Publications on Germanistics in the Scopus Database: A Science Mapping Study

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ABSTRACT

It is aimed to reveal the current state in the field of Germanistics on a global scale in this study. In this direction, the Scopus database was searched for the publications in the field of Germanistics, and the publications related to the relevant literature between the years 2018-2022 were examined with bibliometric analysis. The vast majority of the publications included in the scope of the study are in the article type, and their language is mostly English. The data obtained were visualized with science mapping, which is one of the bibliometric analysis techniques. The VOSviewer program was employed for this. Among the science maps created using this program, there are network maps of the most productive country, keyword co-occurrence analysis, bibliographic coupling analyses of institutions and countries, author and reference co-citation analyses, and co-authorship analysis of countries. The maps were presented in the study's findings section, and the bibliometric information and relationships in each of these maps were assessed separately.

Key words: Germanistics, Bibliometric Analysis, Science Mapping, VOSviewer, Scopus Database

INTRODUCTION

German has been learned in numerous countries for many years and is at the center of attention in various aspects (Auswärtiges Amt, 2015, 2020; Ständige Arbeitsgruppe Deutsch als Fremdsprache, 2000, 2005). The field in which studies on German are included is called "Germanistics" or "German as Foreign and Second Language" in the literature (Krumm et al., 2010; Mayanja & Hamann, 2014; Middeke, 2010). In this study, the concept of Germanistics is used for the field in question in order to avoid confusion. When the relevant literature is examined, it is seen that this field has been classified as domestic Germanistics and foreign Germanistics, and in this context, it has been the subject of scientific research and discussions (Casper-Hehne & Middeke, 2009; Duesberg, 2006; Fabricius-Hansen, 1999; Lepper, 2008; Middeke, 2010). This field is called domestic Germanistics if educational activities and scientific studies related to German are carried out in German-speaking countries, and foreign Germanistics if they are carried out outside German-speaking countries. Furthermore, it is understood that the developments in this field have been experienced both in German-speaking countries and in other countries in the historical process, and in this sense, researchers have contributed to the field by producing scientific studies intensively (Fandrych & Hufeisen, 2010; Götze et al., 2010). However, changing conditions have led to the questioning of traditional concepts and distinctions in this field. One of the points where this questioning takes place is related to the distinction between domestic Germanistics and foreign Germanistics. Globalization, electronic devices, and human mobility have caused the loss of the single meaningfulness of many classical distinctions. For this reason, some professional representatives prefer to use the concept of "transnational Germanistics" to emphasize that the field is not focused on boundaries, but that the external view of language is seen as the main feature of the field in all the contexts of study and language use (Fandrych et al., 2010, pp. 3-4).

The concept of transnational Germanistics proceeds mainly from the fundamental differences and a recognized feature of Germanistic activities in different societies, in different countries, and regions of the world, and it is positively based on diversity and the mutual enrichment that this entails (Redder, 2003, p. 284). When considered in this context, transnational Germanistics means that the field in the global dimension is strengthened scientifically, has a more holistic structure, and scientific interaction and communication in this field have increased. Developments in science and technology, internationalization policies of universities, student and academician mobility, easy sharing of scientific information produced in this field on digital platforms, and facilitation of access to information and scientific productions should be seen as the factors that reveal the concept of transnational Germanistics. In other words, transnational Germanistics, which includes scientific activities related to German, is a concept that has emerged from today's conditions, and should be evaluated within this scope. This

concept has content that covers both the concepts of domestic Germanistics and foreign Germanistics, and integrates the field. Compared to the past, the scientific communication activities of researchers working in the field of Germanistics have increased, their scientific communication habits have changed, and this field has gained a more holistic structure in scientific terms. These realities have prevented the criticisms expressed in the past that there is a communication gap between the actors of the domestic Germanistics and the foreign Germanistics.

So what is the current situation in the field of Germanistics? What kind of dimension have the relations between scientific actors and groups of actors in this field become? Which of them stands out? The information obtained in the studies carried out to answer such questions can provide the opportunity to reveal the general profile of the field of Germanistics and the state of scientific communication in the field and to guide researchers. The state of a field of science and the relations between its scientific elements or how they have changed so far can only be determined by scientific studies related to the relevant literature. From a national perspective, it is seen that studies in this direction have been carried out in Turkey (Özdemir, 2022; Öztürk & Özsoy, 2022). However, a limited amount of studies on the examination of Germanistics literature, which are inclusive on a global scale, have been conducted (Özdemir, 2023), and there is a need in this regard. Therefore, the study sought answers to the question, "What is the current state of the relationship between scientific elements and scientific communication in a global dimension in the field of Germanistics?". It is thought that the examination of the relevant literature in this context will allow for seeing the general structure of the field as transnational Germanistics and the interaction between the actors in this field.

METHODOLOGY

Model and Importance of the Research

This study, which focuses on the examination of publications in Germanistics literature, was designed according to the descriptive research model. Descriptive studies represent a given situation as fully and carefully as possible (Büyüköztürk et al., 2013, p. 22). Today, the rapid increase in scientific knowledge has made it very difficult to carry out research based on the study of traditional literature. This situation has revealed a need for tools that will make it possible to conduct a study that takes into consideration the literature related to a research field. Bibliometric analysis, which is one of these tools that provide significant benefits to researchers by allowing them to see the whole research field, has been widely used by researchers in recent years (Öztürk & Gürler, 2022, pp. 1-2). Bibliometric analysis is a quantitative method that examines the characteristics and citation status of scientific studies on specific topics (Bozdemir & Çivi, 2019, p. 60). With bibliometric analysis, the positive, strong, deficient, and weak aspects of the research field can be identified, the performances of the researches can be evaluated, and the same or different fields can be compared with

each other within the framework of national and international standards (Önal, 2017, p. 1090). At this point, the prominent authors, publications, institutions, countries, and the high number of citations and publications can be considered as the strengths of a field. On the other hand, the issues related to the topics that are ignored or under-researched, the fact that scientific actors are less productive, the sources cited in the studies produced are focused on a single publication type or publications produced in only one language, and the cited sources are not up-to-date can be seen as the weaknesses of a field. In addition, considering the productivity status and the relations between the bibliographies of the produced publications, multidimensional evaluations can be made about the vitality of the relevant field, its place in the national and international level and its interactions.

Bibliometric analysis, which can be used in this direction, can be defined as classifying and analyzing the performances of elements such as studies, authors, journals, keywords, countries, and institutions in any research field by applying mathematical and statistical methods and visualizing the intellectual, conceptual, and social structure reflecting scientific communication in the relevant field with the help of mapping techniques (Şimşir, 2022, p. 14). In addition, conducting a study in this direction enables the current situation of relations and trends in the field of Germanistics to be determined on a global scale and to be illustrated the scientific actors in the field and the interaction between them. It is thought that this study, which is carried out with such aims, will contribute to the literature on transnational Germanistics.

