Trends in Digital Marketing Research: Bibliometric Analysis

Nestor Shpak[1], Rafał Rębilas[2], Ihor Kulyniak[1], Roman Shulyar[1] and Natalia Horbal[1]

[1]*Lviv Polytechnic National University, Stepan Bandera str, 12, Lviv, 79013, Ukraine*
[2]*WSB University, Cieplaka str, 1c, Dąbrowa Górnicza, 41-300, Poland*

Abstract

For a more detailed study of publication activity in the field of digital marketing, a bibliometric analysis was conducted, the main purpose of which was to study bibliographic material and identify trends and priority areas for studying digital marketing. Using the Google Trends tool, a comparative analysis of search queries was carried out, which showed an increase in public interest in the concept of "digital marketing". Scopus tools were used to identify the dynamics of the number of indexed publications, research of belonging to the country, Journal, industry structure of publication activity on the topic under study, highlighting the contribution of individual scientists in the field of digital marketing research by the number of citations and published works. The search for the most relevant publications was carried out by the key concept of "digital marketing" in titles and keywords in the scientometric database Scopus for the period 2000-2023. VOSviewer software is used for building network maps of keyword compatibility, collaboration of authors by country, and time measurement of research. Based on the results of the study, conclusions are drawn about the growing dynamics of the number of publications in the field of digital marketing; three stages of scientific interest in digital marketing research are identified; the multidisciplinary nature of the concept under study is confirmed; 8 clusters that characterize the main areas of research in the field of digital marketing are identified; the leading countries and the most cited authors are identified by their affiliation to a particular country; it is established that the intensive development of scientific research on digital marketing in the countries of the world took place in the period 2018-2021.

Keywords

Bibliometric analysis, digital marketing, internet marketing, scientometric database Scopus, publication activity, scientific publication, Google Trends, VOSviewer, keywords, citation, clustering.

1. Introduction

Digital technologies are used more and more in business and marketing. The internet, social media and mobile devices have changed the way people search for, buy from and interact with brands. Digital marketing technologies are used in various fields: e-commerce, tourism and hotel business, medical field, financial services field, education and science field, etc.

Digital marketing is extremely important in today's world for several reasons [1; 2; 3]:

- digital marketing is quite effective in comparison with traditional marketing. It allows you to attract customers at more affordable prices and with a detailed analysis of campaign performance;
- digital marketing allows you to quickly respond to changes and provide up-to-date information about products and services. This allows businesses to be more flexible and efficient in responding to market trends;

COLINS-2023: 7th International Conference on Computational Linguistics and Intelligent Systems, April 20–21, 2023, Kharkiv, Ukraine
EMAIL: nestor.o.shpak@lpnu.ua (N. Shpak); rrebilas@wsb.edu.pl (R. Rębilas); ihor.y.kulyniak@lpnu.ua (I. Kulyniak); roman.v.shuliar@lpnu.ua (R. Shulyar); natalia.i.horbal@lpnu.ua (N. Horbal)
ORCID: 0000-0003-0620-2458 (N. Shpak); 0000-0001-7926-1155 (R. Rębilas); 0000-0002-8135-4614 (I. Kulyniak); 0000-0001-8065-7579 (R. Shulyar); 0000-0003-1448-5603 (N. Horbal)

- thanks to the Internet and social media, digital marketing allows businesses to reach a wider audience and increase sales;
- digital marketing allows for a detailed analysis of the effectiveness of advertising campaigns. Businesses can measure traffic, conversions and other metrics to select the most effective marketing channels;
- digital marketing allows businesses to interact with their audience in real time and through various communication channels. This creates an opportunity for feedback that allows businesses to better understand their audience.

Research in the field of digital marketing took shape after the Internet became available to the general public in the 1990s. In the 2000s, with the advent of Google and social media, digital marketing became even more popular and became an important part of many companies' business strategies [4]. Since that time, digital marketing research is constantly developing and being conducted by researchers in various scientific fields. The growth of publication activity has made it possible to accumulate a significant database for searching and identifying interrelated promising areas of future research.

The urgency of further research into the state and trends of digital marketing interest can help businesses understand how to effectively use digital technologies to attract customers and increase profits. It can help answer questions about which marketing channels are most effective, how to optimize advertising campaigns, and how to maintain customer engagement online. In addition, digital marketing research can help develop new marketing strategies as digital technologies are constantly changing.

In particular, bibliographic analysis is necessary and helps to get acquainted with the state of research in the field of digital marketing; identify key trends, sources and authors who are most interested in a given topic; review previous research and identify unsolved issues. Bibliographic analysis allows you to expand theoretical knowledge in the field of digital marketing, revealing key concepts and ideas that are the basis for the development of this field, as well as to determine promising directions of research, which can become the basis for further development of this field.

At the same time, the understanding of the concept of “digital marketing” in scientific circles is quite fragmentary. There are many interpretations of this concept, proposed by various scientists. But in connection with the constant development of digital technologies, there is a growing need and requests to study and analyze the essence of the concept of “digital marketing”, which is dynamic, formed and changes over time. Scientific clusters conducting research in this area are also dynamically changing. The formation of the projection of the scientific landscape of digital marketing becomes an important scientific and practical task.

Taking into account the active growth of public and scientific interest in digital marketing, we consider it appropriate to continue researching the publication activity of scientists in this field using the bibliometric method.

The purpose of the research is to outline the trends and priority directions of studying digital marketing, to identify a network of collaboration between authors based on their belonging to a certain country, who are engaged in research in this field. To achieve the goal, the research is aimed at solving such tasks:

1. Identify trends in the publication of articles devoted to digital marketing.
2. To determine the industry structure of the number of indexed publications in Scopus devoted to digital marketing.
3. Identify the most cited publications and magazines that contain articles on digital marketing.
4. Identify the authors with the highest publication activity in the field of digital marketing and analyze the state of collaboration between authors according to their affiliation to a certain country.
5. Identify the main thematic directions of publications devoted to digital marketing.
6. Cluster scientific publications according to the main areas of research to determine further areas for analysis.

2. Related works

The term “digital marketing” was first coined in the mid-1990s when the first digital technologies and the Internet appeared. Since then, the term “digital marketing” has become widely used to describe the use of digital marketing channels to attract, retain and engage with consumers, as well as the use of digital technology and analytics to improve the effectiveness of marketing campaigns.

