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Word-Of-Mouth Marketing in Health Sector: A Bibliometric Analysis

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ABSTRACT

Purpose - By nature, human beings tend to share the positive or negative emotions they experience with their environment. This type of behavior also shows itself in shopping behavior. For example, if consumers who buys clothes experiences satisfaction or dissatisfaction with this clothing, they wants to share this with their circle and convey their positive or negative shopping experience. This is important for all sectors where marketing strategies are developed. Word-of-mouth marketing strategy is an important reference in terms of establishing correct communication with the consumer, especially in the healthcare sector, which has an expensive and complex structure. In this study, it is aimed to systematically examine the studies on the concept of word-of-mouth communication in the field of health through a literature review.

Design/methodology/approach - All studies that included the concept of word of mouth communication were examined by scanning the Web of Science Core Collection (WOSCC). A total of 1086 articles were scanned and a total of 173 articles related to the research topic were included in the study. The year of the research was not taken as a constraint in the study and all articles published until March 11, 2024 were scanned. The Bibliometrix r-package (Biblioshiny) application and VOSviewer was used for textual and grapgical represantations and visualization.

Findings - It is shown that the studies were published between 1996 and 2024, and when their performance is examined, there has been a significant growth in the number of studies since 2019.When the data collection methods of the studies were examined, it was seen that the most dominant method was the survey. Very few studies collect data from online platforms and social media.Among the data analysis methods, the descriptive analysis method was mostly used. It is seen that the number of studies such as machine learning and algorithm development as data analysis methods in social media and online platforms is low.Most of the publications came from the USA and China. İt has been seen that the British Food Journal and the International Journal of Pharmaceutical and Healthcare Marketing publish the most publications on word-of-mouth marketing in the field of healthcare. When the keyword analysis that the authors use the most following word of mouth marketing is examined, it is seen that the words social media, purchase intention, social marketing and health come to the fore.

Discussion - There are limited bibliometric analysis studies on the subject. It can be said that the USA and China provide up-to-date continuity in the field of national health and marketing. The word social media stands out in the keywords, but although it is seen that the word 'electronic word of mouth marketing (e-WOM)' is rarely used due to the scarcity of data analysis studies on social media and online platforms, it is recommended to take into consideration that the increasing social media marketing and online platform data will create a very good sample for the authors of the relevant publications. The study was only scanned by the Web of Science Core Collection (WOSCC). A similar study can be repeated by scanning different databases. In this study on word of mouth communication in the health sector, the sector can be examined in detail. For example, it can be discussed in which area the study is used more in the health sector (surgery, protective and preventive, cosmetics).

1. INTRODUCTION

The health sector, which has been perceived as compulsory treatment services for many years, has turned into a giant sector and also a giant market with global epidemics, developments in the field of medicine, and the explosion in digital technologies and data science. With the increase in individuals' awareness and consciousness, expectations from the health sector have begun to change. Consumers who want to continue their lives with a high quality of life in a prosperous environment have begun to allocate more budget to the field of health in order to provide this environment and have begun to demand special health services. Moreover, they want these services not at the treatment stage, but at the protective and preventive health services stage (Das, 2018; Deloitte, 2022; Butt et al., 2019).

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The transformation of the healthcare industry into a giant industry has turned patients into powerful customer profiles. Moreover, in the field where human life is at stake, such as health, it has made the consumer who has previously experienced similar healthcare services a strong reference. Realizing the importance of this situation, marketing experts have begun to develop the concept of word-of-mouth communication as a marketing strategy and conduct research in this field. Although there are studies in this field, it is thought that there are still gaps in word-of-mouth marketing research in the health sector. For this reason, it is thought that the research will contribute to the gap in the literature (Butt et al., 2019). The information obtained from this study provides information to researchers who want to work on word of mouth marketing in the future about which topics are intensively studied and in which direction word of mouth marketing is used weakly. For example, studies in the literature show us that the concept of word of mouth marketing is mainly associated with social media and that social marketing studies are emphasized. However, it can also be a guide for studies to be conducted in areas where marketing strategies can be used, such as preventive and protective health services and supportive food supplements in the health sector (Argan, 2012; Drevs & Hinz, 2014; Chen et al., 2018; Zolkepli et al., 2023).

2. THEORETICAL REVIEW

According to Ben Ayed and El Aoud (2017), if real development and strengthening in the field of health is desired, they advocate that the patient be included in this process. First, the patient must be seen as a consumer and behavioral change must be achieved. Then, the patient's consciousness and awareness about health should be increased and become a driving force in the development of the health field. word-of-mouth is a powerful factor in changing consumers' behavior in the field of health (Martin, 2017). Because when it comes to health, individuals trust more the information they receive from their close circle or the advice they receive from them (Bansal and Voyer, 2000). When we look at the studies conducted in the field of health on word-of-mouth, which is defined as informal mutual communication about the product from person to person (Arndt, 1967; Anderson, 1998; Wangenheim, 2005; Gürcü and Korkmaz, 2018); Gelb and Johnson (1995) stated in their study that the concept of word-of-mouth can have a strong impact in the field of health because this concept is related to emotions. They also stated that both marketers and healthcare professionals should work by taking this situation into consideration in order to prevent the formation of strong negative emotions in patients. Ferguson et al. (2006) conducted a study on the consequences of both hernia patient's overall satisfaction (and overall service quality) and hospital staff satisfaction on the level of positive word-of-mouth advocacy. At the end of the study, patient evaluations of overall satisfaction and service quality were significantly associated with these progressive levels of word-of-mouth in recommending the hospital to potential patients. Also hospital employee satisfaction was significantly associated with increasing levels of positive word-of-mouth in recommending the hospital to potential patients and potential employees. Khalid et al. (2013) conducted a study to understand to what extent word-of-mouth marketing communication contributes to the consumer decision-making process. At the end of the study, it was concluded that social factors and personal factors have a very important contribution to consumers' decision-making, these factors are accepted as the tool that provides the strongest contribution to consumers' effective decision-making according to their social structure, word-of-mouth marketing communication is a very effective tool and therefore health professionals should use it. Findings have been obtained that they should use it to develop and improve their personal image. Martin (2017), in his study based on a comprehensive literature review of the leading scientific journals of the healthcare industry, found that there are factors in favor of word-of-mouth marketing communication that can be affected by service providers and payers. Additionally, some studies have found that because word-of-mouth marketing communications can spread across networks and influence large groups of people, they should be considered as a possible way to distribute specific healthcare recommendations. Pauli et al. (2023), who conducted a similarly comprehensive and systematic study, found that personnel are important in the service process, negative comments have a stronger effect than positive ones, and the main reason for negative word-of-mouth communication is service quality. Zhang et al. (2013) examined personal messages shared by individuals in the United States on Twitter and evaluated the posts about physical activity in terms of electronic word-of-mouth marketing (e-WOM). The study found that posts about physical activity were popular, but these posts were made more by people with fewer followers and shares.

