Araştırma Makalesi ● Research Article

Bibliometric Analysis of Academic Studies in the Field of Internal Audit and Determination of Factors Affecting their Citations

İç Denetim Alanında Yapılan Akademik Çalışmaların Bibliyometrik Analizi ve Atıf Almalarına Etki Eden Faktörlerin Belirlenmesi

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MAKALE BİLGİSİ

ÖZ

İç denetim faaliyetleri, işletmelerin sürekliliği açısından hayati öneme sahiptir. Bu durum araştırmacılar tarafından dikkatlice takip edilmektedir. Dolayısıyla araştırmacılar iç denetimin etkinliği, verimliliği vb. konularda akademik çalışmalar gerçekleştirmektedir. Bu çalışma iç denetim alanında yapılmış olan akademik çalışmaların bibliyometrik analizini yapmak ve atıf alma olasılığını etkileyen faktörleri tespit etmek amacıyla gerçekleştirilmiştir. Araştırmada, 2013-2022 döneminde DergiPark platformunda yayınlanan 226 makale kapsama alınmış ve çalışmalara yapılan atıflar Google Scholar'dan temin edilmiştir. Verilerin değerlendirilmesinde bibliyometrik analiz ve lojistik regresyon analiz yöntemleri kullanılmıştır. Bibliyometrik analiz sonucunda en fazla çalışma 2019 yılında 37 makale ile gerçekleştirilmiştir. 2013-2022 döneminde yayınlanan 226 çalışma toplam 1.350 atıf almıştır. Çalışmaların %92'si Türkçe, %8'i İngilizce olarak yayınlanmıştır. 3 yazarlı çalışmaların daha fazla atıf aldığı belirlenmiştir. Yayınlanan çalışmalardan alınan atıflar incelendiğinde, toplam ve uluslararası atıflar açısından diğer kategorisinin, ulusal atıflar açısından ise Prof. Dr. kategorisinin ilk sırada olduğu belirlenmiştir. Çalışmamız kapsamında yer alan 226 makalenin 216'sının (%95,6) anahtar kelimelerini "iç denetim" ifadesi içermektedir. İnceleme kapsamına alınan makalelerin atıf alma olasılıklarına ilişkin yapılan lojistik regresyon analizinde ise makalenin yaşı, anahtar kelimeleri arasında "iç denetim" ibaresinin yer alması, yazarlardan en az birisinin Prof. Dr. olması ve DergiPark platformundan indirilme sayısı ile atıf alma olasılığı arasında pozitif yönlü ve anlamlı ilişkinin bulunduğu sonucuna ulaşılmıştır. Buna karşın, makalenin dili, türü, yazar sayısı, sayfa sayısı, anahtar kelime sayısı, başlığında "iç denetim" ibaresinin yer alması, yayınlandığı derginin TR Dizin'de taranması ve referans sayısı değişkenlerinin atıf alma potansiyelini etkilemediği belirlenmiştir.

ARTICLE INFO

ABSTRACT

Internal audit activities are vital for the continuity of businesses. This situation is carefully followed by the researchers. Therefore, researchers carry out academic studies on the effectiveness, efficiency, etc. of internal audit. This study is carried out in order to make a bibliometric analysis of academic studies in the field of internal audit and to determine the factors that affect the probability of being cited. In the research, 226 articles published on the Dergipark platform in the period of 2013-2022 are included and the citations to the studies are obtained from Google Scholar. In the evaluation of the data, bibliometric analysis and logistic regression analysis methods are used. As a result of the bibliometric analysis, the most studies are carried out in 2019 with 37 articles. 226 studies published in the 2013-2022 period received 1,350 citations in total. 92% of the studies are published in Turkish and 8% in English. It is determined that studies with 3 authors received more citations. When the citations from the published studies are examined, it is determined that the other category is in the first place in terms of total and international citations, and the full professor category is in the first place in terms of national citations. The keywords of 216 (95.6%) of 226 articles within the scope of our study include the phrase "internal audit". In the logistic regression analysis of the citation probabilities of the articles included in the review, it is found that there is a positive and significant relationship between the age of the article, presence of the phrase "internal audit" among its keywords, at least one of the authors being a full professor, the number of downloads from the Dergipark platform and the probability of being cited. On the other hand, it is determined that the language, type, number of authors, number of pages, number of keywords, inclusion of the phrase "internal audit" in the title of the article, indexing of the journal in which it was published in the TR Dizin and the number of references do not affect the citation potential.

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Introduction

The number of citations received by academic studies is one of the most basic criteria that determines the impact of these studies. At the same time, the number of citations is considered as a criterion that measures the scientific activities and impact levels of researchers, but also as a criterion that measures the success and impact levels of the academic journals in which the related studies are published. However, citation indicators are accepted as a credible indicator for both authors and academic journals.

Impact factors and h-index values are calculated by using citation numbers, and these metrics provide important information for both researchers and journals. On the other hand, the number of citations received by academic studies cannot be obtained in a short time after the publication of the studies. In order to understand the citation potential of the study, a certain period of time must pass after its publication (Kızılöz, 2020, p. 371).

This study has two main objectives. The first of these is to conduct a bibliometric analysis of the citations of academic studies published in the field of "internal audit" between 2013 and 2022 in the national literature. Another objective is to analyse the factors affecting the citation potential of the studies in question using statistical methods. For this purpose, dependent and independent variables are defined and logistic regression method are applied.

