

## Charting the knowledge landscape of artificial intelligence driven personalization and consumer purchase intention in e-commerce: A bibliometric analysis

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### Abstract

This study presents a systematic bibliometric analysis of the evolving literature on artificial intelligence (AI) driven personalization and its influence on consumer purchase intention within e-commerce environments. Drawing on 279 peer-reviewed, open-access articles indexed in Scopus between 2013 and March 2026, this research maps the intellectual structure of the field through co-citation analysis, co-authorship networks, keyword co-occurrence mapping, and thematic clustering using Biblioshiny and VOSviewer. The dataset exhibits a strong annual growth rate of 27.69%, reflecting the rapid scholarly expansion of AI applications in digital marketing and consumer behavior research. Bibliometric indicators reveal that China, the United Kingdom, and India are the leading contributing nations, while key journals include the Journal of Theoretical and Applied Electronic Commerce Research, Sustainability, and the Journal of Retailing and Consumer Services. Thematic analysis identifies artificial intelligence, consumer behavior, e-commerce, and purchase intention as established motor and basic themes, while explainable AI, consumer trust, and transparency emerge as nascent research frontiers with growing centrality. The findings further underscore the interdisciplinary character of the field, integrating perspectives from information systems, marketing, and consumer psychology. Technologies including recommender systems, chatbots, and predictive analytics are shown to play pivotal roles in shaping consumer decision-making by reducing information overload and enhancing perceived relevance. The study acknowledges limitations stemming from its restriction to Scopus-indexed, English-language, open-access publications, which may introduce language and database selection bias. Future research is directed toward ethical AI governance, consumer data privacy, cross-cultural personalization, and the integration of emerging regulatory frameworks such as GDPR into personalization strategy design.

**Keywords:** Artificial Intelligence Personalization, Consumer Behavior, Purchase Intention, E-Commerce, Recommender Systems, Digital Marketing, Machine Learning, Customer Experience

**JEL Classification:** M31, L81, O33

## 1. Background of the Study

The role of artificial intelligence (AI) will continue to grow as businesses realize the impact that it has made on their marketing strategies, while concurrently developing relationships with customers that result in greater levels of engagement and purchase decisions throughout digital commerce eco-systems (Kumar , 2025). Advances in big data, algorithms for machine learning, and predictive analytic have not only enabled businesses to engage their customers through AI based personalization but also have created a culture in which AI is now embedded into the DNA of marketing as a result of consumer demands for more personalized experiences relative to their personal preferences, browsing patterns and behaviour (Stein et al.,2025)). The introduction of AI into the practice of marketing represents a large and important disruption in how marketing has traditionally been conducted and has resulted in the shift from mass communication to micro targeted engagements that rely on how technology will use advanced methodologies of recommendation, use of artificial intelligence and sentiment analysis to analyze and interpret massive and complex data sets, ultimately resulting in the ability to accurately predict consumer wants (Raji et al., 2024). Businesses that have already begun using AI based technology demonstrate higher conversion rates, improved levels of consumer satisfaction and enhanced loyalty, which serves as a reminder that personalization is the bridge that connects consumers' expectations with businesses' strategic objectives (Haneefa & Singh, 2025). The approach to using personalization effectively should consider various ways of engagement cautiously. Utilizing personalization can create a positive rapport between businesses and their consumers if implemented properly to put it another way, there is a need to find a balance when using personalization; it is essential that consumers view personalized messages as relevant without coming across as intrusive (Khandelwal et al., 2024). The conversations regarding finding this balance across multiple disciplines, including computer science, psychology, information states, communications studies and management Business (Kumar & Arora, 2025), are reflected in bibliographic patterns at the level of Interdisciplinary Convergence. This synthesis is an important component because many journal articles with views on personalization are likely to remain disconnected from one another and thus benefit from bibliometric reviews developed to identify key contributors to the field and establish connections to certain areas of future research (Singh et al., 2023). Significant focus has been placed on AI-based recommender systems for their representation of personalization using collaborative filtering, deep learning and hybridization, to recommend products that are personalized to individual users, with intentions to increase purchase intention by decreasing cognitive load, increasing efficiency and increasing value perception (Hasan,2025). It has been empirically found that when implement well, recommendations can also improve click through and conversion rates, and consumer attachment to brands, with consumers interpreting relevance as acknowledgment and appreciation (Tavanti, 2025). However, questions still arise about whether recommender systems make consumers better consumers or inadvertently steer their behavior? Bibliometric review helps in extracting various themes and highlight the

areas that are under researched such as, explainable AI and ethics of trade-offs in personalization strategies (Nalbant & Aydin, 2025). Furthermore, as marketing has progressively move beyond traditional retail to an omnichannel ecosystem, which includes mobile apps, social media and AI voice assistants, personalization is at a critical juncture to adjust proactively and continue supporting a brand through adaptability-based messaging to users at various touch points (Żyminkowska & Zachurzok-Srebrny,2025). Predictive personalization, where AI with little contact predict latent needs, shows a transition from passive consumption to a more proactive engagement where consumer purchase journeys are compartmentalized and redefined during the process (Ziakis & Vlachopoulou,2023).With the growth of data privacy laws such as the GDPR( General Data Protection Regulation) and CCPA(California Consumer Privacy Act), the academia and industry are realizing that consumer trust is an antecedent and a product of engagement in the ethical frontier of personalization. Personalization poses a threat to longer term brand relationships without transparent governance and value exchanges and therefore it is important to understand consumer trust, consent, and privacy-protecting technologies such as federated learning and blockchain (Haleem et al., 2022). Bibliometric research also shows increasing impact of terms such as ethics, trust and transparency which suggest there is an immediate need to develop frameworks that connect technology to responsibility, and understand gaps such as personalization practices in emerging economies, and intersections to sustainability and responsible consumption (Ismagiloiva et al., 2020). Finally, the use of case studies, experiments, and data driven evaluations in both academia and industry keeps scholarly work practical, allowing theories to reflect return on investment, stakeholder engagement, scalability, and user acceptance, while advancing research ideas in scholarly conversations (Arya et al., 2025).Consumer engagement and purchase intention within AI-personalized marketing is also tethered with psychological constructs such as perceived enjoyment, trust, attitude towards technology, and cognitive dissonance, which connects technology adoption theories (TAM, UTAUT) Unified Theory of Acceptance and Use of Technology to personalization studies, making it an inherently interdisciplinary field (Wang, Phawitpiriyakliti, & Terason, 2024). This study is positioned as a bibliometric review to consolidate current literature relating to AI-personalized marketing focused on consumer engagement and purchase intention to uncover dominant themes, key authors, influential journals, dominant methodologies, and to suggest subtle meanings associated with future research that arises from the technological possibilities, ethical challenges, and consumer outcomes. In doing so, it provides an integrative framework to bridge fragmented insights and directly address academic, industry, and policy interests about the philosophical change of AI personalization in marketing as a practice and its impact on consumer decision-making in the digital economy (Oueslati, 2024).

This article aims to evaluate the existing literature on AI-personalized marketing, identify key themes and trends in how it influences consumer engagement and purchase intention, and highlight the limitations of prior bibliometric studies to suggest future research directions, and offer

researchers and industry practitioners a contemporary, well-rounded account of the research on AI-driven personalization and consumer purchase intention in e-commerce. This study will be the first endeavour, to the authors' knowledge, to conduct a bibliometric analysis to identify trends in AI-driven personalization and consumer purchase intention in e-commerce.

This study is guided by three interrelated research questions that collectively aim to provide a comprehensive understanding of the intellectual landscape of AI-driven personalization and consumer purchase intention in e-commerce. The first question seeks to analyze the evolution and publication trends of research in this domain from 2013 to March 2026, with a particular focus on identifying the most influential authors, documents, journals, and countries that have shaped the trajectory of the field. The second question examines the intellectual structure of the discipline through the systematic mapping of co-authorship, co-citation, and keyword co-occurrence networks, with the goal of uncovering the principal thematic clusters connecting artificial intelligence, consumer behavior, and e-commerce scholarship. The third question investigates the conceptual architecture of the field by categorizing research themes as motor, basic, niche, or emerging and declining, drawing on thematic and trend analyses to illuminate how AI-driven personalization intersects with and influences consumer engagement and purchase intention over time. Together, these questions provide a structured framework for synthesizing fragmented scholarly contributions and identifying meaningful directions for future inquiry.

