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A Comparative Bibliometric Analysis of Ethical Leadership Research: Insights From Scopus and Web of Science (2010-2024)

Etik Liderlik Araştırmalarının Karşılaştırmalı Bibliyometrik Analizi: Scopus ve Web of Science Analizleri (2010-2024)

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Abstract

This research provides a bibliometric analysis of articles published between 2010 and 2024 on "Ethical Leadership" using Scopus and Web of Science databases. The analysis aims to see the status of the ethical leadership. Ethical leadership represents a crucial aspect of effective management and has been the subject of increasing interest from researchers. The investigation involved an examination of both Scopus and Web of Science. These databases are widely recognised as prominent sources of academic research. The comparative analysis is designed to provide detailed insight into the citation patterns, and collaborative networks associated with ethical leadership research. The search scope was narrowed by using the term "ethical leadership" as a keyword in both databases. Furthermore, other disciplines were excluded by entering "education" into the search filter. The term "Ethical Leadership" was entered into the search field. As a result, 122 articles were obtained from the Web of Science database and 133 articles from Scopus. The concept of leadership was identified as the most frequently occurring keyword in both data sources. However, there were discrepancies in the ranking of the most cited authors. While Scopus indicated Den Hortag as the most cited author, Web of Science showed Robledo et al. as the most frequently cited author. Additionally, while Zhu Weichun was identified as the author who published the most documents in Scopus, Catacutan, MRG was identified as the author who shared the most documents in Web of Science.

Keywords: Leadership, Bibliometric analysis, Scopus index, WoSviewer

Öz

Bu makale, Scopus ve Web of Science veri tabanlarını kullanarak 2010-2024 yılları arasında "Etik Liderlik" üzerine yayınlanan makalelerin bibliyometrik bir analizini sunmaktadır. Analiz kapsamlıdır ve bu alandaki araştırmaların mevcut durumunun net bir şekilde anlaşılmasını sağlamayı amaçlamaktadır. Etik liderlik, etkili yönetimin kritik bir yönü olarak kabul edilmekte ve araştırmacılar ve uygulayıcılar tarafından giderek daha fazla ilgi görmektedir. Araştırma, önde gelen iki multidisipliner atıf veri tabanı olan Scopus ve Web of Science'ın ikili olarak incelenmesini içermektedir. Karşılaştırmalı analizin amacı, etik liderlik araştırmaları alanındaki kapsamın, atıf modellerinin ve iş birliği ağlarının ayrıntılı bir şekilde anlaşılmasını sağlamaktır. Analiz edilen verilerden farklı sonuçlar elde edilmiştir. Arama kapsamı, her iki veri tabanında da anahtar kelime olarak 'etik liderlik' kelimesinin kullanılmasıyla daraltılmıştır. Buna ek olarak, arama filtresine "eğitim" girilerek diğer alanlar çıkarılmıştır. Arama alanına 'Etik Liderlik' terimi girilmiş ve bunun sonucunda Web of Science veri tabanından 122, Scopus'tan ise 133 sonuç elde edilmiştir. Liderlik kavramı her iki veri kaynağında da en sık geçen anahtar kelime olarak tespit edilmiştir. Ancak, en çok atıf alan yazarların sıralamasında farklılıklar görülmüştür. Scopus Den Hortag'ı en çok atıf alan yazar olarak gösterirken, Web of Science Robledo ve arkadaşlarını en sık atıf alan yazar olarak göstermiştir. Ayrıca, Zhu Weichun Scopus'ta en çok belge yayınlayan yazar olarak tanımlanırken, Catacutan, MRG Web of Science'ta en çok belge paylaşan yazar olarak görülmüştür.

Anahtar Kelimeler: Liderlik, Bibliyometrik analiz, Scopus index, WoSviewer

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1. INTRODUCTION

Ethical leadership prioritises decisions based on ethical principles and values. It aims to ensure that leaders not only achieve successful results but also do so following ethical values. The concept of ethical leadership has evolved alongside research on leadership and ethics (Bashir & Hassan, 2019; Fulmer, 2004; Hartog, 2015). The concept of ethical leadership has its roots in ancient times. For instance, the ethical ideas of Socrates and the teachings of Confucius indicate that leadership is based on ethical values. The connection between ethical values and leadership was reinforced in the Middle Ages, particularly in the Christian world, and the Renaissance period further developed ethical leadership by highlighting individuals' moral values and virtues. Ethical issues such as freedom, equality, and human rights gained prominence during the Age of Enlightenment. Some leaders of the time emphasized the need to establish a society based on ethical values. In the mid-20th century, ethical leadership gained more academic attention (Darcy, 2010; Freeman et al., 2009; Piccolo et al., 2010).

Since the 2000s, ethical leadership has not only gained significant attention in academic research but has also found practical applications in various fields. It is considered a leadership approach that contributes to the long-term success of both the individual and the community. This real-world relevance of ethical leadership underscores its importance and the need for in-depth research and analysis (Brown et al., 2005).

