



Digital and Interactive Marketing: A Bibliometric Review and Research Agenda

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Abstract

This study aims to synthesize the existing literature on digital and interactive marketing in the garment business. To determine the top contributors to research in terms of authors, publications, nations, and institutions, this study looked at research articles pertaining to digital and interactive marketing in the garment sector. Open-source bibliometric tools like biblioshiny and VOSviewer were used in the study to examine the body of literature throughout the search period and to spot new prospective directions for research. Based on bibliometric data, it is evident that this research domain has garnered significant attention. The bibliometric analysis that was conducted on a sample of 191 research articles sourced from the Scopus database indicates that the top 10 journals account for 45 percent of the published literature within global trends in digital and interactive marketing research. This observation indicates a notable prevalence of research papers within these journals. Typically, the subject of research in question has been predominantly influenced by two nations, namely the United States and China, which have established robust co-authorship connections. The research articles in the sample set are predominantly contributed by the top 10 countries, which collectively represent more than seventy percent of the total. An analysis of the most commonly utilized author keywords reveals the following digital marketing exerts influence across various domains such as marketing, social media, commerce, human behavior, internet infrastructure, digital storage, human interaction, online social networking, communication, and electronic commerce.

Keywords: Bibliometric, Biblioshiny, Digital Marketing, Interactive Marketing, Systematic

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Introduction

Marketing as a field has undoubtedly changed from being frequently mistaken for communications and advertising alone to becoming a strict discipline based on analytics. Parallel to the rise in importance of digital marketing has come a rise in the importance of measurement in marketing. Digital marketing screams for the attention of high management even though it has always been a crucial and occasionally disregarded job in a firm. The executive suite is paying more and more attention to it due to the greater investment in technology needed and the capacity to measure it. The Internet have been used for business reasons for around 30 years. The corporate environment has changed dramatically in this time. Google, Facebook, Amazon, Alibaba, eBay, and Uber were unheard of twenty years ago. Our contemporary economy now depends on these firms. The share of Internet sales in overall retail spending in the United States in 2015 was 7.4%, the highest level since 1999 (Sharma et al., 2020, pp.559-560). Itinerant devices account for 22 to 27% of total internet transactions (Cavalinhos, Marques, & de Fatima Salgueiro, 2021, pp.1120-1211; Huseyinoglu, Galipoglu, & Kotzab, 2017, pp.715-518). Businesses today emphasize the importance of developing a "digital relationship" with their customers. In addition, thanks to digital gadgets and technology like smartphones, smart devices, and the Internet of Things (IoT). Several literature review studies have been conducted in the broad topic of digital marketing and more especially in digital social media marketing and brand. Previously, scholarly investigations have primarily focused on various aspects of digital marketing. These include the conceptualization of digital marketing (Ben & Rygl, 2015, pp.173-174), the evaluation of digital supply chains (Adivar, Huseyinoglu, & Christopher, 2019, pp.259-260; Ishfaq, Davis-Sramek & Gibson, 2021, pp.172-179), the analysis of digital transformation in the retail sector (Reinartz, Wiegand & Imschloss, 2019, pp.253-258), the examination of customer experiences (Tyrvaenen, Karjaluo & Saarij€arvi, 2020, pp.110-180), and the investigation of logistics outsourcing (Buldeo Rai, Verlinde & Macharis, 2019, pp.41-49). Additionally, research has also delved into understanding customer behavior and its implications in the context of digital marketing. In spite of a surge in scholarly attention towards digital marketing in recent years, the research conducted in this field seems to exhibit significant fragmentation. Although previous literature studies have been conducted on this issue, there is a requirement for a comprehensive and meticulous evaluation of the research patterns within this field of knowledge. Despite the fact that a bibliometric review of digital and interactive marketing can provide some potential research gaps to consider: 1) specific areas of digital and interactive marketing, such as search engine optimization (SEO), content marketing, mobile marketing, etc.; 2) business-to-consumer (B2C) marketing strategies and business-to-business (B2B); 3) emerging technologies such as artificial intelligence (AI), virtual reality (VR), augmented reality (AR), etc.; and 4) metrics and measurement. By focusing on these potential gaps, the research agenda can also provide a more targeted roadmap for future research in digital and interactive media. This study utilizes bibliometric and network visualization methodologies to provide a quantitative assessment of the progress made in this domain of knowledge.



Research Objective

1. To examine existing theoretical frameworks and conceptualizations pertaining to digital marketing strategies in the retail sector.
2. To analyze the organization of research in this field and evaluate the current connections between different research studies.
3. To offer recommendations to future researchers regarding potential areas of investigation in this domain.

Scope of the Research

This report intends to answer the following research issues using a bibliometric study and network visualization analysis:

RQ1. In terms of the publication of research papers/articles and citations, what are the main trends in the research conducted in the field of digital marketing?

RQ2. Who are the leading writers, nations, publications, and organizations contributing to the creation of knowledge in this field?

RQ3: What are the underlying links between the most popular author keywords that can lead academics to uncharted study territory?

RQ4: How do the nations that are funding this field of study collaborate with one another?

RQ5. What are the research gaps that can lead to future directions for study in the area of digital marketing?

To do this, the Scopus database's 1,711 research papers and articles in the field of digital marketing were analyzed bibliometrically for this research study. Utilizing bibliometric tools like biblioshiny and VOSviewer, the exercise in bibliometrics and network visualization was completed. The data shows that although still in its infancy, research in the field of digital marketing holds promise for future scholars because shops all over the world are quickly adopting it as a way to improve consumer experiences.