Data Collection Process

It is the quality of the bibliographic data representing the relevant literature that determines whether bibliometric research is good or bad. This is due to the fact that the result of the bibliometric research changes according to the data included in the analysis. For this reason, obtaining data from the relevant literature requires a sensitive study (Gürler, 2022, p. 53). In this context, it is seen that the data collection and processing process is described in detail by researchers to increase validity and reliability (Dede & Ozdemir, 2022; Karagöz & Şeref, 2021). In bibliometric research, four stages are followed in order to determine the relevant literature in a repeatable and transparent manner. These stages were followed during the data collection process of the study (Öztürk, 2022, p. 38):

a. Selecting the database: Data sources for bibliometric research and technology are bibliographies and bibliographic databases. Bibliometric analysis can be performed, for example, on the basis of any sufficiently large list of publications compiled and published by a scientific institution (Glänzel, 2003, p. 13). Therefore, in order to create a bibliometric map, it is necessary to have access to the bibliographic database of the field to be examined. A database of this kind provides bibliographic information on various documents. It also indicated sometimes references that are cited in a document. There are two broad interdisciplinary bibliographic databases

called Web of Science and Scopus, as well as a variety of bibliographic databases for specific disciplines (Van Eck, 2011, p. 2). In this context, the Scopus database was chosen in order to access data on publications in the field of Germanistics. The data set for the relevant subject can be easily downloaded from these databases and transferred to bibliometric analysis programs that can adapt to this data set.

b. Determining the search term: The point to be considered here is that the inclusive term or terms to represent the relevant literature are selected for search in databases. In this context, considering that it would reflect the literature related to German, it was decided to search the Scopus database with the word "German". In the detailed search section of the Scopus database, "social science" was chosen as the "subject area", and the word "German" was searched in the titles, abstracts, and keywords of the studies (Title-ABS-Key).

c. Filtering: In bibliometric studies, it is essential to determine how to limit the scope of analysis and which studies will be included in the data set. For this, it is important to establish a good framework by determining the necessary criteria. Thus, a filtering process is applied to the publications that appear in the first search in bibliometric research (Gürler, 2022, p. 60). The fact that such studies are carried out in line with certain criteria and that different researchers can reach different results with different criteria should be taken into account (Gümrah, 2020, p. 248). In this context, the scope of bibliometric studies can be determined by applying different filtering criteria according to the purpose of the research and the approach of the researcher. In this direction, 75299 publications were reached in the first search in the Scopus database. Publications such as articles, book chapters, reviews, conference papers, and books published between the years 2018-2022 were included in the study by applying the inclusion and exclusion criteria to the data obtained. Moreover, due to the fact that there are many publications from different sub-scientific fields within the scope of the social sciences topic, keywords and publications outside the field of Germanistics were selected in the "keywords" and "source" titles from the refine results section and excluded from the scope. As a result of these, 63155 of the publications reached were excluded and the remaining 12144 publications were included in the bibliometric analysis.

d. Downloading the data set: This final sample, which was determined, was downloaded to the computer in a file format suitable for the VOSviewer program to be analyzed by taking into consideration the download options in the databases, and thus the data set to be used in the study was created. The data that emerged after the determined filtering processes were applied was selected as the final sample of the study.

Data Analysis

Bibliometric studies can be performed in two different ways: with traditional bibliometric parameters or with science mapping techniques. In traditional bibliometric studies, the most productive author, the most cited author, the most productive and collaborating country, the most co-cited author, the journal, and the data to form a general opinion about the university are presented in tables, graphs, and diagrams (Kurutkan & Orhan, 2018, p. 2). Another technique used in bibliometric studies is science mapping. Since the beginning of bibliometric research, the concept of visualizing bibliometric networks—often referred to as "science mapping"—has drawn significant attention. Visualization has proven to be a potent method for studying a wide range of bibliometric networks (Van Eck & Waltman, 2014). Scientific support tools are important and necessary to reveal the conceptual structure of a research field of interest. Science mapping tools fulfill this important role in bibliometrics (Martinez et al., 2015, p. 258). Besides, with science mapping, it is aimed to reveal the structure and dynamics of the scientific fields. This knowledge of structure and development is useful when the researcher wants to review a particular set of knowledge (Zupic & Cater, 2015). From this point of view, science mapping analysis is a method of bibliometrics that enables the description of a scientific field. Additionally, the longitudinal perspective enables us to emphasize how these aspects have changed over time. The essential goal of science mapping analysis is to extract knowledge from a set of unprocessed bibliographic data. Generally, the analyst has previously downloaded the information from a bibliographic source and later, imported it to a particular data model (Cobo et al., 2015, pp. 44-45). The data in question is visualized in the form of bibliometric networks. Many software tools, such as CitNetExplorer, CiteSpace, Gephi, HistCite, Pajek, Sci and VOSviewer, can be used to perform map analysis by visualizing bibliometric networks (Van Eck & Waltman, 2014). In this study, the VOSviewer program was used to visualize and analyze bibliometric relations of publications in the field of Germanistics with science mapping based on the data set obtained.

VOSviewer is a software tool for creating, visualizing, and exploring maps based on network data. Bibliographic data in bibliographic database files and reference manager files can be submitted to VOSviewer, or the data can be downloaded by VOSviewer via API. Bibliographic database files from Web of Science, Scopus, Lens, Dimensions, and PubMed are supported by VOSviewer (Van Eck & Waltman, 2022). VOSviewer is compatible with data accessed from scientifically prominent databases and has an easy-to-use structure. In addition, the existence of studies as a guide for researchers makes the VOSviewer program attractive (Arslan, 2022; Artsın, 2020; Çevik, 2022; Van Eck & Waltman, 2010, 2017, 2022). VOSviewer can be utilized for the analysis of bibliometric network data. For example, this program can be used in the analysis of citation relations between publications or journals, co-occurrence relations between scientific terms, and cooperation relations between researchers (Van Eck & Waltman, 2011). In this context, maps can be created for co-authorship, co-occurrence, citation, bibliographic coupling and co-citation analyses with the network, overlay, and density visualization options in the VOSviewer program

(Çevik, 2022). In this study, the data set related to the field of Germanistics from the Scopus database was transferred to the VOSviewer program. By using this program, science maps were created regarding the most productive country, keyword co-occurrence analysis, bibliographic coupling analyses in the context of institutions and countries, author and reference co-citation analyses, and co-authorship analysis of countries. These maps were presented in the findings section of the study, and the bibliometric data and relationships in each map were evaluated separately.

FINDINGS

In the study, primarily bibliometric data on Germanistics-oriented publications between the years 2018-2022 in the Scopus database were included. Accordingly, the Figure showing the change in the number of publications in the said year range is presented in Figure 1.

As can be seen in Figure 1, the number of Germanistics-oriented publications in the Scopus database between the years 2018-2022 is 12144. It is observed that the number of publications fluctuated in the said year period, and the highest number of publications was made in 2021 (f=2616).

