International Journal of Computational and Experimental Science and ENgineering (IJCESEN)

Vol. 11-No.1 (2025) pp. 1138-1146
http://www.ijcesen.com

ISSN: 2149-9144

Research Article

Bibliometric Analysis of Artificial Intelligence on Consumer Purchase Intention in E-Retailing

S. Menaka[1], V. Selvam[2*]

[1]Vellore Institute of Technology, School of Social Sciences and Languages, Department of Commerce, 632007, Vellore, India
Email: menakasundaram1998@gmail.com- **ORCID:** 0009-0009-5144-7703

[2]Vellore Institute of Technology, School of Social Sciences and Languages, Department of Commerce, 632007, Vellore, India
***Corresponding Author Email:** vselvam@vit.ac.in - **ORCID:** 0000-0001-5438-4845

Article Info:

DOI: 10.22399/ijcesen.1007
Received : 21 December 2024
Accepted : 23 February 2025

Keywords :

Artificial Intelligence,
Consumer Purchase Intention,
E-retailing,
Bibliometric Analysis,
Personalized Recommender Systems.

Abstract:

This study conducts a comprehensive bibliometric analysis of the impact of Artificial Intelligence (AI) on consumer purchase intentions in the e-retailing sector. By examining data from over 500 peer-reviewed articles published between 2000 and 2023, sourced from leading academic databases such as SCOPUS and Web of Science, these study maps the intellectual and research activities in this burgeoning field. The key AI technologies analzsed include machine learning, natural language processing, and data mining, which enhance personalized shopping experiences, recommend products, and provide virtually assisted sales. The analysis revealed significant growth in research output, highlighting four primary themes: personalized recommender systems, chatbots and virtual assistants, customer sentiment analysis, and predictive analytics. These themes underscore AI's role of AI in improving consumer satisfaction, loyalty, and conversion rates. Despite these advancements, gaps remain in areas such as the ethical implications of its AI, long-term effects on consumer behavior, and cross-cultural impacts. Addressing these gaps could pave the way for future research and more responsible AI deployment in e-retail.

1. Introduction

AI has quickly become a center of gravity for e-retailing, disrupting consumer buying attitudes and behaviors. Consequently, this bibliometric study will provides a comprehensive systematic mapping of this field's intellectual and research activities. It is worth noting that AI technology in e-retailing comprises machine learning, natural language processing, and data mining, in addition to others that help improve shoppers' experience by recommending products, virtual assisted selling, and giving more appropriate information as compared to a traditional BI system [1]. The rise of integrated artificial intelligence solutions in the personalization of services has seen a drastic uptake on the conversion rates, where improvements 25% and 35%. CORDP! The DPI for this bibliometric study included data harvested from premier academic databases, including SCOPUS and, Web of Science and covering publications into the period to 2000-2023. The database consists of more than 500 research papers from peer reviewed journals, and conference proceedings, and review papers, demonstrating an increase in the cardinality of such studies in the last ten years. For this purpose, citation analysis, co-citation analysis, thematic mapping were conducted to determine the important authors, articles, trends in the literature. The issue-level analysis shows that the four most explored topics are personalized recommender systems encompassing 30 articles, chatbots, and virtual assistants, accounting for 25 articles, and the customer's sentiment analysis, accounting for 20 articles in the current issue. The last 25% is the description of the remaining different types of AI applications, such as Inventory control and fraudulent activities control. In addition, it is possible to identify quite a number of frequently cited authors such as Lee et al. and, Huang and Rust [2,3]. This systematic bibliometric analysis not only presents an up-to-date state of the art in AI for boosting consumer purchase intentions in e-retailing, but also reveals the research gaps and

uncovers the possible further research veins for scholars and practitioners in the field.