## 2. Research Methodology

The authors used bibliometric analytical technique to explore the literature in AI-driven personalization and consumer purchase intention in e-commerce. Bibliometric analysis offers a holistic understanding of the knowledge base by examining facets such as co-citations and co-occurrences, while also identifying major data themes including key contributions, the most productive authors and organizations, publication trends over time, and the development of relevant keywords—together providing a comprehensive view of the field's intellectual structure. (Donthu et al., 2021; Chen, 2017; Smyrnova-Trybulska et al., 2018; Zhou et al., 2013; Singh and Bashar, 2021). The Scopus database was explored to evaluate the most relevant publications with respect to online impulse purchase behavior, based on keywords. The following terms were combined using three types of Boolean operators; AND \*and OR. The Title, Abstract, and Author's Keywords were searched using the following terms. TIT-ABS-KEY ("artificial intelligence" OR AI OR "AI-driven personalization" OR "personalized recommendations" OR recommender\* OR chatbot\* OR "virtual assistants" OR "augmented reality" OR "AI marketing") AND ("purchase intention" OR "consumer behaviour" OR "purchase decision\*" OR "usage intention" OR "clicking intention" OR "customer engagement") AND (online OR e-commerce OR e-retailing OR "online shopping").

### 3.1 Inclusion and Exclusion Criteria

Initially, there were 1928 articles from the research using the keywords specified above. The authors undertook another round of investigation, specifying the most relevant articles.

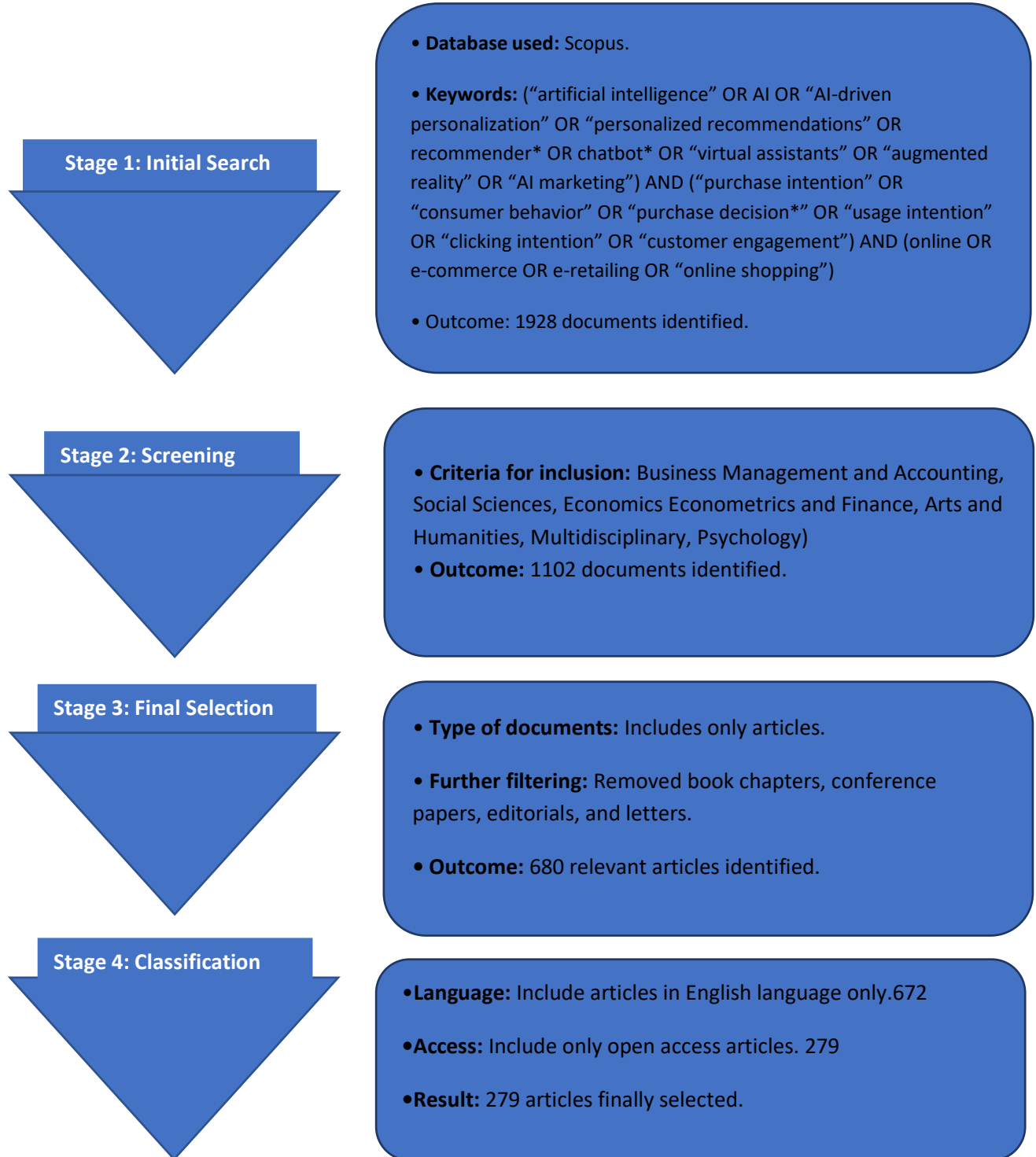
#### 3.1.1 Inclusion Criteria

The selection of articles for this study was governed by a set of clearly defined inclusion criteria to ensure the relevance and methodological consistency of the dataset. Only peer-reviewed research articles published between 2013, and March 2026 were considered, as this timeframe captures the period during which AI-driven personalization in e-commerce emerged as a substantive area of academic inquiry. All included articles were required to be written in the English language to facilitate accurate interpretation and ensure analytical consistency across the dataset. Furthermore, only articles with a clear and direct focus on online retail environments, including e-commerce, e-retailing, and online shopping contexts, were retained to maintain thematic coherence and alignment with the study's research objectives.

#### 3.1.2 Exclusion Criteria

To safeguard the quality and reproducibility of the analysis, a corresponding set of exclusion criteria was applied during the screening process. Articles published in languages other than English were excluded to minimize the risk of translation inconsistencies and interpretive inaccuracies. Non-article document types, including book chapters, conference papers, commercial publications, newspaper articles, editorials, and letters, were removed from consideration, as these formats do not consistently meet the peer-review standards expected of scholarly research. Articles that were not indexed in Scopus were also excluded, given that Scopus indexing serves as an established indicator of publication quality and peer-review rigor. Finally, duplicate records identified across the search results were eliminated to prevent redundancy and ensure that each publication contributed independently to the bibliometric analysis.

**Figure 1. Data retrieval process through PRISMA framework**





**Source:** Author's Compilation

### 3. Results and Discussion

Table 1 analysis encompasses data from all sources published during the time frame of 2013 to 2026 March. A total of 279 documents were retrieved and collected from 141 sources (i.e., journals, books, etc.). The rate of growth over the specified period had a high annual growth rate (27.69%) indicating that this field has experienced significant increases in the production of research output.

**Table 1. MAIN INFORMATION ABOUT DATA**

Description	Results	Description	Results
Timespan	2013:2026	Keywords Plus (ID)	568
Sources (Journals, Books, etc)	141	Author's Keywords (DE)	1006
Documents	279	AUTHORS	
Annual Growth Rate %	27.69	Authors	852
Document Average Age	2.2	Authors of single-authored docs	18
Average citations per doc	32.38	AUTHORS COLLABORATION	
References	37516	Single-authored docs	19
		Co-Authors per Doc	3.43
		International co-authorships %	25.09
		DOCUMENT TYPES	
		Article	279

The documents contained within the data set averaged 2.2 years old, indicating that there has been a rapid turnover of research studies produced within this discipline. The average number of citations per document was found to be 32.38, indicating the publications have made a significant scholarly impact in their respective fields. A total of 37,516 references were cited within all the documents analysed. In terms of document content, 568 Keywords Plus and 1,006 Author

Keywords appear in the data set that can be used to identify the main themes (i.e., topics) and trends of research within the discipline. Author Keywords are identified by researchers for their studies and Keywords Plus are generated automatically from the reference citations to encompass broader subject matter than would be captured in Author Keywords. A total of 852 authors were involved in the documented publications, with 3.43 co-authors per document and an estimated 25.09 % of authors from different countries. All documents analyzed were identified as journal articles.

