

## BIBLIOMETRIC ANALYSIS OF DIGITAL MARKETING WITH VISUAL MAPPING TECHNIQUE

### DİJİTAL PAZARLAMANNIN GÖRSEL HARİTALAMA TEKNİĞİ İLE BİBLİYOMETRİK ANALİZİ

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#### Abstract

Digital marketing is a very important position in line with the ever-advancing technology and the changing customer demands and needs. Due to the increase in studies on digital marketing in recent years, this study has been carried out in order to present the studies in the relevant literature to researchers together. In this study, the literature in the field of digital marketing is examined. This study, which examines the literature in the field of digital marketing, offers a quantitative-based approach to current trends in digital marketing. The paper used Vosviewer to analyze 858 digital marketing records from the Web of Science database between 1975 and 2021. In this article explores the whole picture of digital marketing research and shows a visual information structure and evolution of digital marketing. It is thought that this study, in which the dynamism of scientific publication activity is investigated, will shed light on other studies in the field of digital marketing. In this direction, it provides an important reference for academics to show the current situation and effective trends in the digital marketing field.

**Keywords:** Digital marketing literature, Bibliometric analysis, Science mapping analysis, VOSviewer, Web of science

**JEL Classification:** M30, M31, M39

#### Öz

Dijital pazarlama, sürekli gelişen teknoloji ve değişen müşteri talep ve ihtiyaçları doğrultusunda oldukça önemli bir konumdur. Dijital pazarlama ile ilgili çalışmaların son yıllarda artması nedeniyle, ilgili literatürde yer alan çalışmaları araştırmacılara bir arada sunmak amacıyla bu çalışma gerçekleştirilmiştir. Dijital pazarlama alanındaki literatürün incelendiği bu çalışma, dijital pazarlamadaki mevcut eğilimlere nicel tabanlı bir yaklaşım sunmaktadır. 1975 ve 2021 yılları arasında Web of Science veritabanındaki 858 dijital pazarlama verisini analiz etmek için Vosviewer kullanılmıştır. Çalışma, dijital pazarlama çalışmalarının tüm resmini ortaya koyarak, dijital pazarlamanın görsel bilgi yapısını ve evrimini göstermektedir. Bilimsel yayın

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faaliyet dinamiklerinin araştırıldığı bu çalışmayla dijital pazarlama alanında yapılacak diğer çalışmalara ışık tutacağı düşünülmektedir. Bu doğrultuda, dijital pazarlama alanındaki mevcut durumu ve etkili trendleri ortaya koymak adına araştırmacılara önemli bir referans sağlamaktadır.

**Anahtar Kelimeler:** Dijital pazarlama literatürü, Bibliyometrik analiz, Bilim haritalama analizi, VOSviewer, Web of Science.

**JEL Sınıflandırılması:** M30, M31, M39

## 1. Introduction

We live in a digital age where consumers' lifestyles are changing with the development of the Internet and information technologies, and consumers are more selective and their purchase intentions are transforming from traditional to online purchasing behavior. Internet, which is the basic element of all areas of human life such as social life, personal communication, education, and health, has become one of the most important marketplaces for goods and services transactions (Leeflang et al., 2014).

In the quarter-century since the commercial use of the Internet began, the business world has changed rapidly. Major multinational companies such as Google, Facebook, Amazon, Alibaba, eBay, and Uber, which were not in our lives twenty-five years ago, operate today as key players in the modern economy (Kannan and Li, 2017). Today's increasingly digital environment has transformed the way businesses operate. It has led to a fundamental change in how businesses and consumers interact with each other. Ability for businesses to gather abundant and detailed information about consumers, competitors and the market in general has affected all aspects of the marketing mix, which is called product, price, place and promotion (Goldfarb and Tucker, 2019; Langan et al., 2019). In addition, thanks to digital technologies, product, price, place, and promotion activities change, thus reducing the costs of some marketing activities (Goldfarb and Tucker, 2019).