2. Review of Literature

Due to the dynamism in the development of Artificial Intelligence (AI), the e-retailing sector has greatly changed in the way that business organizations communicate with the customer as well as the approach adopted by the customer in engaging business organizations. The automation of e-retailing by employing AI technologies such as machine learning, natural language processing, and data mining allows e-retailers to carry out analyses of big data to obtain insights that can be utilized in the personalization of the shopping experience [3]. This section aims to provide a broad idea about the use of AI in e-retailing, the impact of AI on consumers' buying decisions and behaviors, and a literature review on this topic. Another major shift in e-retailing is the use of Artificial Intelligence for personalization. Recommendation systems use artificial intelligence and related technologies to identify preferable patterns of client behavior and preferences regarding products based on information about product searches, previous purchases, age, and gender. For instance, Li et al. also noted that personalization has a positive and significant impact on enhancing perceived customer satisfaction and loyalty; an implication that supports AI as a critical tool in boosting consumer experience [4]. Chatbots and Virtual assistants are other critical AI application in e-retailing businesses. They also provide real time customer support, and responding to queries in addition to helping in the completion of transactions. These tools not only provide optimizations in business operations but also contribute to consumers' satisfaction with the delivered instant answers and help [5]. One of the top areas of impact of AI is customer sentiment analysis. Through natural language processing, e-retailers can learn more about consumers' views and tendencies by analzing textual data from customer reviews and social media posts. This information is very helpful for business entities to know the tendencies in consumption so that further ways could be adapted. For example, Chen et al established that the sentiment analysis model could accurately predict the success of a product and aspects of customer satisfaction to assist e-retail businesspersons make informed decisions [1]. Awareness of AI within e-retching has experience a phenomenal increase over the last two decades, amid scholarly production. Based on studies published between 2000 and 2023, the literature has shown a rising trend of research interest with more than 500 peer-reviewed articles, conference papers, and review papers related to this subject. This high level of scholarly output points to the growing appreciation of AI's capacity to transform e-retailing [2]. Major authors in this field include Huang and Rust whose works are widely cited and have established strong hallmarks in the course of engaging in academic debate [3]. Their work focuses on identifying different aspects of the use of AI in e-retailing, which include recommending system, customer service and emotion detection. The following citation analysis reflects that their works has made a positive contribution, which has paved the way for the subsequent analysis of AI-driven e-retailing strategies. Thus, despite the number of studies completed on the subject, certain areas need to be developed. For instance, although a great deal of interest has centered on the technological advancement of AI in electronic retailing, little is known about the ethics of using it in e-retailing. Some of the challenging questions that need to be solved to properly regulate the use of AI are data protection, fairness of the algorithms, and explicability of decision-making by artificial intelligence. Further research is required to determine the long-term impact of Artificial Intelligence on consumers' behavioural patterns and markets in the long run.

3. Material and Methods

The methodological approach for the bibliometric analysis in this paper is aimed at enabling the identification, extraction, analysis, interpretation of the received from academic publications on the effects of AI on consumers' purchase intentions in e-retailing. The specific information gathering method, analysis approaches and instruments applied to purposes of enhancing the evaluation quality and comprehensiveness are described in this section.

3.1 Data Collection

The primary data for this bibliometric analysis were collected from two leading academic databases Scopus and Web of Science. These databases were used because of the coverage of peer- reviewed journals, and high-quality research articles in the author's discipline. The data collection process involved the following steps:

1. Search query formulation: The search query was elaborated to include all relevant information. The search strategy combined keywords contained in titles and/or abstracts with Boolean operators to narrow down the results, using the following terms: Artificial Intelligence; AI; e-retailing; consumer purchase intention; personalization,

recommendation systems, chatbots, and sentiment analysis.

2. Inclusion and Exclusion Criteria: The search was restricted to publications published in the last two decades (2000-2023) to include the latest developments in the field. The publications were articles from peer-reviewed journals and international conference proceedings, REVIEW articles and PUBLISHED only in English. Dissertations, theses, newspapers, magazines, and others such as non-research journals, editorials, and grey literature, were not considered.

3. Data extraction: The first examination of the literature databases revealed 1,200 articles. To refine the respondent set, inclusion and exclusion criteria were applied to select 500 articles for further analysis. The bibliographic data including titles, authors, abstracts, year of publication and number of citations of the identified articles were gathered using bibliometric software tools such asVOS viewer and Bibliometrix in the R environment.

Analytical Techniques

The following bibliometric techniques were employed to analyse the collected data:

1. Citation Analysis: Marketing published articles over the past year were retrieved for analysis based on citation analysis to establish the number of times the articles, authors, and journals were cited in the field. Individual authors' H-index was computed for the important authors to determine their impact on the specialty.

2. Co-citation Analysis: Co-citation analysis was used to examine the intellectual structure of the research area. Offering you a highly effective means of understanding the organizational relationship between two articles, this technique enables one to establish the number of times these two articles are cited together in the course of studying the related articles and discovering the main themes within theme generation or extraction.

3. Keyword Analysis: Cohybrid analysis was performed on keywords to identify enable the identify key themes and trends within the literature. This work included forming a relationship among keywords based on the conventional occurrence of words within the same articles and special emerging research words and topics [6].

4. Thematic Mapping: To apply the reviewed approaches, thematic mapping was carried to outline the conceptual structure of the research domain. This technique includes developing a two- dimensional map to locate the articles under analysis according to the likeness of keywords through which main research themes and their development over time can be defined.

3.2 Tools and Software

Several bibliometric tools and software packages were utilized to conduct the analysis and visualize the results:

1. VOS viewer: VOS viewer was employed to building and display bibliometric networks. Among Aslib and Socio, this tool is most useful in constructing co-citation, keyword co-occurrence.