Digital marketing is also called “internet marketing” [5]. However, the term digital marketing has gained more popularity over time, especially after 2012. The rapid increase in the level of publishing activity convincingly testifies to the significant attention and its growth from the side of scientists to digital marketing in the world (Figure 1).

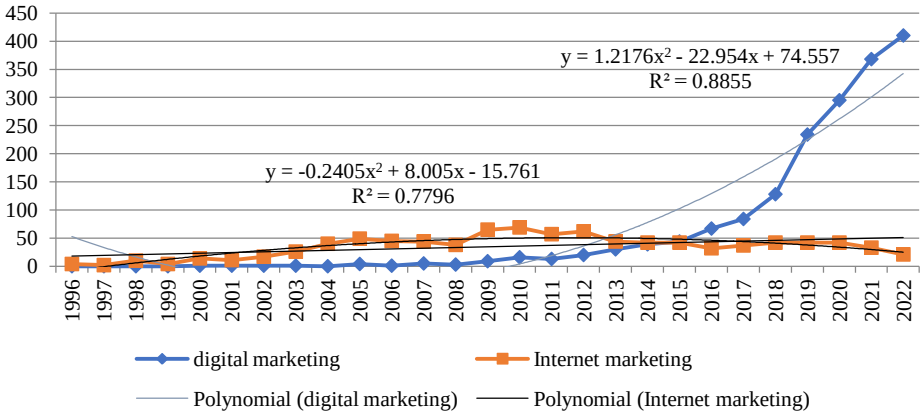

Figure 1: Dynamics of the number of publications indexed in Scopus that contain the terms “Digital marketing” and “Internet marketing” in the title and keywords

Source: compiled by the authors based on data from the Scopus database

The results of the study show that, in general, for the period 1996-2022, Scopus indexed 1,774 and 934 published documents, respectively, that contained the phrases “digital marketing” or “Internet marketing” in the title and/or keywords. The number of publications about digital marketing begins to increase at a very high rate since 2012. On the contrary, the number of Internet marketing publications starts to decrease from the same period. This is confirmed by the nature and direction of the corresponding polynomial functions of the 2nd degree, built on the basis of data on the number of publications.

A similar nature and trend can be observed in the case of a comparative analysis of Google search queries (based on the use of the Google Trends toolkit) by categories: “Digital marketing” and “Internet marketing” (Figure 2). The frequency of application of queries in search engines is determined using the Google Trends tool. This is a public application that displays, on the basis of the Google search engine, the frequency of search popularity of a certain term in relation to the total volume of search queries in different regions of the world and in different languages. This tool has a limitation in the period of data selection, and it starts from 2004.

Figure 2: Comparison of the dynamics of “Digital marketing” and “Internet marketing” searches based on Google Trends

Source: Built by the authors based on Google Trends

Comparative analysis of search queries shown in Figure 2, shows the growth of public interest in the concept of “Digital marketing” against the background of the decline in popularity of the search query “Internet marketing”.

Digital marketing is rapidly gaining popularity for several reasons [6; 7]:

- increase in the use of the Internet – in recent years, the number of Internet users has increased significantly. This creates great opportunities for advertisers to capture the attention of their target audience through various digital channels;
- widespread use of mobile devices – with the increasing use of mobile devices such as smartphones and tablets, companies have the ability to reach their customers anytime, anywhere;
- the growth of social networks – social networks have become not only a place for communication, but also an important marketing tool. They enable companies to reach, engage and interact with their target audience;
- high efficiency – digital marketing can be more effective than traditional marketing because companies can pinpoint their target audience and target advertising campaigns to them.
- a high degree of personalization – digital marketing enables a more personal approach to customers by offering personalized advertising and interaction with them;
- cost reduction – digital marketing can be more cost-effective than traditional marketing as it can reduce advertising and customer acquisition costs.

The opposite directionality of search queries can be explained by the fact that digital marketing covers not only Internet channels, but a wider range of digital marketing channels, such as social networks, mobile devices, digital television, touch screens, etc. That is, digital marketing is a broader category, one of the components of which is Internet marketing. All digital technologies and communication channels are developing rapidly, and consumers are using them more and more in their daily lives. Digital marketing can provide a wide range of opportunities to interact with consumers and increase the effectiveness of marketing campaigns compared to traditional Internet technologies [8].

Also, the interest in research in the field of digital marketing may be related to the growing role of data and analytics in marketing. Thanks to new technologies such as machine learning and artificial intelligence, it is becoming possible to obtain a significant amount of data about consumer behavior and analyze this data, which can lead to more effective marketing decisions.

Based on the amplitude of the graph, three stages of scientific interest in digital marketing research can be identified:

- stage I (1996-2012) is the stage of the emergence of theoretical and practical interest in digital marketing. This stage is due to the rapid development of technology, including the Internet, mobile devices and social media.
- stage II (2012-2015) is a stage of moderate growth. This stage is characterized by small dynamics of the number of scientific articles, monographs, theses of conferences devoted to the topic of digital marketing;
- stage III (2016-2022) is the stage of active development of scientific research. The emergence of theoretical interest in digital marketing is accompanied by an active search for information and knowledge.

The analysis shows that the branch structure of publication activity on the subject under study is quite diversified (Figure 3).

The cross-sector nature of the diagram can be explained by the multidisciplinary nature of the studied concept, since digital marketing is a tool used in business, economics, management, psychology, medicine, computer science, social and other fields. Analytical data displayed in Figure 3, show that 23.9% of all research was carried out in the field of business, management and accounting, the second in terms of the volume of scientific publications (20.1%) is the field of computer science. In third place in the sectoral structure of digital marketing research are social sciences with an indicator of 11.8%.

Regarding the contribution of individual scientists to the research of digital marketing, scientists from the United States and the United Kingdom occupy the leading positions in terms of the number of citations in the Scopus database (Table 1).