This study aims are to contribute to the development of the digital marketing field by examining the literature in a more objective, systematic, and integrated manner. Understanding digitalization in marketing has a very important role for both researchers and practitioners. Bibliometric studies provide an effective orientation to the studies of academicians and therefore to the literature. In the marketing literature, bibliometric studies appear as a widely used method. For example, International marketing (Samiee and Chabowski, 2012); Industry 4.0 (Cobo et al., 2018); Digital mediation in business-to-business marketing (Kumar et al., 2020); key account management (Kumar et al., 2019); Entrepreneurship research (Ferreira et al., 2019); Technology and Innovation Management (Huang et al., 2019); disruptive innovation (Shang et al., 2019). Bibliometric research conducted over the years has a long history in marketing to investigate basic knowledge structures in the field (Samiee and Chabowski, 2012).

In today's digital age, marketers and market researchers conduct intensive research on digital marketing (Kotler et al., 2017; Fierro et al., 2017; Ritz et al., 2019, Behera et al., 2020). However, up to now, few studies have quantitatively analyzed the evolution of Digital Marketing. Although studies on the bibliometric analysis of digital marketing have begun to appear in the literature (León-Castro et al., 2021; Purnomo et al., 2021; Sharma, 2021; Verma et al., 2021); The fact that the current study is

up-to-date as of the year it contains and the comprehensive preparation of the visual mapping makes it different from other studies. This study has been carried out to examine the development of digital marketing studies since 2006.

In this direction, a basic and general framework will be drawn with the mapping technique that can present the studies of digital marketing literature, which is the subject of research, the authors of the studies, the sources in which the studies are published, journals and countries together. In this study, a bibliometric examination has been made, which allows reaching the opportunity to reach the most basic sources in the relevant literature in the fastest way, and then a visual mapping technique has been used. Scientific mapping analysis is a bibliometry technique that enables to reveal of the conceptual, social, and intellectual aspects of the research subject. In addition, it provides the opportunity to emphasize the development or change of these aspects over time by drawing a long-term framework (Cobo et al., 2015).

In the content of the study, firstly the literature of digital marketing which is the subject of the research is examined and then the method of the study is emphasized. Then, the findings are shared in the form of year-based, field-based, country, keyword analysis, author and journal. The findings are presented in the form of graphical and bibliometric network analysis. Then, the limitations of the study and recommendations for future research, and finally, the evaluation of the findings obtained from the practice part of the study are included in the conclusion part of the study.

## **2. Digital Marketing Literature Review**

Marketing campaigns have been based on traditional media such as direct mail supported by TV, print and radio advertising, and public relations for many years. However, since the proposal of the web concept towards the end of the 1980s, there have been major changes in marketing communication recently. Digital equivalents of traditional media, known as digital media channels are now considered vital components of most marketing campaigns (Chaffey & Ellis-Chadwick, 2019). Marketing channels have changed significantly in recent years with technology and innovation. Marketers are increasingly demonstrating greater efficiency, effectiveness, interest and persuasive power to their value partners, especially consumers. The biggest change in marketing channels is achieved by digital transformation (Key, 2017).

Traditionally, marketing always begins with segmentation, dividing the market into homogeneous groups according to geographic, demographic, psychographic, and behavioral profiles. With digital transformation, virtual communities are a new division today. Unlike traditional segmentation, communities are naturally created by customers within their own set of boundaries (Kotler et al., 2017). Market segmentation, increasing digital media tools, and rapidly increasing customer service and options are found to take place in all markets both from business to business and from business to consumer (Day, 2011: 184).

It is seen that the concept of digital marketing was first used in the 1990s. However, while the concept in question was used in the periods mentioned, mainly in association with introducing products to consumers; Since the 2000s, it has been observed that the concept has been expanded with the emergence of new social and mobile applications (Fierro et al., 2017: 242).

