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A BIBLIOMETRIC ANALYSIS OF RESEARCH ON COMMUNICATION IN THE FIELD OF SURVEILLANCE: WEB OF SCIENCE (WOS)

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ABSTRACT

This study presents a comprehensive bibliometric analysis in the field of surveillance and communication by analyzing 421 publications published between 2019 and 2024. The aim of the study is to determine the trends and orientations of the concept of surveillance in the scientific literature after Covid-19. To this end, the Web of Science (WoS) database was searched with the relevant keywords and 17,720 data were obtained. Among the data obtained, 421 articles published in English from the field of Communication were reached by applying the exclusion and inclusion criteria of the sample. The study was developed using Bibliometrix R-Tool and provided metadata from the WoS database. Publications, citations and information sources were analyzed, including top journals, top keywords, top cited and leading articles, top cited scholars, and top contributing institutions and countries. As a result, this study found that engineering, computer sciences and health are the most prominent fields related to surveillance, and that most articles are published in terms of publication type. In surveillance studies related to the field of communication, the words social media, privacy, Covid-19, China, algorithm and big data stand out; countries such as the USA, Australia, the UK, Canada and China are among the most productive countries; and with the increase in surveillance capacities, the protection of user privacy and security will become a critical issue.

Keywords: Surveillance, Communication, Social Media, Bibliometric Analysis, Biblioshiny

GÖZETİM ALANINDA İLETİŞİM ÜZERİNE YAPILAN ARAŞTIRMALARIN BİBLİYOMETRİK ANALİZİ: WEB OF SCIENCE (WOS)

ÖZET

Bu çalışma, 2019-2024 yılları arasında yayınlanan 421 yayını analiz ederek gözetim ve iletişim alanında kapsamlı bir bibliyometrik analiz sunmaktadır. Çalışmanın amacı, Covid-19 sonrası bilimsel literatürde gözetim kavramının eğilimlerini ve yönelimlerini belirlemektir. Bu amaçla Web of Science (WoS) veri tabanında ilgili anahtar kelimelerle arama yapılmış ve 17.720 veri elde edilmiştir. Elde edilen veriler arasından örneklemin dışlama ve dahil etme kriterleri uygulanarak İletişim alanından İngilizce yayınlanmış 421 makaleye ulaşılmıştır. Analizi geliştirmek için Bibliometrix R-Tool kullanılmış ve meta veriler WoS veri tabanından elde edilmiştir. En iyi dergiler, en iyi anahtar kelimeler, en çok atıf alan ve önde gelen makaleler, en çok atıf alan akademisyenler ve en çok katkıda bulunan kurumlar ve ülkeler dahil olmak üzere yayınlar, atıflar ve bilgi kaynakları analiz edilmiştir. Sonuç olarak, bu çalışma mühendislik, bilgisayar bilimleri ve sağlığın gözetimle ilgili en öne çıkan alanlar olduğunu ve yayın türü açısından en çok makalenin yayınlandığını ortaya koymuştur. İletişim alanıyla ilgili gözetim çalışmalarında sosyal medya, mahremiyet, Covid-19, Çin, algoritma ve büyük veri kelimelerinin öne çıktığı; ABD, Avustralya, İngiltere, Kanada ve Çin gibi ülkelerin en üretken ülkeler arasında yer aldığı; gözetim kapasitelerinin artmasıyla birlikte kullanıcı mahremiyetinin ve güvenliğinin korunmasının kritik bir konu haline geleceği görülmüştür.

Anahar Kelimeler: Gözetim, İletişim, Sosyal Medya, Bibliyometrik Analiz, Biblioshiny

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1. INTRODUCTION

Surveillance has been at the center of communication and media studies as a controversial and important area of investigation. In recent years, advances in computer and communication technologies have tremendously increased the capacity and scope of surveillance.

Surveillans is a concept of French origin and means 'to look, observe, watch, monitor, inspect, control, scan, investigate, collect, follow, spy, eavesdrop, test or protect' (T. Marx, 2015: 734). In other words, it is the process of systematically monitoring human behavior in order to access personal information. Surveillance is a set of practices that have specific objectives and privilege those who observe (Lyon, 2013: 33). Theoretical and social interest in surveillance increased after the September 11, 2001 attacks (Ball et al., 2012). Although surveillance studies trace the historical origins of surveillance far back, the changing capacity and form of surveillance is related to the needs of modern administrative apparatuses.

Towards the end of the 18th century in Western Europe, the traditional system of punishment gave way to disciplinary surveillance with more effective results. The body was no longer destroyed by punishment, but rather made useful and productive. Foucault (2013) sees disciplinary power based on surveillance as methods that make it possible to put the body under rigorous control, ensure the unremitting obedience of bodily forces and impose a relationship of docility and usefulness on these forces. The body is structured in social and economic contexts to be oriented towards productive work.

Karl Marx, one of the first thinkers to point to surveillance in social theory, argues that the capitalist system disciplines labor by observing the activities of workers in factories in order to maximize production (Lyon, 1997: 43). Max Weber (1986: 193), who examines surveillance through modern organizations, states that bureaucratic rational management is based on surveillance and develops a new understanding of management in which data on individuals are rationally collected and systematically archived. Another work that inspired surveillance studies is George Orwell's dystopian novel “1984”. Orwell's 1984 depicts Big Brother's surveillance of citizens through giant screens and the destruction of individual freedom by a totalitarian system based on surveillance. Contemporary surveillance studies have been a field of study in academia since the 1950s. Gary T. Marx (2015) argues that this is related to the post-World War II sensitization to anti-democratic practices.

Foucault (2013), a critical figure in surveillance studies, offers a new perspective on modern surveillance with his conceptualization of archaeology and the panopticon. Modern approaches to surveillance have developed by dealing with the nation state, bureaucracy, the development of technology and their political economy. Postmodern approaches to surveillance have focused on the consequences of digital technologies (Fuchs et al., 2012: 6). For almost two decades, researchers in the fields of information society studies and surveillance studies have stressed how crucial computers are to monitoring. Because of this, many categories that characterize the relationship between computers and surveillance have emerged: Data surveillance, electronic (super)panopticon, modern surveillance, electronic surveillance, or digital surveillance (Fuchs et al., 2012: 1).

When Web 1.0 was introduced to the public in the 90s, the internet was a one-way communication where users did not produce content. The transition to Web 2.0 and the dot.com crisis in the early 2000s marked a turning point in the development of the internet. Web 2.0 offered users a new communication environment with an interactive participatory architecture (O'Reilly, 2005) where they could produce, consume and share content.

Social media is a user-generated media environment that allows users to create content simultaneously and establish a mutual and horizontal communication through various platforms, blogs, wikis, etc. It has a design that meets and encourages the user's desire to both see and be seen (T. Marx, 2015: 739). While social media offers users the opportunity to build identities by creating online profiles, it also enables them to acquire social capital through the identities they build here (Kaplan and Haenlein, 2010; Boyd, 2007; Albrechtshund, 2008).

Liberal and critical studies in the literature on Web 2.0 and social media have led to various debates on the field. The liberal approach offers a perspective that Web 2.0 and social media foster participatory culture and strengthen the individual and democracy. However, research on the unseen negative aspects of social media and the internet presents a critical viewpoint, arguing that technological advancements uphold capitalism's uneven system.

Henry Jenkins (2006), one of the prominent examples of the liberal approach, argues that user-generated content creates freer and more variable content streams with the concept of convergence culture; Manuel Castells (2009: 421), with his definition of network society, states that Web 2.0 users build their own mass communication networks and empower themselves in this way. Clay Shirky states that social media has remarkably increased our ability to share, collaborate with each other and take collective action (Shirky, 2008: 20).

Against this, critical studies argue that a new business model has emerged in online networks in which every behavior of users is systematically surveilled and commodified. With Web 2.0 and digital platforms, every online behavior of users is systematically monitored, recorded and processed with cookies and algorithms. Since surveillance is often embedded in daily life, it is internalized without being noticed, thus becoming legitimate (Bauman and Lyon, 2013: 7). All Internet-based technologies are used by states and commercial companies to access all kinds of data of citizens. The ultimate goal of the citizen data obtained in this surveillance is to 'capture the digital consumer' (Bolin, 2011: 63). Users who are surveilled as data objects, whose individual data are collected and analyzed by media industries (Fuchs, 2011), are the source of sustaining a new business model based on “big data” (Andrejevic and Gates, 2014). This new business model is conceptualized as the “digital surveillance economy” (Clarke, 2019). The foundation of the digital surveillance economy is the analysis of data gathered to ascertain the attitudes, behavior, and pricing ranges of customers for products and services (Clarke, 2019: 62). While physical surveillance is concerned with people's bodies and practices, data surveillance is concerned with people's consumption practices, tastes and interactions (Clarke and Greenleaf, 2017: 2-3). Data surveillance points to a process in which physical methods are eliminated at low cost (Clarke, 16).

This model is based on personalized advertising and the sale of user information to advertisers in order to increase the profits of platform owners with the information gained from surveillance. The workings of this model were demonstrated early on by Smythe (1977) with his commodification of the audience approach. Fuchs (2011) adapts Smythe's work to social media. He states that users are transformed into prosumer/produser (producer-consumer) with the use of the internet and social media, and that all internet interaction data is sold to advertisers and exploited by capitalism (Fuchs, 2014: 147-8). Shoshana Zuboff argues that by collecting internet behavior and data and selling it to advertisers, companies like Google and Amazon accumulate capital by appropriating “behavioral surplus value” in a similar way to the appropriation of surplus value in industrial capitalism. Zuboff conceptualizes this situation as “surveillance capitalism”. According to Zuboff, surveillance capitalism increases its capital by directing its users towards predictable behaviors through nudging and herding practices (Zuboff, 2019: 201).