Ethical leadership in education involves incorporating ethical values and principles into leaders' decision-making processes within educational organisations or contexts. Ethical leadership aims to establish a just and transparent educational environment that fosters trust among students, teachers, parents, and communities. Ethical leadership in education aims to develop individuals' character and sense of social responsibility and promote academic achievement. In the context of educational organizations, ethical leadership is characterized by the upholding of high ethical standards at both the individual and organizational levels. Those who demonstrate ethical leadership are transparent in their decision-making and actions, and act with integrity and fairness throughout the process. Such behaviour fosters trust and encourages all members of the organization to act by the same values. Ethical leaders treat all individuals in a manner that is consistent with the principles of fairness and equality. They make decisions that are perceived as just and impartial. Such leaders are also responsible for preventing discrimination within the organization and ensuring that the rights of all individuals are respected. Ethical leaders recognize that they are accountable for their own actions and for the actions of the organization as a whole (Çelik et al., 2015; Toor & Ofori, 2009). Ethical leaders ensure that the organization's mission, vision and values are integrated into daily practices. Such behaviour is demonstrated through the actions of the leader, who serves as a model for students and staff alike.

Ethical leaders facilitate open communication and engage all stakeholders in decision-making processes. This fosters a culture of trust within the organization, wherein all members feel valued. Ethical leaders exemplify ethical standards through their behaviour, thereby inspiring others to adhere to these standards. Ethical leadership in educational organizations can enhance student success and organizational efficiency, as this type of leadership cultivates a culture of trust and ensures that all members are aligned towards a common goal. Furthermore, ethical leadership contributes to fair and effective decision-making in education, and increases the motivation and commitment of students and staff. This model strives to positively impact educational organizations and society (Bachmann, 2016; Mihelic et al., 2010).

This article aims to review articles written in the past fourteen years to answer these questions;

1. What are the most common keywords in Ethical Leadership research?
2. Who has been the most cited author in the field of Ethical Leadership?
3. Which publications are the most cited in the field of Ethical Leadership?
4. What is the most cited year in the field of Ethical Leadership?
5. Who are the most active authors and what are their demographics?
6. What is the year with the most Ethical Leadership studies in education?

7. Which universities lead the most research in the field of Ethical Leadership?
8. Which Universities cites the most in the field of Ethical Leadership?
9. Which countries lead in the production of Ethical Leadership studies in education?
10. Which countries were cited the most in ethical leadership?

To answer these questions, a bibliometric analysis of the last fourteen years' corpus, as accessed on the Web of Science, will be compared using Scopus Analytics and the Web of Science.

2. METHOD

The following section contains a presentation of the data obtained during the research process.

2.1. Design and Procedure

This research is used bibliometric analysis, which is one of the quantitative methods that analyses journals, articles, books, and conference papers, citations, keywords and other publications (Alsharif et al., .2020; Donthu et al., 2021). *Bibliometric analysis* is a method used to objectively evaluate a researcher's performance considering number of publications, number of citations, citation impact and publication quality. Additionally, bibliometric analysis is used to identify publication trends and tendencies within a particular research field. This information can inform future research planning and strategic decision-making (Ellegaard & Wallin, 2015; Merigó & Yang, 2017).

2.2. Data Collection Tools and Procedures

The data in this study was conducted using the Scopus data analysis tool. The Scopus analysis tool allows researchers to access information such as journals, articles, book chapters, citations, abstracts, institutional information, keywords, publication dates and to perform bibliometric analysis (de Moya-Anegón et al., 2007; Sweileh, 2018). In addition, the Scopus analysis tool converts researchers' analysis reports into various formats such as PDF and Excel. Additionally, histograms, scatter plots and word clouds are among the display options. The Scopus analysis tool helps explain the development of the research field interpreting the results (Badar & Lasthuizen, 2023; Van Eck & Waltman, 2009).

The study also used the Web of Science analysis tool (, which helps researchers observe and analyze data more comprehensively with graphs and tree maps. Tree maps in the Web of Science are used to show relationships and distributions between subject areas, research areas, or institutions by visualizing data with blocks and colors. Additionally, bar charts are used to understand specific temporal changes or categorical distributions. (Khiste & Paithankar, 2017; Krauskopf, 2018).

2.3. Web of Science

Web of Science (WoS) is an abstract and citation database providing academic and scientific research. Researchers use WoS to find information about, book chapters, articles, journals, conference papers, and other publications. Moreover, it provides the opportunity to conduct a comprehensive literature review in many different disciplines (Guz & Rushchitsky, 2009; Falagas et al., 2007; Mongeon & Paul-Hus, 2016). WoS provides citation information of the articles to the researchers. Citation information is an important tool for assessing the quality and importance of research. In this way, one can see how much impact an article had and how much it was referenced by other researchers. (Leydesdorff et al., 2013; Qiu & Lv, 2014; Vieira & Gomes, 2009). WoS offers advanced search features to search scientific publications and filter results, using criteria such as keywords, author names, institutions and publication years. Besides, it provides the most cited articles and trending research topics on a particular topic.

2.4. Scopus

Scopus is an abstract and citation database for academic research Scopus collects data from various sources such as scientific articles, conference papers, patents and books. Therefore, researchers

can easily follow the most current and important studies in the discipline (Guz & Rushchitsky, 2009; Falagas et al., 2007). Moreover, Scopus offers citation analysis, which analyzes how many times an article has been cited and which studies have been cited. Therefore, researchers can identify the most influential publications and authors in a particular discipline. Additionally, Scopus calculates scientific performance metrics such as the h-index. This index evaluates a researcher's scientific impact by the number of publications and the number of citations these publications receive (Norris & Oppenheim, 2007; Leydesdorff et al., 2013; Qiu & Lv, 2014).

