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Bibliometric Analysis Bibliometric Analysis of Research (1980-2023)

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ABSTRACT

The concept of bibliometric analysis, in addition to seeing the developments in any scientific field over a certain period of time, also provides information about where the scientific field in question will evolve in the future by offering a different perspective to understand the evolution of the field related to the concept. Bibliometric analysis method, which is used as an element or content in socio-economic fields such as communication, public relations, advertising, marketing, health, business, economy, finance and banking, technology, education, politics, etc., is the subject of many academic researches and numerous studies in the literature. The concept of bibliometric analysis is intricate and complex, and performing a bibliometric analysis of bibliometric analysis research will be able to provide a panoramic perspective to researchers and organizations in different disciplines. The research aims to evaluate the status of the concept of bibliometric analysis in the international literature within the framework of descriptive analysis with the document review method. For this purpose, after searching the Web of Science database and the necessary limitation procedures, a total of 18,432 published scientific studies published between 1980 and 2023 that include the concept of bibliometric analysis in all research, titles or keywords or have bibliometric analysis content were accessed. A total of 18,432 scientific studies accessed constitute the sample of the study. As a result of the research, in addition to the fact that the studies on bibliometric analysis are generally co-authored and that there is a high level of collaborative index in the fields of study, no common concept association related to bibliometric analysis or any common word concept or keyword association related to the expression bibliometric analysis was found.
Anahtar Kelimeler: Bibliometric analysis, publication, research, citation.

Bibliyometrik Analiz Araştırmalarının Bibliyometrik Analizi (1980-2023)

ÖZ

Bibliyometrik analiz kavramı, herhangi bir bilimsel alanda belirli bir zaman süreci içerisinde yaşanan gelişmeleri görmenin yanı sıra, kavrama bağlı alanda oluşan evrimi anlamaya yönelik değişik bir bakış açısı sunarak, söz konusu bilimsel alanın gelecekte nereye doğru evrileceği konusunda da bilgi vermektedir. İletişim, halkla ilişkiler, reklam, pazarlama, sağlık, işetme, ekonomi, finans ve bankacılık, teknoloji, eğitim, siyaset, vb. pekçok alanda sosyo-ekonomik alanlarda bir unsur ya da içerik olarak kullanılan bibliyometrik analiz yöntemi pekçok akademik araştırmada ve literatürde yer alan çok sayıda çalışmaya konu olmaktadır. Bibliyometrik analiz kavramı girift ve kompleks bir yapıda olup, bibliyometrik analiz araştırmalarının bibliyometrik analizinin gerçekleştirilmesi, farklı disiplinlerdeki araştırmacılara ve kuruluşlara panoramik bir bakış açısı kazandırılabilecektir. Araştırma bibliyometrik analiz kavramının uluslararası literatürdeki durumunu betimsel analiz çerçevesinde doküman inceleme yöntemi ile değerlendirmek amacındadır. Bu amaç doğrultusunda Web of Science veri tabanında yapılan tarama ve gerekli sınırlama işlemlerinden sonra, 1980-2023 yılları arasında yayımlanan tüm araştırma, başlık veya anahtar kelimelerinde bibliyometrik analiz kavramını içeren ya da bibliyometrik analiz içeriğine sahip olan toplam 18.432 adet yayınlanmış bilimsel araştırmaya erişilmiştir. Erişilen toplam 18.432 bilimsel çalışma araştırmanın örneklemini oluşturmaktadır. Araştırma sonucunda, bibliyometrik analiz konusunda gerçekleştirilen araştırmaların genellikle ortak yazarlı olduğu ve çalışma alanlarında yüksek düzeyde bir ortak çalışma endeksinin varlığından söz edilebilmesinin yanı sıra, bibliyometrik analiz ile ilişkili ortak kavram birlikteliği olan veya bibliyometrik analiz ifadesine ilişkin herhangi bir ortak kelime kavram veya anahtar kelime ilişkisi bulunamamıştır.
Keywords: Bibliyometrik analiz, yayın, araştırma, atıf.

Introduction

The bibliometric analysis method is closely related to "infometrics", which is a broader term used to provide quantitative analysis of printed publications, and "webometrics", which examines different aspects of the web, which has a close similarity with scientometrics (Ellegaard and Wallin, 2015: p. 1810). Although there are many concepts and researches in the literature on bibliometric analysis, the fact that there is no study that evaluates or examines the status of the concept of bibliometric analysis in the international literature with the document analysis method within the framework of descriptive analysis makes the research remarkable. The research is important in terms of evaluating the status of scientific studies conducted in the international literature on bibliometric analysis research with the document review method within the framework of descriptive analysis. The research is also important in terms of making scientific categorization on the subject of bibliometric analysis as well as the classification of concept units according to countries, organizations, authors and keywords of the researches conducted in the field of bibliometric analysis with the publication-citation mapping technique. The following basic questions are sought to be answered in the research: In which scientific field has the most research on bibliometric analysis been conducted? What is the distribution of the total number of scientific researches published on bibliometric analysis by years according to publication category? What is the distribution of country and organization publications on bibliometric analysis? What are the important articles in the field? Who are the most prolific authors? What is the keyword clustering in research on bibliometric analysis? Today, the need for bibliometric analysis of the concept of bibliometric analysis, which attracts the attention of almost every branch of science and whose phenomenological plane is constantly expanding and the excess of pattern units or the need for bibliometric analysis of the concept of bibliometric analysis used in many fields, is among the issues that need to be researched because the public, researchers, academics, business managers and readers want to know in which areas bibliometric analysis research is effective.

Conceptual Framework

Bibliometric Analysis and Usage

Bibliometric analysis refers to the fields of information science as a combination of the terms scientometrics and informatrics and is concerned with the study of the dynamics of disciplines as reflected in the production of their literature (Hood and Wilson, 2001: p. 291). Unlike systematic literature review, the aim of bibliometric analysis research is to obtain quantitative data and numerical measurement indicators about the performance of the research conducted, and bibliometric analysis method, which can be confused with the concepts of metrics such as scientometric, webometric, cybermetric, altmetric, infometric, is an analytical method used to obtain formal and quantitative data on the current status of any concept and facilitates monitoring academic trends through visualization software (Dirik, Eryılmaz and Erhan, 2023: p. 168). The first research in which the bibliometric analysis method was used was the research by Cole and Eales in 1917, in which the works published in the field of anatomy were examined and published as articles (Polat, Saraçoğlu and Duman, 2019: p. 47). Today, the fact that bibliometric research and analysis are carried out by many researchers on concepts related to their fields of expertise causes bibliometric research to become widespread and bibliometric research richness in the literature.