It is thought that the aforementioned study will contribute to the literature in terms of performing citation analysis for articles in the field of internal audit and analysing the factors affecting the probability of being cited by statistical methods.

The study consists of five sections, including the introduction. Following the introduction, information on academic studies on citation analysis in national and international literature is given. In the following sections, there are bibliometric analysis and statistical analysis sections for our research scope. Finally, the study is concluded with the conclusion part.

Conceptual Framework

In this section, basic information about the concepts of internal audit and citation analysis, which constitutes the conceptual framework of the study, is given.

Internal Audit

Internal audit can be defined as an assurance and consultancy service that evaluates the effectiveness and adequacy of corporate governance, risk management and internal control systems of enterprises. The main purpose of this activity, which is carried out independently and objectively, is to contribute to the achievement of the goals of the enterprises and add value to the activities of the institution. The internal audit activity adopts a disciplined and systematic approach for this purpose (IIA, 2017, p. 26).

Regarding the roles and responsibilities of the internal audit function, the IIA (Institute of Internal Auditors) notes that internal audit services can also be provided from outside the company, that this function mainly focuses on internal control, risk management and governance processes, has the potential to add value to businesses and improve corporate activities, and will help companies achieve their corporate goals (Celayir, 2021, p. 51).

Internal audit activity is performed by internal audit professionals who have in-depth knowledge of the operational activities, systems and work culture of the business. It provides reasonable assurance to the top management of the company that the internal control of the company is sufficient to minimize the occurrence of risk and contributes to the effective and

efficient execution of the company's activities and also to the achievement of the company's objectives (Adil, 2022, p. 108).

Elitaş (2004) states that the main purpose of internal audit is to support the board of directors and senior management of the enterprise in fulfilling their responsibilities effectively and efficiently. The internal audit function provides some benefits to the business management and all stakeholders with the assurance and consultancy services it provides. The main benefits of internal auditing can be summarized as follows (Günlük and Özcan, 2020, pp. 190-191):

- Supporting the decision-making processes of senior management and stakeholders by reviewing the reliability and accuracy of the information and reports produced within the enterprise,
- Reducing and preventing fraud incidents that may arise in the business,
- Preventing and detecting mistakes that can be made by employees during the performance of their duties,
- Providing access to low-cost financial resources by establishing trust in the business,
- Supporting the company's good corporate governance process,
- Ensuring compliance of the business with legal and internal policies, procedures and regulations,
- Supporting the organization to reach the determined targets.

In order for businesses to benefit from the above-mentioned benefits of internal audit, it is extremely important that they establish effective internal audit mechanisms within the organization.

Bibliometric Analysis and Citation Analysis

Bibliometric analysis is a qualitative research method that includes a number of methods that researchers use to analyze previously published studies (McCain, 1990). It is s one of the tools used in determining research policies in the literature and producing policies for publications (Türkoğlu, Duran and Yetişen, 2022, p. 463) The theoretical foundations in any field can be strengthened within the framework of the results obtained in these studies. In addition, the intellectual structure of a particular discipline can be revealed by identifying critical research topics in the field. In addition, the relationships between authors, publishers and studies can be revealed by bibliometric analysis methods (Gerçek and Gerçek, 2022, p. 818).

Bibliometric analyses carried out in our country mainly focus on articles and master's or doctoral theses. The data obtained from the national thesis database are used in studies for theses. In studies for academic articles, journal, subject or field studies are carried out (Duran and Çelikkaya, 2019, p. 154). Different methods such as citation, co-citation, bibliometric matching and bibliometric mapping analysis can be used in bibliometric studies (Chai and Xiao, 2012, p. 25).

Citation analysis is one of the most common methods used in bibliometric studies (Baker, 1990). Citation analysis assumes that authors cite studies that they consider important to the development of their research. It is based on the principle that more cited studies have a greater impact on the research topic compared to less cited studies (Chai and Xiao, 2012, p. 25). Citation analyzes carried out in a field of science contribute to the knowledge of important developments in the field. They show the history of scientific progress and support the determination of the main actors of the field of science (Heradio, De La Torre, Galan, Cabrerizo, Herrera-Viedma and Dormido, 2016, p. 19).

Citation analysis can be conducted for the studies in the bibliography list used in the studies carried out, or by analyzing the citations of a study or studies published in a field of

science. Most of the studies conducted in this context in our country are for citations in the reference lists of publications. On the other hand, in this study, the factors affecting the citation of publications were emphasized.

Literature Review

When the academic studies conducted within the scope of citation analysis are examined, it is seen that postgraduate theses or articles are the subject of research, and although there are studies for the analysis of the citations received, the analysis of the citations is mainly investigated. In the literature review, no study was found on the citation analysis of academic studies in the field of internal audit. From this point of view, it is thought that this study can contribute to the literature. Summary information on the prominent academic studies published in the national and international literature regarding citation analysis is given below.

Chen and Zhang (2015) conducted a study using the regression method to estimate the citation numbers of academic studies. In the study, six content features for the articles and ten features for the authors were defined. Gradient Boosted Regression Trees and Random Forest methods were used to estimate the number of citations of academic articles. In the analyzes made on a real dataset, it was concluded that article content features are more effective in estimating the number of citations. Stegehuis, Litvak and Waltman (2015) proposed a model using the quantile regression method, which predicts the long-term probability of an academic article to be cited. In the analysis study, two main variables that may have an impact on the long-term citation potential were determined as the impact factor of the published journal and the number of citations the article reached after one year. The results of the analysis reveal that both variables positively affect the long-term citation effect of the articles.

