

## Decoding Digital Marketing: A Bibliometric Journey Across a Decade

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### Abstract

The last decade witnessed a profound transformation in the realm of digital marketing, marked by the rapid evolution of technologies and platforms. Staying abreast of these developments proves challenging. This study, spanning from 2014, employs bibliometric analysis on 1419 publications to discern trends in digital marketing. The aim is to identify significant trends and formulate strategies for achieving marketing objectives, capturing the attention of researchers and practitioners alike. Notably, the United States and India emerge as the most prolific contributors, with authors Sakas DP and Saura JR leading. The University of Edinburgh is the most active affiliate, while Sustainability (Switzerland) and the Journal of Business Research excel in published articles and citations, respectively. The study underscores digital marketing's global relevance, particularly in relation to consumer relationships, behaviour, and value co-creation. Email marketing and social media are integral to communication, with a growing emphasis on social media and value co-creation. Deep learning is identified as a potentially fluctuating theme while digital tourism marketing gains traction through online channels. In our dynamic digital world, where digital marketing communication is pivotal, this research serves as a valuable resource for academics, educators, and practitioners seeking to stay updated on the latest trends in the field.

**Keywords:** Bibliometric Analysis, Digital Marketing, Marketing, Consumer Relationships, Marketing Research

### **Introduction**

Digital marketing is a broad term for the targeted, measurable, and interactive promotion of goods or services through digital technology. In recent years, digital marketing has become increasingly important as more businesses seek to establish their online presence and engage with customers in the digital realm (Man, 2020). As a result, digital marketing has witnessed significant changes and innovations that have impacted how businesses approach marketing and advertising. The period from 2014 to 2023 has seen significant changes in digital marketing, with the emergence of new technologies and changes in consumer behaviour. The COVID-19 pandemic has also accelerated the shift to digital marketing as businesses adapt to changing market conditions (Kankam, 2022). As digital marketing continues to be important in the business world, it is vital to understand the trends and shifts occurring in the field (Erlanitasari et al., 2020). According to the Scopus database, the average number of scientific publications related to digital marketing is around 100 documents per year (Manzoor et al., 2021). Analysing the development of topics related to digital marketing can be an effective tool for keeping up with the latest developments in the field.

Bibliometrics uses data analysis methods to investigate scientific publication outputs (Phoong et al., 2022). It is used to identify trends in journal articles, collaborative efforts, selectivity of studies, and investigate the working principles of existing domains in the literature. The bibliometric analysis deals with massive documentation (thousands), objective data (total citations and publications), and complex data (number of citations and publications, occurrence of keywords and topics) (Pan et al., 2023). In summary, bibliometric analysis can help to understand and map scientific knowledge in a particular field by analysing large amounts of unstructured data (Cabanillas-lazo et al., 2022).

This study will use a bibliometric approach to analyse publications related to digital marketing. This approach will use bibliographic data to identify research themes, top authors, and frequently cited articles. The use of bibliometric analysis can provide a systematic and comprehensive understanding of changes and advancements in digital marketing (Aria & Cuccurullo, 2017). By analysing publications related to digital marketing, we can identify the most influential authors, the most frequently cited articles, and the research themes that are most capturing attention (Markoulli et al., 2017). By examining trends and patterns in digital marketing research, this analysis can provide a comprehensive understanding of the field's evolution over the past decade. This study will explain the most popular topics, main research themes, and emerging trends in digital marketing, helping researchers and practitioners stay up-to-date with the latest developments in the field.

The findings of this study will be essential for marketers, business owners, and academics interested in digital marketing. With the insights gained from the analysis, businesses can make decisions based on information about their marketing strategies and stay ahead of the competition. Academics and researchers can also use the results to develop new research directions and contribute more to digital marketing. Overall, this bibliometric analysis will make a valuable contribution to the field of digital marketing and help stakeholders stay informed about the latest developments and trends. Therefore, conducting a bibliometric

analysis of digital marketing publications during this period is crucial to understanding changes in the field. , this study aims to analyse the trends and themes dominating the field of digital marketing from 2014 to 2023. The research question is, first, what is the distribution of publications by year, country, affiliation, source, most prolific author, and most cited articles in Digital Marketing? The second is the trending and relevant topics for future research in digital marketing.

## **Literature Review**

### *Digital Marketing*

Digital marketing also refers to the process of concept, idea, price, promotion, and distribution planning and execution (Bourne, 2020; Manko, 2022; Nunan & Di Domenico, 2019). It can be defined as establishing and maintaining relationships of mutual benefit between producers and consumers (Busca & Bertrandias, 2020). The only difference between digital and traditional marketing is the tools used (Mogaji et al., 2021). Digital marketing can be defined as marketing activities that include branding and using various media (Kemp et al., 2019; Rekha et al., 2017). Digital marketing is the promotion and sale of goods or services through the use of digital channels and technologies. This includes many different strategies, such as search engine optimisation (SEO), social media marketing, email marketing, mobile marketing, and content marketing (Bala & Verma, 2018). Examples include blogs, web pages, email, AdWords, and social media networks (Goldman et al., 2021).

Digital marketing is frequently studied as part of a more extensive marketing curriculum, with classes covering consumer behaviour, market research, branding, and advertising. Digital marketing uses the advancements of the digital world to conduct advertising that is not widely publicised but has a significant impact (Cowley et al., 2021; Matidza et al., 2020). As a result, digital marketing can be defined as a technique for branding services, brands, or products through online technology or the internet (Langan et al., 2019; Makrides et al., 2020). Through various digital marketing techniques, the primary aim is to promote the brand, shape preferences, and increase sales traffic. Digital advertising or online marketing is another concept for digital marketing (Dash & Sharma, 2019; Hastings, 2021). Digital marketing has become an essential aspect of modern businesses and marketing strategies. With the advancement of technology, digital marketing has transformed into a dynamic and evolving field that requires constant adaptation and innovation. Overall, digital marketing is a vital part of today's businesses, and experts in the pitch are in great demand across many sectors.

## **Methodology**

### *Research method*

The research method utilised bibliometric analysis, enabling the examination of aggregate bibliographic data, including academic journals and citations. This method involves bibliometric correlation analysis to identify current research directions by analysing article keywords and co-citations, thus revealing the field's topical structure and intellectual foundations. The process involved various steps, including identifying research queries, selecting appropriate methods, organising and sorting relevant data, cleaning, analysing, displaying, and interpreting results.

The bibliometric analysis method allows researchers to study collections of aggregate bibliographic data, including academic journals and related citations. This method uses

bibliometric correlation analysis to highlight current research directions by cross-examining article keywords and co-citations to show the field's topical structure and intellectual underpinnings. This method is used in this research, and the results show how topics are organised and related before being visually mapped out (Donthu et al., 2021). The bibliometric method involves identifying research queries, selecting suitable methods, arranging and sorting relevant data, and cleaning, analysing, displaying, and interpreting results (Cowley et al., 2021).