Although bibliometric analysis research is an effective method for summarizing and synthesizing the literature, it has some limitations, and the fact that bibliometric methodology has its own limitations due to the nature of bibliometric methodology results in the fact that the quantitative and qualitative results of bibliometrically analyzed research are often uncertain (Wallin, 2005: p. 267). Researchers using bibliometric analysis need to pay more attention to bibliometric observations when conducting qualitative studies (Gaur and Kumar, 2018: p. 285). The main methods that stand out in the analysis of bibliographic data obtained from databases include citation analysis, co-author analysis, co-citation analysis and co-word relationship analysis (Gülmez, Özteke and Gümüş, 2021: p. 218). The rapid spread of studies using bibliometric analysis is important in terms of summarizing the literature as well as easy access to detailed information about the concept under investigation. In

addition, research using bibliometric analysis has the potential to provide a systematic, relational, transparent and reproducible review process and thus increase the quality of research and reviews.

The Importance of Using Bibliometric Analysis

Bibliometrics is an important field of information science as it represents a unique set of techniques for monitoring and analyzing information resources and managing knowledge in social and organizational contexts (Patra, Bhattacharya and Verma, 2006: p. 31). In bibliometric analysis research, which is one of the frequently preferred techniques in terms of classification and analysis of scientific research based on certain criteria, scientific findings are obtained by evaluating and analyzing certain qualities of documents or publications (Ulu and Akdağ, 2015: p. 6). Bibliometrics is a set of methods used in the quantitative analysis of information such as author, field, subject, citation, institution, country of scientific researches with mathematical and statistical tools by using book chapters, articles, patents, conference papers, citations and other scientific research data in published scientific journals and books, and gives some clues about the relevant discipline, field, subject, institutions, countries, authors, cooperation between authors (Ukşul, 2016: p. 13). WoS and Scopus, which are among the data sources used for bibliometric analysis, are two established literature databases for bibliometric research, and both databases are transparent in indicating publications and references cited (Leydesdorf, 2016: p. 2132). In addition, among other databases that can be used for bibliometric research, Google Scholar, PubMed, MEDLINE databases are among the most preferred (Chen, 2017: p. 3). In bibliometric analysis studies, the amount of research attributed to countries, institutions and authors; the number of citations, the impact of the published work on scientific communities, the number of co-citations, the number of research conducted annually is basically an output that they evaluate by measuring (Zupic and Čater, 2015: p. 457). In particular, identifying research areas, seeing missing areas and creating a basis for new research are among the contributions of bibliometric research to the literature (Kozan, 2020: p. 4). The measurements made in bibliometric research are very useful to show the materials of the data and resources collected during analysis and review (Cancino, Merigó, Coronado, Dessouky, and Dessouky, 2017: p. 619). Bibliometric research methods also allow researchers to base their findings on the collective bibliographic data produced by other scholars working in the field and to express their ideas through citation, collaboration and writing. Bibliometric analysis methods and research do not replace traditional review methods, but can be complementary. Nowadays, many scientific publications such as articles, theses, dissertations, books, congress books, posters are discussed in national and international literature.

Literature Review

In the literature, there is no research that performs bibliometric analysis by centering the concept of bibliometric analysis, which is examined together with many social and technical concepts

Table 1
Research in the Literature

Researcher and Year	Research Results
Glänzel and Schoepflin (1994)	It has raised the issue of establishing bibliometric analysis standards in bibliometric research.
Van Raan (2003)	By providing an overview of advanced bibliometric methods for the objective and transparent evaluation of bibliometric data, the scientific (basic and applied) developments of bibliometric analysis, recent advances in bibliometric mapping techniques are promising.
Wallin (2005)	He noted that bibliometric research has many pitfalls and that technical skills, critical understanding and a precise knowledge of the scientific field under study are required to conduct and interpret bibliometric research correctly.
Jonkers and Derrick (2012)	Investigating the extended impact of bibliometrics, noted that the perception of evaluating research using a single number is a major limiting factor in the acceptance of bibliometric methods, and presented an independent empirical investigation of publication trends underlying concerns about the misuse of bibliometric results and the misrepresentation of concepts, results and methods outside the field of bibliometrics.

Metin (2013)	He stated that as a result of applying statistical and mathematical techniques to the data obtained through bibliometric research, it is possible to analyze certain characteristics of books, documents, articles and documents and to make comments on their development.
Aström and Hansson (2013)	They found that librarians are the right people to support bibliometrics because of their proficiency with bibliographic tools and metadata, and their neutral position in the evaluation of academic work.
Ellegaard and Wallin (2015)	Inference methods for the dissemination and use of bibliometric data are discussed in different contexts, for a keyword analysis, popular topics and multidisciplinary articles covered by bibliometric analysis with the highest impact and most used are shown, a noticeable change in the countries contributing to the pool of bibliometric analysis is observed, as well as an impact on self-perpetuation and reference uptake.
Ellegaard (2018)	Bibliometric research is particularly strong and concentrated in areas such as life sciences and biomedicine.
González-Alcaide (2021)	He concluded that bibliometric research takes place in a controllable and uncontrollable process that is outside the traditional field of bibliometric research and that the information produced in the main center can be ignored in this process.

In the literature, bibliometric analysis is carried out in all fields of science, generally in social and technical sciences, and in all kinds of concepts, while environmental sciences-ecology, information science library science and management are among the fields with the highest number of bibliometric analyzes.

Bibliometric Analysis of Research Related to Bibliometric Analysis

Bibliometric analysis is an extremely popular, preferred and rigorous method for researching and analyzing large and voluminous scientific data sources and evolutionary details of a particular field (Donthu, Kumar, Mukherjee, Pandey and Lim, 2021: p. 285). As a result, the studies in the field of research are statistically analyzed in terms of author, subject title, keyword, cited work, cited source, etc. and the conceptual, intellectual and social structure of the discipline is revealed (Bozkurt and Çetin, p. 2016). Within the scope of the research, first of all, the Web of Science (WOS) database was accessed and the studies containing the phrase "bibliometric analysis" in the research title, abstract or keywords were scanned and the data on the 18,432 results obtained were transferred to the WOS program and bibliometric analysis was carried out.

Purpose and Method of the Study

The research aims to evaluate the status of the concept of bibliometric analysis in the international literature within the framework of descriptive analysis by document review method. The dataset created from 18.432 scientific researches in the Web of Science (WOS) database between 1980 and 2023 will be analyzed through the Vosviewer program within six research questions in line with the purpose of the bibliometric study. First, with the help of certain bibliometric indicators, an overview of the 18.432 studies will be presented, and the prominent organizations and countries leading the field with their important journals, articles and prolific authors will be identified. Then, bibliometric methods such as citation analysis, co-citation analysis and common word association analysis were used to map the scientific field of bibliometric analysis literature. Citation analysis was used to determine the strength of the links between the highly cited articles of the field, co-citation analysis was used to determine the intensity and strength of the relationships between co-cited studies, and co-word relationship analysis was used to determine the concepts related to bibliometric analysis.