By the American Marketing Association (<https://www.ama.org/topics/digital-marketing/>), digital marketing is defined as “the use of digital or social channels to promote a brand or reach consumers”. This type of marketing can be carried out on the internet, social media, search engines, mobile devices and other channels. Digital marketing channels point to internet systems capable of simultaneously creating and delivering value from producers to consumers. In some cases, a complete value chain operation can be carried out entirely online. By means of software as a service, products designed on computers are created and delivered to consumers over the internet. Physical products may not be produced or transported in digital environments, but their research, personalization, purchase, review, and post-purchase communication can be accomplished through a well-designed mobile application (Key, 2017).

Kannan and Li (2017: 22) pointed out that digital marketing, with an inclusive perspective, “collaborate with customers and partners to create, communicate, present and sustain value for all stakeholders; “an adaptable and technology efficient process”. In another definition, it is technically expressed as the transmission of the value of items such as digital marketing, goods or services to customers, and the use of online and offline digital channels, especially over the internet (Behera et al., 2020: 1). Digital marketing through social and mobile media has rapidly become a part of the daily lives of millions of people, expanding into common social media activities, and has often enabled the creation of effective customer relationships (Kim et al., 2019).

With digital marketing that develops in parallel with technological innovations, marketing academics and practitioners are witnessing a major transformation in marketing (Lamberton & Stephen, 2016). Marketers need to focus on relationship-based interactions with their customers to improve their digital marketing practices (Tiago and Verissimo, 2014: 703).

Today, marketers have data flow far beyond their usage capacity. This situation creates the necessity of updating the marketing strategies to be implemented (Day, 2011: 183). From this point of view, new ways of reaching customers, informing, interacting, making sales, obtaining information, and providing services to customers by revolutionizing marketing have recently been offered with digital media platforms (Lamberton and Stephen, 2016: 146). According to Goldfarb and Tucker (2019), digital marketing differs from traditional marketing by reducing costs in five categories such as search, reproduction, transportation, tracking, and verification. In addition, changes in consumer behavior have required businesses to rethink their marketing strategies in the digital field (Tiago and Verissimo, 2014: 703).

In their study, Kannan and Li (2017: 22) investigated how the developments in digital technology reshaped the marketing process and strategies and the effects of this transformation in the field called “digital marketing”, emphasizing the importance of today’s businesses to establish a “digital

relationship” with customers. Moreover, they argue that digital technologies and devices such as smartphones, smart products, the internet of things (IoT), artificial intelligence, and deep learning all promise significant transformations in the lives of consumers in the near future (Kannan and Li, 2017).

### 3. Methodology

Bibliometry has been applied in social sciences in various ways. This method is a quantitative analysis of the bibliographic features of a body of literature (Lawani, 1981; Nicolas et al., 2020; Liu et al., 2020). Bibliometry has an interdisciplinary premise that has a strengthened perspective to expand scientific research (Samiee and Chabowski, 2012).

The bibliometric analysis provides attractive insight into the works of academics. Bibliometric studies facilitate the interpretation of the options to be obtained from the academic perspective (Ferreira et al., 2019). Bibliometric analysis is the presentation of disciplines, fields, specialties or how authors are related to each other on the basis on their distance (Cobo et al., 2012, 1609). Bibliometric studies expand the scope of the relevant literature, especially for academicians who are new to the field of research, in terms of understanding the subject of research from an interdisciplinary perspective (Liu et al., 2020).

Simplex data analysis is not enough to meet the demands of bibliometric research today. There is a growing interest in science mapping, also known as visualizing bibliometric network. It provides more detailed information in addition to obtaining more clearly explainable results with bibliometric visualization (Huang et al., 2019). The science mapping is a visual representation of disciplines, fields, areas of expertise, and how documents or authors relate to each other. It is often used in different research areas to identify some key elements (countries, authors, journals, topics, etc.) (Cobo et al., 2018).

Bibliometric analysis was used to evaluate current research trends in digital marketing literature. Databases in web-based online environments such as Web of Science, Scopus, CiteSeer, Google Scholar and Medline are common data sources used in bibliometric research (Cobo et al., 2015).