### Data collection

The metadata was mined from the Scopus Database, which aims to accumulate publications related to Digital Marketing from 2014 to 2023 using the search term "Digital Marketing". This metadata was retrieved in January 2023, and to avoid search errors caused by database updates, data investigations were conducted in a single day, and no search limits were imposed. The collected data was then filtered based on the year of publication, document type, subject field, and document source type. The results of the document filters processed by the Scopus database are shown below.

TITLE-ABS-KEY ("Digital Marketing") AND ( LIMIT-TO ( PUBYEAR , 2023 ) OR LIMIT-TO ( PUBYEAR , 2022 ) OR LIMIT-TO ( PUBYEAR , 2021 ) OR LIMIT-TO ( PUBYEAR , 2020 ) OR LIMIT-TO ( PUBYEAR , 2019 ) OR LIMIT-TO ( PUBYEAR , 2018 ) OR LIMIT-TO ( PUBYEAR , 2017 ) OR LIMIT-TO ( PUBYEAR , 2016 ) OR LIMIT-TO ( PUBYEAR , 2015 ) OR LIMIT-TO ( PUBYEAR , 2014 ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( SRCTYPE , "j" ) OR LIMIT-TO ( SRCTYPE , "p" ) OR LIMIT-TO ( SRCTYPE , "d" ) )

After filtering the database, the results are shown in the following figure.

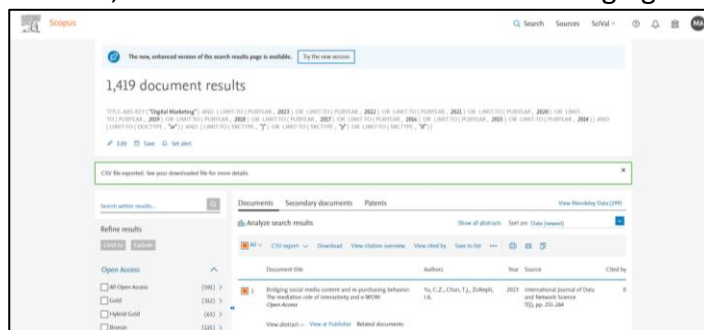


Figure 1: The process of retrieving metadata in the Scopus database

After applying the keywords to find data from Scopus, the metadata is downloaded in comma summative value (.csv) format.

### Data Coding and Analysis

After obtaining metadata from the Scopus database, the next step is to perform metadata analysis using R Studio software with the Bibliometrix package. To install the bibliometrix package, the code "install.packages(bibliometrix)" must be used for the first time. After the package is installed, it can be called using the code "library(bibliometrix)", followed by the code "biblioshiny()" to open the bibliometric analysis program in a browser window. Scopus metadata can be imported in the "Loading Data" section. The analysis results will display visualisations of published articles, most cited articles, most prolific authors, most used keywords, and the evolution of research themes. Two researchers with doctoral qualifications carried out the data analysis procedures. The result is a descriptive analysis used to examine and interpret the findings.

## Results

### Main Information

The metadata has been exported to biblioshiny. The initial appearance of this software is the leading information of all articles that have been exported and are ready to be analysed. The leading information regarding the documents to be analysed using a bibliometric is presented in Figure 2.

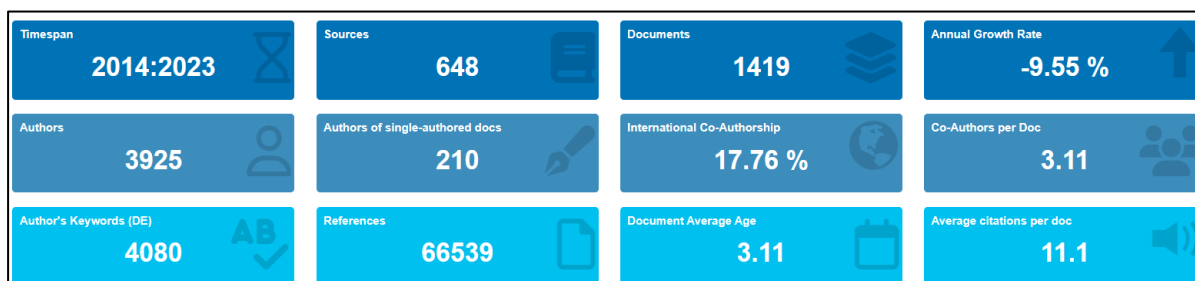


Figure 2. Main Information

Figure 2 shows that 1419 documents were subject to bibliometric analysis of documents published from 2014 to 2023, sourced from 648 Scopus-indexed journals, proceedings, and books. The average publication growth per year reaches -9.55%. There are 3925 authors, of which 210 are document authors with one author. The percentage of international co-authorship is 17.76%, with 3.11 Co-authors per Document. There are also 4080 keywords and 66539 references related to Digital Marketing. Additionally, these documents have an average of 11.1 citations per document.

### Distribution of Articles by Years

This study presents the distribution of publications each year on Scopus. Data distribution starts with the year the article was first published and continues until the article is ready to be published. The results of the distribution of the number of article publications each year are presented in Figure 3.

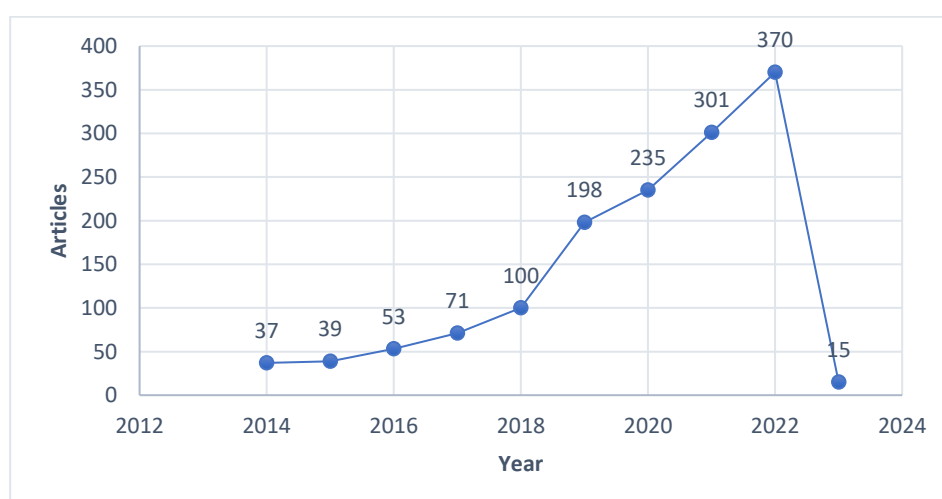


Figure 3. Annual Scientific Production

Figure 3 presents a clear picture of the trend of articles published in digital marketing. The graph depicts a steady increase in the number of articles from 2015 to 2017, with a significant

jump in 2018. After that, there has been a steady increase in articles every year. The highest number of articles were published in 2022, with a total of 370 articles. The significant rise in the number of articles in 2018 can be attributed to the increasing importance of digital marketing in the business world. This trend will continue as more businesses turn to digital marketing to reach their target audience and stay competitive. The graph in Figure 3 shows that the number of articles published on digital marketing is steadily increasing and is likely to continue. This trend highlights the importance of digital marketing as a research area and the need for further exploration and analysis of the field.