Within the scope of the research, network analysis technique, which is a method used to examine and understand systems in which connections and relationships interact with each other, was also utilized. Network analysis is used to understand the structure and dynamics of networks, identify patterns, identify central players and groups, and examine information diffusion. Another example of approaches to dealing with the complexity of large data sets is the use of network analysis methods to map research areas (Sinkovics, 2016: p. 328). In this study, although

bibliometric analysis was used as a tool for literature analysis, network analysis was used to understand the structure of networks, identify patterns, and visualize the complexity of large data sets. VOSviewer 1.6.20 was used to create network maps and visualize the literature. Network analyses, which are carried out to identify trends in the research field and to quantitatively evaluate and visualize bibliographic material, reveal the relationships and interactions between dimensions by examining the collaboration between countries, the author-publication-citation network, and the frequency of keywords used together in a data set. A total of 18,432 scientific studies accessed constitute the sample of the study. A total of 18,432 scientific studies with bibliometric analysis content were analyzed with the VOS viewer program to determine the scientific categories and interest orientation in which the interest in bibliometric analysis is concentrated, and the prominent country, organization, author and keyword concept units were reached with the publication-citation mapping technique.

Data Set

By searching for research in the field of social sciences under the main theme of "Bibliometric analysis" in the titles in the Web of Science database, the study data range was determined as 1980-2023 since the first study with bibliometric analysis was conducted in 1980 in the process that started with the use of the concept of bibliometric analysis in the field until 1980. The methodological summary of the study is shown in Figure 1.

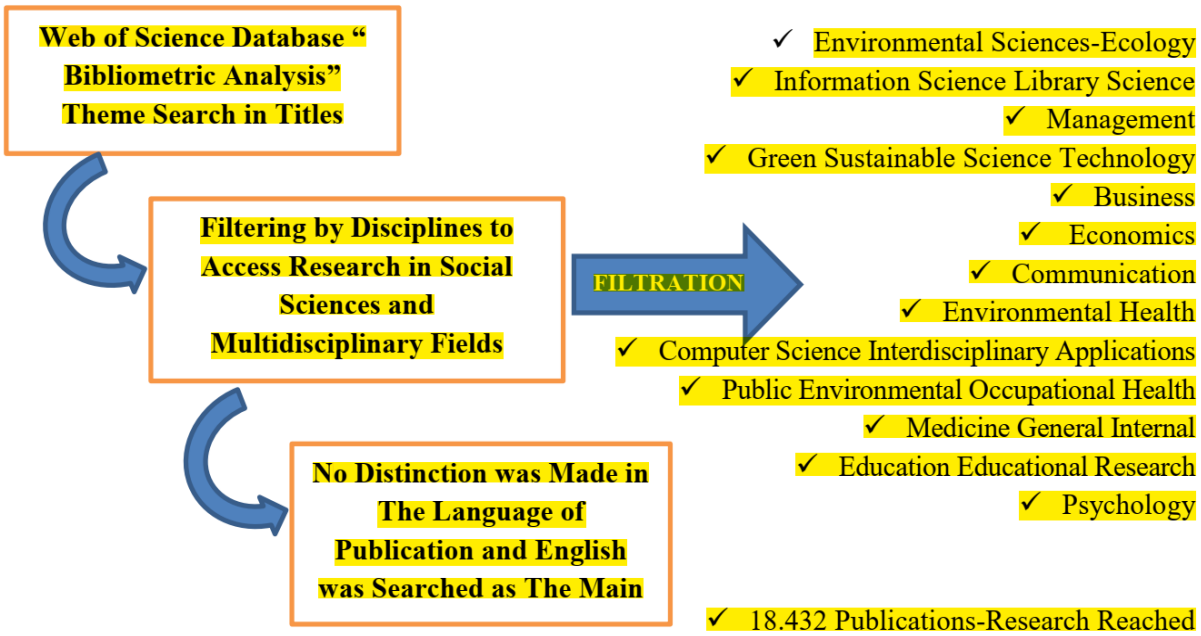

Figure 1: Systematic and Methodological Flow of the Study

As seen in Figure 1, as a result of the literature review completed on Februbary 15, 2024, 18.432 research-publications were identified as the data set of the study. In addition, while it was determined that the academic language used in the books, book chapters, articles and proceedings accessed was mostly English, it was also determined that there were studies in Spanish, Portuguese, Russian, German, Turkish, Chinese, French and other country languages.

Analysis and Findings of the Research

Table 2 provides information on the types and number of studies conducted in the field of bibliometric analysis.

Table 2
Types and Number of Studies

Publication Type	***Number of Research***	***Percentage***
Article	11.572	65,76
Full Text Paper	985	21,52
Review Article	1.281	4,87
Book Chapter	823	3,13
Early View Article	697	2,65
Letter to the Editor	261	,99
Abstract	171	,28
Book Criticism	24	,09
Book	6	,03
Others	177	,68
Total	**18.432**	**100**

It is seen that out of a total of 18.432 studies conducted in the field of bibliometric analysis between 1980 and 2023, the highest number of 17.283 were prepared as articles and the lowest number of 6 were prepared as books.

Table 3
Distribution of Research by Years

Years	***Number of Research***	***Percent***	***Years***	***Number of Research***	***Percent***
1980	2	0,011	2002	25	0,136
1981	6	0,033	2003	31	0,168
1982	1	0,005	2004	32	0,174
1983	3	0,016	2005	58	0,315
1984	6	0,033	2006	61	0,331
1985	1	0,005	2007	72	0,391
1986	6	0,033	2008	113	0,613
1987	1	0,005	2009	141	0,765
1988	5	0,027	2010	158	0,857
1989	2	0,011	2011	210	1,139
1990	5	0,027	2012	237	1,286
1991	10	0,054	2013	259	1,405
1992	16	0,087	2014	300	1,628
1993	9	0,049	2015	423	2,295
1994	8	0,043	2016	489	2,653
1995	9	0,049	2017	638	3,461
1996	18	0,098	2018	776	4,210
1997	9	0,049	2019	1141	6,190
1998	19	0,103	2020	1772	9,614
1999	25	0,136	2021	2729	14,806
2000	27	0,146	2022	3961	21,490
2001	22	0,119	2023	4596	24,935
Total				**18.432**	**100**

It is seen in Figure 2 that a total of 18.432 studies conducted in the field of bibliometric analysis between 1980 and 2023 have shown a parobolic increase over the years, especially after 2007.

