

MAPPING THE CONCEPTUAL STRUCTURE OF DIGITAL MARKETING AND CUSTOMER ENGAGEMENT: A BIBLIOMETRIC APPROACH

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ABSTRACT

The rapid evolution of technological advancements and shifting consumer behavior necessitates a comprehensive understanding of emerging trends and research directions in digital marketing and customer engagement. This study presents a comprehensive bibliometric analysis of 6,220 publications from SCOPUS and Web of Science (2010–2024) to map the conceptual structure and thematic evolution of digital marketing and customer engagement research. Utilizing tools such as Biblioshiny, the analysis identifies key trends through keyword co-occurrence, thematic mapping, and correspondence analysis. The findings reveal a dynamic shift from foundational consumer preferences and advertising themes to emerging domains such as influencer marketing, sustainability, and

AI-driven strategies. Thematic clusters underscore the rising influence of social media, electric vehicles, and sentiment analysis in shaping consumer behavior, while motor themes like willingness to pay and choice experiments remain crucial. Niche areas such as game theory and e-commerce platforms highlight the underexplored research opportunities. This study emphasizes the transformative role of artificial intelligence in customer experiences and the necessity of interdisciplinary collaboration to address evolving market challenges. Despite limitations, including language biases and database constraints, this research offers actionable insights for academia and practice. This study advocates for future exploration of sustainability, global consumer trends, and advanced analytics, enabling businesses to craft adaptive strategies in a digitally competitive landscape. This analysis provides a roadmap for advancing theoretical frameworks and fostering deeper customer connections and sustainable brand growth.

JEL Classification: M31, C80, O33, I23

INTRODUCTION

There are both possibilities and threats to customer engagement in this digital age. In the contemporary business landscape, digital marketing and customer engagement have emerged as important domains of research and application influenced by technical development and dynamic consumer behavior (Ndekwa et al., 2023). Digital marketing is vital for businesses to attract new customers, retain existing customers, and increase sales (Laila et al., 2024). The digital platforms have transformed businesses into connecting with their customers (Dhungana et al., 2023; Vinerean & Opreana, 2021). Digital marketing uses online channels to sell products and services with customer engagement and develop long-term consumer relationships through digital platforms (Sharabati et al., 2024). Customer engagement is an emotional relationship and investment between brands and buyers that is directly related to product purchases and develops customer participation (Clarence & Keni, 2022; Mehta & Handriana, 2024). It is now a vital success factor for products and brands due to the growing digital transformation, where customers engage

with companies (Jiménez-Partearroyo et al., 2024). Customer satisfaction and brand loyalty are influenced by engagement, which includes emotional, cognitive, and behavioral engagement with a brand (Brodie et al., 2011; Vinerean & Opreana, 2021). Customer engagement has emerged as a critical strategy for business organizations across all industries. In essence, it represents the depth of the connection between a brand and its customers, built on trust, satisfaction, and mutual value. Customer engagement involves building, creating, and engaging with customers and building relationships (Brodie et al., 2011). Customer engagement has emerged as a crucial element in marketing strategies to gain a competitive advantage and enhance the image and performance of firms, leading to customer satisfaction and loyalty (Vinerean & Opreana, 2021).

Online platforms are becoming increasingly important in both academia and business. Digital marketing and consumer involvement influence business performance, consumer habits, technological development, and international competition (Sang, 2024). Technological developments, including artificial intelligence, big data analytics, and machine learning, which allow companies to provide tailored experiences and instantly react to consumer preferences, are driving rapid changes in digital marketing (Kaplan & Haenlein, 2010). However, this development also presents challenges such as data privacy concerns, enhanced website security, and service quality in a competitive digital environment (Clarence & Keni, 2022). Publications on digital marketing, such as social media marketing, influencer marketing, and customer relationship management, have notably increased scholarly research on digital marketing and customer engagement (Vinerean & Opreana, 2021). Understanding these trends and their development depends critically on bibliometric analyses, which methodically evaluate scientific publications, patterns, and influences (Donthu et al., 2021; Pahari et al., 2024). The increasing recognition of digital marketing as a critical element of contemporary business strategy is represented by significant publication trends, particularly the substantial increase from 2015 to 2024 (Bryła et al., 2022). Using publication pattern analysis, researchers can identify prominent themes, new areas of interest, and gaps in the literature for future research and applications.

This study examines the academic domains of digital marketing and customer engagement through bibliometric analysis. This study offers a conceptual structure of digital marketing and customer engagement by integrating a co-occurrence network, thematic map, and evolution and correspondence analysis, highlighting key themes and revealing new themes. This study analyzed 6,220 research articles from the SCOPUS and Web of Science databases, providing insights into significant research theme evolution and scope for future research. By developing effective strategies informed by their understanding of these themes, industries can engage with their customers, generate growth, and maintain a competitive edge. Artificial intelligence, big data analytics, and machine learning have revolutionized digital marketing and customer engagement (Putra, 2024). The United States, China, Australia, and the United Kingdom have become leaders in scientific production, indicating their active involvement in advancing digital marketing (Vinerean & Opreana, 2021). By encouraging interdisciplinary research and collaboration, prominent universities and institutions make substantial contributions to the body of knowledge (Kumar et al., 2023). Influential authors in this field frequently concentrate on high-impact subjects, generate widely cited works, and contribute to establishing theoretical frameworks that facilitate academic inquiry and practical application. Investigating the attributes of these authors' contributions can offer valuable insights into the field's intellectual underpinnings.