#### *Distribution of Articles by Country*

Many countries conduct research in digital marketing every year, but if you look at the productivity of these countries, the top 10 countries are the countries of origin. When research published by Scopus is displayed in the country conducting the research, the results are obtained in the diagram in Figure 4.

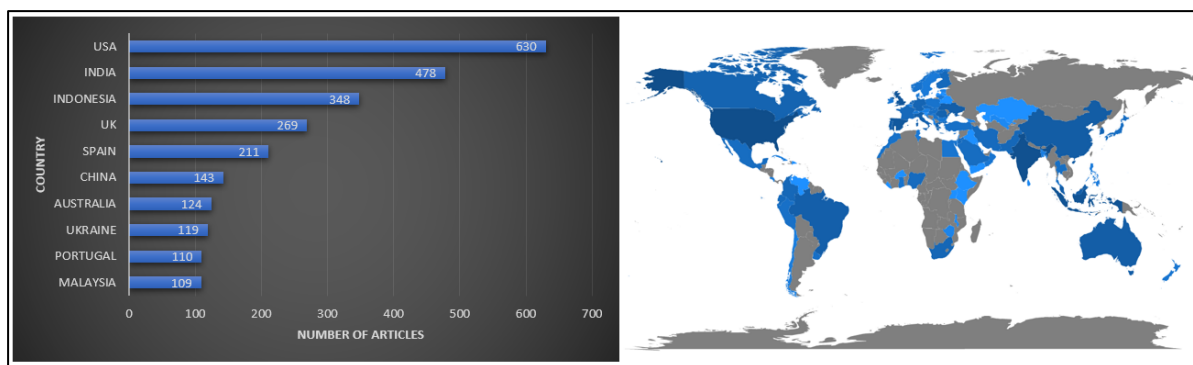


Figure 4. Distribution of articles by country

The data in Figure 4 shows that the United States and India are the two leading countries in terms of the number of articles published in Digital Marketing. The United States has published the most articles on this topic, with 630 publications, followed by India with 478 publications. Indonesia has the third-highest number of publications, with 348 articles. These results indicate that Digital Marketing is a widely researched topic in the United States, which can be attributed to the fact that the country is home to many technology-based companies and has highly advanced digital infrastructure. In recent years, the United Kingdom, Spain, China, Australia, Ukraine, Portugal, and Malaysia have emerged as significant contributors to Digital Marketing research, making them among the top ten countries with the most publications. This shows that Digital Marketing is an increasingly popular topic in these countries, and researchers in these regions are actively researching this topic. Here's an expanded version of the section on the distribution of articles by country:

- **United States:** Leading the pack, the United States has emerged as a powerhouse in digital marketing research, accounting for the highest number of publications with 630 articles. This dominance can be attributed to the country's robust technology sector, home to numerous innovative companies, and its advanced digital infrastructure, fostering a conducive environment for research and development in the field.
- **India:** Following closely behind, India demonstrates substantial engagement in digital marketing research, with 478 publications. The country's burgeoning economy, coupled

with its rapidly expanding digital landscape, has fueled significant interest and investment in exploring various facets of digital marketing within the academic community.

- **Indonesia:** Securing the third position, Indonesia showcases a noteworthy presence in digital marketing research, contributing 348 articles. This underscores the growing significance of digital platforms and strategies within the Indonesian context as businesses and organisations seek to leverage technology to enhance their market presence and competitiveness.
- **United Kingdom:** Stepping onto the global stage, the United Kingdom emerges as a prominent player in digital marketing research, with a notable increase in publications in recent years. With 215 articles, the UK's active involvement underscores its commitment to staying at the forefront of digital innovation and understanding evolving consumer behaviours in the digital realm.
- **Spain:** Mirroring the upward trajectory, Spain demonstrates a growing interest in digital marketing research, with 182 publications. This suggests a concerted effort within the Spanish academic community to explore emerging trends, challenges, and opportunities in harnessing digital channels for marketing purposes.
- **China:** With its vast market potential and technological prowess, China's presence in digital marketing research is becoming increasingly pronounced, as evidenced by its 178 publications. The country's unique digital landscape and consumer behaviours present intriguing avenues for investigation and analysis.
- **Australia:** Positioned as a key player in the Asia-Pacific region, Australia contributes significantly to digital marketing research, with 165 publications. The country's dynamic business environment and digitally savvy population provide fertile ground for exploring innovative marketing strategies and tactics.
- **Ukraine:** Reflecting its growing research capabilities, Ukraine emerges as a notable contender in digital marketing research, with 157 publications. This highlights the country's evolving academic landscape and its endeavour to engage with contemporary issues shaping the global digital economy.
- **Portugal:** Portugal is making substantial strides in digital marketing research. Portugal exhibits a burgeoning interest in the field, with 143 publications. This underscores the country's commitment to knowledge creation and dissemination in the digital arena, positioning itself as a noteworthy contributor to the global discourse on marketing in the digital age.
- **Malaysia:** Rounding up the top ten countries, Malaysia demonstrates a keen interest in digital marketing research, with 132 publications. The country's strategic location, coupled with its investment in digital infrastructure and education, positions it as a key player in shaping the future of digital marketing in the Southeast Asian region.

In summary, the distribution of articles by country reveals a diverse landscape of digital marketing research, with various nations actively contributing to the advancement of knowledge in this field. From established powerhouses like the United States and India to emerging players such as Indonesia and Ukraine, the global community of researchers continues to explore the multifaceted dimensions of digital marketing, enriching our understanding and shaping the future of marketing practices worldwide.

*Most Productive Affiliate*

The following presents data on the most productive affiliations for the Digital Marketing theme. The results of the bibliometric analysis can be seen in Figure 5.