The remainder of this research is organized as follows. The literature review on digital marketing and bibliometric analysis is described in Section 2 in depth. In Section 3, the study's methodology is described. The outcomes of the bibliometric and network visualization analyses are summarized in Section 4. The study's main conclusions are outlined in Section 5, and its consequences are summarized in Section 6. While Section 7 outlines the scope for upcoming research in this field and defines the study's limits.



Conceptual Framework

The primary areas of interest, evolution, rising research trends, and core research collaborating groups should be known to Digital Marketing (DM) research scholars given the DM research domain's quick advancement. Internationally renowned companies that promote branded goods are among of the primary participants in DM. The citation network, co-citation network, and co-author network analysis are used in this study to investigate research and the key researchers by looking at the bibliographic information of related research papers from a wide-ranging and inclusive perspective (Krishen et al., 2021, pp.185-189). The twentieth century's efforts to globalize brought in fierce competition in the marketing sector, raising the standard of goods and services. The marketing industry needed both international distribution and cross-border promotion to advertise products and services. By selling AT&T a banner ad that was then shown on the magazine's website in 1994, the web magazine Hot-wired helped popularize the idea of online advertising. Internet usage has become more popular. Reviews of the literature on digital marketing are now widely available. For example, (Liadeli, Sotgiu & Verlegh, 2023, pp.410-419) carried out thorough assessments of the social media literature in marketing. There are also reviews exclusively related to eWOM (Tyrvaïnen et al., 2020, pp.110-120; Chung, Ko, Joung & Kim, 2020, pp.589-591; Frassetto & Miquel, 2017, pp.860-8769), affiliate marketing (Manohar, Mittal & Tandon, 2020, pp.959-965; Dwivedi et al., 2021, pp.61-69), Pay-per-click (Tyrvaïnen et al., 2020, pp.110-120; Chung et al., 2020, pp.589-591; Frassetto & Miquel, 2017, pp.860-8769; Dwivedi et al., 2021, pp.61-69) and the impact of social media. The distinction between traditional and digital marketing. Journals published between 1987 and 2000 are divided into five areas in Ngai's 2003 study: the Internet Marketing (IM) environment, IM functionality, distinctive IM applications, and IM research (see Figure 1).

In order to extensively identify pertinent research concerns, the current publication offers a distinctive overview of the variety of DM research articles from a multidisciplinary perspective. Our assessment adds to the findings by taking a look at content development, different types of advertising, and social media marketing in addition to seeing digital marketing from a strategic perspective. By examining the bibliometric information of research articles written on DM, this bibliometric analysis is expanded to uncover significant research collaborations, their development, and related research subjects. The human processing of the literature review might be time-consuming; hence this work uses computer methods to analyze the bibliometric data of publications related to DM research. The citation, cogitation, and co-author networks are constructed using the bibliometric data from the study literature.



Literature Review

Digital marketing (DM)

Because of the proliferation of options were a considerable increase in the use of online social forums in digital media. As a low-cost technique for increasing the reach of digital marketing, social networks enabled the birth of the social media marketing (SMM) paradigm and related marketing analytics. SMM is an integrated process that can reach a significantly larger consumer base than traditional forms of marketing when utilized to advertise products and services on social media platforms (Dwivedi et al., 2021, pp.65-70) studies conducted as early as the first decade of the twentieth century foresaw the potential of digital marketing, destination marketing, and opinion mining to address customer happiness and retention. As a result, both academic researchers and marketing experts working in the field of digital marketing will benefit from the conceptualization of major study areas and the development of research concepts. Therefore, conducting literature review can assist in determining the key topics of interest in digital marketing. The twentieth century's efforts to globalize brought in fierce competition in the marketing sector, raising the standard of goods and services. The marketing industry needed both international distribution and cross-border promotion to advertise products and services. By selling AT&T a banner ad that was then shown on the magazine's website since 1994 as shown in (Mahadevan & Joshi, 2021, pp.15-20), the web magazine Hot-wired helped popularize the idea of online advertising. Internet usage has become more popular.

Reviews of the literature on digital marketing are now widely available and have out thorough assessments of the social media literature in marketing. There are also reviews exclusively related to eWOM (Tyrvaenen et al., 2020, pp.110-120; Chung et al., 2020, pp.589-591; Frasquet & Miquel, 2017, pp.860-8769), affiliate marketing (Manohar, Mittal & Tandon, 2020, pp.959-965; Dwivedi et al., 2021, pp.61-69), Pay-per-click (Tyrvaenen et al., 2020, pp.110-120; Chung et al., 2020, pp.589-591; Frasquet & Miquel, 2017, pp.860-8769; Dwivedi et al., 2021, pp.61-69; Mahadevan & Joshi, 2021, pp.12-20), Pay-per-click (Tyrvaenen et al., 2020, pp.110-120; Chung et al., 2020, pp.589-591; Frasquet & Miquel, 2017, pp.860-8769; Dwivedi et al., 2021, pp.61-69) and the impact of social media. Journals published between 1987 and 2022 are divided into five areas in Ngai's 2003 study: the Internet Marketing (IM) environment, IM functionality, distinctive IM applications, IM research, and other.

Bibliometric analysis

Utilization of quantitative analytical instruments to evaluate, analyze, and elucidate many elements of a corpus of research literature in any area is known as bibliometric analysis. It recognizes the contribution to academic literature in that field by evaluating the growth of research in that field, the role of key individuals in promoting research through a significant number and quality of publications, the affiliation of institutions with a significant presence in research in that area, and the overall direction of research in that field (Hall, 2011, pp.18-20).