Surveillance takes place on social media through a variety of practices immanent to everyday, consensual sociality and covert practices (Trottier, 2011: 59). Surveillance on social media is both vertical and lateral. On the one hand, there is surveillance by governments, corporations and interest groups, and on the other hand, there is a process and design in which users surveil each other. This surveillance where users monitor each other is a surveillance based on social interaction. According to Chayko (2018: 81- 90), who conceptualizes this interaction as the attention economy, social media users lose their privacy as they pursue attention in new media environments.

Privacy can be defined as the right to determine who can access and use information about oneself and to what extent (Westin, 2003: 1) or the selective control of access to the self (Margulis, 2011: 11). However, all surveillance practices result in violations of privacy (Boyd, 2008). In a world dominated by surveillance capitalism, it is almost impossible not to be subjected to the collection and production of information about oneself. While modernity advances the ideal of the right to privacy, it also constantly advances surveillance that threatens privacy rights. The determinacy of the opposition between the ideals of privacy and surveillance is therefore a fundamental area of debate in surveillance studies (Fuchs, 2012: 46).

Studies on the relationship between surveillance and communication have generally focused on how social media use facilitates surveillance and how technology companies process social media data. However, a comprehensive mapping and analysis of trends in this research on surveillance and communication over the years is lacking. This research seeks to fill this gap by performing a bibliometric analysis.Conducted with the post-Covid-19 pandemic limitation, this research aimed to examine the trend of surveillance and communication studies through bibliometric tools.

The research questions guiding the study are as follows:

- Which types of publications have been prominent in the field of surveillance andcommunication, and what is the trend over the years?
- What are the main keywords and themes in the research field?
- Which are the most cited authors, most influential publications, leading countries and most prominent research institutions? What are the relationships between these elements?
- What are the most prominent articles, countries/regions, sources and authors in the research field and how are they related?
- To what extent has the Covid-19 pandemic been covered in surveillance and communication research?

2. METHODOLOGY

This study presents a bibliometric analysis to identify the main trends of research on surveillance and communication in the literature. Bibliometrics is a method used to reveal trends and developments in scientific literature, explore the structure of the intellectual field, identify current research themes, and identify knowledge gaps (Xie et al., 2020; Donthu et al., 2021). It can also be used to analyze article and journal performance, examine trends in research components, and map knowledge domains by visualizing data analysis results (Cobo et al., 2011). It provides an important framework for scientists to summarize the current state of their research fields and determine future directions (Donthu et al., 2021; Verma and Gustafsson, 2020). By examining the

evolution of research activities over time, bibliometric analysis reveals how interest in particular topics has changed over time and which areas of knowledge have shown growth (Khan, I, 2016). It also offers the opportunity to analyze the trends of authors and collaborations between academic institutions and researchers (Maan and Shiva, 2023; Faruk et al., 2021). Through citation and co-citation analyses, emerging themes in specific fields of study, the influence of different journals and schools of thought, and the disciplinary background of previous studies can be examined (Faruk et al., 2021). For example, such analyses allow assessing the general trends and characteristics of bibliometric studies, exploring and organizing studies in a particular discipline (Aria and Cuccurullo, 2017). The R software used for bibliometric analysis is a programming language that stands out in scientific computing with its powerful statistical algorithms, high-quality numerical processing capacity, and integrated data matching tools (Aria and Cuccurullo, 2017).

The data used in the study were obtained from the Web of Science (WoS) database using bibliometric analysis method. WoS is one of the most preferred bibliometric data sources in academic research due to its international recognition and high quality standards (Merigó et al., 2015). Offering comprehensive data for researchers, WoS provides the opportunity to make comprehensive evaluations in terms of many criteria such as citation analysis, author and institution information, country-based distributions, and journal impact factors (Birkle et al., 2020; Merigó et al., 2015; Gaviria-Marin et al., 2019).

2.1. RESEARCH SCOPE AND DATA COLLECTION PROCESS

This study focuses on two important interdisciplinary concepts, namely “surveillance” and “communication”. Within the scope of the research, a search query was performed on the Web of Science database on December 11, 2024 with the following keywords without any limitations: “surveillance” and ‘communication’, ‘mass media’ or ‘communication’ or ‘social media’ or ‘digital media’ or ‘Instagram’ or ‘Facebook’ or ‘TikTok’ or ‘Twitter’ (Figure 1). As a result of this search, a total of 17,720 academic works were identified. The analysis steps followed in the study are visualized in Figure 2.

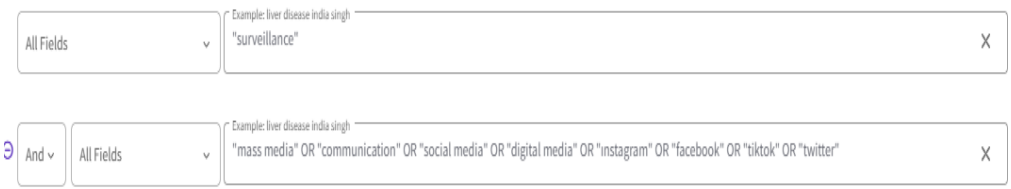

Figure 1. Keywords used in the research conducted on the WoS database

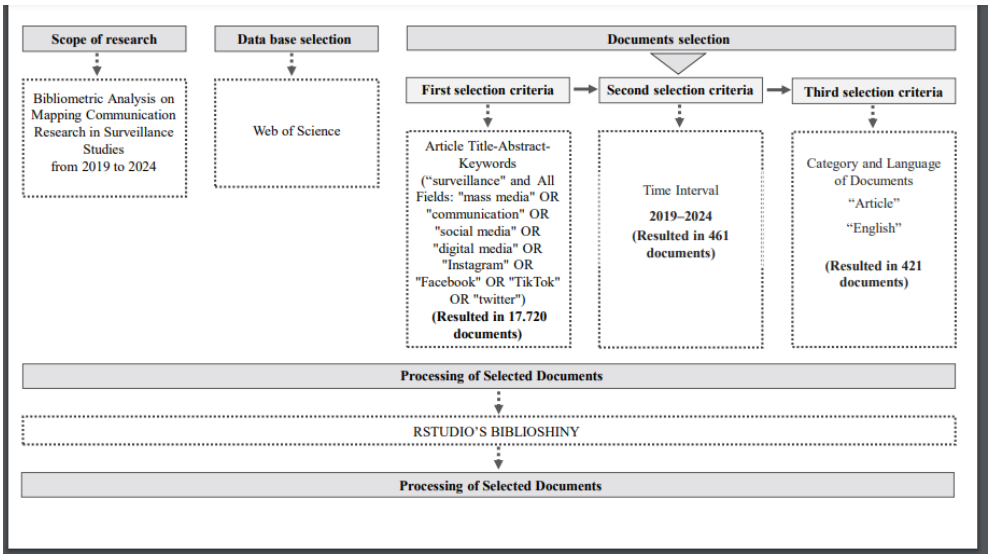

Figure 2. Flow chart of methodology research

In line with the focus of the study, exclusion and inclusion criteria were applied to examine only studies in the field of "communication". In this context, only 1,093 studies in the communication category (Figure 6) were included in the analysis, excluding all other fields. In order to further narrow the focus of the study, the study was limited to the years 2019-2024 by using the "publication year" filtering strategy. The main reason for choosing this period is the increase in social media use with the Covid-19 pandemic and the significant changes in surveillance and communication dynamics in this process. In this context, the research focuses on "Trends in Surveillance and Communication Studies after Covid-19". Furthermore, other document types other than articles were excluded and only academic articles were included in the analysis. As a result of this filtering, a total of 461 articles were downloaded in BibTeX format for bibliometric analysis. The reason why only articles were selected for analysis in this study is that the content that is easily accessible in databases such as Web of Science consists mostly of articles published in peer-reviewed journals. In addition, these articles are especially preferred in bibliometric studies because they provide structured data compatible with Bibliometrix analysis.

These downloaded data were analyzed using R-tools and the Biblioshiny plugin developed by Aria and Cuccurullo (2017). Statistical analysis of the datasets was performed in different categories using R-tools and the bibliometric plugin to provide in-depth insights (Aria and Cuccurullo, 2017). As part of this process, the downloaded data were filtered again for analysis in R Studio. Accordingly, the analysis was first restricted to peer-reviewed and accessible articles written in English (excluding early access reviews). With these restrictions, a total of 421 data sets were obtained. The next section of the study presents a statistical and visual map analysis (Figure 3) of the 421 data.

Figure 3. Main Data Information -Biblioshiny Software

As a result of the fitting, the basic information analysis with bibliometrics is visualized in Figure 6. Accordingly, there are a total of 122 sources and 421 documents in line with the focus of the study. While the annual growth rate is 3.77%, the annual number of citations is 7,732. A total of 1,510 keywords (author's keywords) written by 784 authors were found.

In this study, the data obtained were analyzed in Bibliometrix and Vosviewer software environment. In the analysis process, the WoS database was preferred due to its large data set and analysis possibilities. R Studio's open access bibliometric software Biblioshiny was used for data processing and visualization.

The data obtained and the information maps created are presented in the findings section.

3. RESULTS

This section presents a comprehensive mapping of the distribution of the raw data set of 17,720 publications obtained as a result of searching the Web of Science (WoS) database with keywords determined without any year or field limitation.