**Figure 2. Documents by year**

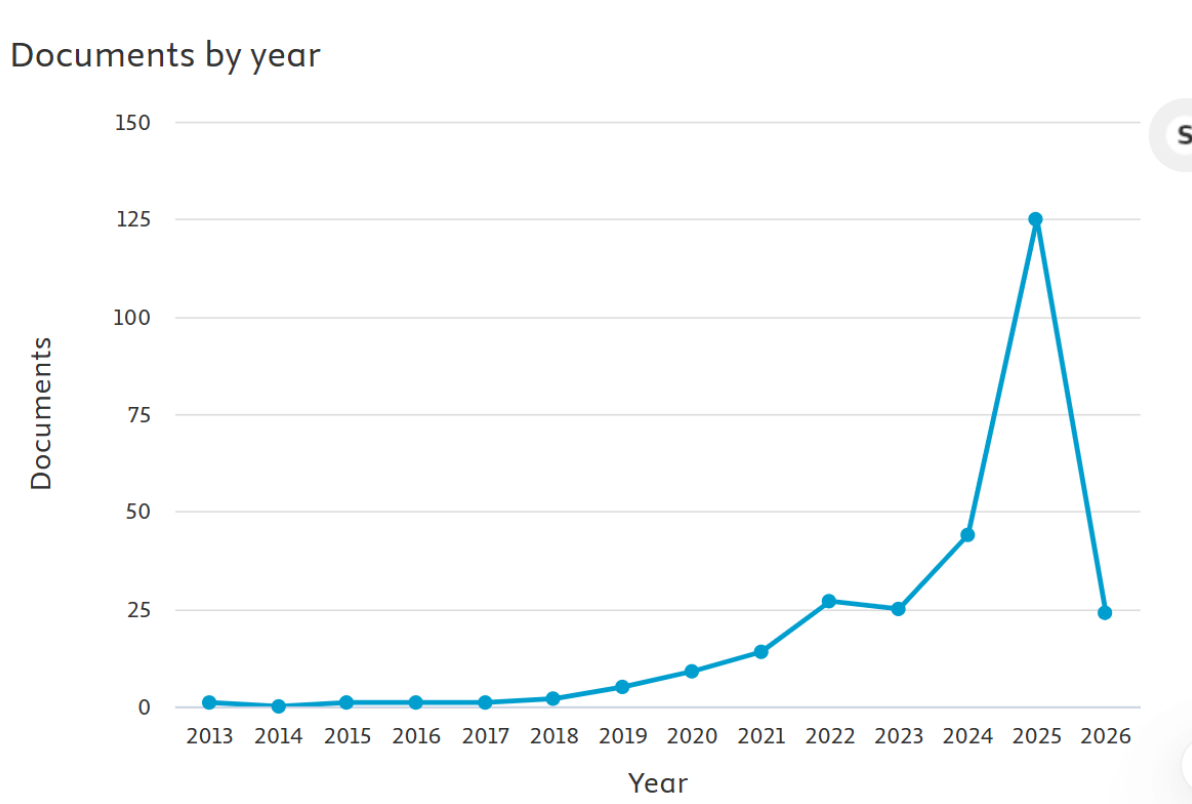


Figure 2 shows that during the period from 2013 to 2026 March, the data provided in figure 1 shows the annual publication distribution in the reference sample of publications. Somewhat stagnant through the earlier years (2013-2017), as this emerging field developed, there was a steadily increasing number of publications from 2018-2021, indicative of increasing academic interest in AI (Artificial Intelligence) personalized marketing. The number of documents identified surged considerably after 2022, suggesting an increase in the attention research in this specific area is receiving. After this point, there was considerable growth in 2024 (as well as a peak in 2025), which resulted in an all-time high of documents within the published record for this study's duration. This growth was a direct correlation of an increase in the number of scholarly publications produced and provided further support for the growing relevance of AI in



personalized marketing. The volume of documents in 2026 March appears less; however, there could be an incomplete indexing process of publications for this current year that will be experienced as well. Overall, the data consolidated demonstrates continuing growth, both in empirical and theoretical research relating to AI in relation to personalized marketing.

**Table 2. Most Cited Publications**

Sr	Authors	Title	TC	Journal	Publisher	DOI
1	Dwivedi et al (2021)	Setting the future of digital and social media marketing research: Perspectives and research propositions	1578	<a href="#">International Journal of Information Management</a>	Elsevier	<a href="https://doi.org/10.1016/j.ijinfo.mgt.2020.102168">https://doi.org/10.1016/j.ijinfo.mgt.2020.102168</a>
2	Sime et al (2020)	Influences of the Industry 4.0 Revolution on the Human Capital Development and Consumer Behavior: A Systematic Review	532	Sustainability	MDPI	<a href="https://doi.org/10.3390/S12104035">10.3390/S12104035</a>
3	Huang & Liao, S. (2015)	A model of acceptance of augmented-reality interactive technology: the moderating role of cognitive innovativeness	373	Electronic Commerce research	Springer	<a href="https://doi.org/10.1007/s10660-014-9163-2">10.1007/s10660-014-9163-2</a>



4	Xu et al (2020)	AI Customer Service: Task Complexity, Problem-Solving Ability, and Usage Intention	280	ANZMAC	SAGE	<a href="https://doi.org/10.1016/j.ausmj.2020.03.005">https://doi.org/10.1016/j.ausmj.2020.03.005</a>
5	Joy et al (2022)	Digital future of luxury brands: Metaverse, digital fashion, and non-fungible tokens	267	Strategic change	Wiley	<a href="https://doi.org/10.1002/js.c.2502">10.1002/js.c.2502</a>
6	Smink et al (2020)	Shopping in augmented reality: The effects of spatial presence, personalization and intrusiveness on app and brand responses	241	<a href="https://doi.org/10.1016/j.jbusres.2020.07.018">Journal of Business Research</a>	Elsevier	<a href="https://doi.org/10.1016/j.jbusres.2020.07.018">10.1016/j.jbusres.2020.07.018</a>
7	Seo & Lee (2021)	The Emergence of Service Robots at Restaurants: Integrating Trust, Perceived Risk,	217	Sustainability	MDPI	<a href="https://doi.org/10.3390/su13084431">10.3390/su13084431</a>



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		and Satisfaction.				
8	Perez-Vega et al (2021).	Reshaping the contexts of online customer engagement behavior via artificial intelligence: A conceptual framework	216	<a href="#">Journal of Business Research</a>	Elsevier	<a href="https://doi.org/10.1016/j.jbusres.2020.11.002">10.1016/j.jbusres.2020.11.002</a>
9	Smink et al (2019)	Try online before you buy: How does shopping with augmented reality affect brand responses and personal data disclosure	199	<a href="#">Electronic Commerce Research and Applications</a>	Elsevier	<a href="https://doi.org/10.1016/j.elerap.2019.100854">10.1016/j.elerap.2019.100854</a>
10	Yin & Qiu (2021)	AI Technology and Online Purchase Intention: Structural Equation Model Based on Perceived Value	164	<a href="#">Sustainability</a>	MDPI	<a href="https://doi.org/10.3390/su13105671">10.3390/su13105671</a>

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Table 2 shows the highest-valued publications used in the study with important contributions to digital technologies based on consumer behaviour. The publication with the most significant impact is Dwivedi et al. (2021) with 1,578 citations where it discusses the future of digital and social media marketing. Other notable publications include Simă et al. (2020) regarding Industry 4.0 and consumer behaviours (532 citations) and Huang and Liao (2014) who wrote about augmented reality and the adoption of augmented reality (373 citations). Other areas of research include the use of artificial intelligence in customer service, digital luxury and the metaverse, augmented reality for online shopping, service robots and customer engagement online. These publications reflect popular trends, between 2014-2022, which included emerging subject matter such as artificial intelligence, augmented reality and digital transformations and also leading journals of significance such as Sustainability, Journal of Business Research and Electronic Commerce Research amongst others which provided influential research.

**Table 3. Top 10 Most Cited Journals**

Sources	Articles	SJR	H-index
1. JOURNAL OF THEORETICAL AND APPLIED ELECTRONIC COMMERCE RESEARCH	19	Q1	54
2. SUSTAINABILITY (SWITZERLAND)	15	Q1	207
3. JOURNAL OF RETAILING AND CONSUMER SERVICES	10	Q1	167
4. FRONTIERS IN PSYCHOLOGY	9	Q2	212
5. PSYCHOLOGY AND MARKETING	9	Q1	154
6. ACTA PSYCHOLOGICA	8	Q1	116
7. PLOS ONE	8	Q1	467
8. BEHAVIORAL SCIENCES	7	Q2	52
9. SAGE OPEN	6	Q1	74
10. COGENT BUSINESS AND MANAGEMENT	5	Q2	56

Table 3 presents the most influential journals in terms of their contributions to the research area, along with the number of articles published in each journal, the journal's scimago journal rank (SJR), and H-index value representing both productivity and the citation impact of the journal. The H-index indicates how many articles published in a particular journal have received at least the same number of citations and is therefore a measure of a journal's academic impact. As can be seen from the list, the Journal of Theoretical and Applied Electronic Commerce Research (JTAECR) ranks #1, with 19 articles published in the journal; it has an SJR quartile value of Q1, and an H-index value of 54, indicating very high levels of contribution to scholarly research in the electronic commerce and digital marketing fields. Sustainability (with 15 articles published and an



H-index value of 207) ranks #2, demonstrating a very high level of citation impact, and indicating strong academic influence in the interdisciplinary fields of sustainability research and technology. In addition, JRetailing and Consumer Services ranked #3 overall with 10 article publications; and Frontiers in Psychology is ranked #4 with 9 article publications, both journals demonstrate high levels of contributions to research related to consumer behavior and digital commerce. Other high-quality journals are Psychology & Marketing (H-index = 154), Acta Psychologica (H-index = 116), PLOS ONE (H-index = 467), which all demonstrate high levels of academic influence. Behavioral Sciences, SAGE Open, and Cogent Business & Management contribute further to research regarding marketing, consumer psychology and the business and marketing environment utilizing digital technology. Most of the leading marketing journals map to the Q1 classification, indicating that this research area is substantiated by high-quality and high-impact academic sources. These journals are critical in disseminating knowledge associated with artificial intelligence, consumer behaviour, marketing and electronic commerce and aiding the development of this area of research.