Canata, Çapkın, Doğan, Sünger and Oynak (2017) conducted a citation analysis for graduate theses. The sample set of the study consists of 120 postgraduate theses written in the Department of Information and Records Management of Istanbul University in the period 1967-2015. The results show that the most cited publications in the theses examined are the Journal of Turkish Librarianship and the Official Gazette. Weihs and Etzioni (2017) proposed a model for estimating authors' h-index values and citation counts over a ten-year period. In the proposed model, the Gradient Boosted Regression Trees method was used. In the study, they performed an analysis by listing various features for a total of 63 articles and 44 authors. The results of the study reveal that estimation of academic impact for a ten-year period is possible and the criteria used may not be valid for every author and article. However, it was concluded that the variability in the estimates decreased with the age of the articles and the length of the authors' career.

Temelli and Karcıoğlu (2018) conducted a bibliometric review of the articles published in the Journal of Accounting and Tax Practices. Within the scope of the study, there are 123 articles published in the journal in the period of 2010-2017. As a result, it was determined that the number of bibliographies per article was 22.24, the most bibliography was used in 2012, and 44 authors referred to their own works. Serçemeli and Kurnaz (2019) conducted a study on the most cited academic studies in the field of auditing. The scope of the study consists of the analysis of a total of 75 articles published in the field of auditing in three selected international journals and received the most citations. As a result of the analyzes made using the content analysis method, it has been determined that the number of authors of the articles is mainly three or more, the authors mainly work in the USA, and the most prominent issues are focused on the SOX law, PCAOB reports and the quality of audit studies. However, when the journals in which the articles were published were analyzed, it was determined that the journal Auditing was the most cited journal, while the Current Issues in Auditing journal received the least number of citations. Serefoglu Henkoglu, Mizanalı and Barutçu (2019) performed the citation

analysis of the graduate theses published in the field of Management Information Systems in the period of 2006-2018. A total of 177 theses were analyzed in the study. In the examinations, it was concluded that the average number of citations in the theses was 76, 52% of the citations were made to journals, Information Management was the most cited journal, and Fred D. Davis was the most cited author.

Şeref and Karagöz (2020) performed the citation analysis of the postgraduate and doctoral theses written in the period of 1988-2019 on teaching Turkish to foreigners. A total of 22,763 studies cited in 267 graduate theses were analyzed in the study. The results show that an average of 134 citations are made in doctoral theses and an average of 72 citations in master's theses. Fronzetti Colladon, D'Angelo and Gloor (2020) investigated the factors affecting the citation success of international academic studies published in the field of chemical engineering in the period of 2010-2012. Text mining and social network analysis were used as methods in the study. The results suggest that publishing as a co-author, writing the article summary using more informative words, and conducting studies by different social groups have a positive effect on citation. Tonta and Akbulut (2021) investigated the citation effect of international academic studies from Turkey. Within the scope of the study, 2% of the 226 thousand articles published in the period of 2006-2015 were selected as a sample and analyzes were carried out using the obstacle model. The results show that the reference numbers of the articles, the five-year impact factors of the journals and the quarterly values are the factors that affect the citation numbers the most.

Traag (2021) conducted a study on the causal effect of journals on citations. The analyzes conducted using data on 727 thousand articles reveal that high-impact journals tend to choose publications with high citation potential, while at the same time, these journals increase the citation rate of published articles. Kıllı and Işık (2022) conducted research on the references to foreign publications in 353 doctoral theses published in the field of accounting science in the 2010-2020 period. The results show that the most cited foreign journals in doctoral theses are "The Accounting Review", "Journal of Accounting and Economic" and "Journal of Accounting Research".

Analysis

Objective and Scope

The objective of this study is to determine the factors that affect the citation potential of academic studies conducted in the literature on internal audit. For this purpose, it has been tried to understand what depends on whether a work written on internal audit is cited or not, by modelling different possible causes with statistical analysis.

In the study, citations of academic studies on internal audit written in Turkey are examined. In this context, DergiPark and Google Scholar databases are used. The study considers the period between 2013 and 2022.

Limitations

The data included in the analysis are collected in the last week of 2022. After this date, there may be articles published or cited on the website named DergiPark. Citations are taken from the Google Scholar database. Citations from articles published in journals not scanned in this index may not have been reflected in the analysis. In addition, there may be references that have not yet been reflected in the database at the time of data collection.

Another limitation is related to the statistical analysis method used. Although logistic regression can be used to comment on the availability of citation potential of an academic work, it is not sufficient to identify factors that increase the number of citations. Therefore, in

subsequent studies, academicians can analyse which variables increase the number of citations by using different statistical methods.

Methodology

In this study, bibliometric analysis and logistic regression are used. Although different methods such as Gradient Boosted Regression Trees, Random Forest and Quantile regression methods are used in the studies in the literature, the reason for applying the logistic regression method in this study is that the defined dependent variable is categorical (Akgül and Çevik, 2003, p. 390). Bibliometric analysis is carried out using Microsoft Excel and logistic regression analysis is performed with SPSS package program.