The annual distribution of published documents shows both the general development of research activities and basic trends. (Xie et al., 2020). When WoS analysis is conducted without a year limitation for the research, the statistical analysis by years is shown in Figure 4. The diagram shows the annual distribution of the number of scientific publications between 2001 and 2024. Accordingly, while there was a very limited number of publications on surveillance in 2001, there has been a steady upward trend in this field since 2007. It is possible to say that this increase in the production of publications corresponds to a period when the internet penetrated every aspect of social life, Web 2.0 technologies developed and social media platforms diversified and reached mass use. In the post-Covid-19 period, it is noteworthy that the studies reached their maximum level in 2022. The year 2022 stands out as the period when broadcast production reached its peak. The pandemic has caused individuals to necessarily move their daily life practices to the digital environment. In this process, almost all kinds of behaviors performed via the internet have become open to surveillance and digital monitoring, inevitably but often with voluntary participation. It can be said that these developments paved the way for an increased interest in surveillance-oriented studies in the academic literature. As of 2023, a slow downward trend is observed compared to 2022 and previous years.

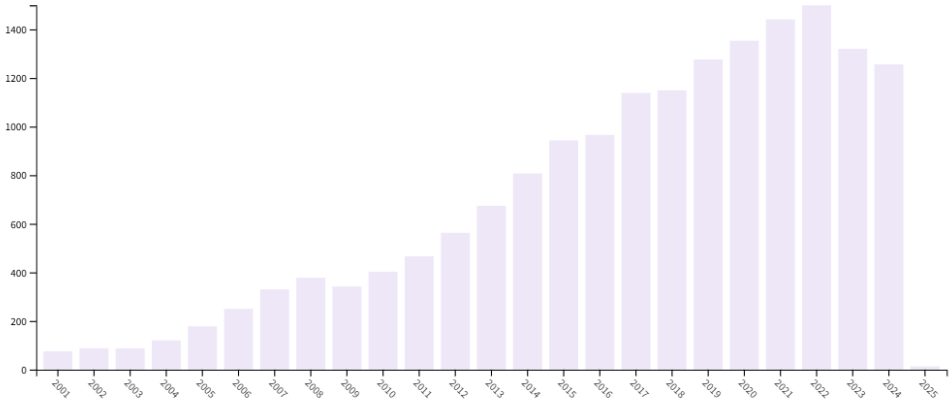

Figure 4. Number of Documents by Year- WoS Categories

The document types of the obtained data are analyzed and visualized in Figure5. Accordingly, when the publication types are examined according to the keywords of the study, the article type appears as the type in which the most scientific production is made with 11,056. It is followed by proceeding paper with 5,439 publications and review articles with 1,118 publications. These three publication types stand out as the types in which the most production is made. Apart from these publications, there are publications such as book chapter, early access and editorial material.

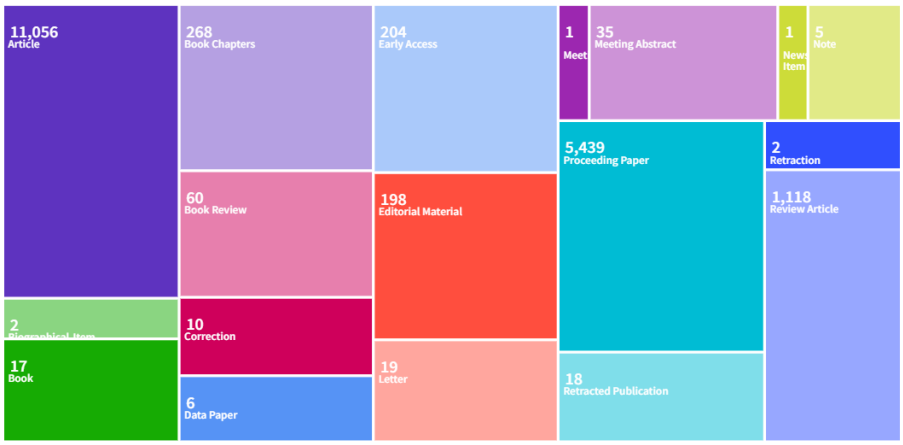

Figure 5. Tree Map of document types -WoS Categories

WoS Tree Map categories were visually analyzed to see the current state of studies on the relationship between surveillance and communication. In Figure 6, WoS document fields are limited to 25 categories. Accordingly; engineering (N= 4, 108), telecommunication (N= 3,096), computer science information systems (N= 2, 239), Public Environmental Occupational Health (N= 2,009), Computer Science Theory Methods (N= 1,439) and Computer Science Artificial Intelligence (N=1, 252), Communication (N= 1,093) Health Care Science Servises (N= 600) and Infectious Diseases (N= 596). As can be seen, the density of publications in the fields of engineering, telecommunication and health is remarkable.

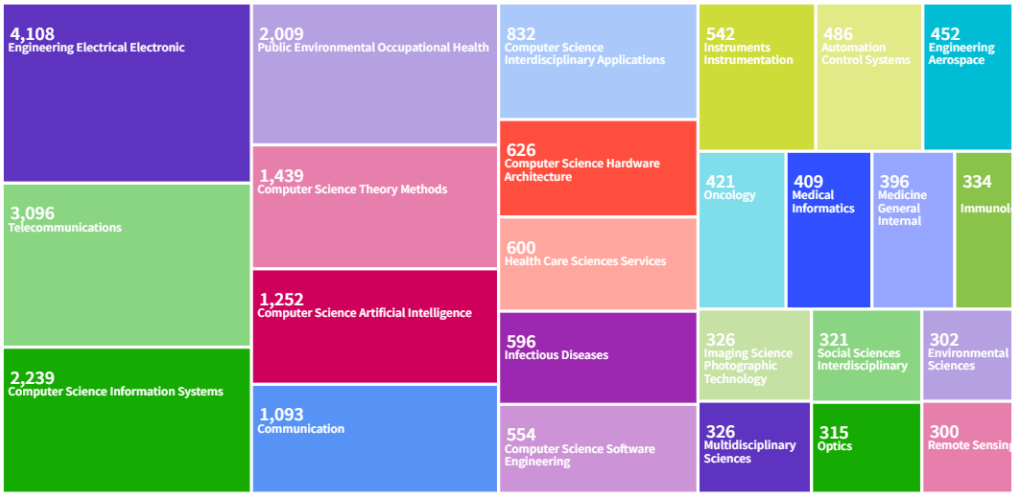

Figure 6. Tree Map categories- WoS categories

3.1. SCIENTIFIC PRODUCTION BY YEARS

This section presents the findings of the bibliometric analysis of 421 English articles obtained from the Web of Science (WoS) database and filtered according to field, year and genre criteria using the Biblioshiny program. By focusing on these articles published with the theme of surveillance within the scope of communication studies between 2019-2024, trends in the field were revealed. Above is an analysis of the raw data obtained from the WoS database. While this analysis shows general research trends, the analysis of this dataset in Biblioshiny, selected according to specific criteria in this section, reveals limited thematic trends. Scientific production in the field of Surveillance and Communication by years is as shown in Figure 7. Accordingly, while there were 64 publications in 2019, this number increased to 72 in 2021. In 2022, there was a decrease compared to previous years with 59 publications, while the peak was reached in 2023 with 79 publications.

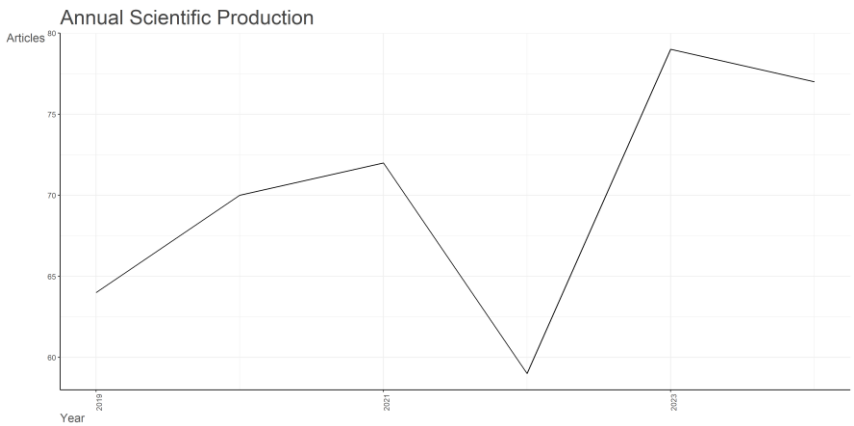

Figure 7. Scientific Production by Years- Biblioshiny Software

3.1.2. MOST RELEVANT SOURCES

The most relevant sources published on surveillance and communication are presented in Figure 8. The 20 most relevant sources were selected for the analysis. Information Communication & Society ranks first with 47 publications, followed by International Journal of Communication with 44 publications. Social Media + Society with 29 publications, New Media & Society with 19 publications and Communication Culture & Critique with 15 publications are the prolific journals.