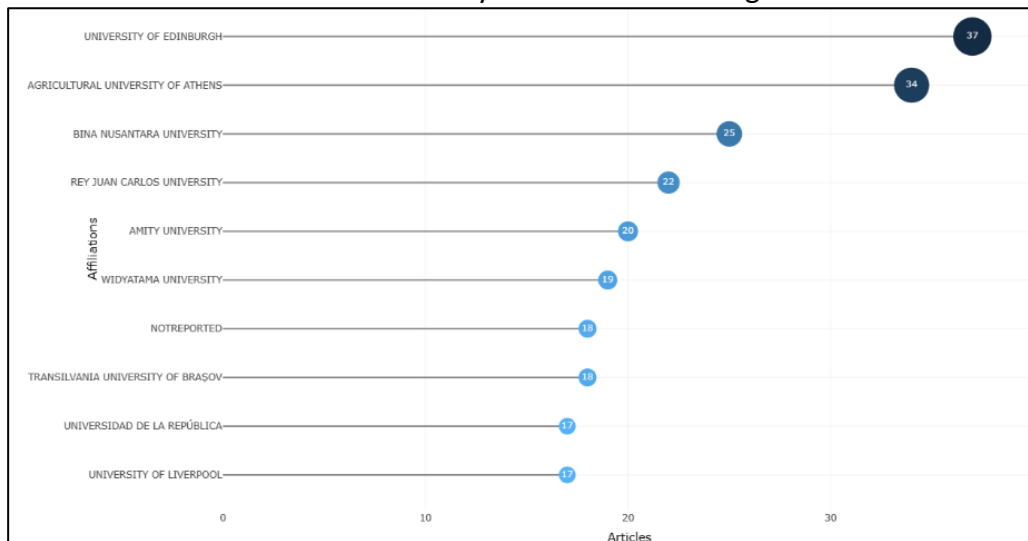


Figure 5. The most productive affiliates

Figure 5 shows that the University of Edinburgh is the associate that publicises the most articles in the field of Digital Marketing. The Agricultural University of Athens is the second affiliate. In addition to the two mentioned above, the top five are Bina Nusantara University, Rey Juan Carlos University, and Amity University.

*Most Productive Sources (Articles and Citations)*

The citation analysis begins with the ten sources with the highest publication according to the subject of Scopus-indexed Digital Marketing. The data is presented in Table 1.

Table 1

*The most productive sources*

Source	Articles	Citations	H-Index
Sustainability (Switzerland)	44	13	11
Journal of Digital and Social Media Marketing	39	4	2
Emerald Emerging Markets Case Studies	28	3	2
International Journal of Data and Network Science	24	40	5
Journal of Business Research	20	1057	12
Industrial Marketing Management	16	808	8
International Journal of Recent Technology and Engineering	16	7	3
Applied Marketing Analytics	14	5	2
International Journal of Advanced Science and Technology	14	12	3
Journal of Marketing Education	13	335	9

According to Table 1, "Sustainability (Switzerland)" is the publication that has released the most publications on Digital Marketing, with 44 articles and 13 citations. The "Journal of Digital and Social Media Marketing" came next, with 39 publications and four citations. Furthermore, even though the "Journal of Business Research" has the fewest articles, namely 20 articles. Moreover, the number of resources with the most citations is 1057. This indicates that the articles from this journal are of excellent quality and impact. Likewise, "Industrial



Marketing Management" and "Journal of Marketing Education" have only 16 and 13 articles, respectively, but the number of citations reaches 808 and 335, respectively.

### Articles with the Most Citations

The following presents the ten most cited articles from various sources and authors. Table 2 shows the results of the bibliometric analysis.

Table 2

#### Top 10-Most Articles Citations

No	Authors	DOI	Year	Journal	Total Citations
1	Kumar A	10.1509/jm.14.0249	2016	Journal of Marketing	465
2	Kannan PK	10.1016/j.ijresmar.2016.11.006	2017	International Journal of Research in Marketing	458
3	Felix R	10.1016/j.jbusres.2016.05.001	2017	Journal of Business Research	380
4	Dwivedi YK	10.1016/j.ijinfomgt.2020.102168	2021	International Journal of Information Management	341
5	Appel G	10.1007/s11747-019-00695-1	2020	Journal of the Academy of Marketing Science	335
6	Leeflang PSH	10.1016/j.emj.2013.12.001	2014	European Management Journal	331
7	Tiago MTPMB	10.1016/j.bushor.2014.07.002	2014	Business Horizons	264
8	Yadav MS	10.1509/jm.12.0020	2014	Journal of Marketing	244
9	Chung M	10.1016/j.jbusres.2018.10.004	2020	Journal of Business Research	212
10	Van Mierlo T	10.2196/jmir.2966	2014	Journal of Medical Internet Research	207

Table 2 shows information about the authors and the highest number of citations from Scopus. Based on the data in Table 1, it can be seen that the article belongs to "Kumar A. (2016)" with 465 citations, which places it as the most cited article on the topic of Digital Marketing. The most citations are followed by "Kannan PK (2017)", "Felix R (2020)", "Dwivedi YK (2021)", and "Appel G (2020)", which are included in the five most cited articles and followed by other authors afterwards.

### The Most Prolific Author

The following data regarding the most productive authors for the Digital Marketing theme is presented. The results of the bibliometric analysis can be seen in Table 3.

Table 3

#### The most productive authors

No	Authors	Affiliation	Country	Articles	Articles Fractionalised
1	Sakas DP	Agricultural University of Athens	Greece	8	2.34
2	Saura JR	Rey Juan Carlos University	Spain	8	3.33
3	Ahuja V	Jaypee Business School	India	7	3.75
4	Dwivedi YK	Swansea University	United Kingdom	6	1.51
5	Gupta A	Indian Institute of Technology Delhi	India	5	1.70
6	Krishen AK	University of Nevada	USA	5	0.79
7	Li X	Yunnan University of Finance and Economics	China	5	1.01

N	Authors	Affiliation	Country	Articles	Articles Fractionalised
8	Reklitis DP	Agricultural University of Athens	Greece	5	1.34
9	Sharma A	University of Miami	USA	5	1.62
10	Wang Y	The University of Sheffield	United Kingdom	5	1.01

According to Table 3, the most productive authors are Sakas DP from the Agricultural University of Athens, Greece, and Saura JR from Rey Juan Carlos University, Spain. They have each published eight articles about Digital Marketing. Then, it was continued by Ahuja V from Jaypee Business School, India, who published seven articles. Furthermore, Dwivedi YK from Swansea University, United Kingdom, published six articles.

*Trending Topics*

The following data is presented regarding trending topics for the Digital Marketing theme. Figure 6 depicts the findings of the bibliometric analysis.