In a study conducted by Tableessy et al. in 2023, they aimed to reveal the extent to which the purchase intentions of consumers of a cosmetics company, directed through word-of-mouth marketing, affect their

purchasing decisions. At the end of the study, it was determined that purchase intention positively affects purchase decisions and that word-of-mouth marketing directs purchase intention on purchasing decisions.

Tavares (2024) aimed to reveal how customer satisfaction with the services of an aesthetic clinic affects the perceived value and word-of-mouth marketing. At the end of the study, it was revealed that the satisfaction of customers with clinical experience has a positive effect on perceived value and word-of-mouth marketing.

Although studies on word-of-mouth communication have been conducted in the health sector, there are still some gaps in the field (Pauli et al. 2023). For example, it is seen that studies on word of mouth marketing in the recently popular fields of beauty, aesthetics and cosmetics are extremely limited. It is seen that there is a gap in the literature regarding the guiding effect of word of mouth marketing in this field, which tools are used for word of mouth marketing communication, the contribution of social media to word of mouth marketing in beauty, cosmetics and aesthetics, and the ethical elements that may arise in sensitive issues such as health. Therefore, it is thought that this study will guide researchers in terms of the issues that need to be addressed in the health sector.

3. METHODOLOGY

3.1. Data Extractiom

The present study aims to map the current state of research on word-of-mouth (WOM) marketing within the healthcare sector. In pursuit of this objective, the study addressed the following research questions:

1. What is the frequency of WOM research in healthcare?
2. Which themes are most commonly associated with WOM in healthcare?
3. How have the trends in WOM usage evolved over the years in the healthcare sector?
4. How is the distrubition of WOM across different countries in the healthcare sector?
5. What is the citation performance of studies related to WOM in this field?

For inclusion, only research that integrates both healthcare and WOM marketing concepts was considered, while studies focusing solely on WOM outside the healthcare context were excluded. Moreover, the analysis was limited to publications indexed in the Web of Science Core Collection. The dataset underwent three rounds of review by two experts, with only those studies that received final approval being incorporated into the research.

An initial attempt was made on March 8, 2023, to gain a profound understanding of word-of-mouth marketing in the healthcare sector. Initially, the keywords 'word-of-mouth' and 'health' were chosen as the main keywords, and only English studies were considered, then searched in the Web of Science Core Collection database. A total of 1086 articles were obtained; however, to focus on studies related to word-of-mouth marketing in the healthcare sector, the keywords were redefined as 'word-of-mouth' and 'health marketing', and a new search was conducted on March 11, 2023. A total of 203 articles were obtained as a result of the search. After meticulous review, it was decided to remove 30 articles from the review because they did not meet the research criteria.

3.2. Data Analysis

In this study, science mapping was performed using the descriptive method, which is one of the bibliometric analysis methods. Thus, it was aimed to reveal the scientific dynamics of word-of-mouth marketing in the health sector (Yılmaz, 2021).The Bibliometrix r-package (Biblioshiny) application (Aria & cuccurullo, 2017) was used to create analyzes of textual and graphical representations of publication and citation trends, featured documents, authors, sources, relevant links, and country collaborations. Additionally, VOSviewer is used for visualization network – keywords and bibliographic linking (Baker et al., 2020a,2020b).

4. RESULTS

4.1. Overview of Publications

An overview of the publication database is shown in Table 1 and Figure 1.

Table1. Data Overview

Description	Results	
Main Information About Data		
Timespan	1996:2024	
Sources (Journals, Books, etc)	129	
Documents	173	
Annual Growth Rate %	5,08	
Document Average Age	6,27	
Average citations per doc	22	
References	9832	
Document Contents		
Keywords Plus (ID)	530	
Author's Keywords (DE)	719	
Authors		
Authors	538	
Authors of single-authored docs	15	
Authors Collaboration		
Single-authored docs	16	
Co-Authors per Doc	3,23	
International co-authorships %	27,75	
Document Types		**%**
article	147	84,97
paper; book chapter	3	1,73
paper; early access	8	4,62
editorial material	1	0,58
proceedings paper	7	4,05

As shown in Table 1 and Figure 1, 173 articles were obtained regarding word-of-mouth (WOM) in the healthcare marketting. In the period from 1996 to 2024, original articles constitute 84.97% with 147 articles (as shown in Table 1), article early access accounts for 4.62% with 8 papers, and review accounts for 4.05% with 7 papers, proceedings paper 4.05% with a total of 7 papers, book chapter with 3 papers constitutes 1.73% and editorial material constitutes 0.58% with 1 article.

