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Visual Mapping and Bibliometric Analysis of the Belleten Journal (2009-2021)

*Belleten Dergisinin Görsel Haritalaması ve Bibliyometrik
Analizi (2009-2021)*

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Abstract

The Belleten Journal, which started publication in 1937, has contributed to Turkey's knowledge and dissemination of information for nearly a century. In this research, visual mapping and bibliometric analysis of 431 articles published in the journal Belleten, which were scanned in Web of Science (WoS) and Scopus databases between 2009-2021, were conducted. Data were obtained from the WoS and Scopus database in January (2022). In the study, the articles with the highest impact factor, the distribution of the articles, the author profile, the number of authors, the distribution of the authors according to the universities they belong to and the most frequently cited authors were determined. In order to determine the intellectual structure of the journal Belleten, co-citation analysis was carried out to reveal the relationship networks between bibliometric items. Research findings show that Golen, Z. with six articles and Demiryürek, N. with five articles in the journal Belleten are the most productive authors. Ankara University is the university that contributes the most to the journal with 24 articles. Hacettepe University follows Ankara University with 20 articles. The highest number of publications in the journal is in Turkey with 374 articles. Turkey is followed by Kyrgyzstan with six articles and Azerbaijan with five articles. Of the articles published in the journal, 293 are empirical, and 138 are review articles. The findings show that the Belleten Journal successfully fulfills its function as an effective platform for producing and disseminating knowledge in Turkish History, Political Science, Turkish Culture, and Anthropology.

Öz

1937 yılında yayın hayatına başlayan Belleten dergisi, yaklaşık bir asırdır Türkiye'nin bilgi birikimine ve bilginin yayılmasına katkıda bulunmuştur. Bu araştırmada, 2009-2021 yılları arasında Web of Science (WoS) ve Scopus veri tabanlarında taranan Belleten dergisinde yayınlanan 431 makalenin görsel haritalama ve bibliyometrik analiz çalışması yapılmıştır. Gerekli veriler WoS ve Scopus veri tabanından Ocak (2022) tarihinde elde edilmiştir. Araştırmada etki faktörü en yüksek olan makaleler, makalelerin dağılımı, yazar profili, yazar sayısı, yazarların ait oldukları üniversitelere göre dağılımı ve en sık atıf alan yazarlar belirlenmiştir. Belleten dergisinin düşünsel yapısını belirlemek amacıyla bibliyometrik öğeler arasındaki ilişki ağlarını ortaya çıkarmak için ortak atıf analizi gerçekleştirilmiştir. Araştırma bulguları Belleten dergisinde altı makale ile Golen, Z. ve beş makale ile Demiryürek, N.'nin en üretken yazarlar olduklarını göstermektedir. Dergiye en fazla katkı sağlayan üniversite 24 makale ile Ankara Üniversitesi'dir. Ankara Üniversitesi'ni 20 makale ile Hacettepe Üniversitesi takip etmektedir.

Dergide en fazla makale yayınlanan ülke 374 makale ile Türkiye' dir. Türkiye' yi altı makale ile Kırgızistan ve beş makale ile Azerbaycan izlemektedir. Dergide yayınlanan makalelerin 293'ü ampirik, 138'i derleme makalesidir. Bulgular, Belleten dergisinin Türk Tarihi, Siyaset Bilimi, Türk Kültürü ve Antropoloji alanlarında bilgi üretme ve yaymada etkin bir platform olma işlevini başarıyla yerine getirdiğini göstermektedir.

1. Introduction

Although bibliometrics is new, its application and usage go back to the 1890s (Osareh, 1996). Shapiro (1992) states that the history of bibliometrics goes back much further than Osareh said. Sengupta (1992) supports Osareh's claim and argues that the first bibliometric work was the "*Theory of the National and International Bibliography*," published by Campbell in 1896. In the early days, Hulme used the "statistical bibliography" concept instead of bibliometrics. According to Hulme, statistical bibliography is the discipline concerned with the systematic arrangement of documented data. Nearly 35 years later, the scope of the term "bibliometrics" was extended by Pritchard to apply statistical methods to books and scientific publications (Jena, 2006). According to Lawani et al. (1981), research in comparative anatomy conducted by Cole and Eales in 1917 and published between 1550 and 1860 was the first bibliometric study (Biswas et al., 2007). Although there are different opinions about when the first bibliometric research was conducted, the interest increased over time. This interest continues today (Glänzel and Debackere, 2022).

Data from certain publications were collected in the past, and publication frequencies of publications, citations, high-productivity authors, institutions, and countries were examined for bibliometric research (Walker et al., 2019). New technologies and bibliometric software packages emerging today can perform bibliometric visualization and advanced bibliometric analysis of journals (José and Acedo, 2007). The software has the capability to create visual representations of co-authorship, co-citation, keyword co-occurrence, bibliographic link patterns, and networks. Examining the conceptual structure of a scientific journal can be beneficial to bibliometric researchers, practitioners, and academics in determining its intellectual construction and subject integration (Locke and Perera, 2001). Today, bibliometrics is an interdisciplinary field covering all scientific areas (Glänzel and Debackere, 2022). Analyzing and visualizing Belleten, a top journal in its field, using bibliometric methods is crucial for researchers and for establishing its publication policy.

Laengle et al. (2018) describe bibliometrics as a practical approach to assessing the scientific influence of research institutions, authors, and journals, as well as identifying emerging trends, highly cited themes, interdisciplinary outcomes, and scientific collaboration. Bibliometric analysis is the quantitative description of the enquired literature and helps to measure any recorded information (Merigo et al., 2017). In bibliometrics, web-based research is carried out in various sample sizes (Laengle et al., 2018). Some cover a small sample, while others cover a relatively large area (Pritchard, 1969). Researchers conducting bibliometric studies are interested in the productivity of individuals, institutions or countries that produce books and scientific publications with methods such as citation analysis, common citation analysis, common word analysis (Merigo et al., 2017).

By examining specific characteristics of publications, bibliometric studies yield a range of insights into scientific communication, as noted by Laengle et al. (2018). Despite many methods used to determine the structures of scientific journals that have an important role in the development and dissemination of science, the most preferred method is bibliometric analysis (Law and Cheung, 2008). Scientific journals are the primary means of disseminating scientific knowledge, transferring knowledge, and documenting research results (Laengle et al., 2018). Bibliometrics is a convenient guide for potential authors of a particular journal and a guiding reference for its development (Merigo et al., 2017). In addition, bibliometrics reveals the development trend of publications and topics studied (Xu et al., 2018). Bibliometric research is developing as a complementary and supportive research area thanks to these functional aspects.

Bibliometric research is used by researchers for various purposes, such as identifying the most prolific scholars in a given field and uncovering the nature of their collaborations. Additionally, it allows for comparisons to be made between countries, institutions, or schools on a range of subjects. Research is carried out across multiple sample sizes in bibliometric research journals. Some cover a small sample, while others cover a relatively large area. As mentioned above, this research revealed the journal's

general tendency and intellectual structure by analyzing the main articles, countries, institutions, authors, citations, and co-citations published in the journal (Laengle et al., 2017). In the studies on bibliometrics, research is carried out to determine the development trend of journals and examine the journal's conceptual development and intellectual and social network structure (Tang et al., 2018). In addition, bibliometric studies are carried out to determine the journal's academic impact structure and scientific quality (Xu et al., 2018).