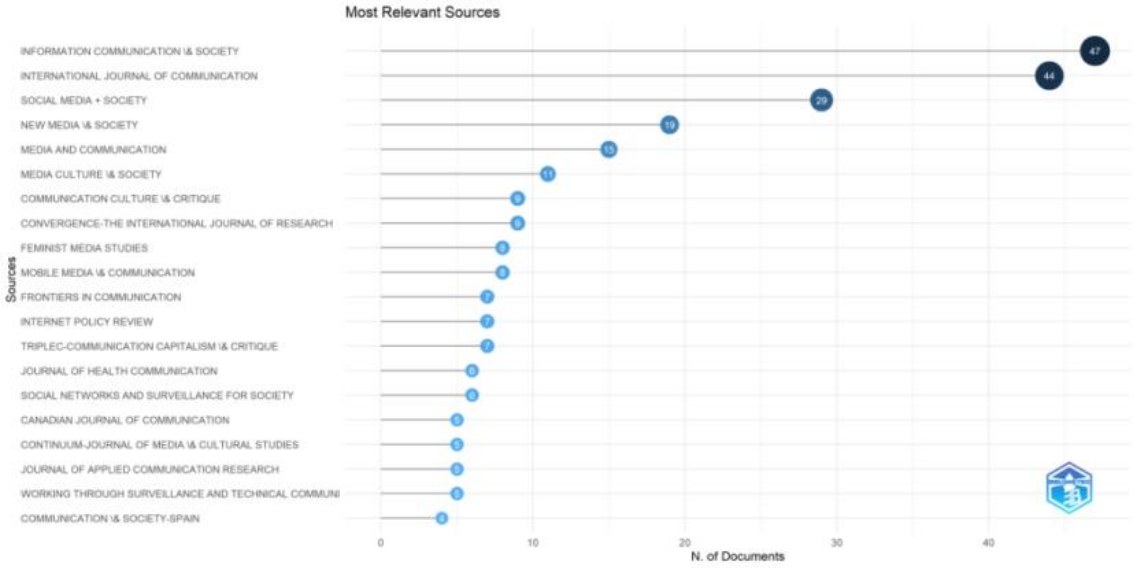

Figure 8. Top 20 Most Relevant Sources- Biblioshiny Software

3.1.3. MOST RELEVANT AND FREQUENT WORDS

Figure 9 shows the most relevant words. The most relevant words provide information about the trends of current research as well as the essence of an article. We analyzed 20 keywords in the Biblioshiny software program. In Figure 9, the size of the circles indicates the frequency of the term and the length of the lines indicates how long it has been studied. Accordingly, the word surveillance ranked first with 123 occurrences, followed by social media with 67 occurrences and then privacy with 52 occurrences. Covid 19 ranks fourth with 26. Other words are listed as China, Algorithm, Data, Facebook, Big Data, Artificial Intelligence, Digital and Surveillance capitalism respectively.

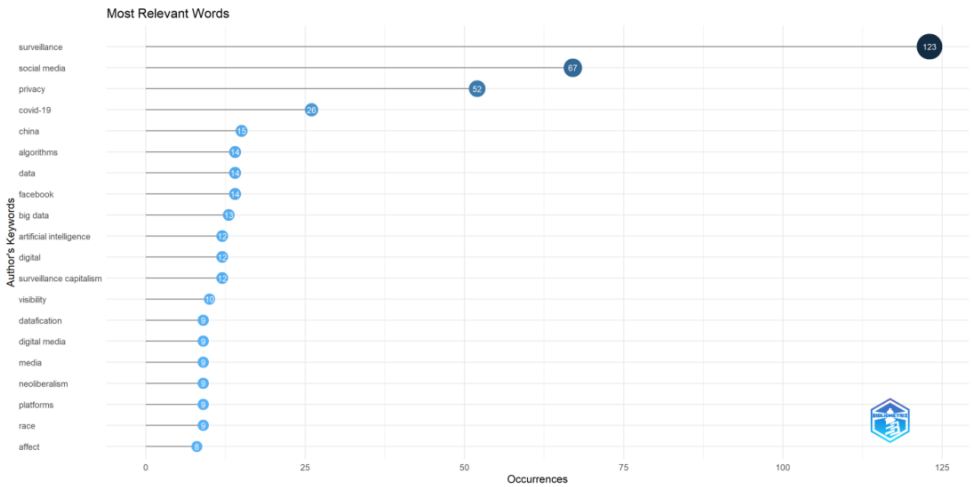

Figure 9. Top 20 Most Relevant Words- Biblioshiny Software

Figure 10, which shows the frequency of use of keywords, shows us the importance of the research topic. The analysis of the most used keywords in the field of surveillance and communication reflects the dynamic and current structure of the field. As can be seen in Figure 10, surveillance is the most frequently used keyword with 77 occurrences, social media is in second

place with 40 occurrences and media is in third place with 35 occurrences. Privacy ranks 29, information and politics 24, and communication 23.

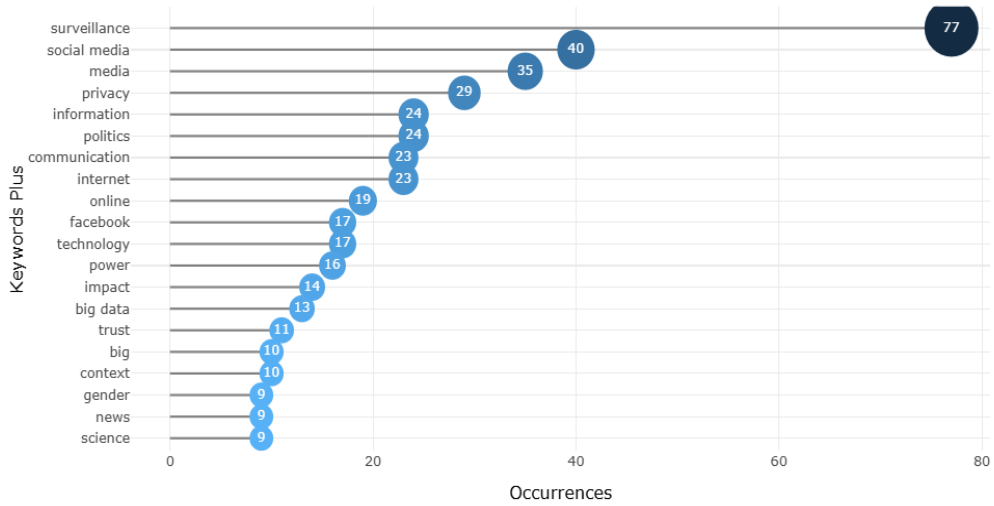

Figure 10. Top 20 Most Frequent Words-Biblioshiny Software

3.1.4. ANALYSIS OF NETWORK VISUALIZATIONS

Network visualizations are a Vosviever analysis that visualizes the cluster analysis of relationships between different topics (Napitupulu, 2021). In this study, network analysis was used to visualize the data network for bibliometric analysis. Figure 11 show the keyword visualization of publications related to surveillance and communication (Hudha et al., 2020). Accordingly, 2539 keywords were identified in 421 different studies. For the network analysis visualization of these keywords, the criterion of having 5 related words in common was taken into consideration. With this criterion limitation, the number of 2539 keywords decreased to 118. Accordingly, the keywords that appeared at least 5 times were analyzed over 9 clusters, 916 links and 1726 total link strength. Keywords are represented by nodes and colors. The size of a node indicates the frequency of use of the keyword in different studies and represents the frequency of network connections (McAllistervd et al., 2021; Avinc et al., 2024). When the research network map is analyzed, it is seen that the keywords “surveillance” (blue), “social media” (green) and “privacy” (yellow), “facebook” (red), covid-19 (dark blue) and digital media (orange) stand out.

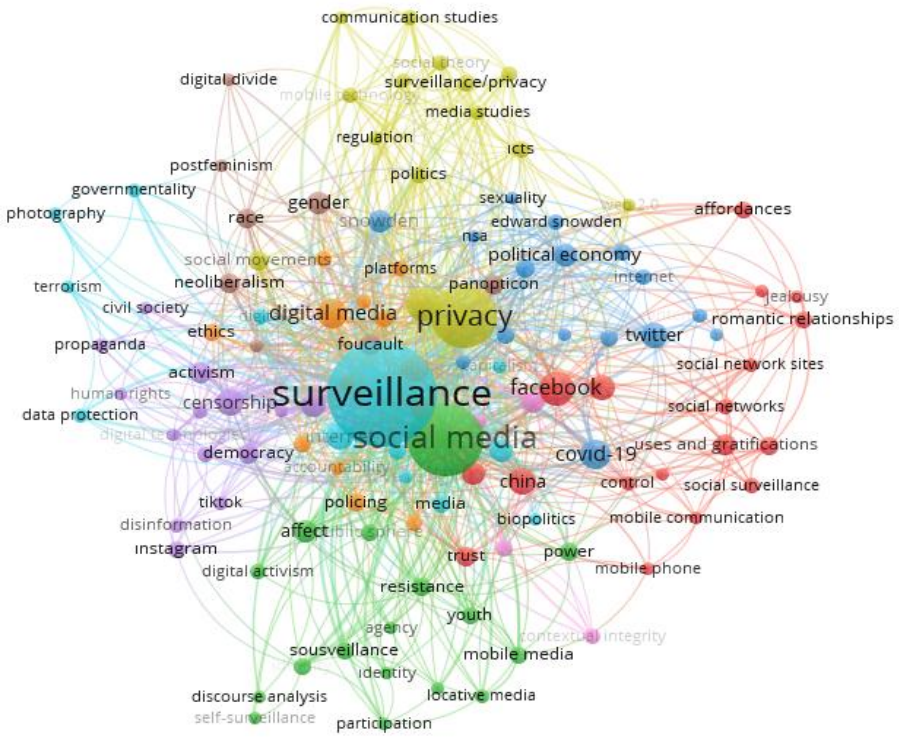

Figure 11. Network Visualizations- Vosviewer

3.1.5. WORD CLOUD

The word cloud provides a visual illustration of metadata ratios of keywords in research. The keywords visualized by the word cloud provide an opportunity to understand the focus of the articles. This graphic includes the main words, keywords and title words of the topic. The words that stand out in large font from the word cloud visual are the basic and important words. Accordingly, the most important and most used keywords in Figure 12 are surveillance, which is shown in the largest font size, followed by social media, privacy and Covid 19. Words such as China, big data, algorithm, facebook, digital surveillance, digital and artificial intelligence were also included as words that attracted attention.

