# A Bibliometric Analysis of Artificial Intelligence in Customer Experience: Unveiling the Future

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*Abstract*— The purpose of this article is to explore the way artificial intelligence is considered in customer experience, focusing on major contributions and emerging trends. To do so, a bibliometric analysis of 255 articles was conducted. Only articles published between 2014 and 2024 in business, management and social sciences fields were analyzed. The data was extracted from the Scopus database and analyzed using VOSviewer as a software tool for building and visualizing bibliometric networks. The study revealed the influencing authors, journals, top articles and emerging AI tools in deferent domain linked to costumer experience.

Keywords- customer experience, artificial intelligence, marketing, bibliometric analysis, chatbot

#### I. INTRODUCTION

Since the 1970s, customer relations have undergone a gradual evolution. At the time, marketing was still largely transactional, focused on the single act of purchase and the optimization of distribution processes. The customer was perceived above all as a passive consumer within a mass production system [1]. However, consumption starts to have an experiential aspect that is focused on the pursuit of fantasies, feelings and pleasure, enriching the understanding of customer behavior [2].

This perspective changed with the emergence of relationship marketing, which considers customer relations as a strategic lever for building loyalty among increasingly volatile customers [3]. The customer relationship began to emerge, alongside reflections on perceived product or service quality, and the ISO (International Organization for Standardization) was created.

Then, in 1994, the concept of "customer experience" was first introduced by Luis Carbone, known as the father of customer experience, who emphasized that it is more than just a transaction, it's the "takeaway" impression formed by people's interactions with products, services, and businesses. They argue that companies should engineer experiences by systematically designing and orchestrating the signals customers receive [4].

Thus, in the 2000s, a new phase of evolution emerged due to digitalization. Marketing shifted from being purely transactional to becoming increasingly digital, and the customer has become a connected actor who can express his expectations via multiple channels (web, mobile, social networks), which both complicate and enriches customer experience [5]. In this context, artificial intelligence, the most recent general-purpose-technologies (GPTs) which are still in development [6], is beginning to be mobilized in marketing specifically in customer relations. Artificial intelligence dates to the work of john McCarthy, the father of AI, at Dartmouth Conference who claims that AI is the science of using a machine to perform tasks that humans perform using their intelligence. It is defined as well as the system's ability to interpret external data correctly, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation [7]. AI then became a strategic tool in the service of costumer

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experience by the automation of interactions (chatbots, voice assistants) and the optimization of customer's journey [8].

Scientific research has developed significantly around AI. However, it is essential to examine the extent to which this academic production anticipates future transformations and identifies potential limits of it especially in terms of costumer experience. The aim of this study is therefore to explore the way AI is considered in customer experience, focusing on major contributions and emerging issues through a bibliometric analysis that has become a popular methodology within business field [9] [10] [11].

# II. RESEARCH METHODOLOGY

Bibliometric analysis is a research methodology that maps the evolution of a research topic, identifies the major research trends of recent years, and gives an idea of the articles, journals, and institutions central to a given research theme or field. It also uses influence networks, literature clusters, and keyword analysis to better position a search gap. To conduct the analysis, we followed a four-step approach that starts with (A) data search using Scopus Booleans and all keywords that refer to artificial intelligence and Customer Experience. To have relevant data multiple keywords were used, for customer experience we used consumer experience, client experience, user experience, UX, customer journey, customer service, experience management, and customer touchpoint, and for artificial intelligence, we used AI, machine learning, deep learning, and generative ai. Then, (B) refining the data by selecting only articles published between 2024 and 2024 and limiting the search to business and social sciences fields. Afterward, (C) Scanning the article's title and abstract to eliminate non-relevant articles. From there, we extracted the data to (D) analyze it using VOSviewer software, a computer program for constructing maps based on co-occurrence data and for viewing such maps [12].

# A. Data Search

The foundation of our bibliometric analysis is a compilation of bibliographic data from the most acknowledged academic database Scopus which is renowned for its extensive coverage and the quality of its scientific publications. Scopus was chosen for its advanced search tools, enabling precise, targeted exploration of literature. The objective was to collect a representative set of relevant scientific documents on artificial intelligence and customer experience, two key themes in current research.

