# An Extensive Survey of the Field of Interactive Digital Marketing Using a Bibliographic Network Analysis

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**Abstract:** Digital technologies and social networking sites are widely used, the way marketers engage with clients has undergone a significant transformation. Businesses can compete by using marketing techniques that are more objective, relational, and interactive thanks to information and communication technology (ICT) technologies and the range of digital platforms that are used. A broad and effective reach is made possible by utilizing cutting-edge technology and data-driven marketing, especially in digital advertising. Consumer groups have consequently become more knowledgeable, powerful, and connected both offline and online thanks to digital marketing (DM). The interaction between DM and improving customer satisfaction is the driving force behind this study. Since improving customer satisfaction is crucial to the survival of educational institutions, educational marketing interactions must begin with meeting both consumer and community needs and wants. This study identifies analysis dynamics in interactive DM by determining the stages of progression of significant articles, topics, co-citation networks, and citations using a variety of computational techniques, including development curve analysis and citation network analysis (CNA) of bi-bliometric data. The research adds to the vast, global field of study known as interactive DM.

**Keywords:** Information and communication technology (ICT), Digital marketing (DM), Marketing, Citation network analysis (CNA)

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# 1. Introduction

DM has become more convenient, has a bigger audience, is more cost-effective, and can now transcend time and space barriers thanks to the adoption of cutting-edge gadgets and methodologies. To achieve retailing goals both in the business-to-consumer and consumer-to-consumer sectors situations, DM makes use of technology of all sorts. DM is a dynamic, multi-disciplinary field that is always changing. It is not only a matter of using electrical technology that may be used for marketing and improvement because of recent advancements in ICT platforms and tools (Krishen, et al., 2021). New methods of reaching out to users, keeping them informed, maintaining their attention, and providing them with goods and services are made possible by DM. Since it performs so admirably, it is projected that marketing will stay at the forefront of technical innovation, and advancement (Ghorbani, et al., 2022). The business has traditionally prioritized analytics in marketing and, in particular, the accurate evaluation of marketing performance (Figueiredo, et al., 2021). Electronic marketing is still a growing system that offers this terrace, making it possible to use internet-based technology to perform all kinds of electronic advertising (Gao, et al., 2021). The internet has grown, and DM has evolved to include a vast network of software, stock trading, consumer behavior research, and other services in addition to just selling items. Today, a very important component of every company, corporation or organization's marketing plan is DM (Verma, S., (2021)). This study uses a range of computational techniques, including as development curve analysis and CAN, to evaluate the phases of development of consider the strength, topics, co-citation networks, and citations in interactive DM. The study contributes to the large-scale, international field of study known as interactive DM.

# 2. Related works

The internet and DM expanded to provide more than simply product sales, and now encompasses a broad network of software, stock trading, consumer behavior research, and other services. DM is a key element of today's marketing strategies for any business, corporation, or organization (Bramah, et al., 2022). A notable corpus of academic articles on DM that have been published over the last ten years will be analyzed for citation, trend, content, keyword use, and co-citation (Umesh, et al., (2022)).DM, a concept that is still relatively new and describes itself as a medium for communication, was originally known as internet marketing (Rosario, et al., 2019). To find similar themes, divide the specific topics into four groups. They also create graphs to represent coauthor ships, bibliographic coupling, and cogitations (Khan, et al., 2020). Information for academic academics and professionals in the business to help them understand how internet marketing research is developed and how it plays a part in developing marketing strategies (Patrick, et al., 2020).

# 3. Methodology

Tools for bibliometric-based citation analysis show the flow of information in different substantive study topics via a visual depiction of scholarship networks. Software for social network analysis (SNA), such as gephi and VOS viewer, is used to create the networks for the evolutionary trajectory, citation, co-citation, including co-authorship article using bibliometric data from the selected publications. CNA, which

offers a replacement for the expert-based method, is developing as a technological forecasting technique. They undertake a network analysis and temporal analysis of DM-related bibliographic data from the Scopus database using SNA's clustering and main route methodologies. The development of the subject area is then traced using main route analysis, and five phases in the maturity model of the DM development curve are identified. The knowledge burst detection technique provides further confirmation of the findings. Current subjects with potential for future study are identified by doing a main route's leaf nodes' content examination.

Analytic technique: The citation, co-author, and co-citation networks of study papers were used to analyse the bibliographic data of DM research from 1990 to 2019. The 45,260 nodes in the citation network reflect research publications published scholarly publications and conference proceedings, together with the mention that go with them. The biggest node, referred to as the huge component, was taken out of the networks and subjected to further analysis. The phases of DM development are revealed by the global main route for main path analysis method. A topic evolution model is suggested by comparing the Scopus and Web of Science (WoS) data. It was initially suggested to use Search Path Link Count (SPLC) to discover every main route of development of a domain using the citation networks primary route analysis in SPLC. In each literature, several methods are put forward to calculate the traversal count, taking into account both search locally, which utilizes the connections with the greatest SPLC as the exist links, and search globally, which uses the linkages with the greatest total SPLC. They use a global search strategy to identify each primary evolutionary route.