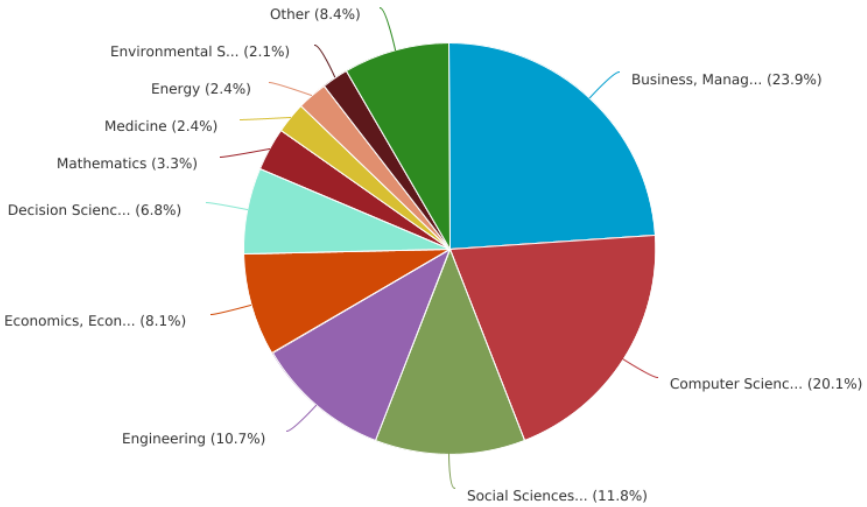

Figure 3: Industry structure of the number of publications indexed in Scopus, which contain the terms "digital marketing" in the title and keywords

Source: compiled by the authors based on data from the Scopus database

Table 1

Contribution of individual scientists in the field of digital marketing research

N	Document title	Authors	Year	Source	Countries	Cited by
1	Closing the marketing capabilities gap	Day G.S.	2011	Journal of Marketing [9]	United States	557
2	From social to sale: The effects of firm-generated content in social media on customer behavior	Kumar A., Bezawada R., Rishika R., Janakiraman R., Kannan P.K.	2016	Journal of Marketing [10]	Finland, India, United States	474
3	Digital marketing: A framework, review and research agenda	Kannan P.K., Li, Hongshuang "Alice"	2017	International Journal of Research in Marketing [11]	United States	473
4	A thematic exploration of digital, social media, and mobile marketing: Research evolution from 2000 to 2015 and an agenda for future inquiry	Lamberton C., Stephen A.T.	2016	Journal of Marketing [12]	United Kingdom	469
5	Elements of strategic social media marketing: A holistic framework	Felix R., Rauschnabel P.A., Hinsch C.	2017	Journal of Business Research [13]	United States	385
6	Setting the future of digital and social media marketing research: Perspectives and research propositions	Dwivedi Y.K., Ismagilova E., Hughes D.L. et al.	2021	International Journal of Information Management [14]	United Kingdom and others	365
7	The future of social media in marketing	Appel G., Grewal L., Hadi R., Stephen A.T.	2020	Journal of the Academy of Marketing Science [15]	United States, United Kingdom	353

N	Document title	Authors	Year	Source	Countries	Cited by
8	Social commerce: A contingency framework for assessing marketing potential	Yadav M.S., de Valck K., Hennig-Thurau T., Hoffman D.L., Spann M.	2013	Journal of Interactive Marketing [16]	United States, France, Germany, United Kingdom	294
9	Digital marketing and social media: Why bother?	Tiago M.T.P.M.B., Veríssimo J.M.C.	2014	Business Horizons [17]	Portugal	267
10	Marketing in computer-mediated environments: Research synthesis and new directions	Yadav M.S., Pavlou P.A.	2014	Journal of Marketing [18]	United States	251

So, the publication "Closing the marketing capabilities gap" by Day G.S. is the most cited (557 citations) [9]. In this study, the author proposes to use three adaptive capabilities to close the marketing capability gap: (1) close market study, (2) adaptive market experimentation, and (3) open marketing. In second place is the publication "From social to sale: The effects of firm-generated content in social media on customer behaviour" [10]. In this study, the authors study the impact of firm-generated content (FGC) in social media on three key customer metrics: spending, cross-buying, and customer profitability. The authors investigate the synergistic effects of FGC with television advertising and e-mail communication. In third place is the publication "Digital marketing: A framework, review and research agenda" [11], which was cited 473 times. The article develops and describes a framework for digital marketing research; developments and existing research are organized around the elements and touchpoints that make up the framework; issues are outlined and an agenda for future digital marketing research is identified to address the issues from the firm's perspective. In addition, it is worth noting that four of the most cited works were published in the Journal of Marketing.

The authors who have the largest number of publications are listed in Table 2.

Table 2

Top 10 authors by the number of publications in the field of digital marketing research

N	Authors	Country	Number of published works	h-index of the author in the Scopus database
1	Sakas, D.P.	Greece	13	13
2	Saura, J.R.	Spain	10	24
3	Ahuja, V.	India	8	11
4	Dwivedi, Y.K.	United Kingdom	7	85
5	Halkiopoulos, C.	Greece	7	5
6	Karjaluoto, H.	Finland	7	36
7	Chaffey, D.	United Kingdom	6	3
8	Constantinides, E.	Netherlands	6	16
9	Cunha, C.R.	Portugal	6	6
10	Dominique-Ferreira, S.	Portugal	5	6

Among the researches of individual scientists, the following trends in the study of digital marketing can be distinguished: the study of new technologies (social networks, mobile applications, touch screens) and their impact on consumer behavior and decision-making regarding the purchase of goods; research of communication of producers and traders with consumers using digital

technologies; research on technical, resource and financial support for the implementation of digital marketing at enterprises and organizations, etc.

Taking into account the active growth of public and scientific interest in digital marketing, we consider it appropriate to continue the research of publishing activity in this field using the bibliographic method.

The purpose of the study is to outline the trends and priority areas of digital marketing studies, to single out institutions and scientists engaged in research in this field.

3. Methods

One of the methods of evaluating the results of scientific research is bibliometric analysis. Bibliometrics is a discipline that uses mathematical and statistical methods of studying the flow of scientific documents in order to identify trends in the development of subject areas, features of authorship and mutual influence of publications. Bibliometric analysis allows you to analyze and visualize key characteristics of published articles and identify research trends in a certain field using online literature databases [19].