In the bibliometric analysis, the parameters used in similar studies in the literature are used. Articles included in the scope of the study are analyzed according to the year of citations they received, the language of publication, the presence of an extended English summary, the type of study, the number of authors, the academic titles of the authors, the number of pages, the number of keywords, the presence of the phrase "internal audit" in the keyword and the study title, the number of references, the number of downloads from the DergiPark platform and the indexing status of the journal in the TR Dizin at the time the article was published.

In the logistic regression analysis of the study, these parameters are accepted as the independent variables of the model established to determine the factors affecting the citation of the articles published in the field of internal audit.

Results

Bibliometric analysis

226 academic studies on internal auditing were conducted in the 2013-2022 period. The distribution of these studies by years is given in Table 1.

Table 1: Distribution of academic studies by years

Year	Number of Academic Studies	%
2013	14	6.2
2014	8	3.5
2015	10	4.4
2016	16	7.1
2017	15	6.6
2018	27	11.9
2019	37	16.4
2020	36	15.9
2021	32	14.2
2022	31	13.7
TOTAL	**226**	**100.0**

The highest number of studies was carried out in 2019 with 37 studies and a rate of 16.4%. When we look at the trend of the studies over the years, it is seen that the number of articles written in the field of internal audit has increased since 2018, but in low numbers until the end of 2017.

Table 2 below provides an analysis of the citations of academic studies on a yearly basis.

Table 2: Distribution of citations of academic studies by years

Year	Total Number of Studies	Total Number of Citations Received	%	Number of Citations Per Study	Number of National Citations	Number of National Citations Per Study	Number of International Citations	Number of International Citations Per Study
2013	14	226	16.7	16.1	207	14.8	19	1.4
2014	8	161	11.9	20.1	35	4.4	126	15.8
2015	10	184	13.6	18.4	180	18.0	4	0.4
2016	16	155	11.5	9.7	124	7.8	31	1.9
2017	15	276	20.4	18.4	136	9.1	140	9.3
2018	27	132	9.8	4.9	122	4.5	10	0.4
2019	37	96	7.1	2.6	94	2.5	2	0.1
2020	36	83	6.1	2.3	68	1.9	15	0.4
2021	32	32	2.4	1.0	29	0.9	3	0.1
2022	31	5	0.4	0.2	5	0.2	0	0.0
TOTAL	**226**	**1,350**	**100**		**1,000**		**350**	

226 studies published in the 2013-2022 period received 1,350 citations in total. When the distribution of citations received on the basis of years is examined, it has been determined that the most citations were received in 2017 with a rate of 20.4%. It is seen that there is a regular decrease in the citations received after 2017 and the lowest level was reached in 2022. Likewise, in terms of the number of citations per study, 2017 appears to be the year with the highest number of citations.

It is also understood whether the citations taken from the information in Table 2 are of national or international origin. 74% of the citations received by the articles published in the aforementioned period are of national origin and 26% of them are of international origin. The highest national citation was received by studies published in 2015, while the highest international citation was obtained by studies conducted in 2017. The year with the highest national citations per study was 2015, while it was 2014 for international citations.

Table 3 presents the distribution and citation rates of the studies included in the scope of the review by publication languages.

Table 3: Distribution of citations of academic studies by publication languages

Language	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
Turkish	207	4.9	4.7	0.1
English	19	18.2	1	17.2
TOTAL	**226**	**6**	**4.4**	**1.5**

92% of the studies were published in Turkish and 8% in English. Studies published in Turkish received an average of 4.9 citations, while those published in English received an average of 18.2 citations. When the citations are evaluated in terms of their origin, it is seen that the studies published in Turkish receive only 0.1 international citations on average, and almost all of the citations they receive are of national origin. In studies published in English, the situation is the opposite. International citations correspond to almost all citations received.

Academic studies published in Turkish were examined in terms of the availability of extended English abstracts. The obtained results are presented in Table 4.

Table 4: Distribution of citations by extended English abstracts of academic studies in Turkish

Extended English Abstract	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
Yes	36	1.4	1.4	0

| No | 171 | 5.6 | 5.4 | 0.1 |

While 36 (17.4%) of 207 studies published in Turkish during the 2013-2022 period had an extended English abstract, the others (82.6%) did not. When this situation is examined in terms of citations, it has been determined that the presence of extended English abstract does not affect the number of citations received.

The distribution of citations based on the types of academic studies is given in Table 5 below.

Table 5: Distribution of citations by types of academic studies

Type	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
Research Article	169	5.7	3.7	2
Review Article	53	7.4	7.2	0.2
Case Study	4	0.3	0.3	0

Of the 226 articles published during the review period, 169 (74.8%) were research articles, 53 (23.5%) were review articles, and 4 (1.7%) were case studies. Based on the data in the table, it is seen that the average and national average citation received values of review articles are higher than other article types. On the other hand, research articles rank first in international average citations received category.

The distribution of citations of academic studies according to the number of authors is given in Table 6 below.

Table 6: Distribution of citations of academic studies by number of authors

Number of Authors	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
1	92	4.6	4.4	0.2
2	108	4.8	3.8	1.1
3	25	15.3	7.3	8
5	1	19	0	19

The articles that entered the review period were published with 1, 2, 3 or 5 authors. Of the studies, 108 (47.8%) had 2 authors, 92 (40.7%) had 1 author, 11.1% had 3 authors and one had 5 authors. The results obtained from Table 6 reveal that articles with three authors have a higher citation potential.