The application of bibliometric techniques to study the quantitative structure and scientific characteristics of publications on specific topics can provide valuable guidance for future research. Bibliometric research is also very functional in seeing how the literature has evolved, identifying gaps, and heading new fields of study. Bibliometric research can also contribute to journal editorial studies to give clues about journals' publication policy (Xu et al., 2018). The main objective of this study is to investigate the evolution of *Belleten Journal* from its inception in 1937 until 2022. To achieve this, we conducted an analysis of the most productive authors, institutions, and countries, as well as citation and co-citation analyses.

According to the literature review, it has been determined that only one bibliometric analysis of the journal has been made since the publication of *Belleten Journal*. The publication titled "A Publication Strategy Proposal for Social and Human Sciences Journals," published by Yalçın H. and Yayla K. (2016) in the 31(2), 2016 issue of the *Journal of History Studies*, was analyzed by bibliometric method. The significance and relevance of the bibliometric approach was illustrated through a case study of *Belleten Journal* in this study.

This bibliometric study examined the overall publication trends in *Belleten Journal*, including authorship and co-authorship patterns, article types, subject distribution of articles, methodological approaches, and contributors to articles. Furthermore, the study also assessed the highly cited articles in the journal and identified the most productive researchers and authors based on their affiliated universities. To the best of our knowledge, there is no publication that has provided a comprehensive visual mapping of the journal's entire publication history since its inception in 1937. It is thought that this study will fill this gap in the literature. This research will be essential for seeing the journal's impact in the field and determining the publication policies. Furthermore, identifying the overall trends of published articles will aid in understanding the intellectual structure of the journal, including the most prolific authors and universities, as well as the highly cited papers. For this purpose, in addition to the fundamental question of what is the general view of *Belleten's* diary from the beginning to the present, the following questions will be answered:

RQ1. What is the number of articles published annually and periodically in *Belleten Magazine*?

RQ2. Which subject has the most articles published in *Belleten Journal*?

RQ3. What are the keywords utilized in articles published in *Belleten Journal*, and how do they cluster and co-occur in the map?

RQ4. Who are the most prolific and influential authors, universities, and countries in *Belleten Journal*?

RQ5. How do the references change over the years?

RQ6. What is the intellectual structure of the *Belleten Journal*?

RQ7. Do the articles published in the *Belleten Journal* comply with Lotka's law?

2. Material and Method

Bibliometric studies can be descriptive and evaluative (McBurney and Novak, 2002). Despite the existence of various quantitative methods for identifying significant scientific publications, bibliometric analysis is the most commonly employed approach (Zupic and Čater, 2015). Unlike traditional literature reviews, bibliometric analysis allows for an evaluation of the structure of a particular research area and provides insights into how publications demonstrate a trend over a specified period (Laengle et al., 2017). The bibliometric method is also preferred because it is

convenient to see the conceptual and intellectual development in a certain period and make meta-analyses (Rehn and Kronman, 2009). We chose the bibliometric method in the research because it allows us to see how the studied area has evolved and make suggestions based on factual data (Law and Cheung, 2008).

2.1. Collection of Bibliometric Data

We collected the data for the study using the WoS and Scopus databases. Belleten journal started its publication life in 1937. It has published 304 issues from its first issue until 2021. The journal began to be published in the Web of Science, the Emerging Source Citation Index (ESCI) database, starting from issue 266 in 2009. In the bibliometric analysis of the Belleten Journal, the annual number of articles published, in which subject they published the most pieces, the keywords in the articles published, the most efficient authors, institutions and countries, the most cited authors, the intellectual structure and the compliance of the articles published with Lotka law were determined (Zupic and Čater, 2015). Research data were collected from WoS and Scopus databases in January 2022.

2.2. Analysis of Data

In bibliometric research, citation analysis, co-citation analysis, productivity status of individuals, institutions, or countries, and analysis of information resources (books, articles, etc.) (Zupic and Čater, 2015). In these analyzes, in addition to general descriptive statistics, citation analysis, co-citation analysis, keyword networks, collaboration networks are used (Cobo et al., 2011). The research encompassed a range of bibliometric techniques, such as citation analysis, bibliographic matching analysis, co-citation analysis, researcher analysis, institution analysis, bibliometric mapping analysis, indicator analysis, intellectual structure analysis, concept analysis, and institutional analysis (Liu et al., 2015). The research conducted a bibliometric analysis of Belleten Journal, with a focus on identifying essential concepts in bibliometric data collection, analysis, visualization, and interpretation (Aria, 2017).

In bibliometric analysis, different analyses such as general view, researcher, article, conceptual, intellectual, and social structure analysis are performed (Moral-Muñoz et al., 2020). At Bibliometrix, we applied performance analysis (overview, resources, authors, documents) and scientific domain mapping (conceptual, intellectual, and social structure) procedures (Moral-Muñoz et al., 2020). This research identified the keywords in the conceptual structure analysis, scanned the keywords, and analyzed the bibliographic data set obtained (Evren and Kozak, 2013). In the intellectual structure analysis obtained from the citation and common citation analysis, different perspectives developed over time were examined (Fahimnia et al., 2015). For intellectual structure analysis, common word (conceptual structure), co-author (social network), co-citation and bibliography matching analyzes were performed (Cobo et al., 2012). In social structure analysis, the interaction between research topics, authors and institutions in a particular field was examined (Merigo et al., 2017). With these analysis techniques, the evolutionary development of the clusters in the emerging networks related to the investigated area can be analyzed in different periods. The research used BibExcel, Bibliometrix, and VOSviewer software for classification, visualization, relationship networks, and bibliometric analysis (Low and Siegel, 2019). Network analyzes were performed for clusters in data visualization, frequency of occurrence, strength of connections between various study units, and number of citations (Zupic & Čater, 2015).

3. Analyses and Findings

3.1. Descriptive Statistics

It links descriptive information on the bibliometric analysis and practical guidance on its application (Uttkarsh and Sonkar, 2020). One of the necessary stages of bibliometric research is to show the essential performance characteristics of scientific elements in the relevant field with descriptive analysis (Cobo et al., 2011). The Belleten Journal is one of the longest-lasting periodicals in Turkey and has been published regularly since 1937. Bibliometric analyses were covered after 2009 when the Belleten Journal started indexing in WoS and Scopus. As a result of the search, 431 articles were

identified and the results were displayed with visual mapping and bibliometric indicators. The number of reports increased remarkably during 1997-2018. The study's 431 articles from 2009 to 2022 consist of research and review articles. 397 authors published these studies. Of the published articles, 327 have one author, 54 have two authors, 11 have three authors, three have four authors, and two have six authors. According to the analyzed data, 1.09 articles per author show that single authorship is prominent in Belleten Journal. The collaboration index value in articles was calculated as 1.69. The collaboration index was calculated by considering multi-authorship status. The high number of single-authored articles reduces the average of co-authors per article.