This study helps fill the knowledge gap in digital marketing dynamics and provides valuable information for academics and practitioners. This study uses a bibliometric approach to investigate the conceptual structures of digital marketing and customer engagement. By analyzing a comprehensive dataset of publications, this research aims to uncover the key thematic areas and research trends that shape the discourse. In addition to enhancing academic knowledge, the findings provide practical insights for practitioners attempting to comprehend digital marketing and improve methods for engaging customers in the digital age.

This study aims to address the following research questions to explore the conceptual structure of digital marketing and consumer engagement: RQ1: What are the primary

research themes and topics in digital marketing and consumer engagement? RQ2: How are the key terms and concepts interconnected in digital marketing and customer engagement? RQ3: What gaps exist in the current literature on digital marketing and customer engagement, and what opportunities do they present for future research The findings benefit scholars, practitioners, and policymakers by offering a holistic view of the current state of research and highlighting opportunities for future studies. The remainder of this paper is organized as follows: material and methods, results, discussions, conclusion and suggestions.

MATERIALS AND METHODS

Methodological Approach

Pritchard coined the term “bibliometrics” in 1969, which is the library branch that deals with the database of all research articles, journals, and so on. (Singh & Dhir, 2019). Bibliometrics uses mathematical and statistical techniques to examine the scientific research output of a field (Pham et al., 2022; Rita & Ramos, 2022). The bibliometric methodology abridges the application of quantitative methods to bibliometric data (Kumar et al., 2023). A bibliometric analysis was used to identify the conceptual structure of digital marketing and customer engagement. The procedural stages of this method involve assessing research literature, identifying acceptable keywords to select relevant research papers, and collecting the initial findings through criteria (Donthu et al., 2021), which ensure that only pertinent research is presented (Liu et al., 2021). This study aims to provide a detailed analysis of the conceptual framework and development of themes related to digital marketing and customer engagement.

Database Selection

SCOPUS and Web of Science (WoS) were selected for their extensive collection of high-quality academic literature and their global reputation as reliable databases. Some relevant

research may be indexed in other multidisciplinary and subject-specific databases and may not be included in our study, even if SCOPUS and Web of Science (WoS) are the primary sources. On 24th April 2024, SCOPUS and Web of Science (WoS) were chosen to retrieve information.

Research Design

It is crucial to comprehend the methods by which data are acquired and analyzed to conduct bibliometric research. This bibliometric analysis clearly explains the research topics that require further exploration (Varsha et al., 2021). It also analyzes the current literature on the conceptual structure of knowledge of digital marketing and customer engagement. This design offers a more comprehensive view of authors' keyword co-occurrence, thematic maps, theme evolution, and correspondence analysis (Shafi et al., 2024). This study used previously published research data from two large databases, Scopus and Web of Science, to gather reliable and accurate information. This study ensured that the results were reliable and that all crucial ideas were measured.

Sources of Data

This study used Scopus and Web of Science (WoS) indexed databases to retrieve data on April 24, 2024. The WoS and Scopus-indexed databases were chosen for their extensive coverage of good publications in all academic subjects and for being the most comprehensive repositories (Thangavel & Chandra, 2023). These databases contain all bibliographic information regarding authors, citations, journals, and other items that can be used in the study (Gao et al., 2022). The search terms were mainly used in the document title, keywords, and abstract. Table 1 displays the structure of the search query in the relevant database search engine.

Table 1: Gathering data, searching strings, and retrieving results from databases

Database	Search strings	Output
SCOPUS	<p>"Digital Marketing" OR "Digital marketing management" OR "Electronic commerce marketing" OR "e-commerce marketing" OR "Search engine marketing" OR "Influencer marketing" OR "Content marketing" OR "Content automation" OR "data-driven marketing" OR "Email Marketing" OR "email direct marketing" OR "Social networks sites" OR "Search Engine Optimization" OR "SEO" OR "Online platforms" OR "Content Marketing" OR "Online advertising" OR "E-commerce" AND "customers engagement" OR "Purchase intention of customers" OR "Consumer preferences" OR "Purchase decision making" OR "Users experience" OR "Brand awareness" OR "Customers retention" OR "Customers relationship management" OR "Behaviors targeting" OR "Customer behaviors" OR "Trends in consumer behaviors" OR "Online consumer behaviors" OR "Online Shopping Behaviors"</p>	1380
Web of Science	<p>"Digital Marketing" OR "Digital marketing management" OR "Electronic commerce marketing" OR "e-commerce marketing" OR "Search engine marketing" OR "Influencer marketing" OR "Content marketing" OR "Content automation" OR "data-driven marketing" OR "Email Marketing" OR "email direct marketing" OR "Social networks sites" OR "Search Engine Optimization" OR "SEO" OR "Online platforms" OR "Content Marketing" OR "Online advertising" OR "E-commerce" AND "customers engagement" OR "Purchase intention of customers" OR "Consumer preferences" OR "Purchase decision making" OR "Users experience" OR "Brand awareness" OR "Customers retention" OR "Customers relationship management" OR "Behaviors targeting" OR "Customer behaviors" OR "Trends in consumer behaviors" OR "Online consumer behaviors" OR "Online Shopping Behaviors"</p>	6762

To include all publications that are connected to the search words, the scope of the search was restricted to “subject” (which provides for searching in “title,” “abstract,” and “keyword”) without any chronological filter. We excluded materials related to languages other than English and included subjects in the subject areas of business, management, accounting and social sciences. After selecting primary material and removing duplicates of 1922 documents from Biblioshiny under R Programming, a final dataset of 6220 Documents is compiled for analysis.

Analytical tools

Bibliometric data analytical tools, RStudio Biblioshiny, were used in this study. A free, open-source tool called RStudio can be downloaded from the company’s website for data science analyses (Abafe et al., 2022; Ruslan et al., 2023). Biblioshiny was a valuable tool for processing data (Mougenot & Doussoulin, 2022).

