

RESEARCH ARTICLE

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Customer Experience Management: Scientometric Analysis to Record the Past and Illustrate the Future

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Abstract

One of the debates that has received much attention by many researchers in recent years and provided a platform to examine its various fields is customer experience management. Companies can differentiate themselves from competitors, create greater customer loyalty, and provide stronger brand relations via the experiences provided to their customers. The present study is aimed to identify the changes and progress made in customer experience management. For this purpose, the papers available in the Web of Science database were analyzed over a period of 24 years (1998 to 2022) using scientometric methods. The results of the study present a comprehensive review of the field of customer experience management by identifying its basics, provide influential works and intellectual link between the works. It is noteworthy that the present analysis reveals more cited articles, key authors, keywords, intellectual turning points, and emerging research trends in this field. These results help researchers to perceive the boundaries of the researches conducted in customer experience management and gain valuable scientific information through which they can determine the development process of their future studies.

Keywords: Customer Experience Management, Research Trends, Bibliographic Analysis

Introduction

Behavioral economics is the discipline that human emotions affect economic decision-making processes (Kahneman, 2003, Mullainathan, S., & Thaler, 2000). In recent years, investigating the emotional aspects of customers' routine decisions has received much attention in academic and professional publications (Baumeister et al., 2007; Lee et al., 2009). Also, many researches have attempted to explain customer behavior using emotion memories (Cornescu and Adam, 2015). Today, the term "experience economy" (Payne and Gilmore, 1998) is much prevalent. At the business level, this idea is discussed as "customer experience management (Homburg et al., 2017; Schmitt, 2010). The main goal of customer experience management is to define the concept of customer experience in companies, to create a general term entailing all research efforts in this field and to enable organizations to

achieve a competitive advantage through a better understanding of consumer behavior (Mishra et al., 2021). Thus, companies can differentiate themselves from competitors via the experiences they provide to their customers (Shaw and Ivens, 2002), create high customer loyalty (Biedenbach and Marl, 2010; Cuong et al., 2020) and to provide stronger relations with the brand (De Croyler and Rodríguez, 2019).

Much research has been conducted in response to how to manage customer experience. However, it is necessary to examine these researches by an integrated method, to classify their outcomes, and to provide a good opportunity for the future studies in this field. In order to achieve a comprehensive view in this regard, a precise scientific measurement is required. The use of scientometric method in the review of literature provides a comprehensive, complete and purposeful perspective through

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which all the influencing aspects of customer experience management can be examined. Hence, the purpose of this study is to investigate what changes customer experience management has made in the global trend of business process and how to determine their contribution in the researches? What is the category of the researches conducted in customer experience management? What is the future direction of studies in customer experience management? And which country is the pioneer in this field?

Research Background

The demands and desires of consumers are different, but sometimes the consumption of products/services creates positive experiences that may create a good sense of the brand; and thus, create a competitive advantage (Lewis and Chambers, 1999). Customer experience has recently attracted the attention of academics and experts in the development of marketing strategies. Numerous articles related to customer experience marketing have been published in marketing and psychology journals (Andersson, 2007; Brakus, Schmitt, & Zhang, 2007; Chattopadhyay & Laborie, 2005; Shaw & Ivens, 2002; Tung & Ritchie, 2011). In addition, issues of the Journal of Retailing (Grewal, Levy, & Kumar, 2009; Puccinelli et al., 2009; Verhoef et al., 2009) have dedicated a significant part to the debate of experience creation and management. There are two different but related domains of researches in this field. The first one defines experience as a product feature (Gilmore & Pine, 2002; Haun Tong & Jones, 2010; Pine & Gilmore, 1988). This group of literature considers experience as a stimulus that may have tangible benefits that lead to consumption utility, but acts as a catalyst in performing hedonic functions. Chen et al. (2013) revealed that innovation in services has a positive and significant impact on sensory marketing and sensory marketing has a positive and significant impact on the sensory value of customers. Zhou and Mu (2013) found that the customer's first

experience has a positive effect on his behavioral intentions. In a study, Andersson et al. (2016) investigated the influence of background music on consumer behavior in a home electronics store. Koechling (2021) investigated the effect of experiential marketing on experiential value and customer satisfaction. The results emphasize on the role of sense experience in the creation of emotional value, and there is a positive and significant relationship between emotional value and customer satisfaction.