One of the methods of bibliometric analysis is scientific mapping, it shows the connections between the components of the study [20]. The analysis concerns the intellectual interactions and structural connections between the objects of research [21]. Scholarly mapping techniques include citation analysis, co-citation analysis, bibliographic collation, word analysis, and co-authorship analysis. Such methods, combined with network analysis, are important for representing the bibliometric structure and intellectual structure of the field of study [22; 23].

In order to analyze scientific developments devoted to the issues of digital marketing, this study was conducted in several stages (Figure 4).

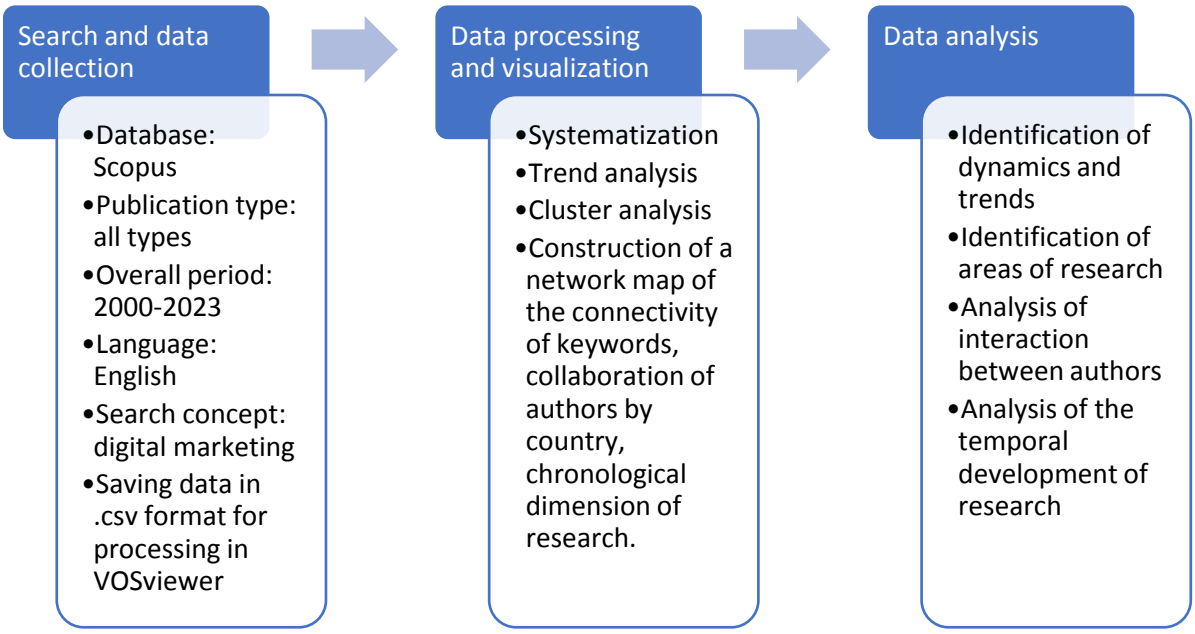

Figure 4: Research methodology of publication activity

At the first stage, a search was made for the most relevant publications in the Scopus scientometric database. It was decided to work with Scopus because the number of journals and citations in Scopus is greater than in Web of Science [24], and there is a 95% overlap between WOS and Scopus publications [25]. 2000 – February 2023 was chosen as the research period. The search for scientific publications was carried out using the key term “digital marketing” in the titles and keywords. To reject publications that contain the words “digital” and “marketing” separately, the symbol " " was used, which made it possible not to include in the general list of search queries publications that

contain research on traditional or other types (different from digital) of marketing, as well as publications, in which the concept of "digital" refers to other objects, such as digital channels, digital tools, etc. To increase the accuracy of the research results, the possibility of searching by article abstracts has been removed from the search, since, in our opinion, the mention of the researched concept in the abstract does not mean that it is key in the research. Thus, the research sample is 1,843 publications. During the analyzed period, publications in the Scopus database were mainly represented by articles (969 articles or 52.6%), the share of Conference Paper was 31.5% (580 units), the share of Book Chapters was 8.5% (156 units), and the share of other types of publications is 7.4% (138 units). Scopus tools were used to identify the dynamics of the number of indexed publications, study affiliation to the country, journal, industry structure of publication activity on the researched topic, distinguish the contribution of individual scientists in the field of digital marketing research by the number of citations and published works.

The Scopus database allows you to store bibliographic data for further analysis. Bibliographic data is saved in .csv format, which is required by the VOSviewer software.

The second stage involves the processing and visualization of the data found and collected from the Scopus database. Grouping of data and their visual representation was carried out using the Scopus database tool – "Analyze search results". Also, with the help of the same tool, grouped data on the number of publications by time period were obtained, which were used for graphical representation of the dynamics and structure of publications, conducting trend analysis using Excel software.

In order to visualize the thematic orientation of scientific developments, the method of visualization of similarities was applied. The work uses the VOSviewer software to build network maps of the connectivity of keywords, collaboration of authors by country, and the time dimension of research. The obtained results (1843 scientific publications) were imported into the VOSviewer program. The VOSviewer (Visualizing Scientific Landscapes) platform is an open source software for bibliometric network analysis. It allows you to work with text files containing descriptions of bibliographic records exported from Scopus, Web of Science and other databases. The analysis in this program was aimed at identifying the frequency of shared use of terms by researchers in the titles and keywords of scientific publications.

At the third stage of the study, data analysis was conducted to obtain answers to the research questions posed at the beginning of the study.

4. Experiment and results

Using the VOSviewer software, a network map of common words was built based on bibliographic data. In order to carry out a more detailed analysis, a limit was set, according to which the term should occur at least six times. Thus, among all keywords, 354 met the threshold value. The keywords were checked for relevance, after which the total number of keywords was reduced to 344.

The visual results of building the bibliometric map are shown in Figure 5. It is worth noting that the bibliometric map reflects the frequency of use of terms by the size of the circle and the closeness of the connection and makes it possible to monitor options for combinations of terms both within clusters and between them. The color of the circle indicates that the keyword belongs to a certain cluster. In turn, the size of the circle corresponds to the frequency of appearance of the corresponding keyword in scientific publications – the larger the diameter of the circle, the more often this term occurs. The links in the map show the co-occurrence of keywords in the posts. At the same time, the shorter the distance between the keywords, the stronger the connection between them.