Extraction, Loading, and Conversion of Data

Procedures for data extraction, loading, and conversion were proposed by Agbo et al. (2021a). The Bibliometrix R Library merged the two datasets, Scopus and WoS. Lines 1–23 of Table 2 outline the data conversion and merging procedures for Scopus and Web of Science. This demonstrates the typical process for using RStudio software to combine and transform data sources downloaded from Scopus.

Table 2: Conversion and combining of two data sources with RStudio

Command Line	Command
Line 1	install.packages("xlsx")
Line 2	library (bibliometrix)
Line 3	library(xlsx)
Line 4	getwd()
Line 5	WOS1 = convert2df("WOS1.txt")
Line 6	wos2 = convert2df("wos2.txt")
Line 7	wos3 = convert2df("wos3.txt")
Line 8	wos4 = convert2df("wos4.txt")
Line 9	wos5 = convert2df("wos5.txt")
Line 10	wos6 = convert2df("wos6.txt")
Line 11	wos7 = convert2df("wos7.txt")
Line 12	wos8 = convert2df("wos8.txt")
Line 13	wos9 = convert2df("wos9.txt")
Line 14	wos10 = convert2df("wos10.txt")
Line 15	wos11 = convert2df("wos11.txt")
Line 16	wos12 = convert2df("wos12.txt")
Line 17	wos13 = convert2df("wos13.txt")
Line 18	data<-read.bib("C:/Users/dell/Desktop/Saud.bib")
Line 19	scopus = convert2df("SCOPUS.bib",dbsource="scopus", format="bibtex")
Line 20	scopus = convert2df ("scopus.bib1", dbsource = "scopus", format="bibtex")
	scopus = convert2df("scopus.ganesh1", dbsource = "scopus", format="bibtex")
Line 21	combined = mergeDbSources (wos1, wos2,wos3, wos4,wos5, wos6,wos7, wos8,wos9, wos10, wos11,wos12, wos13 scopus, remove.duplicated=T)
Line 22	write.csv (combined, "final.csv")
Line 23	biblioshiny()

Table 2 shows the 6220 datasets between 2010 and 2024 used in the analysis. The sources of these documents included books, journals, articles, conference proceedings, and early review access. The data collection included 13976 authors, with 388 single authors.

Data Analysis

The Scopus and WoS retrieved data were analyzed using Biblioshiny free software applications. Biblioshiny was used to analyze Scopus and Web of Science data, and this aims to filter ideas and approaches employed in digital marketing and customer engagement literature using Biblioshiny to analyze the data. Initially, the study examined the literature's descriptive aspects and investigated thematic evolution and maps to locate the current situation and future research directions of the field.

RESULTS AND DISCUSSION

Researchers commonly utilize conceptual frameworks to understand their topics and identify the most important hot topics. The texts use the author's keywords co-occurrence, correspondence analysis, thematic map, and evolution to investigate the conceptual framework of digital marketing and customer engagement.

Descriptive Analysis of Bibliometric Data

An overview of the data, document types, content, authors, and collaborations among authors is presented in Table 3. Using the Scopus and Web of Science databases, 6220 documents were extracted between 2010 and April 24, 2024. Scientific journals dominated the sources of these documents, with 1394 sources. The number of keywords used was 15822. In addition, 227716 references were used in these papers. The average citations

per document is 21.37, the number of single document authors is 388, the number of co-authors per document is 3.67, and the annual growth rate is 6%.

Table 3: Main information

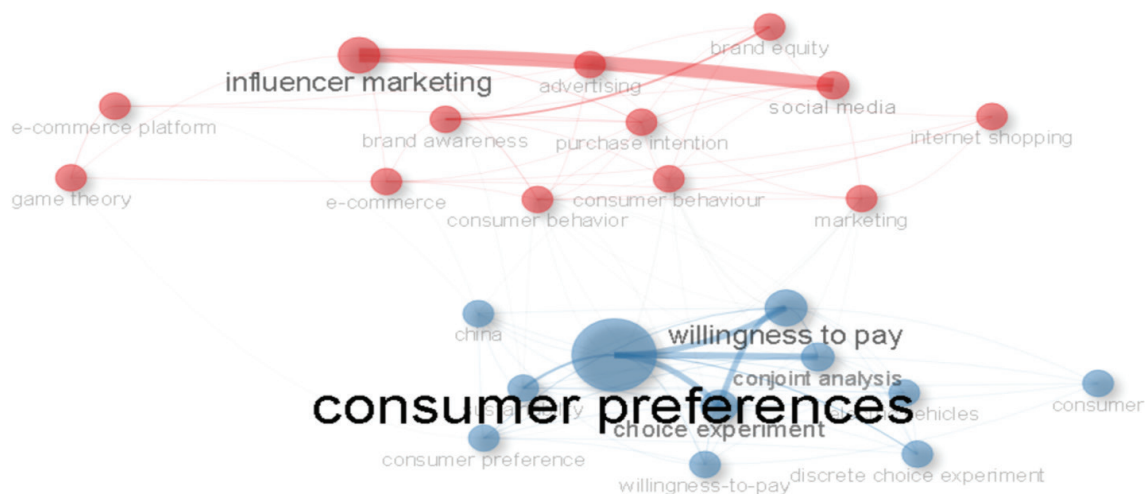
Description	Results
Primary information about the data	
Timespan	2010:2024
Sources (Journals, Books, etc.)	1394
Documents	6220
Annual Growth Rate %	6
Document Average Age	4.83
Average citations per doc	21.37
References	227716
DOCUMENT CONTENTS	
Keywords Plus (ID)	8329
Author's Keywords (DE)	15822
AUTHORS	
Authors	13976
Authors of single-authored docs	388
AUTHORS COLLABORATION	
Single-authored docs	419
Co-Authors per Doc	3.67
International co-authorships %	31.86
DOCUMENT TYPES	
Article	5898
Article; book chapter	9
Article; early access	219
Article; proceedings paper	72
Article; retracted publication	19
Article; early access; retracted publication	2