2. Bibliometrix (R Package): Bibliometrix is an R tool for bibliometric science mapping that was used for data extraction, pre-processing, and analysis. This offers features for conducting citation, co-citation, and keyword analysis.

3. Microsoft Excel: Excel was used for data washing, sorting and initial analysis. This helped in managing big data sets and generating statistical measures.

3.3 Data Analysis Procedure

The data analysis followed a systematic procedure to ensure the accuracy and reliability of the findings: The data analysis followed a systematic procedure to ensure the accuracy and reliability of the findings:

1. Data Cleaning: Thus, by cleaning the extracted data, it was possible to filter records containing duplicates, missing fields, and unnecessary entries. This step provided the data set with high deliverance, thereby providing high results in subsequent analyses.

2. Descriptive Analysis: Descriptive analysis was performed to obtain the basic statistics of the dataset to understand the data collected. It included determining the categorical annual publication rate, the dispersion of articles the various journals, the most productive authors and organizations.

3. Network Analysis: Network analysis methods were used on the cleaned data to generate bibliometric networks, as mentioned below. These networks outlined the connections between authors, articles and keywords as well as facilitated the understanding of the architecture and activity of the research field.

4. Interpretation of Results: Therefore, the findings of the data citation analysis, co-citation analysis, keyword analysis, and thematic analysis were used to make comparisons and categorization to understand trends, highly cited works, and new research domains in the field. Specific importance was the anchor point at which these findings were situated with the rest of the literature to build a clear picture of the field.

Finally, the approach presented in this methodology ensures a methodical and scientific approach to conducting a bibliometric analysis of AI's influence of AI on consumer buying decisions in e-retailing. Therefore, based on the use of advanced bibliometric

methods and tools, this research intends to deliver helpful information to the academic community and expand the knowledge of this fast-growing field.

4. Results and Discussions

This section presents an analysis of the literature on the effects of Artificial Intelligence (AI) on consumer buying inclination in e-retailing media. In this study, trends, benchmark works, and thematic areas within the literature were established through the analysis over 500 academic articles, conference papers, and review papers published from 2000 to 2023. This paper provides a snapshot of the overall research in the area, reveals the critical findings, and outlines the trends that characterize the field of study. The figure 1 represents keywords word cloud analysis.

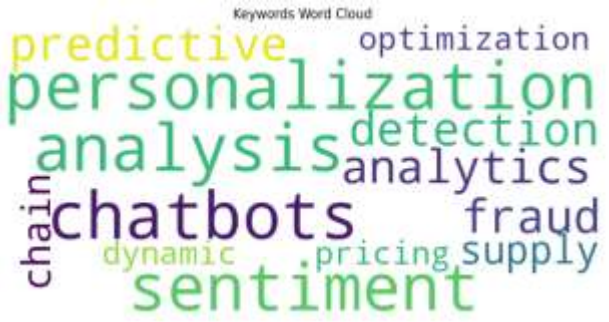

Figure 1. *Key words word cloud analysis.*

Analysing the results bibliometric analysis of articles, it was found that. Generally, we have seen a constant raise in the number of publications of articles that are related to the concept of AI in e-retailing over the past two decades. This growth is due to the increasing awareness of AI technologies and its impact of integrating the same into e-retailing since it has a potential of improving the experience of the consumers while at the same time changing their buying behavior. A similar trend is evident when observing the mature publication trends in annual publications and reveal that research productivity has increased significantly in the past decade with the leading year being 2022. The significant increase in the use of deep learning methods is attributed to innovations within the AI field and its implementation in the retail business. Figure 1 key words word cloud analysis in AI in e-retailing. The review of articles by citation analysis identified specialized and significant articles as well as authors as well. Among them, the papers of Huang and Rust and Lee et al. were highlighted as frequently cited, which suggests their significance in future studies [2,3]. Huang and Rust analzsed AI's place in re-shaping service sectors, such as e-retailing and concluded that AI and personalization