A series of keywords associated with artificial intelligence and customer experience were selected. Scopus' advanced search boolean operators were then used to combine these terms to refine the results. The search query *TITLE-ABS-KEY (("Costumer experience" OR "client experience" OR "user experience" OR "UX" OR "customer journey" OR "consumer experience" OR "client interaction" OR "customer service" OR "experience management" OR "customer Touchpoint") AND ("Artificial intelligence" OR ai OR "machine learning" OR "Deep learning" OR generative ai )) AND PUBYEAR > 2013 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) enabled us to target publications dealing simultaneously with these two subjects more precisely. Using this approach, 3356 documents were found in the database.* 

# B. Data Refining

The documents identified from the search were subjected to a filtering process designed to exclude documents published outside the field of business, management and social sciences, and to select only articles published in English. The selected data was reduced from a total of 3356 to 475 articles.

# C. Data Scanning

To ensure the relevance of data, 475 articles were scanned by reading each article's title and abstract. As a result, 220 articles were eliminated from the list because they were out of topic.

D. Data analysis

For better analysis we used the software VOSviewer to visualize all networks of the data as is shown in the findings section.

### III. FINDINGS

#### A. Distribution per year

The research work linking AI and customer experience didn't start to take place until 2019. This doesn't mean that there were no publications in this direction, but that publications prior to 2019 dealt with AI and customer experience separately. The graph (see figure 1) shows continuous growth in the number of publications since 2019, with a noticeable acceleration from 2023 onwards. This trend indicates a growing interest in the subject, particularly in connection with the emergence of generative artificial intelligence technologies.



Fig. 1 Distribution per year of the publications

## B. Top Journals

Looking at the bibliometric analysis sources, one journal stood out: the International Journal of Human Interactions. It came up the most, with 19 publications, which seems to show it's a major outlet for research on AI and customer experience. A lot of authors seem to rely on it, making it kind of a central reference point. In second place comes the Journal of Retailing and Consumer Services with 11 publications and then comes journals with 6,5,4 publications



Fig. 2 Top 10 Journals

## C. Authors key words co occurrence

The analysis of the co-occurrences of all the keywords shows six clusters. The 1<sup>st</sup> cluster (the red one) groups together 14 items closely related to customer experience and interaction with conversational technologies. It highlights a thematic focus on user-centered conversational interface design. Studies belonging to this cluster focus on how technologies such as chatbots influence user perceptions, usage intentions and satisfaction. Furthermore, notions such as design, user interfaces and intention to use underline the importance of the ergonomic and behavioral dimension in the adoption of these systems. The 2<sup>nd</sup> cluster (the green one) groups 12 items that focus on the impact of AI technologies on consumer behavior and the macro-orientation of it. The 3<sup>rd</sup> cluster (the dark blue one) groups 12 items as well. It is dominated by items related to consumer behavior, reflecting a thematic focus on the behavioral study of AI usage, with particular attention paid to decision-making, trust and engagement in digital environments, especially in e-commerce. The 4<sup>th</sup> cluster (the yellow one) groups 10 terms which indicate an orientation towards the integration of advanced AI technologies in e-commerce, to optimize the customer experience and strengthen engagement via social media. The 5<sup>th</sup> cluster (the purple one) groups 7 items. It reflects a thematic focus on the effects of anthropomorphism and social presence in chatbot interaction. This cluster therefore focuses on the impact of perceived human attributes on the acceptance and use of chatbots. Finaly, the 6<sup>th</sup> cluster highlights a recent theme focusing on the use of generative artificial intelligence, in particular ChatGPT, and its effects on consumer behavior.



Fig. 3 Key words Co occurrence

# D. Bibliographic Coupling

Analysis of bibliographic linkage at author level has identified nine clusters of researchers sharing common references.

By reading the abstracts of the articles published by the authors in the pairing, we can see that the first cluster (12 authors), dominated by authors such as Dhruv Grewal, Sandra Maria Correia Loureiro and Patrick Van Esch, revolves around work focused on the personalization of the customer experience, the perception of value and the emotional impact of AI in service environments.

The second, smaller cluster (4 authors) includes researchers such as Akinade Adewojo and Yang Cheng, whose contributions focus more on the technological and organizational dimensions of AI implementation in customer relations. The third cluster (4 authors), links researchers like Campbell Colin and Sands Sean, deals with the integration of AI in marketing and its impact on engagement and loyalty. The fourth cluster (3 authors) focuses on customer acceptance of AI. The fifth cluster (3 authors) focuses on AI algorithms, notably their application in e-commerce or streaming platforms. The sixth cluster (2 authors) focuses on human-machine interaction and its impact on customer experience. The seventh cluster (2 authors) explores new forms of communication, namely chatbots and virtual assistants. The eighth cluster (2 authors) focuses on adapting AI to customer behavior. Finally, the ninth cluster (2 authors), focuses primarily on the management of change caused by AI in relation to customer experience.