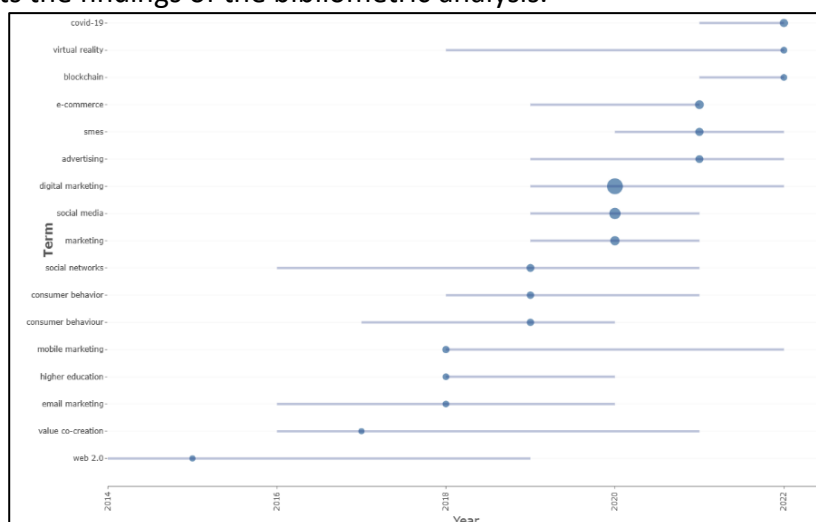


Figure 6. Trend Topics

According to Figure 6, there have been several trending topics in digital marketing in the past 10 years. A longitudinal analysis of digital marketing trends spanning the past decade, as illustrated in Figure 6, reveals the evolving landscape of key themes and topics. Over this period, several trends have emerged, reflecting the dynamic interplay between technological advancements, changing consumer behaviours, and evolving business strategies. Categorised into distinct thematic clusters, these trends offer valuable insights into the trajectory of digital marketing and highlight areas of continued relevance and innovation. In the realm of technology and innovation, the impact of global events such as the COVID-19 pandemic is unmistakable. The crisis has spurred a rapid acceleration in digital adoption, necessitating businesses to adapt their marketing strategies to meet evolving consumer needs and behaviours. Concurrently, advancements in immersive technologies like virtual reality and the rise of blockchain have opened new avenues for marketers to engage with audiences and enhance the security and transparency of digital transactions. Meanwhile, the enduring concept of Web 2.0 continues to shape the interactive nature of online experiences, influencing the design and functionality of digital marketing platforms.

On the business and marketing front, the proliferation of e-commerce has transformed the retail landscape, prompting businesses to innovate their marketing approaches to thrive in the digital marketplace. Small and medium-sized enterprises (SMEs) are increasingly leveraging digital tools to expand their reach and compete effectively in a crowded online space. Traditional advertising methods continue to evolve alongside digital channels as marketers seek to optimise their strategies to resonate with target audiences. Amidst these developments, digital marketing remains a central focus, encompassing a myriad of strategies aimed at engaging and converting digital consumers. Social media platforms, in particular, have become indispensable channels for brand communication and engagement, shaping consumer perceptions and purchase decisions.

In the realm of education, the digitalisation of higher education has created new opportunities and challenges for marketing institutions to attract and engage students through online channels. Understanding consumer behaviour and fostering value co-creation have emerged as essential pillars of effective marketing strategies as businesses seek to personalise experiences and build meaningful relationships with their audiences. Despite the emergence of new communication channels, email marketing remains a stalwart in the digital marketer's toolkit, offering a direct and personalised means of communication with consumers. Likewise, social networking platforms continue to influence communication dynamics between brands and consumers, driving the evolution of social media marketing strategies. By analysing the temporal patterns of these trends, researchers can gain valuable insights into the dynamic nature of digital marketing and anticipate future developments in the field. Moreover, understanding the relative significance of these topics provides context for shaping marketing strategies and adapting to the ever-changing digital landscape.

*Relevant Topics for Future Research*

The following presents data related to relevant topics for future research on the Digital Marketing theme. The results of the bibliometric analysis can be seen in Figure 7.

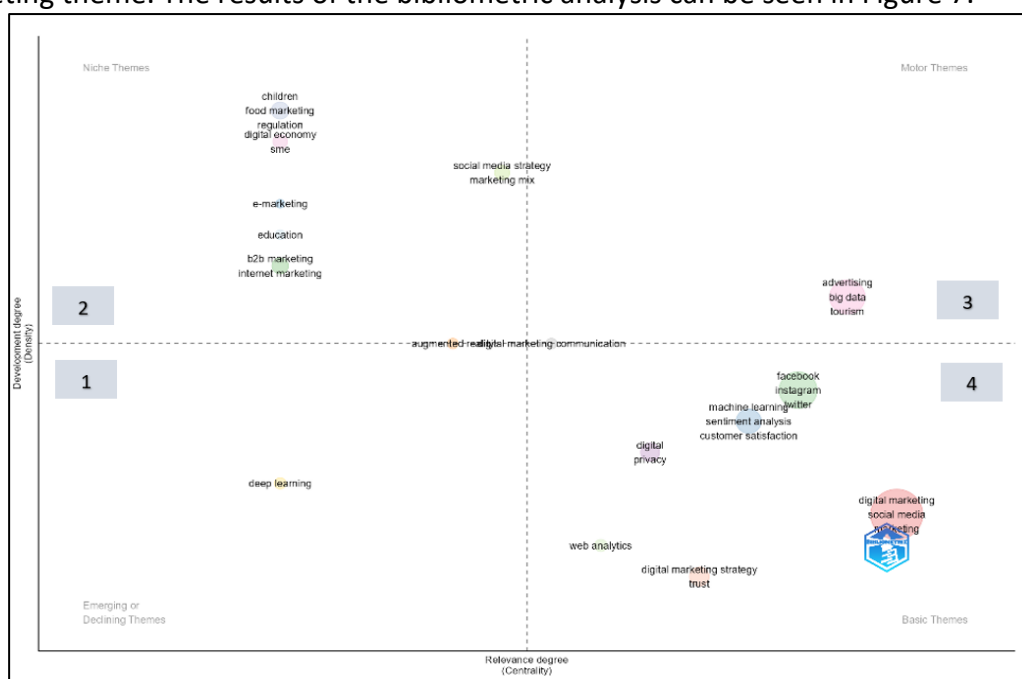


Figure 7. Thematic Map

Figure 8 shows several relevant topics that could be used as future research topics. These topics are divided into four quadrants. Quadrant 1 is called emerging or declining themes. Quadrant 2 is called niche themes. Quadrant 3 is called motor themes, and quadrant 4 is called basic themes. Topics in quadrant 1 include deep learning. Topics in quadrant 2 include children, food marketing, regulation, digital economy, SMEs, social media strategy, marketing mix, e-marketing, education, B2B marketing, and internet marketing. Topics in quadrant 3 include advertising, big data, and tourism. Topics in quadrant 4 include Facebook, Instagram, Twitter, machine learning, sentiment analysis, customer satisfaction, digital privacy, digital marketing, social media marketing, web analytics, digital marketing strategy, and trust. In addition, some topics fall between quadrants 1 and 2, such as augmented reality, and topics that fall between quadrants 3 and 4, such as digital marketing communication.