Figure 12. Top 20 Word Cloud- Biblioshiny Software

3.1.6. CO-OCCURRENCE NETWORK

The Vosviewer program was used to visualize the co-occurrence keyword networks. Co-occurrence networks show a visual and analytical representation of how terms or concepts often appear together in a given literature. Co-occurrence reveals patterns of association when analyzing the co-occurrence of keywords (van Eck and Waltman, 2009). In Figure 13, the clusters consist of 7 colors. The most frequently used keywords are represented by color bubbles. The size of the bubble indicates the frequency and importance of the word. Here we see a clustering around two main colors. The largest co-occurrence network is represented by the word surveillance in purple. There are 21 other words in purple that form the co-occurrence network with it. Accordingly, the concepts that are in relationship networks with the color purple are words such as media, communication, big data, technology. The second largest word is the social media cluster represented by the color red. The words that make up the social media related networks are 16 in total and these are online, internet, politics, activism, etc. The third largest network, which is colored green, consists of 5 words. These words are perception, attitudes, knowledge, etc. In addition, ethnic with brown, race with pink and news with yellow, which consist of a single cluster, appear to be weakly related. The two clusters trust and risk are represented by blue colors. These two clusters seem to be related to the word surveillance.

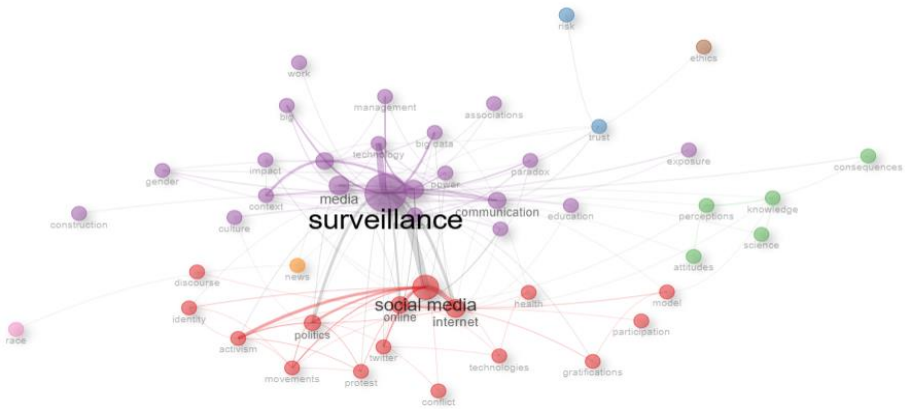

Figure 13. Co-Occurrence Network -Biblioshiny Software

3.1.7. MOST RELEVANT AUTHORS

Figure 14 shows the top 20 authors who published on the topic between 2019 and 2024. This graph shows the contribution of the authors to scientific production on this topic. Young, S. tops the list with 5 publications, followed by Andrejevic, M., Bhatia, Kv., Dogruel, L., Kaur-Gill, S., and Kent, R. with 3 publications.

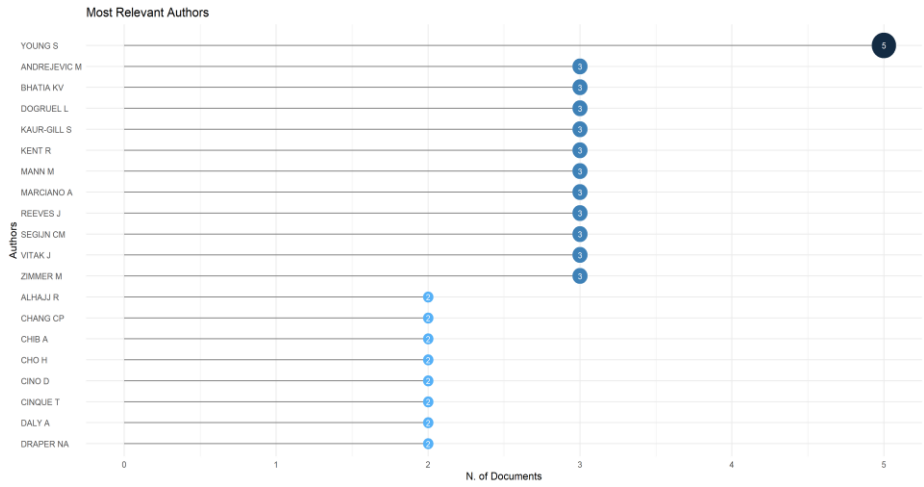

Figure 14. Top 20 Most Relevant Authors -Biblioshiny Software

3.1.8. CORRESPONDING AUTHORS COUNTRIES

Figure 15 shows the number of scientific productions of the top 20 countries. Accordingly, Blue bars (SCP) represent authors from the same country, single country publications. Red bars (MCP) represent multi-country publications, i.e. the distribution of publications according to the country of the co-author. As seen in the graph, the US ranks first in surveillance and social media studies with 140 publications, 17 of which are multi-country publications, and the MCP rate is 12.1%. The majority of US research on the topic is single country publications (SCP), suggesting that academics would rather publish more articles that are exclusive to the US. Australia ranks second with 41 publications, with 8 multi-country publications (MCP) and an MCP publication rate of 19.5%. Compared to the US, Australia is more open to international broadcasting collaborations. The United Kingdom follows Australia with 35 broadcasts, 4 of which are multi-country broadcasts (MCP) with an MCP rate of 11.4%. It can be said that the UK focuses more on single broadcasts but is open to cooperation, albeit limited. China ranks 4th with a total of 23 publications, 3 multi-country publications and an MCP rate of 13.0%. It is seen that all countries are in limited international cooperation.

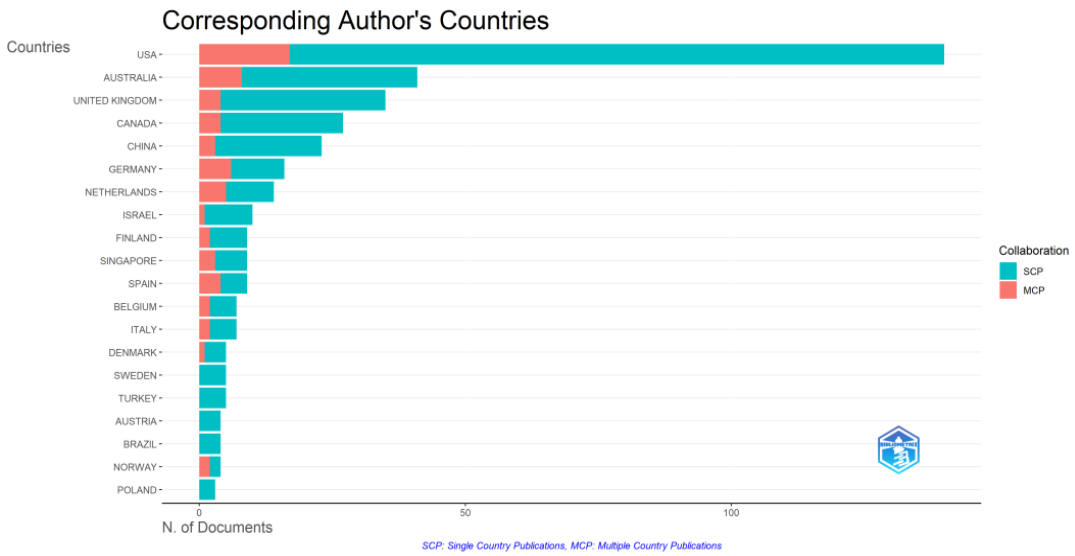

Figure 15. Top 20 Corresponding Author's Country- Biblioshiny Software

3.1.9. MOST RELEVANT AFFILIATION

Figure 16 shows the most important links in surveillance and communication research. Dekain University in Australia and the University of Pennsylvania in the USA top the list with 16 publications each. Monash and Amsterdam Universities follow with 15 publications each. Texas Austin with 14 publications, Southern California and Wisconsin Universities with 13 publications are seen as productive institutions. Chinese Hong Kong, King's College London and Nanyag Tecnology Universities are the other institutions with 12 publications each.

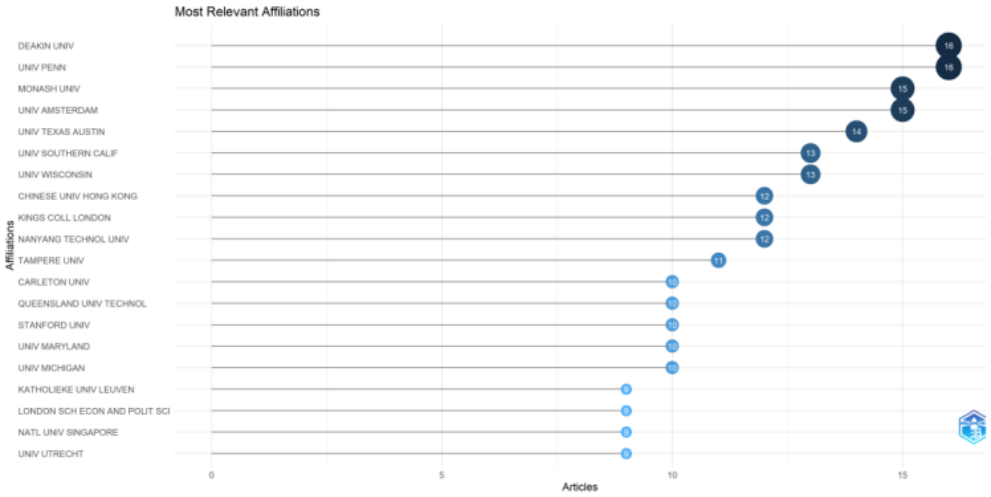

Figure 16. Top 20 Most Relevant Affiliation -Biblioshiny Software

3.1.10. COUNTRY PRODUCTION AND COLLABORATION

Figure 17 maps the countries that produce the most scientific studies in surveillance and communication research. Dark blues represent the country that produces the most, while light blues rank second. It should be noted that the prominence of English-speaking countries is due to the limited availability of English-language publications in other countries. While the USA stands out with 397 publications, Australia ranks second with 111 publications. Following them are the UK with 102, Canada with 72 and China with 62 publications. It can be thought that the concentration of studies in the USA is due to the pioneering role of the USA in the development and use of information and communication technologies. In this respect, the USA is in an advantageous position in analyzing the social effects of the use of technological systems such as the internet, computers, telephones and social media, which emerged as a result of technological development. Recent discussions about China's investments in technology and the results and effects of the platforms it has developed have been reflected in the production of publications in China.