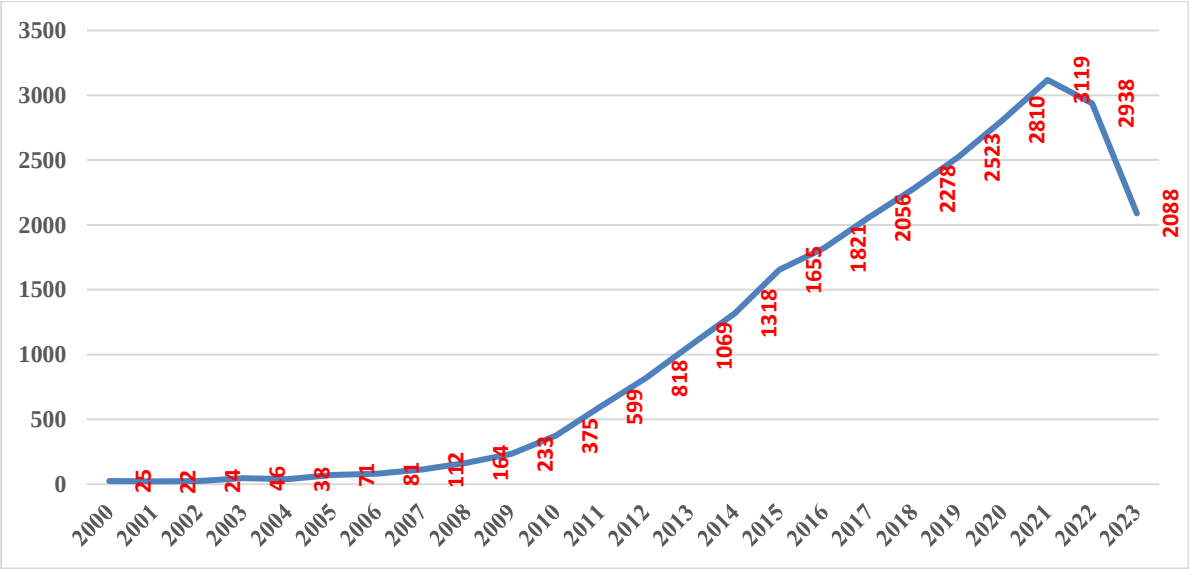

Figure 2: Annual Publication Numbers of Research

Table 4 shows the results of the studies on bibliometric analysis in terms of publication categories and research areas.

Table 4
Number of Research Conducted by Scientific Research Fields

Research Areas	***Number of Research***	***Percent***
Environmental Sciences-Ecology	2.714	14,71
Information Science Library Science	2.576	13,98
Management	1.859	10
Green Sustainable Science Technology	1.821	9,87
Business	1.724	9,37
Environmental Studies	1.712	9,31
Computer Science	975	5,29
Public Environmental Occupational Health	762	4,17
Medicine General Internal	683	3,72
EducationEducationalResearch	620	3,37
Economics	493	2,68
Others	2.493	13,54
Total	**18.432**	**100**

It is seen in Table 4 that 30.72% of the researches conducted in the form of bibliometric analysis according to scientific research fields were carried out in the field of technical sciences and 69.28% in the field of social sciences.

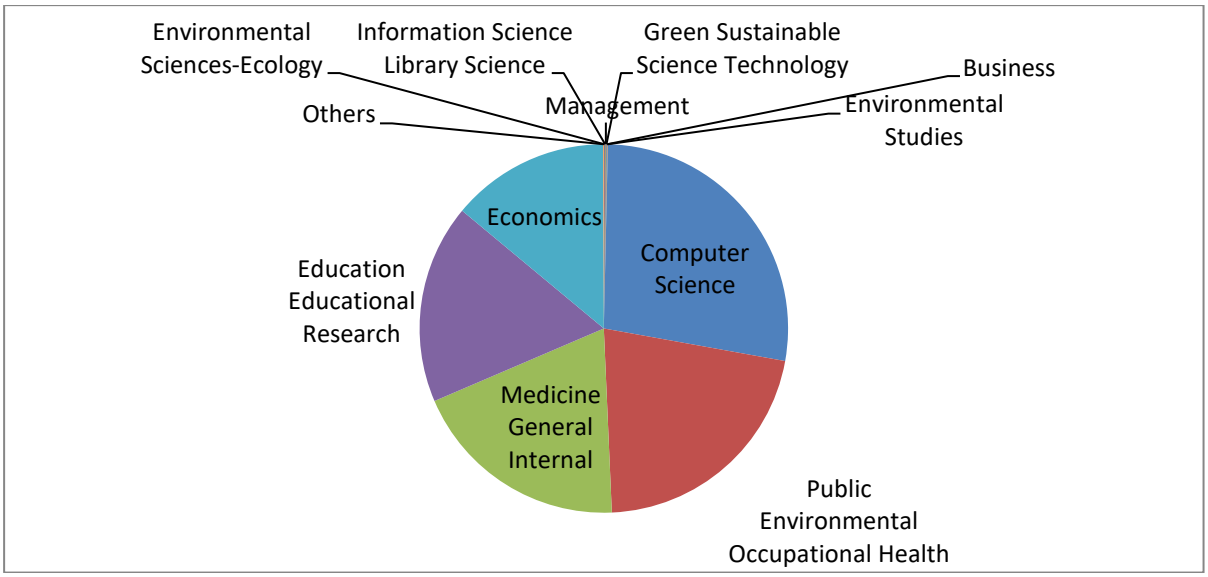

Figure 3: Categorization of Research by Scientific Field Types

According to the data in Figure 3, the most studies on bibliometric analysis were conducted in the field of Computer Science (21.51%), Educational Research (12.98%) and Business Administration (11.36%).

Table 5
Number of Publications and Citations by Country

Researched (Broadcast) Countries	***Documents***	***Citations***	***Link Strenght***
China	5.254	61.862	29.228
United States of America	1.961	43.525	21.104
India	1.492	18.199	16.792
Australia	736	17.017	11.811
The United Kingdom of Great Britain	1.008	27.301	10.593
Spain	1.739	25.682	10.325
Malaysia	724	10.810	9.648
Taiwan	512	11.186	8.921
Italy	721	15.309	6.534
Canada	540	10.686	4.579
Brazil	1.059	9.757	4.269
Turkey	460	4.711	3.615
Others	2.226	51.102	25.056
Total	**18.432**	**307.327**	**162.475**

According to the researches conducted on the number of publications and citations by countries related to bibliometric analysis, China ranks first with 5.254 studies, United States of America ranks second with 1.961 studies and India ranks third with 1.492 studies.