The thematic map presented in Figure 8 also outlines various avenues for future research in the field of digital marketing, highlighting emerging trends and areas of particular interest. Among these themes, two stand out the most: deep learning and digital tourism marketing. Delving deeper into these topics can provide valuable insights for academics and practitioners, offering practical applications and case studies to enhance understanding and inform strategic decision-making. Deep Learning in Quadrant 1 of the thematic map, deep learning is emerging as a key area of interest in the digital marketing landscape. As an advanced subset of artificial intelligence (AI), deep learning has great potential to revolutionise marketing and consumer engagement strategies. By leveraging complex neural networks to analyse vast data sets and extract meaningful insights, deep learning algorithms enable marketers to personalise content, predict consumer behaviour, and optimise campaign performance with unprecedented accuracy. For example, case studies demonstrating the application of deep learning in targeted advertising, recommendation systems, and customer segmentation can provide practical insight into leveraging these technologies to drive marketing effectiveness and ROI.

Digital Traveler Marketing. In Quadrant 3 of the thematic map, tourism emerges as a driving theme that has significant implications for digital marketing. In an increasingly connected world, digital platforms play a critical role in shaping travel experiences, influencing destination choices and facilitating tourism transactions. Digital travel marketing encompasses a wide range of strategies, from social media campaigns and online reviews to in-depth virtual tours and location-based promotions. By exploring case studies of successful digital marketing initiatives in the tourism sector, researchers and practitioners can learn valuable lessons about leveraging technology to attract visitors, improve destination branding, and encourage sustainable tourism practices. Examples include the innovative use of augmented reality (AR) to showcase tourist attractions, data-driven strategies to target specific tourism segments, and collaborative partnerships between destinations and digital platforms to strengthen marketing reach.

By looking into these emerging themes and exploring their real-world applications through case studies and examples, researchers and practitioners can gain practical insights into leveraging deep learning and digital marketing strategies to drive innovation, increase consumer engagement, and achieve sustainable business growth in the increasingly digital era. Market. To understand the relationships between topics in the field of digital marketing, refer to Figure 8 below.



Figure 8. Co-Occurrence Network

A Co-Occurrence Network is an analysis technique used to identify and map relationships between words or topics that appear together in documents or articles. In the context of the digital marketing field from 2014 to 2022, the Co-Occurrence Network can be used to map relationships between the most frequently discussed topics in the literature related to the field. According to Figure 8, based on keyword clustering analysis, keywords in the field of Digital Marketing can be divided into three major clusters. They can be further divided into several themes to indicate relevant research topics for the future, such as social media marketing, social networking, perception, communication, and advertising. Digital marketing, commerce, artificial intelligence, decision-making, e-commerce, big data, consumer behaviour, marketing strategies, and forecasting comprise the second group. The third group comprises sustainability, strategic approaches, retail, business, and consumer behaviour. These topics are interconnected and form a strong network or mutual influence. Marketing is the most frequently used and discussed topic by authors. What is interesting here is that the three topic clusters are related. This indicates that the three central dimensions are interconnected in developing the Digital Marketing variable framework.

## Discussion

### *Distribution of Digital Marketing Publications*

A bibliometric approach is used to build a knowledge structure about digital marketing. The analysis is based on keywords, citations, grouping, and visual analysis used in this study. The Scopus database is applied to perform bibliometric analysis on Digital Marketing publications. This study analysed 1419 publications on Digital Marketing from 2014 to 2023. This study examines the evolution of Digital Marketing research over the last ten years. The number of articles about digital marketing continues to rise year after year. It demonstrates that digital marketing is widespread, particularly in marketing management.

The bibliometric analysis showing that the United States, India, and Indonesia have published roughly a quarter of all articles related to Digital Marketing over the last decade is a noteworthy finding. It suggests that these countries are actively researching and contributing to Digital Marketing. However, it is essential to note that bibliometric analysis alone cannot determine the quality of the research produced in these countries, nor can it

account for the differences in research methodology or focus (Makrides et al., 2020). The analysis also shows that the most prolific writers are from Greece, India, the United States, and the United Kingdom. This finding suggests that these countries have a significant presence in the field of Digital Marketing research and may have well-established research communities. It would be interesting to investigate further why these countries are producing more research in this area and what factors might be driving this trend.

Regarding the affiliation of the most productive institutions, it is interesting to see the University of Edinburgh, USA, and the Agricultural University of Athens holding the first and second positions, respectively. It is worth noting that the reputation and resources of these institutions could be contributing factors to their productivity in the field. The presence of Bina Nusantara University in the third position is also noteworthy, as it is an Indonesian institution, further highlighting Indonesia's growing presence in the field of Digital Marketing research. The bibliometric analysis provides valuable insights into the countries, institutions, and individuals contributing to Digital Marketing research. While the analysis is limited to quantitative productivity measures, it offers a starting point for further investigation into the quality and impact of the research produced by these countries and institutions (Fortuna et al., 2020). Future research may explore the underlying factors driving these trends and offer a more comprehensive understanding of the global landscape of Digital Marketing research.

The data analysis revealing sustainability as the most productive journal is interesting. It may suggest that the journal is widely recognised and respected among researchers in the field or has a more open and accessible publishing policy. However, it is worth noting that productivity alone does not necessarily reflect the quality of the published work. On the other hand, the fact that the Journal of Business Research has the highest number of article citations despite being ranked fifth in productivity suggests that the journal is publishing high-quality work that is relevant and impactful in the field. This indicates that researchers in the field find the journal's contents valuable and influential, which could be attributed to the rigorous peer-review process, the reputation of the journal, or other factors (Wang et al., 2021). It is essential to recognise that productivity and citation counts are only two measures of journal quality and that other factors should be considered when evaluating the value and impact of a particular publication (Zyoud et al., 2015). These may include the journal's reputation, the impact factor, the editorial board, and the rigour of the peer-review process, among others.

In conclusion, the finding that Sustainability is the most productive journal and the Journal of Business Research has the most article citations is interesting and informative. Still, it should be interpreted with other factors contributing to academic publications' quality and impact. Further research and analysis are needed to gain a more comprehensive understanding of the value and impact of different journals in business research.

The data presented in Table 1 provides insights into the most influential articles on Digital Marketing. Interestingly, the article with the most citations belongs to Kumar (2016), which suggests that this article has had a significant impact on the field of Digital Marketing. It is crucial to understand why this article has received such many citations. Moreover, the fact that the top five most cited articles are from different authors and were published in different years shows that research on Digital Marketing is a continuously evolving field with multiple areas of interest. It also suggests that the most influential articles may provide various insights and findings from numerous perspectives and approaches. Understanding the most cited

articles in a field is essential for researchers who aim to contribute to it (Andati et al., 2022). They can identify the most influential articles in their area of interest, build upon the findings of these articles, and contribute to the field's advancement (Raak et al., 2014). Overall, the data presented in Table 1 highlights the importance of Digital Marketing as a research area and provides valuable insights into the most influential articles that have shaped the field.