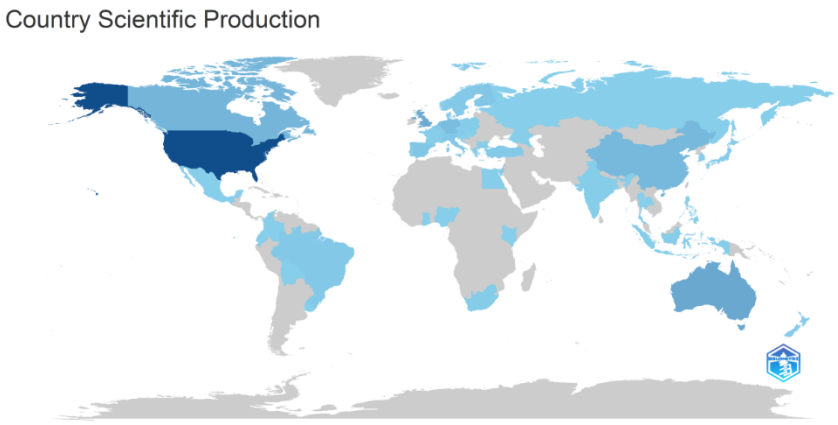

Figure 17. Top 20 Scientific Maps of Country Productions-Biblioshiny Software

The World Map of Countries' Collaboration is shown in Figure 18. The map shows the countries that produce the most scientific studies on surveillance and social media. Dark blues indicate the most productive country. Accordingly, the USA is the most productive country, followed by Australia and China. International cooperation is shown on the map with connecting lines. While the intensity of cooperation between the US and Europe stands out, cooperation links between Western Europe and Australia and between the US and China are also noteworthy.

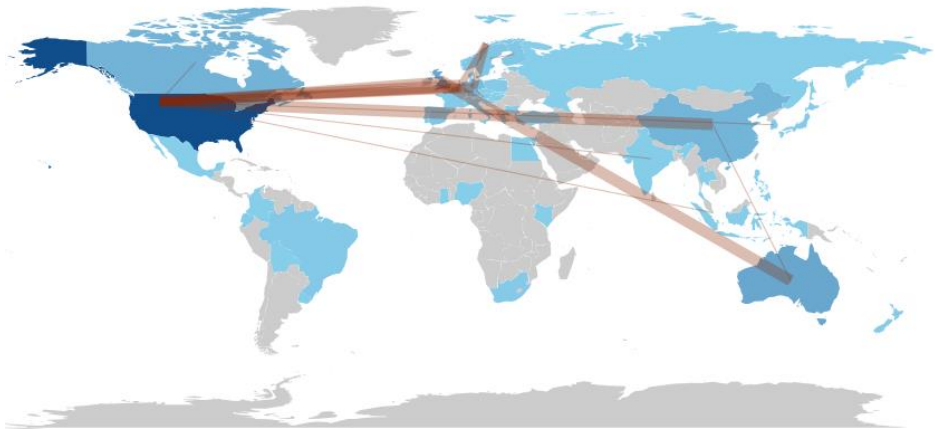

Figure 18. Top 20 Countries Collaboration World Map -Biblioshiny Software

3.1.11. TREE FIELD PLOT

The tree field plot provides a visualization of the relationship between authors, affiliates and keywords in the surveillance and social media space. Figure 19 shows the relationship between authors, keywords and affiliates in a three-field plot, representing connections by bandwidth. The height of the rectangular nodes indicates the proportion of a particular country, institution or journal in the collaboration network, while the width of the lines between the nodes is proportional to the number of links (Koo, 2021: 9). In Figure 19, which analyzes the relationship between top authors, top keywords and top affiliates, the left column represents keywords, the middle column represents authors and the right column represents affiliates. Accordingly, “surveillance” and “privacy” and “covid-19” stand out among the most used keywords in Figure 19. Among the prominent authors in the graph, Andrejevic M, Monah University stands out, followed by Kent R, King's College London and then Chib A, Nanyah Tecnology University. Prominent institutions are Deakin University and the University of Maryland and King's College London. These authors also appear to have an association with the keyword Covid -19.

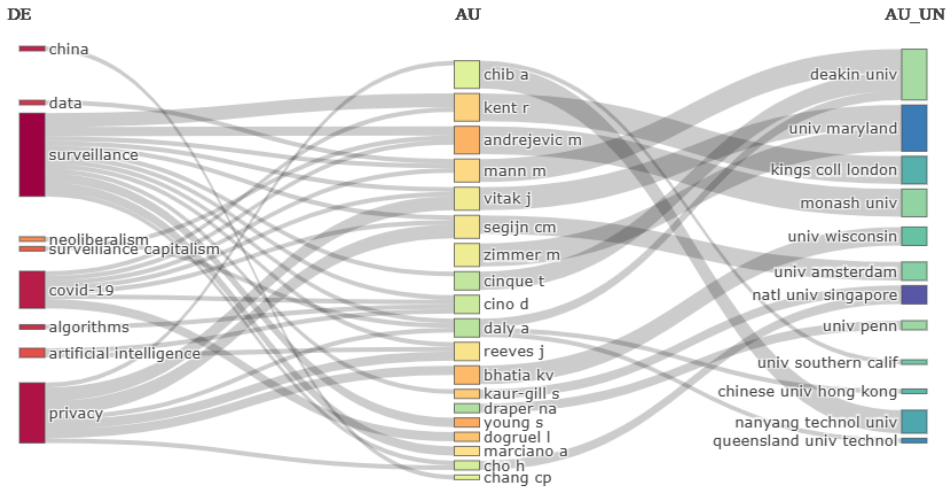

Figure 19. Three-Field Plot-Biblioshiny Software

3.1.12. EVOLUTION OF THEMES OVER THE YEARS

Figure 20 shows the thematic evolution in the field of surveillance and communication. The thematic evolution graph shows topics related to more than one research area. Figure 20 shows the evolution and change of research priorities in surveillance and communication between 2019-2022 and 2023-2024. In 2019-2022, surveillance was the most used theme, followed by China and algorithms. The reason for China's thematic prominence is that the prevalence of TikTok, which developed under its hosting, increased during this period. Between 2023 and 2024, it was observed that the intensity of use of these themes narrowed and new themes were added. In this period, surveillance, platform, digital surveillance and surveillance capitalism follow a close course. In this period, specific new topics such as digital capitalism, surveillance capitalism, artificial intelligence, covid-19 and mental health emerged. Themes such as surveillance, China and race are key concepts that persist in both periods. The term communication was not included in the studies between 2023 and 2024.

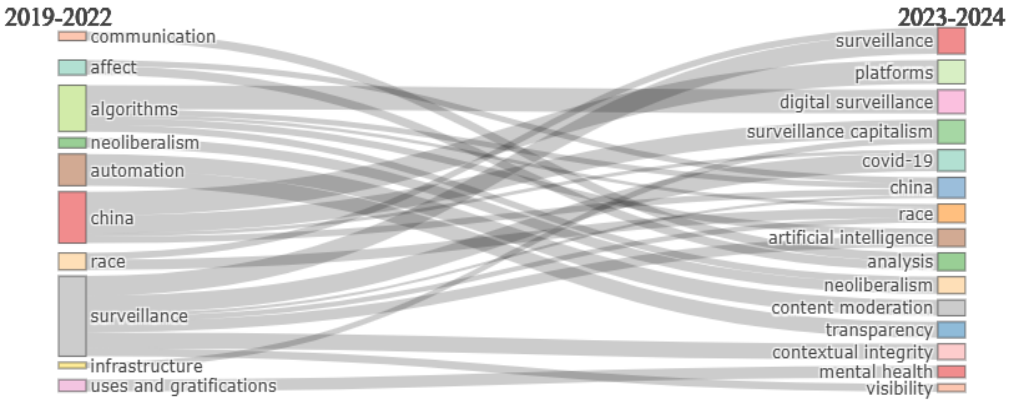

Figure 20. Thematic **Evolution** -Biblioshiny Software

3.1.13. THEMATIC MAP

Thematic map comprehensively visualizes the thematic map of big data research. To comprehensively capture the thematic map of data research, author keywords and index keywords in bibliographic records were analyzed. The thematic map is structured on two axes, vertical and horizontal, and analyzed in terms of degree of development (intensity) and relevance (importance). The topics are organized into four parts, differentiated by domain, indicating their importance in a given context and their developmental maturity. Each category is represented in clusters with different colors (Avinc et al., 2024).

In Figure 21, the themes at the top right in the schematic map analysis constitute the Motor Themes. These themes are the topics that drive the research forward. Prominent concepts in this area are: politics, activism, identity, social networking sites and politics, political movements, identity formation and activism. The basic themes on the bottom right are the core areas of research and are the most relevant topics. Concepts emerging from the Basic themes are: surveillance, social media, privacy, communication, internet, online, facebok and technology. Niche Themes, on the top left, have a low level of relevance but a high density of topics. Topics in this section are more specific and constitute specialized or advanced topics. Words that appear in this section are: Mobile, quantified self, discourses. In the bottom left, Emerging or Regressing Themes are less intense topics. The key words here are: News, ethics, privacy concerns, paradox.