3.2. Bibliometric Analysis

3.2.1. The Annual Number of Documents Published in The Belleten Journal

With databases, document types such as articles, book chapters and proceedings can be easily accessed. Depending on the research purpose, one or more of them can be selected. Generally, because "proceedings" are unaudited information, "books" and "book chapters" are excluded from the scope of bibliometric research because they are descriptive and repetitive (Öztürk and Gürler, 2021). The number of articles in Belleten Magazine is shown in Chart 1 by years. The number of documents (articles, book reviews, bibliographies, etc.) in Belleten Journal, regularly published three times a year and an average of 40 essays since 1990, is shown in Chart 1 over 12-year periods. A total of 3654 documents, including research articles, translations, book reviews, bibliographies, and news, were published in the journal between 1937-2021. The period in which the documents were issued the most was between 1973-1984. About 17% of all papers were published during this period. The periods following this period and the most frequently published periods are 1985-1996, with 578 documents, and 1997-2008, with 553 papers, respectively. The period with the least number of documents published is 1937-1948, with 406 pieces.

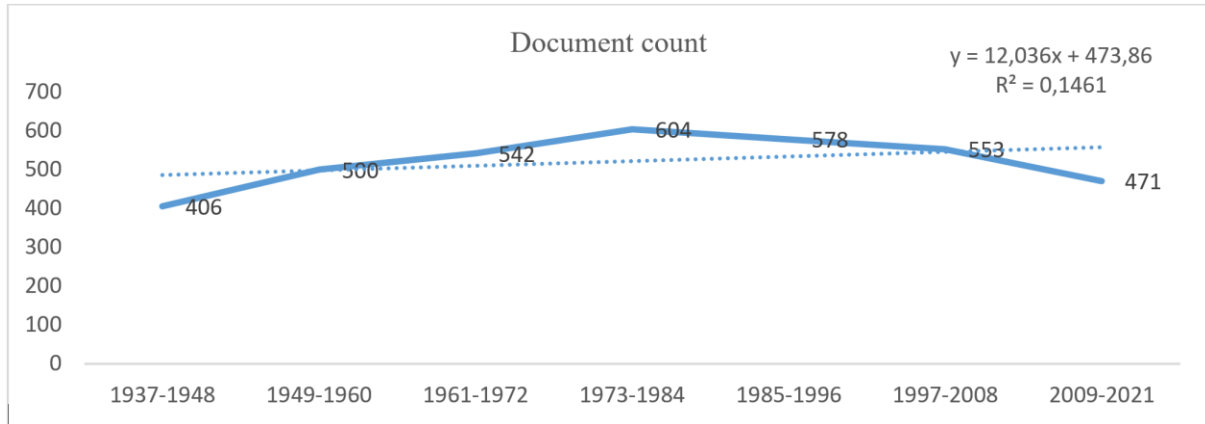
The Belleten Journal is searched in Web of Science and Scopus. The journal has been indexed regularly in the WoS database since 2009 and in the Scopus database since 2011. The data of the Belleten Journal only includes documents from 2009. Therefore, the analyzed data covers the data between 2009-2021. Both databases allow co-citation analysis, citation analysis, bibliography matching, and co-author analysis. Data from relevant databases can be exported in formats such as RIS, CSV, Bibtext, or Plaintext, among others, to be utilized by software programs for conducting bibliometric analyses, as outlined by Echchakoui (2020). Researchers use combined datasets from both databases to obtain a comprehensive and valid conclusion. Since the Belleten journal is indexed in both databases, duplicate publications can be included in the analysis when data fusion is not done.

Hence, necessary filtering and data merging processes were carried out before the analysis. The number of documents remaining after joining the documents published in WoS and Scopus databases between 2009-2021 is 471. Of the 471 papers, 40 are book reviews, and 431 are types of research and review articles. We did not include book reviews in the analysis process because they were not peer-reviewed. The study analyzed a total of 431 research and review articles. Graph 2 illustrates the journal's article count from 2009 to 2021, with an average of 30 articles per year during this period. The highest number of publications, 40, was recorded in 2019.

Graph 1 depicts the number of documents, including books and articles, published in Belleten Journal. From 2009 to 2022, 471 papers were published in the Belleten journal. While documents/articles were issued with a quantitatively increasing trend from 1937 to 1984, the number of publications showed a reverse direction from 1984 to 2022. This situation caused it to occur as ($R^2 = 0.1461$).

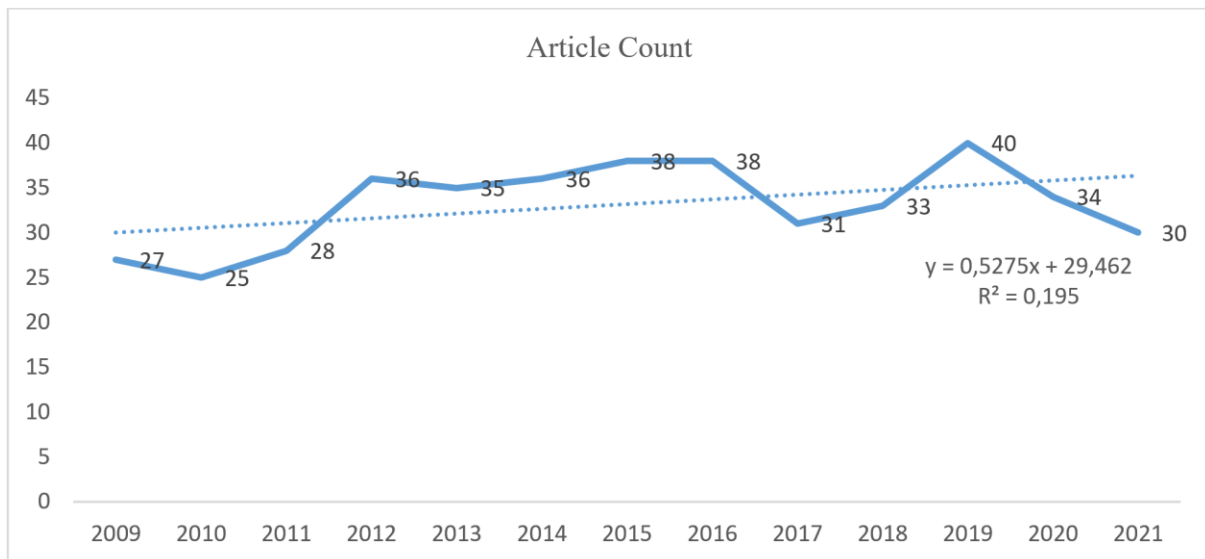
Graph 1

Documents per Year (N = 3614 documents)