The second stream of research has focused on the consumer experience, which is created due to the customer's interaction with the physical environment or individuals (Gentile, Spiller, & Noci, 2007; Mayer & Schwager, 2007; Rose, Clark, Samouel, & Hair, 2012). This body of literature regards experience as a distinction in the supply of products and services. These two streams are mostly connected via the experience consumption. Experiential consumption can be (1) sensory or (2) participatory. Sensory experience requires customers to use their sense organs for consumption, for example, watching a 3D movie, listening to a music concert or a similar event. On the other hand, participation consumption involves customers in the process of creation and consumption. In these cases, services are experienced by the individual when interacting. These services may provide a pure experience, such as an experience at a theme park, or an integrated or hybrid experience that is part of a service experience, such as serving dinner at a restaurant where the food is prepared based on the customer's request. For example, Goldring and Schill (2015) concluded that restaurants using sensory marketing have a significant effect on customer satisfaction. A review of literature indicates that today, the importance of customer experience management is perceived, but it is necessary to clarify what kind of knowledge the different and diverse research has offered to improve services and enhance competitiveness, and to show the path of further studies. A comprehensive review of literature is of great importance to

evaluate the development of underlying structures, explore the theoretical basics of research, and provide future path for researchers. Therefore, a *scientometric* research is conducted in the field of customer experience management, which contributes to improve previous researches.

The continuation of the research is organized in this way. First, the background of the research is reviewed, then the research method is explained. Based on the mentioned research method, research findings are presented and finally the conclusion is expressed.

Methodology

In this study, in order to analyze the co-citations of the researches conducted in the field of customer experience management, Citespace software was used. In this software, the nodes represent the name of the author, journal, country, keywords, etc. and the links show the citation or correlation between the nodes.

The papers were extracted from the Web of Science database over the period of 1998-2022. This database was selected for several reasons. First, WoS would make it possible for users to search indexed multidisciplinary studies (Rey-Martí et al., 2016; Song et al., 2019) and could also increase the representativeness and accessibility of the data (Wang et al., 2021). The WoS database remains the most frequently used database for bibliometric studies in management and organizational research (Zupic & Čater, 2015). Additionally, this highly reputed database provided an array of indices from social sciences, arts, and the humanities, along with conference proceedings and emerging sources. For this reason, several researchers conducting bibliometric review studies recommended the WoS database (Goyal et al., 2021; Guo et al., 2021; Maditati et al., 2018; Zhang et al., 2020).

For the analysis of synchronicity or cooperation networks, the top 50 papers from each time slice were selected. The time slice is 1 year. Links that have little effect on

important structures are reduced with the "Network Router" feature. The index used in this research to evaluate centrality, betweenness centrality, was first defined by Freeman (1977). The BC parameter is calculated using Equation 1.

$$BC_i = \sum_{i \neq j \neq k} \frac{n_{st}^i}{g_{st}} \quad (1)$$

Where g_{st} represents the number of the shortest paths from nodes s to node t , and n_{st}^i denotes the number of paths which pass through the node i . The importance of each node can be partially evaluated by the BC index. Any node with a high BC value (≥ 0.1) is considered a turning point and is shown in purple (Zhang et al., 2020).

By entering the obtained data into the software, the following outputs can be achieved.

What are the features of research conducted in the field of customer experience management?

Which countries have examined customer experience management the most? How is the cooperation of countries with each other in the field of customer experience management in different years?

Which authors had the most effect?

What is the topic and citation map tree?

Which subjects were more interesting to writers during a certain period of time and are no longer applied?

How is the future trend of research conducted in customer experience management?

Research Findings

Publication Characteristics

As shown in Figure 1, the total research conducted in the field of customer experience management is increasing in the years 1998 to 2022. According to the results obtained from the Web of Science, 1477 researches have been conducted in customer experience management, which has increased from 1 research in 1998 to 248 researches in 2022. Among the mentioned researches, there were 1353 articles, 70 review papers, 83 recent access researches, and 28 editorial resource

researches, 5 book reviews, 6 conference abstracts, 8 letters, and 23 conference papers. In this study, book reviews, conference

abstracts, letters, conference articles, and editorial references were excluded.