Co-occurrence network of author keywords

The co-occurrence of “author keywords” was selected as the emerging topic in this study. Keyword co-occurrence analysis, which demonstrates the structure of scientific knowledge, can help identify research hotspots and trends. Keyword co-occurrence represents research hotspots in a domain and can accurately describe document content (Shome et al., 2023). Keyword analysis helps identify patterns in specific fields (Farooq, 2024). The researchers created a keyword co-occurrence map using Biblioshiny software to determine digital marketing and customer engagement topics based on the co-occurrence map published from 2010 to 2024. The node size and connecting line width in the co-occurrence analysis reflect the amount and intensity of co-occurring associations between the respective nodes (Brychkov & Domegan, 2017; Pahari et al., 2024). Figure 6 reveals the significance of six keywords, namely, “consumer preferences,” “influencer marketing,” “willingness to pay,” “influencer marketing,” “choice experiment,” “social media,” and “brand equity,” in the field of digital marketing and customer engagement. The size and position of the respective nodes indicate their significance. The analysis revealed the presence of two distinct clusters, represented by red and blue.

FIGURE 1

Co-occurrence network of author keywords



Nodes with higher betweenness centrality are deemed more significant, as they are pivotal points through which information flows (Elías & Marithza, 2022). Figure 1 provides an overview of the frequently emerging terms in the analyzed articles. Colored clusters were added to determine their grouping by examining the links between two terms.

Table 4: Authors’ keywords network

Cluster 1: Influencer Marketing	Influencer Marketing, social media, brand awareness, e-commerce, consumer behavior, e-commerce platform, brand equity, consumer behavior, purchase intention, marketing, game theory, internet shopping, advertising.
Cluster 2: Consumer preferences	Consumer preferences, willingness to pay, choice experiment, conjoint analysis, consumer preference, sustainability, electric vehicles, discrete choice experiment, willingness.

The results (Table 1) demonstrate that “consumer preferences” are associated with a wide range of keywords and exhibit the highest co-occurrence score. The other emerging keywords, such as “influencer marketing,” “willingness to pay,” “influencer marketing,” “choice experiment,” “social media,” and “brand equity,” have been prominently utilized in the analyzed research articles.

Influencer marketing and consumer preferences are two clusters identified as central nodes, denoted by red and blue colours, respectively, in Figure 1. There is a link among the keywords in each cluster, indicating that they are not isolated but related to each other in digital marketing and customer engagement. Table 4 shows the words associated with clusters 1 and 2.

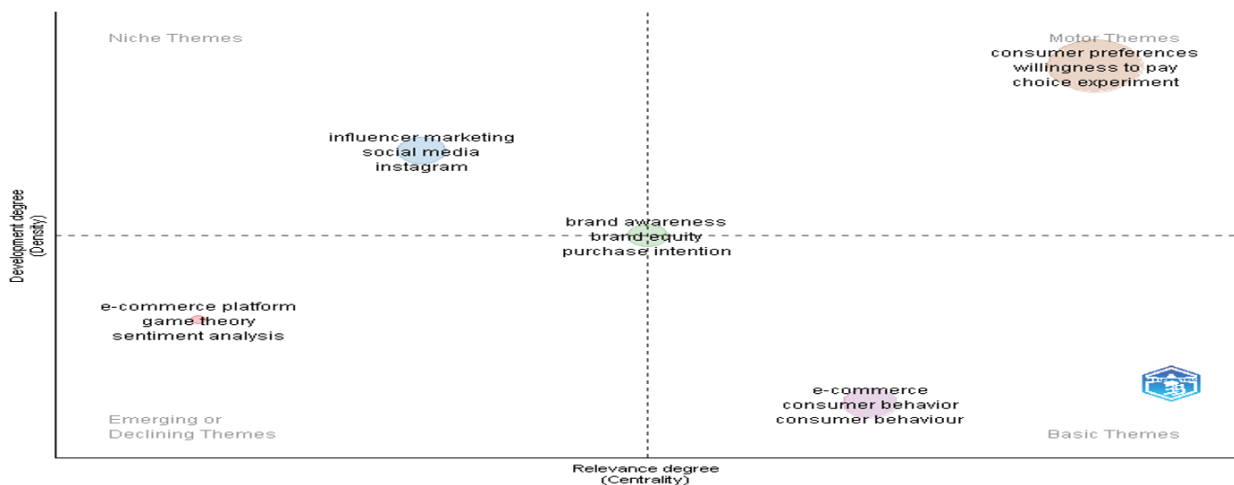
Thematic map

The thematic map includes niche, motor, emerging or declining, and basic themes. Evaluating and visualizing growing themes is critical in any research domain (Farooq, 2024). The thematic map reveals growing themes and assesses topics using various quadrants of the map. The X-axis shows relevance, while the Y-axis represents theme development on a thematic map. Understanding the development and relevance of these themes is essential for guiding future studies. The thematic map visually represents these themes by distinguishing between well-established areas and emerging trends. This section analyzes a thematic map of bibliometric data to explore the significance and interconnectivity of key topics in digital marketing and customer engagement.