There are 2 main types of bibliometric research: study description and study evaluation. Descriptive studies involve analyzing a specific field of research literature by examining various factors such as contributing authors, organizations, and journals. On the other hand, evaluative studies focus on assessing through citation and co-citation analysis, the corpus of literature (Saha, Mani & Goyal, 2020, pp.985-990). Bibliometric studies have the capacity to delineate the fundamental framework, principal subject domains, and thematic elements within a corpus of scholarly works. Additionally, these analyses can discern prevailing patterns and provide informed projections regarding potential future research trajectories (Kumar, Kamble & Roy, 2019, pp.766-778). Bibliometric investigations have become a crucial element of information research, as evidenced by their evolution through time. Bibliometric studies serve multiple functions, such as assessing communication patterns, identifying specialized areas, analyzing trends in research interest pertaining to a certain subject, and recognizing influential contributors across various levels, including authors, journals, and organizations. Furthermore, bibliometric studies have been exhaustively employed to assess scientific advancement and detect paradigm shifts in research undertaken within a particular field. Citation analysis is an indispensable tool employed in bibliometric research. Citations are frequently employed in academic writing to establish a connection between the research being discussed and the research being cited (Pilkington & Meredith, 2009, pp.188–190; Punjani, Kumar & Kadam, 2019, pp.2470–2475). The utilization of citation analysis can serve as a means to assess the present relevance and applicability of a given research publication (Mishra et al., 2018, pp.935–940). According to Marshakova (1981, pp.15–20), the citation analysis has demonstrated its utility in aiding information retrieval, facilitating the construction of intellectual connections, and facilitating the discovery and delineation of research borders within various disciplines.

The goal of literature reviews using bibliometric analysis is to examine the body of research that has already been done in a certain area, hence these studies must adhere to a defined approach. The systematic methodology for conducting literature reviews was used in this study, and it serves as the foundation for a five-step technique. a plethora of bibliometric studies (Fahimnia, Sarkis & Davarzani, 2015, pp.105-110; Hossain et al., 2020, pp.5-19). It offers a methodical way to look through the many resources, organize the literature review with mind maps, map the research topic's structure, and then compile the bibliography.

Methodology

The goal of literature reviews using bibliometric analysis is to examine the body of research that has already been done in a certain area, hence these studies must adhere to a defined approach. The process for the search and analysis exercise as shown in Figure 1. The systematic methodology for conducting literature reviews was used in this study, and it serves as the foundation for a five-step technique. a plethora of bibliometric studies (Fahimnia, Sarkis & Davarzani, 2015, pp.105-110; Hossain et al., 2020, pp.15-19). Adopting a structured methodology for the bibliometric analysis would guarantee comprehensive coverage of all relevant research papers, as well as an effort to offer insights into existing study areas and lay

out guidelines for future research in the area. Digital marketing encompasses a vast array of practices and specific areas; this methodology allows for more thorough analysis and the identification of targeted research gaps. This strategy needs marketing for businesses and consumers, including ensuring the review captures research relevant to both types of marketing. Moreover, emerging technology in digital marketing is constantly evolving with new technologies. This methodology shows trends and prominent marketing strategies might vary across different regions and identifies current trends and emerging research gaps. The measuring will succeed, address crucial aspects of digital marketing, and ensure the research agenda considers the effectiveness and data-driven field.

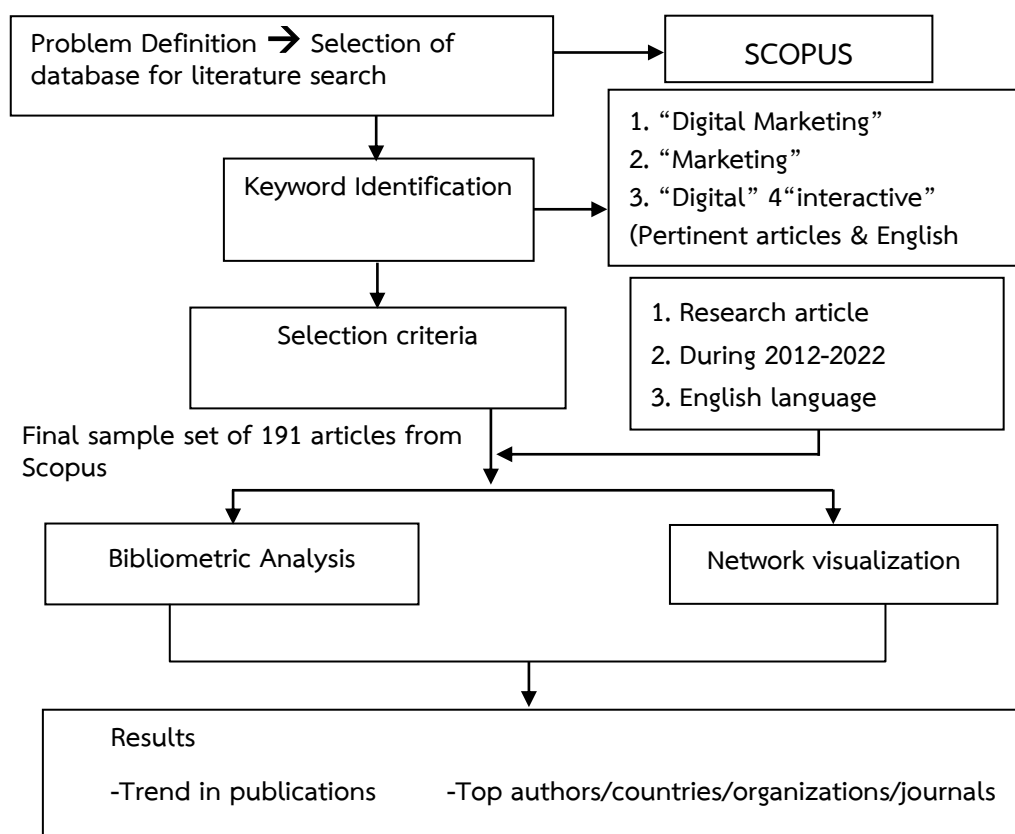


Figure 1 Conceptual Framework

Step 1: Choosing a suitable database. A crucial first stage in the bibliometric analysis is choosing. A database that will be used to seek for research literature. The Scopus database was utilized to conduct a search for research articles in the areas of brand and digital marketing for the benefit of this study. The Scopus database has the most abstracts and Citations of peer-reviewed literature in social science disciplines, humanities, and science and technology. Over 20,000 peer-reviewed journals, including leading academic publishers, are included by Scopus. Researchers frequently use Scopus because it allows export data to other bibliometric and visualization tools.