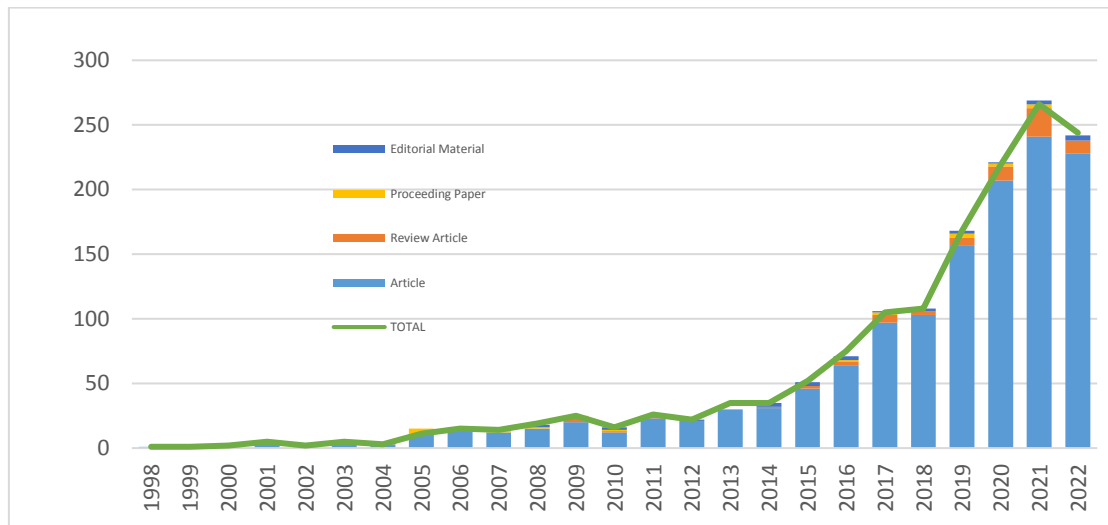


Figure 1. Research conducted in customer experience management

Table 1 shows the top 5 journals in the field of customer experience management. This table indicates that approximately 22% of the researches performed in the field of customer

experience management were published in these journals. By publishing 75 articles until 2022, Retailer and Customer Service Journals have accounted 5% of the articles.

Table 1. Top 5 journals in the field of customer experience management

Journal title	Impact factor (2021)	Country	H index	N	Percentage of 1477 researches
JOURNAL OF RETAILING AND CONSUMER SERVICES	10.972	United Kingdom	104	76	0.05
JOURNAL OF SERVICES MARKETING	5.246	United Kingdom	111	68	0.05
JOURNAL OF BUSINESS RESEARCH	10.969	United States	217	65	0.04
JOURNAL OF SERVICE MANAGEMENT	9.45	United Kingdom	69	55	0.04
SUSTAINABILITY	3.889	Switzerland	109	53	0.04

Cooperation network of countries

Figure 2 illustrates the cooperation between countries in the field of customer experience management. The size of the ring represents the frequency of publications and the color of each ring corresponds to different years, and the thicker the lines, the stronger the collaboration. The size of the ring of the countries such as the US, China, Australia and the United Kingdom indicates the high activity of this country. In addition to cooperation relations according to the purple ring around the countries in Fig.2, It can be

said that some countries including England, Canada, Sweden, Australia, Ireland, Saudi Arabia, Norway, France, Vietnam and Belgium have the highest value of BC centrality index. This shows that their interactions are higher in relation to scientific productions compared to other countries. The countries are ranked based on the BC value of in Table 2. According to the results obtained in England with the value of BC=1.15, Canada with the value of BC=1.03 is a turning point among other countries. Despite their high scientific production (212 and 123

respectively), the United States and China are not among the highly centralized countries.

Table 2. *Turning points in the cooperation network of countries*

Rank	Country	Centrality	N	Rank	Country	Centrality	N
1	ENGLAND	1.15	128	13	NETHERLANDS	0.24	28
2	CANADA	1.03	33	14	THAILAND	0.19	9
3	SWEDEN	0.98	34	15	INDONESIA	0.14	4
4	AUSTRALIA	0.96	62	16	TUNISIA	0.14	4
5	IRELAND	0.64	9	17	GHANA	0.14	3
6	SAUDI ARABIA	0.57	7	18	SPAIN	0.1	42
7	NORWAY	0.51	20	19	TAIWAN	0.1	34
8	FRANCE	0.45	53	20	ITALY	0.1	32
9	VIETNAM	0.4	7	21	MALAYSIA	0.1	14
10	BELGIUM	0.32	15	22	DENMARK	0.1	11
11	SINGAPORE	0.32	14	23	SCOTLAND	0.1	10
12	ROMANIA	0.28	12	24	LITHUANIA	0.1	2

Also, the red points in the middle of the countries of England, Taiwan, the US, Australia and India indicate that these countries have strong citation. The strong

burst refers to the time when they are most referred to. The time period and the citation burst are listed in Table 3.