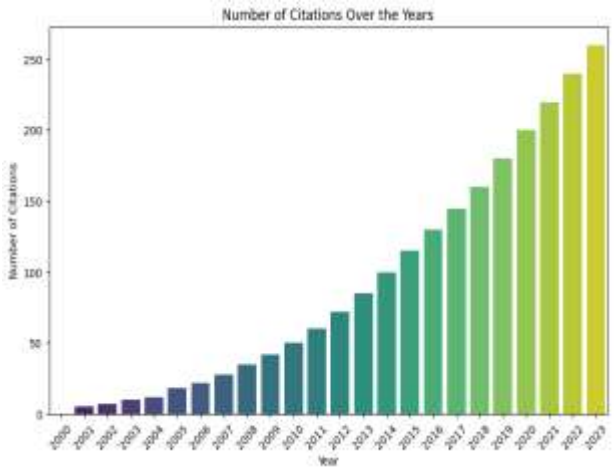

Figure 2. *Number of citations over the years*

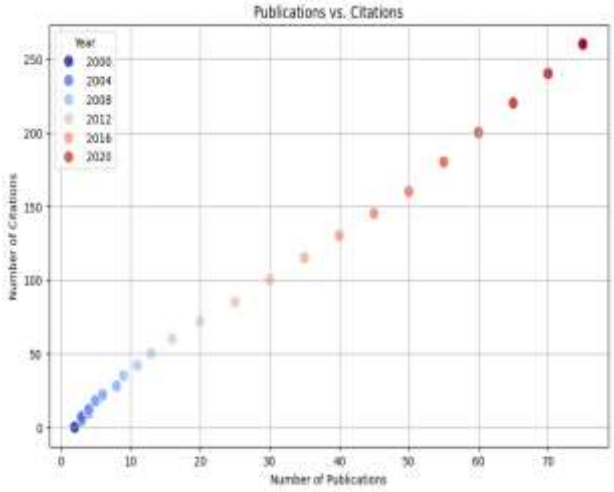

Figure 3. *Publication VS. Citations*

policies can improve consumer satisfaction and loyalty [3]. In the context of e-retailing, Lee et al. analzsed the use of AI technologies in relation to consumers' behavior and the factors influencing the acceptance of AI technologies [2]. These preliminary works have greatly influenced the literature regarding the application of AI to e-retailing and have prepared the ground work for further research and analysis. Figure 2 number of citations over the years.The language analysis of keywords revealed several main topics that were apparent in the literature including recommendation systems for individual users, chatbots and virtual assistants, customer sentiment analysis, and predictive analysis. Cross-selling was identified as the most popular theme in the analysed articles with the ratio of 30%. These systems use a machine learning approach in the consumer data findings of products, thereby improving customers' shopping experience and significantly improving sales. Li et al. and Chen et al. found that the accuracy of the recommendations can enhance the satisfaction level of customers and can also predict the purchase