Figure 1. Key Figures of the Data Collection

As seen in Figure 1, the annual growth rate of studies on word-of-mouth communication in health marketing is 5.08%. It can be seen that there are a total of 538 different authors in these 173 articles. There are 719 different keywords determined by the authors. A total of 9832 references were used in these 173 articels. The annual citation rate of each article is shown as 22. The average co-authors per document was shown as 3.23.

4.2. Annual Trends In Publications

The distribution of documents according to years is given in Figure 2 and Table 2. There is a noticeable increase in research on word-of-mouth marketing in the health sector in 2019. Although interest in the subject decreases in 2021, the same intensity of interest is seen in 2023.

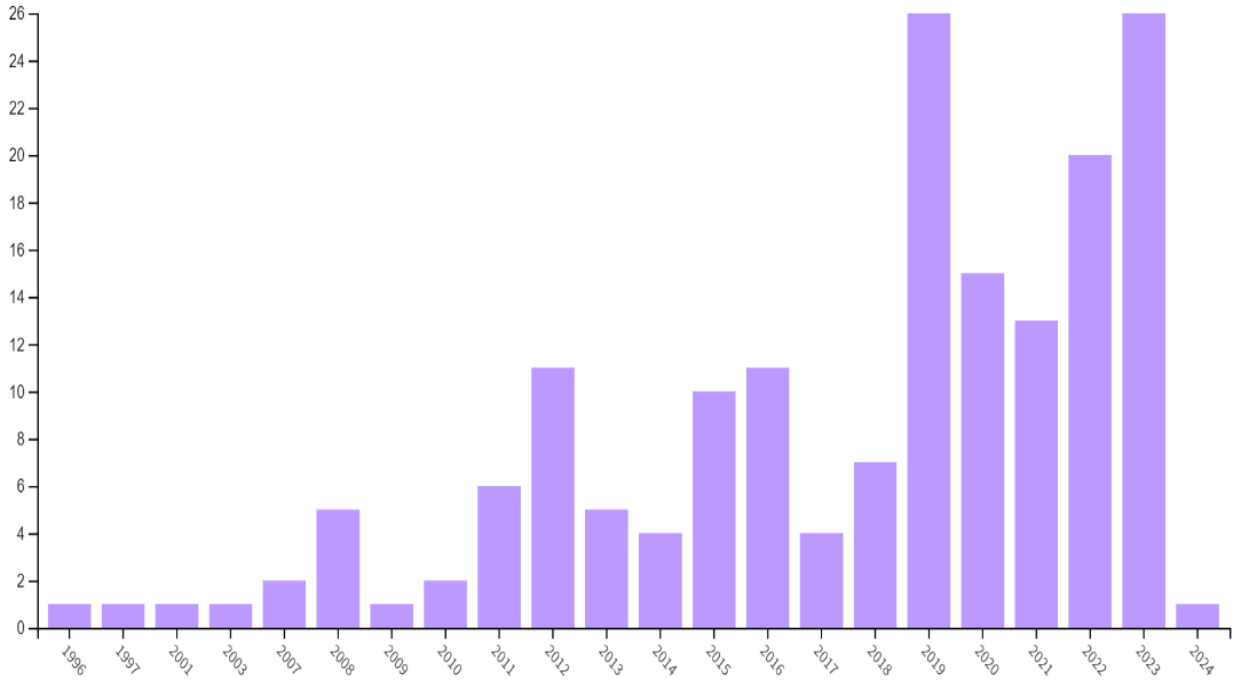


Figure 2. Annual Trends in Publications

Table 2. Numbers of Publications by Years

Publication Years	Record Count	% of 173
2024	1	0,58
2023	26	15,03
2022	20	11,56
2021	13	7,51
2020	15	8,67
2019	26	15,03
2018	7	4,05
2017	4	2,31
2016	11	6,36
2015	10	5,78
2014	4	2,31
2013	5	2,89
2012	11	6,36
2011	6	3,47
2010	2	1,16
2009	1	0,58
2008	5	2,89
2007	2	1,16
2003	1	0,58
2001	1	0,58
1997	1	0,58
1996	1	0,58

An examination of the research trends depicted in Figure 2, with numerical representation in Table 2, reveals a significant increase in publication numbers in 2019 and 2023, both of which reached the highest level with 26 publications. In contrast, a notable decline occurred in 2021. However, the resurgence in 2023 indicates a return to the publication levels seen in 2019. These data suggest a substantial rise in academic interest in word-of-mouth marketing, particularly following 2019.

4.3. Citation Analysis of Publications

Figure 3 shows the ten most cited studies from publications related to health marketing and word-of-mouth marketing, written between 1996 and 2024 and registered in the Web of Science Core Collection (WOSCC) database. The review study titled 'Contemporary medical tourism: Conceptualisation, culture and commodification' written by Connell (2013) was the most cited study with 326 citations. The empirical study titled 'Contemporary medical tourism: Conceptualisation, culture and commodification' (Teng, 2015) became the second most cited study with 186 citations. Of the 173 articles collected, 34 articles have not received any citations yet.