Table 3. *Top 5 countries with the strongest citation burst*

Country	Year	Strength	Begin	End	1994 - 2022
TAIWAN	1994	3.33	2008	2013	
SPAIN	1994	3.68	2009	2013	
USA	1994	3.83	2004	2007	
GERMANY	1994	2.82	2011	2014	
SLOVENIA	1994	3.3	2009	2011	

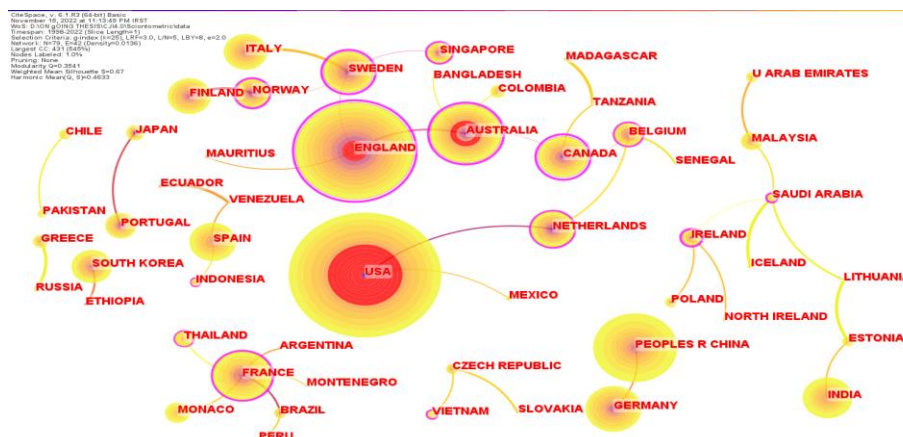


Figure 2. *Cooperation relationship between different countries in customer experience management*

Cooperation network of institutions

Figure 3 shows the cooperation between institutions in the literature of customer experience management. Carl Stand University and Hong Kong Polytechnic have

the highest productions and Cranfield and Karl Stad Universities have the strongest citation burst, which is shown in the figure with red rings.

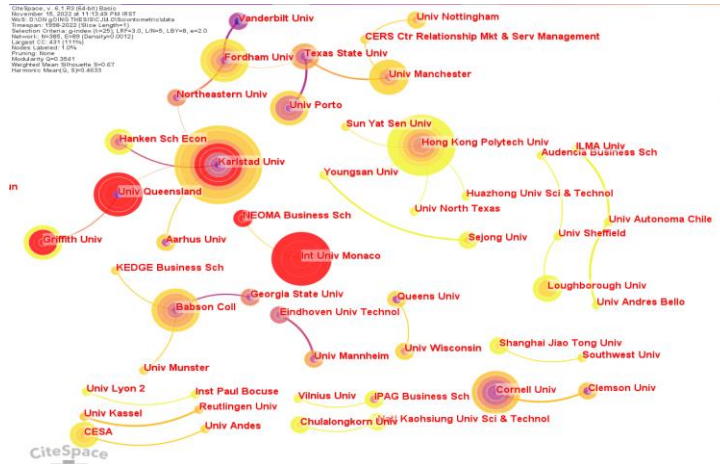


Figure 3. Cooperation network of institutions in the field of customer relationship management

Analysis of prolific authors and the examination of their collaboration network

Top researchers and cooperation relationships between them are shown in Figure 4. This map is plotted by VOS viewer software. According to the obtained results,

Klaus is the top author in the field of customer experience management, and with high centrality, he is the connecting element of researchers in different groups. The largest cooperation network has been formed with the centrality of this author.

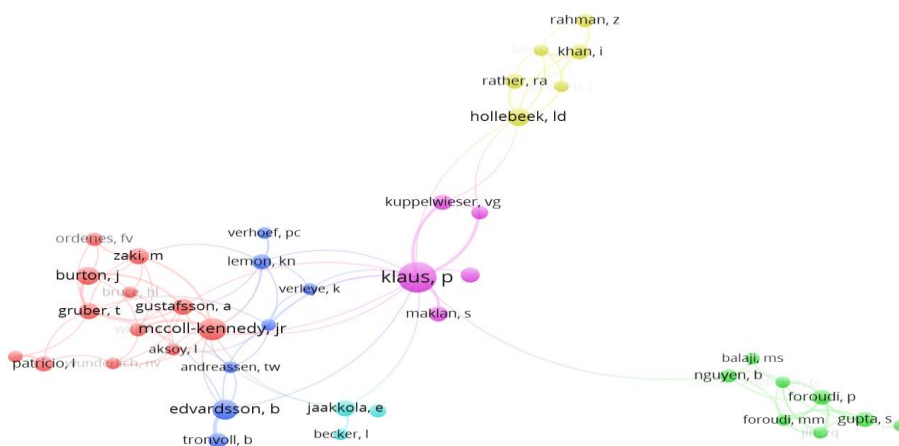


Figure 4. Collaborative relationships among top authors in customer experience management

Hot topics

Normally, hot topics indicate current research opportunities and future research development trends (Wang et al., 2018). In this research, by collecting the keywords with the highest frequency, the main words of the field of customer experience management can be listed in Table 5 in three time periods. As it can be seen, despite the fact that customer experience management has received much attention since 1998, this issue has not been considered before 2010, and