**Table 4. Top 10 Author's Contribution**

Authors	Number of Articles	Total citations	Average citation/Articles
ZHANG C (Chuanxia Zheng)	6	50	8.33
LI Y (Li, Yanmin)	5	22	4.40
WANG Y (Yong Wang.)	5	1629	325.80
LI H (Li, Hengyun)	4	165	41.25
ANUTE N	3	0	0
BEYARI H	3	43	14.33
CHEN J	3	22	7.33
CHEN X	3	45	15.00
DONG Y	3	3	1.00
FLAVIÁN C	3	290	96.67

**Figure 3. Most Relevant Authors**

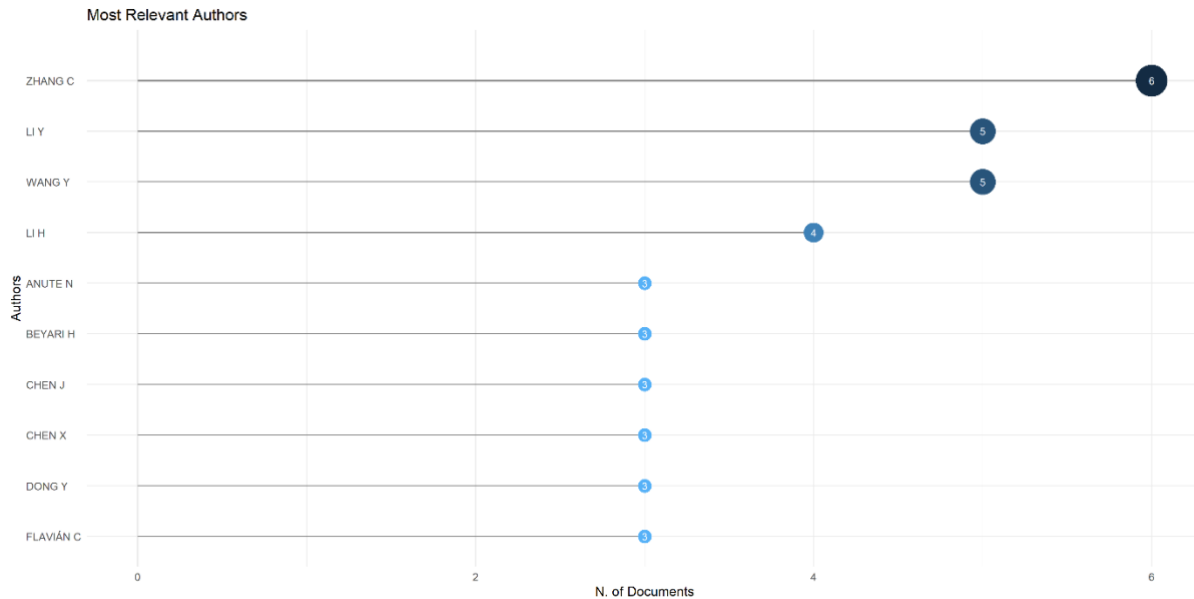


Table 4 and the Figure 3 show the leading authors in the scientific field by total number of publications and the citation impact of those publications (CIs). When evaluating productivity in bibliometric studies, this information is often determined by looking at the number of times an author published papers and/or had them cited in that specific area. The data presented in the table indicates that Zhang C is the most prolific author within the given research area, with a total of six publications. Following him are Li Y and Wang Y, each having published five articles in this research arena. Li H is fourth, with four published papers. The remaining authors -- Anute N, Beyari H, Chen J, Chen X, Dong Y, and Flavián C -- are tied for fifth place, each with three publications. This demonstrates a pattern commonly seen in bibliometric research, where a small percentage of researchers produce a significant amount of published works; in other words, research productivity is often concentrated among a small number of researchers. With respect to citation impact, Wang Y has the most scholarly impact, with a total of 1,629 gross citations, which gives him the highest gross average number of citations per published paper (325.80). According to citation counts, Flavián C show impact with 290 total citations for an average of 96.67 citations per article. Li H whose publications have accumulated with 165 citations at an average of 41.25 citations per article. The following authors have moderate levels of citation impact: Zhang C; Beyari H; Chen X. Anute N And Dong Y have low levels of citation impact. The corresponding figure depicts the distribution of authors by the number of publications. Zhang C has the highest publication output while many of the other authors have low levels of publication output. It can be concluded from this analysis that the research area is dominated by a small group of high-output, high-impact authors and also a group of authors that have low-output levels which follows the

publishing structure typical of research disciplines reported in the literature from bibliometric studies.

**Figure 4. Author's collaborations**

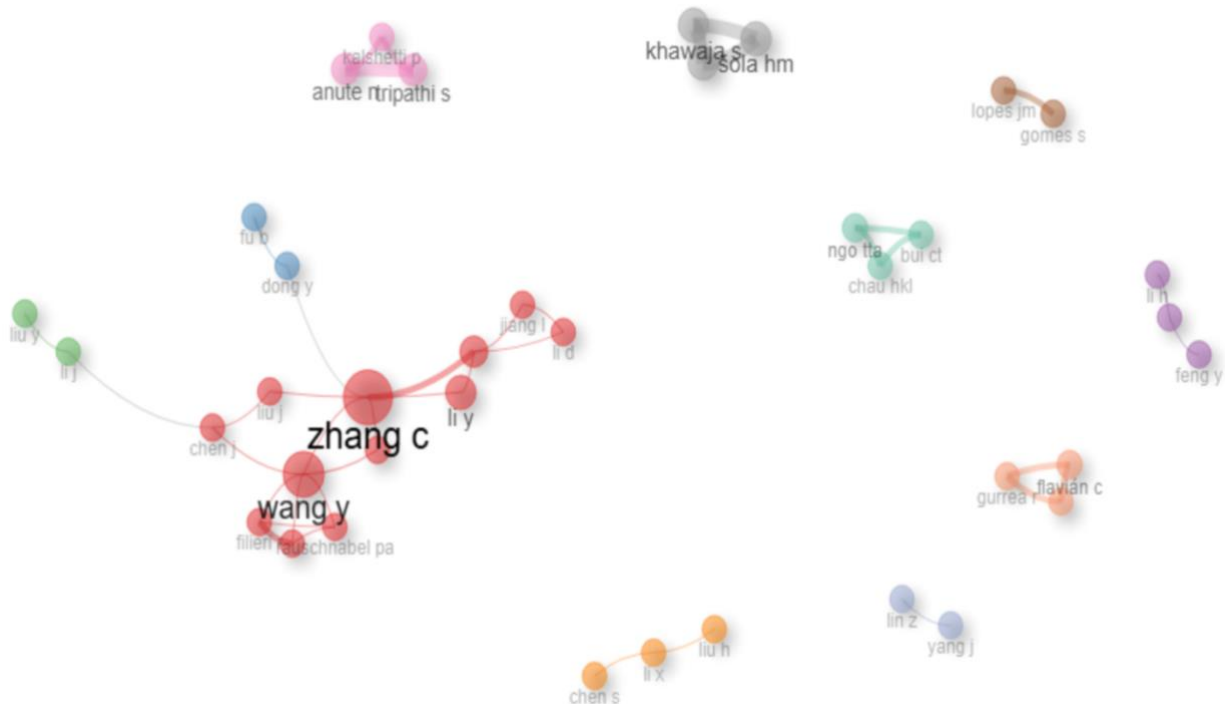


Figure 4 illustrates the author collaboration network in the selected research field using bibliometric analysis. In this network visualization, each node represents an individual author, while the links between nodes indicate co-authorship relationships, meaning that the connected authors have collaborated on one or more publications. The size of each node generally reflects the author's research contribution or influence, such as the number of publications or collaborative links within the dataset. Different colors represent clusters of authors, indicating groups of researchers who frequently collaborate with one another. From the network structure, Zhang C appears as the most prominent and central author, indicated by the larger node size and multiple collaborative links with other researchers such as Li Y, Jiang L, and Wang Y. This suggests that Zhang C plays a significant role in the artificial intelligence (AI) technology and consumers purchase intention in e-commerce platforms and maintains strong collaborative relationships within the core research group. The cluster around these authors forms the largest and most interconnected research group, highlighting active collaboration and knowledge exchange. Other smaller clusters are also visible in the network, representing independent collaboration groups that contribute to the field but maintain fewer connections with the central cluster. These groups include authors such as Khawaja S., Sola H. M., Lopes J. M., Gomes S., and Feng Y., who collaborate within their respective clusters.