Web of Science is the world’s leading scientific literature database in the fields of social sciences, arts and humanities. This database includes international conferences, symposiums, seminars, workshops and congress meetings. It is the database that keeps its complete and retrospective scope in social sciences, arts and humanities since the 1900s (Martinez et al., 2015). According to another definition, Web of Science is an online scientific indexing service, which is the world’s leading scientific research data source (Khalil and Crawford, 2015, p.51).

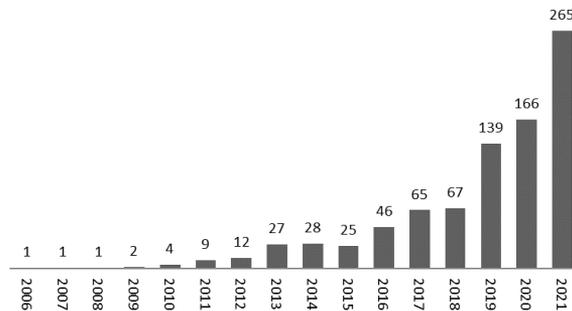
Since Web of Science is the most significant bibliographic database (Cobo et al., 2018), the relevant research documents related to the analysis to be made were downloaded from here using the “digital marketing” query. In this study, the publications published in the digital marketing literature using the terms “digital marketing” between 1975-2021 and indexed in the “Web of Science Core Collection” database were reached. .Because the digital marketing literature is new, the first studies after 2006 were found in Web of Science. Therefore, it was included in the analysis between the years 2006-2021.

Scientific mapping technique aims to reveal the structural and dynamic aspects of scientific research (Cobo et al., 2012). Bibexcel, VOSviewer, CiteSpace, CopalRed, IN-SPIRE, CRExplorer, Network Workbench Tool, Science of Science Tool, VantagePoint and SciMAat are software used in scientific mapping techniques to create bibliometric network analysis and condensed network visual (Cobo et al., 2011; Cobo et al., 2012; Pradhan, 2016). In this study, a visualization program called VOSviewer (version 1.6.16) was used to visualize the bibliometric analysis. The functionality of VOSviewer gains importance in terms of being useful in viewing and interpreting large bibliometric maps easily (Van Eck & Waltman, 2009). With the help of the VOSviewer software, the literature is illustrated in a mapped way. Unlike other web-based programs used for mapping, VOSviewer places special emphasis on graphic presentation. There are two aspects of bibliometric mapping, namely the construction of bibliometric maps and their graphical representation.

#### 4. Findings

According to the data obtained from the Web of Science database on Digital Marketing, a total of 1372 scientific publications were accessed by describing them as “topic” and searching as “digital marketing” for the period 2006-2021. Of these publications, consist of 858 (62.3%) articles, 425 (30.1%) proceeding papers, 43 (3.1%) of review articles, 35 (2.4%) book chapters and 30 (2.1%) editorial materials. In this study, only the articles on digital marketing accessed from the relevant database were analyzed.

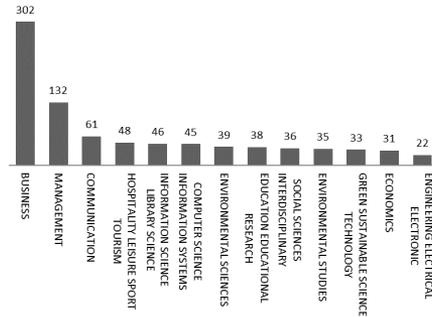
The distribution of the mentioned publications by years is presented in Figure 1.



**Figure 1:** Distribution of Articles Related to Digital Marketing for the Period 2006-2021 by Years

As can be seen from Figure 1, it is observed that digital marketing has been increasingly taking place in the field over the years. In particular, the year in which the most publications on digital marketing, which has increased since 2013, were produced the year 2021 with 265 scientific publications (30.8%).