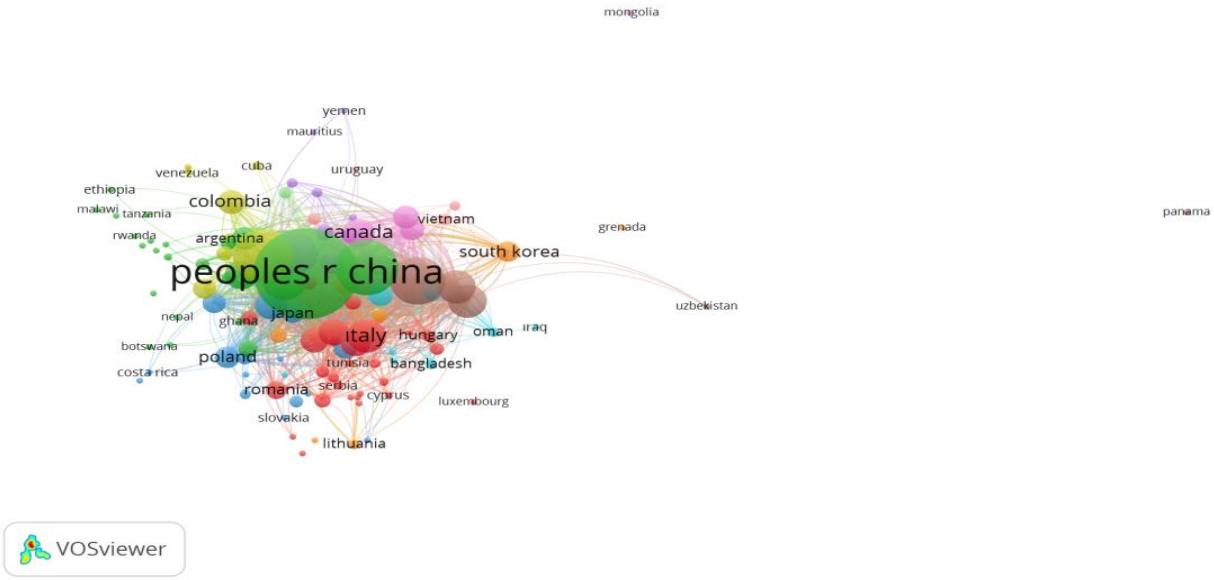

Figure 4: Collaboration Network Analysis of Publications Between Countries

Another type of analysis, which is mostly preferred in bibliographic analysis researches, is the realization of the publication citation network map of the countries of the publications, and the collaboration network analysis of the publications made in the literature on bibliometric analysis between countries is given in Figure 4. With 61.862 citations and 29.228 link strength, China represents the green cluster. United States of America ranks second with 43.525 citations and 21.104 total link strength and represents the brown cluster. With 18.199 citations and 16.792 link strength, India represents the red cluster.

Table 6
Distribution of Publications and Citations of Authors Regarding the Concept of Bibliometric Analysis

Author	***Documents***	***Citations***	***Link Strenght***
Ho, Yuh-San	175	5.437	4.174
Kumar, Satish	123	5.268	3.298
Pandey, Nitesh	45	3.006	1.798
Lim, Weng Marc	41	3.168	1.732
Fu, Hui-Zhen	35	1.198	1.512
Donthu, Naveen	22	2.832	1.421
Wang, Ming-Huang	21	1.419	1.387
Merigo, Jose M.	56	3.257	1.249
Xu, Zeshui	57	1.291	1.158
Zyoud, Sa'ed H.	65	1.649	783
Others	306	9.983	6.269
Total	**940**	**38.508**	**24.808**

In bibliometric analyses, another issue that generally has a certain importance in terms of academic evaluation is the determination of the researchers or authors who contribute the most to the field and the strength of the connection with the number of citations made as well as the number of researches conducted by the author. Table 6 shows the distribution of author publications and citations of the top 10 researchers with at least 5 publications and 1 citation out of 940 authors who published on the subject of bibliometric analysis between 1980 and 2023. According to the number of publications and citations by authors on bibliometric analysis, Hu, Yuh-San ranks first with 175 studies and 5.437 citations, Kumar, Satish ranks second with 123 studies and 5.268 citations, and Pandey and Nitesh ranks third with 45 studies and 3.006 citations.

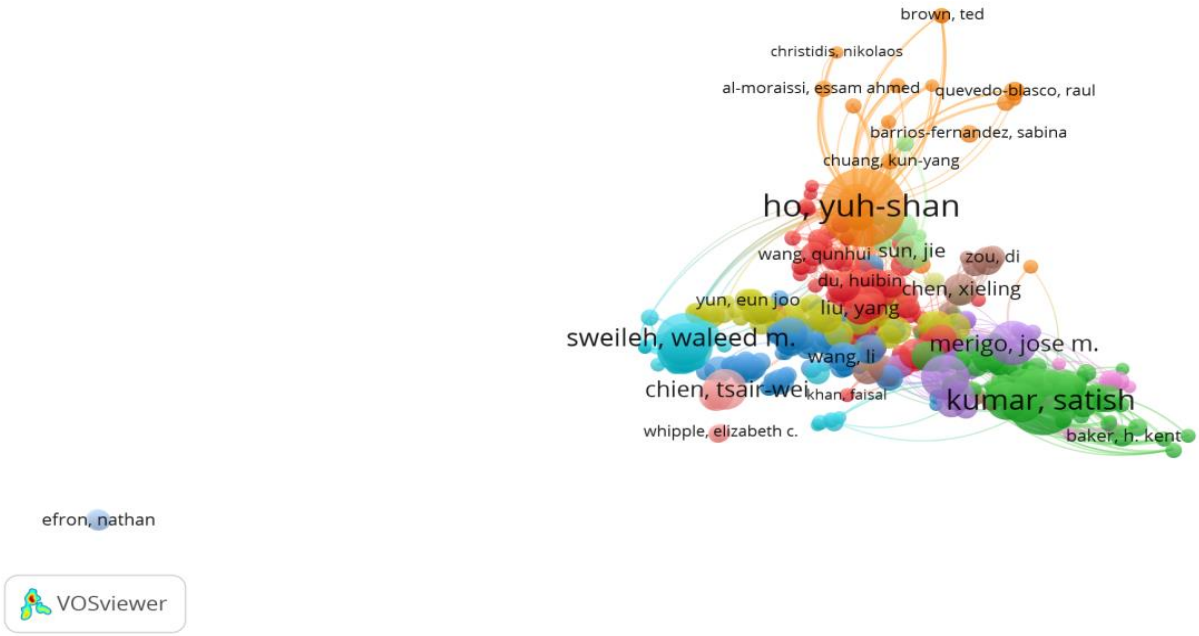

Figure 5: Author Publication-Citation Network Analysis on the Concept of Bibliometric Analysis

The author publication and citation network map analysis performed in the literature on the concept of bibliometric analysis is shown in Figure 5. For the co-citation analysis of authors, the minimum number of citations of an author was set as 1. Of the 940 authors who met this criterion, 10 exceeded the threshold value and therefore a total of 20 authors are included in the mapping. The authors are divided into 5 different clusters according to the result of co-citation analysis, and the number of author publications and citations related to bibliometric analysis revealed that there is a dense clustering in Hu, Yuh-San.