2.5. Differences Between the Scopus and the Web of Science (WoS)

The Scopus and the Web of Science are essential databases providing academic research. These databases scan and index scientific articles, conference papers, and other academic publications (Gavel & Iselid, 2008; Mikki, 2009). The WoS database has a more selective process and generally includes more prestigious journals. Therefore, the studies are generally considered to have a higher impact. Scopus and the WoS are essential resources for academic research. While Scopus has broader coverage and diversity, the WoS includes more selective journals depending on the researcher's needs and field. Regarding Coverage, Scopus is run by Elsevier and includes approximately more than 25,000 active journals. However, Web of Science is managed by Clarivate Analytics and includes approximately 21,000 journals (Mongeon & Paul-Hus, 2016).

The Scopus database is updated more frequently providing access to more current data. While Web of Science is updated regularly, but may be slightly less frequent than Scopus. Scopus has a user-friendly interface and offers a variety of analytical tools. Nevertheless, the WoS has a more complex interface but provides more detailed analysis tools. Additionally, Scopus and the WoS databases differ in terms of the indexes. Scopus provides more general research. On the other hand, the WoS offers specialized indexes such as Science Citation Index (SCI), Social Sciences Citation Index (SSCI) and Arts & Humanities Citation Index (AHCI) (Falagas et al., 2007; Vieira & Gomes, 2009).

2.6. Data Analysis

The researchers initially formulated the research questions and objectives, defining the scope and boundaries, including the databases and years from 2010 to 2024. The search scope was narrowed by the use of the word 'ethical leadership' as a keyword in both databases. In addition, other fields have been removed by entering "education" into the search filter. The term 'Ethical Leadership' was entered into the search field. After narrowing the scope of the research on authors, institutions, journals, and citation counts 122 articles obtained from the Web of Science database and 133 articles from Scopus. The research results and its development were interpreted and visualized using diagrams, graphs and charts.

3. FINDINGS

This section analyses the results of a search carried out in the Scopus and Web of Science databases. Moreover, the Vosviewer is used visualize data on ethical leadership from 2010 to 2024. The data from the Scopus and Web of Science databases, as well as the data obtained from the Vosviewer, are compared.

3.1. Publication Year Analysis

The growing interest on ethical leadership can be associated with several factors. Scandals and corruption cases in business world have increased the importance of ethical leadership. Such occurrences have shown that leaders need to pay more attention to ethical behaviours. Additionally, employees expect ethical behaviors and integrity in the workplace as well as fairness, transparency and responsibility Ethical leadership increases the organizations' reputation and public trust, providing customer loyalty and strengthening business relationships Therefore, these reasons play a crucial role in increasing research on ethical leadership. (Hsieh, et al., 2023; Zhao, et al., 2022).

The research included 131 articles from the Scopus database and 121 articles from the Web of Science database, published between 2010 and 2024. it is seen that the number of articles published increased from 2 in 2012 to 17 in 2023. Similarly, the data obtained from Scopus shows an increase in the number of articles from 1 in 2010 to 27 in 2023. Moreover, the year 2023 had the highest number of published articles, providing a growing interest and research on ethical leadership. The growth in research on ethical leadership over the years is confirmed by similar studies in the field (Gan & Yusof, 2020; Hsieh et al., 2023; Yu et al., 2020). Figure 1 and Figure 2 Show the annual distribution of the articles published between 2010 and 2024 on both databases.

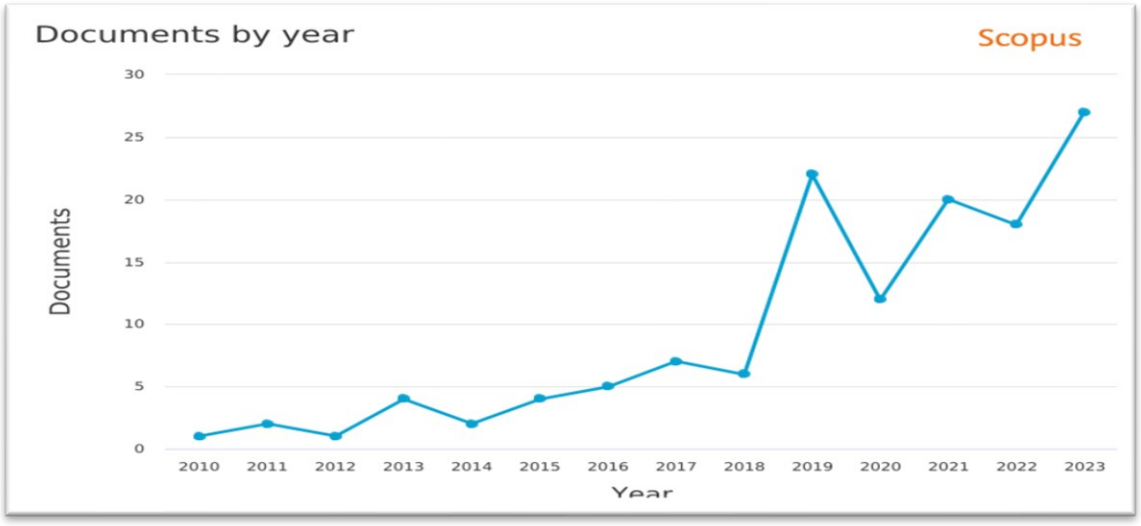

Figure 1: Annual Distribution of Publications according to Scopus Database (Search date: January 1, 2024)