The Motor Themes, which include “consumer preferences, willingness to pay,” and “choice experiment,” are central and well-developed, reflecting their critical role in advancing the understanding of consumer decision-making within e-commerce. These themes highlight the significance of consumer-centric research, particularly in assessing product valuation and purchasing behaviors. Niche Themes, such as “influencer marketing,” “social media,” and “Instagram,” represent highly specialized and well-developed topics. Although these themes are not yet central to the broader field, they underscore the growing importance of digital platforms and social media in shaping consumer interactions and brand strategy. Basic Themes, including “e-commerce” and “consumer behaviour,” are foundational yet underdeveloped, suggesting an opportunity for further research to deepen their conceptual frameworks and practical applications. Finally, Emerging or Declining Themes, such as “e-commerce platform,” “game theory,” and “sentiment analysis,” reflect areas that may represent developing research interests or declining relevance. These topics, particularly “game theory” and “sentiment analysis,” indicate the potential for interdisciplinary approaches to enhance the understanding of e-commerce systems and consumer sentiments.

FIGURE 2

Thematic map



The thematic map reveals a dynamic research landscape in e-commerce and consumer behavior, with distinct areas of strength and opportunities for its growth. Motor Themes are pivotal for advancing the field, whereas Niche Themes highlight emerging trends that require broader integration. Basic Themes underscore the need for foundational development, and Emerging or Declining Themes present avenues for innovation. Future research should focus on bridging the gap between Basic and Niche Themes to foster a more comprehensive understanding of consumer behavior in the digital age. This study provides a roadmap for researchers to prioritize areas of high relevance and development, contributing to the continued evolution of this interdisciplinary field.

Table 5: Clusters in thematic map

Clusters	Keywords
Cluster 1:	E-Commerce Platform, Game theory, sentiment analysis, pricing.
Cluster 2:	Influencer Marketing, Social media, Instagram, social media influencers, online word of mouth, social media marketing, social commerce.
Cluster 3:	Brand Awareness, Brand equity, purchase intention, advertising, brand loyalty, trust, and brand image.
Cluster 4:	E-Commerce, Consumer behavior, electronic commerce, marketing, china, internet shopping, covid-19, consumer behaviour, electronic commerce, quality, food, country of origin.
Cluster 5:	Consumer Preferences, Willingness to pay, choice experiment, conjoint analysis, consumer preference, sustainability, electric vehicles, discrete choice experiment, willingness-to-pay, consumer, animal welfare, electric vehicle, food safety, organic, consumers, organic food, preferences, preference, latent class analysis, choice experiments, local food, mixed logit model, contingent valuation, market segmentation, sustainable consumption, consumer choice.

Thematic evolution

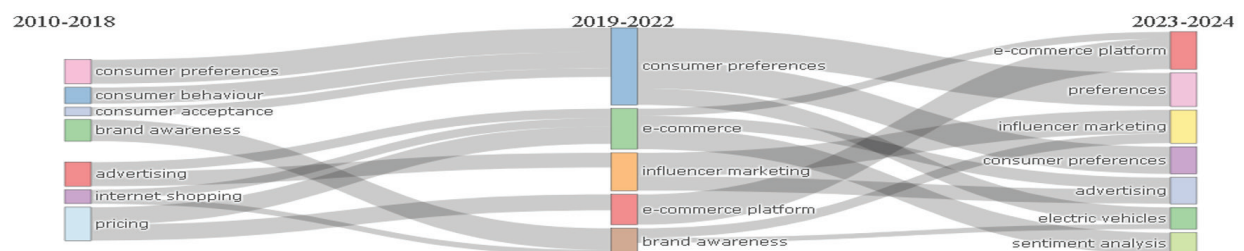
This study examined the thematic evolution of digital marketing and consumer engagement. The thematic evolution analysis aims to reveal the developed themes over time (Abafe et al., 2022; Ryszko & Szafraniec, 2022). A thematic evolution analysis was conducted based on the authors' keywords. This study analyzes its thematic evolution to better understand the emerging field of digital marketing and customer engagement.

Dividing time into several time slices allows one to show the evolution of themes in digital marketing and consumer interaction research using alluvial graphs (Manigandan & Sivakumar, 2024). Based on the distribution of publications per year, the data collection was divided into three time slices by setting two cutting points at 2018 and 2022.

The Sankey diagram (Figure 3) illustrates the evolution of key research themes in digital marketing and customer engagement across three periods: 2010–2018, 2019–2022, and 2023–2024. From 2010 to 2018, consumer preferences, behavior, advertising, pricing, and brand awareness dominated research efforts, reflecting foundational studies on consumer decision-making and market dynamics. There was an apparent change with the rise of e-commerce and influencer marketing between 2019 and 2022. The Sankey diagram shows how digitalization and social media affect customer research.

FIGURE 3

Sankey diagram (thematic evolution)



By 2023–2024, new topics such as electric vehicles and sentiment analysis have become widespread.

