coverage, which is why comprehensive coverage and flexible filters should be used in tandem when assembling a corpus (Visser et al., 2021). Therefore, the current analysis may lack applied perspectives, real-time industry developments, and emerging trends that have not yet entered the peer-reviewed literature.

Development of published studies

The first years of the window saw modest publication activity on AI and consumer purchase. Between 2020 and 2023, the field saw a period of slow but steady growth, with less than thirty articles per year, reflecting limited early academic endeavours. The initial low output can be explained by two contextual factors: the multidisciplinary challenges of AI across business, government and science were being mapped (Dwivedi et al., 2021), and the transformative potential of AI for marketing strategy and customer behaviour was only being theorised in mainstream marketing journals (Davenport et al., 2019), so the field had just begun to crystallise as a distinct research area. The number of publications started to increase rapidly after 2024. The year 2025 was found to have the highest number of publications (189 articles; 55.4%) in the corpus. The acceleration is consistent with the mainstreaming of conversational AI and the rise of generative AI and virtual influencers as consumer-facing technologies, which brought renewed scholarly interest in how specific AI agents affect purchase decisions (Gerlich et al., 2024). Table 1 presents the yearly spread of scholarly publications on Ai and consumer purchase from 2020 to 2025, offering useful insights into the evolution of academic interest in the field.

Table 1: Distribution of Academic Publications

Year	Documents	Percentage
2025	189	55.4%
2024	72	21.1%
2023	28	8.2%
2022	25	7.3%
2021	19	5.6%
2020	8	2.3%
Total	**341**	**100%**

Distribution by Subject Area

The interdisciplinary nature of the field is demonstrated by the distribution of publications on AI and consumer purchase across subject areas. Table 2.0 shows the distribution of publications on AI and consumer purchase across different subject areas, giving insights into the interdisciplinary nature of the field. Business, Management and Accounting shows the highest research concentration with 184 publications (27.6%), which is expected as purchase behaviour is central to management and marketing scholarship. Computer Science is the second prominent area, corresponding to the technical foundations of artificial intelligence systems, with 107 publications (16.1%), followed by Social Sciences (13.5%) and Economics, Econometrics and Finance (7.1%), together with Psychology (5.4%) contributing behavioural theory and Engineering (5.3%) contributing

system design perspectives. The addition of Decision Sciences (5%) indicates the field's reliance on modelling and optimisation approaches. Environmental Science, the least contributing at (3%) and Arts and Humanities at (2.3%) indicate nascent or peripheral interest in AI and consumer purchase from sustainability and cultural angles respectively, a trend that reflects the growing interest in AI-enabled environmental benefits in consumer research (Frank, 2021).

Table 2: Distribution of subject areas

Subject area	Total publications	Publication (%)
Business, Management and Accounting	184	27.6
Computer Science	107	16.1
Social Sciences	90	13.5
Economics, Econometrics and Finance	47	7.1
Psychology	36	5.4
Engineering	35	5.3
Decision Sciences	33	5.0
Environmental Science	20	3.0
Arts and Humanities	15	2.3
Energy	16	2.4
Others	73	12.5

Co-occurrence analysis of keywords

The most frequently used author keywords offer insight into the central themes, conceptual priorities and changing research directions of the AI and consumer purchase literature. Unsurprisingly, the term "artificial intelligence" appears in 140 publications, reaffirming its role as the anchor concept around which the research is structured. The second most prominent keyword is "Purchase intention", appearing in 61 publications, followed by "Consumer behavior" in 35 publications, "Consumption behavior" in 28 publications and "Sales" in 29 publications. This keyword structure mirrors the empirical literature: purchase intention is the field's dominant dependent variable (Yin & Qiu, 2021; Yen & Chiang, 2021), consumer behavior is examined through engagement and usage frameworks (Hsieh & Lee, 2021; Kautish et al., 2023) and the marketing and sales focus is carried by studies of chatbots and voice assistants as promotional and transactional agents (Lee et al., 2022; Zhu et al., 2023). Table 3 outlines the most frequently used author keywords in the corpus of AI and consumer purchase literature.

Table 3: Top Keywords

Keywords	Total Publications (TP)
Artificial intelligent	140
Purchase Intention	61
Consumer Behavior	35
Consumption behavior	28
Sales	29
Purchasing	28
Marketing	25

Citation metrics of highly cited articles

Citation analysis was performed using the Scopus citation overview. Table 4 reports the citation record for the articles published between 2020 and 2025. The journal count of 315 is in the citation overview due to some articles lacking citation data.

Table 4: Citation Metrics

Metrics	Data
Publication years	2020-2025
Citation years	5
Paper	315

Citation papers	10428
h-index	54

The ten most cited articles

The most cited publications on AI and consumer purchase from 2020 to 2025 are presented in Table 5. The table not only ranks scholarly impact but also highlights the key contributors that have shaped the field. The articles in this set have informed the theoretical accounts of how AI affects consumer purchasing as well as the empirical approaches that have been used to study it. Their insights have carried over into marketing strategy and consumer behaviour research.