**Figure 5. Countries Collaboration**

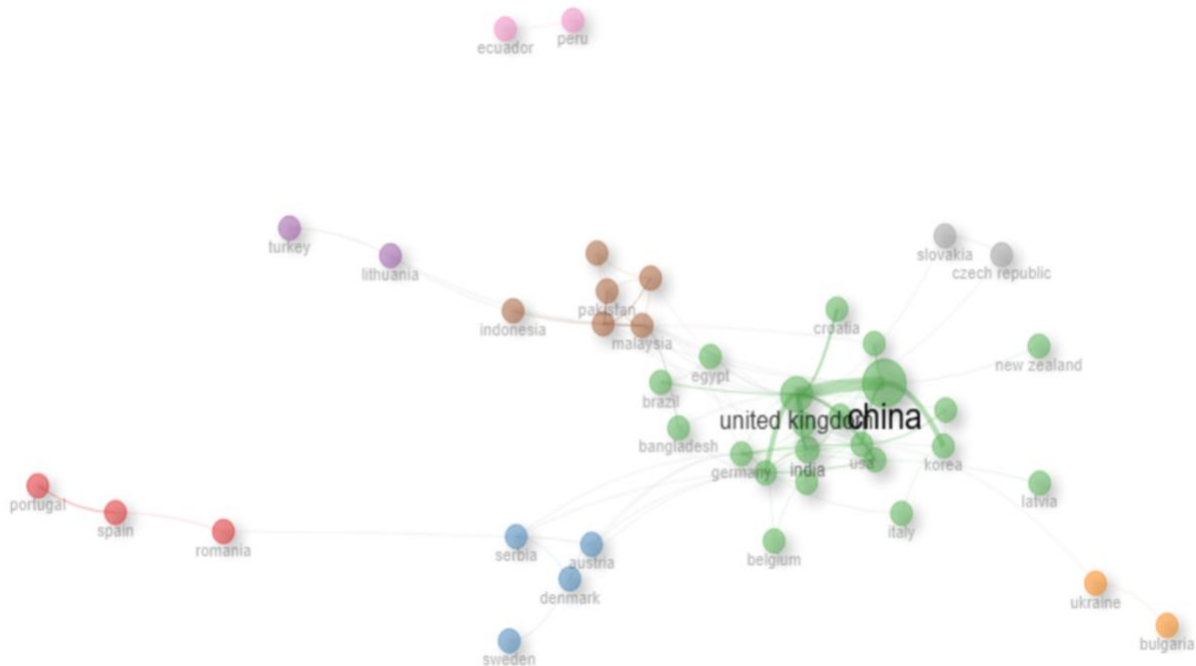


Figure 5 presents a country collaboration network generated through bibliometric analysis. In this visualization, each node represents a country, while the links between nodes indicate collaborative research relationships, typically based on co-authored publications between researchers from different countries (Duan,2024). The size of each node reflects the number of publications contributed by that country, whereas the thickness of the connecting lines represents the strength of collaboration between countries. Different colors indicate distinct clusters of countries that frequently collaborate with each other. The map shows that China and the United Kingdom occupy central positions in the network, as indicated by their relatively larger nodes and numerous connections with other countries. This suggests that these countries play a significant role in international research collaboration within the study domain. Their strong links with countries such as India, the United States, Germany, Brazil, and Korea demonstrate active participation in global knowledge exchange and cross-border research partnerships. Several regional clusters are also visible in the network. For example, Pakistan, Malaysia, and Indonesia form a cluster indicating close collaboration among Asian countries. Similarly, Portugal, Spain, and Romania form another cluster reflecting regional cooperation in Europe. Additional smaller clusters include collaborations among Serbia, Austria, Denmark, and Sweden, as well as connections among Ukraine and Bulgaria. Overall, the visualization highlights that research in this field is international and collaborative, with multiple countries contributing to the development of knowledge. The presence of several clusters indicates both regional collaboration patterns and broader global



partnerships, emphasizing the growing importance of international cooperation in advancing scientific research.

**Table 5. Most Productive Countries**

Country	Developing/ Developed	Articles	Articles%	SCP (Single country publications)	MCP (multi- country publications)	MCP %
China	Developing	56	20.1	45	11	19.6
UK	Developed	20	7.2	6	14	70
Korea	Developed	19	6.8	14	5	26.3
India	Developing	14	5	12	2	14.3
Spain	Developed	11	3.9	10	1	9.1
Portugal	Developed	8	2.9	7	1	12.5
Malaysia	Developing	7	2.5	5	2	28.6
Germany	Developed	6	2.2	5	1	16.7
Italy	Developed	6	2.2	5	1	16.7
Romania	Developing	6	2.2	4	2	33.3

Table 5 show the output of countries involved in the study of AI-contingent personalization or eCommerce marketing are included in the table below. China appears to have the highest level of output with 56 articles (20% market share), 40 citations (MCPS), 11% MUPS, and 15.6 citations per article. The second highest producer is the United Kingdom with 20 articles (7% market share), 12 citations, and 14.3 citations per article. With 10 articles (5% market share), 6 citations and 14.4 citations per article, India ranks third. With only 7 articles (2.9% market share), Malaysia is the next highest producer with 10 citations and 28.6 citations per article. Italy has lower productivity (6 articles, 2.2% market share) than Malaysia but has more than twice the number of citations (4 citations and 33.7 citations per article). Last among the countries included in this study is Romania, pointing to a growing contribution from emerging economies.

Table 6 and Figure 6 show most frequently occurring keywords identified in the dataset of the bibliometric analysis are shown in the figure below. Frequency of keywords in the dataset reflects how often a particular word has been mentioned in the publications included in the analysis and represents the primary research themes and hence the dominant areas of research in this field of study. The higher frequency indicates that more research has focused on that keyword than on any other keyword in the literature (Ma et al., 2023). The frequency of occurrence of the keywords shows that Artificial Intelligence is the most frequently used keyword with a total 80 occurrences, indicating that it is the primary concept within this area of research. Evidence shows that AI technology in today's academic research continues to grow more important. With 56 instances, 'consumer behavior' was the second most frequent keyword, demonstrating a significant amount

of academic research to understand how consumers make purchase decisions due to technological advances. Key words also included 'e-commerce' (40), 'augmented reality' (36) and 'purchase intention' (35) shows significant emphasis on how technology is changing shopping and consumer experiences in the digital realm.

**Table 6. Top 10 Most Frequent words**

Terms	Frequency
artificial intelligence	80
consumer behavior	56
e-commerce	40
augmented reality	36
purchase intention	35
electronic commerce	28
Human	26
Marketing	26
consumption behavior	22
Humans	22