Graph 2

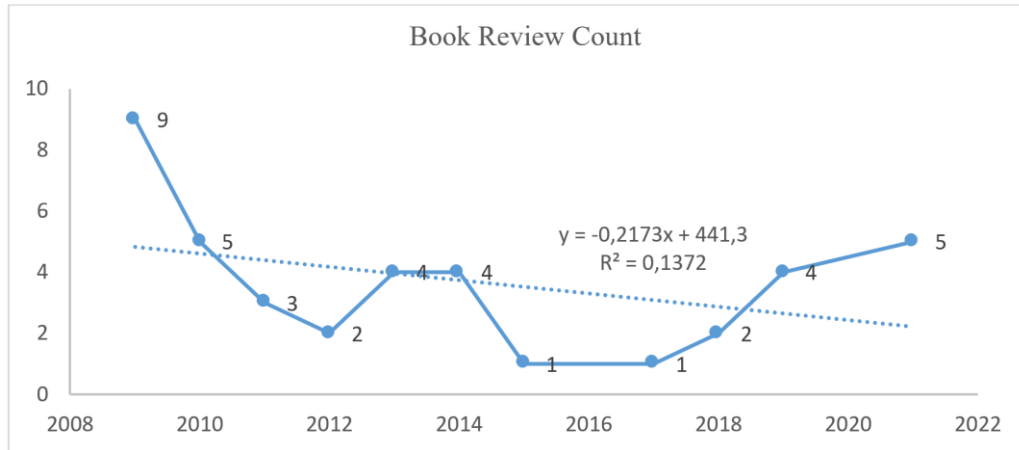
Number of Articles per Year



The year with the highest book review was 2009 (9) and the lowest years were 2015 and 2017. Since the growth trend of both articles and documents started to decline after 1984, the R^2 value was also low ($R^2 = 0.1372$). The values in Graph 3 show that the Belleten journal followed a fluctuating course in book reviews. While nine book reviews were published in the journal in 2009, three were published in 2012, two in 2016, and 3 in 2020. The book review did not show a regular trend that caused the R^2 value to be 0.3203.

Graph 3

Book Reviews per Year

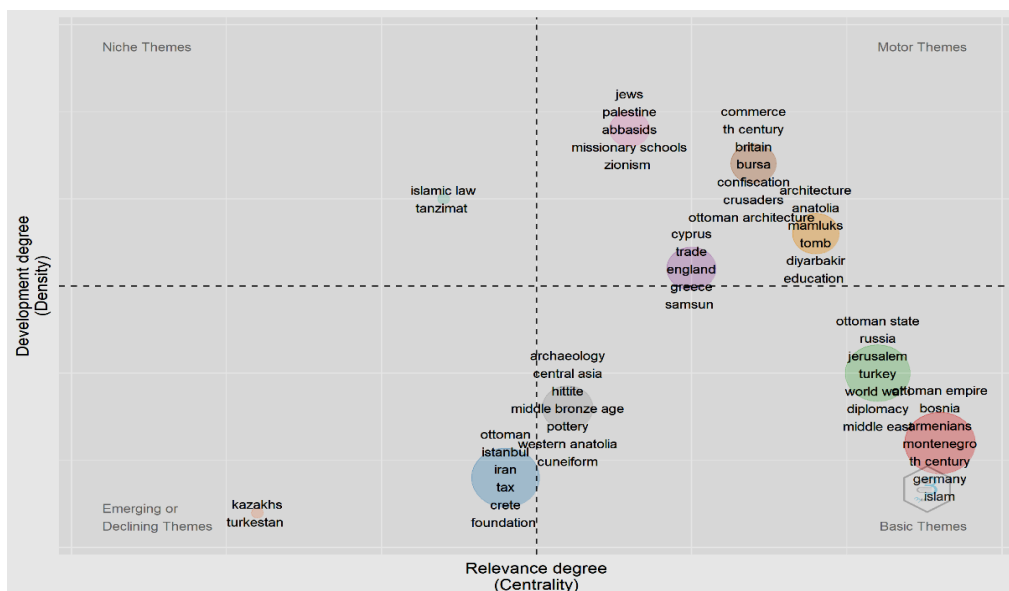


3.2.2. Subject Distribution of Publications in The Belleten Journal

Topic distribution involves quantitatively representing the various topics published in a specific journal (Hood and Wilson, 2001).. In this study, the keywords from articles published within the examined period were grouped into ten clusters, covering a total of 60 themes based on their density and centrality. Accordingly, the thematic analysis clusters include Ottoman Empire, Ottoman, Ottoman State, Cyprus, Architecture, Commerce, Jews, Archeology, Islamic Law, and Kazakhstan. The themes in the two-dimensional diagram presented in Figure 1 were analyzed based on the quarter in which they appear, revealing that the top right quadrant comprises the Cyprus, Architecture, Commerce, and Jews clusters. On the other hand, essential pieces consist of Ottoman Empire, Ottoman State, and Archeology clusters, lower than motor themes. On the other hand, the articles belonging to Islamic Law and Kazakhstan clusters should be studied more. The map in Figure 2 depicts the density of concepts based on their frequency of occurrence in article titles and keywords. Concept density map and thematic analysis were carried out with the R-Bibliometrix application.

Figure 1

Total Link Strengths And Relationship Networks of the Author Keywords. Notes: Created using Bibliometrix (N = 431 articles)

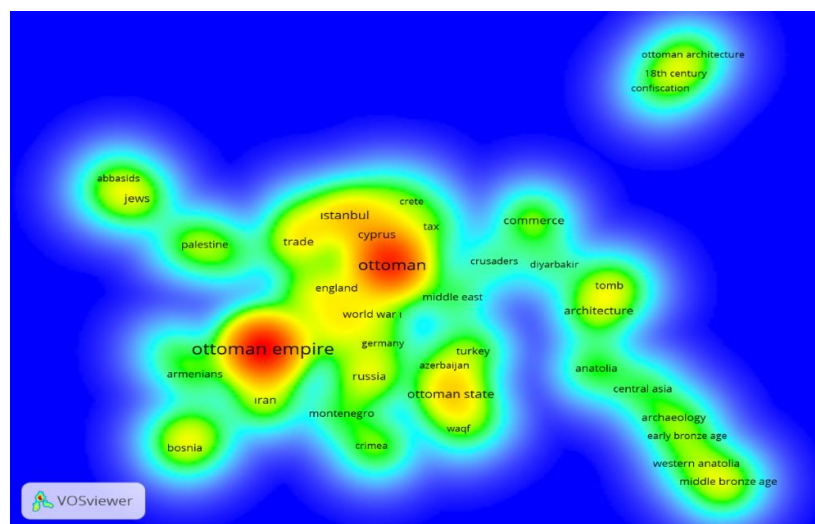


3.2.3. Keyword Clustering and Co-word Map in Articles Published in The Belleten Journal

In bibliometric analysis, the coexistence of two keywords in different articles in a particular field indicates the connection and coexistence between these words. Co-word analysis is performed using the titles, keywords, or summaries of documents, as noted by Waltman et al. (2020). We conducted analyses by keywords, assuming that author keywords better reflect the research content than titles and abstracts. At this stage, we determined the strength of the relationship between co-word analysis and keywords and determined the general course of the field. To reveal the conceptual structure of the articles we made a co-word analysis with Bibliometrix and VOSviewer programs. We determined that 1678 different keywords were used in 431 papers included in the study. In the research, we chose the minimum threshold as three views. In total, 183 of 1678 keywords have at least three appearances in the dataset of 431 articles. In VosViewer, a minimum threshold of total link strength of five was set for the keywords, and it was observed that 159 out of 183 keywords met this threshold.