Academic studies can be published individually or jointly by authors with different titles. Table 7 includes the citation information of the studies included in our scope according to the author with the highest academic title.

Table 7: Distribution of citations of academic studies by highest academic title

Highest Academic Title	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
Prof. Dr.	44	6.8	6.6	0.2
Assoc. Prof.	34	4.1	3.9	0.2
Asst. Prof./ Dr.	91	5	4.8	0.2
Other	57	7.9	2.4	5.5

In 44 (19.5%) of the 226 studies published in the period covered by the review, the highest author academic title was Prof. Dr., in 34 (15%) Assoc. Prof., in 91 (40.3%) Asst. Prof. / Dr. and in 57 (25.2% other. When the data in Table 7 is examined in terms of citation averages, it is seen that the articles with at least one full professor author are in the first place in terms of national average citation received. However, the other category stands out in terms of average citation received and international average citation received.

Information on the number of pages of their academic studies and the citations they received according to the number of pages are given in Table 8.

Table 8: Distribution of citations by page numbers of academic studies

Number of Pages	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
0-9	18	18	1.6	16.4
10-19	113	3.9	3.8	0.2
20-29	75	7	6.5	0.5
More than 29	20	3	3	0.1

Within the scope of our study, the articles published in the 2013-2022 period were divided into four categories in terms of page numbers as 0-9, 10-19, 20-29 and more than 29. The number of pages in 18 (%8) of the studies is in the range of 0-9, 113 (%50) of them is in the range of 10-19, and 75 (%33.2) of them is in the range of 20-29. The number of pages of 20 (%8.8) studies is more than 29. When the citation status of the articles is evaluated in terms of the total number of pages, it is seen that the articles with a maximum total number of 9 pages receive more citations on average and internationally. In terms of national average citation received, articles with 20-29 pages are in the first place.

The distribution of citations of the analyzed academic studies according to the number of keywords is presented in Table 9.

Table 9: Distribution of citations by keyword numbers of academic studies

Number of Keywords	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
0-3	88	5.9	4.8	1.1
4-6	134	6.1	4.3	1.9
7-9	4	1.5	1.5	0

The academic studies examined were divided into three categories in terms of the number of keywords as 0-3, 4-6 and 7-9. 88 (38.9%) of the studies have maximum of 3 keywords, 134 (59.3%) have 4-6 keywords and 4 (1.8%) have 7-9 keywords. From the data in Table 9, it can be said that the articles with 4-6 keywords are more successful than the others in terms of average and international average citations received. However, when the citations received by these articles are compared to the articles with at most three keywords, it is seen that there is no significant difference.

The studies were analyzed for the existence of the phrase "internal audit" among their keywords, and the results in Table 10 were reached.

Table 10: The distribution of citations according to whether the keywords of academic studies have the expression of "internal audit" or not

Keywords Include "Internal Audit"	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
Yes	216	6	4.4	1.6
No	10	4.8	4.5	0.3

Keywords of 216 (95.6%) of 226 articles included in the scope of our study include the phrase "internal audit". The keywords of 10 (4.4%) do not include the phrase "internal audit". It has been determined that articles with the phrase "internal audit" among their keywords perform better in terms of average citation received and international average citation received.

Articles were classified in terms of citation statistics according to whether the phrase "internal audit" was included in their titles and the data in Table 11 were obtained.

Table 11: The distribution of citations according to the presence of "internal audit" in the title of academic studies

Title Include "Internal Audit"	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
Yes	191	6.6	4.8	1.8
No	35	2.7	2.5	0.2

In the title of 191 (84.5%) of the examined studies, the phrase "internal audit" is found, while 35 (15.5%) do not have it in the title. The results show that the inclusion of the phrase "internal audit" in the title of the article increases the number of citations received by the study.

The published articles were also separated in terms of reference numbers and the citations they received according to the number of references were analyzed. The results obtained are presented in Table 12 below.

Table 12: Distribution of citations of academic studies by number of references

Number of References	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
0-19	57	3.9	3.4	0.6
20-39	102	6.7	4.8	2
40-59	56	7.4	5.4	2
At least 60	11	2.4	1.8	0.5

The academic studies examined were divided into four categories in terms of the number of references they have as 0-19, 20-39, 40-59 and at least 60. 57 (25.2%) of all studies have 0-19 references, 102 (45.1%) have 20-39 references, 56 (24.8%) have 40-59 references, and 11 (4.9%) have at least 60 references. The data in Table 12 reveal that articles with 40-59 references receive more citations compared to other studies.

The scope of our work consists of articles published on the DergiPark platform. For this reason, the number of downloads of these studies from the DergiPark platform was determined and compared with the citations they received. The obtained results are given in Table 13.

Table 13: The distribution of citations of academic studies by the number of downloads from the DergiPark platform

Number of Downloads from Dergipark	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
0-999	139	2.6	2.3	0.3
1,000-1,999	48	4.4	4.1	0.3
More than 2,000	39	19.9	12.2	7.7

The articles examined were divided into three categories in terms of the number of downloads from DergiPark as 0-999, 1,000-1,999 and more than 2,000. 139 (61.5%) of the articles were downloaded 0-999 times, 48 (21.2%) 1,000-1,999 times, 39 (17.3%) more than 2,000 times from the DergiPark platform. The results of the analysis reveal that as the number of downloads of the articles from the DergiPark platform increases, the number of citations they receive also increases.