The distribution of the publications examined according to their types is presented in Figure 2. Accordingly, the distribution of these publications from the highest to the lowest is in the form of articles (f=8341, 68.7%), book chapters (f=2033, 16.7%), reviews (f=1004, 8.3%), conference papers (f=421, 3.5%), and books (f=345, 2.8%).
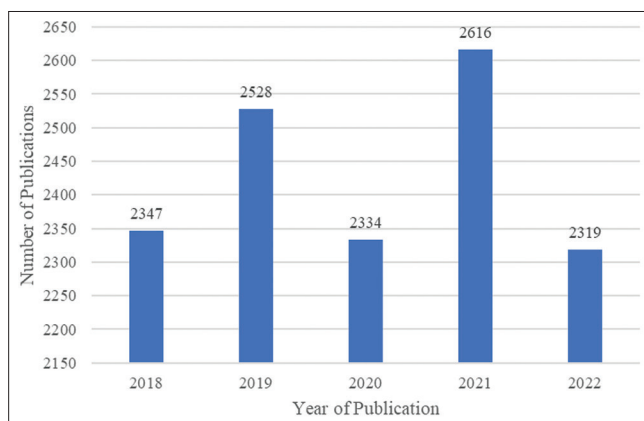
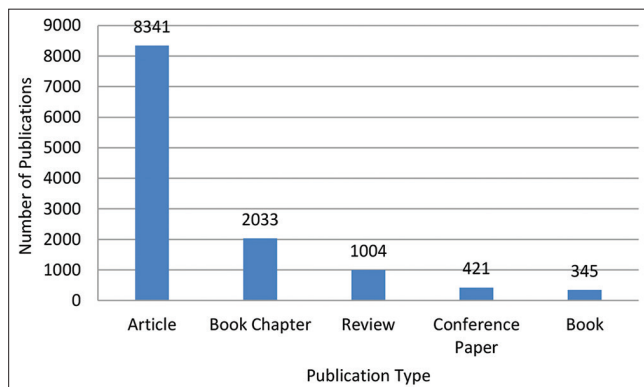The distribution of the publications by languages is given in Figure 3. According to that Figure, the publications in question were mostly published in English (f=9327, 76.8%). Subsequently, the number of publications in German (f=1234, 10.2%), Russian (f=384, 3.2%), and Spanish (f=328, 2.7%) is remarkable.

Figure 4 shows the most productive countries in terms of publication. According to the visualization in this Figure, the countries that stand out with the number of publications in the field of Germanistics are Germany (f=4632, 38.1%), the United States (f=1298, 10.7%), the United Kingdom (f=816, 6.7%), the Russian Federation (f=531, 4.4), Austria (f=411, 3.4%), Spain (f=404, 3.3%), Poland (f=400, 3.3%), Italy (f=372, 3.1%), Switzerland (f=349, 2.9%), and the Netherlands (f=294, 2.4%). The sum of these publications (f=9507) constitutes 78.3% of the total number of publications focused on Germanistics. Apart from these, the network maps created with the VOSviewer program related to Germanistics-oriented publications are included in this part of the study. The network map of keyword co-occurrence analysis related to these publications is as follows:

There are 14 clusters in Figure 5, where the network map of keyword co-occurrence is presented. The circle size shows the excess usage of the keywords and the circle colors show which keywords are used together. Also, the lines between the circles mean that they are related (Şenbabaoğlu
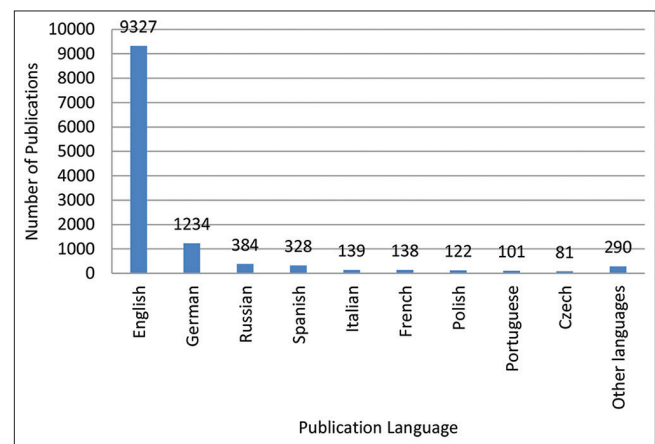

Figure 1. Number of publications by year

Figure 2. Distribution of publications by types

Figure 3. Distribution of publications by languages
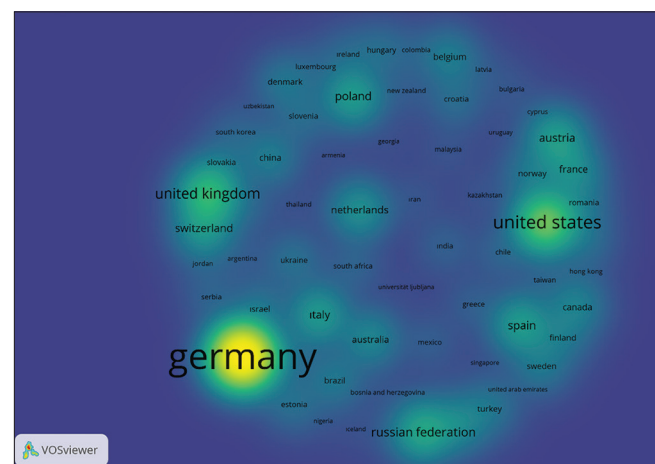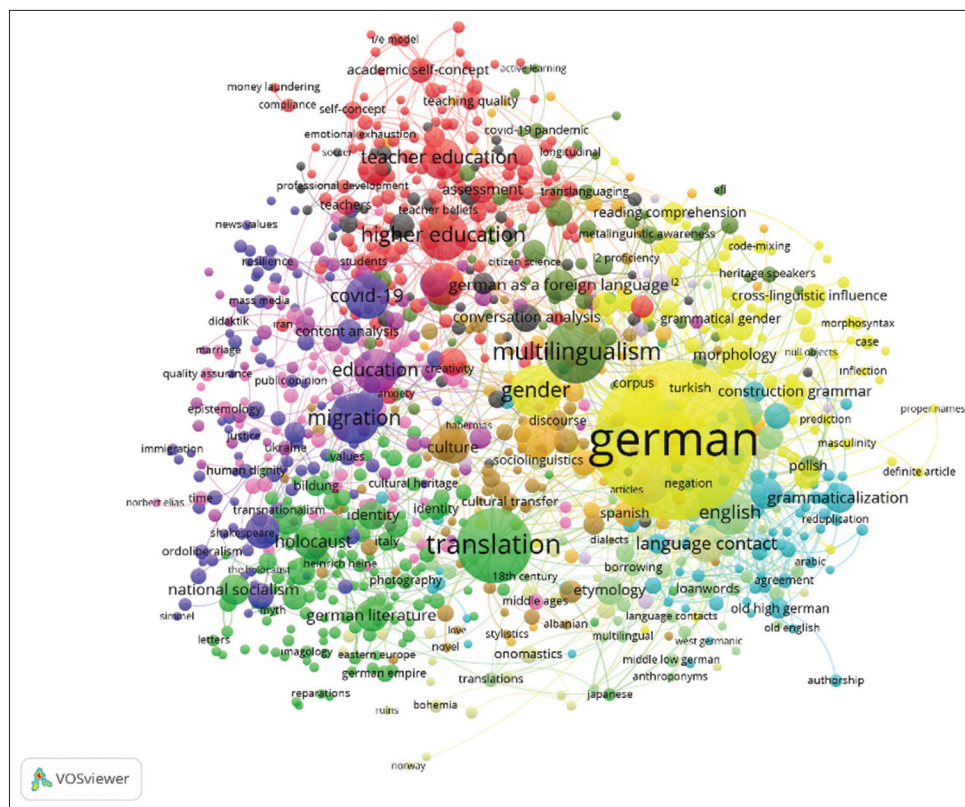