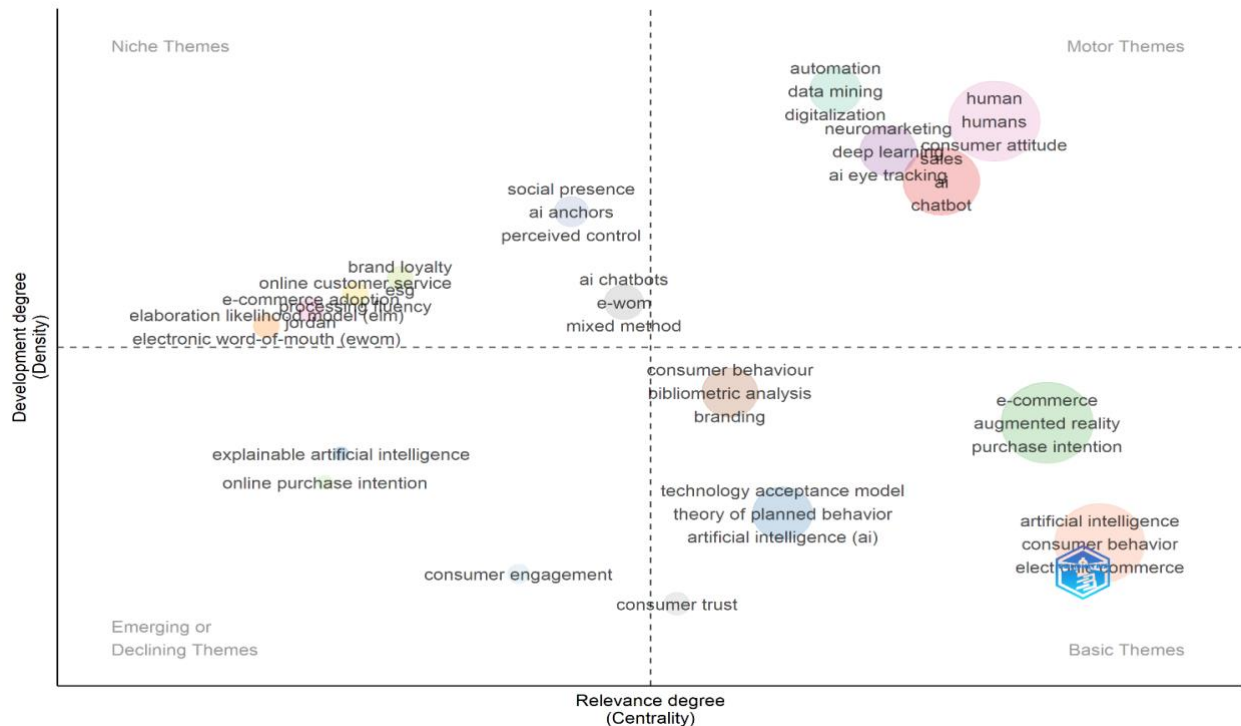
Also, terms such as 'electronic commerce' (28) and 'marketing' (26) show a connection between technology and modern marketing techniques. Similarly, there are a high frequency of occurrences of the keyword's 'human' (26), 'humans' (22) and 'consumption behavior' (22), indicating that this research area is not only about studying the technology of ecommerce, but also the human/behavioral aspects of ecommerce. Therefore, the frequency analysis indicates that the essential focus of the industry lies within the areas of AI, consumer behavior and commerce through technology, illustrating the merging of advanced technology into both online shopping and marketing research.

Figure 6. Word cloud of Keywords



Figure 7 shows thematic map illustrates the conceptual structure of research on artificial intelligence, consumer behavior, and online shopping based on keyword co-occurrence analysis. The map is divided into four quadrants according to centrality (relevance) and density (development), representing motor themes, niche themes, basic themes, and emerging or declining themes.

Figure 7. Thematic Map



- **Motor Themes (High Centrality – High Density)**

This area of the quadrant (top right) has motor themes that have become very strong and are relevant to the area of research. Motor themes in this quadrant can be characterized as driving forces within a particular field of study. In terms of motor themes, this area contains keywords; Automation, Data Mining, Digitalization, Neuromarketing, Deep Learning, Artificial Intelligence (AI), Chatbot, Human, Humans, Consumer Attitude, and Sales. This suggests that AI/the effects of AI-related technologies on consumer attitudes toward products and sales-related behavior is one of the most robustly researched and established areas of the literature. These terms also indicate a strong relational tie to other areas of research, thereby identifying the major technological advances that are impacting marketing today as well as the study of consumer behavior.

- **Niche Themes (Low Centrality – High Density)**

The upper-left quadrant is the quadrant for niche themes, and the sub-cluster in this quadrant consists of social presence, AI anchors, perceived control, brand loyalty, online customer service, e-commerce adoption, processing fluency, elaboration likelihood model (ELM) and electronic word-of-mouth (eWOM). Nonetheless, these are highly developed areas with little influence in the rest of the research landscape. Additionally, these themes are specific research domains focusing on the psychological and behavioral aspects of digital marketing and customer interactions. These themes suggest more research is needed, and that there are slightly looser affiliations with the core themes. Many also intersect with customary literature on AI and consumer behavior.

- **Basic Themes (High Centrality – Low Density)**

The lower right quadrant is the basic theme; that is, the least specific and most universally applicable of all fourteen themes (see Figure 11). The basic theme clusters are artificial intelligence, consumer behavior, electronic commerce, e-commerce, augmented reality, purchase intention, TAM, TPB, and consumer trust. These themes form the basis of research on AI-driven online shopping behavior. That said, although these themes are fairly close-knit and connected to other themes discussed, they warrant additional theoretical and empirical attention, as they continue to represent meaningful avenues for future research.

- **Emerging or Declining Themes (Low Centrality – Low Density)**

The lower-left quadrant represents emerging or declining themes, which have low relevance and low development in the research field. This cluster includes explainable artificial intelligence, online purchase intention, and consumer engagement. These topics may either represent new research directions that are still evolving or areas that have received relatively limited attention in the existing literature. Given the increasing importance of explainable AI and transparency in AI systems, these themes are likely to gain more prominence in future studies related to AI-driven personalization and consumer trust.

**Figure 8. Trend Topics**

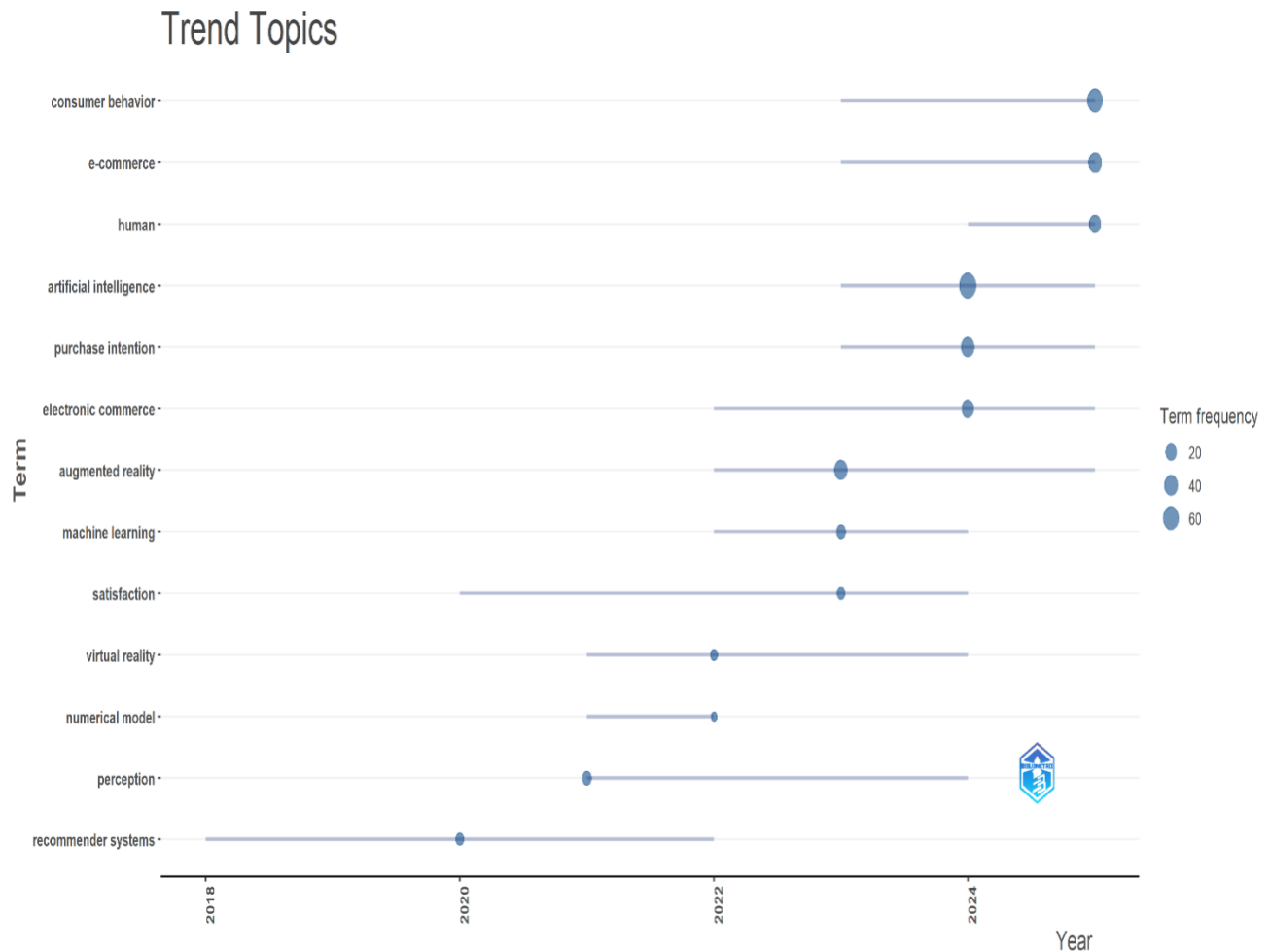


Figure 8 shows the trend topic analyses allow us to see how different research terms have ebbed and flowed over time for the subject matter that was examined. On the graphs produced through these analyses, the horizontal axis shows the time frame of publication while the vertical axis depicts which of the most frequently published research terms (as determined through author keywords) exist. Line graphs are used to show the length of time that a particular term has been active within the literature, and the size of the circles displayed represent how often or frequently you see that term in a specific timeframe (Ay, 2024). This figure shows us that among the various terms found in the published literature, consumer behavior, e-commerce, and human aspects are the most recently published and have thus received the most attention from researchers and thus represents a trend toward more scholarly effort toward understanding how people utilize digital commerce platforms. Additionally, artificial intelligence and purchase intention will also become common terms found among published literature due to the rising level of intelligent technology influencing how consumers make purchase decisions. Trends in prior research demonstrate a focus