The indexing status of the journals in which the articles included in our review by TR Dizin at the date of article publication was analyzed. Results obtained are presented in Table 14 below.

Table 14: Distribution of citations according to the status of indexing by TR Dizin on the publication date of the journals in which the studies were published

Indexing by TR Dizin at the Publication Date	Number of Studies	Average Citation Received	National Average Citation Received	International Average Citation Received
Yes	109	5	4.8	0.2
No	117	6.9	4.1	2.8

Journals in which 109 (48.2%) articles were published are indexed by TR Dizin at the publication date. The remaining 117 (51.8%) are not indexed by the TR Dizin. Indexing by TR Dizin at the publication date results with higher performance for national average citation received. On the other hand, it shows lower performance in terms of average citation received and international average citation received.

Logistic Regression Analysis

Logistic regression analysis is an analysis method that is used when the dependent variable is categorical and is an extension of multiple regression analysis. For this purpose, in a model created by defining a categorical dependent variable and different independent variables, the relationship between the independent variables and the dependent variable can be analyzed with this method (Akgül and Çevik, 2003, 390).

The following model is created to analyze the factors affecting the citation probability of academic studies in the field of internal audit.

$$CP_k=B_0+B_1L_k+B_2T_k+B_3A_k+B_4P_k+B_5K_k+B_6KIA_k+B_7TIA_k+B_8TR_k+B_9AT_k+B_{10}R_k+B_{11}D_k+B_{12}AGE_k$$

Considering the logistic regression analysis results in the following sections of the study (Table 20), the model including the calculated coefficients emerges as follows.

$$CP_k=-6.239+0.117L_k-0.449T_k+0.031A_k+0.009P_k-0.165K_k +4.762KIA_k +0.151TIA_k +0.651TR_k +1.015AT_k+ 0.011_0R_k+0.011D_k+0.426AGE_k$$

The details of the dependent and independent variables included in the model are presented in the table below.

Table 15: Dependent and independent variables

Dependent Variable	Measurement
• Citation Probability (CP)	• If cited:1; if not:0
• Independent Variables	•
• Article Language (L)	• English:1; Turkish:0
• Article Type (T)	• Research article:1; Others:0
• Number of Authors (A)	• Total number of authors
• Article Page Count (P)	• Total number of pages
• Number of Keywords (K)	• Total number of keywords
• Keyword "Internal Audit" (KIA)	• If there is internal audit:1; if not:0
• The Phrase "Internal Audit" in the Title (TIA)	• If there is internal audit:1; if not:0
• Whether the journal was indexed in the TR Dizin in the issue in which the article was published (TR)	• If it is indexed in TR Dizin:1; if not:0
• Highest Author Academic Title (AT)	• If at least one of the authors is a full professor:1; if not:0
• Number of References of the Article (R)	• Total number of references
• Number of Downloads of the Article from Dergipark (D)	• Total number of downloads
• Age of the Article (AGE)	• For 2022:0; for 2013:9

Before testing the relationship between dependent and independent variables, the goodness of fit and significance of the model used should be measured. The results of the Omnibus test performed for this purpose are presented in Table 16. Since the chi-square significance values are less than 0.05, it is concluded that the model is statistically significant (Menard, 2001).

Table 16: Omnibus test

		Chi-square	Df	Sig.
Step 1	Step	77,989	12	,000
	Block	77,989	12	,000
	Model	77,989	12	,000

Statistical data showing the suitability of the designed model to the data are given in Table 17. Cox & Snell R Square and Nagelkerke R Square values in the table show the power of the independent variables to explain the dependent variable (Menard, 2001). According to the Cox & Snell R Square value, there is a 29.2% relationship between the dependent variable and the independent variables, and a 40.2% relationship according to the Nagelkerke R Square value.

Table 17: Model summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	214,532	,292	,402

The results of the Hosmer-Lemeshow test, which is another test showing the goodness of fit of the designed model, are given in Table 18. Since the significance value (0.111) is greater than 0.05, it can be said that the model and data fit is acceptable (Menard, 2001).

Table 18: Hosmer-Lemeshow test

Step	Chi-square	Df	Sig.
1	13,019	8	,111

The classification table for the model is given below. In the classification table, it is seen that the overall percentage is 78.8%, which is over 50%.

Table 19: Classification table

			Predicted		
			Citation		Percentage
	Observed		,00	1,00	Correct
Step 1	Citation	,00	52	27	65,8
		1,00	21	126	85,7
	Overall Percentage				78,8

The results obtained as a result of the logistic regression analysis using the defined dependent and independent variables are presented in Table 20.