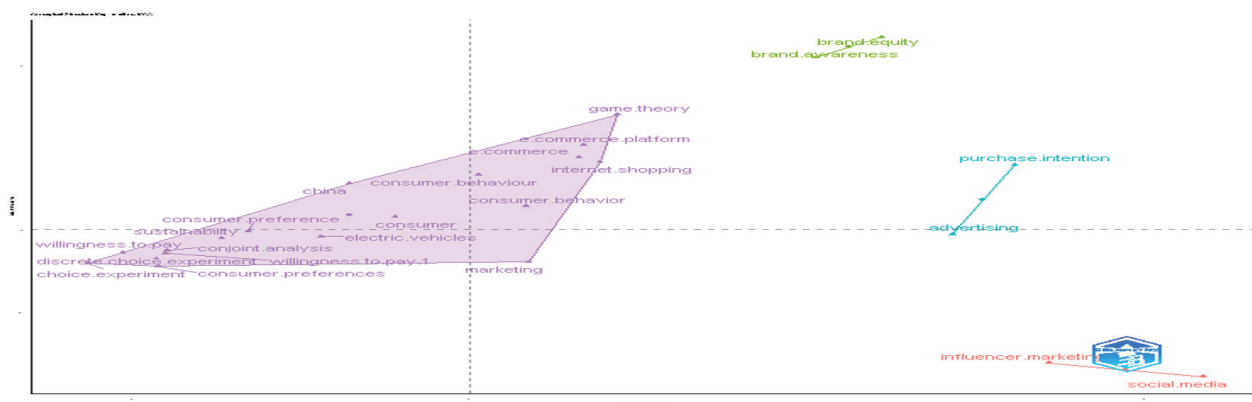
Consequently, an interdisciplinary approach combining sustainability and data analytics was developed. While declining interest in topics such as pricing and online shopping suggests saturation in these areas, the consistency of consumer choices across all phases highlights their fundamental significance. The dynamic development of consumer research is well represented by this bibliometric visualization, which corresponds with more general changes in technology and society.

Multi-correspondence analysis

Multi-correspondence analysis (MCA) shows a conceptual map used in research papers and explores the connections between words using area mapping to split keywords into four groups. Each word is arranged based on its diminutive particle value or Dim 1 (56.11%) and Dim 2 (15.69%), to map words with similar characteristics.

FIGURE 4

Multi-correspondence analysis



MCA is a technique for managing big datasets that makes it possible to illustrate the conceptual organization of a field. It also uses K-means clustering to find collections of publications with associated characteristics.

Figure 4 depicts the four dimensions represented by purple, red, green, and blue, with each area containing interconnected words. In the purple area, phrases such as consumer preferences, choice experiment, conjoint analysis, electric vehicles, e-commerce, consumer behavior, sustainability, e-commerce platform, consumer preference, discrete choice experiment, marketing, willingness to pay, China, consumer, game theory, and Internet shopping were found. The red region encompasses influencer marketing and social media. The green area includes brand awareness and brand equity. “Advertising” and “purchase intention” are in the blue region. This study identifies the purple area as an under-explored research domain. The red area indicates more publications in a particular field.

The findings of this bibliometric study provide valuable insights into the evolving landscape of digital marketing and customer engagement. The thematic evolution analysis shows that the focus has shifted from major issues such as advertising and customer preferences (2010–2018) to new areas such as influencer marketing, e-commerce platforms, and sentiment analysis (2019–2024). This development demonstrates the impact of societal and technological shifts on the field. The growth of social media and influencer marketing shows that digital transformation has changed how people connect with brands, making their interactions more personal and meaningful. The growing importance of artificial intelligence and sentiment analysis shows that the field aligns with data-driven methods to better understand how people feel and act.

The thematic map analysis shows the existence of different research clusters. The main motor themes are customer preferences and their willingness to pay. These ideas are crucial for understanding how people make decisions, especially in digital transformation, where personalized marketing has become prevalent. Niche topics such as social media and influencer marketing show how digital platforms are becoming increasingly important

in changing how people interact with brands. However, basic themes that have not been fully explored, such as e-commerce and customer behavior, suggest that these areas require more research to strengthen the field's theoretical foundations.

The results also show that prices and online shopping are not as hot as they once were; they are still vital areas of the digital marketing ecosystem. The themes related to electric vehicles and sustainability combine marketing, environment, and society, indicating an increasing multidisciplinary focus. The marketing of environmentally friendly products and services has increased recently, which is consistent with this tendency.

Multi-correspondence analysis (MCA) shows that vital ideas in the field are linked to even more interconnectedness. The clusters related to consumer preferences, influencer marketing, and brand awareness help understand the basic ideas behind the study of digital marketing and customer engagement. The clusters of terms such as "willingness to pay," "social media," and "brand equity" show that the field is becoming more complicated and interdisciplinary in nature.

The results of this study are significant for both scholarly research and real-world applications. Researchers can use the survey to identify gaps in existing research. This shows that sustainability, advanced analytics, and new technologies in digital marketing require further research. These insights highlight the importance of using data-driven and customer-focused strategies to remain competitive in a market that is becoming increasingly digital and global for professionals. In addition, the way themes change over time suggests that companies must continually adapt to new technologies and changing consumer behavior to keep their marketing efforts relevant and successful.

Overall, this bibliometric analysis shows that it is a valuable tool for tracking the advancement of research in digital marketing and customer engagement.

CONCLUSION AND SUGGESTIONS

This study conducts a bibliometric analysis of the changing academic landscape of digital marketing and customer engagement. These findings highlight the necessity of connecting academic research to real-world challenges and prospects to ensure that digital marketing approaches are genuine and effective. The field uncovered key research themes, emerging trends, and conceptual structures by examining 6,720 publications from the SCOPUS and Web of Science databases between 2010 and 2024. Thematic evolution demonstrated considerable transitions from traditional issues such as consumer preferences and advertising to emerging issues such as sentiment analysis, influencer marketing, electric vehicles, and sustainability. The findings emphasize the interdisciplinary nature of the field, fuelled by technical advances such as artificial intelligence, big data analytics, and machine learning. These developments have changed how firms engage with customers and have aroused academic interest in creating meaningful consumer experiences.