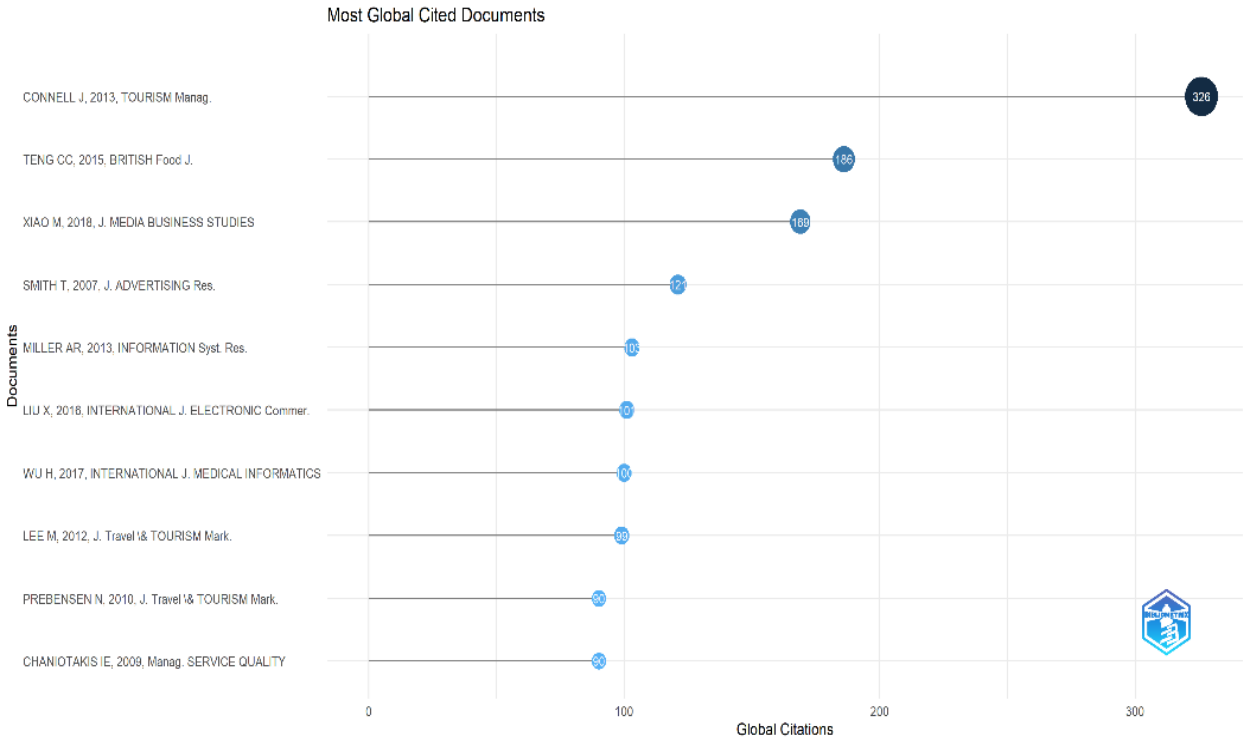


Figure 3. Most Cited Articles

4.4. Research Design Analysis of Publications

According to Table 3; 57.3% (99) of the studies were qualitative, 24.9% (43) were qualitative, and 17.9% (31) were of mixed research design. This indicates that qualitative research was the predominant approach in the analyzed studies. The significant proportion of qualitative studies suggests a focus on in-depth exploration and understanding of the research topics.

Table 3. Research Design Numbers of Publications

Research Design	**n**	**%**
Quantitative	99	57,2
Qualitative	43	24,9
Mixed	31	17,9
Total	**173**	**100**

4.5. Sample Size Analysis of Publications

Considering all the studies according to the Table 4; 21.9% (34) of the total had a sample size of 5-99, 17.4% (27) had a sample size of 1000 or more, and 16.1% had a sample size of 500-999. It is seen that the most preferred sample size belongs to the 100-499 sample size with 44.5%.

Table 4. Research Design Numbers of Publications

Sample Size	**n**	**%**
1000 samples and above	27	17,4
500-999 samples	25	16,1
100-499 samples	69	44,5
5-99 samples	34	21,9
Total	**155**	**100**

4.6. Data Collection Method Analysis of Publications

Table 5 presents the analysis results of the data collection methods of the studies. It is seen that 65.8% (102) of the studies collected data through surveys, 12.3% (19) used interviews, and 10.3% collected data from online platforms and social media.

Table 5. Data Collection Methods of Publications

Data collection method	n	%
Survey	102	65,8
Interview	19	12,3
Online Platforms and Social Media	16	10,3
Focus Group	6	3,90
Archival	5	3,20
Experiment	3	1,90
Observation	2	1,30
Other Methods	2	1,30
Total	**155**	**100,00**

4.7.Data Analysis Method of Publications

Table 6 lists the data analysis methods used in the publications. Descriptive analysis was used in 30.3% (47) of the studies, regression analysis was used in 28.3% (44), Structural Equation Modeling (SEM) was used in 10.3% (16) and Partial Least was used in 7% (11) of the studies. Square Structural Equation Modeling (PL-SEM) analysis method was used.

Table 6. Data Analysis Methods of Publications

Data analysis method	n	%
Descriptive	47	30,30
Regression	44	28,30
Structural Equation Modeling (SEM)	16	10,30
Partial Least Square Structural Equation Modelling	11	7,00
Factor Analysis	9	5,80
Other Quantitative Analysis	7	4,50
Thematic Analysis	5	3,20
ANOVA	4	2,50
Other Qualitative Analysis	4	2,50
Chi-squared tests	2	1,20
ANCOVA	1	0,60
Correlation	1	0,60
Machine Learning	1	0,60
MANOVA	1	0,60
Mixed-Methods Analysis	1	0,60
T-test	1	0,60
Total	**155**	**100,00**

4.8.Contribution of Journals

As shown in Figure 1, the results indicate that a total of 129 journals were published in the relevant field The results showed that a total of 129 journals were published in the relevant field.