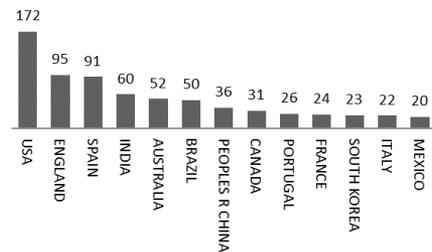
At this stage, where the work areas that contribute the most to the digital marketing literature are analyzed, the findings obtained are presented in Figure 2.



**Figure 2:** Distribution of the Fields of Digital Marketing Articles for the 2006-2021 Period

As can be seen from Figure 2, studies related to digital marketing were mostly carried out in the fields of business, management and communication. The indication that digital marketing is a multidisciplinary field of study, from computer science to business; from economy to communication; It is involved in many fields of study from tourism to management.

In order to examine the authors who contribute to the digital marketing literature with their scientific publications, the address information of the first 13 countries on a country basis is presented in Figure 3.



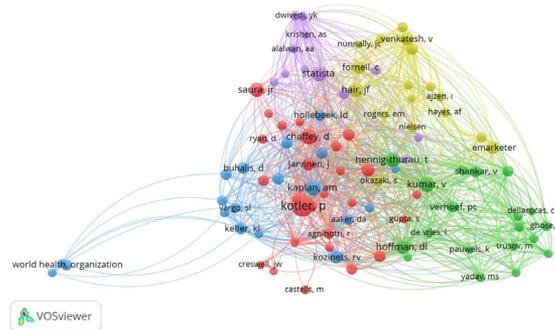
**Figure 3:** Distribution of Articles Related to Digital Marketing for the 2006-2021 Period, by Country of Publication

When looking at the contributing countries, the USA ranks first with 172 (20%) scientific publications.

The distribution of the articles on digital marketing according to the countries where they are published is presented in Figure 4, with the colored visual network analysis in the VOSviewer program. In this way, circle sizes are in parallel with the number of publications belonging to the countries. The same circle colors indicate whether the studies conducted in countries have references to each other, and the lines between the circles indicate that studies in which countries are related to studies in which countries.



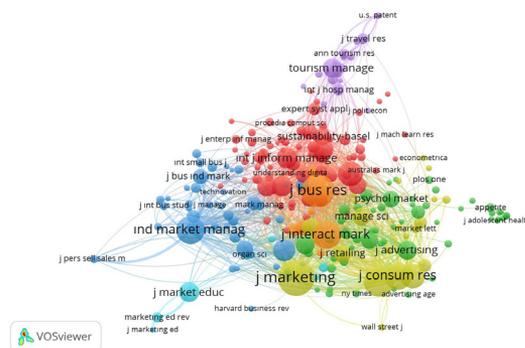
(Samiee and Chabowski, 2012). Accordingly, the following analyzes were made and evaluations were made according to the effect of citations between authors and journals. Colorized visual network analysis of the set of article authors on digital marketing in VOSviewer program is shown in Figure 6.



**Figure 6:** Bibliometric Network Analysis of the Authors of Articles About Digital Marketing for the 2006-2021 Period

As can be seen in Figure 6, four clusters have been formed in which the authors of the studies conducted over the years are related to each other. The most prominent authors in the sets are Kotler, P, Hair, JF, Hennig-Thurau, T, and Kaplan, AM. It is important to examine the publications of the authors who will work in the field of digital marketing.

Following the author network analysis, it is possible to see the journals that publish the most studies on digital marketing and the links between them in Figure 7.



**Figure 7:** Bibliometric Network Analysis of Journal Distribution of Articles Related to Digital Marketing for the 2006-2021 Period

As can be seen in Figure 7, six clusters related to each other were formed according to the journals in which the studies conducted over the years were published. The most prominent journals in the

clusters are Journal of Marketing, Journal of Consumer Research, Journal of Business Research, Computer in Human Behavior, Journal of Marketing Research and Journal of Market Education.