Figure 4. The most scientifically productive countries

Figure 5. Network map of keyword co-occurrence

& Parıltı, 2019, p. 725). On this network map, "German" (Oc¹=401, TLS²=784, L³=330) in the yellow cluster, "translation" (Oc=125, TLS=166, L=122) in the green cluster, "multilingualism" (Oc=94, TLS=161, L=108) in the dark green cluster, "migration" (Oc=67, TLS=97, L=81) in the blue cluster, and "higher education" (Oc=66, TLS=81, L=70) in the red cluster stand out with their frequency of use. Apart from these, "education" (Oc=56, TLS=96, L=77) in the pink cluster, "German language" (Oc=52, TLS=84, L=74) in the orange cluster, "English" (Oc=52, TLS=162, L=78) in the light green cluster, "language contact" (Oc=43, TLS=81, L=55) in the gray cluster, and "semantics" (Oc=40, TLS=72, L=52) in the lilac cluster are among the most frequently used keywords. When looking at the last four remaining clusters, it is seen that "culture" (Oc=35, TLS=55, L=50) in the brown cluster, "grammaticalization" (Oc=30, TLS=56, L=37) in the turquoise cluster, "conversation analysis" (Oc=26, TLS=31, L=25) in the black cluster, and "methodology" (Oc=19, TLS=25, L=23) in the purple cluster are the other frequently used keywords. In addition, covid-19, which can be seen as a current issue, is on the map. It appears from this information that the Germanistics-oriented publications covered a wide range of topics.

In addition to the keyword co-occurrence analysis, bibliographic coupling is another focus of the study. Bibliographic coupling is based on the assumption that a link is established between these two studies when a publication is cited by two studies. The more two studies cite the same publications, the more similar their bibliographies and the stronger their relationship (Bağış, 2022; Zupic & Cater, 2015). It is more likely that articles A and B, which are bibliographically related, have a highly cited article in common than an infrequently cited article. Therefore, it may be argued that having a rarely referenced article in common points to a higher degree of content similarity between A and B, than when this occurs for a widely cited article. This argument suggests that while determining the bibliographic coupling value of two publications, one should consider the frequency of references in A and B (Shen et al., 2019). The terms "bibliographic coupling" and "co-citation analyses" are frequently used interchangeably or incorrectly. The latter ones examine reference pairs, or articles that have been cited, whereas bibliographic coupling techniques act from those citing papers that share items in their references. It is believed that co-citation connections and publications with bibliographic links will group together to reflect the same or at least similar research subjects (Glänzel, 2003, p. 84). On the first network map created in order to make determinations in this direction, the bibliographic coupling in the context of the institutions was visualized and presented:

It is seen that 8 clusters are formed on the network map of institution-oriented bibliographic coupling in Figure 6. The universities with the highest total link strengths include the University of Bremen (TLS=486, L=14) in the yellow cluster and the University of Michigan (TLS=411, L=16) in the black cluster. Further, the University of Bamberg (TLS=324, L=21) is the university with the highest total link strength in the blue cluster. Then, the University of Graz (TLS=333, L=26) in the green cluster and the University of Potsdam

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1   Occurences
2   Total link strength
3   Links
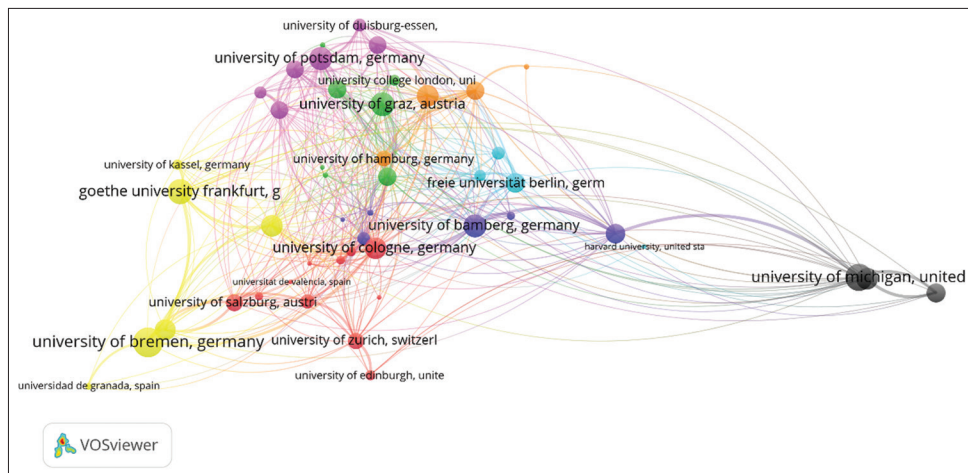
Figure 6. Network map of institution-oriented bibliographic coupling

(TLS=316, L=27) in the purple cluster draw attention with their total link strengths. Besides these, the University of Cologne (TLS=296, L=36) in the red cluster, the University of Reading (TLS=294, L=29) in the orange cluster, and the Free University of Berlin (TLS=241, L=23) in the turquoise cluster are the institutions that stand out with their total link strengths on the aforementioned network map.

There are 12 clusters in Figure 7, which presents the network map of bibliographic coupling in the context of countries. Germany (TLS=135433, L=66), Switzerland (TLS=23269, L=61), Norway (TLS=10161, L=57), and Sweden (TLS=6900, L=55) in the turquoise cluster, the United States (TLS=43306, L=65), Italy (TLS=10825, L=60), and Denmark (TLS=6686, L=56) in the yellow cluster, the United Kingdom (TLS=39265, L=66) and Finland (TLS=6919, L=51) in the red cluster, and Austria (TLS=23462, L=60) in the brown cluster are among the countries with the highest total link strengths on this network map. The Netherlands (TLS=21701, L=58) in the light blue cluster, Australia (TLS=17979, L=60) and Luxembourg (TLS=4308, L=44) in the purple cluster, Spain (TLS=11986, L=59) and France (TLS=9495, L=57) in the black cluster, Canada (TLS=11716, L=55) and Belgium (TLS=9904, L=59) in the orange cluster, and Poland (TLS=8010, L=59), China (TLS= 4820, L=55), Japan (TLS=4575, L=48), and Israel (TLS=4546, L=43) in the green cluster are the countries that attract attention with their total link strengths. Moreover, the Russian Federation (TLS=5084, L=52) in the blue cluster, New Zealand (TLS=1890, L=39) in the pink cluster, and Egypt (TLS=210, L=22) in the light green cluster are the other countries that stand out with their high total link strengths in terms of bibliographic coupling.