Step 2: The process is choosing the search exercise's keywords including the relevant keywords in the search string was of utmost importance to provide a thorough and integrated search that encompasses all research publications in the field of digital marketing. "Digital marketing," "marketing," "interactive," and "interactive marketing" were among the search terms utilized. The "OR" option in the pursuit engine of the Scopus archives was used to combine the group of terms.

Step 3: Findings from the initial search. The timeframe 2012-2023 was chosen for the investigation since research articles in this topic started appearing in the Scopus database in 2012 and later. The Scopus database returned 217 articles in total as a result of the original search.

Step 4: Applying criteria to research article inclusion and exclusion with a number of filters was used on the initial search results to ensure that only pertinent articles would be chosen for examination. The filters that were used were: (1) academic journal articles exclusively; and (2) English as the language.

Lastly, following filter's application, 1,711 articles indexed by Scopus satisfied the criteria for the above-mentioned search. The final dataset for the bibliometric and network visualization analysis included 191 articles in total (144 from Scopus).

Finding the right tools for Analysis of bibliometric and network visualization is Step 5. The choice of the tool to be utilized during a bibliometric study is an important one. There are numerous bibliometric software packages available, each with unique features and restrictions. Including the relevant keywords in the search string was of utmost importance in order to provide a thorough and integrated search that encompasses all research publications in the field of digital marketing. The R language is used to program bibliometrix, which enables efficient bibliometric analysis. Because it is adaptable, bibliometrix makes it simple to integrate it with other statistical tools. Additionally, bibliometrix enables analysis to be done on biblioshiny, an application with an accessible online interface for non-coders. For the bibliometric study, biblioshiny received the data in BibTex format that was retrieved from the Scopus database. A network analysis of research publications in the area of digital marketing is constructed and visualized using VOS viewer (Van Eck & Waltman, 2010, pp.525-530) is a visualization application. Based on keyword co-occurrences of the most cited author keywords, co-authorship ties between countries actively engaged in this field of study, and citation linkages between journals that produce research literature in the field of digital marketing, we identify the following countries as the most prolific producers of digital marketing research literature, network visualization analysis was conducted. The upcoming section contains the findings of the bibliometric and network visualization analyses. The authors sought to offer a unified image of the 195 research articles from both databases were extracted individually from the Scopus database. Since data are downloaded in different formats, certain data analysis parameters cannot be combined; consequently, the results for each database are presented separately for these parameters.



Results

Initial data statistics

The sample set for the bibliometric data analysis was the final set of 1,711 articles, the data is from the Scopus database. Over the years 2012–2023, 74 journals were published. The Scopus database contains a total of 191 articles that is only 352 writers had research published in the Scopus database, reflecting the fact that the topic of digital marketing only attracted researchers' attention in this decade. There were 2.44 authors per article on average, the number of citations per document was 21.6 on average, which may reflect the fact that this area of study hasn't seen much major progress. The significant growth rates for digital and interactive marketing market around 11-13.6% (CAGR) during the forecast period from 2024 to 2033. (Market.US, 2024). This indicates that authors collaborate to produce research publications in this field. This is further corroborated by the fact that in both datasets, there are more authors who collaborated on research publications in this field than authors who wrote research articles independently.

Annual scientific production

The annual scientific production of research articles on digital marketing. This subject of study has only been studied in the previous ten years, with only a few publications between 2013 and 2017. Over the last few years, the number of articles has constantly increased. Due to the extraordinarily low starting point of one article in 2013, the compounded annual growth rate of research papers in this subject between 2013 and 2020 was nearly 64%, as presented in Hall (2011, pp.20–25; Hossain et al., 2020, pp.15–19); however, a more realistic growth rate of 29% was found between 2016 and 2020. This demonstrates a growing interest in this field.

The citation analysis, the goal of a citation analysis is to look at the relationships between the research articles utilized for the analysis from the sample set. There were no citations in 2013. A total of 3,578 citations were made from 2014 to 2020 (Hossain et al., 2020, p. 15–19). Figure 2 shows the citation summary for the years 2014 to 2020. The 195 research publications have had an increase in citations over the past few years, which shows that academics and researchers are becoming more interested in the subject of digital marketing.

Journal performances

In this research, we analyzed 91 articles from the sample group totaled. There are 74 journals in Scopus' database. The top 5 journals that contribute to the body of research on digital marketing are shown in Table 1. Around 45% of the research literature is contained in the top 5 journals, which shows a considerable concentration of study in these journals. International Journal of Retail and Distribution Management is the journal with the most articles (25 articles) among all the journals. which accounts for almost 13% of all the articles in the sample set.



Table 1 The top 5 research articles in terms of citations received.