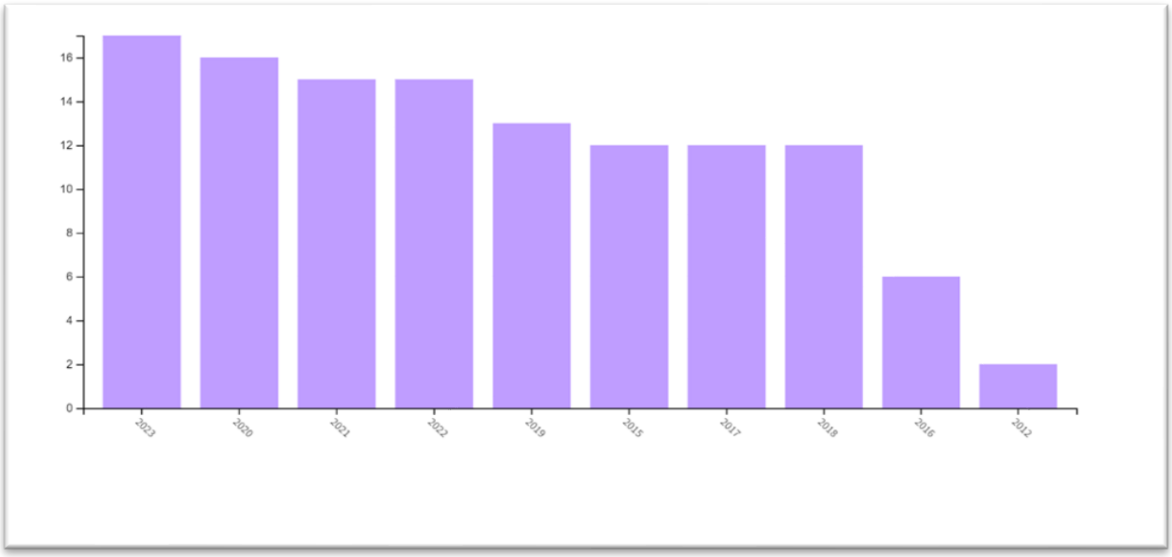

Figure 2: Annual Distribution of Publications according to Web of Science Database (Search date: January 1, 2024)

3.2. Keyword Analysis

Keywords consist of words that reflect the main themes and subjects of the research. Keywords allow researchers to find the right sources searching for information on a particular topic. Using the right keywords provides easier access to the relevant literature. The keywords for research articles, reports, theses, books, conference papers and other publications outline the main topic and content of the study, helping readers quickly understand it. Moreover, using keywords when indexing studies allows for classifying and finding relevant categories. (Abhishek & Hosanagar, 2007; Rose et al., 2010). Using the right keywords increases the researchers' reach of wider audiences and ability to be cited. The research appears in more search results with relevant keywords (Xu, et al., 2010). Keywords are an important part of the research process increasing the accessibility of research. Using the right keywords increases the value and impact of the work for both researchers and readers (Bhalotia et al., 2003; Majdak, 2017; Tanijiri et al.; Adachi, 2016). The most frequently used keywords, according to the Scopus database and Web of Science, are presented in Figures 3 and 4.

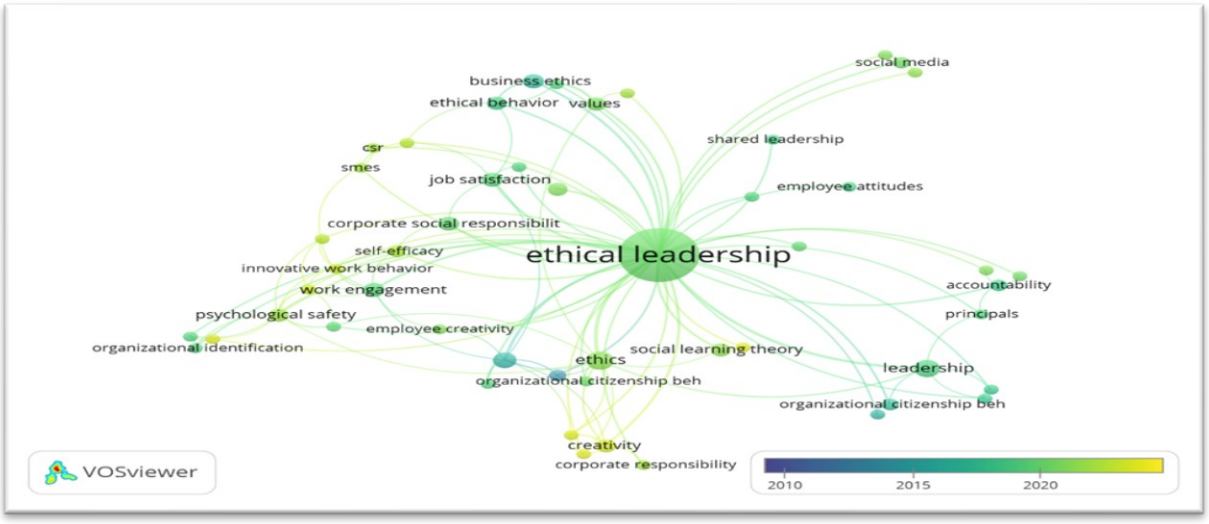

Figure 3: The Most Frequently Used Keywords on Ethical Leadership on Scopus Databa