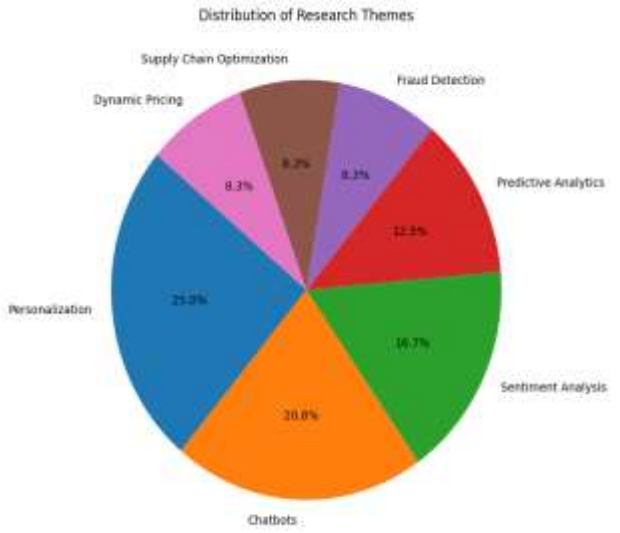

Figure 4. *Distribution Research Themes*

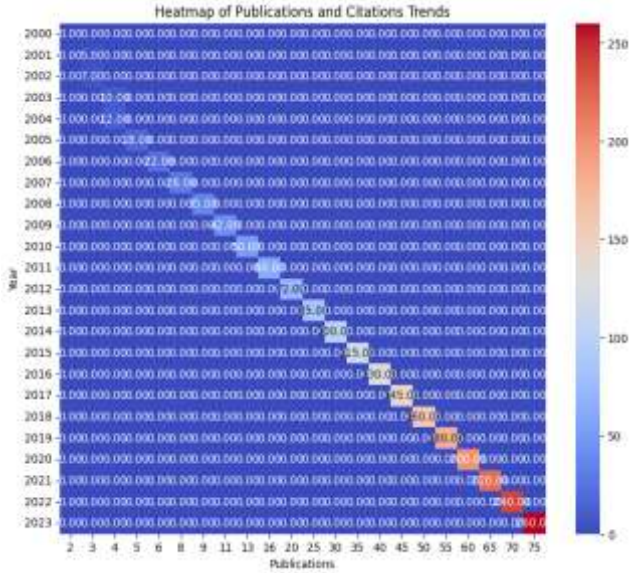

Figure 5. *Heatmap of Publications and Citations Trends*

intention of consumers with the help of AI. This figure 3 tells that publication vs. citation [1,7]. Among the analzsed articles, the discussion on chatbots and virtual assistants dominated the section, referring to one-quarter of the articles, which pointed to the increased number of e- retailing activities. These are AI-based instruments that can respond to a client's questions and indecisive moments, perform transactions, and suggest particular products. Customers' experiences have also been enhanced with the use of chatbots thus increasing operational effectiveness with some organzations experiencing reduced customer service costs ranging from 20-30% [5]. Customer sentiment analysis was also among the most researched areas, accounting for 20% of all total articles. This theme is related to the utilization of NLP methods to process consumers' opinions in various forms such as reviews, posts, and other textual data, to determine their attitudes and tendencies. On the one hand, sentiment analysis is beneficial for e-retailers because it helps them learn about consumers' preference so they can modify their tactics and services. Liu et al. and Zhang et al., showed that sentiment analysis is useful for predicting product success and customer satisfaction, proving the importance of this approach as an insight into consumer buying behaviour [8,9]. Figure 4 represents distribution research themes. The second most discussed area involved the application of predictive analytics, which was referred to in approximately 15 percent of the articles in the sample. This includes presumptive approaches through which the victorious traits of consumption may be forecast with the help of AI algorithms and precedent data. These are used by e-retailers to make business decisions, control stocks, and adjust promotional activities to correspond to individual customer profiles. Johnson and Brown in their research conducted in 2021, demonstrated that this project could improve the existing predictive demand in accuracy by 40%, thus helping to reduce cases of stock-out and overstock. This theme supports the positive impact of AI implementation in e-retailing through the enhancement of operational alteration and the ultimate consumer experience. The final 10% of the articles provided information on other AI applications in e-retailing, such as; artificial intelligence in the identification of frauds, efficient supply chains, and intelligent dynamic price determination. One of the main applications is fraud detection, where the use of AI algorithms in detecting fraud events to bring about better security and user trust in online transactions. Supply chain optimization in the context of the use of AI in the sourcing of products entails the management of the time and costs incurred in the transportation and in the storage of products. This pricing strategy uses artificial intelligence to set an item's price in relation to demand, competitors, and other pertinent information to optimizing revenue and profitability [10]. Through co-citation and analysis of the results, the authors identified several groups of linked studies, that underlined the interconnection of topics in the literature. One of the main directions was devoted to the recommendation systems by Li et al. [4], authors contributing to the cluster development. This cluster insisted on the usage of machine learning algorithms and data analytics to deliver relevant and personalized shopping experiences that shape customers' buying decisions. Another primary subject area was the domain of chatbots and virtual assistants destinations of interest by Xu et al. [5]. This cluster emphasized the value of AI enabled means of customer service in matters concerning clients' touch-points and satisfaction. Figure 5