Paper	DOI	Total Citations	TC per Year	Normalized TC
Chassiakos Yr, 2016, Pediatrics	10.1542/peds.2016-2593	494	61.75	7.97
Chung M, 2020, J Bus Res	10.1016/j.jbusres.2018.10.004	248	62.00	10.65
Robinson Tn, 2017, Pediatrics	10.1542/peds.2016-1758K	244	34.86	8.00
Dwivedi Yk, 2022, Int J Inf Manage	10.1016/j.ijinfomgt.2022.102542	107	53.50	17.08
Chen Y-Rr, 2017, Public Relat Rev	10.1016/j.pubrev.2017.07.005	71	10.14	2.33
Total		1164	222.25	46.03

Additionally, Figure 2 shows the top 5 authors influenced by cited references (year spectroscopy) who contributed to the study of digital marketing. Hubner is the most prolific contributor, having written five studies in the field of digital marketing. Based on citations, the best 5 research publications include two studies by this author: "Distribution systems in omni-channel retailing" and "Last mile fulfillment and distribution in omni-channel groceryretailing: A strategic planning framework."

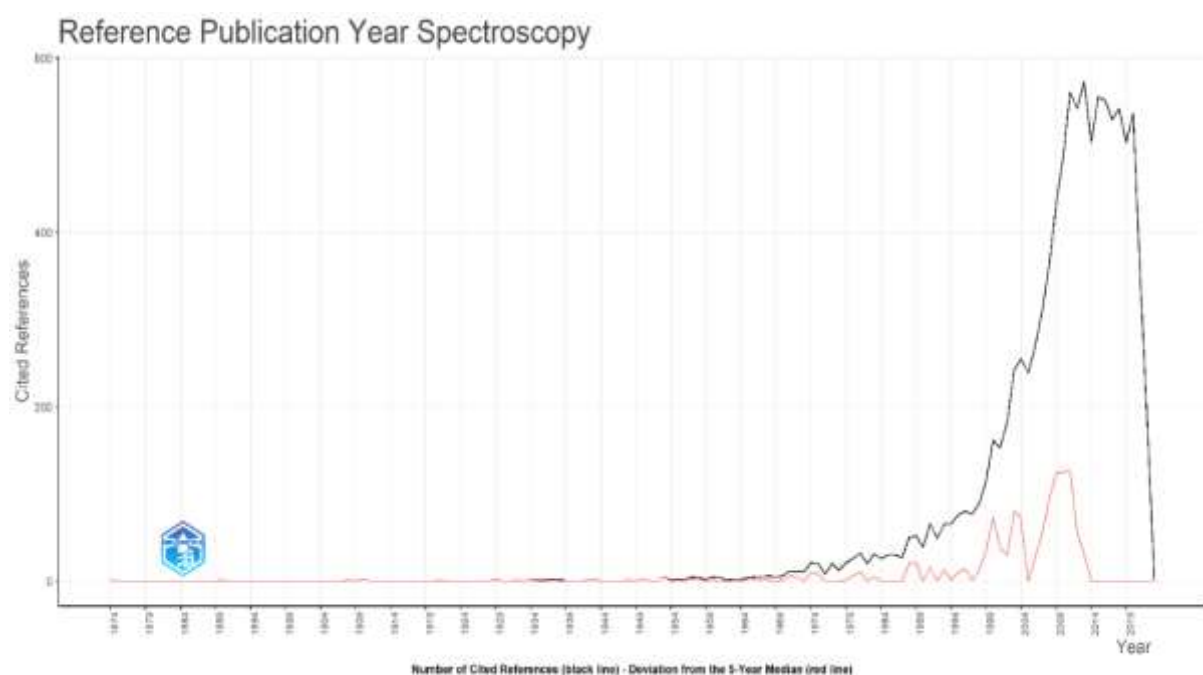


Figure 2 Cited references (using biblioshiny)

Statistics on country and affiliation

For the time under consideration, Figure 3 shows the scientific production of research publications by country for the leading ten nations in digital marketing. The top ten countries account for approximately 72 percent of the research articles in this field. It should be noted that the countries of all contributing authors are attributed to research articles with multiple authors. The USA leads research in the field of digital marketing, followed by China, which contributed 86 and 62 scholarly publications, respectively. Research in this area has also benefited from the contributions of other nations including Germany and the UK. In the upcoming years, it is anticipated that more people will contribute to the academic literature. Given the anticipated growth of the global retail industry, both offline and online, this sector is expected to expand.

Country Collaboration Map

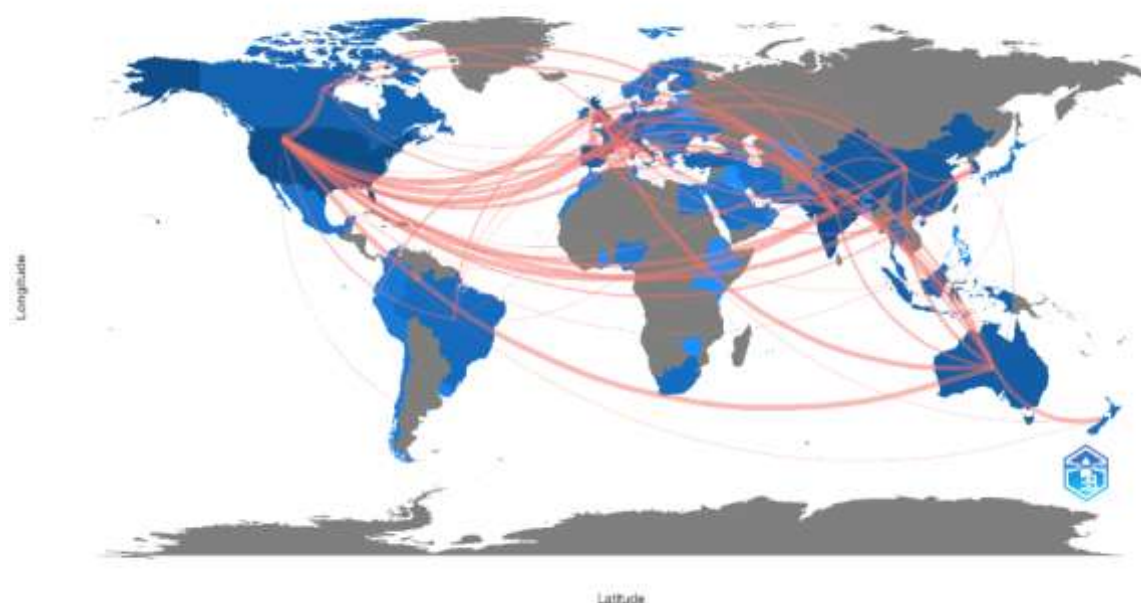


Figure 3 The production of research publications.