Figure 2

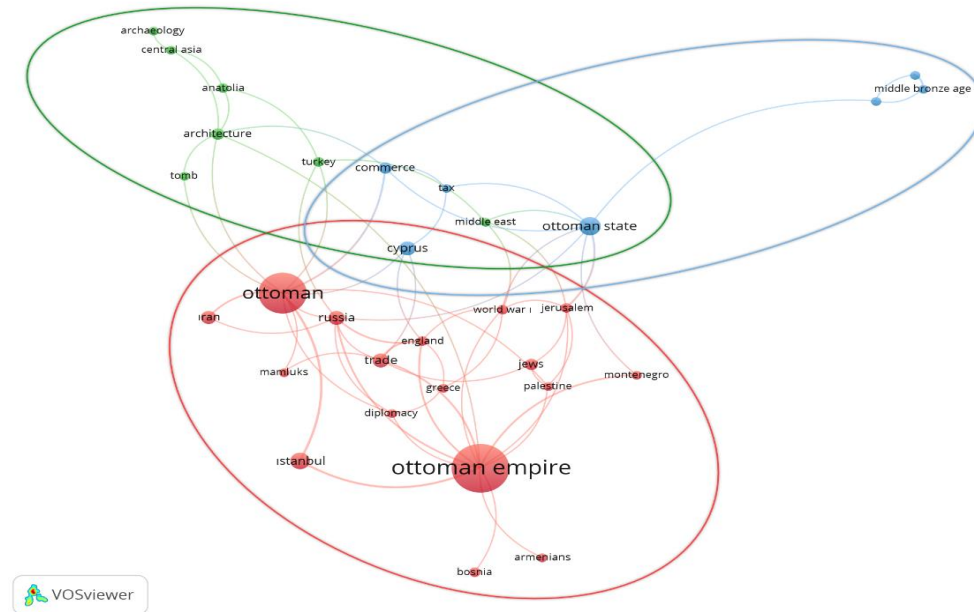
Density Visualization of Author Keywords



The author keywords' total link strength and their relationship networks are illustrated in Figure 3. The dimension of the circles in figure represents the actual link strength or association frequency of each word concerning its usage with other concepts. The lines connecting the circles indicate the relationship between the words, while the position of the keywords in Figure 3 indicates their centrality or peripheral location within the network of relationships. Co-word analysis of the three clusters seen in Figure 3 is highlighted: Cluster 1 (red color, lower set), Cluster 2 (blue color, upper-right cluster), and Cluster 3 (green color, upper-left cluster). Each group represents a field of study in the Belleten Journal. Cluster 1 (red) is shaped around the Ottoman Empire and critical concepts. Considering the co-occurrence of two primary keywords representing Cluster 1, the familiar and most intense relationship power is related to the primary image of "Istanbul." Other keywords in the red cluster show the relations between countries such as England, Russia, Iran, and Greece. It shows the co-occurrence of the Ottoman Empire's key concept representing Cluster 2 (blue) and the key concepts emphasizing commercial relations such as Trade and Tax. Cluster 3 (green) includes the co-creation of critical ideas in which archaeological elements are prominent.

Figure 3

Total Link Strengths and Relationship Networks of the Author Keywords. (N = 431 articles).



Through an examination of the keywords utilized in its articles, Belleten Journal caters to a wide range of audiences and may attract potential researchers. Frequently used keywords indicate active and most exciting research areas. Figure 3 shows the co-occurrence map of the frequently used keyword.

3.2.4. Most Published and Cited Authors in Belleten Journal

397 authors contributed to the articles in the Belleten Journal. While the number of authors of single-author articles is 327, the number of authors of multi-author articles is 68. The author collaboration index in the journal is 1.71. Table 1 provides a list of authors who tended more than two articles. 64 (15%) of 431 articles and 25 (20%) of 130 citations belong to the authors given in Table 1. Golen Z. is the most prolific author regarding articles and sources. Sources can indicate the impact of articles published by a journal and their significance in scholarly communication. 5% of the authorities to the articles in the journal were made to Golen, Z. Golen, Z.'s most cited publication with three citations is his article "Bosnia and Herzegovina of Revolt 1857-59". This is followed by "Political Events in Bosnia and Herzegovina in the XIXth Century," with two references. Articles on the political developments in Bosnia and Herzegovina in the 19th century are the most cited publications from the journal. The other most prolific author in the journal is Demiryürek, N., with five articles and four citations.

Table 1

Most Productive Authors

| Authors | No of articles | Total citations |
|----------------|-----------------------|------------------------|
| Golen Z | 6 | 7 |
| Demiryurek N | 5 | 4 |
| Acıduman A | 4 | - |
| Ozlu Z | 4 | - |
| Sunay S | 4 | 2 |
| Arslantas N | 3 | - |
| Colak S | 3 | - |
| Ferlibas MB | 3 | - |

| | | |
|------------|---|---|
| Keskin MC | 3 | 3 |
| Orbay K | 3 | 4 |
| Ozkul AE | 3 | 2 |
| Polat S | 3 | 1 |
| Sonyel SR | 3 | - |
| Usta A | 3 | 1 |
| Uyar M | 3 | 3 |
| Yıldırım S | 3 | - |
| Adıyeke AN | 2 | - |
| Adıyeke N | 2 | 1 |
| Akdoğan R | 2 | - |
| Arda B | 2 | - |

3.2.5. Most Productive Institution/University Analysis

Researchers from 174 different institutions produced the 431 articles reviewed. Researchers from 104 institutions contributed to the field with a single study. Of the 174 institutions, 21 are universities abroad and 22 are non-university institutions. The number of Turkish-origin universities contributing to the journal is 131. Table 2 lists the universities that contributed five or more articles to *Belleten Journal*, organized by the number of articles published. Table 2 displays the top 20 universities, which account for 176 (41%) out of 431 articles and 62 (48%) out of 130 citations. It is noteworthy that the institutions based in Ankara and Istanbul contributed the most to the journal, with a total of 67 articles.