Additionally, this study used multi-correspondence analysis, thematic mapping, and keyword co-occurrence analysis. The results show strong techniques for locating established research clusters, gaps, and new opportunities in the field. This analysis emphasizes the increasing significance of sustainability, social media platforms, and advanced technology in determining the future course of digital marketing and customer engagement research. This information provides a roadmap for further studies and real-world implementation to enhance academic knowledge and corporate strategies.

More studies are needed on the connection between digital marketing and environmentally friendly consumer habits, especially when purchasing electric vehicles and organic foods. New areas of study should be explored, such as artificial intelligence and machine learning-based topics, such as sentiment analysis, predictive analytics, and data-driven marketing. Understanding global shifts in consumer behavior requires research into a broader range of markets and cultural contexts, not limited to the most well-known ones. Given that social media platforms are constantly evolving, studies on the long-term effects of celebrity endorsements on consumer trust, devotion, and spending patterns

are necessary. Additionally, the use of artificial intelligence, augmented reality, and virtual reality in digital marketing is essential for future research.

The study exclusively utilized papers indexed in SCOPUS and Web of Science; consequently, relevant papers published in languages other than English or databases outside these were not included. Only publications from 2010 to April 2024 were included in the dataset. Possible omission of later-published studies and emerging patterns. As diverse priorities and methods influence digital marketing and customer engagement in different industries, the results may not be completely applicable outside academia. Bibliometric tools such as Biblioshiny and RStudio offer significant insights; however, they might miss prominent topics and new areas of study that combine disciplines because they only use predefined keywords and cited data.

Researchers in digital marketing and customer engagement can benefit from standardizing their reporting practices to make their findings more transparent and easier to compare. Researchers should encourage cooperation across fields to incorporate insights from sustainability, marketing, psychology, and technology to thoroughly address emerging trends. Due to the rapid acceleration of digital transformation in these areas, policymakers and practitioners should prioritize understanding consumer behavior in emerging nations. Practitioners should use bibliometric study findings in competitive marketplaces to inform data-driven marketing strategies and focus on customers. Researchers can do more to advance the multidisciplinary study of digital marketing and consumer engagement to overcome these shortcomings and implement these suggestions.

REFERENCES

- Abafe, E. A., Bahta, Y. T., & Jordaan, H. (2022). Exploring biblioshiny for historical assessment of global research on sustainable use of water in agriculture. *Sustainability*, 14(17). <https://doi.org/10.3390/su141710651>
- Agbo, F. J., Oyelere, S. S., Suhonen, J., & Tukiainen, M. (2021). Scientific production and thematic breakthroughs in smart learning environments: A bibliometric analysis. *Smart Learning Environments*, 8(1), 1. <https://doi.org/10.1186/s40561-021-00170-1> (If no DOI was given, I can update if needed)
- Brodie, R. J., Hollebeek, L. D., Jurić, B., & Ilić, A. (2011). Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research*, 14(3), 252–271. <https://doi.org/10.1177/1094670511411703>
- Brychkov, D., & Domegan, C. (2017). Social marketing and systems science: Past, present and future. *Journal of Social Marketing*, 7(1), 74–93. <https://doi.org/10.1108/JSOCM-10-2016-0065>
- Bryła, P., Chatterjee, S., & Ciabiada-Bryła, B. (2022). The impact of social media marketing on consumer engagement in sustainable consumption: A systematic literature review. *International Journal of Environmental Research and Public Health*, 19(24). <https://doi.org/10.3390/ijerph192416637>
- Clarence, C., & Keni, K. (2022). The prediction of purchase intention based on digital marketing, customer engagement, and brand preference. In *Proceedings of the Tenth International Conference on Entrepreneurship and Business Management 2021 (ICEBM 2021)* (pp. 481–486). <https://doi.org/10.2991/aebmr.k.220501.073>
- Dhungana, B. R., Adhikari, A., Ojha, D., Ranabhat, D., Lamichhane, K., & Acharya, S. (2023). Customer perception toward digital financial services: A case of Pokhara, Nepal. *Butwal Campus Journal*, 6(1), 1-11. <https://doi.org/10.3126/bcj.v6i1.62573>

- Donthu, N., Kumar, S., & Pattnaik, D. (2021). Intellectual structure and publication pattern in *International Journal of Advertising*: A bibliometric analysis during 1982–2019. *International Journal of Advertising*, 40(2), 148–174. <https://doi.org/10.1080/02650487.2020.1756655>
- Elías, L. R. C., & Marithza, S. E. (2022). Trends in branding research focused on the elderly: Bibliometric analysis and systematic review of the literature. *Revista de Métodos Cuantitativos para la Economía y la Empresa*, 34, 305–327. <https://doi.org/10.46661/revmetodoscuanteconempresa.6100>
- Farooq, R. (2024). A review of knowledge management research in the past three decades: A bibliometric analysis. *VINE Journal of Information and Knowledge Management Systems*, 54(2), 339–378. <https://doi.org/10.1108/VJIKMS-08-2021-0169>
- Gao, Y., Wong, S. L., Khambari, M. N. M., Noordin, N. bt, & Geng, J. (2022). Sustaining e-learning studies in higher education: An examination of scientific productions in Scopus between 2019 and 2021. *Sustainability*, 14(21), 14005. <https://doi.org/10.3390/su142114005>
- Jiménez-Partearroyo, M., Medina-López, A., & Rana, S. (2024). Business intelligence and business analytics in tourism: Insights through Gioia methodology. *International Entrepreneurship and Management Journal*, 2287–2321. <https://doi.org/10.1007/s11365-024-00973-7>
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59–68. <https://doi.org/10.1016/j.bushor.2009.09.003>
- Kumar, S., Lim, W. M., Sivarajah, U., & Kaur, J. (2023). Artificial intelligence and blockchain integration in business: Trends from a bibliometric-content analysis. *Information Systems Frontiers*, 25(2), 871–896. <https://doi.org/10.1007/s10796-022-10279-0>
- Laila, N., Sukmaningrum, P. S., Ngah, W. A. S. W., Rosyidi, L. N., & Rahmawati, I. (2024). An in-depth analysis of digital marketing trends and prospects in small and medium-sized enterprises: Utilizing bibliometric mapping. *Cogent Business & Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2336565>