Table 5: Highly cited articles

No	Author	Title	Year	Cites
1	Sohn, K., & Kwon, O.	Technology acceptance theories and factors influencing artificial Intelligence-based intelligent products	2020	604
2	McLean, G., Osei-Frimpong, K., & Barhorst, J	Alexa, do voice assistants influence consumer brand engagement? – Examining the role of AI powered voice assistants in influencing consumer brand engagement	2021	317
3	Garvey, A., Kim, T., & Duhachek, A.	Bad News? Send an AI. Good News? Send a Human	2023	299
4	Yen, C., & Chiang, M.-C.	Trust me, if you can: a study on the factors that influence consumers' purchase intention triggered by chatbots based on brain image evidence and self-reported assessments	2021	268
5	Sung, E., Bae, S., Han, D. I. D., & Kwon, O.	Consumer engagement via interactive artificial intelligence and mixed reality	2021	239
6	Yin, J., & Qiu, X.	AI technology and online purchase intention: Structural equation model based on perceived value	2021	203
7	Giroux, M., Kim, J., Lee, J. C., & Park, J.	Artificial Intelligence and Declined Guilt: Retailing Morality Comparison Between Human and AI	2022	186
8	Klaus, P., & Zaichkowsky, J. L.	AI voice bots: a services marketing research agenda	2020	182
9	Kim, I., Ki, C.-W. C., Lee, H., & Kim, Y.-K.	Virtual influencer marketing: Evaluating the influence of virtual influencers' form realism and behavioral realism on consumer ambivalence and marketing performance	2024	171
10	Frank, B.	Artificial intelligence-enabled environmental sustainability of products: Marketing benefits and their variation by consumer, location, and product types	2021	159

The most cited article in the dataset is "Technology acceptance theories and factors influencing artificial Intelligence-based intelligent products" by Sohn and Kwon (2020) with 604 citations. This study addressed the fundamental question of which theoretical model is most appropriate for explaining consumer acceptance of AI products.

Another article is "Alexa, do voice assistants influence consumer brand engagement? Examining the role of AI powered voice assistants in influencing consumer brand engagement" by McLean et al. (2021) with 317 citations. Other publication "Bad News? Send an AI. Good News? Send a Human" by Garvey et al., (2023) with 299 citations. Next article: "Trust me, if you can: a study on the factors that influence consumers' purchase intention triggered by chatbots based on brain image evidence and self-reported assessments" by Yen and Chiang (2021) with 268 citations.

Sung, Bae, Han and Kwon (2021) are highly cited with 239 citations because they study AI engagement in a fully immersive, real-world retail setting: a large AI-embedded mixed reality exhibit in a retail and entertainment complex. Articles on "AI technology and online purchase intention: Structural equation model based on perceived value" by Yin and Qiu (2021) have 203 citations. Giroux et al. (2022) rank highly with 186 citations on "Artificial Intelligence and Declined Guilt: Retailing Morality Comparison Between Human and AI

". Klaus and Zaichkowsky (2020) are highly cited with the article "AI voice bots: a services marketing research agenda" with 182 citations.

Next, Kim et al. (2024) attract high citations with 171 citations for the article "Virtual influencer marketing: Evaluating the influence of virtual influencers' form realism and behavioral realism on consumer ambivalence and marketing performance ". Frank (2021) ranks among the top ten because it connects AI and consumer purchase to environmental sustainability, a dimension largely absents from the rest of the corpus with 159 citations. This article is widely cited because it shows that environmental benefits of AI are themselves a purchase driver, expanding the field beyond functional and hedonic value (Sohn et al., 2020).

Discussion

The body of Scopus-indexed literature identified in this review indicates a broadening research landscape at the intersection of artificial intelligence (AI) and consumer purchase behavior between 2020 and 2025. Early studies examined the applicability of established technology-acceptance frameworks to AI-based products and their implications for purchase intention (Sohn & Kwon, 2020), while subsequent research increasingly investigated consumer responses to specific AI-enabled applications, including voice assistants (McLean et al., 2021), chatbots, interactive AI and mixed reality (Sung et al., 2021).

More recent studies have further extended this research stream to emerging AI-mediated marketing contexts, such as virtual influencers, where characteristics such as form and behavioral realism have been examined in relation to follow and purchase intentions (Kim et al., 2024). Overall, the literature reflects a shift from examining general AI acceptance and its determinants toward more application-specific investigations of how AI-enabled technologies shape consumer engagement, attitudes, and purchase-related outcomes.

A notable geographic limitation of literature is the concentration of several empirical studies within specific national and market contexts. For example, Zhu et al. (2023) examined consumers who had used AI chatbots in online travel agencies in China, while Bilal et al. (2024) investigated Chinese social-media users with experience in online purchasing and AI technologies. Such concentration limits the extent to which existing findings can be generalized across national and cultural contexts.

In addition, the previous studies have paid less attention to the moral and ethical implications of AI-mediated consumption. There is evidence from previous research that shows customers react differently to human and AI agents when they are given positive or negative information (Garvey et al., 2023), that they experience lower levels of guilt and have weaker moral intentions when interacting with self-service technologies and AI (Giroux et al., 2022).

5. Conclusion and Recommendations

This study contributes to the growing literature on AI and consumer purchasing behaviors by providing a complete bibliometric analysis of the research landscape based on Scopus-indexed publications. A detailed overview of how the research topic has developed is provided by examining the different subject areas, key authors, keywords and citation analysis. Identifying current and emerging research trends can provide valuable information regarding the knowledge structure and potential future research opportunities.

From a policy perspective, the growing research interest in AI-driven consumer interactions highlights the need for appropriate policies and procedures to be put in place to help facilitate responsible and ethical use of AI in businesses. Policymakers should prioritise consumer data protection, privacy, transparency and ethical AI practices to strengthen consumer confidence in AI driven purchasing.

The findings suggest several areas for future research, including the need for longer-term evidence, wider cross-cultural representation and increased focus on the ethics of AI-mediated consumer decision-making. The results suggest that in practice, AI-enabled marketing should consider consumer trust, relevance, experiential value, and characteristics of the AI agent in the specific purchase context. The current analysis could be further extended in future bibliometric studies by incorporating additional databases and covering a longer publication period. The combination of techniques based on structural mapping and techniques based on

content could also provide a more detailed understanding of how this rapidly developing research field continues to evolve.

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