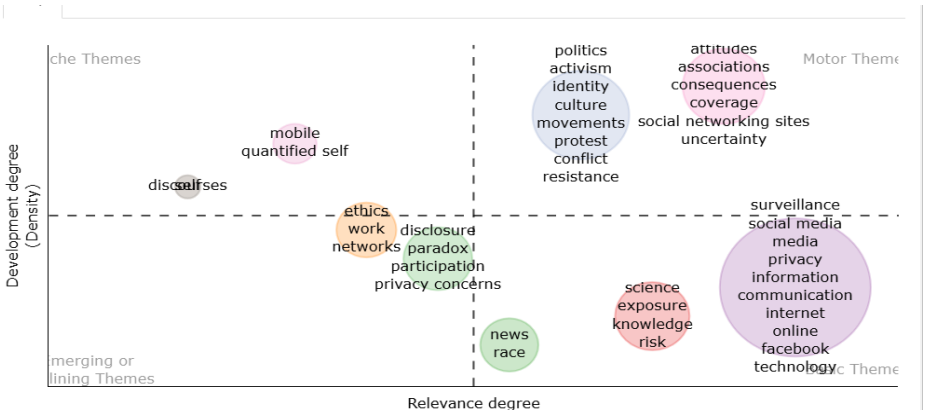

Figure 21. Tematik Map -Biblioshiny Software

3.1.14. ANALYSIS OF MOST GLOBALLY CITED DOCUMENTS

Figure 22 shows the 20 most cited articles on surveillance and social media. This graph shows the author, year, journal, and total number of citations. Citations have an important place in today's knowledge accumulation. Because researchers benefit from each other's and their own previous studies. Citations from one study to another show intellectual connections between publications (Appio et.al., 2014).

The most cited article is the study by Duff and Chan (2019), which was cited 108 times and ranked sixth in terms of average citations per year (19.8). This study shows that social media users feel that they are constantly being monitored and that imagined surveillance raises security and privacy concerns, which is why users develop strategies to manage their visibility against imagined surveillance in the digital environment. It suggests that platforms should pay more attention to user privacy and security. The second paper was written by Lou et al. (2022) and received 105 citations. This study examines the effects of virtual influencers that appear human but are created from artificial intelligence or computer graphics on consumers, particularly how they shape the perception between reality and artificiality, and suggests implications for their effectiveness in

advertising campaigns. Liang F.'s (2020) study ranks third with 103 citations and examines the health code applications of digital platforms in China developed to combat the Covid-19 pandemic. It shows that digital technologies developed to protect public health have become a key player in the state-citizenship relationship. In the fourth place, Katzenbach's (2019) study was cited 92 times. Focusing on the concept of algorithmic governance, the article examines the impact of algorithms and artificial intelligence on governance and social order, and discusses important issues such as the impact of algorithms on power relations, privacy and social inequalities. In fifth place is Lutz C, et.al (2020), which has been cited 77 times. This article addresses digital data collection and users' feelings about privacy. It focuses on the tension between users' desire for privacy and digital participation in the context of "data capitalism" and addresses the relationship between users' sense of insecurity and data capitalism.

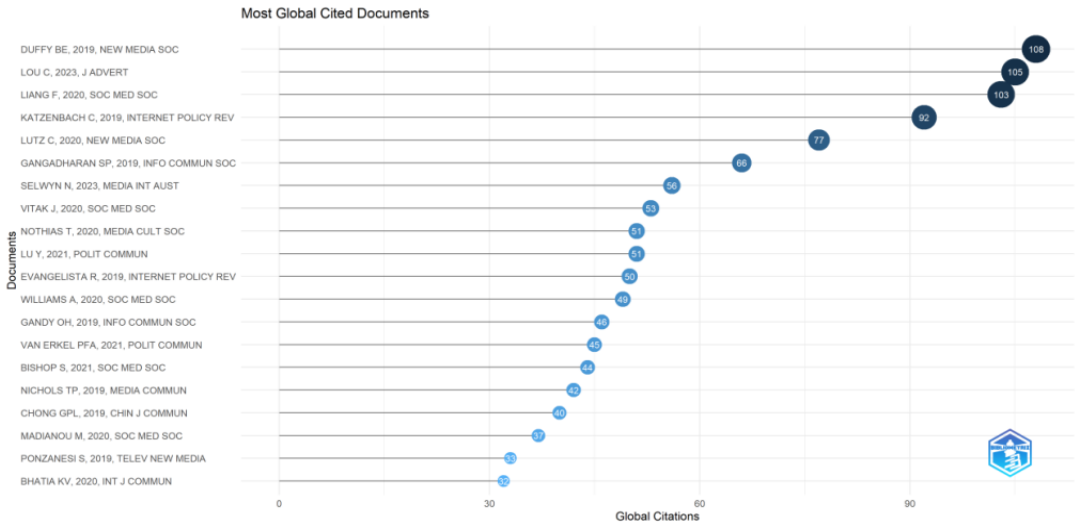

Figure 22. Top 20 Most Global Cited Dokuments -Biblioshiny software

4. CONCLUSION

This research reveals the general trends of surveillance and social media research in 2019-2024 after Covid-19. Using Bibliometrix Biblishny software programs and VoSviewer software programs, prominent keywords, authors, institutions and journals were identified. In the WoS database, categories such as Engineering Telecommunication, Computer Science Information Systems, Public Environmental Occupational Health and Computer Science Artificial Intelligence are among the important areas where the concept of surveillance is emphasized. The analysis of the WoS category shows that publications are concentrated in the fields of engineering, computer science, health and communication. By the help of information and communication technologies playing a central role in everyday life, the effectiveness of surveillance has started to increase in every field.

Publications in the field of communication have grown in parallel with the increase in the use of social media, and the increase has become more evident after the Covid-19 pandemic. During the pandemic, people met their daily needs online, which increased the interest in this intensive use. The focus of the studies is on surveillance, social media and privacy. In terms of publication type, article-type publications are at the forefront. The most frequently used keywords in the field of surveillance and communication are Surveillance, Social Media and Privacy, Covid-

19, China, Algorithm, Big Data. In the countries where the most studies are produced, the USA is at the forefront, followed by countries such as Australia, the UK, Canada and China. This may be attributed to the pioneering role of the USA in the development and use of information and communication technologies. In this respect, the US is in an advantageous position in analyzing the social effects of the use of technological systems such as the internet, computers, telephones and social media, which emerged as a result of technological development. Recent debates about China's investments in technology and the results and effects of the platforms it has developed have been reflected in the production of publications in China. It should be noted that the prominence of English-speaking countries is due to the limited availability of English-language publications in other countries. In addition, the study provides data on authors, citations, institutions and journals.

Since 2004, there has been a steady increase in surveillance studies in parallel with the spread of Web 2.0 and the emergence of social media platforms. With the diversification and widespread use of social media platforms, big data discussions have developed and surveillance and communication studies have gained significant momentum. In the post-Covid-19 period, it is noteworthy that the studies reached their maximum level in 2022. During the Covid-19 period, both institutions and people used information and communication technologies very intensively to maintain daily life. The increasing use of the internet and social media in all areas of social life has led to an increase in research examining the consequences and effects in terms of surveillance and communication.

The most prominent keywords in the research area are Surveillance, Social Media and Privacy. Other keywords are Covid 19, China, Algorithm, Data, Facebook, Big Data, Artificial Intelligence, Digital and Surveillance capitalism. Between 2019 and 2022, the themes of surveillance, China, algorithm and automation are more intense, while between 2023-2024, the intensity of use of these themes has narrowed and the themes have diversified. In 2023-2024, new themes such as platform, digital surveillance, artificial intelligence, covid-19, mental health and race emerged.

For publications on surveillance and related topics between 2019 and 2024, Young, S. leads the list with 5 publications, followed by Andrejevic, M., Bhatia, K.V., Dogruel, L., Kaur-Gill, S. and Kent, R. Prominent universities include Deakin University (Australia), University of Maryland (USA) and King's College London (UK). In terms of the distribution of publications by country, the USA ranks first as the country with the most publications, followed by Australia, the UK, Canada and China. There is also a high level of cooperation between countries, particularly between the USA and Europe, Western Europe and Australia, and the USA and China. Other institutions that stand out in publications are the University of Pennsylvania (USA), Monash University (Australia), the University of Amsterdam (the Netherlands), the Universities of Texas Austin, Southern California and Wisconsin (USA), and the Chinese University of Hong Kong, King's College London and Nanyang Technological University (Singapore). The pioneering role of the USA in information and communication technologies seems to be the determinant of its prominence in the research. It should not be ignored that English language limitations also play a decisive role in these results. However, China's investments in technology and the platforms it has developed have also been an important factor that has recently increased the production of publications in China.

The word Covid-19 has been prominent in Surveillance and Communication research. It is seen that the word Covid-19 has a prominent visibility in keyword cluster analyses, and in the analysis of themes by years, it is seen that the concept of Covid-19 is as intense as other prominent

concepts in 2023-2024. There is a strong relationship between the word Covid-19 and the word surveillance. Among the most cited publications, the publication on the relationship between surveillance and Covid-19 in the field of health attracts attention.

As a result, this study has revealed the general trends of surveillance and communication studies. The implications of phenomena such as social media, algorithms, artificial intelligence and human-machine interaction, especially in the field of individual autonomy and privacy, have an important place in surveillance and communication research. The relationship between algorithms, artificial intelligence and surveillance stands out as a promising area for future research. Moreover, with the increasing surveillance capacities of states, companies and platforms, the protection of user privacy and security, and new forms of self-presentation against surveillance are emerging as critical areas for further research.

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REFERENCES

Albrechtslund, A. (2008). Online Social Networking as Participatory Surveillance. *First Monday, 13*(3).