General patterns: The preliminary study pinpoints the typical trends of research in DM. The main multidisciplinary fields that contributed to the dataset are identified, as well as the authors, sources of the publications, institutions connected to the writers, and associated national affiliations. The general knowledge about the main study subjects and their phases of change throughout time is provided by the highly cited publications content analyses arranged by date.

## 4. Findings

Countries and journals: After going through the pre-processing step, a total of 45,260 records were added to the dataset that was obtained from the Scopus and WoS data repositories by applying the keywords that were mentioned before. We developed a development curve to demonstrate the present level of research maturity as well as the possibility for further development in research that is connected to DM. The advancement of the development curve that is shown in Fig. 9.1 may be utilized to make estimates about the levels of the growth of the research domain.
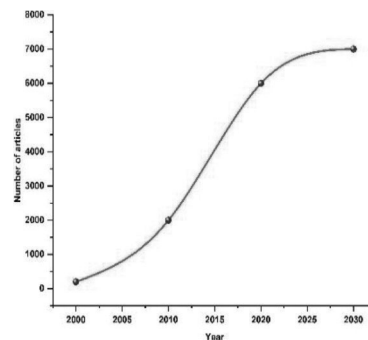


**Fig. 9.1** The subject evolution and maturity models for research topics in digital marketing

Topic evolution model: Every development from research subjects in the field is shown by the content examination of significant issues covered in high citation publications that are studied in chronological order. Since more papers have been published during the previous two decades, it is clear that DM is still in its development and dissemination phase and has not yet matured. There are fewer publications in the years before 2000, which may indicate that this is the beginning of evolution.

Main path analysis: Introduced is progression of change revealed by each citation network's major route paper, which concentrated on various theoretical concerns relating to consumer conduct. Their paper further highlighted every possible negative impacts concerning interactive media on politicians' also marketers' ability to make decisions and the issues with regulation they may face. The transition to the new e-Commerce paradigm presented marketing managers and companies with several ethical challenges, most notably privacy difficulties. The first level of development occurs up to the year 2000, as illustrated by the development graph, during which time conversion policies and theoretical difficulties were important to

study topics. During this time, the Internet gained widespread popularity.

Article and journal co-citation networks: For our analysis, networks of publications and journals that have received more than 20 co-citations are constructed utilising bibliographic research. The four main clusters of co-cited publications and relevant topics are depicted by the colours red, green, yellow, and blue in the co-citation networks of articles and journals. Social media marketing is the primary substantive problem with in red.

Cluster, while other topics there deal with research methods, including structural equation modelling. The brand community and social media are two of the major topics of the green cluster. Publications on consumer culture and marketing are represented by the pink cluster, those on interactive marketing by the blue cluster, and those on tourism, management, and hospitality by the violet cluster. Publications on psychology and health are represented by the green cluster. As seen in Table 9.1, articles with many citations cover a wide range of topics, including interactive marketing, business research, tourism, marketing, and advertising.

**Table 9.1**  The co-citation network's top journals by citation

| Journals | Citations | Documents |
|---|---|---|
| Journal of Business Research | 5646 | 117 |
| International Journal of Electronic Commerce | 1379 | 33 |
| International Journal of Market Research | 360 | 25 |
| Journal of Interactive Marketing | 8335 | 138 |
| Journal of Marketing | 4319 | 33 |
| Journal of Research In Interactive Marketing | 354 | 80 |
| Tourism Management | 5117 | 47 |
| Journal of Destination Marketing & Management | 569 | 24 |
| Marketing Science | 4951 | 76 |

| Journals | Citations | Documents |
|---|---|---|
| International Marketing Review | 620 | 25 |
| Electronic Commerce Research And Applications | 800 | 51 |
| International Journal of Advertising | 1261 | 62 |
| Journal of Travel & Tourism Marketing | 1051 | 39 |
| Business Horizons | 3784 | 50 |
| Psychology & Marketing | 1122 | 43 |
| Computers In Human Behavior | 2620 | 86 |
| International Journal of Information Management | 1654 | 47 |
| Journal of Marketing Research | 4829 | 48 |
| Journal of Advertising Research | 1953 | 76 |
| International Journal of Research In Marketing | 2300 | 34 |
| Journal of Advertising | 1832 | 32 |
| European Journal of Marketing | 1444 | 68 |

## 5. Conclusion

The dynamics of research today and the evolution of research trends from a range of perspectives and provides a variety of contributions. It will be able to develop innovative research partnerships in interactive and DM with the subject model and main research agendas that have been defined. Finally, using the two views comparison between citation and co-citation strength, their investigation further reveals the key research works in the DM area. Their paper's last contribution and conclusion in the field of interactive and DM often use one variety about research methodologies. This tendency is particularly noticeable in the most widely referenced publications. Future studies may probe more profound substantive relationships, co-authorships, and subjects as interact.

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*Note:* The table and the figure in this chapter were made by the Authors.