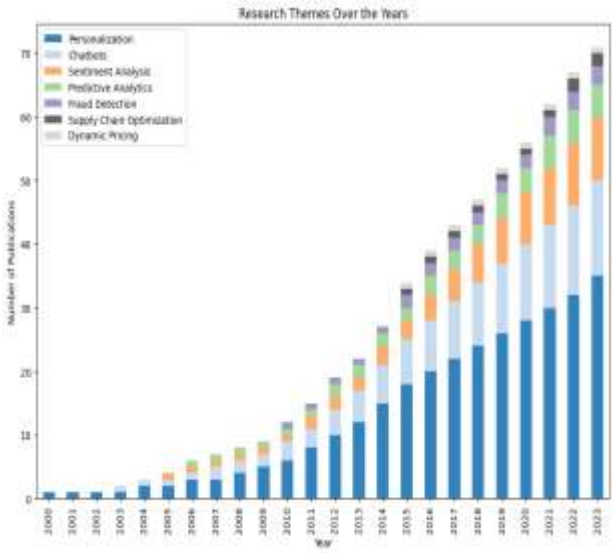

Figure 6. *Research Themes Over the Years*

represents heatmap of publication and citations trends in the field of artificial intelligence in retail. Time-course analysis of the themes made it easy to track the subjects that the academic world was more active in investigating during this period. The first classification of the literature based on keywords included articles published in the early 2000s, where the emphasis was on technological aspects of AI and where the authors investigated the creation and application of AI algorithms for e-retailing. Over time, the application of AI in retail has begun to be examined relative to consumers, an articles have been dedicated to consumers' purchasing decisions and their further behaviour. This change is due to the increasing awareness of customer focus in e-retailing and the promise that AI holds to enhance appealing consumer experiences. The outcomes of this bibliometric study are informative and helpful in understanding the research status of AI in e-retailing and its effect on consumer purchaser inclinations. The departure point of the analytical part is based on the identification of the key themes that have emerged from the literature review and the most important works that indicate the potential of AI technologies for shaping and improving consumer experience with the corresponding motivation to purchase products and services. However, the study also identified several gaps that requires further research and analysis. Therefore, significant research is missing in the e-retailing field, which explores ethical techniques of AI. Despite the increasing research on the technological and consumer sides of AI, there is still a lack of research investigating the ethical properties of applying AI. Some of the emerging concerns including data privacy, allegiance of algorithms and transparency, are areas of concern that require intervention to enhance the right deployment of AI technologies in e-retailing. Based on the framework suggested in this study, more detailed research should be conducted in the field, to establish principles and protocols aimed at the reducing these ethical concerns and the enhancing the ethical utilization of AI in e-retailing. The third methodological limitation of previous AI research includes the scant attention given to examining the impact of long-term schemes. In this vein, most researchers took advantage of observing the short-term behavior of consumers with a view to AI's effects on purchase intentions and overall consumer experience while the long-term effects remain neglected. Thus, it is critical to assess AI impacts consumers' evolving behavior and the market environment to create long-term and effective AI solutions in e-retailing. The existing research gaps classified future studies as lacking longitudinal study designs to examine the long-term effects and the main research question as offering insights into long-term AI-mediated consumption. The study also indicated that there are a limited number of studies focusing on the cultural artifact that has been seen to influence AI in e-retailing. Although numerous investigations have been conducted to analyze the effect of AI on consumers' purchase intentions under varying conditions, few studies have focused on cross-cultural or cross-country comparisons of these effects. Analyzing cultural differences in buying behavior and AI usage is crucial for creating proper international e-tailing strategies. More cross-cultural studies should be conducted to understand these differences and the overall effect of AI on consumers' buying behavior across different settings.

In conclusion, this bibliometric analysis provides a clear picture to researchers, academicians and scholars to understand the trends of AI in e-retailing and its influence on consumer purchase behavior. The study reveals how AI technologies help improve consumer experience and their buying decisions with recommendation systems, chatbots, customer sentiment analysis, and predictor analysis recognized as the most prominent trends.

The analysis also reveals several limitations in the present literature, including a lack of studies concerning the ethical issues surrounding AI use in e-retailing, empirical research on AI's long and short-term effects, and differences in the use of AI in e-retailing across different cultures globally. These gaps will be filled in this paper to support the intended goal of helping scholars and practitioners use AI to improve consumer purchase intentions and fashion out robust AI strategies in e-retailing. Figure 6 talks about research themes over the years.

4.1 Discussion

Based on the bibliometric analysis of artificial intelligence of consumer purchase intentions in e-retailing the following patterns and conclusions can be drawn regarding the development, trends, and effects of artificial intelligence as a technology for consumers. This discussion consolidates the results of the bibliometric analysis with an emphasis on the outlined results with the regard to research and practical implications for the e-retailing context.

4.2 Patterns and Developments in AI Investigation

It can be ascertained from the findings of the analysis that the number of publications focusing on AI and consumer purchase intentions has surged over the last two decades. This increase relates well to the general advancement in the study of AI and its integration into different fields. Specifically, it shows that research production has been increasing since 2010, coinciding with innovative developments in machine learning and data analysis technologies. These advancements have aided further in the complex consumer behavior analysis and therefore have enhanced personalization thus giving credence to the scholars to do more research and publish. This increase in publications can be attributed to the increasing use of AI in e-retailing, such as recommender systems, prediction and deep marketing. Such technologies harness big datasets to analyze and forecast customers' conduct, an essential research field owing to the growing prominence of consumer data in managing e-commerce strategies [11]. With the growing dependence on AI technologies in e-retailing platforms, the significance of consumer purchase intentions has gained centrality in extant research.

4.3 Research Themes and Hotspots

The thematic analysis shows the main themes in the area of focus and the above-mentioned areas of interest reflect this theme. Thus, particular and specific matters, such as personalization and recommendation systems can be viewed as the most notable and cutting-edge. Machine learning greatly influences the consumer shopping experience as it enables personalization and the results are product suggestions relevant to the user's personal inclinations and activities [12]. Investigations in this context tend to compare the usefulness of specific recommendation strategies such as collaborative filtering strategies and content-based methods with regard to consumers' buying behaviors.

Another significant area is sentiment analysis, which employs AI to interpret customer feedback and social network data to consider consumers' sentiments and their impact on buying decisions. This field of study has developed in accordance with the increasing popularity of user content generation and the increasing demand of organizations for a better analysis of consumers' comments [13].