on problems related to recommender systems, perception, and numerical models that are considered the basic building blocks of intelligent systems. These technological foundations have seen a transition from recommending systems and algorithms to more immersive and advanced digital experiences such as augmented reality (AR), virtual reality (VR), and machine learning, reflecting the advancement of technology within the field over time. A review of the trend topic's analysis indicates a definitive movement away from technological infrastructure and algorithmic models, and toward consumer-driven topics related to AI-driven personalization, consumer satisfaction, and eCommerce purchase intentions. This transformation reflects an increased emphasis in current research on how the emergence of new digital technologies will impact consumer behavior and experience because of the larger transition of digital commerce and intelligent marketing systems.

**Figure 9. Co-occurrence keywords Network**

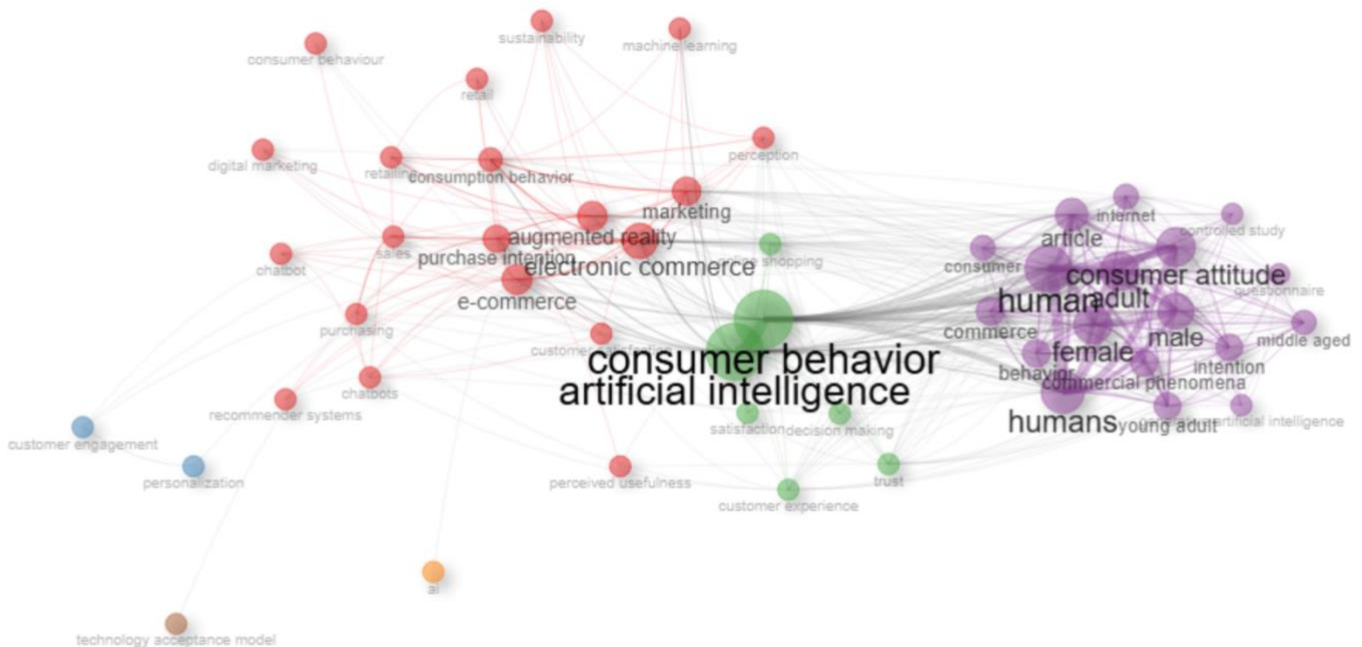


Figure 9 shows keyword co-occurrence network illustrates the research area's conceptual structure. Each node (author keyword) in the network is represented by a size that reflects how often the keyword occurs in the database. Two author keywords are connected (with an edge) if they co-occur in the same article. Nodes that are connected more strongly or closely signify greater

thematic association between the two keywords. Clusters of related keywords are distinguished from one another by color coding, which helps to categorize keyword clusters into thematic research categories (Nazarian & Lee2021). The network's largest node is the consumer and artificial intelligence (AI) keyword; they are both central to the network. The large sizes of these keywords and their close connections to other author keywords, such as electronic commerce, marketing, purchase intention, customer experience, and trust, indicate that consumer decision-making through AI technology in a digital commerce environment is being studied more extensively. The visualization illustrates multiple clusters differentiated by color (red, green, and purple). Most red thematic references were associated with eCommerce, augmented reality, marketing activities (i.e., traditional marketing, digital marketing), and purchasing intention (e.g., technological applications for online retailing and marketing strategies). The dominant theme within the green cluster encompassed issues such as consumer behavior patterns, decision-making processes, and the degree of satisfaction and trust consumers exhibit as they conduct shopping in AI-integrated retail environments; however, the demographic characteristics of consumers (i.e., human beings) were represented through words contained in the purple thematic cluster, that is, 'male', 'female', 'adult', and 'consumer attitude'. Together, the co-occurrence network highlights a highly interdisciplinary approach to academic literature that connects artificial intelligence systems to how consumer behaviors (i.e., eCommerce) are influenced by those same systems. The numerous connections between the various themes indicate an increasing interest among researchers regarding the effect of AI-based technologies on consumer attitudes and experiences when making purchase decisions at digital marketplaces.

### 3.1 Discussion

The findings of this bibliometric analysis provide a structured and evidence-based account of the intellectual development of AI-driven personalization and consumer purchase intention research in e-commerce from 2013 to March 2026. The results are interpreted across four key dimensions: publication growth, geographic contributions, thematic structure, and collaborative networks.

#### 3.1.1 Publication Growth and Disciplinary Trajectory

The annual growth rate of 27.69% recorded in this study reflects the accelerating scholarly interest in AI-driven personalization within digital commerce environments. The relatively modest publication output observed between 2013 and 2017 is consistent with the early developmental stage of AI marketing technologies, during which foundational tools such as collaborative filtering algorithms and early recommender systems were still being refined. The sharp surge in publications from 2022 onward aligns with the mainstream adoption of large language models, conversational AI interfaces, and AI-curated shopping experiences across major e-commerce platforms. This trajectory confirms that AI-driven personalization has transitioned from a peripheral technological novelty to a central and rapidly maturing area of academic inquiry,

mirroring broader patterns of research growth observed in adjacent fields such as digital marketing and information systems.

### *3.1.2 Geographic and Institutional Contributions*

The geographic distribution of research output reveals a field that is globally collaborative yet productively concentrated. China's leading contribution of over 20% of total publications reflects its substantial national investments in artificial intelligence infrastructure and e-commerce innovation. The United Kingdom's exceptionally high multi-country publication rate of 70% positions it as an international collaborative hub rather than merely a prolific producer, facilitating knowledge exchange across European, Asian, and North American scholarly communities. India's growing presence in the dataset, particularly in studies addressing technology adoption and consumer trust in emerging market contexts, signals a meaningful diversification of geographic perspectives in the literature. However, the limited representation of African, Latin American, and Middle Eastern scholarship points to a persistent geographic gap that future research must address to ensure the cross-cultural generalizability of findings.