## **5. Limitations and Future Research**

After a thorough disciplinary review of fundamental digital marketing studies, this study provides thematic visions and implications for academics and practitioners, which are promising ways to create effective digital marketing. One of the main objectives of this research was to develop directions for future studies. This study, which was conducted with a quantitative systematic literature review, it was aimed to determine the themes related to digital marketing and to identify research gaps and research areas for future studies. The most important limitations of the study are that the articles were accessed through Web of Science, which is only one database. Although a database accepted as the most comprehensive in the literature is selected, it still causes scientific publications that are not scanned here to be ignored. In addition, only articles in the field of digital marketing were examined in this study, and all proceeding papers, book chapters, editorial materials and reviews can be included in the study.

## **6. Conclusion**

As customers increasingly interact with businesses through digital channels, marketers need to track these interactions. In this study, in which the articles in digital marketing literature between 2006-2021 were analyzed, it was aimed to create a consistent framework to evaluate the appropriateness of digital marketing research by combining the theoretical cornerstones and current research trends. It is thought that it will be a guiding and illuminating study on digital marketing.

This study, which aims to analyze the literature in a systematically and comprehensively manner in order to define the theoretical principles and research trends in digital marketing research, offers the opportunity to complement existing studies in a differently. As a result of the bibliometric analysis carried out, an important part of the scientific publications in the field of digital marketing has been reached collectively. In this context, the study provided the opportunity to create a coherent overview of research trends and basic studies in the digital marketing literature.

The bibliometric analysis, which provides the opportunity to demonstrate the effectiveness of scientific publications, enables one to examine of the authors, countries and scientific journals, as well as to see the trend topics that are worked together, in other words, the conceptual structure. The bibliometric analysis and visual mapping method, which have been used in different disciplines recently, have been applied together in this study.

The development of scientific knowledge takes place through a circulation process in which all new information is partially dependent on existing knowledge (Samiee and Chabowski, 2012). In the study conducted for this purpose, guiding findings were obtained for future studies. Within the scope

of the study, firstly the data obtained from Web of Science was arranged and the articles published between 1975-2021 were included in the data to be analyzed. Because the digital marketing literature is new, the first studies after 2006 were found in Web of Science. Therefore, it was included in the analysis between the years 2006-2021. Then, the outputs obtained from the VOSviewer program, which is used to make a visual presentation are included.

In the light of the findings, it has been observed that the subject of digital marketing has an increasing trend as a field of study in the literature. It has been revealed that a significant increase has been recorded in the relevant literature in 2013 and after. According to the findings of this study, which was conducted to enlighten the conceptual structure and scientific development of digital marketing, most publications were produced in 2021.

It has been found that business, management and communication are the fields that contribute the most to the digital marketing literature. In addition, digital marketing; from computer science to business; from economy to communication; Its involvement in many fields from tourism to management has been demonstrated as an important indicator of its multidisciplinary field of study. The USA has emerged as the most contributing country in digital marketing, which has taken its place as an important field of work in many fields. As of the point reached, it is observed that digital marketing has increasing importance in the world to better understand it.

The keywords used in digital marketing articles are social media, social networks, e-commerce, advertising, consumer behavior, and content marketing. As a result of the analysis of the authors of the articles on digital marketing, it was seen that the authors formed four clusters related to each other. The most prominent authors in the sets are Kotler, P, Hair, JF, Hennig-Thurau, T, and Kaplan, AM. Following the author network analysis, when the distribution of the articles on digital marketing according to the journals they were published in was examined, it was observed that the journals formed six clusters related to each other. The most prominent journals in the clusters are Journal of Marketing, Journal of Consumer Research, Journal of Business Research, Computer in Human Behavior, Journal of Marketing Research and Journal of Market Education.

### **Author Contribution**

All stages of the study were conducted by the author.

### **Conflict of Interest**

No conflict of interest was reported by the author.

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## Resume

**Emine ŞENBABAĞLU DANACI (Ph.D.)**, is a Research Assistant (Ph.D.), and teaching marketing courses in Business Administration Program, Duzce University, Turkey. She has Ph.D. degree from Gazi University. She has research assistant position since 2014. Her research interests are consumer behavior, digital marketing and innovativeness.