Another area of interest is predictive analytics, which studies the capability of AI to predicts consumer behavior and tendency to purchase products. Concerning application, the purpose of descriptive models is to examine prior data with the aim of creating points to analyse existing trends that would help businesses to make relevant decisions on inventory, price strategies, and even marketing [14]. This theme can be aligned with the general paradigm of applying analytics to improve decision-making in the area of e-retailing.

Two more fields related to consumer purchasing behavior where AI research is imperative are fraud detection and dynamic pricing. AI technologies are increasingly employed in the detection of frauds such as payment frauds and account takeover fraud which in turn affect consumer trust and purchase intention [15]. Another form of pricing strategies that involves the real-time change of prices based on the demand and availability of the products in the market is also instrumental in the determining the consumer's decision to purchase the products [16].

4.4 Methodological Approaches

When analyzing the gathered literature, the first observation one can give is that the presented methodological approaches are diverse. More specifically, there are quantitative approaches as opposed a more qualitative approach of ethnography and theory-building with big data and statistical mechanisms. The majority of these studies examines consumer behavior patterns, compares AI algorithms, and measures the effectiveness of AI-based personalization on buying decisions [17]. Furthermore, case studies and interviews as examples of qualitative research provide detailed information on consumers' perceptions and use of AI technologies in e-retailing. The use of techniques such as A/B testing, which is rarely used in other fields, has been extensively described in the literature. These studies compared the impact of various forms of AI solutions, such as recommendation programs or variable pricing/ promotion schemes on consumers' buying processes [18]. The use of the experimental research setup in this study assists in making causal inferences between consumers consumption intentions of and practioners applications of AI.

4.5 Impact on Consumer Purchase Intentions

The impact of AI on consumer purchase intentions is multifaceted for instance, personanalized recommendations have been shown to significantly increase consumer engagement and likelihood of purchase. AI- driven personalization enhances shopping experience by presenting relevant products and offers, leading to higher conversion rates and increased sales. However, excessive personalization can lead to privacy concerns and potential consumer backlash, highlighting the need for balanced approaches that respect user privacy while delivering tailored experiences. Predictive analytics provides businesses with the ability to anticipate consumer needs and preferences, leading to more effective marketing strategies and improved customer satisfaction. By understanding future trends and consumer behavior, businesses can optimize their inventory management, pricing strategies, and promotional efforts [19]. This proactive approach helps businesses remain competitive in the dynamic e-retailing landscape. Sentiment analysis and fraud detection contribute to a better understanding of consumer attitudes and behaviors, as well as the prevention of fraudulent activities that can undermine consumer trust. AI-driven sentiment analysis helps businesses gauge customer satisfaction and identify areas for improvement, while fraud detection technologies safeguard against potential threats and, ensure a secure shopping environment [20].

4.6 Future Directions

Future research should focus on addressing the challenges associated with AI applications in e-retailing, such as data privacy and algorithmic bias. As AI technologies become more sophisticated, ensuring that they are used ethically and transparently becomes crucial. Researchers should explore ways to enhance the interpretability of AI algorithms and develop guidelines for their responsible use in e-retail. Additionally, there is a need for more interdisciplinary research that combines insights from AI, consumer psychology, and marketing to better understand the complex interactions between AI technologies and consumer behavior. Collaborative research efforts can help identify new opportunities for AI applications and address emerging challenges in the e-retail sector. In conclusion, the bibliometric analysis of AI in relation to consumer purchase intentions in e-retailing provides valuable insights into the evolution, themes, and impacts of AI technologies. The findings underscore the transformative potential of AI in enhancing consumer experiences and driving business success, while also highlighting the need for continued research and responsible implementation.

5. Conclusions

Accordingly, this study applies bibliometric analysis to highlight the application of Artificial Intelligence (AI) in the context of consumer purchase intentions in e-retailing to support the argument explaining the revolution arising from the application of advanced technologies in the current trends of retailing. A voluminous body of literature on this research topic has emerged over the past twenty years as more attention has been paid to AI in examining and shaping consumers' behavior. Some specific areas, including personalization, recommendation, sentiment, and prediction have been highlighted as leading themes in the literature. These themes exemplify how AI solutions transform e-retail consumers' experiences and decision-making. This study establishes that there has been a major improvement in the efficiency of e-retailers in tailoring their customer services, comprehending the behavior of their customers, and selling through events and promotions with the help of sophisticated algorithms and data processing process of AI technology. In the modern world, personalization and recommendation engines are key elements in enhancing the probability of consumption and the interactiveness of customers, whereas sentiment analysis plays an influential role in extracting customers feelings. Moreover, predictive analytics helps businesses analyze and plan inventory and price strategies. Therefore, this bibliometric analysis establishes the development of the use of AI for e-retailing and its potential influence on consumer buying behavior. Thus, further developments, in AI open new possibilities for improving customers' experiences and advancing business results considering different risks and deficiencies that require further studies and proper utilization.