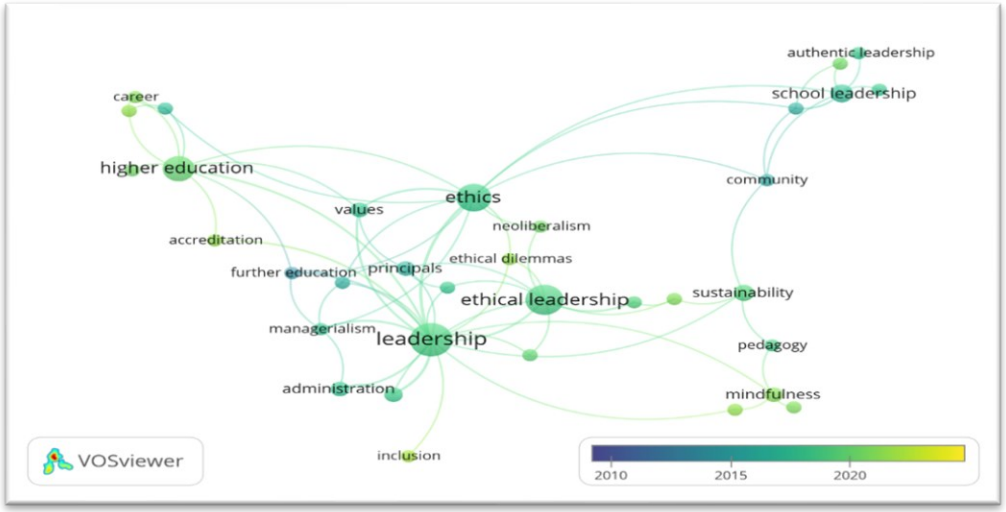

Figure 4: The Most Frequently Used Keywords on Ethical Leadership according to Web of Science

The research examined the most frequently used keywords in the articles published between 2010 and 2024 on the Scopus database and Web of Science. The term '*leadership*' was the most frequently used keyword, appearing 23 times, followed by 'ethical leadership', used 17 times, followed by '*ethics*', *'higher education'*, *'school education'*, '*sustainability*', and *'values'* in the Scopus database.

The term 'leadership' was the most frequently used keyword, appearing 23 times in the Web of Science database. The term '*leadership*' is followed by the phrase *'ethical leadership'*, which appears 17 times. The terms '*ethics*', *'higher education', 'school leadership', 'further education'*, and *'managerialism*' are presented in descending order.

3.3. Citation Analysis

Citations play a crucial role in research, serving several vital purposes, and their use is an integral part of scholarly communication. It allows researchers to credit the original authors and sources of information that have contributed to their work, acknowledging the intellectual contributions of others helping researchers to avoid plagiarism. Moreover, citations lend authority and credibility to an author's claims or arguments by supporting them with evidence from reputable sources (Yang & Meho, 2006). By referencing previous studies, researchers demonstrate how their work relates to, builds upon, or diverges from prior research in the field. In addition, citations serve as pointers to additional resources that readers can consult to gain a deeper understanding of a topic, promoting continuous learning and encouraging readers to explore related works. By citing sources, readers can evaluate the validity of claims made in the research (Osareh, 1996; Nicolaisen, 2007).

Citations also demonstrate awareness of relevant scholarship and provide a trail for readers to trace the development of ideas and views. They enable transparency in the research process and allow others to evaluate the methodology and reasoning behind a study. Besides, citations also play a crucial role in the peer review process, allowing reviewers to assess the quality and reliability of the sources used in a study. As a result, citation contribute to the overall quality assurance of scholarly work (Moed, 2006).

Based on data from Scopus and Web of Science, the most cited authors are shown in Figures 5 and 6.

Figure 5: The Most Cited Authors on Ethical Leadership according to Scopus Database

As illustrated in Figure 5, a comparative analysis of the data on citation counts from two distinct periods, as obtained from Scopus, reveals notable shifts in academic impact and focus. From 2010 to 2015, Den Hartog et al. (2012) were the most prolific researchers in the field, publishing the highest number of citations (233). In contrast, the period from 2016 to 2024 sees a shift in the leading contributions. Despite having published fewer documents (102), Asif et al. (2019) achieved the highest

number of citations. It is also noteworthy that Gerpott et al. (2019) and Zimon et al. (2019) are among the most cited authors in this latter period. Figure 6 shows the most cited authors on ethical leadership according to the Web of Science Database.