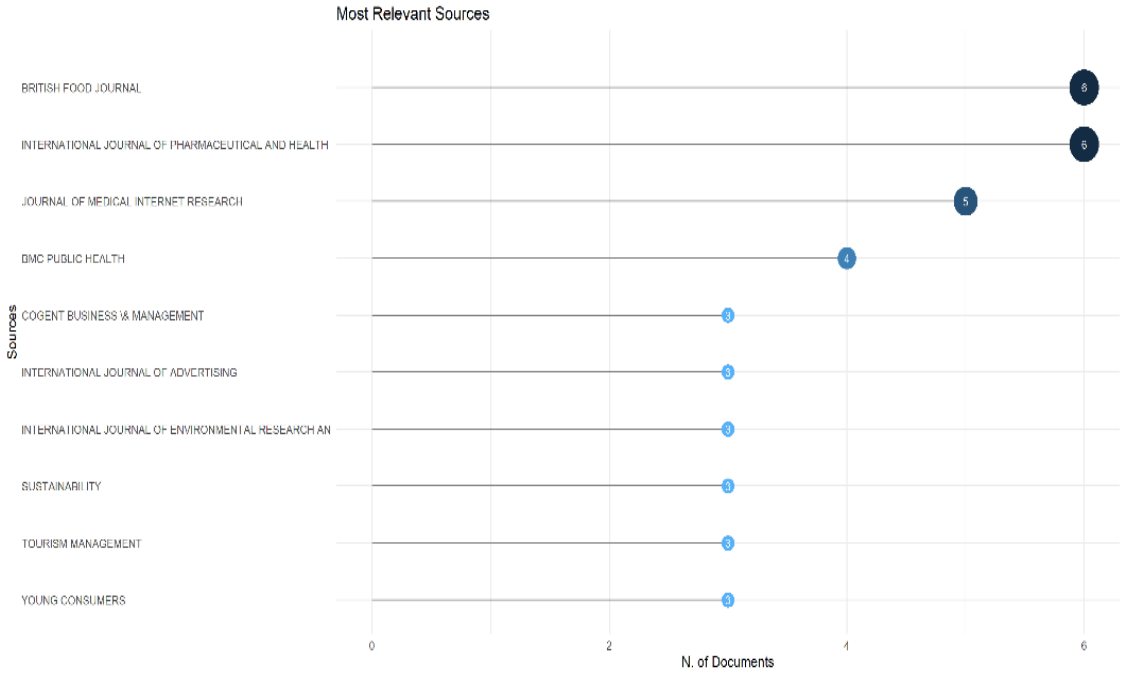


Figure 4. Distribution of Journals by Publications

As presented in Table 7 and Figure 4, the top 10 journals, each with more than three publications, include the British Food Journal and the International Journal of Pharmaceutical and Healthcare, both of which contributed six publications, ranking them in the top two positions. The second most prolific journal, Marketing Magazine, published five articles.

Table 7. Journals and Publication Numbers

Journals	**n**
British Food Journal	6
International Journal Of Pharmaceutical And Healthcare Marketing	6
Journal Of Medical Internet Research	5
Bmc Public Health	4
Cogent Business \& Management	3
International Journal Of Advertising	3
International Journal Of Environmental Research And Publıc Health	3
Sustainability	3
Tourism Management	3
Young Consumers	3

4.9.Contribution of Authors

As shown in Table 8, when the number of publications of the authors is examined, it is seen that the author who published the most is Argan (2011a, 2011b, 2012, 2016), who published 4 publications in the relevant field. The productivity of the authors by year is shown in Figure 5.

Table 8. List of 15 Most Prolific Authors

Authors	**n**
Argan (2011a, 2011b, 2012, 2016),	4
Peluso (2020, 2021, 2023)	3
Phua (2018, 2020, 2024)	3
Pichierri (2020, 2021, 2023)	3
Wu (2017, 2019, 2022)	3
Argan MT (2011a, 2011b)	2
Campo (2013, 2017)	2
Guido (2020, 2021)	2
Jin (2018, 2020)	2
Lee (2015, 2016)	2

As shown in Table 8, when the number of publications of the authors is examined, it is seen that the author who published the most is Argan (2011a, 2011b, 2012, 2016) who published 4 publications in the relevant field.