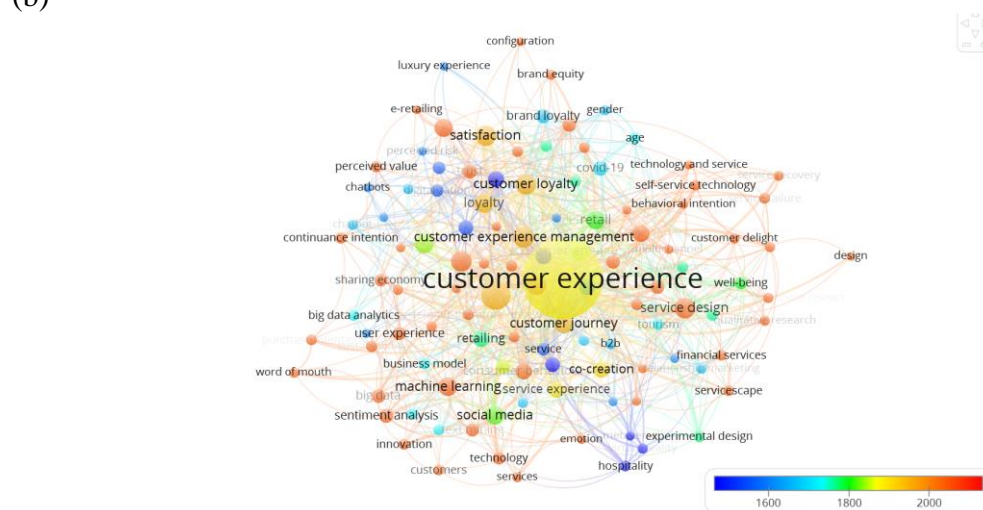
most of the keywords are mostly about customer experience and customer satisfaction. Co-creation, customer value, service experience and self-efficacy were important key words over the period of 2010 to 2015. However, since 2016, we encountered new words about technology and seem to show the main direction of research, such as social networks, big data, artificial intelligence, augmented reality, online customer experience, etc.

Table 4.
Top keywords

Before 2010			2010-2015			2016-2022		
Keyword	N	Centrality	Keyword	N	Centrality	Keyword	N	Centrality
Customer experience	4	0.05	Customer experience	37	0.27	Customer experience	315	0.02
Customer satisfaction	3	0.55	Consumer satisfaction	23	0.20	Customer satisfaction	170	0.01
Impact	2	0.03	Service quality	19	0.18	Impact	129	0.02
Service quality	2	0.09	Consumer behavior	11	0.13	Loyalty	80	0.03
Performance	2	0.11	Perception	11	0.07	Quality	72	0.01
Brand	2	0.03	Co- creation	6	0.11	Technology	52	0.05
Dynamic model	1	0.00	Consumer loyalty	6	0.02	Trust	52	0.01
Commitment	1	0.00	Service experience	4	0.03	Service quality	45	0.03
Behavior	1	0.02	Word of mouth	4	0.01	Behavior	35	0.04
Customer relationship management	1	0.00	Customer value	3	0.00	Social media	35	0.01
Human resource	1	0.13	Media	3	0.01	Innovation	34	0.02

Figure 5a shows overlap map and Figure 5b indicates the density map of keywords. These maps show that clusters of research (b)

about customer experience are forming. For a more detailed analysis of keywords, see Fig. 6.



(a)

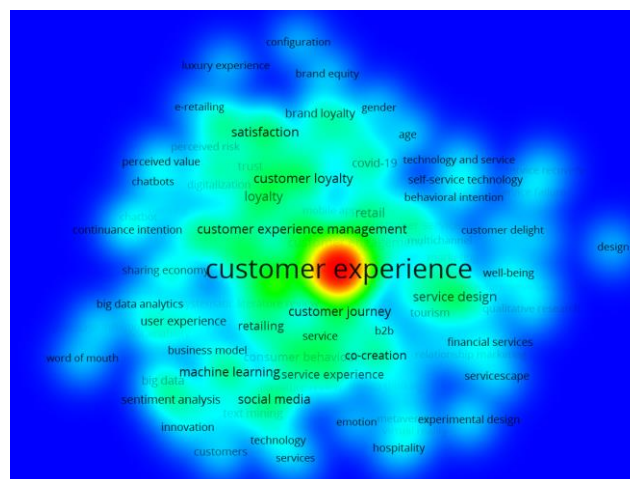


Figure 5. Overlap map and keyword density map

Co-citation analysis

Co-citation cluster analysis is an effective tool to understand the intellectual and conceptual structure of some research fields (Lu, 2017, Yang et al., 2019). According to citation analysis, the citation network of this study consists of 867 nodes and 1576 arcs (Fig. 6). In this research, based on the LLR

algorithm and according to the keywords of the above-mentioned papers, 17 co-citation clusters were identified automatically, and each of these clusters was named with the "title + number + #". Figure 7 shows the formed clusters and the knowledge map of these clusters over time is presented in Figure 8.