After creating network maps of the bibliographic coupling, network maps of co-citation were created in the study. Co-citation analysis shows the frequency of citations of two different analysis units, such as work, author, and journal, together in the same study. Such analyses allow the intensity of the relationships between co-cited authors, studies, and journals to be determined. It is the basic assumption of this analysis that the more two publications are cited together, the more likely the cited publications are to be related (Bağış,
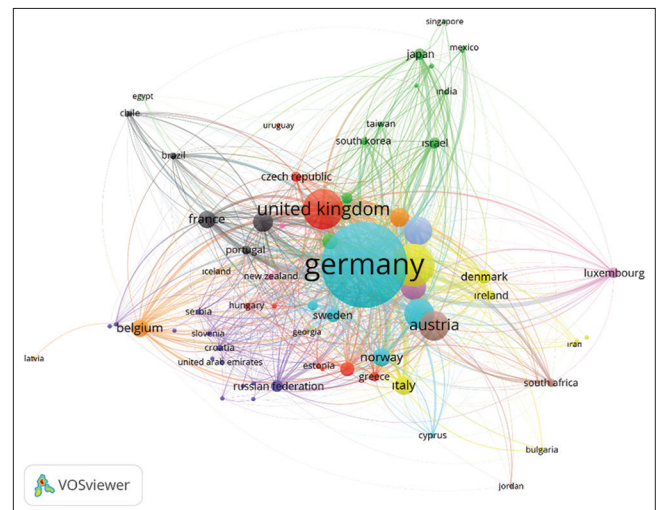
Figure 7. Network map of country-oriented bibliographic coupling

2022). In this direction, network maps of author and reference co-citations were created in the context of the studies cited in Germanistics-oriented publications.

There are 5 clusters on the network map of the author co-citation in Figure 8. Of these, when looking at the blue cluster, it is understood that H. W. Marsch (TLS=105423, L=548), U. Trautwein (TLS=70005, L=625) and O. Ludtke (TLS=58532, L=617) are conspicuous. They are known for their studies in various sub-branches of educational sciences. It is seen that J. Baumert (TLS=65900, L=667), M. Kunter (TLS=44705, L=578) and E. Klieme (TLS=26651, L=671) outshine in the yellow cluster. They are famed for their educational science-oriented works. N. Chomsky (TLS=19586, L=452), the founder of theory on transformational generative grammar, and A.Alexiadou (TLS=8857, L=271) and H. C. Boas (TLS=8850, L=166), known for their linguistic studies, are the authors with the highest total link strengths in the green cluster. E. Bialystok (TLS=15508, L=528), who is one of the prominent authors in the red cluster, is notable for her works on bilingualism. Besides, W. Schneider (TLS=12439, L=705) and H. Clahsen (TLS=9200, L=416) stand out in this cluster. Schneider performs studies in the field of cognitive

neuroscience, and Clahsen is famous for his studies on psycholinguistics and multilingualism. K. Maaz (TLS=10178, L=479), who works on the education system, social inequalities, and school structure development, and H. P. Blossfeld (TLS=7727, L=477), famous for his works in sociology, education, and statistical methods, stand out in the purple cluster. Furthermore, J. Cohen (TLS=7291, L=788), who works in the fields of psychology and education, is another prominent author in this cluster. His works usually focus on topics such as children's ability to learn and develop, k-12 education, and school climate.

As can be seen in Figure 9 that 5 clusters are formed on the network map of the reference co-citation. Among these, the publication named "The Minimalist Program" (TLS=54, L=14), which stands out in the yellow cluster, was written by N. Chomsky (1995), one of the most prominent names of today's linguistics, and is seen as an extremely important resource for transformational generative grammar. "Constructing a language: A usage-based theory of language acquisition" (TLS=28, L=11) by M. Tomasello (2003) is the publication with the strongest co-citation relationships in the red cluster. The mentioned publication focused on people's language acquisition processes within the framework of linguistics, language development processes, social learning, and cognitive science. The publication titled "Statistical Power Analysis for the Behavioral Sciences" (TLS=22,

L=11) by J. Cohen (1988) stands out in the green cluster. This publication on statistical power analysis is an important resource that can be used to ground statistics-oriented studies. The featured resource in the purple cluster is "Common European Framework of Reference for Languages: Learning, Teaching, Assessment" (2001) (TLS=18, L=13). The mentioned resource has a guiding function for researchers, institutions, and language policy developers in terms of foreign language teaching, learning, and evaluation. It is seen that J. Lave and E. Wenger's (1991) work titled "Situated learning: Legitimate peripheral participation" (TLS=7, L=5) draws attention in blue cluster. This study is an important reference source for research on subjects related to learning as situated activity.

Authorship is the primary bibliometric identifier of a scientific publication. Its most characteristic tendency is intense scientific collaboration. Collaboration in research is reflected by the co-authorship of the published results, which can be analyzed with the help of bibliometric methods (Glänzel, 2002, p. 461). It is assumed that the co-authorship of scientific publications is a measure of cooperation. Co-authorship reflects stronger social ties than other measures of relatedness studying the social networks of research fields. Furthermore, co-authorship analysis allows us to examine issues of cooperation at the level of institutions and countries, as bibliographic data includes information about
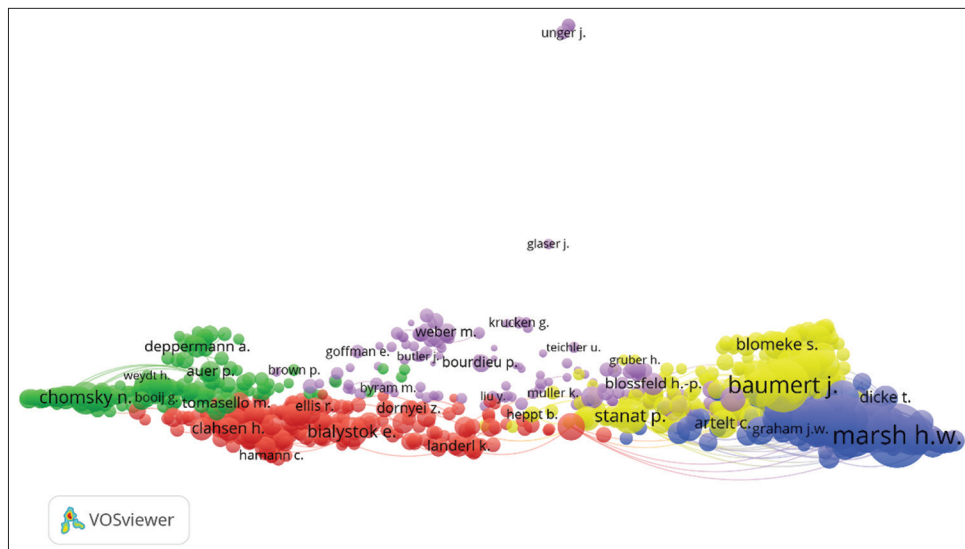
Figure 8. Network map of author co-citation
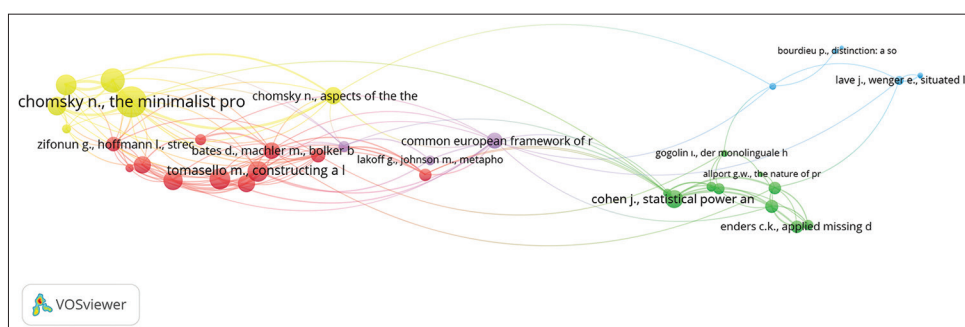
Figure 9. Network map of reference co-citation
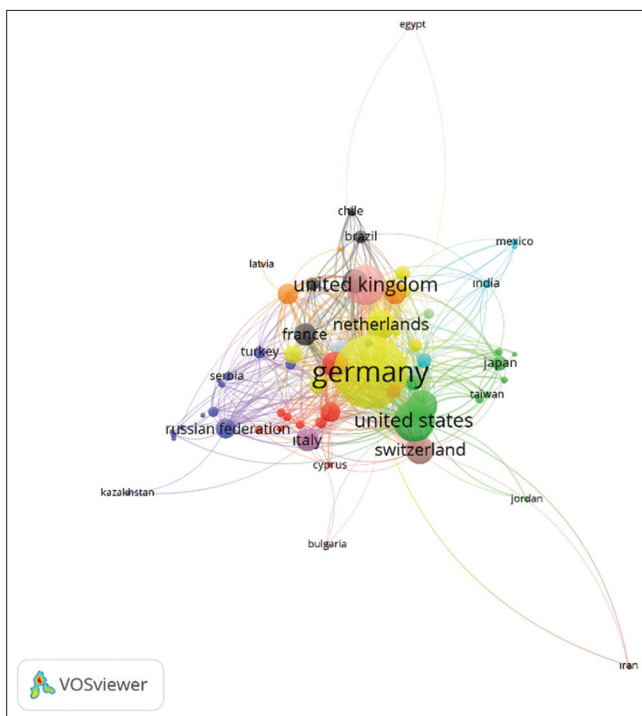
Figure 10. Network map of countries co-authorship