According to Figure 5, the grouping of keywords into 8 clusters was obtained, which characterize the main directions of research in the field of digital marketing. Let us analyze the isolated clusters. The largest cluster (red), which combines 63 keywords. This cluster can tentatively be called "business transformation under the influence of digital technologies". The analysis of this cluster shows a strong connection between the research of business processes from the point of view of digital marketing, the impact of the COVID-19 pandemic, the development of digitalization technologies and tools, the peculiarities of the application of digital marketing in the tourism industry and the service sector.

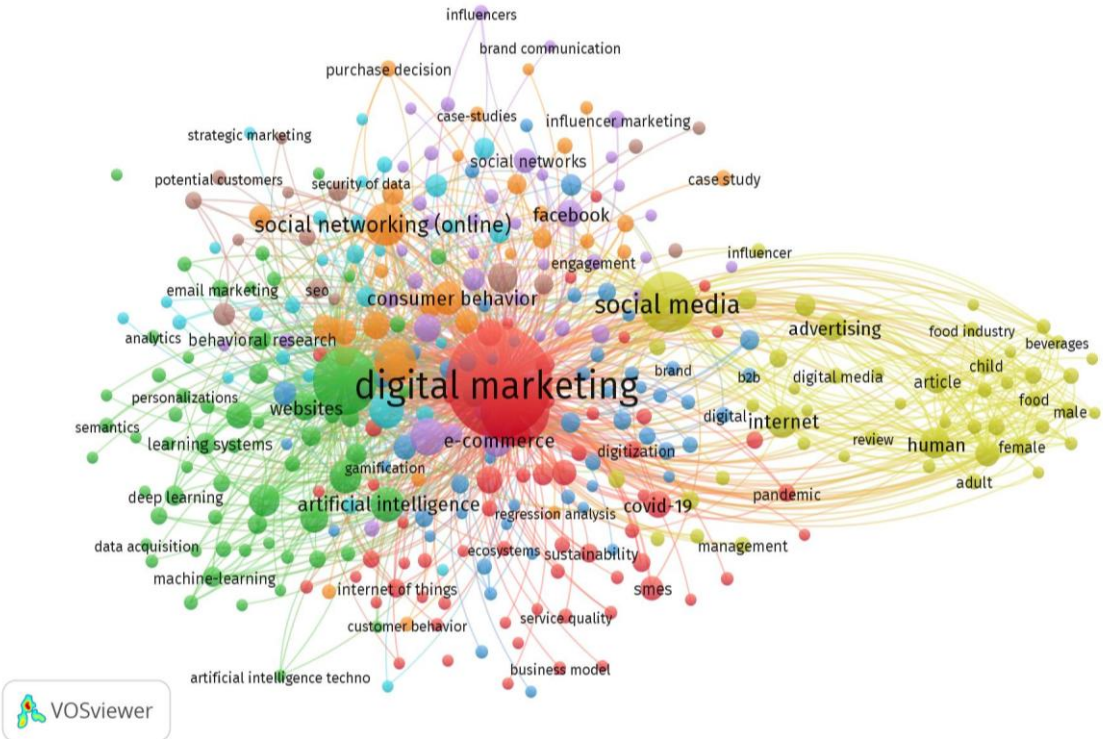

Figure 5: Visualization of the network map of keyword connectivity (2000-02.2023)

Source: constructed by the authors from the Scopus database using VOSviewer

The second largest cluster (green) consists of 61 keywords. Keywords indicate that scientists have paid the most attention to the study of the relationship and influence of information and computer technologies and the formation of digital marketing, in particular artificial intelligence, machine learning, big data, data analytics, data mining, data protection, data science, data visualization, deep learning, e-learning, informatics management, machine learning, text mining, learning systems and others.

The third cluster (blue) unites 52 keywords that indicate that digital marketing was studied from the point of view of business interaction with other companies and consumers (competition, competitive advantage, b2b, customer relationship, international business, user experience, loyalty, students, millennial) and the specifics of using digital marketing tools and technologies (marketing mix, brand, branding, omnichannel, online reviews, public relations, storytelling), etc.

The fourth cluster (yellow) consists of 50 keywords. This cluster is the most distant from all other clusters and includes concepts that indirectly relate to digital marketing. This cluster explains the study of the impact of digital marketing on the formation and change of consumer behavior (most often categories such as children, adolescents, gender distribution on women and men), including through the Internet, social networks, advertising, mass media, mobile applications and other digital technologies.

The fifth cluster (purple) is formed by 42 keywords, which indicate that scholars have paid great attention to the role of digital marketing in e-commerce, the use of the Internet and other electronic channels for information gathering, market and consumer research, and product and service promotion.

The sixth cluster (blue) is made up of 30 keywords that indicate that digital marketing has been researched from a marketing strategy perspective. At the same time, scientists most often paid attention to technologies such as virtual reality, augmented reality, mobile technology, and online shopping.

The seventh cluster (orange) is also formed from 30 keywords, which indicate that scientists have studied digital channels of marketing communications as one of the sources of gathering and studying the opinions of consumers about making purchases. In particular, scientists paid special attention to

such methods of marketing research (case study, decision making, in-depth interviews, online questionnaire, surveys) through digital marketing channels, in particular, social networks.

The eighth cluster (brown) is formed by 16 keywords, which indicate that digital marketing has been studied in terms of digital content and the application of search engine optimization and search marketing tools to promote it through online channels, social networks.

The frequency of use of the keyword phrase "digital marketing" is the highest. The list of other keywords that occur most often is as follows: marketing (494), commerce (402), social media (314), sales (142), social networking (online) (140). All other keywords occurred less than 100 times.

The generalized characteristics of clusters of key word combinations in scientific research are presented in Table 3.