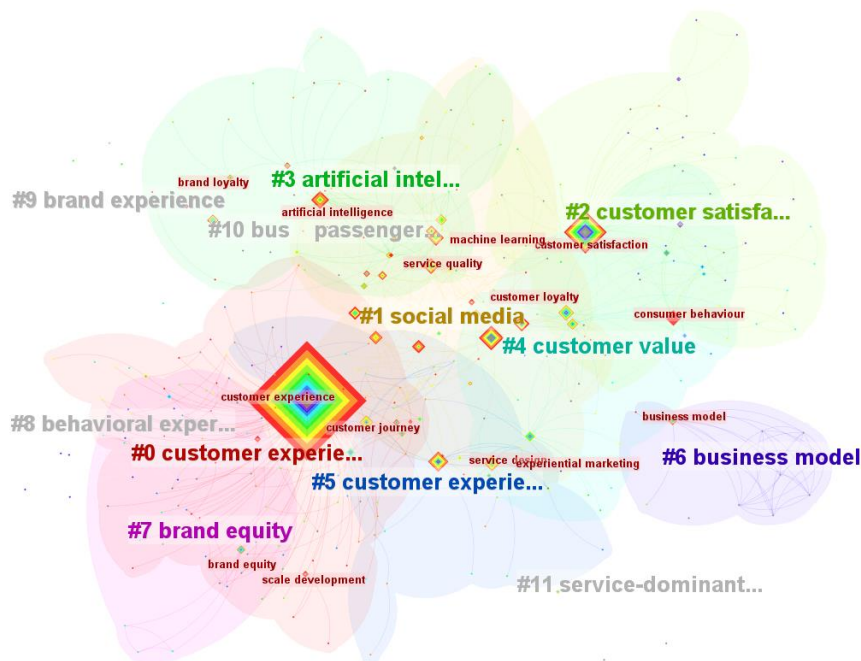


Figure 6. Top keyword clusters in customer experience management field

The modularity (Q) and average silhouette (S) values are two important parameters to measure the quality of the cluster result, which represent the "overall structure features" of the branches in co-citation networks between 0 and 1. The bigger the Q value, the better the clustering. The value of $Q > 0.3$ represents that this network has a good and regular structure. Large values of S show high homogeneity of nodes, if we have: $S > 0.7$, it indicates that the cluster has high validity (Chen et al., 2013). According to the obtained results, the value of $Q=0.6898$ and the value of $S=0.848$, indicates that the clusters are well structured and highly reliable.

One of the most active formed clusters is cluster 2, with the title of omnichannel (multi-channel) concept (Figures 7 & 8). This cluster has been formed since 2007 and is still active. The omnichannel marketing is of great

importance as a multi-channel sales approach. Most industries have been considerably affected by digitalization and have been obliged to adapt or change their business models (Soresko et al., 2011) and have converted to omnichannel management. At a high level, being an omnichannel organization means putting the customer at the center of the company's interaction through channel integration, stability, and a seamless customer experience (Verhoogh et al., 2016). For in-store retailers, omnichannel has provided the possibility of improving synergies between channels and touchpoints in order to increase store sales and potentially prevent the death of physical stores (Berman, 2019).

There are three waves for the evolution of the omnichannel phenomenon. In the first wave (mid-1990s), retailers launched the very first online channels that were characterized

by being technology-driven, managed in silos, and not integrated with traditional channels. During the second wave (about 2005 to 2014) the requirement for omnichannel integration emerged. Retailers began to focus their strategies on consumer demands and find that customers should shop in the channel of their choice. Finally, the third wave (around 2015 up today) observes the emergence of omnichannel retailing as a response to a change in people's purchasing behavior. At this stage, the integration between different channels is greater and each channel becomes a touchpoint between the consumer and the brand. In 2020, the coronavirus pandemic has obliged retailers to adopt omnichannel strategies (Business Insider, 2020).

Under these conditions, over the last decade, omnichannel has developed the industry at different levels: from the management of logistics (Hübner et al., 2016) to understanding customer intent to use certain channel or use a new technology (Juaneda-Ayensa et al., 2016). Based on these challenges, omnichannel has received much attention from many researchers, and special issues dedicated to omnichannel have been published (e.g., Verhoef et al., 2015; Taichon et al., 2020). The subject requires research on a wide variety of themes as the dynamics of customer relationship management in an omnichannel retailing environment (Lazaris et al., 2014).