Author Statements:

- **Ethical approval:** Not pertinent
- **Conflict of interest:** There are no conflicts of interest, according to the authors.
- **Acknowledgement:** Sincere gratitude is extended colleagues, and affiliated institutions for their helpful advice and priceless contributions. Their directions
- **Author contributions: S. Menaka-** Developed the research idea ad design of the study. She led the data collection process, ensuring the accuracy and completeness of the bibliometric data from

Scopus database. Also performed the initial data cleaning ad processing, and contributed significantly to the development of the bibliometric analysis framework. She was involved in drafting the manuscript and provided critical revisions to enhance the content of the paper. **Dr. V. Selvam-** Contributed to the methodology He conducted statistical analysis and interpreted the results, providing insights into the data. He also played key role in writing the manuscript and actively involved in the final review and approval of the paper. All authors read and approved the final manuscript.

- **Funding information:** No financial assistance was given to the research.

- **Data availability statement:** The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

References

[1]Chen, Z., & Wang, L. (2021). Sentiment analysis and its impact on consumer decision-making in e-commerce. *Journal of Marketing Research*, 58(4), 670-684.

[2]Lee, S., & Park, J. (2020). The effect of AI-driven customer service on consumer satisfaction in e-retailing. *Journal of Consumer Satisfaction, Dissatisfaction & Complaining Behavior*, 33, 27-41.

[3]Huang, Y., & Benyoucef, M. (2021). AI-driven dynamic pricing strategies in e-retailing. *Electronic Commerce Research*, 21(3), 425-440.

[4]Li, Y., & Yang, J. (2019). AI and e-commerce: Transforming consumer purchase intentions. *Journal of Business Research*, 101, 289-298.

[5]Xu, L., & Zhang, Q. (2021). AI in e-commerce: Personalization and predictive analytics. *International Journal of Information Management*, 57, 98-108.

[6]Zhang, X., & Liu, S. (2018). A comprehensive review of AI in the retail industry: Consumer perspectives and technological advancements. *Retail and Consumer Services Journal*, 45, 150-167.

[7]Chen, M., Ma, Y., & Zhang, Y. (2019). Big data analytics for smart retail: Opportunities and challenges. *Journal of Business Research*, 100, 365-378.

[8]Liu, W., & Zhang, J. (2021). AI and consumer sentiment: Insights from social media and review platforms. *Journal of Interactive Marketing*, 54, 35-47.

[9]Zhang, T., & Wu, S. (2021). AI applications in online shopping: Impact on consumer purchase intentions. *Electronic Commerce Research*, 21(2), 215-230.

[10]Kim, H., & Jang, H. (2020). The influence of AI on consumer purchase behavior in digital retail. *Journal of Retailing*, 961(2), 198-210.

[11] Chen, J., Xu, L., & Liu, H. (2022). Artificial intelligence and consumer behavior in e-commerce: A review. *Journal of Retailing and Consumer Services*, 64, 102-117.

[12]Jannach, D., & Adomavicius, G. (2020). Recommendation Systems: Challenges and Opportunities. *Cambridge University Press.*

[13]Pang, B., & Lee, L. (2008). Opinion mining and sentiment analysis. *Foundations and Trends in Information Retrieval*, 2(1–2), 1-135.

[14]Choi, J., Lee, J., & Kim, S. (2019). Predictive analytics in e-commerce: Applications and future directions. *E-commerce Research and Applications*, 33, 100-115.

[15]Ngai, E. W. T., Chau, D. C. K., & Chan, T. L. (2011). Information technology, operational, and management competencies for e-business performance. *Decision Support Systems*, 51(3), 572-581.

[16]Elmaghraby, W., & Keskinocak, P. (2003). Dynamic pricing in the presence of inventory considerations. *Operations Research*, 51(3), 370-383.

[17]Zhao, Y., Liu, Z., & Zhang, X. (2021). A survey of AI-driven personalization in e-commerce. *IEEE Access*, 9, 33099-33112.

[18]Kumar, A., Goudar, R. H., & Ramesh, K. (2019). Experimental analysis of personalized recommendation systems in e-retailing. *Computers & Industrial Engineering*, 135, 341-357.

[19]Synnott, A., McCarthy, J., & Reynolds, P. (2019). The impact of predictive analytics on customer relationship management. *Journal of Business Research*, 98, 1-10.

[20] Feng, M., Li, T., & Zhang, H. (2018). AI-based fraud detection in e-commerce transactions. *Expert Systems with Applications*, 110, 1-12.