Table 20: Logistic regression analysis results

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B) Lower	Upper
Step1	Age	,426	,101	17,975	1	,000	1,532	1,258	1,865
	Language	,117	,690	,029	1	,866	1,124	,291	4,343
	Type	-,449	,416	1,162	1	,281	,638	,282	1,443
	Authors	,031	,269,	,013	1	,908	1,032	,609	1,747
	Pages	,009	,023	,166	1	,684	1,010	,965	1,057
	Keywords	-,165	,184	,808	1	,369	,848	,591	1,216
	Keyword_IA	4,762	1,256	14,364	1	,000	116,978	9,968	1372,754
	Title_IA	,151	,474	,102	1	,750	1,163	,459	2,948
	TR_Dizin	,651	,351	3,449	1	,063	1,918	,965	3,812
	AcademicTitle	1,015	,511	3,946	1	,047	2,759	1,014	7,511
	References	,011	,010	1,299	1	,254	1,011	,992	1,031
	Downloads	,001	,000	9,274	1	,002	1,001	1,000	1,001
	Constant	-6,239	1,471	17,976	1	,000	,002		

According to the results in Table 20, it is seen that there is a positive and significant ($p < 0.05$) relationship between the age of the article, the phrase "internal audit" in the keyword,

the academic titles of the authors, the number of downloads from the DergiPark platform and the citation probability. Accordingly, the high age of the article, the phrase "internal audit" among its keywords, the fact that at least one author is a full professor and the number of downloads from the DergiPark platform positively affects the probability of being cited. It is concluded that the calculated p-values of the other defined independent variables other than the aforementioned variables are greater than 0.05, and that they do not have statistically significant effect on the probability of being cited.

Conclusion

According to the results of the bibliometric analysis, the most studies were conducted in 2019. When we look at the trend of the studies over the years, it is seen that the number of articles written in the field of internal audit has increased since 2018, but in low numbers until the end of 2017. 226 studies published in the 2013-2022 period received 1,350 citations in total. It is seen that there is a regular decrease in the citations received after 2017 and the lowest level was reached in 2022. 92% of the studies were published in Turkish and 8% in English. Studies published in Turkish received an average of 4.9 citations, while those published in English received an average of 18.2 citations. Therefore, it is considered that articles published in foreign languages are cited more.

When the types of studies are evaluated in terms of the citations they receive, it is seen that the highest number of citations in the average and national average categories are received by review articles. On the other hand, research articles are the most cited article type in terms of international average citation received. The results of the analyses reveal that when a single study with 5 authors is excluded, studies with 3 authors receive the highest number of citations in terms of average, national average and international average citation received. On the other hand, in terms of national average citation received, the lowest citation was received by studies with 2 authors, while studies with 1 author received the lowest international average citation. When the received citations of the published studies are examined, it is determined that the category of other is in the first place in terms of total and international citations, and the category of Prof. Dr. is in the first place in terms of national citations. The number of pages of 20 (%8.8) studies is more than 29. Studies with a number of 0-9 pages in terms of average citation received and international average citation received, and studies of 20-29 pages in terms of national average citation received are in the first place.

When the number of keywords and citations were compared, it was determined that articles with 4-6 keywords in terms of average citation received and international average citation received, and articles with a maximum of three keywords in terms of national average citation received. It has been determined that articles with the phrase "internal audit" among their keywords perform better in terms of average citation received and international average citation received. On the other hand, it has been observed that whether the keywords of the articles contain the phrase "internal audit" does not make a significant difference in terms of national average citation received. In terms of average, national average and international average, it was determined that the articles with the phrase "internal audit" in the title received more citations than the others. Articles with references between 40-59 stand out in terms of average citation received and national average citation received. Articles with references between 20-39 and 40-59 are at the forefront in terms of international average citation received. It has been determined that the articles downloaded more than 2,000 times from the DergiPark platform have higher citation numbers in terms of average citation received, national average citation received and international average citation received compared to others.

According to the results of logistic regression analysis performed within the scope of the study; the higher the time elapsed since the article was first published, the higher the

likelihood of citation. This is already expected when all other variables remain constant: The longer an article stays in the publication, the greater its accessibility and citation potential. The number of downloads, another variable expressing accessibility, gives a result that supports the result obtained with the publication time of the article. Accordingly, as the number of downloads increases, the possibility of citation of the article also arises. Again, this indicates that studies that are accessible and found interested by other authors have the potential to be cited. Another result that supports the others is whether the keywords of the study contain internal audit keywords or not. Accordingly, the presence of the word internal audit within the keywords influences the citation potential and this is an expected result. Authors studying in the field of internal audit may be using keywords in the literature review, and this is likely to provide accessibility.

The last and most striking result is the effect of the author's academic title on citation potential. According to the results of our study, as the title of the author increases, the potential for citation also emerges. The results show that the fact that at least one of the authors of the articles published in the field of internal audit is a full professor positively affects the probability of the article being cited. This situation can be interpreted as the articles written by full professors are considered as primary sources by the authors. In addition, it can be evaluated as an indicator of the respect and trust of the authors for the academic title. On the other hand, statistical analysis results shoe that there is no statistically significant relationship between the language used in academic studies on internal auditing, the type of the article, the number of authors, the number of pages, the number of keywords, the number of references used in the article and the citation potential. Contrary to the results listed above regarding accessibility with which a relationship is detected, the presence of the phrase internal audit in the title of the article does not have an effect on the citation potential.

Apart from the independent variables defined in this study, different variables can also be used in the studies to be carried out in the coming periods for the analysis of the citation probabilities of academic articles. In addition, similar analyzes can be made for studies published in different fields other than internal audit. Moreover, in addition to the citation possibilities of academic studies, the factors that affect the number of citations they receive can also be the subject of research.

References

Adil, M. (2022). The role of internal audit in improving the implementation of good corporate governance principles. *Point of View Research Accounting and Auditing,* 3(2), 106-118.

Akgül A. and Çevik O., (2003), *İstatistiksel analiz teknikleri SPSS'te işletme yönetimi uygulamaları.* Ankara: Emek Ofset.