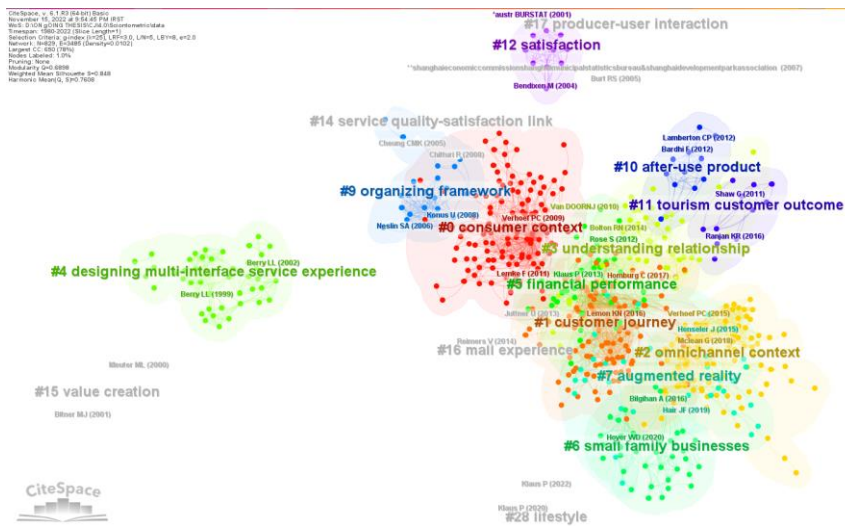


Figure 7. Customer experience management co-citation clusters

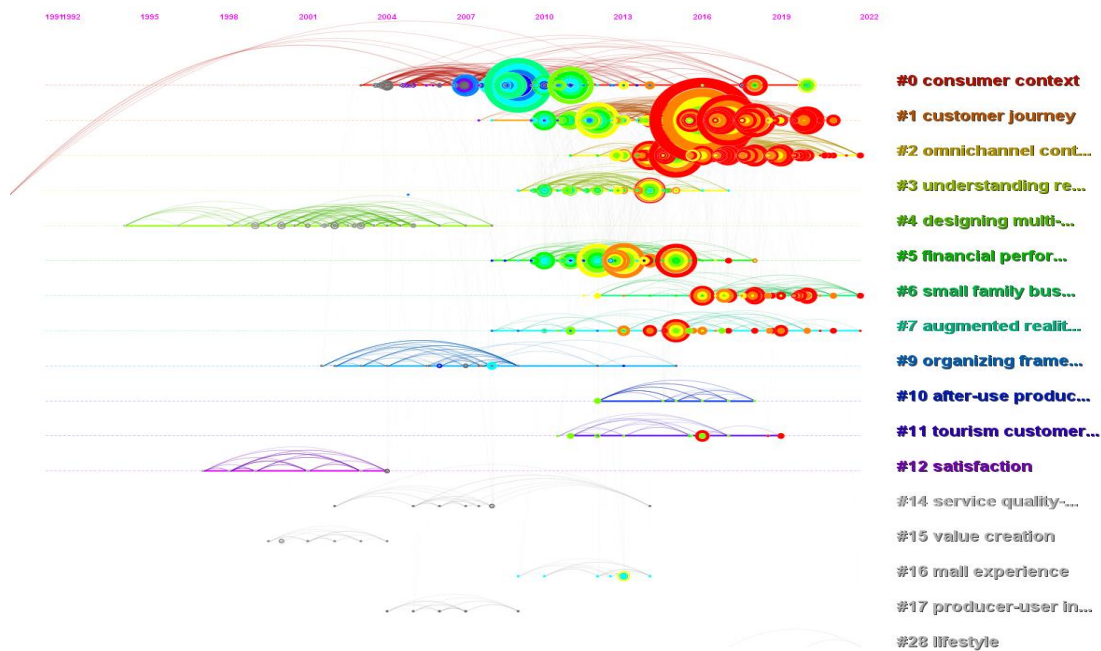


Figure 8. Knowledge map of customer experience management

Discussion and Conclusion

In this research, efforts have been made to evaluate the subject of customer experience management by examining the researches that have been performed and by examining the branches of the subject that have been formed during different years in customer experience management, and the trend of future researches in this field has been determined. Some of the results obtained from the mentioned analysis can be defined as follows.

- Research in this field of customer experience management has a growing trend and from 1 research in 1998 has increased to 248 researches in 2022.
- Among the journals that have published customer experience management topics during the 1998-2022, retailer and customer service Journal has accounted for 5% of the articles by publishing 75 articles until 2022.
- The results obtained from the analysis of the top countries in customer experience management have indicated that the US, China, Australia and the United Kingdom are now the pioneers in the number of countries, and England and Canada are the leaders in the centrality index and England, Australia and Taiwan have the strongest citation burst in

researches on customer experience management.