institutional affiliations and geographic locations of authors (Zupic & Cater, 2015). The co-authorship relations of the Germanistics-oriented publications discussed for these reasons are visualized by the network map below at the country level.

There are 12 clusters in total in Figure 10, where the network map of cooperation between countries in the field of Germanistics is presented. Among these, Germany (TLS=1366, L=58) and the Netherlands (TLS=234 L=29) in the yellow cluster, the United States (TLS=430, L=49) and Austria (TLS=226, L=32) in the green cluster, the United Kingdom (TLS=406, L=43) in the lilac cluster, and Switzerland (TLS=209, L=29) in the brown cluster are among the countries with the highest total link strengths. In addition to these, Australia (TLS=172, L=33), Norway (TLS=102, L=23) and the Czech Republic (TLS=47, L=19) in the red cluster, Spain (TLS=150, L=29) and France (TLS=127, L=26) in the black cluster are the countries that stand out with their highest total link strengths according to this network map. The other countries with the highest total link strengths are Italy (TLS=139, L=31) in the purple cluster, Canada (TLS=124, L=29) and Belgium (TLS=109, L=31) in the orange cluster, the Russian Federation (TLS=97, L=27) and Turkey (TLS=39, L=16) in the blue cluster, Poland (TLS= 93, L=27) in the light blue cluster, Israel (TLS=53, L=18) in the turquoise cluster, and Luxembourg (TLS=27, L=10) in the light green cluster.

CONCLUSION

The interaction and relationship between the actors in a field can be revealed at the macro level with bibliometrics-based studies, which provide the opportunity to analyze great knowledge. The relationship networks presented in the maps

created through science mapping techniques offer the opportunity to have a scientific discussion on topics such as the basic dynamics, structure, actors, evolution, positive and negative aspects of scientific fields. Furthermore, the specific realities and requirements of the relevant field in researches on these subjects can be put forward concretely by visualizing bibliometric relations.

In the study carried out in line with the realities in this direction, the data for the field of Germanistics were obtained from the Scopus database, and science mapping analysis was applied to visually determine and present the complex relationships between some bibliometric indicators for these data. The rate of scientific journals among the examined publications is quite higher than other types of publications. One of the main reasons for this situation is that the Scopus database, which includes many types of publications, contains publications that are mainly published in scientific journals.

According to the data obtained from the Scopus database, the language of most of the publications examined in the study is English. Scopus is an international database that researchers from different countries apply to share their scientific publications or access scientific publications of interest. Such realities are among the reasons that make it effective to publish the examined publications mainly in English. From the perspective of countries, Germany, the United States, the United Kingdom, the Russian Federation, Austria, Spain, Poland, Italy, Switzerland, and the Netherlands are in first place in terms of broadcast production. Based on this information, it can be concluded that the impact of these countries on the scientific progress in the field of Germanistics in a global sense is high.

The first network map created in the study is for co-occurrence analysis of author keywords. The formation of many clusters on the network map created for the keywords of the publications in question can be associated with the fact that the scope of the field is quite wide. The keywords in question are determined according to the subfields of the field and the topics on which the research focuses. Accordingly, topics such as "translation", "multilingualism", "migration", "higher education", "education", "grammaticalization", "conversations analysis", "culture", "German language", "semantics", "language contact", " English" and "methodology" are of interest in the field of Germanistics. When looking at the clusters in which the keywords are included, it was seen that there are words in these clusters that are related to current issues. It is an indication that the field is lively and dynamic enough to respond to current realities.

In addition to the keyword co-occurrence analysis, the bibliographic coupling is another point of focus in the study. The first visual created in this context is a network map of institution-oriented bibliographic coupling. In this way, conclusions have been reached regarding the intellectual structure of the literature that exists or will be formed in the field of Germanistics. According to the results, many of the universities with the highest total link strengths are in Germany, while the rest are in the United States, in Austria, and in the United Kingdom. Another network map created in the study is related to bibliographic coupling analysis in the context of

countries. Germany, Switzerland, Norway, Sweden, United States, Italy, Denmark, the United Kingdom, Finland, Austria, the Netherlands, Australia, Luxembourg, Spain, France, Canada, Belgium, Poland, China, Japan, Israel, and the Russian Federation are the countries with the highest total link strengths in the clusters on the network map. This information is an indication that these countries are significantly decisive in shaping the field of Germanistics today, and that an expectation in this direction may be entered into in the future.

After the network map for the bibliographic coupling analysis, the co-citation network maps were also created in the study in order to make determinations about the elements that make up the current intellectual structure of the field of Germanistics. Data on the main works and authors in the center of this field was obtained with the co-citation network maps in the context of the cited studies. Among the scientific works discussed in this context, it was seen that publications focused on statistics, thematic analysis, German grammar, linguistics, and language policies stand out. Besides, it has been determined that the clusters found in the science maps created for network analysis of author co-citation include authors who carry out scientific studies in various disciplines such as various sub-branches of educational sciences, linguistics, bilingualism, cognitive neuroscience, psycholinguistics and multilingualism, and statistical methods. Among these, H. W. Marsch, J. Baumert, N. Chomsky, E. Bialystok, and K. Maaz are the prominent names in the clusters on the network map created. It can be foreseen that the recognition of these sources and authors, which are frequently taken into account in the production process of Germanistics-oriented scientific studies, will be beneficial for field researchers.