Baker, D. R. (1990). Citation analysis: A methodological review. *Social Work Research & Abstracts*, 26(3), 3-10.

Canata, F., Çapkın., Doğan, G., Sünger, B. and Oynak, E. (2017). İstanbul üniversitesi bilgi ve belge yönetimi bölümü lisansüstü tezlerinin atıf analizi. *Türk Kütüphaneciliği*, 31 (1), 31-46.

Celayir, D. (2021). *İç denetim ve risk değerlendirme*. İstanbul: Hiperyayın.

Chai, K. H. and Xiao, X. (2012). Understanding design research: A bibliometric analysis of design studies (1996–2010). *Design Studies*, 33(1), 24-43.

Chen, J. and Zhang, C. (2015). *Predicting citation counts of papers*. IEEE 14th International Conference on Cognitive Informatics & Cognitive Computing (ICCI* CC), 434–440.

Duran, G. and Çelikkaya, S. (2019). Türkiye'de lojistik üzerine yapılmış lisansüstü tezlerin bibliyometrik analizi. *G. Ü. İslâhiye İİBF Uluslararası E-Dergi*, 3(3), 152-167.

Elitaş, C. (2004). Kontrol önlem ve yordamlarının iç denetçi açısından rolü ve önemi. *İç Denetim Dergisi*, Yaz 2003-2004, 34-41.

Fronzetti Colladon, A., D'Angelo, C. A. and Gloor, P. A. (2020). Predicting the future success of scientific publications through social network and semantic analysis. *Scientometrics*, 124, 357-377.

Gerçek, M. and Gerçek, R. G. (2022). İnsan Kaynakları Yönetimi çalışmalarının bibliyometrik analizi (2017-2021). *Ömer Halisdemir Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 15(4), 816-832.

Günlük, M and Özcan, M. (2020). *İç denetim ve iç denetim etkinliği olgusu: Literatür üzerine Bir İnceleme.* Alagöz, A. ve Koçyiğit, S. (Ed). *Denetimde seçme konular & İç denetim iç kontrol sektörel uygulamaları*, (1. Baskı, s. 181-216), Ankara: Gazi Kitabevi.

Heradio, R., De La Torre, L., Galan, D., Cabrerizo, F. J., Herrera-Viedma, E. and Dormido, S. (2016). Virtual and remote labs in education: A bibliometric analysis. *Computers & Education*, 98, 14-38.

IIA (2017). Mesleki uygulama çerçevesi kapsamında uluslararası iç denetim standartları. https://www.tide.org.tr/file/documents/pdf/UMUC-2017-updated.pdf (Access Date: 21.06.2023).

Kıllı, M. and Işık, Y. (2022). An analysis on cited foreign journals in accounting doctoral theses in Turkey. *Muhasebe Bilim Dünyası Dergisi,* 24 (4), 908-935.

Kızılöz, H. E. (2020). Bilimsel makalelerin atıf sayısı tahmini. *European Journal of Science and Technology,* Özel Sayı, 370-375.

McCain, K.W. (1990). Mapping authors in intellectual space: A technical overview. *Journal of the American Society for Information Science*, 41(6), 433–443.

Menard, S. (2001). *Applied logistic regression analysis*. Thousand Oaks: Sage, CA.

Serçemeli M. and Kurnaz E. (2019). Denetim alanında en çok atıf alan uluslararası çalışmalar: (Scopus endeksi kapsamında literatür taraması). *Gümüşhane Üniversitesi Sosyal Bilimler Enstitüsü Elektronik Dergisi*, 10 (2), 354-368.

Stegehuis, C., Litvak, N. and Waltman, L. (2015). Predicting the long-term citation impact of recent publications. *Journal of informetrics*, 9 (3), 642–657.

Şeref, İ. and Karagöz, B. (2020). Citation analysis of graduate theses on teaching of Turkish as a foreign language (1988-2019). *Cukurova University Faculty of Education Journal*, 49 (2), 1145-1183.

Şerefoğlu Henkoğlu, H., Mizanalı, M. C., and Barutcu, S. (2019). Türkiye'de yönetim bilişim sistemleri alanındaki tezlerin atıf analizi. *Bilgi Dünyası*, 20 (2), 95-117.

Temelli, F. and Karcıoğlu, R. (2018). Muhasebe ve Vergi Uygulamaları dergisinde yayınlanan makalelerin bibliyometrik analizi: 2010-2017 dönemi. *Muhasebe ve Vergi Uygulamaları Dergisi*, 11 (2), 248-268.

Tonta, Y. and Akbulut, M. (2021). Uluslararası dergilerde yayımlanan Türkiye adresli makalelerin atıf etkisini artıran faktörler. *Türk Kütüphaneciliği*, 35 (3), 388-409.

Traag, V. A. (2021). Inferring the causal effect of journals on citations. *Quantitative Science Studies*, 2 (2), 496–504.

Türkoğlu, M., Duran, G. and Yetişen, S. (2022). Türkiye'de e-ticaret üzerine yapılmış lisansüstü tezlerin bibliyometrik analizi. *Düzce Üniversitesi Sosyal Bilimler Dergisi*, 12(1), 462-476.

Weihs, L. and Etzioni, O. (2017). *Learning to predict citation-based impact measures*. Proceedings of the 17th ACM/IEEE Joint Conference on Digital Libraries, 49–58, IEEE.