### *3.1.3 Thematic Structure and Conceptual Evolution*

The thematic map generated through keyword co-occurrence analysis reveals a field consolidating around established theoretical pillars while simultaneously expanding toward new conceptual frontiers. Motor themes including artificial intelligence, deep learning, chatbots, automation, and consumer attitude confirm that AI-enabled technologies and their behavioral consequences form the durable intellectual core of the domain. The persistence of foundational frameworks such as the Technology Acceptance Model and the Theory of Planned Behavior among the basic themes reflects their continued explanatory relevance in accounting for consumer responses to AI-driven systems, though it also raises questions about whether these models are sufficiently equipped to capture emerging phenomena such as personalization fatigue, algorithmic aversion, and AI-induced privacy anxiety. The identification of explainable AI, consumer engagement, and online purchase intention as emerging themes is particularly significant, as it signals a discernible shift in the field's orientation away from purely technological concerns toward the ethical, psychological, and governance dimensions of AI personalization. This evolution is consistent with the growing regulatory pressure surrounding data privacy and algorithmic transparency globally, and suggests that questions of trust, consent, and responsible AI deployment will increasingly define the theoretical agenda of the field in the years ahead.

### *3.1.4 Collaborative Networks and Knowledge Diffusion*

The co-authorship network analysis reveals a field structured around a small number of highly productive and influential research clusters, with Zhang C emerging as the most prolific contributor and Wang Y demonstrating the highest citation impact at an average of 325.80 citations per article. The concentration of scholarly influence within a limited group of authors and



institutions reflects the Lotka's Law pattern commonly observed in bibliometric research, where a small proportion of researchers account for a disproportionately large share of total output. While the presence of dense intra-cluster collaboration indicates strong knowledge exchange within established research groups, the relatively sparse connections across clusters suggest that interdisciplinary dialogue between scholars working on psychological, technological, and managerial dimensions of AI personalization remains limited. Bridging these collaborative gaps through targeted cross-disciplinary research initiatives would likely accelerate the development of more integrated and practically applicable theoretical frameworks for understanding how AI-driven personalization shapes consumer decision-making in the evolving digital economy.

#### **4. Conclusion, Implications, Limitations, and Future Research Directions**

This study presents a comprehensive bibliometric analysis of the scholarly literature on AI-driven personalization and consumer purchase intention in e-commerce, spanning the period from 2013 to March 2026. Drawing on a final dataset of 279 peer-reviewed, open-access articles sourced from the Scopus database, the analysis systematically maps the intellectual structure, thematic evolution, and collaborative networks that define this rapidly growing field. The findings confirm a consistent and accelerating upward trajectory in annual publication output, with an annual growth rate of 27.69%, reflecting the increasing recognition of artificial intelligence as a transformative force in digital marketing and consumer behavior research. Prominent contributors include China, the United Kingdom, and India, whose sustained research output underscores the global and interdisciplinary nature of the domain. Core themes identified through keyword and thematic analyses, including artificial intelligence, consumer behavior, e-commerce, purchase intention, recommender systems, and predictive analytics, represent the established conceptual pillars of the field. Simultaneously, emerging themes such as explainable AI, consumer trust, and transparency signal the next frontier of scholarly inquiry, where technological capability intersects with ethical responsibility. Collectively, these findings affirm that AI-driven personalization is no longer a peripheral concern in digital commerce research but a central and evolving area of investigation with significant implications for theory, practice, and policy.

##### **4.1 Implications of the Study**

The findings of this study carry meaningful implications for researchers, practitioners, and policymakers operating across the intersecting domains of artificial intelligence, digital marketing, and consumer behavior. For academics, the bibliometric mapping presented here offers a structured foundation for situating new research within the broader intellectual landscape of the field, identifying underexplored themes, and building upon the most influential theoretical and empirical contributions. The prominence of technology acceptance models such as TAM and UTAUT in the literature further encourages future scholars to extend and refine these frameworks in the context of AI-powered shopping environments, particularly as consumer interactions with intelligent systems grow more complex and multifaceted.



For industry practitioners, the study reinforces the strategic importance of investing in AI-driven personalization technologies, including recommender systems, chatbots, and predictive analytics, as tools for enhancing customer experience, improving purchase conversion rates, and strengthening long-term brand relationships. The evidence presented suggests that organizations which treat personalization as a dynamic and consumer-centered practice, rather than a static technological feature, are better positioned to meet evolving consumer expectations and maintain competitive advantage in increasingly saturated digital marketplaces. Practitioners are also encouraged to approach personalization with careful consideration of intrusiveness and perceived privacy violations, as the balance between relevance and overreach remains a critical determinant of consumer trust and engagement.

At the policy and societal level, the growing prominence of themes related to explainability, ethics, and transparency in the literature signals an urgent need for governance frameworks that align AI personalization practices with consumer rights and regulatory obligations. Policymakers and regulatory bodies are encouraged to develop standards that hold organizations accountable for the transparency of algorithmic decision-making, the ethical use of consumer data, and compliance with data protection legislation such as the General Data Protection Regulation and the California Consumer Privacy Act. In doing so, they can help ensure that the benefits of AI-driven personalization are realized without compromising consumer autonomy, privacy, or trust.

#### **4.2 Limitations and Future Research Directions**

While this study makes a significant contribution to the understanding of AI-driven personalization and consumer purchase intention in e-commerce, several limitations must be acknowledged. First, the analysis was restricted to open-access articles indexed in the Scopus database, which, while ensuring a high standard of peer review and methodological transparency, may have resulted in the exclusion of relevant studies published in subscription-based journals or alternative academic databases such as Web of Science, PubMed, or Google Scholar. This database-selection bias may limit the comprehensiveness of the findings and potentially underrepresent contributions from certain disciplines or regional research communities.

Second, the restriction to English-language publications, although necessary to ensure analytical consistency and minimize translation-related inaccuracies, introduces a language bias that may have excluded valuable research conducted and published in other languages. As a consequence, perspectives from non-English-speaking regions, particularly those in East Asia, Latin America, the Middle East, and continental Europe, may be underrepresented, potentially affecting the cultural and geographic breadth of the findings.

Third, the reliance on citation counts as a proxy for scholarly influence, while a well-established practice in bibliometric research, carries inherent limitations. Highly cited publications do not always reflect the most recent or contextually relevant advancements in a field, and recently published studies of considerable quality may have been overlooked due to insufficient citation

accumulation at the time of data extraction. Finally, the bibliometric tools employed in this study, namely Biblioshiny and VOSviewer, while widely adopted and methodologically robust, impose certain analytical constraints. The exclusive use of these platforms may have limited the depth and diversity of insights that could have been generated through complementary tools such as CiteSpace, SciMAT, or BibExcel.

The findings of this study open several promising avenues for future scholarly inquiry that warrant systematic empirical and theoretical attention. One of the most pressing directions concerns the ethical dimensions of AI-driven personalization, particularly as algorithmic systems become increasingly embedded in consumer decision-making processes. Future research should investigate how organizations can design and deploy personalization technologies in ways that are transparent, explainable, and aligned with consumer expectations of fairness and data sovereignty. The growing prominence of explainable AI in the thematic analysis suggests that scholars are beginning to grapple with these questions, yet empirical frameworks for evaluating ethical compliance in personalized marketing remain underdeveloped.

A second important direction involves the role of consumer trust in mediating the relationship between AI-driven personalization and purchase intention. While trust has emerged as a recurring and increasingly central theme in the literature, the mechanisms through which AI transparency, data governance practices, and personalization accuracy shape consumer trust across different cultural and demographic contexts remain insufficiently understood. Cross-cultural comparative studies would be particularly valuable in this regard, as the existing literature is disproportionately concentrated in developed economies, leaving significant gaps in knowledge about consumer responses to AI personalization in emerging markets.

Future research should also explore the intersection of AI-driven personalization with sustainability and responsible consumption. As organizations face growing pressure to demonstrate environmental and social accountability, understanding how personalized AI systems can be designed to nudge consumers toward more sustainable purchasing behaviors represents a meaningful and underexplored area of inquiry. Additionally, the increasing integration of AI personalization across omnichannel retail environments, encompassing mobile commerce, social media platforms, voice assistants, and immersive technologies such as augmented reality and the metaverse, calls for research that examines consumer behavior holistically across these interconnected touchpoints rather than in isolation.

Finally, from a methodological standpoint, future bibliometric studies in this domain would benefit from incorporating a wider range of databases, including Web of Science and Google Scholar, to reduce selection bias and capture a more representative sample of global scholarship. The adoption of complementary analytical tools such as CiteSpace, SciMAT, and BibExcel alongside VOSviewer and Biblioshiny would further enrich the depth and reliability of intellectual structure mapping. Longitudinal studies and mixed-methods approaches that combine bibliometric analysis



with systematic literature reviews or meta-analyses are also encouraged to provide a more nuanced and integrative account of how AI-driven personalization continues to reshape consumer behavior in the evolving digital economy.

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