- Liu, H., Li, X., & Wang, S. (2021). A bibliometric analysis of 30 years of platform research: Developing the research agenda for platforms, the associated technologies, and social impacts. *Technological Forecasting and Social Change*, 169, 120827. <https://doi.org/10.1016/j.techfore.2021.120827>
- Manigandan, L., & Sivakumar, A. (2024). Chatbot research: Unveiling evolutionary trends and collaborative pathways through bibliometric analysis. *Multidisciplinary Reviews*, 7(3). <https://doi.org/10.31893/multirev.2024045>
- Mehta, A. M., & Handriana, T. (2024). Analyzing CSR and customer engagement through green banking digitalization: With the mediating effect of perceived environmental value and the moderation effect of customer's eco-consciousness. *Cogent Business & Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2332502>
- Mougenot, B., & Doussoulin, J. P. (2022). Conceptual evolution of the bioeconomy: A bibliometric analysis. *Environment, Development and Sustainability*, 24(1), 1031–1047. <https://doi.org/10.1007/s10668-021-01481-2>
- Ndekwa, A. G., Kalugendo, E., Sood, K., & Grima, S. (2023). An analysis of agribusiness digitalisation transformation of the Sub-Saharan African countries small-scale farmers' production distribution. *Research on World Agricultural Economy*, 4(3), 63–78. <https://doi.org/10.36956/rwae.v4i3.897>
- Pahari, S., Bandyopadhyay, A., Kumar, V. V. M., & Pingle, S. (2024). A bibliometric analysis of digital advertising in social media: The state of the art and future research agenda. *Cogent Business & Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2383794>
- Pham, X. L., Nguyen, P. M. B., & Truong, G. N. T. (2022). A co-word and co-citation analysis of digital marketing research. *International Journal of Service Science, Management, Engineering, and Technology*, 13(1), 1–20. <https://doi.org/10.4018/IJSSMET.304817>
- Putra, A. H. P. K. (2024). Learning from the past bridging digital and physical markets: A guideline for future research agenda of online-to-offline (O2O) marketing strategy. *International Review of Management and Marketing*, 14(3), 82–96. <https://doi.org/10.32479/irmm.16145>

- Rita, P., & Ramos, R. F. (2022). Global research trends in consumer behavior and sustainability in e-commerce: A bibliometric analysis of the knowledge structure. *Sustainability*, 14(15). <https://doi.org/10.3390/su14159455>
- Ruslan, B., Maulina, E., Tahir, R., Rivani, & Muftiadi, R. A. (2023). Sustainable consumer behavior: Bibliometric analysis for future research direction in Muslim fashion context. *Sustainability*, 15(24). <https://doi.org/10.3390/su152416824>
- Ryszko, A., & Szafraniec, M. (2022). Mapping the landscape of the business model and open innovation scientific field to set proposals for directions of future research. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3). <https://doi.org/10.3390/joitmc8030150>
- Sang, N. M. (2024). Bibliometric insights into the evolution of digital marketing trends. *Innovative Marketing*, 20(2), 1–14. [https://doi.org/10.21511/im.20\(2\).2024.01](https://doi.org/10.21511/im.20(2).2024.01)
- Shafi, S., Mohamed, W. N., Damaianti, I., & Salleh, H. S. (2024). Environmental consciousness in the digital era of online shopping: A systematic and bibliometric review. *International Journal of Design & Nature and Ecodynamics*, 19(3), 971–984. <https://doi.org/10.18280/ijdne.190327>
- Sharabati, A. A. A., Ali, A. A. A., Allahham, M. I., Hussein, A. A., Alheet, A. F., & Mohammad, A. S. (2024). The impact of digital marketing on the performance of SMEs: An analytical study in light of modern digital transformations. *Sustainability*, 16(19), 1–25. <https://doi.org/10.3390/su16198667>
- Shome, S., Hassan, M. K., Verma, S., & Panigrahi, T. R. (2023). Impact investment for sustainable development: A bibliometric analysis. *International Review of Economics & Finance*, 84, 770–800. <https://doi.org/10.1016/j.iref.2022.12.001>
- Singh, S., & Dhir, S. (2019). Structured review using TCCM and bibliometric analysis of international cause-related marketing, social marketing, and innovation of the firm. *International Review on Public and Nonprofit Marketing*, 16(2–4), 335–347. <https://doi.org/10.1007/s12208-019-00233-3>

- Thangavel, P., & Chandra, B. (2023). Two decades of m-commerce consumer research: A bibliometric analysis using R Biblioshiny. *Sustainability*, 15(15). <https://doi.org/10.3390/su151511835>
- Varsha, P. S., Akter, S., Kumar, A., Gochhait, S., & Patagundi, B. (2021). The impact of artificial intelligence on branding: A bibliometric analysis (1982–2019). *Journal of Global Information Management*, 29(4), 221–246. <https://doi.org/10.4018/JGIM.20210701.0a10>
- Vinerean, S., & Opreana, A. (2021). Measuring customer engagement in social media marketing: A higher-order model. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(7), 2633–2654. <https://doi.org/10.3390/jtaer16070145>