Table 3

Characterization of key word clusters in scientific research

N	Cluster color	Conventional name of the direction of scientific research	The most used term	Number of keywords	Related keywords
1	red	business transformation under the influence of digital technologies	digital marketing	63	digital transformation, covid-19, tourism, innovation, smes, business
2	green	information and computer technologies in marketing	commerce	61	artificial intelligence, big data, machine learning, e-learning, websites, data mining
3	dark blue	digital marketing technologies	digital technologies	52	instagram, marketing communication, internet marketing, twitter, marketing mix, brand, branding, public relations, chatbot, blockchain
4	yellow	human and digital marketing	social media	50	human, Internet, advertising, child, female, social network
5	purple	electronic commerce	electronic commerce	42	strategic planning, e-commerce, social networks, digital marketing, social commerce, marketing research
6	light-blue	marketing strategy	marketing strategy	30	consumer behavior, mobile marketing, marketing channels, strategic marketing
7	orange	social networks to study consumers about sales	sales	30	social networking (online), decision making, information systems, social media marketing, information use, surveys, social media marketing
8	brown	search engine marketing	social media marketing	16	online marketing, search engines, content marketing, search engine optimization, seo

It was established that during the analyzed period of 2000-2023, Indian and American scientists had the largest number of articles on digital marketing in the Scopus database (Figure 6).

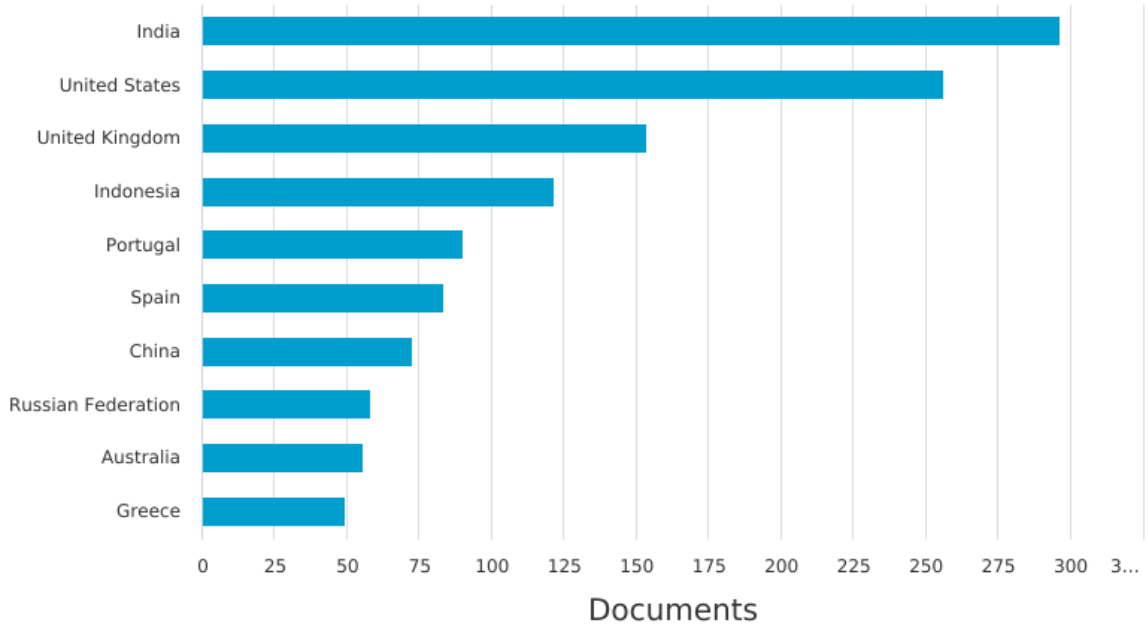

Figure 6: TOP-10 countries by the number of publications indexed in Scopus, which contain the term "digital marketing" in the title and/or keywords, 2000-2023

Source: compiled by the authors based on data from the Scopus database

We will build and analyze a network of collaboration between authors based on their affiliation to a certain country (Figure 7). To visualize the obtained results, we will use the VOSviewer software. The limiting criterion for building the map is a minimum of 5 publications in one country. Thus, out of 130 countries, this requirement is met for 65 countries.

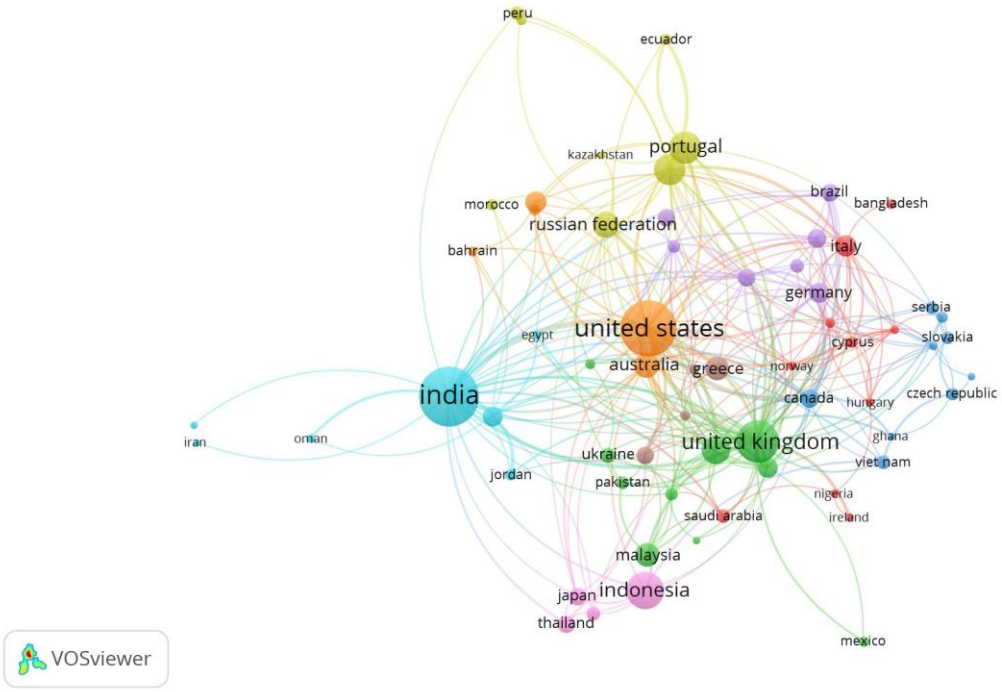

Figure 7: Visualization of the network map of authors' collaboration by country

Source: constructed by the authors from the Scopus database using VOSviewer

According to Figure 7, the world leaders in terms of the number of publications are India (295 publications or 16.08% of the total volume), the USA (258 publications or 14.01%), Great Britain (153 publications or 8.31%) and Indonesia (121 publications or 6.57%). Ukrainian scientists have published 21 publications based on the specified base, which is 1.14% of the global flow of publications; accordingly, in the overall rating, Ukraine occupies the 25th position.