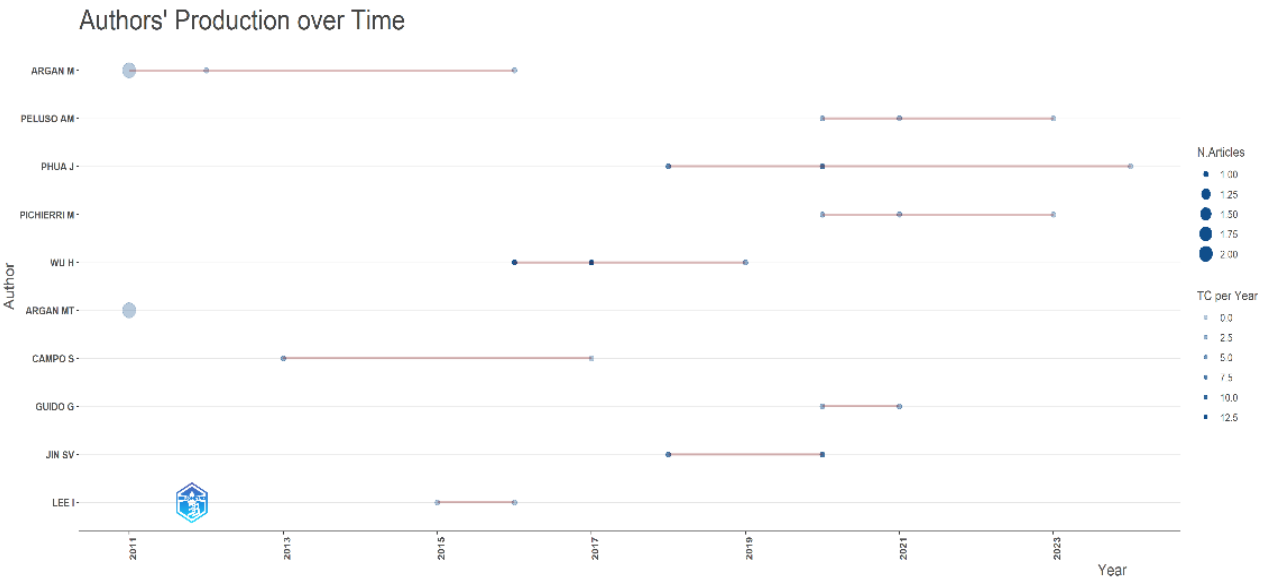
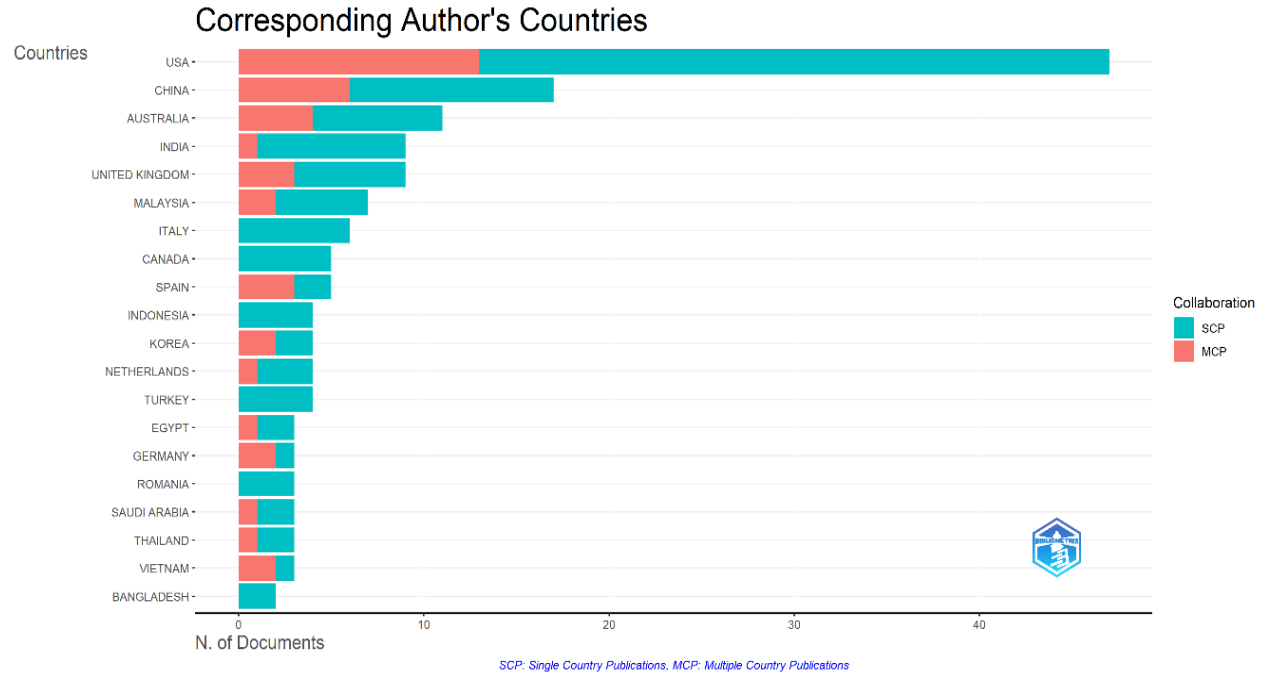


Figure 5. Publication Numbers of Relevant Authors by Year

The productivity of the authors by year is shown in Figure 5. It can be observed that Argan M., the most prolific author in this field, has not published any research on this subject in the relevant database since 2016. In contrast, the remaining authors in the ranking have increasingly focused on these studies, with the majority of their contributions emerging from 2020 onward. This shift suggests a renewed scholarly interest and evolving perspectives in the area of research under consideration.

When the distribution of authors by country is examined, it is seen that most studies are published by authors from the USA and China. The top ten countries are given in Figure 6. When the distribution of the authors who contributed most to the relevant publication is examined by country, it is seen that the most studies were



published by authors from the USA.

Figure 6. Distribution of Countries Of The Corresponding Author According to Publications

The top ten countries are given in Table 9 and Figure 6. The Figure 6 shows the broadcast distribution of countries as single country and multi-country. Of the 47 articles published in the USA, 34 are single-country publications and 13 are multi-country publications.

Table 9. List of 10 Countries of The Corresponding Author According To Publications

Country	n
USA	47
Chine	17
Australia	11
İndia	9
United Kingdom	9
Malaysia	7
İtaly	6
Canada	5
Spain	5
İndonesia	4

4.10. Keyword Occurence Analysis

VOSviwer and Biblioshiny programs are used for keyword analysis. Each node represents a keyword, and the thickness of the link between nodes (as shown in Figure 7) represents the strength of the link between keywords, determined by their frequency of co-occurrence in 173 publications.The word cloud consists of the most common keywords determined with the support of Biblioshiny software and shown in Figure 8. In this way, it can be seen that the words social media, word-of-mouth, marketing, satisfaction and health are clearly used as keywords and these topics are focused on.