The last subject discussed in the study is the co-authorship analysis, which shows the cooperation and social networks among the authors who carry out scientific production in the field. The social relations between the countries in terms of co-authorship are visualized on the network maps created in this framework. Germany, the Netherlands, the United States, Austria, the United Kingdom, Switzerland, the Russian Federation, Australia, Norway, Spain, France, Italy, Canada and Belgium are the countries that stand out in this regard. It is understood that the cooperation rates of the mentioned countries in the scientific developments in the field of transnational Germanistics are high, and they have significantly contributed to the integration of the field of Germanistics by increasing cooperation in scientific production. Moreover, the aforementioned network maps give clues about the openness of the scientists in the field of Germanistics in these countries to communication and scientific integration. It can be concluded that researchers working in the field in these countries have a high tendency to cooperate in scientific production and activities.

The countries, institutions, authors, works, and keywords indicated on the maps created in the study show effective scientific actors and topics in the field of Germanistics. It is possible to say that they are influential on the current situation of the field of Germanistics and will have a say in directing this field in the future. In this respect, the examination of these scientific actors, products, and topics by field researchers is important for both themselves and the

development of the field. According to another result reached in the study, it can be concluded that the amount of scientific knowledge production in the field of Germanistics is high in German-speaking countries, especially in Germany, in some other European countries, in the United States, in the United Kingdom, and in the Russian Federation, and their impact in the field is significant.

The science maps created in the study show the point that the field of transnational Germanistics has reached in terms of integration and enrichment. The information obtained presents the scientific actors who stand out and give direction with their contributions to the field, the bibliometric relationships between them, the current state of the field, and current issues within a framework. From this point of view, it has been possible to see the profile of the field as global and multifaceted. Therefore, it is important for field researchers to show the latest state reached by transnational Germanistics.

Scientific interaction, progress, and integration in the field of Germanistics have increased thanks to globalization and technological developments. This situation has led to the irrelevance of the criticism that Germanistics in German-speaking countries is disconnected from Germanistic activities in other countries, and the concept of transnational Germanistics gains importance as a more inclusive expression. The current and global situation in this field can be likened to a collage-shaped picture. The status of countries as scientific actors can be seen as parts of this collage picture, and the status of universities and their researchers in this field can be seen as the motifs of these parts. From this point of view, it can be imagined that the actors in the field of Germanistics are constantly processing this collage picture with their current scientific production, and as a result, the general appearance of this picture has been reshaped in the historical process. In this study, the situation of the field of Germanistics between the years 2018-2022 was discussed with a bibliometric analysis of the publications in this time period. The data obtained in the study were taken from the Scopus database, which has international validity in scientific terms. These also constitute the limitations of the study. Handling the publications on Germanistics in national and different international databases from different perspectives with bibliometric analysis will enable us to reach conclusions about the different dimensions of Germanistics. In this context, the development and current situation of studies in German literature, German translation, German language education and German as a foreign language, which are within the field of Germanistics, can be examined separately within the framework of bibliometric indicators and relations.

REFERENCES

Arslan, E. (2022). Sosyal bilim araştırmalarında VOSviewer ile bibliyometrik haritalama ve örnek bir uygulama. *Anadolu Üniversitesi Sosyal Bilimler Dergisi, 22* (Özel Sayı 2), 33-56.

Artsın, M. (2020). Bir metin madenciliği uygulaması: Vosviewer. *Eskişehir Teknik Üniversitesi Bilim ve Teknoloji Dergisi B-Teorik Bilimler, 8*(2), 344 – 354.

Auswärtiges Amt (2015). *Deutsch als Fremdsprache weltweit. Datenerhebung 2015.*

Auswärtiges Amt (2020). *Deutsch als Fremdsprache weltweit. Datenerhebung 2020.*

Bağış, M. (2022). Bibliyometrik araştırmalarda kullanılan başlıca analiz teknikleri. O. Öztürk & G. Gürler (Ed.), *Bir Literatür İncelemesi Aracı Olarak Bibliyometrik Analiz İçinde* (3. basım) (pp. 97-109). Nobel Akademik Yayıncılık.

Bozdemir, E. & Çivi, F. (2019). Standart maliyet yönteminin görsel haritalama tekniğine göre bibliyometrik analizi. *Muhasebe ve Finansman Dergisi, 81*, 59- 84.

Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2013). *Bilimsel Araştırma Yöntemleri* (15. basım). Pegem Akademi.

Casper-Hehne, H. & Middeke, A. (Hrsg.) (2009). *Sprachpraxis der DaF- und Germanistikstudiengänge im europäischen Hochschulraum*. Universitätsdrucke Göttingen.

Çevik, Z. (2022). Bibliyometrik araştırmalarda analiz tekniklerinin uygulanması: VOSviewer paket programı. O. Öztürk & G. Gürler (Ed.), *Bir Literatür İncelemesi Aracı Olarak Bibliyometrik Analiz İçinde* (3. basım) (pp. 125-211). Nobel Akademik Yayıncılık.

Cobo, M. J., López-Herrera, A. G., & Herrera-Viedma, E. (2015). A relational database model for science mapping analysis. *Acta Polytechnica Hungarica, 12*(6), 43-62.

Dede, E., & Ozdemir, E. (2022). Mapping and performance evaluation of mathematics education research in Turkey: A bibliometric analysis from 2005 to 2021. *Journal of Pedagogical Research*, *6*(4), 1-19.

Duesberg, P. (2006). DaF International. Aktuelle Tendenzen weltweit und Herausforderungen für die deutschsprachigen Länder. *Info DaF, 33*(5), 411–437.

Fabricius-Hansen, C. (1999). Welchen besonderen Bedarf hat die Auslandsgermanistik? In: G. Stickel (Hrsg.), *Sprache – Sprachwissenschaft – Öffentlichkeit* (pp. 59-72). Walter de Gruyter.

Fandrych, C., & Hufeisen, B. (2010). Die Situation von Deutsch außerhalb des deutschsprachigen Raumes. In: H. J. Krumm, C. Fandrych, B. Hufeisen & C. Riemer (Hrsg.), *Deutsch als Fremd- und Zweitsprache - ein internationales Handbuch Band 1* (pp. 34-43). Walter De Gruyter.

Fandrych, C., Hufeisen, B., Krumm, H. J., & Riemer, C. (2010). Perspektiven und Schwerpunkte des Faches Deutsch als Fremd- und Zweitsprache. In: H. J. Krumm, C. Fandrych, B. Hufeisen & C. Riemer (Hrsg.), *Deutsch als Fremd- und Zweitsprache - ein internationales Handbuch Band 1* (pp. 1-18). Walter De Gruyter.

Glänzel, W. (2002). Coauthorship patterns and trends in the sciences (1980-1998): A bibliometric study with implications for database indexing and search strategies. *Library Trends*, *50*(3), 461-473.