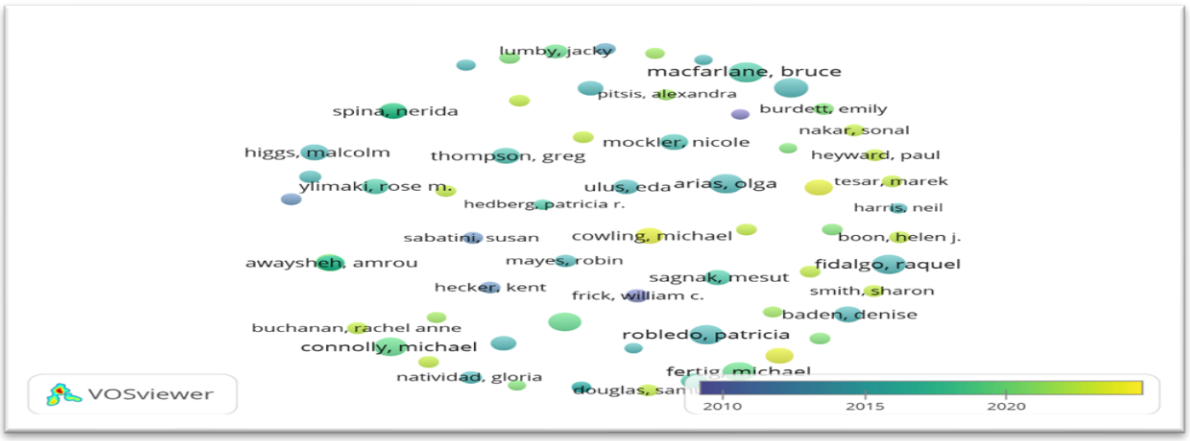

Figure 6. The Most Cited Authors on Ethical Leadership according to Web of Science Database

Figure 6 illustrates that the data obtained from Web of Science indicate a shift in research impact and recognition during two distinct periods. From 2010 to 2015, Robledo et al. (2015) achieved the highest citation count, with 47, thereby indicating that their work was highly influential within that timeframe. In the subsequent period, spanning from 2016 to 2024, the most frequently cited work was that of Macfarlane (2017), with 52 citations. The next most frequently cited works were those of Connoly et al. (2019) and Crawford et al. (2023), with 44 and 29 citations, respectively. Table 1 shows the most cited publications on ethical leadership according to the Scopus Database.

Table 1. The Most Cited Publications on Ethical Leadership according to the Scopus Database

Rank	From 2010 to 2015		From 2016 to 2024	
	Documents	**Citations**	**Documents**	**Citations**
1.	(Den Hartog et al.,2012)	233	(Asif et al., 2019)	102
2.	(Zhu et al., 2015)	122	(Gerpott et al.,2019)	73
3.	(Resick et al., 2013)	98	(Zimon et al.,2019)	69
4.	(Stouten et al.,2013)	96	(Saleem et al., 2020)	65
5.	(Eisenbeiss & van Knippenberg,2015)	84	(Vullinghs et al.,2020)	58
6.	(Frisch & Huppenbauer, 2014)	69	(Bablola et al., 2019)	56
7.	(Neves & Story,2015)	61	(Voegtlin,2016)	56
8.	(Giessner & van Quaquebeke,2010)	51	(Kim & Thapa,2018)	55
9.	(Ehrich et al.,2015)	25	(Mostafa & El-Motalip,2020)	51
10.	(Cramwinckel et al.,2013)	20	(Dreyer et al.,2017)	48

Table 1 shows all of the researchers with the highest number of citations. Using a threshold of at least six citations and one publication, we identify the citation structure of researchers who have published studies on leadership. Out of 319 authors, only 121 met the criteria. According to the analysis results obtained from Scopus, Den Hartog is the most cited author, with 233 citations. Zhu Weichun

follows him with 122 citations, and thirdly by Asif Muhammad with 102 citations. Table 2 shows the most cited publications on ethical leadership according to the Web of Science Database.

Table 2. The Most Cited Publications on Ethical Leadership according to the Web of Science Database

Rank	From 2010 to 2015		From 2016 to 2024	
	Documents	**Citations**	**Documents**	**Citations**
1.	(Robledo et al, 2015)	47	(Macfarlane, 2017)	52
2.	(Baden & Higgs, 2015)	29	(Connoly et al., 2019)	44
3.	(Hammersley-Fletcher, 2015)	25	(Crawford et al, 2023)	29
4.	(Tomkins & Ulus, 2015)	25	(Thompson & Mockler, 2016)	29
5.	(Ehrich et al., 2015)	22	Awaysheh & Bonfiglio, 2017)	27
6.	(Mayes et al., 2015)	17	(Uljens & Ylimaki, 2017)	27
7.	(Conlon et al, 2012)	14	(Sagnak,2017)	26
8.	(Akin,2015)	12	(Mousa et al., 2020)	25
9.	(Frick&Frick,2010)	10	(Lumby,2019)	22
10.	(Elliot,2015)	10	(Buchanan et al.,2022	15

Table 2 shows all of the researchers with the highest number of citations. Using a threshold of at least six citations and one publication, we identify the citation structure of researchers who have published studies on leadership. Out of 127 authors, only 65 met the criteria. According to the analysis results obtained from Vosviewer, the most cited author is Macfarlane, who is cited 52 times in 1 document. Olga Arias followed him with 47 citations, and thirdly by Raquel Fidalgo with 47 citations. Based on data from Scopus and Web of Science, the most cited years are shown in Figures 7 and 8.