Table 2

Most Productive Universities

| Affiliations | No of articles | Total citations |
|---------------------------------------|-----------------------|------------------------|
| Ankara University | 24 | 6 |
| Hacettepe University | 20 | 6 |
| Istanbul University | 12 | 3 |
| Gazi University | 11 | 1 |
| Hitit University | 9 | 5 |
| Akdeniz University | 8 | 7 |
| Mehmet Akif Ersoy University | 8 | 7 |
| Mimar Sinan Güzel Sanatlar University | 8 | 2 |
| Sakarya University | 8 | 0 |
| Dokuz Eylül University | 7 | 3 |
| Erciyes University | 7 | 3 |
| Eskisehir Osmangazi University | 7 | 0 |
| Aksaray University | 6 | 2 |
| Canakkale Onsekiz Mart University | 6 | 0 |
| Dumlupınar University | 6 | 3 |
| Ege University | 6 | 4 |
| Gaziantep University | 6 | 2 |
| Marmara University | 6 | 0 |
| Pamukkale University | 6 | 5 |
| Adiyaman University | 5 | 3 |

3.2.6. Most Productive Countries

Researchers from 19 different countries wrote the 431 articles reviewed. Table 3 presents a breakdown of all countries that contributed to the journal, categorized by the number of articles and the total number of citations. Turkey's most active country is 374 articles, Kyrgyzstan with six pieces, and Azerbaijan with five. 374 (87%) of 431 articles were contributed by researchers from Turkey and 16 (4%) from Turkic Republics. The remaining 41 articles (9%) are distributed among other countries.

Table 3

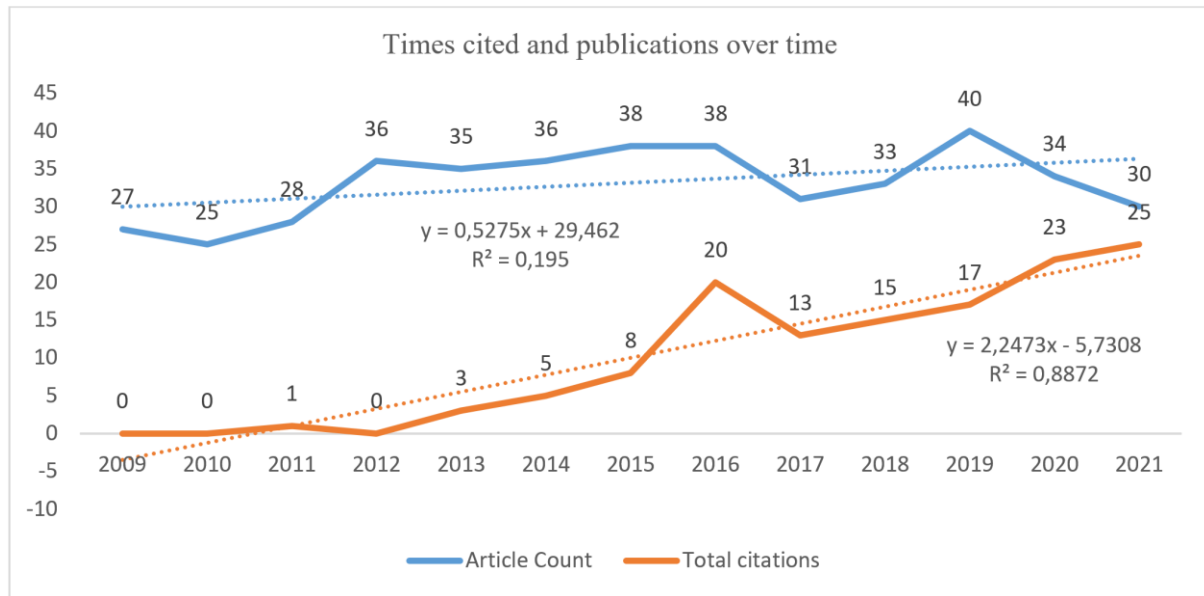
Most Productive Countries

| Country | No of articles | Single Country Publications | Multiple Country Publications | Citations |
|-----------------|-----------------------|------------------------------------|--------------------------------------|------------------|
| Turkey | 374 | 369 | 5 | 117 |
| Kyrgyzstan | 6 | 5 | 1 | 0 |
| Azerbaijan | 5 | 5 | 1 | 2 |
| Bosnia & Herceg | 4 | 3 | 1 | 2 |
| Germany | 4 | 2 | 0 | 1 |
| Iran | 4 | 2 | 0 | 0 |
| Kazakhstan | 4 | 2 | 0 | 1 |
| Poland | 3 | 2 | 0 | 1 |
| Russia | 3 | 2 | 0 | 1 |
| Denmark | 3 | 1 | 0 | 1 |
| France | 3 | 1 | 0 | 1 |
| Montenegro | 2 | 1 | 0 | 0 |
| Serbia | 2 | 1 | 0 | 0 |
| South Africa | 1 | 1 | 0 | 0 |
| USA | 2 | 1 | 0 | 3 |
| Netherlands | 2 | 1 | 0 | 0 |
| Uzbekistan | 1 | 1 | 0 | 0 |
| England | 1 | 1 | 0 | 0 |
| Scotland | 1 | 1 | 0 | 0 |

3.2.7. Analysis of Citations to Belleten Journal by Years

Citation analysis offers insights into the influence of studies based on the references to publications made by other researchers. Moreover, it confirms positive correlation between the number of citations and the impact of the cited work (Osca-Lluch et al., 2009). Highly cited studies significantly impact a research area more than less cited studies (Zupic and Čater, 2015). However, it should be expected that the number of citations is one of many criteria for the importance of a publication. That previous publication will receive more quotations than later ones. Authorities have a feature such as creating a reading list for researchers just starting to work in a research field.

Another point is that citations are an indicator of cooperation between researchers. Despite being in publication since 1937, Belleten Journal's citation count could potentially be higher. This is likely due to the journal's policy of focusing on only a few fields within the social sciences. When Figure 7 is analyzed, it is understood that no reference was made to the journal in 2009 and 2010, and only one was made in 2011. It is understood that there was a regular increase from 2012 to 2016, but the number of citations decreased again in 2017 and decreased to 14 citations. It is understood that there was a steady increase from 2017 to 2021, but the number was limited to 24 citations.

Graph 4*Times Cited and Publications over Time***3.2.8. Intellectual Structure of Belleten Journal**

The intellectual structure depicts the interconnections and relationships between bibliometric items within the field. Co-citation analysis (CCA) reveals the frequency at which two studies are cited and the frequency at which two distinct units of analysis, such as study, author, or journal, are referenced in the same survey. CCA considers co-citation counts to determine similarity measures between studies, authors, and journals. In any investigation, CCA units are considered related even if they do not directly quote each other. If other studies cite both co-cited studies, it is mentioned that there is a stronger relationship between the cited studies. CCA operates under the underlying assumption that the higher the number of citations between two publications, the greater the likelihood that the cited publications are related. The relationship analyses between the analysis units were made to determine this research's intellectual structure. A co-citation analysis was conducted on a sample of 431 articles to establish links between publications, authors, and sources for this purpose.

3.2.8.1. Publication-level Co-citation Analysis

At least five citations were identified to conduct CCA at publication level. Out of the 18,275 references, only 30 surpassed the specified threshold. The top ten references that exceed the threshold value and have the highest total connection strength are given in Table 4.