Figure 7 visualizes the interaction between authors according to the criterion of co-authorship between countries. Scientists from India were found to have the highest number of publications in total, with 81 publications co-authored by scientists from 36 countries. The maximum number of joint publications in India with the UAE is 5 publications. The second most publishing activity is the USA – 107 publications co-authored with scientists from 31 countries. The largest number of joint publications in the USA and Australia is 8 publications. Great Britain published 105 publications in co-authorship with scientists from 39 countries, and the most joint publications with scientists from France – 11 publications.

Let us consider the chronological perspective of scientific research in the field of digital marketing by constructing a network map using the VOSviewer software. The program builds network connections and classifies keywords using a timeline (Figure 8). Visualization of the network map will allow you to explore the latest trends in publishing activity by keywords.

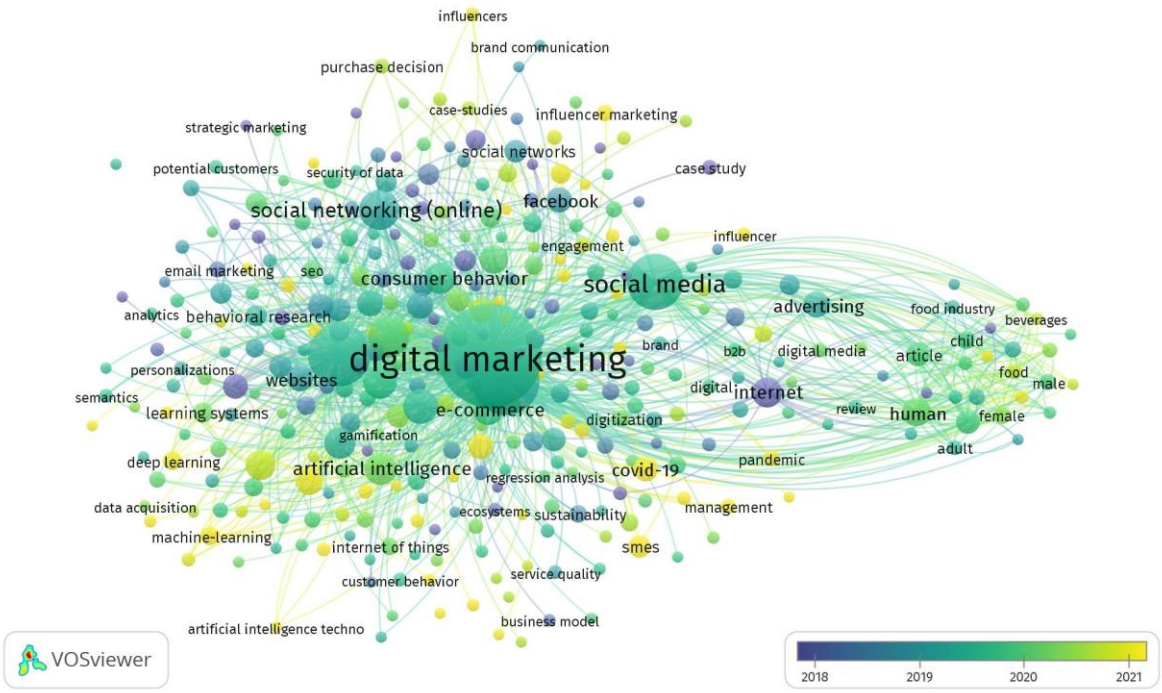

Figure 8: Visualization of the network map of the chronological dimension of research
Source: constructed by the authors from the Scopus database using VOSviewer

Keywords, depending on the year of publication, acquire different colors (average value for the cluster). The color gradation, which changes from dark blue to yellow, determines the period of publication of the publication.

Those keywords that appeared recently (in our case 2021-2022) are highlighted in yellow. The results of the bibliometric analysis on a chronological scale demonstrate that the intensive development of scientific research on the topic of digital marketing in the countries of the world takes place in the period 2018-2021. In particular, in recent years, research is primarily related to the study of artificial intelligence, machine learning, deep learning, learning system, big data, security of data. In addition, research is closely related to the study of the impact of the COVID-19 pandemic on the functioning of businesses, in particular small and medium-sized enterprises.

5. Discussions

A bibliometric analysis of the Scopus database showed a continuous high growth of studies citing keywords related to digital marketing. All this determines the additional need for further research, despite the available. In the source [26], the scientists limited themselves to the analysis of digital marketing communication, and in the source [27], the scientists chose the Web of Science database for analysis and the bibliometric analysis conducted to study the field of brand orientation. Unlike other studies, the author's study comprehensively reflects the trends in the development of the publishing activity of scientists in the field of digital marketing.

The author's contribution to the development of theoretical provisions in the field of digital marketing bibliometrics is as follows:

- a study of traditional marketing or certain types of digital marketing, such as internet marketing, does not provide a complete picture of the evolution of digital marketing research;
- the results of this study will allow us to pay attention to those factors that cause the greatest impact on the development of digital marketing, in particular, digital technologies, information technologies, artificial intelligence, behavioral factors, pandemic, marketing strategy, social networks;
- research can answer questions about the relevance of implementing certain digital technologies and tools in the field of digital marketing, which will allow companies to create more effective marketing campaigns with lower costs;
- the research will reveal promising directions for the development of digital marketing, which will help companies and marketers understand what trends are happening in the market and how they can affect the effectiveness of choosing and implementing a marketing strategy;
- the results of the research will help to identify gaps and future needs in scientific research, identify trends in the development of science, directions of research that are gaining popularity and the level of interest of the scientific community in certain issues;
- the analysis of publications by countries and scientists will make it possible to single out the main scientific directions and schools on the subject of research, to identify potential co-authors or scientific groups for cooperation.