Table 7
Institutional Distribution of Publications and Citations on the Concept of Bibliometric Analysis (Top 10 Institutions)

Researched (Broadcasting) Organizations	***Documents***	***Citations***	***Link Strenght***
Asia University	190	5.568	6.049
Peking University	151	3.934	4.557
Swinburne University Technol	74	3.739	4.465
Malaviya Natl Inst Technol	77	3.668	4.428
Georgia State University	26	3.095	3.367
Chinese Acad Sci	269	4.473	3.352
University Acron	17	2.350	2.261
Sichuan University	203	3.052	2.499
University Chile	82	3.482	2.409
University Valancia	194	2.985	1.714
Total	**1.283**	**36.346**	**35.101**

As can be seen in Table 7, among the top 10 institutions contributing the most to the field in terms of number of publications, Asia University ranks first with 190 publications and 5.568 citations, Peking University ranks second with 151 publications and 3.934 citations, and Swinburne University Technol ranks third with 74 publications and 3.739 citations.

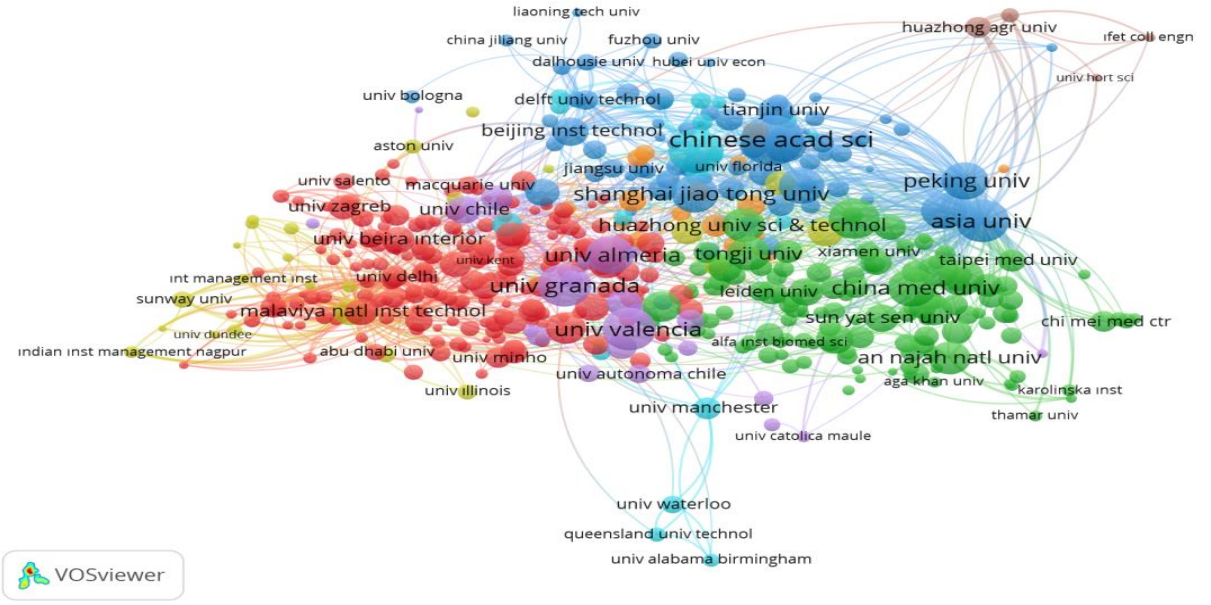

Figure 6: The Most Frequent Institution of Publications on the Concept of Bibliometric Analysis - Attribution Network Analysis

The publication citation network analysis of 4.028 institutions, which was created with the condition of at least 10 publications and 5 citations among 4.256 institutions publishing on bibliometric analysis, is shown in Figure 6, and it is revealed that there is a dense clustering of Asia University and Peking University.

Despite the analysis of the most commonly used words related to the expression bibliometric analysis or the most commonly used words related to the expression bibliometric analysis, no common word concept or related keyword related to bibliometric analysis was found. Therefore, key concept association network analysis related to bibliometric analysis could not be performed.

Conclusion, Discussion and Recommendations

Bibliometric analysis is a type of research for a specific field to understand global research trends and to study academic outputs from Scopus or WoS database (Alsharif, Salleh and Baharun, 2020: p. 2949). According to Pritchard (1969), in order to understand the nature and course of bibliometrics, it should be known that it is a method for applying the rules of mathematics and statistics to written communication. Broadus (1987) states that bibliometrics is the quantitative study of physically published units or bibliographic units or both. Especially in the analysis of all scientific research, the use of bibliometric analysis has become mandatory in the preference and realization of bibliometric analysis.

In order to reveal an overview of the conceptual, evolutionary and intellectual structure of the bibliometric analysis literature, a bibliometric analysis of 18.432 bibliometric analysis studies was carried out with the dataset obtained from the WoS database. First, in order to provide an overview of the bibliometric analysis research literature with the help of some bibliometric indicators, the leading universities and leading countries in the field with their important journals, articles and prolific authors were identified. Then, bibliometric methods such as citation analysis, co-citation analysis and keyword association analysis were used to map the scientific field of bibliometric analysis research literature. According to Web of Science, articles rank first in terms of document type in bibliometric analysis research, and it has been determined that there has been a regular and parabolic increase since 1990 in parallel with the spread of bibliometric analysis research worldwide. In addition to the fact that most of the research on bibliometric analysis research is carried out in the fields of environmental sciences and social sciences, it has been concluded that most of the research on bibliometric analysis is carried out by researchers and organizations in China, the United States and India. According to the number of publications and citations of bibliometric analysis researches by authors, Ho, Yuh-San ranks first with 175 studies and 5.437 citations, Kumar, Satish

ranks second with 123 studies and 5.268 citations, and Pandey and Nitesh ranks third with 45 studies and 3.006 citations. The institutions that publish the most on bibliometric analysis research worldwide are, respectively, Asia University. Peking University and Technol Swinburne University. The most important finding of the research is that no common word concept or keyword relationship was found despite the analysis of the most commonly used words related to bibliometric analysis or the phrase bibliometric analysis. The reason why there is no common concept association or keyword relationship related to bibliometric analysis is that bibliometric analysis researches are conducted in every field and every concept in the literature and are not concentrated with certain disciplines and concepts.