The contributions from various organizations on this topic are still in their infancy and are not abundant because the field of digital marketing has only recently attracted scholarly interest. With nine research articles, University of Pennsylvania came in first place on the list of organizations that have contributed, followed by Izmir Ekonomi University with seven. The leading 10 contributor's organizations in this research domain include three American organizations, two Chinese organizations, and one German organization. The most commonly occurring words in the titles of the research articles were determined using bibliometric evaluation program biblioshiny. The same software was also used to identify the most popular author keywords. We used ten words that appear most frequently in the titles of the scholarly articles included in the dataset such as marketing, social media, commerce, and so forth.

In the names of research articles in this area, the terms "marketing," "commerce," "social media," and "social network" are most frequently employed. The 20 most often used author keywords are represented as a word tree map as shown in Figure 4, which includes all of them. Retail and e-commerce are the most utilized keywords for the author, followed by social media marketing and digital marketing. The accompanying tree map makes it clear how digital marketing and the retail industry are related. Examining digital marketing considering channel integration, retail logistics, as well as general retail operations looks to be another area of interest to academics and researchers. These author-specific keywords are less frequently used, which may be because these conceptual linkages are still developing in this field of study. Customer happiness, customer worth and customer fidelity are other keywords with a lesser frequency, demonstrating that authors are linking the availability of digital marketing options in the marketing sector to customer-related results. These could also be viewed as possibilities directions for further study in this area.

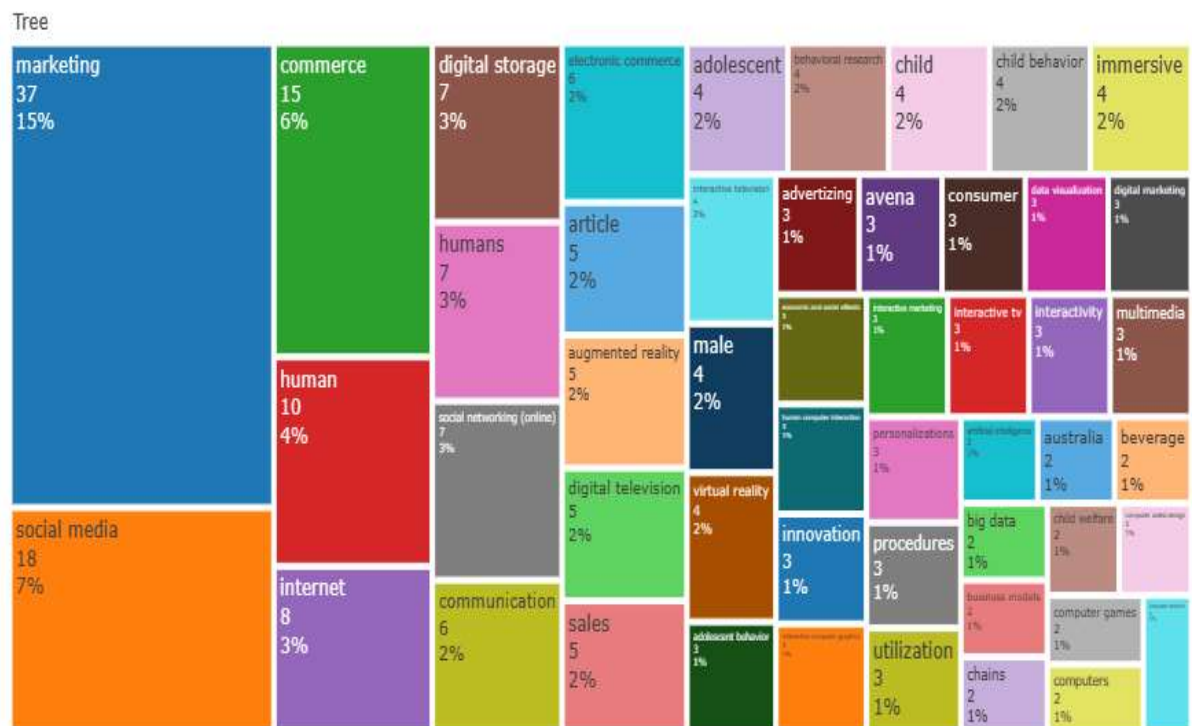


Figure 4 Tree Map of author keywords.

Bibliometric network visualization using VOS viewer

The biblioshiny instrument was used to determine which author keywords are most used in this research domain. These keywords aid in identifying the themes and topics that are currently popular in the respective field of study. Next in frequency of use is "cloud simulation" with 14 occurrences. This word tree map reveals some of the most important research aspects in the domain of AR/VR in apparel, including virtual try-on, body scanning, virtual fit, motion capture, garment design, and sensory evaluation. These 20 keywords are



also associated with various technologies used in the apparel industry as part of AR/VR, and thus include terms such as cad, computer animation, and avatars. This section concentrates on extending the bibliometric results to network visualization and graphical analysis. This was accomplished with the assistance of the VOS viewer software, which employs a clustering and network layout procedure to graphically represent the various networks and relationships present in any literature dataset. The graphical analysis of these network visualization diagrams aids in identifying the most significant trends and insights in the research literature, which can provide opportunities for future research collaboration.