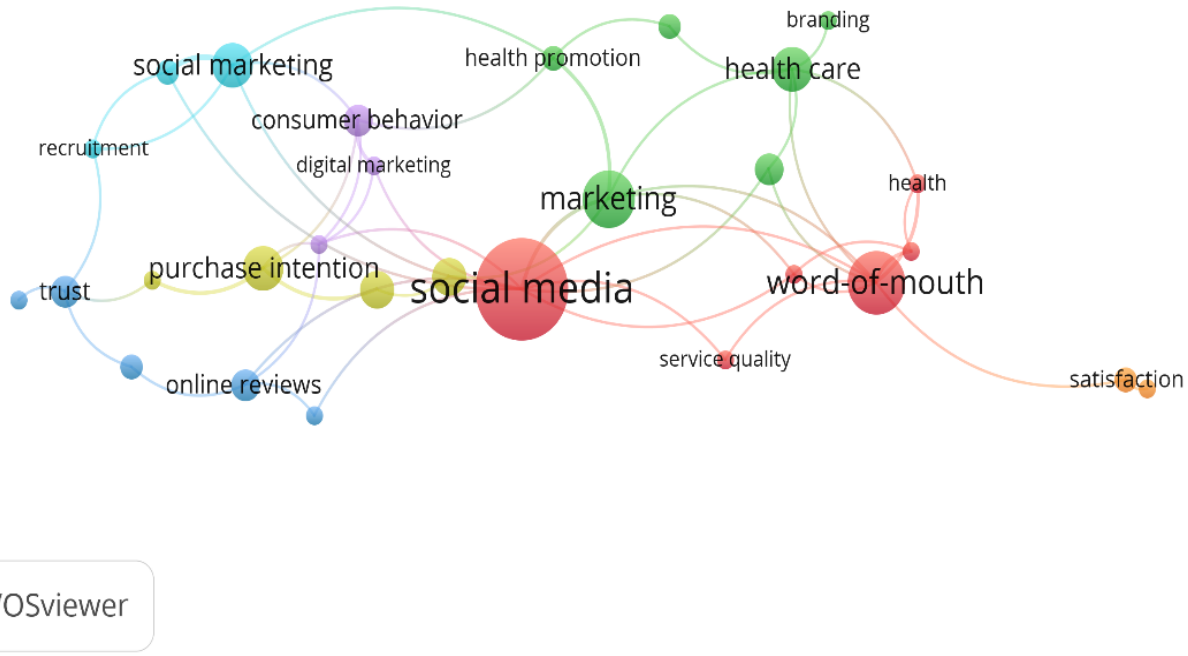


Figure 7. Clusters and Links Between Author Keywords

An examination of keyword associations, along with an analysis of Figure 7, which illustrates the strength of connections between these keywords, indicates that the term "word of mouth" is most frequently co-occurring with "social media". Additionally, "marketing", "social marketing", "purchase intention" and "health care" are among the most commonly used keywords in the selected studies although with relatively lower frequency, the terms "consumer behavior" and "health promotion" have also been identified in research.