The data used in this study, which determines the general situation regarding the current state of research on bibliometric analysis research, is limited to publications from the WoS database. For future studies, it is suggested that databases such as SCOPUS, IEEE Xplore, EBSCO, Emerald, Science Direct, Taylor and Francis, Springer, SSRN, etc. should be utilized by considering data quality and accessibility. For future research, a detailed examination of bibliometric analysis research literature can be carried out between certain time intervals.

Author Contribution Statement

The authors contributed 50% to this article.

Conflicts of Interest

There is no conflict of interest in this article.

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Genişletilmiş Özet

Büyük ve hacimli bilimsel veri kaynaklarının araştırılması ve analiz edilmesi ile belirli bir alanın evrimsel ayrıntıları için son derece popüler, tercih edilen ve titiz bir yöntem olan bibliyometrik analiz yöntemi kullanılmaktadır (Donthu vd., 2021: 285). Yine gerçekleştirilen sonucunda araştırma yapılan alandaki çalışmalar yazar, konu başlığı, anahtar kelime, atıf yapılan eser, atıf yapılan kaynak vb. açılardan istatistiksel olarak incelenmektedir ve araştırma yapılan disiplinin kavramsal, entelektüel ve sosyal yapısı ortaya konulmaktadır (Bozkurt ve Çetin, 2016). Araştırma kapsamında öncelikle Scopus veri tabanına giriş yapılarak araştırma başlığı, özet veya anahtar kelimelerinde "bibliometric analysis" ifadesi içeren çalışmalar taratılmış ve elde edilen 18.432 sonuçlara ilişkin veriler Wos programına aktarılarak bibliyometrik analiz gerçekleştirilmiştir.

Giriş

Literatürde, bibliyometrik analizi gerçekleştirilen pek çok kavram ve araştırmaya karşın, bibliyometrik analiz kavramının uluslararası literatürdeki durumunu betimsel analiz çerçevesinde doküman inceleme yöntemi ile değerlendiren veya inceleyen herhangi bir çalışmaya rastlanılmamış olması araştırmayı dikkat çekici hale getirmektedir. Araştırma bibliyometrik analiz araştırmaları ile ilgili uluslararası literatürde gerçekleştirilen bilimsel çalışmaların durumunu betimsel analiz çerçevesinde doküman inceleme yöntemi ile değerlendirmesi bakımından önemlidir. Yine araştırma bibliyometrik analiz konusuna yönelik bilimsel kategorilendirme yapılmasının yanı sıra, yayın-atıf haritalama tekniğiyle bibliyometrik analiz alanında yapılan araştırmaların ülkelere, kuruluşlara, yazarlara ve anahtar kelimelere göre kavram birimlerinin sınıflandırılmasının yapılması bakımından da önemlidir. Araştırmada şu temel sorulara yanıt aranmaktadır: Bibliyometrik analiz ile ilgili en fazla hangi bilimsel alanda araştırma gerçekleştirilmiştir? Yayın kategorisine göre bibliyometrik analiz konusunda yayınlanan toplam bilimsel araştırma sayısı yıllar itibariyle dağılımı nedir? Bibliyometrik analiz ile ilgili ülke ve kuruluş yayın dağılımı nasıldır? Alanın önemli makaleleri hangileridir? En üretken yazarlar kimlerdir? Bibliyometrik analiz konu alan araştırmalarda anahtar kelime kümelenmesi nasıldır? Günümüzde hemen her bilim dalının ilgisini çekerek olgusal düzlemi sürekli genişleyen ve örüntü birimlerinin fazlalığı ya da pekçok alanda kullanılan bibliyometrik analiz kavramının bibliyometrik analizinin gerçekleştirilmesine duyulan ihtiyaç, hangi alanlarda bibliyometrik analiz araştırmalarının etkili olduğunun kamuoyu, araştırmacılar, akademisyenler, işletme yöneticileri ve okuyucular tarafından bilinmek istenmesi sebebiyle araştırılması gereken konular arasında yer almaktadır.

Yöntem

Araştırma bibliyometrik analiz kavramının uluslararası literatürdeki durumunu betimsel analiz çerçevesinde doküman inceleme yöntemi ile değerlendirmek amacındadır. Web of Science (WOS) veri tabanında 1980-2023 yılları arasında yer alan 18.432 adet bilimsel araştırma sonucu oluşturulan veri seti bibliyometrik çalışmanın amacı doğrultusunda altı araştırma sorusu dahilinde Vosviewer programı vasıtasıyla analiz edilecektir. Öncelikle, belirli bibliyometrik göstergeler yardımıyla 18.432 araştırmaya ilişkin genel bir bakış sunularak alanın önemli dergileri, makaleleri ve üretken yazarlarıyla alanda öne çıkan kuruluşlar ve alana öncülük eden ülkeler tespit edilmiştir. Daha sonra atıf analizi, ortak atıf analizi ve ortak kelime ilişki analizi gibi bibliyometrik yöntemler kullanılarak bibliyometrik analiz literatürüne ilişkin bilimsel alan haritalaması yapılmıştır. Atıf analiziyle, alanın yüksek atıflı makaleleri arasındaki bağlantı gücü, ortak atıf analiziyle, birlikte atıf yapılan çalışmalar arasındaki ilişkilerin yoğunluğu ve gücü, ortak kelime ilişki analiziyle de bibliyometrik analizin ilişkili olduğu kavramlar tespit edilmiştir.

Araştırma kapsamında bağlantıların ve ilişkilerin birbirleriyle etkileşim içinde olduğu sistemleri incelemek ve anlamak amacıyla kullanılan bir yöntem olan ağ analizi tekniğinden de faydalanılmıştır. Ağ analizi, ağların yapısını ve dinamiklerini anlamak, örüntüleri belirlemek, merkezi oyuncuları ve grupları tanımlamak, bilgi yayılımını incelemek gibi amaçlarla kullanılmaktadır. Büyük veri setlerinin içerdiği karmaşıklıkla başa çıkma yaklaşımlarının bir diğer

örneği, araştırma alanlarının haritalandırılması amacıyla ağ analizi yöntemlerinin kullanılmasıdır. (Sinkovics, 2016: 328). Araştırmada, literatür analizi için bir araç olarak bibliyometrik analiz kullanılmakla birlikte ağların yapısını anlamak, örüntüleri belirlemek, büyük veri setlerinin karmaşıklığının görselleştirilmesi amacıyla ağ analizi kullanılmıştır. Ağ haritaları oluşturmak ve literatürü görselleştirmek için VOSviewer 1.6.20 programından faydalanılmıştır. Araştırma alanındaki eğilimleri belirlemek ve bibliyografik materyali nicel olarak değerlendirmek ve görselleştirmek amacıyla gerçekleştirilen ağ analizleri, bir veri setinde birlikte kullanılan ülkeler arasında işbirliği, yazar yayın-atıf ağını ve anahtar kelimelerin sıklığını inceleyerek boyutlar arasındaki ilişkileri ve etkileşimleri ortaya koymaktadır.