The findings in Table 3 provide valuable insights into the productivity of authors in Digital Marketing. Sakas DP and Saura JR have published eight articles, which are the most productive authors on this topic. Their significant contribution to the field of Digital Marketing is impressive, and it suggests that they are experts in this area. Notably, the second-most productive author is from Spain, demonstrating that Digital Marketing research is not limited to Anglophone countries. The third most productive author, Ahuja V from India, further supports the idea that research in Digital Marketing is not limited to a particular region. This indicates that Digital Marketing is a global research topic that attracts interest from researchers worldwide. Dwivedi YK from Swansea University, United Kingdom, who published six articles, is also worth noting. Dwivedi YK is a highly regarded researcher in the field of digital marketing, and his contributions have had a significant impact on digital marketing research. Overall, the productivity of these authors indicates that Digital Marketing is a growing research area, and it will continue to attract the attention of researchers worldwide. Their work provides a foundation for future research and insights into the evolving digital marketing landscape.

#### *Trending and Relevant Topics for Future Research in Digital Marketing*

Based on the bibliometric analysis, there have been several trending topics over the last ten years in the field of digital marketing, including COVID-19, virtual reality, blockchain, e-commerce, SMEs, advertising, digital marketing, social media, marketing, social networks, consumer behaviour, mobile marketing, higher education, email marketing, value co-creation, and web 2.0. All of these topics can be divided into five categories. Topics such as COVID-19, virtual reality, blockchain, and Web 2.0 belong to the technology and innovation category. Topics such as e-commerce, SMEs, advertising, digital marketing, social media, marketing, social networks, and mobile marketing belong to the business and marketing category. Higher education can be related to the field of education. Consumer behaviour and value co-creation can be related to consumer relations. Email marketing and social media can be related to the field of communication.

From 2014 to 2015, the "web 2.0" topic dominated the trending topics, showing how important the concept was then. From 2016 to 2017, "social media" and "value co-creation" became the main focus, indicating increasing attention to building stronger consumer relationships. From 2018 to 2019, "mobile banking" and "virtual reality" became the main topics, reflecting the development of new technologies influencing the digital marketing field. In 2020, "digital marketing" became the leading trending topic, showing this field's importance in digital marketing. "COVID-19" also emerged as an essential topic, reflecting the pandemic's impact on business and digital marketing. In 2021, "blockchain" became the leading trending topic, indicating an increased interest in this technology in digital marketing. Overall, the trending topics in digital marketing from 2014 to 2022 depict the evolution and changes in the focus and issues that are important in the field. This technique can help experts and professionals understand trends and changes in the field of digital marketing, as well as

map the relationships between different topics. This study's findings are relevant to research conducted by Ruyter et al. (2018) and Ullal et al. (2021), which found that the digital marketing system synergies and interacts with a broader marketing system.

These topics are divided into four quadrants. Quadrant 1 is called emerging or declining themes, quadrant 2 is called niche themes, quadrant 3 is called motor themes, and quadrant 4 is called basic themes. Emerging or declining themes, niche themes, motor themes, and basic themes are categories used in bibliometric analysis to classify research topics based on their importance and relevance within a particular field (Pham-Duc et al., 2021). Emerging or declining themes refer to topics becoming more critical or losing their significance in the field. These topics may be new, relatively unexplored, or previously essential topics that are now losing relevance (López-Duarte et al., 2020). Niche themes, on the other hand, are particular topics that may not be of broad interest to the entire field. These topics may be highly specialised, focused on a particular industry or sector, or relevant only to a specific geographic region (Kholidah et al., 2022). Motor themes refer to topics that are highly influential and have a significant impact on the field. These topics may be well-established and highly researched and will likely impact the entire field broadly (Li et al., 2022). Finally, basic themes refer to the fundamental concepts and principles that underpin the field. These topics are likely to be widely researched and highly relevant to the entire field, and they may be viewed as essential knowledge for researchers working in the area (Abouzid et al., 2021). By categorising research topics into these four categories, bibliometric analysis can provide valuable insights into the current state of research in a particular field and help researchers identify which topics are most important and relevant to their work.

The topic in quadrant 1 is deep learning. Deep learning is classified as an emerging or declining theme in bibliometric analysis because although it has fast and promising developments, it also has the potential to experience a decrease in interest and attention in the future (Huang et al., 2022). Initially, deep learning had low-interest levels, but it became increasingly popular as technology advanced and the need for complex data processing increased (Qiu et al., 2022). Deep learning is widely applied in various fields, such as image recognition, speech recognition, and natural language processing (Choi et al., 2021). However, the potential decline in interest in this topic is also related to the difficulty of developing complex deep-learning models and the computational and hardware constraints associated with their use. Therefore, deep learning is considered an emerging or declining theme because while it is still an important and interesting topic, it has the potential to shift interest and attention in the future.

The topics in quadrant 2 include children, food marketing, regulation, digital economy, SMEs, social media strategy, marketing mix, e-marketing, education, B2B marketing, and internet marketing. These topics are related to the field of marketing. They are categorised as niche themes in bibliometric analysis because they are relatively popular but have not become major or motor themes in research. These topics usually have connections to significant themes but are considered to have a narrower or more specific research focus. For example, topics such as SMEs, e-marketing, and B2B marketing, while essential in business, are often less focused than broader topics such as advertising or digital marketing (Vieira et al., 2019).



The topics in Quadrant 3 are advertising, big data, and tourism. Advertising, big data, and tourism are topics that fall under the broader field of digital marketing. Advertising refers to the practice of creating and delivering promotional messages to target audiences through various media channels (Manko, 2022). Big data, on the other hand, refers to using large and complex data sets to identify patterns and insights that can inform decision-making (Wang et al., 2021). In digital marketing, big data is used to gather and analyse customer data, which can be used to optimise marketing strategies. Tourism refers to the industry and practice of travel, hospitality, and leisure (Katsoni, 2015). Further, in digital marketing, tourism marketing involves promoting destinations and travel experiences through digital channels such as social media and online travel agencies.

The topics in quadrant 4 include Facebook, Instagram, Twitter, machine learning, sentiment analysis, customer satisfaction, digital privacy, digital marketing, social media marketing, web analytics, digital marketing strategy, and trust. These topics fall under basic themes, which have already developed and become essential parts of digital marketing. Facebook, Instagram, and Twitter are essential components of digital marketing because they are widely used as platforms to promote products and services. The widespread use of social media has made social media marketing crucial in digital marketing (Rejeb et al., 2022). Machine learning and sentiment analysis are rapidly evolving technologies that are increasingly integrated into digital marketing (Marya et al., 2021). Machine learning improves the efficiency and effectiveness of digital marketing, while sentiment analysis helps understand consumer perceptions and responses to products and services (Del Campo et al., 2022). Customer satisfaction is crucial in digital marketing because satisfied customers become loyal and recommend products and services to others (Khairawati, 2019).