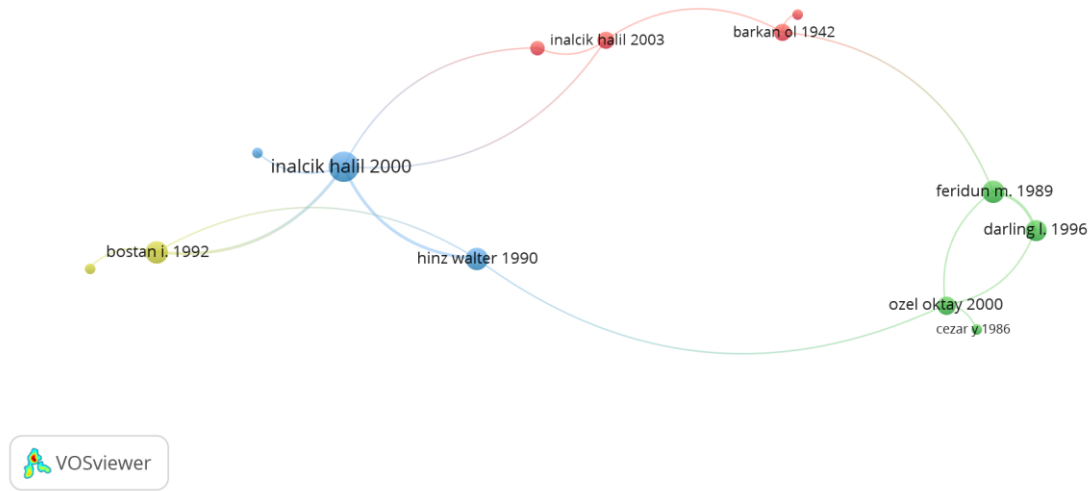
Table 3*Most Cited References*

| Cited reference | Citations | Total link strengths |
|---|-----------|----------------------|
| Jennings Ronald c, 1993, Christians Muslims | 4 | 9 |
| Samani Hasan, 2006, thesis | 4 | 9 |
| Given Dina, 2010, thesis | 5 | 8 |
| Inalcik Halil, 2000, Osmanli İmparatorlugu | 5 | 7 |
| Barkan Ol, 1942, Vakıflar Dergisi, v2, | 4 | 6 |
| Feridun m., 1989, 16 asırda Manisa kazi | 5 | 6 |
| Ozkul A. Efdal, 2005, Kıbrıs'ın sosyo ekonomisi | 5 | 6 |
| Tabakoglu A, 1985, gerileme donemine | 4 | 6 |
| Ozel Oktay, 2000, Osmanlı Devletinde | 5 | 5 |

Figure 4 displays the total link strength of the studies through the size of circles, while the lines between the circles indicate the number of studies cited together by the 431 articles. The thickness of the lines represents the strength of the link between the two studies. At the same time, due to the high frequency of citations, studies that are close to each other in the network image have a high level of similarity and relevance.

Figure 4

Co-citation Analysis (Level: references)



3.2.8.2. Source-level Co-citation Analysis

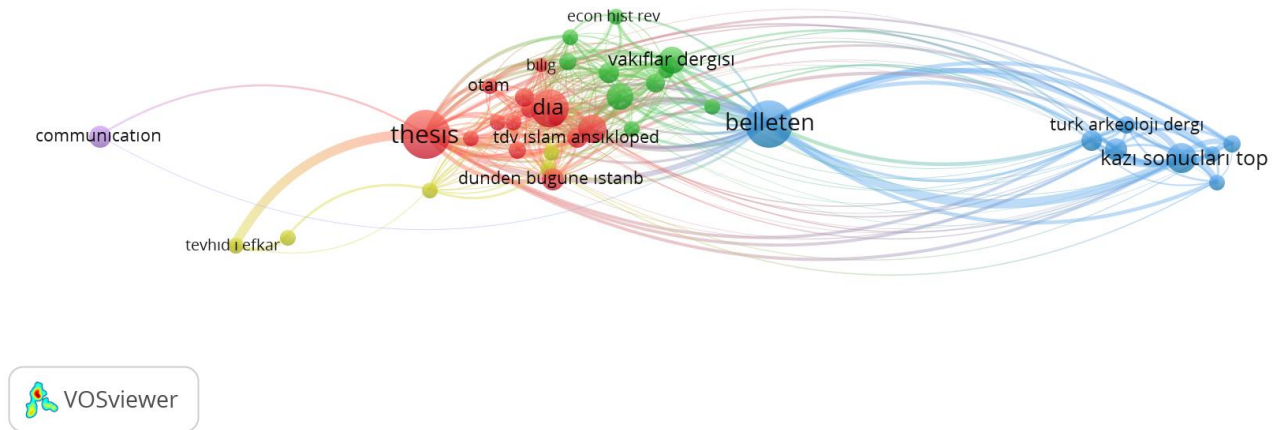
The lowest threshold value for performing CCA at source level has been set at 20 citations. Out of 12075 sources, 43 exceed the set 20 thresholds. The top ten sources that exceed the threshold and have the highest total connection strength are given in Table 4.

Table 4

Most Cited Sources

| Source | Citations | Total link strength |
|------------------------|-----------|---------------------|
| Belleten | 248 | 1769 |
| Thesis | 268 | 1677 |
| Kazı Sonuçları Top | 97 | 1258 |
| DIA | 158 | 1072 |
| Türkiye Diyanet Vakf | 78 | 640 |
| Vakıflar Dergisi | 74 | 640 |
| Türk Arkeoloji Dergisi | 26 | 475 |
| Anatol Studies | 49 | 457 |
| Dünden Bugüne İstanbul | 47 | 429 |

The dimension of the circles in Figure 5 represents the total connection strength of the studies. According to this, the sources with the highest connection strength are the Belleten Journal, theses, excavation results meetings, and the Turkish Religious Foundation Encyclopedia of Islam (DIA) according to the number of connection strengths.

Figure 5*Co-citation Analysis (Level: source)*

3.2.8.3. Co-citation Analysis at Author Level

The lowest threshold value for CCA at author level is 15 citations. Of the 11796 authors in the references of 431 articles, 35 exceeded the threshold and were included in the study. Table 6 presents the top ten authors who surpassed the threshold and received the highest number of citations.