Web of Science veri tabanındaki başlıklarda "Bibliyometrik analiz" ana teması altında yer alan sosyal bilimler alanındaki araştırmalar aratılarak 1980 yılına kadar alanda bibliyometrik analiz kavramının kullanılması ile başlayan süreçte bibliyometrik analiz ile yapılan ilk çalışmanın 1980 yılında yapılması nedeniyle çalışma veri aralığı 1980-2023 olarak belirlenmiştir.

15 Şubat 2024 tarihinde tamamlanan yazın taraması sonucunda söz konusu söz konusu 18.432 araştırma ve yayın çalışmanın veri seti olarak belirlenmiştir. Ayrıca erişilen kitap, kitap bölümü, makale ve bildirilerde kullanılan akademik dilin yoğunlukla İngilizce olduğu belirlenirken, İspanyolca, Portekizce, Rusça, Almanca, Türkçe, Çince, Fransızca ve diğer ülke dillerinde de çalışmaların olduğu tespit edilmiştir

Bulgular

Bibliyometrik analiz konusunda gerçekleştirilen araştırmaların genellikle ortak yazarlı olduğu ve çalışma alanlarında yüksek düzeyde bir ortak çalışma endeksinin varlığından söz edilebilmesinin yanı sıra, bibliyometrik analiz ile ilişkili ortak kavram birlikteliği olan veya bibliyometrik analiz ifadesine ilişkin herhangi bir ortak kelime kavram veya anahtar kelime ilişkisi bulunamamıştır.

Genellikle bibliyometrik araştırmaları yapılan kitap, kitap bölümü, makale ve bildirilerde kullanılan akademik dilin İngilizce olduğu ve 1980– 2023 yılları arasında bibliyometrik analiz alanında gerçekleştirilen toplam 18.432 araştırmaların yıllar itibarıyle parobolik bir biçimde artış gösterdiği özellikle 2007 yılından sonra ise hızlı bir artış gösterdiği tespit edilmiştir.

Sonuç, Tartışma ve Öneriler

Bibliyometrik analiz literatürünün kavramsal, evrimsel ve entelektüel yapısına ilişkin genel bir görünümünün ortaya çıkarılabilmesi amacıyla WoS veri tabanından elde edilen veri setiyle 18.432 bibliyometrik analiz araştırmasının bibliyometrik analizi gerçekleştirilmiş olup, ilk olarak, birtakım bibliyometrik göstergeler yardımıyla bibliyometrik analiz araştırmaları literatürüne ilişkin genel bir bakış sunabilmek amacıyla alanın önemli dergileri, makaleleri ve üretken yazarlarıyla alanda öne çıkan üniversiteler ve alana öncülük eden ülkeler tespit edilmiştir. Daha sonra bibliyometrik analiz araştırmaları literatürüne ilişkin bilimsel alan haritalaması yapmak amacıyla atıf analizi, ortak atıf analizi ve ortak anahtar kelime ilişki birlikteliği analizi gibi bibliyometrik yöntemler kullanılmıştır. Web of Science'a göre bibliyometrik analiz araştırmalarında belge türü bakımından ilk sırada makaleler yer almakta olup, bibliyometrik analiz araştırmaları konusunun dünya genelinde yaygınlaşmasına paralel olarak 1990 yılından itibaren düzenli ve parabolik bir artış yaşandığı tespit edilmiştir. Bibliyometrik analiz araştırmaları ile ilgili araştırmaların en fazla çevre bilimleri ve sosyal bilimler alanında gerçekleştirilmesinin yanı sıra, bibliyometrik analiz ile ilgili araştırmaların en fazla Çin, Amerika Birleşik Devletleri ve Hindistan'daki araştırmacılar ve kuruluşlar tarafından gerçekleştirildiği sonucuna ulaşılmıştır.

Bibliyometrik analiz araştırmaları ilgili yazarlara göre yapılan yayın sayıları ve atıf sayılarında yapılan araştırmalara göre Ho, Yuh-San 175 çalışmayla ve 5.437 atıfla ilk sırada, Kumar, Satish 123 çalışmayla ve 5.268 atıfla ikinci sırada ve Pandey ve Nitesh 45 çalışmayla ve 3.006 atıfla üçüncü sırada yer almaktadır. Bibliyometrik analiz araştırmaları ile ilgili dünya genelinde en çok yayın yapan kuruluşlar sırasıyla, Asia University. Peking University ve Technol Swinburne University olmuştur.

Araştırmanın en önemli bulgusu ise bibliyometrik analiz ile ilişkili ortak kavram birlikteliği olan veya bibliyometrik analiz ifadesine ilişkin en çok birlikte kullanılan kelime analizi yapılmasına rağmen herhangi bir ortak kelime kavram veya anahtar kelime ilişkisi bulunamamasıdır. Bibliyometrik analiz ile ilişkili ortak kavram birlikteliği olan veya anahtar kelime ilişkisi bulunamamasının sebebi ise literatürde her alanda ve her kavramla ilgili bibliyometrik analiz araştırmalarının gerçekleştirilmesi ve belirli disiplin ve kavramlarla birlikte yoğunlaşmaması gösterilebilir.

Bibliyometrik analiz araştırmaları konusundaki araştırmaların mevcut durumuna ilişkin genel durumunun tespit edildiği bu çalışmada kullanılan veriler WoS veri tabanından yayınlarla sınırlıdır. Gelecek çalışmalar için veri kalitesi ve ulaşılabilirliği dikkate alınarak SCOPUS, IEEE Xplore, EBSCO, Emerald, Science Direct, Taylor and Francis, Springer, SSRN gibi veri tabanlarından da yararlanılması önerilmektedir.Gelecekte yapılabilecek araştırmalar için ise, bibliyometrik analiz araştırma literatürünün belirli zaman aralıkları arasında detaylı incelenmesi gerçekleştirebilir.