Glänzel, W. (2003). *Bibliometrics as a research field. A course on theory and application of bibliometric indicators*. Course Handouts. https://www.cin.ufpe.br/~ajhol/futuro/references/01%23_Bibliometrics_Module_KUL_BIBLIOMETRICS%20AS%20A%20

RESEARCH%20FIELD.pdf (accessed 09 January 2023).

Götze, L., Helbig, G., Henrici, G., & Krumm, H. J. (2010). Die Strukturdebatte als Teil der Fachgeschichte. In: H. J. Krumm, C. Fandrych, B. Hufeisen & C. Riemer (Hrsg.), *Deutsch als Fremd- und Zweitsprache - ein internationales Handbuch Band 1* (pp. 19-34). Walter De Gruyter.

Gümrah, A. (2020). Türkiye'de yönetim muhasebesiyle ilgili hazırlanan tezlerin bibliyometrik analiz yöntemiyle incelenmesi. *Journal of Academic Value Studies, 6*(3) 244-253.

Gürler, G. (2022). Bibliyometrik araştırmalarda ilgili literatüre ilişkin veri setinin oluşturulma süreci. O. Öztürk & G. Gürler (Ed.), *Bir Literatür İncelemesi Aracı Olarak Bibliyometrik Analiz İçinde* (3. basım) (pp. 53-66). Nobel Akademik Yayıncılık.

https://www.scopus.com (accessed 24 February 2023).

Karagöz, B., & Şeref, İ. (2021). Intellectual structure of mobile learning field: Bibliometric evidence from Turkey (2006-2020). *Open Journal for Educational Research, 5*(2), 403-418.

Krumm, H.J., Fandrych, C., Hufeisen, B., & Riemer, C. (Hrsg.) (2010). *Deutsch als Fremd- und Zweitsprache - ein internationales Handbuch Band 1-2*. Walter De Gruyter.

Kurutkan, M. N. & Orhan, F. (2018). Bilim haritalama, bibliyometrik analiz ve kitap ile ilgili genel hususlar. M. N. Kurutkan & F. Orhan (Eds.), *Sağlık Politikası Konusunun Bilim Haritalama Teknikleri İle Analizi İçinde* (pp. 2-12). İksad.

Lepper, M. (2008). Welche Auslandgermanistik?. Einladung zu einer Diskussion. In: *Jahrbuch der deutschen Schillergesellschaft Band II* (pp.13-17). Wallstein Verlag.

Martinez, M. A., Cobo, M. J., Herrera, M., & Herrera-Viedma, E. (2015). Analyzing the scientific evolution of social work using science mapping. *Research on Social Work Practice*, *25*(2), 257-277.

Mayanja, S., & Hamann, E. (Hrsg.) (2014). *Schwerpunkte der DaF-Studiengänge und Germanistik im östlichen Afrika*. Materialien Deutsch als Fremdsprache Band 91. Universitätsdrucke Göttingen.

Middeke, A. (Hrsg.) (2010). *Entwicklungstendenzen germanistischer Studiengänge im Ausland*. Materialien Deutsch als Fremdsprache Band 84. Universitätsverlag Göttingen.

Önal, G. F. (2017). Bildirilerin bibliyometrik profili: IX. Ulusal müzik eğitimi sempozyumu. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi, 18*(3), 1079-1097.

Özdemir, A. Y. (2022). Almanca odaklı dergilerde yayımlanan makalelerin bibliyometrik analizi. F. E. Kılınç (Ed.), *Eğitim Bilimleri Alanında Uluslararası Araştırmalar III İçinde* (pp. 5-23). Eğitim Yayınevi.

Özdemir, A. Y. (2023). Bibliometric analysis of publications on German as a foreign language in WOS example. *European Journal of Foreign Language Teaching*, *7*(1), 98-116.

Öztürk, A. O., & Özsoy, P. (2022). Bibliographische Erfassung der online veröffentlichten Beiträge in der Diyalog-Zeitschrift des Germanistenverbandes im Zeitraum 2013-2020. In: S. Uysal Ünalan (Hrsg.), *Ege*

Germanistik Forschungen zur deutschen Sprache, Literatur und Kultur Band 1 (pp. 161-192). Ege Üniversitesi Yayınları.

Öztürk, O. (2022). Bibliyometrik araştırmaların tasarımına ilişkin bir çerçeve. O. Öztürk & G. Gürler (Ed.), *Bir Literatür İncelemesi Aracı Olarak Bibliyometrik Analiz İçinde* (3. basım) (pp. 33-50). Nobel Akademik Yayıncılık.

Öztürk, O., & Gürler, G. (Ed.) (2022). Giriş. *Bir Literatür İncelemesi Aracı Olarak Bibliyometrik Analiz İçinde* (3. basım) (pp. 1-4). Nobel Akademik Yayıncılık.

Redder, A. (2003). Transnationale Germanistik. In: G. Stickel (Hrsg.), *Deutsch von auβen* (pp. 274-291). Walter de Gruyter.

Shen, S., Zhu, D., Rousseau, R., Su, X., & Wang, D. (2019). A refined method for computing bibliographic coupling strengths. *Journal of Informetrics, 13*(2), 605-615.

Ständige Arbeitsgruppe Deutsch als Fremdsprache (StaDAF) (2000). *Deutsch als Fremdsprache. Erhebung 2000*.

Ständige Arbeitsgruppe Deutsch als Fremdsprache (StaDAF) (2005). *Deutsch als Fremdsprache weltweit. Datenerhebung 2005*.

Şenbabaoğlu, E., & Parıltı, N. (2019). Tüketici yenilikçiliğinin görsel haritalama tekniğiyle bibliyometrik analizi. *Üçüncü Sektör Sosyal Ekonomi Dergisi, 54*(2), 713-730.

Şimşir, İ. (2022). Bibliyometri ve bibliyometrik analize ilişkin kavramsal çerçeve. O. Öztürk & G. Gürler (Ed.), *Bir Literatür İncelemesi Aracı Olarak Bibliyometrik Analiz İçinde* (3. basım) (s.7-31). Nobel Akademik Yayıncılık.

Van Eck, N. J. (2011). *Methodological advances in bibliometric mapping of science* [Unpublished Doctoral Thesis]. Erasmus University Rotterdam.

Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523-538.

Van Eck, N. J., & Waltman, L. (2011). Text mining and visualization using VOSviewer. *ISSI Newsletter*, *7*(3), 50-54.

Van Eck, N. J., & Waltman, L. (2014). Visualizing bibliometric networks. In Y. Ding, R. Rousseau, & D. Wolfram (Eds.), *Measuring Scholarly Impact: Methods and Practice* (pp. 285–320). Springer.

Van Eck, N. J. & Waltman, L. (2017). Citation-based clustering of publications using CitNetExplorer and VOSviewer. *Scientometrics 111*(2), 1053–1070.

Van Eck, N. J., & Waltman, L. (2022). *VOSviewer Manual*. https://www.vosviewer.com/documentation/Manual_VOSviewer_1.6.18.pdf. (accessed 18 February 2023).

Zupic, I., & Cater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, *18*(3), 429-472.