Therefore, monitoring customer satisfaction and taking necessary actions to improve it is crucial in digital marketing (Otto et al., 2020). Digital privacy is also a significant concern in digital marketing due to the increasing use of consumer data. Ensuring the security and privacy of consumer data is essential to building consumer trust and loyalty (Giorgi et al., 2022). Web analytics is an essential tool in digital marketing because it helps to understand consumer behaviour and optimise marketing strategies. By analysing data from websites and social media, companies can improve customer experiences and increase sales (Hasbolah, 2021). Digital marketing strategy is crucial because companies must have a clear and effective strategy to achieve marketing goals. In the constantly evolving digital era, companies must be able to develop appropriate marketing strategies to compete in the increasingly competitive market (Nirmalasari et al., 2022). Trust is vital in digital marketing because consumers are more likely to purchase products and services from trustworthy companies. Building consumer trust is vital in building brands and creating sustainable business opportunities (Khan et al., 2022). Overall, topics in the essential themes category are vital in digital marketing. Companies must understand and implement effective strategies to maximise the potential of digital marketing and achieve business goals.

Additionally, some topics fall between quadrants 1 and 2, namely augmented reality. Augmented reality is a technology that allows users to see the real world around them by combining digital elements in real-time visual displays. This topic is placed between quadrants 1 and 2 because it is still in the developmental stage and has not yet been fully adopted by the large market. However, it shows potential to become an increasingly important topic.

Topics that fall between quadrants 3 and 4 are digital marketing communication. Digital marketing communication is a topic related to the use of digital technology in business marketing and communication efforts. This topic is placed between quadrants 3 and 4 because it is relatively established and widely adopted by businesses and organisations. Still, it remains relevant and impactful in the field of digital marketing. Digital marketing communication is becoming increasingly important and complex, especially in a constantly changing digital environment, making it an area of continued development and focus in marketing research and practice.

In choosing future research topics in digital marketing, the chosen quadrant category depends on the research objectives and the researcher's interests. If the goal is to research an emerging topic, then topics in the Emerging or Declining Themes category can be chosen. However, if the focus is on a more specific topic, then topics in the Niche Themes category can be chosen. Meanwhile, topics in the Basic Themes category are more suitable for studying topics tested and proven vital in digital marketing practice. Digital marketing in 2024 is undergoing a transformative shift, with advancements in artificial intelligence, the growing dominance of video content, heightened emphasis on privacy-centric strategies, and the critical role of hyper-personalisation reshaping how businesses create immersive and tailored customer experiences (Pandiyana & Pandian, 2024).

The Emerging or Declining Themes category can be appropriate for research focusing on emerging or declining topics. For example, the topic of deep learning, which is included in this category, can be the focus of research to delve into the increasingly popular machine learning technology. Meanwhile, the Niche Themes category can be chosen for research focusing on a relatively specific topic that has not been extensively researched. For instance, the digital economy, which is included in this category, can be the focus of research to understand the appropriate strategies in business decision-making. If the research wants to focus more on a specific industry or based on target audiences, the Motor Themes category can be the appropriate choice. For example, tourism, which is included in this category, can be chosen as the research focus on understanding consumer behaviour in travel destinations. Finally, the Basic Themes category can be chosen for research that wants to focus on more general and fundamental topics in digital marketing. Examples of topics that fall into this category are Digital Marketing Strategy, Social Media Marketing, and Web Analytics, which can be the focus of research to understand how digital marketing can be implemented effectively and efficiently.

The study's practical implications for digital marketing professionals are significant, particularly regarding emerging trends like augmented reality and digital marketing communication. AR, situated between quadrants 1 and 2, shows promise for enhancing consumer engagement despite being in its developmental stage. In contrast, digital marketing communication, positioned between quadrants 3 and 4, emphasises the importance of leveraging digital technology for effective communication strategies. When choosing research topics, professionals can target emerging or declining themes like deep learning for cutting-edge insights or niche themes such as the digital economy for specific areas of interest. Ultimately, aligning research objectives with relevant quadrant categories allows practitioners to stay ahead of evolving trends and technologies, ensuring competitiveness in the dynamic digital marketing landscape.

**Conclusion**

While the report successfully highlights prospective research areas within Digital Marketing, it falls short in providing specific suggestions on research questions and methodologies, which could serve as valuable guidance for new researchers entering the field. A bibliometric analysis conducted on Digital Marketing articles from 2014 to 2023 revealed significant growth in the literature over the past decade. Through keyword analysis, the study identified popular research topics, while an examination of the most cited articles elucidated foundational research within the field. These findings offer insights into the current state of Digital Marketing research and can help identify emerging trends for future studies.

However, it is essential to acknowledge the limitations of the study. Firstly, the reliance on the Scopus database may result in the exclusion of relevant articles, potentially impacting the comprehensiveness of the results. Additionally, given the rapid evolution of the Digital Marketing landscape, regular updates to the findings are necessary to ensure their relevance and accuracy. To address these limitations and facilitate future research endeavours, researchers must explore more diverse databases beyond Scopus. Platforms such as Web of Science (WoS), Dimensions, Lens.org, PubMed, and Cochrane Library offer alternative sources of data that can enhance result accuracy and provide a broader perspective on Digital Marketing research trends. By linking metadata from multiple database providers, researchers can gain deeper insights into the field's dynamics and identify emerging topics and methodologies.

Moving forward, future research in Digital Marketing should prioritise methodological rigour and interdisciplinary approaches. Specific research questions could focus on investigating the impact of emerging technologies on marketing strategies, understanding consumer behaviour in the digital age, and exploring ethical considerations in digital advertising. Methodologies may include quantitative surveys, qualitative interviews, experimental studies, and case analyses. In conclusion, while the current study sheds light on the evolving landscape of Digital Marketing research, there remains a need for further exploration and refinement. By addressing the identified limitations and embracing diverse methodologies and data sources, researchers can contribute to a more nuanced understanding of Digital Marketing dynamics and drive innovation in the field.

This research significantly contributes to the theoretical understanding and practical implications of digital marketing. Theoretically, it provides a comprehensive bibliometric analysis that maps the evolution of digital marketing research over the past decade, identifying key trends, influential publications, and emerging themes. This adds depth to the existing knowledge by systematically organising fragmented research outputs and highlighting underexplored areas like deep learning and augmented reality in marketing. Contextually, the study offers insights into the global landscape of digital marketing, emphasising the pivotal roles of countries like the United States, India, and Indonesia in shaping the field. By focusing on diverse thematic clusters and their applications, this research serves as a valuable resource for academics, practitioners, and policymakers aiming to adapt to the rapidly evolving digital marketing environment. These contributions bridge the gap between theoretical discourse and practical strategies, ensuring relevance in both academic and industry contexts.

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