Figure 8. Keyword Wordcloud

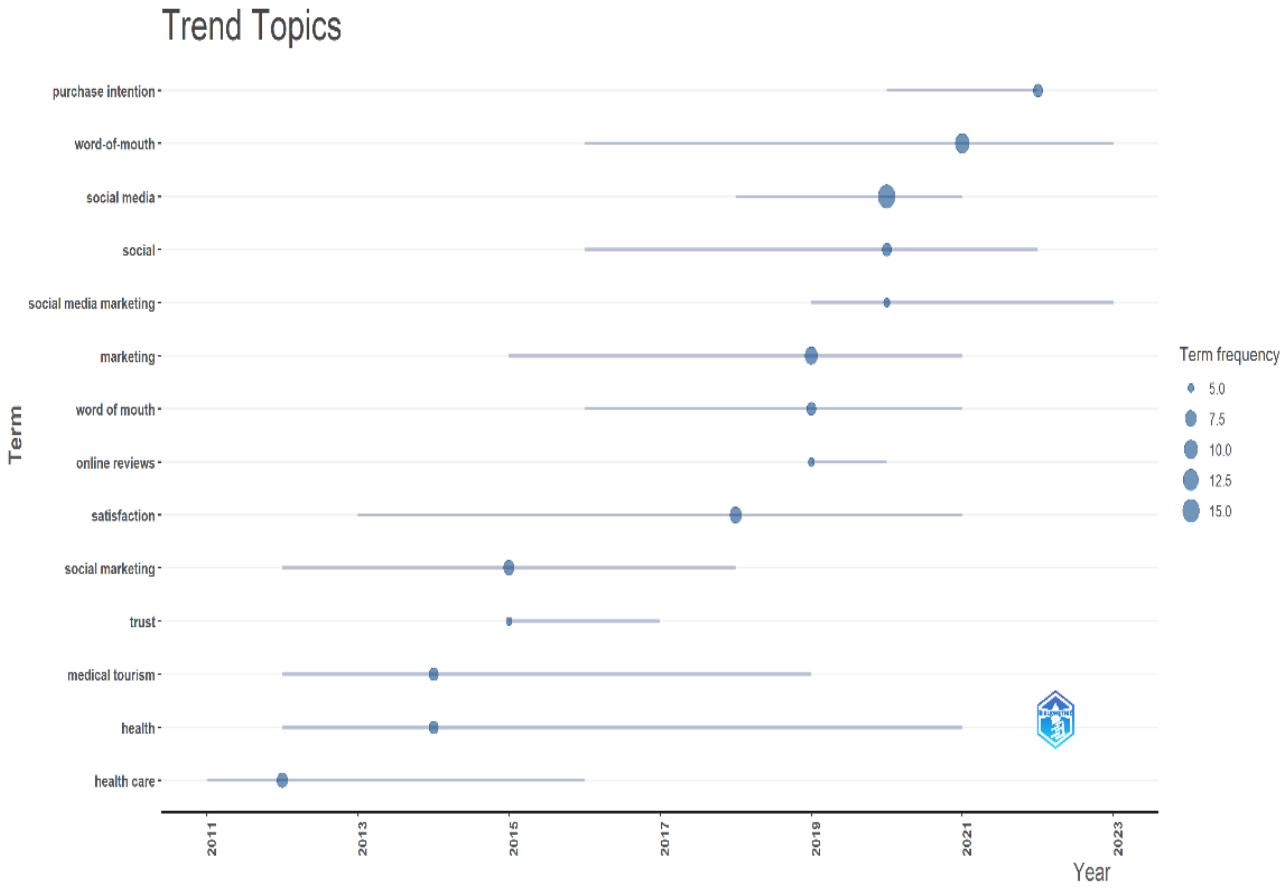


Figure 9. Author's Keywords Trend Topics

An analysis of the trends in key terms identified by the authors, as shown in Figure 9, reveals that terms such as "purchase intention," "social media," "word-of-mouth," and "social media marketing" have gained significant attention, particularly after 2019. This increased focus can be interpreted as a growing understanding of the interaction between digital marketing and consumer behavior.

5. CONCLUSION

This study uses bibliometric analysis to explore the field of word-of-mouth marketing in the healthcare sector. It is shown that the studies were published between 1996 and 2024, and when their performance is examined, there has been a significant growth in the number of studies since 2019.

When we look at the document types of the publications, it can be seen that the majority of them are article studies. It has been observed that there are very few review studies on word-of-mouth marketing in the healthcare sector. Considering the market area in a rapidly developing and growing sector such as health, it is recommended to conduct more review studies in order to catch the trends.When looking at the research designs, it can be seen that the quantitative method dominates.

In these studies, it is seen that the sample size range is 100-499. However, it should be noted that; While some studies work directly with people face to face in sample selection, a few studies can reach very large sample sizes because they are easy to access by using comments and feedback on social media and online platforms. Authors who want to increase the sample size may be advised to use online platforms.

When the data collection methods of the studies were examined, it was seen that the most dominant method was the survey. The research focus of studies may be primarily on theory building, which seems logical given that the field is still developing. As mentioned above, although very few studies collect data from online platforms and social media, authors who want to reach large sample sizes can use this method

Among the data analysis methods, the descriptive analysis method was mostly used. In addition, the regression method, which is the other most used method, is followed by Structural Equation Modeling (SEM) and Partial Least Square Structural Equation Modeling. It is suggested that the number of studies such as machine learning and algorithm development as methods of analyzing data on social media and online platforms is low, but studies on this subject should be increased.

Most of the publications came from the USA and China. It can be said that these countries provide continuity by keeping up-to-date in the field of health and marketing. When we look at the distribution of the studies between countries (single and multi-country publications), it is seen that most multi-country publications are made with USA country authors.

In the literature, it has been seen that the British Food Journal and the International Journal of Pharmaceutical and Healthcare Marketing publish the most publications on word-of-mouth marketing in the field of healthcare.It is seen that the most work (4 articles) on the relevant subject was done by Argan (2011a, 2011b, 2012, 2016), a Turkish writer, but there is no other work in the relevant database after 2016. When we look at the keyword analysis determined by the authors, we can say that the most used keywords following the word-of-mouth are social media, purchase intention, social marketing, healthcare and the tendency to these areas is increasing. Due to the limited number of data analysis studies focused on social media and online platforms, the term "electronic word-of-mouth (e-WOM)" is not frequently used in research. However, with the increasing prevalence of social media marketing and the continuous expansion of online platforms, the availability of valuable data samples will provide new opportunities for future research on e-WOM.

e-WOM refers to the online sharing of opinions, experiences, and reviews, which influences others' purchasing decisions through a wide digital reach (López & Sicilia, 2014). It occurs on platforms like social media, review sites, and forums. Unlike traditional WOM, which is face-to-face and interactive, e-WOM allows opinions to remain online for longer, reaching a broader audience. The source and receiver of e-WOM are typically unfamiliar, and the source is often anonymous. Studies primarily focus on topics like social media, social marketing, and purchasing behavior. However, w

ord-of-mouth marketing is also significant in fields like cosmetics, beauty, and health, where its ethical implications should be explored.

When the keywords obtained from the research are examined, it is seen that the studies are mainly conducted on topics such as social media, social marketing and purchasing behavior. However, it is thought that word-of-mouth marketing is an important concept that should be addressed in the field of cosmetics and beauty. In addition, the effect of word-of-mouth marketing can be examined in the field of beauty and aesthetics, which has been frequently mentioned in recent years. Again, it is thought that addressing the ethical dimension of word-of-mouth marketing in the field of health is also very important.

This study contributes in several ways. This study firstly reveals the developments of publications in the field of word-of-mouth marketing in health. Secondly, it determines general information about the methods used in these studies. In addition, it provides information about the areas in which studies are trending and suggestions for areas of study that should be focused on.

This study has some limitations. The study was scanned only by Web of Science Core Collection (WOSCC). A similar study can be repeated by scanning different databases. In this study about word-of-mouth communication in the health sector, the sector can be studied in detail. For example, the issue in which field in the health sector the study is used more (surgical, protective and preventive, cosmetic) can be discussed.

It is thought that this bibliometric study may guide and assist academicians in their studies on word-of-mouth marketing in the field of health.

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