- The results obtained from the analysis of institutions active in customer experience management research topics indicated that *Karlstad University* and *Hong Kong Polytechnic* have the most productions and the *University of Queensland* and *Monaco* have the strongest citation burst and communication ring.

- The results obtained from the analysis of the authors show that in recent years, researchers like *Klaus* are the top authors in the literature of customer experience management, and with high centrality, they are the connecting link of researchers in different groups. The largest cooperation network has been formed with the centrality of this author

- By investigating the hot topics in the field of customer experience management in different years, it can be said that despite the fact that customer experience management has received much attention since 1998, this topic has not been formed before 2010, and most of the keywords are about customer experience and customer satisfaction. Co-creation, customer value, service experience and self-efficacy were important key words during 2010 to 2015. But since 2016, we encountered new words about the topic of

technology and this indicated the main direction of research, such as social networks, big data, artificial intelligence, augmented reality, online customer experience, etc.

- According to the results obtained from the classification of research performed in the field of customer experience management, it can be said that the research conducted in this field is placed in 12 categories. The largest cluster is the customer concept with 128 members and accounts for approximately 83% of the network.

The general results indicate that since 1998, the focus has been on the subject of customer experience, but since 2016, research in this field has attracted much attention from researchers, because the number of articles published per year has increased considerably. The field of customer experience management has now evolved from conceptualization to implementation stage. Although research on customer experience has increased significantly, it is not fully mature yet, as theoretical, practical, and methodological issues require further studies.

Most importantly, the literature dedicated to identifying different structures to measure experience is limited. Sometimes, researchers use structures that are suitable to measure customer satisfaction and service quality to quantify customer experience. However, this investigation showed that there is a significant difference between the factors of satisfaction and experience. In order to identify and develop an experience, one should know how the customer experience can be measured to illustrate all aspects of the experience.

In addition, we found that researchers from countries such as the US, Australia, and the United Kingdom master customer experience management research. All three countries are developed, and most of the research has been performed based on high technology companies and developed sectors. Further studies can focus more on less developed countries.

Another aspect of the experience requiring attention, and has become a hot keyword in

recent years, is the interaction of the social environment in the development and presenting the experience. For example, how the group experience influences the customer's decision has not been taken into account. While there is a few researches on the interaction between the service provider and the consumer, interactions between customers are rarely investigated in the existing literature. Based on the rapid increase of customer interaction through social networks (Rihwa et al., 2014, Rihwa et al., 2013), the focus of the contemporary research field is on how companies look at creating and maintaining customer relations between them.

Another important issue that was indicated in this research is engaging more customers in business activities so that the customer considers himself a part of the business. This issue creates a concept called "value co-creation". Co-creation of value is a new form of business strategy that emphasizes the continuous creation and recognition of common values of organizations and their customers and is regarded the result of effective interaction between them. The use of co-creation to create experience is considered a hot research topic that can guide the future studies in this field.

Omnichannel was identified as the most important and active research cluster. By investigating the important research in this cluster, it was concluded that there are numerous benefits for omnichannel providers in presenting an attractive customer experience, but despite the fact that this research area is an important and developing area, research topics in this field include: Operationalize the customer experience, mapping the customer experience in the omnichannel customer lifecycle, create a true brand experience through multiple touch points.

Another important issue that in this study that little literature is dedicated in this area, is the impact of technology-based systems on customer experience. These technologies are virtual reality, simulation, big data analysis, cloud technologies, cyber security, Internet of

Things, identification and automatic data collection, robotics, drones, nano technology and business intelligence, as these new technologies can have applications for a wide range of business areas, including the development of new products and services, production, work environment, people and organizational management, business models, etc., which will lead to considerable changes. Various researches have been performed to use smart technologies to improve customer experience. Ameen et al. (2021) investigated how the integration of artificial intelligence in buying can lead to improved customer experience. Hollebeek et al. (2020) examined the role of virtual reality in travel map. Romano et al. (2020) investigated the role of virtual reality in enhancing customer experience. Holmend et al. (2020) examined customer experience management in the era of big data analysis. However, the research in this field is limited, both technologies are examined separately, not based on a whole and coherent method, and it focuses on a part of the customer experience and does not provide a general image of the customer experience. This issue can be a basis for further studies.

Briefly, this research can help other researchers to identify the direction of future research on customer experience management, and by moving in this direction, they can avoid repetitive researches and easily identify the research gaps of customer experience management.

Naturally, this study faced some limitations that should be considered when interpreting the results. The keywords selected were based on the aims of study and the literature review conducted in this study. In the future, however, other relevant keywords might emerge in the literature. Moreover, relying on only one database could ignore the publications indexed on other databases. Future investigations can include other databases such as Scopus.

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