The primary goal of analyzing keyword co-occurrence using network visualization is to examine the overall knowledge structure of a specific study area by assessing the linkages between the terms used by researchers in that field. A network graph was generated with the VOS viewer software to perform a graphical analysis of term co-occurrence. In this graph, only keywords that appeared at least twice were evaluated. This criterion was met by a total of 81 keywords. These keywords were screened for duplication, and 73 were left, with just 59 of them being related. Figure 5 depicts the keyword co-occurrences map. The keyword "virtual reality" has the most co-occurrences and strong links with the other keywords, as indicated by the larger circle size and comparatively higher text size. Similarly, "augmented reality," "cloth simulation," and "virtual try-on" are a few other terms that have better correlations than the other keywords. Furthermore, virtual reality is associated with a number of keywords, including apparel, clothes, computer-aided design, interactivity, fabric animation, body scanning, and deep learning. Similarly, augmented reality is associated with a number of phrases, such as virtual fitting room, fashion, virtual try-on, and human model, to mention a few. Thus, the significance of AR/VR in the garment business may be observed. In Figure 6 depicts the partnerships among writers, also known as co-authorship, amongst different countries. Initially, the criterion of at most 25 countries per research article was used to filter the articles from the complete data set of 239 for creating this network map. Furthermore, a minimum of two articles per country was set. In the domain of AR/VR in clothes, there was significant collaboration among the selected countries. This network map revealed various groups with distinct colors, including the United States and Japan, China and Hong Kong, Switzerland and Saudi Arabia, and Germany, South Korea, and Norway. Although collaboration linkages were discovered to be greater inside clusters, it was noticed that scholars from various clusters collaborate to publish research publications in this field.

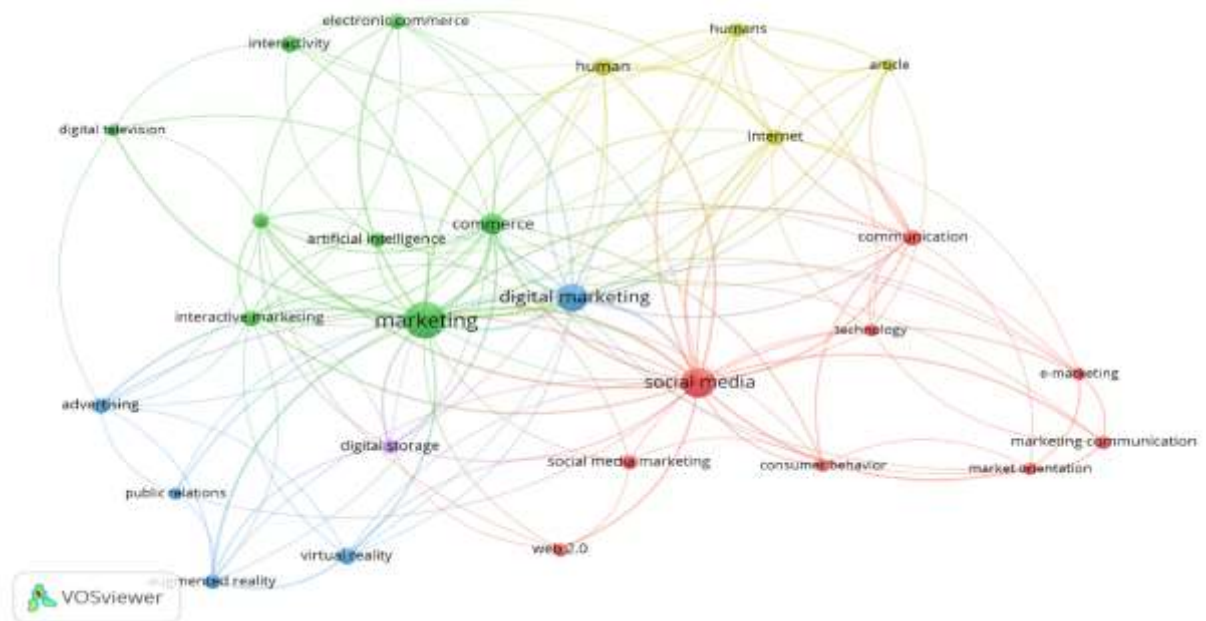


Figure 5 Keyword Co-occurrence Network.