Fig. 4 Bibliographic Coupling of Authors

# E. Top Articles

As described in Table 1 below, we note that the most cited article shows that ChatGPT has a big impact on the academic world. And despite its presence, it is cited more than older articles, from which we conclude the massive interest of the scientific community in exploring generative AI such as ChatGPT. Thus, there is an acceleration of publications on AI tools used in marketing and customer experience such as chatbots. Researchers are also interested in the ethical and responsible side of using artificial intelligence.

Dana	Title	Authona	Veen	Citations
Kang			rear	
1	What if the devil is my guardian angel: ChatGP1 as a case study of	I lili A.; Shehata B.; et all	2023	132
	using chatbots in education [13].			
2	AI-based chatbots in customer service and their effects on user	Adam M.; Wessel M.;	2021	539
	compliance [14].	Benlian A.		
3	I, Chatbot: Modeling the determinants of users' satisfaction and	Ashfaq M.; Yun J.; Yu S.;	2020	508
	continuance intention of AI-powered service agents [15].	Loureiro S.M.C.		
4	Consumers and Artificial Intelligence: An Experiential Perspective	Puntoni S.; Reczek R.W.;	2021	486
	[16].	Giesler M.; Botti S.		
5	Concentualizing AI literacy: An exploratory review [17]	Ng D.T.K.; Leung J.K.L.;	2021	468
	conceptualizing in meruoy. In exploratory forlow [17].	Chu S.K.W.; Qiao M.S.		
6	From data to action: How marketers can leverage AI [18].	Campbell C.; Sands S.;	2020	255
		Ferraro C.; Tsao HY.J.;		
		Mavrommatis A.		
7	Challenges and Opportunities of Generative AI for Higher Education as	Michel-Villarreal R.;	2023	230
	Explained by ChatGPT [19].	Vilalta-Perdomo E. et all.		
8	Digital transformation: harnessing digital technologies for the next	Zaki M.	2019	211
Ū	generation of services [20]			
	How Do AL driver Chathets Import Heer Experience? Exemining	Chang V. Liang II	2020	200
9	Cretifications, Denoived Drivery Diele, Setisfaction, Levelty, and	Cheng I.; Jiang H.	2020	200
	Graunications, Perceived Privacy Kisk, Satisfaction, Loyalty, and			
	Continued Use [21].			
10	Engaging and retaining customers with AI and employee service [22].	Prentice C.; Nguyen M.	2020	198

TABLE I TOP 10 ARTICLES

### **IV. DISCUSSION**

This bibliometric analysis confirms that the scientific community has a growing interest in this topic. The most influential articles focus on the adoption of AI technologies in marketing, customer experience, and educational contexts. On the other hand, only a small community mentions its adoption in organizational contexts. This shows that, despite the so-called perfect intelligence of the machine, the organization also requires human intelligence.

We also note that certain AI technologies are booming, such as AI-based communication tools (chatbots, virtual assistants...), which are more widely used in customer relations, generative AI (ChatGPT...), which is now central in the educational and academic fields, and predictive AI (Data Robot), used increasingly in marketing.

However, among the limitations identified in the analysis are issues relating to customer privacy, algorithm transparency, and the management of big data. This conflict between innovation and responsibility highlights the need for a balanced approach, combining AI technological performance with respect for consumer privacy. bibliometric analysis confirms the scientific community's growing interest in this subject. The most influential works focus on the adoption of AI technologies in marketing, customer experience and educational contexts. On the other hand, only a small proportion of works mention adoption in organizational contexts. This shows that, despite the so-called perfect intelligence of the machine, the organization also requires human intelligence.

#### V. CONCLUSIONS

In conclusion, the analysis reveals a diversity of complementary approaches in research on artificial intelligence and customer experience. Some explore the marketing and behavioural dimensions, while others focus on the technological aspects of acceptance. This diversity shows that the transformation of the customer experience by AI mobilizes a variety of disciplines (marketing, information systems, human-machine interaction), and reflects the multidimensional complexity of the subject, especially concerning customer culture. As a result, we can tell that research is dynamic and constantly expanding. However, the impact of cultural differences on customer acceptance of AI tools is missing.

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