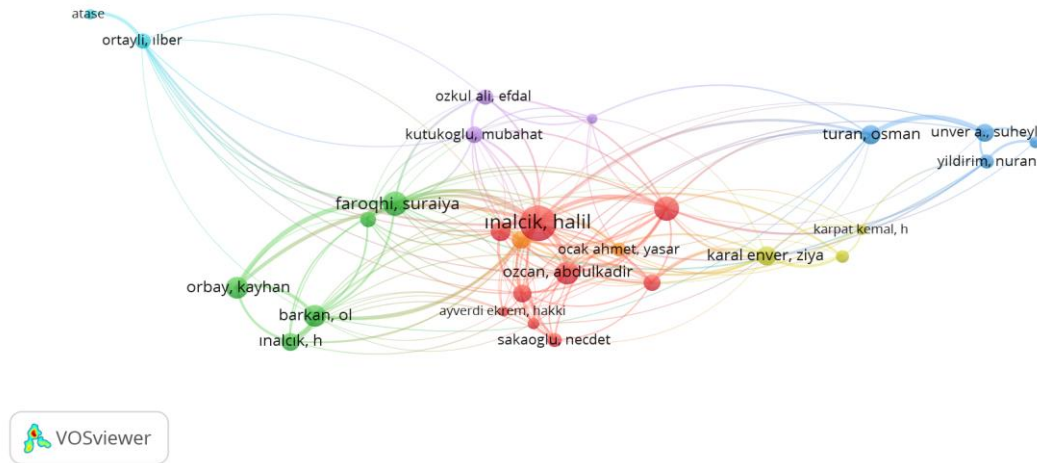
Tablo 5*Most Cited Authors*

| Author | Citations | Total link strength |
|---------------------------|-----------|---------------------|
| Inalcik, Halil | 110 | 367 |
| Uzuncarsili Ismail, Hakki | 41 | 150 |
| Turan, Osman | 32 | 91 |
| Ozcan, Abdulkadir | 30 | 141 |
| Faroqhi, Suraiya | 29 | 149 |
| Ocak Ahmet, Yasar | 28 | 46 |
| Ozguc, T | 25 | 175 |
| Barkan, O. L | 25 | 127 |
| Karal Enver, Ziya | 25 | 86 |
| Yildirim, Nuran | 25 | 47 |

The author with the highest link strength (367) and the most cited (110) is İnalçık, H. In Figure 6, the relationships between the authors are depicted by the lines between the two circles. However, the distance between the two authors shows similarity/relatedness.

Figure 6

Co-citation Analysis (Level: author)



3.2.8.4. Compliance of Articles Published in Belleten with Lotka Law

Lotka's law explains the assessment of scientific productivity, which involves determining the contributions of authors in a given field and analyzing the quantitative distribution of their work.

Lotka's law states that the number of authors with two studies is roughly a quarter of the number of authors with one study. In comparison, the number of authors with three studies is approximately one-ninth of the number of authors with one study. The number of authors with n studies is approximately n^2 of the number of authors with one study. The data found that 397 authors, 1.09 articles per author, published 431 articles. This rate means that single authorship is dominant in the Belleten Journal. The number of authors and documents is given in Table 7.

Table 6

Author Productivity through Lotka's Law

| Documents written | Authors | (%) |
|-------------------|---------|-----|
| 1 | 327 | 82 |
| 2 | 54 | 14 |
| 3 | 11 | 3 |
| 4 | 3 | 1 |
| 6 | 2 | 1 |

When evaluated according to Lotka's law, approximately 250 authors are required to contribute with one article, 82 with two pieces, 36 with three articles, 20 with four papers, and 9 with six themes. The analysis conducted to determine author productivity in Belleten Journal revealed that it does not conform to Lotka's law.

4. Discussion and Conclusion

Bibliometric analysis is a means of extracting introductory and exploratory information from the past to the present, thereby enabling the measurement of the quality and impact of journals and their articles through a comprehensive collection of data. The bibliometric method was used in the research to provide primary and reliable indicators (Harnad, 2008). Bibliometric studies were carried out from 2009, when the journal Belleten was indexed in WoS and Scopus, until 2021, when the last issue was published. The journal is indexed by Arts & Humanities Citation Index (AHCI), Historical Abstracts, Scopus, and ULAKBIM TR Index, which was published in 1937. The Belleten Journal presents original research and new Turkish history studies in scientific articles to the scientific community as a

publication policy. The journal publishes original research-analysis articles, translations, book presentations, congress-symposium news, and death articles (necrology).

The average number of citations is 0.3016, a relatively low value. The reason for the low value is caused that the journal's publications are limited to specific fields of social sciences that may play a role. The average annual citation per document published in the journal is 0.0357, which is also low due to the stated reason. The fact that the articles (311) and full papers (380) published in the journal are single-authored is due to the weak social network among the authors published in the journal. In the period covering 2009-2021, the journal's number of documents per author is 1.09, and the number of authors per document is 0.921. Co-authors per document were only 1.14. The collaboration index of articles in the journal is only 1.69. This value is expected to be around five. The journal's subject area is cultural studies, and the Q value, which shows its relationship with the number of journals in the area where the journal is located, is in the third 25th slice. 3, the journal's h-index and overall rank in the category are 28637. The impact score is only 0.03. These values are low due to insufficient citations and Turkish publications.

Research findings show that the journal reached the highest number of publications (40) in 2019. Of the articles published, 82% have a single author, 14% with two authors, and 3% with three authors. These values show the weak cooperation network between the authors in the Journal. It is understood that the citations made to the articles in the journal follow a fluctuating course. This situation may be caused by the limited coverage and insufficient recognition of the subject of the journal. The increase in internet usage opportunities, the abundance of metadata, and the limited number of citations despite the increase in information literacy indicate that the journal should try different alternatives regarding publication policy (Figuerola et al., 2017). The Belleten Journal should consider the new disciplines and cyclical interest changes (Meho and Yang, 2007). Furthermore, the predominance of Turkish-language articles in the journal may have restricted the number of citations it received. Out of all the articles published, 385 (89%) were in Turkish, 45 (10.5%) were in English, and one (0.5%) was in French.

Articles published in the journal do not comply with Lotka's law. The literature review indicates that most journals that remain active in the field of social sciences do not adhere to it. Compliance with the above rules is more in question for journals that publish in a specific area. Another reason why the distribution of authors does not comply with Lotka's law is the low number of authors contributing to more than one article (Polat, 2020). The number of pieces with multiple authors in the journal is low. The fact that individual studies are included more in the reports and the low collaboration index caused the author's productivity to not comply with Lotka's law. Multi-author publication, also called co-authored publication, is the benchmark for measuring collaborative activity. The number of co-authors is strongly correlated with the impact of an article (Harnad, 2008). As the number of authors per article increases, the proportion of papers that receive multiple citations also increases. The desire of researchers to improve their scientific recognition and specialization contributes to increased collaboration between authors (Mas-Bleda et al., 2014). The functionality of networks that arise due to interaction with other scientists in transferring tacit knowledge increases the cooperation between the authors. When evaluated from these aspects, the increase in the rate of collaboration in the journal will also increase the number of citations.

The first of the limitations in this study is the bibliometric data sources used. This study contains WoS and Scopus data sources. Future researchers can make longer-term analyzes using the Google Scholar database. The second limitation is the scope of the study. The study includes co-authorship trends, methodologies, and theories in the journal. These could be explored in depth but have yet to be explored in-depth due to the broad scope of this study. Future researchers can conduct systematic literature reviews and bibliometric reviews to cover these topics separately.

Compliance with Ethical Standards

Conflict of Interest: The authors declare that there is no conflict of interest.

Ethics Committee Permission: Ethics committee approval is not required for his study.

Authors Contribution Rate Statement: The authors state that the data collection and processing, as well as the supply of resources and materials, were carried out by Selçuk Nam, and analysis and interpretation by Hasan Tutar, and they declare that they have contributed equally on other points

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