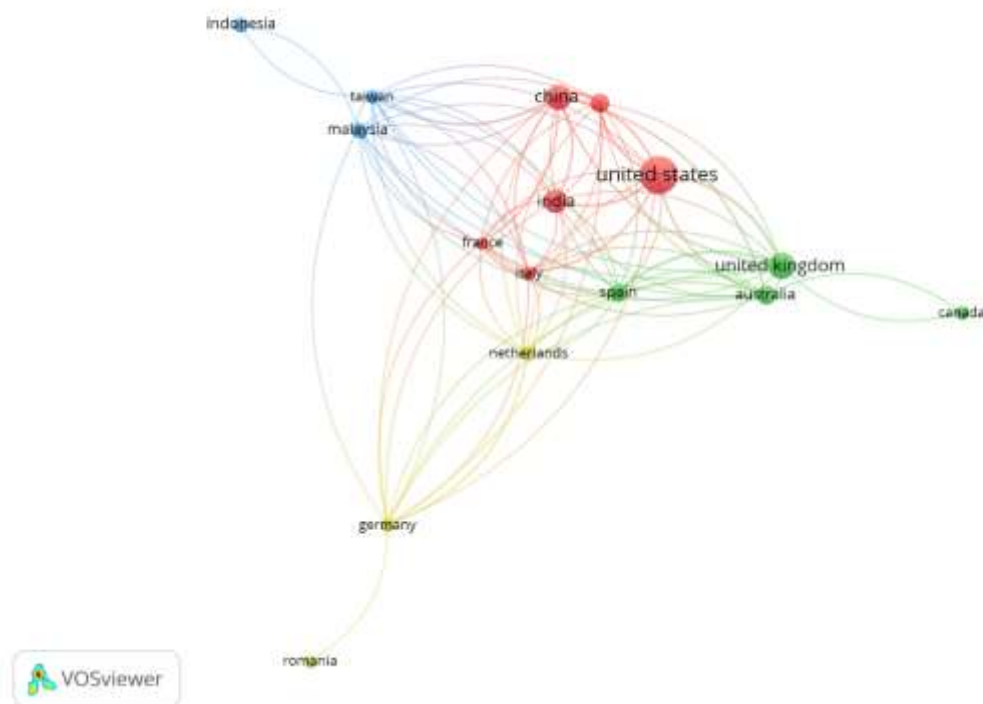


Figure 6 Network Map of Authorship Collaboration between Countries.



The analysis of keyword co-occurrences may also aid researchers in identifying research gaps or prospective directions for future research. The interaction between digital marketing and topics like customer value, the impact on customer loyalty, digital marketing, and product returns, as well as the issues associated with retail logistics and supply chain integration, provides opportunities for future scholars, as is shown from the network visualization map above. Co-authorship relationships between nations shed light on writers from diverse nations who work together to develop research literature in a certain field of study. Using VOS viewer software, the co-authorship relationships between the nations that contribute to digital marketing research were analyzed. This analysis only considered research articles that included a maximum of 25 countries per publication. Additionally, only nations that had at least three publications on digital marketing were considered. The Scopus network visualization map for co-authorship between countries.

Conclusion

A bibliometric analysis aims to provide a quantitative evaluation of the research conducted in a particular field of study over time. The research aims to give readers a quick overview of the most significant developments in the field of digital marketing research since the idea gained popularity. Moreover, we used bibliometric and network visualization approaches to examine global trends in digital and interactive marketing research. Only in the last decade has research into digital marketing began. But over the past three years, a lot more research publications have been produced in this area, and many more writers have worked together to produce multi-authored research papers on the topic. This suggests that these journals have a significant concentration of research papers. Nearly three quarters of the research articles in the sample set are from the top 10 countries. A study of the top author keywords reveals that digital marketing has ramifications. for areas such as marketing, social media, commerce, human, internet, digital storage, humans, social networking (online), communication, and electronic commerce. These connections should provide a lot of room for further study in this field. Furthermore, the rapid rise of AI/AR tools is driving the emergence of a multitude of interactive marketing schemes and tools. As these tools are developed more research must be done to identify growth potential markets, potential of market penetration /saturation strategies, evaluation of marketing tools/strategies, and continued analysis of consumer preferences/behaviors.

Discussion

We expanded our scope to include interactive marketing, which has become recently become a popular topic of research as well. It offers sight into how the idea of digital marketing was conceptualized as well as the most important perspective-based lenses used by scholars to analyze this phenomenon. It also revealed interactive marketing as a rapidly emerging field



of research that is poised to continue growing alongside the prevalence of VR/AR hardware and software development. The integration of these technologies has the potential of changing the entire consumer marketing landscape in the future. Moreover, researchers might use the study's information into the ties between authors from different nations to help them collaborate on academic projects. By offering a fundamental framework for their research on digital marketing, this study can also act as a jumping-off point for future scholars in this subject.

Even though research in this area only started at the beginning of this decade, academics and business professionals are both interested in this method of retailing, according to the bibliometric analysis of digital marketing. Academics and retailers can both benefit from this study's understanding of the general subfields of research in this topic, as well as its trends and significant contributors in terms of authors, journals, and organizations. Retailers could discover the most important problems with digital marketing by carefully examining these research studies. Additionally, retailers would need to make it very apparent which technologies they planned to invest in and how they planned for consumer use of the new technology. According to studies, this acceptance precedes the intention to make a purchase. One of today's top customer needs is easy access to product information. Retailers would need to offer customers various access points so that they could browse social media, mobile apps, and websites with ease. Improving the information-seeking experience of the consumer, in-store digital touchpoints may enable customers accustomed to gain access to online product evaluations and reviews in physical stores. Lastly, continued investment and innovation in the VR/AR field, is driving more and more interactive marketing experiences. Early adopters and curators of interactive marketing experiences could benefit greatly over time as the price of consumers facing VR/AR diminishes over time. There is strong evidence that interactive marketing will be highly significant in the future of commerce.

Recommendations

The scope of our research is constrained and limited. There are many more correlations that can be examined from the extensive dataset that was utilized in our research. The relationship between international co-authorship by country to identify collaborations that are notable anomalies such as research impact, efficiency of research, speed of research, and commercialization rate of research. The extensive correlation analysis should be completed to continue to track new developments in the marketing space. Additionally, different keyword combinations can be examined for effectiveness, conversion rate, consumer interest, and many other metrics. Lastly, research relating to interactive marketing remains negligible at this time. However, interactive marketing is likely to become foundational to the future consumer experience. Therefore, any research relating to interactive marketing with a particular focus on VR/AR technology integration effectiveness, its integration into consumer culture, and consumer behavior/preferences in this emerging field will contribute greatly to the growing body of knowledge relating to interactive marketing.



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