Andrejevic, M. and Gates, K. (2014). Big Data Surveillance: Introduction. *Surveillance & Society, 12*(2), 185–196.

Appio, F. P., Cesaroni, F. and Di Minin, A. (2014). Visualizing the Structure and Bridges of the Intellectual Property Management and Strategy Literature: A document co-citation analysis. *Scientometrics, 101*(1), 623–661.

Aria, M. and Cuccurullo, C. (2017). Bibliometrix: an R-tool for Comprehensive Science Mapping Analysis. *Journal of Informetrics, 11*(4), 959–975.

Avinc, G. M. and Yıldız, A. (2024). A Bibliometric and Systematic Review of Scientific Publications on Metaverse Research in Architecture: Web of Science (WoS). *International Journal of Technology and Design Education*, 1-25.

Ball, K., Haggerty, K. and Lyon, D. (2012). *Handbook of Surveillance Studies*. London: Routledge.

Bauman, Z. and Lyon, D. (2013). *Akışkan Gözetim.* (E. Yılmaz, Trans.) İstanbul: Ayrıntı Yayınları.

Birkle, C., Pendlebury, D. A., Schnell, J. and Adams, J. (2020). Web of Science as a Data Source for Research on Scientific and Scholarly Activity. *Quantitative Science Studies, 1*(1), 363–376.

Bolin, G. and Andersson Schwarz, J. (2015). Heuristics of the Algorithm: Big Data, User Interpretation, and Translation Strategies. *Big Data & Society*, July–December, 1–12.

Boyd, D. (2007). Social Network Sites: Public, Private, or What. *Knowledge Tree, 13*(1), 1–7.

Castells, M. (2009). *Communication Power*. Oxford: Oxford University Press.

Chayko, M. (2018). *Süper Bağlantılı: İnternet, Dijital Medya, Tekno-Sosyal Hayat*. (B. Bayındır, Y. Deniz and T. Bayrak, Trans.) İstanbul: Der Yayınları.

Clarke, R. (2016). *Dataveillance*. Retrieved November 5, 2021, from http://www.rogerclarke.com/DV/#SurvD

Clarke, R. and Greenleaf, G. (2017). Dataveillance Regulation: A Research Framework. *UNSW Law Research Paper*, 17-84.

Clarke, R. (2019*).* Risks Inherent in the Digital Surveillance Economy: A Research Agenda. *Journal of Information Technology, 34*(1), 59–80.

Cobo, M. J., López-Herrera, A.G., Herrera-Viedma, E. and Herrera, F. (2011). An approach for Detecting, Quantifying, and Visualizing the Evolution of Aresearch Field: A practical Application to the Fuzzy Sets Theory Field. *Journalof Informetrics, 5*(1), 146–166.

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N. and Lim, W. M. (2021). How to Conduct a Bibliometric Analysis: An Overview and Guidelines. *Journal of Business Research, 133*, 285-296.

Farinosi, M. (2011). Beyond the Panopticon Framework: Privacy, Control and User-Generated Content. In A. Esposito, A. Vinciarelli, R. Hoffmann, and V. C. Müller (Eds.), *Toward Autonomous, Adaptive, and Context-aware Multimodal Interfaces: Theoretical and Practical Issues – Third COST 2102 International Training School, Caserta, Italy, March 15-19, 2010, Revised Selected Papers* (pp. 180–189). Berlin Heidelberg: Springer

Faruk, M., Rahman, M. and Hasan, S. (2021). How Digital Marketing Evolved Over Time: A Bibliometric Analysis on Scopus Database. *Heliyon, 7*(12), 1-9.

Fuchs, C. (2011). *Critique of the Political Economy of Web 2.0 Surveillance*. In C. Fuchs, K. Boersma, A. Albrechtslund and M. Sandoval (Eds.), *Internet and Surveillance: The Challenges of Web 2.0 and Social Media* (pp. 31–71). New York: Routledge.

Fuchs, C. (2014). *Sosyal Medya: Eleştirel Bir Giriş.* (D. Saraçoğlu and İ. Kalaycı, Trans.) İstanbul: Notabene.

Fuchs, C., Boersma, K., Albrechtslund, A. and Sandoval, M. (2012). Introduction: Internet and Surveillance. In C. Fuchs, K. Boersma, A. Albrechtslund, & M. Sandoval (Eds.), *Internet and Surveillance: The Challenges of Web 2.0 and Social Media* (pp. 1–xx). Routledge: New York.

Foucault, M. (2013). *Hapishanenin Doğuşu.* (M. A. Kılıçbay, Trans.) İstanbul: İmge Yayınları.

Gaviria-Marin, M., Merigó, J. M., and Baier-Fuentes, H. (2018*).* Knowledge Management: A global Examination Based on Bibliometric Analysis. *Technological Forecasting and Social Change*.

Hudha, M. N., Hamidah, I., Permanasari, A., Abdullah, A. G., Rachman, I., and Matsumoto, T. (2020). Low carbon Education: A review and Bibliometric Analysis. *European Journal of Educational Research, 9*(1), 319–329.

Jenkins, H. (2006). *Convergence Culture: Where Old and New Media Collide*. New York University Press.

Kaplan, A. and Haenlein, M. (2010). Users of the World, Unite! The Challenges and Opportunities of Social Media. *Business Horizons, 53*(1), 59–68.

Khan, I. (2016). A Scientometric Analysis of *DESIDOC Journal of Library & Information Technology* (2010–2014). *Library Hi Tech News, 33*(7), 8–12.

Koo, M. (2021). Systemic Lupus Erythematosus Research: A Bibliometric Analysis over a 50-Year Period. *International Journal of Environmental Research and Public Health, 18*, 1-14.

Lyon, D. (1997). *Elektronik Göz.* (D. Hattatoğlu, Trans.) İstanbul: Sarmal Yayınevi.

Lyon, D. (2013). *Gözetim Çalışmaları*. (A. Toprak, Trans.) İstanbul: Kalkedon Yayınları.

Maan, A. K. and Shiva, A. (2023). Mapping Social Media in the Theoretical Field of Behavioural Finance: A Bibliographic Analysis. *International Journal of Electronic Finance, 12*(1), 18–35.

Margulis, S. T. (2011). *Three Theories of Privacy: An Overview*. In S. Trepte and L. Reinecke (Eds.), *Privacy online. Perspectives on Privacy and Self-disclosure in The Social Web* (pp. 9–17). Heidelberg Berlin: Springer.

Marx, G. T. (2015). Surveillance Studies. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (2nd ed., Vol. 23, (pp. 733–741). Elsevier.

McAllister, J. T., Lennertz, L. and Atencio Mojica, Z. (2021). Mapping a Discipline: A Guide to using VOSviewer for Bibliometric and Visual Analysis. *Science & Technology Libraries, 41*(3), 1-30.

Merigó, J. M., Gil-Lafuente, A. M. and Yager, R. R. (2015). An Overview of Fuzzy Research with Bibliometric Indicators. *Applied Soft Computing, 27*, 420–433.

Napitupulu, D. (2021). A Bibliometric Analysis of e-Government Research. *Library Philosophy and Practice, 6*, 1–20.

Noyons, E. C. M., Moed, H. F. and Van Raan, A. F. J. (1999). Integrating Research Performance Analysis and Scientometrics. *Science 46*(3), 591-604.

O'Reilly, T. (2005). *What is Web 2.0? O'Reilly Media*. https://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html?page=1 (accessed 10, December 2024).

Orwell, G. (2024). *1984* (C. Üster, Trans.; 82nd ed.). İstanbul: Can Yayınları.

Parlina, A., Ramli, K. and Murfi, H. (2020). Theme Mapping and Bliometrics Analysis of One Decade of Big Data Research in the Scopus Database. *Information, 11*(2), 69.

Sandoval, M. (2012). A Critical Empirical Case Study of Consumer Surveillance on Web 2.0. In C. Fuchs, K. Boersma, A. Albrechtslund, and M. Sandoval (Eds.), *Internet and Surveillance: The Challenges of Web 2.0 and Social Media* (pp. 147–169). New York: Routledge.

Shirky, C. (2008). *Here Comes Everybody: The Power Of Organizing Without Organizations*. Penguin Press.

Smythe, W. D. (1977). Communications: Blindspot of Western Marxism. *Canadian Journal of Political and Social Theory/Revue Canadienne de Theorie Politique Etsociale, 1*(3), 1–27.

Thelwall, M. (2008). Bibliometrics to Webometrics. *Journal of Information Science, 34*, 605–621.

Trottier, D. (2011). A Research Agenda for Social Media Surveillance. *Fast Capitalism, 8*(1), 59–68.

Van Eck, N. J. and Waltman, L. (2009). Software Survey: VOSviewer, a Computer Program for Bibliometric Mapping. *Scientometrics, 84*(2), 523–538.

Verma, S. and Gustafsson, A. (2020). Investigating the Emerging COVID-19 Research Trends in the Feld of Business and Management: A Bibliometric Analysis Approach. *Journal of Business Research, 118*, 253–261.

Weber, M. (1986). *Sosyoloji Yazıları.* (H. H. Gerth and C. Wright Mills, Eds.; T. Parla, Trans.). İstanbul: Metis Yayınları.

Westin, AF. (2003.) Social and Political Dimensions of Privacy. *Journal of Social Issues 59*(2):431-453.

Xie, H., Zhang, Y., Wu, Z. and Lv, T. (2020). A Bibliometric Analysis on Land Degradation: Current Status, Development, and Future Directions. *Land, 9*(1), 28.

Zuboff, S. (2021*). Gözetleme Kapitalizmi Çağı: Ürünün "Sen" Olduğu Çağda İnsanın Geleceği İçin Savaş*. (T. Uzunçelebi, Trans.) İstanbul*:* Okyanus Yayınları.