This study confirms the evidence of previous observations (such as M. Faruk, M. Rahman, S. Hasan [28], A. M. Amiri, B. P. Kushwaha, R. Singh [29]) about the significant growth of digital marketing and its prospects for application in all spheres of activity, in particular in tourism [30; 31; 32], which was revealed through the frequency of occurrence of key words that indicate this industry. The problems that exist with the introduction of digital marketing [33; 34] may be the result of insufficient theoretical base and necessary skills for citizens and entrepreneurs. In addition, some businesses are afraid to implement new digital technologies in marketing due to a lack of trust [35].

An interesting conclusion can be drawn from the results of a study about India, which took the first position in the ranking of countries in terms of the number of publications indexed in Scopus that contain the term “digital marketing” in the title and/or keywords. Our result does not coincide with the result published by scientists in the source [36], which indicated that the largest number of publications was in the USA, Great Britain and China. In our opinion, the discrepancy is explained by the different time periods of the study (in our case, we additionally added an analysis of publications from June 2020 to February 2023) and the improvement of India’s innovation activity, that is confirmed by the published results the Global Innovation Index 2022 annual report [37]. According to the Report, India ranks first among the countries of Central and Southern Asia and for the first time entered the TOP-40 among all 132 countries and economies of the world.

The analysis of the industry structure of publishing activity on digital marketing showed the multidisciplinary nature of the studied concept. This creates opportunities for building multidisciplinary perspectives and also highlights the need for collaboration between different sectors and fields. In particular, the analysis of keywords in the field of digital marketing from a chronological perspective revealed the growing popularity in recent years of scientific publications related to the study of artificial intelligence and its role in marketing. E. P. Morais, C. R. Cunha, J. P. Sousa [38], who conducted a bibliometric analysis of the relationship between Big Data and Digital Marketing, come to a similar conclusion. C. Marin-Palacios, M. B. Fullat [39], which revealed

a shift in Instagram's marketing strategy towards intelligent data analysis and machine learning, also obtained similar conclusions.

Among the main problematic points of this study is the fact that only the quantitative aspect of publication activity is analyzed, that is, which countries have published the most articles, which keywords are more common in publications, etc. Bibliometric analysis does not allow to analyze publications by quality. This problematic issue is also noted in the works of other scientists [40].

6. Conclusions

A bibliometric analysis of scientific literature on digital marketing from 2000 to 2023 was conducted to outline the trends and priority areas of digital marketing study, to single out institutions and scientists engaged in research in this field. The research used several special methods and tools, including built-in Scopus tools, VOSviewer software, and Google Trends. Based on the results of the research, the following conclusions can be drawn:

1. This study analyzed publications on digital marketing for the period 2000-2023 indexed in the Scopus database. It was found that publishing activity on digital marketing is gaining more and more popularity every year, especially after 2012. This is confirmed by determining the frequency of application of queries in search engines using the Google Trends tool. From this we can conclude that digital marketing is a global topic with fruitful collaboration between scholars. Three stages of scientific interest in digital marketing research are distinguished: Stage I (1996-2012) – the stage of the emergence of theoretical and practical interest in digital marketing; The II stage (2012-2015) is the stage of moderate growth and the III stage (2016-2022) is the stage of active development of scientific research.
2. The analysis of the industry structure of the number of publications indexed in Scopus, which contain the terms "digital marketing" in the title and keywords, showed a significant diversification of research and made it possible to draw a conclusion about the multidisciplinary nature of the studied concept, since digital marketing is a tool that is used not only in business, but also other areas of human activity. The most publications were found in the field of business, management and accounting, computer and social sciences.
3. Visualization of the network map of common words based on bibliographic data made it possible to single out 8 clusters characterizing the main directions of research in the field of digital marketing. The first cluster demonstrates the transformation of the marketing environment of business and the service sector (in particular, tourism) under the influence of digitization, the introduction of digital technologies and other factors, including the spread of the COVID-19 pandemic. The second cluster testifies to the relationship of information and computer technologies and their influence on the formation of digital marketing. The third cluster examines the evolution of scientific research in digital marketing from the point of view of business interaction with other companies and consumers, as well as the specifics of the application of digital marketing tools and technologies. The fourth cluster explains the study of the impact of digital marketing on the formation and change of consumer behavior through the Internet, social networks, advertising, mass media, mobile applications and other digital technologies. The fifth cluster indicates the study by scientists of digital marketing in the structure of e-commerce. The sixth cluster reflects digital marketing research from the point of view of conducting a marketing strategy. The seventh cluster describes the direction of research related to social networks and digital channels of marketing communications as one of the sources of collecting and studying the opinions of consumers about making purchases. The eighth cluster reflects a separate direction of digital marketing research from the point of view of digital content and the application of search engine optimization and search engine marketing tools.
4. An analysis of the collaboration network between authors based on their affiliation to a certain country showed the leadership in publishing activity of India, the USA, Great Britain and Indonesia. In the Scopus database, 21 publications of Ukrainian scientists are indexed, taking the 25th position in the overall ranking among all countries.
5. The results of the bibliometric analysis on a chronological scale demonstrate that the intensive development of scientific research on the topic of digital marketing in the countries of

the world took place in the period 2018-2021. In particular, in recent years, research is primarily related to studying the role of using artificial intelligence, machine learning, deep learning, learning system, big data, security of data and other information technologies in digital marketing. In addition, the research is closely related to the study of the development of digital marketing in business and services under the influence of the COVID-19 pandemic.

On the other hand, our study has some limitations. First, the selection of publications was largely limited to the Scopus database. At the same time, scientific publications from another important database, Web of Science, and other databases specialized in this topic were not taken into account. Secondly, the analysis of scientific publications was carried out according to the key concept "digital marketing", which was found only in titles and keywords. Abstracts that also contained the researched concept were excluded from the search for publications, so changing the research area or entering additional keywords that are related to digital marketing could have provided additional and clearer results.

This study will help future researchers to familiarize themselves with the state of digital marketing publishing activity and the trend regarding the topic; find out which main keywords the authors used; to get acquainted with the most popular publications, which are the most cited, because they contain important information about the researched topic, and to find out what exactly is missing and which topics require further research in the scientific field. The bibliometric attributes presented in the study will allow us to understand the evolution of digital marketing from the beginning of the active use of digital technologies in marketing. Consequently, research on publishing activity remains important, and further theoretical and empirical research on digital marketing will contribute to progress in this area.

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