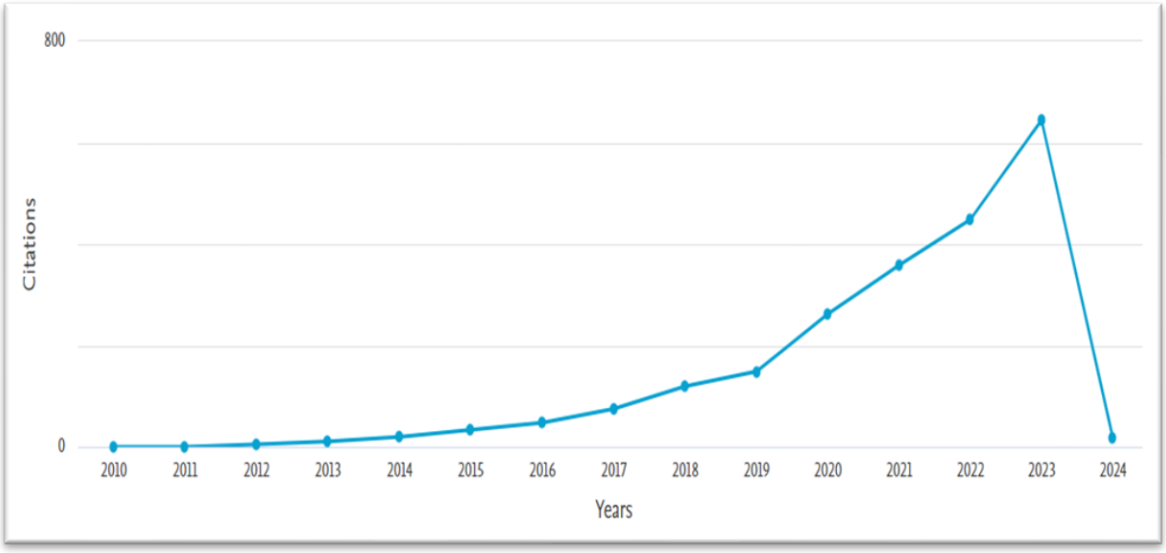

Figure 7: Most Cited Years on Ethical Leadership according to Scopus Database

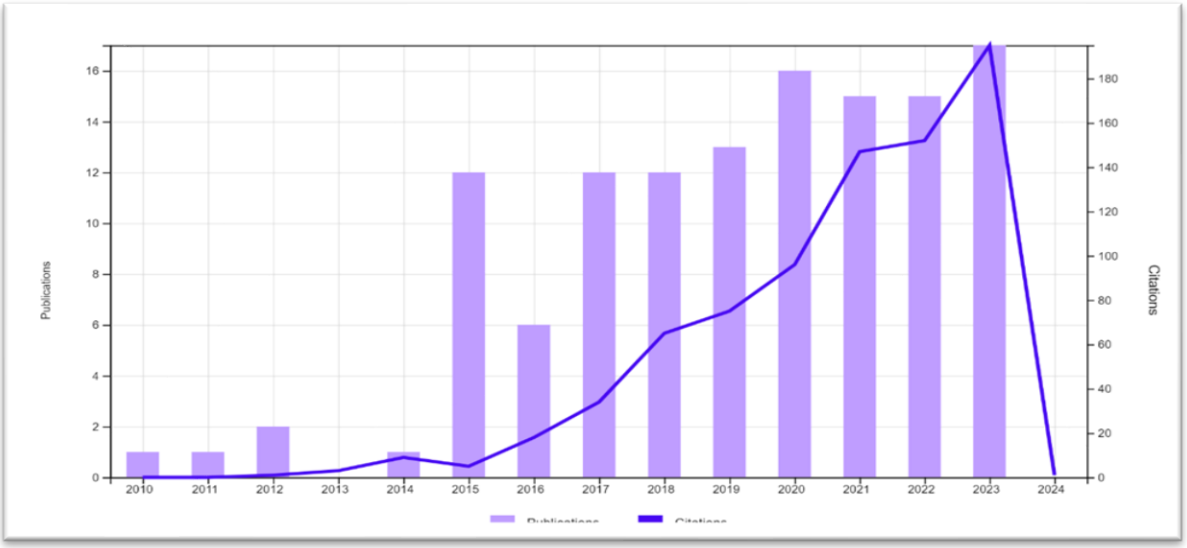

Figure 8. The Most Cited Years on Ethical Leadership according to Web of Science Database

Figures 7 and 8 show information about the most cited years obtained from Scopus and Web of Science. According to the data obtained from Scopus, the number of publications and citations has significantly increased from 1 publication and 0 citations in 2010 to 28 publications and 664 citations in 2023. On the other hand, based on the data retrieved from the Web of Science, publications containing the keyword "Ethical leadership" received one publication with 0 citations in 2010, while the most cited year was 2023, which received 17 publications with 195 citations.

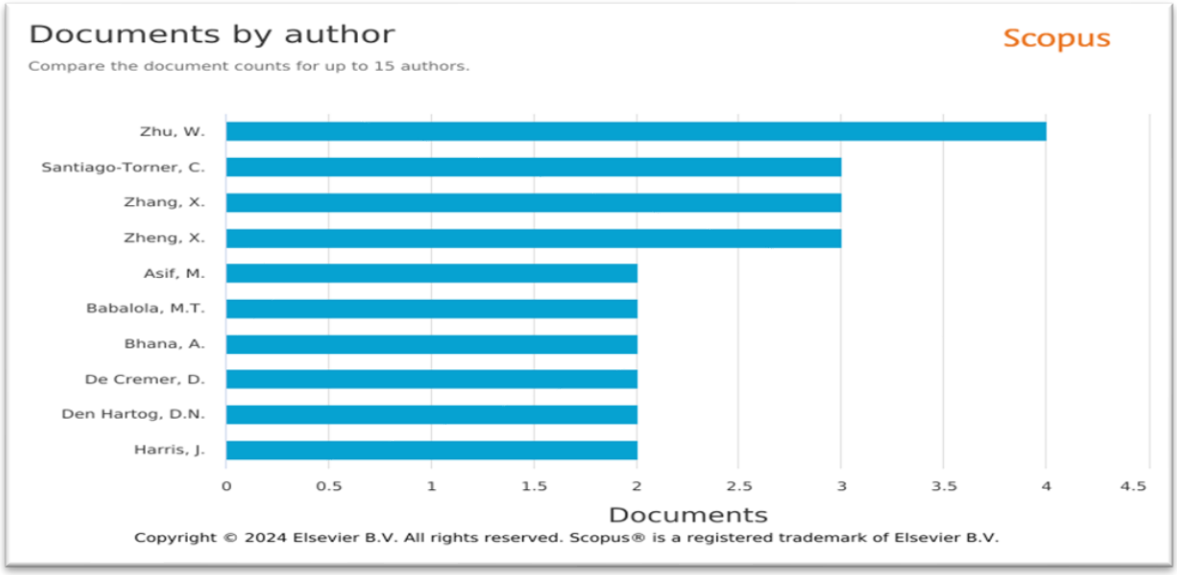

Figure 9: The Most Active Authors on Leadership according to Scopus Database

According to the data obtained after filtering in Scopus, Zhu Weichun was the author who produced the most articles by publishing four articles in the field of "leadership". The author's article "*Ethical Leadership and Follower Voice and Performance: The Role of Follower Identifications and Entity Morality Beliefs*", published in 2015, has been the most cited and cited 122 times so far. Next is Santiago-Torner, C., with three articles. In 2023, the author published "Curvilinear Relationship

between Ethical Leadership and Creativity within the Colombian Electricity Sector. The Mediating Role of Work Autonomy, Affective Commitment, and Intrinsic Motivation", which has been cited 5 times.

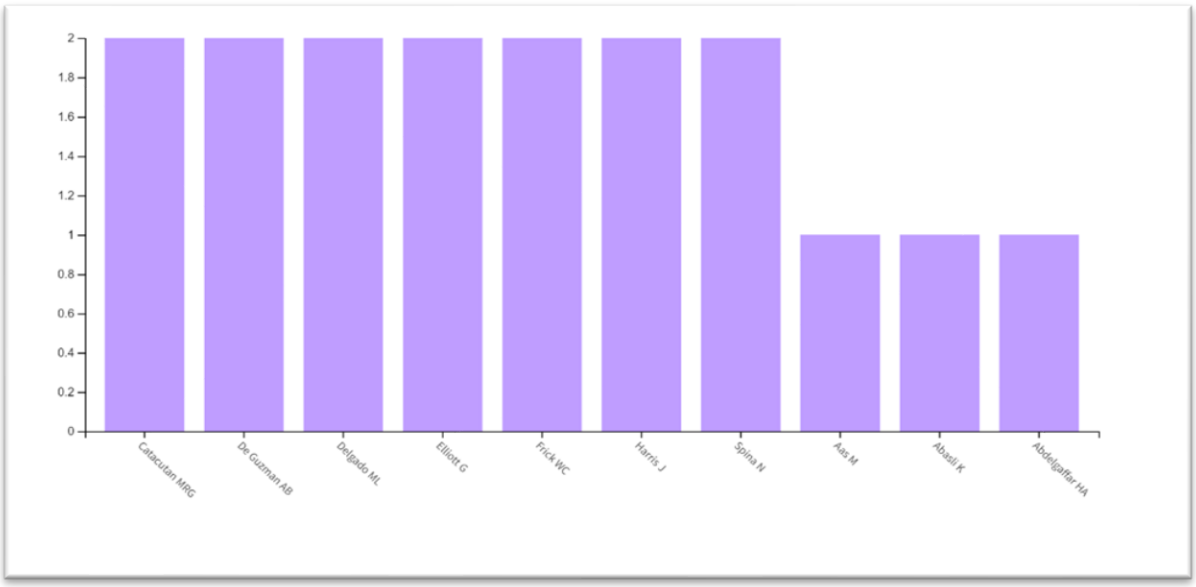

Figure 10: The Most Active Authors on Leadership according to the Web of Science Database

According to the data obtained after filtering in Web of Science, Catacutan, MRG was the author who produced the most articles by publishing two articles in the field of "leadership". The author's article " *Ethical Decision-making in Academic Administration: A Qualitative Study of College Deans' Ethical Frameworks*" was published in 2015 and cited seven times. Next is de Guzman AB, which has three articles. In 2016, the author published " *Bridge over Troubled Water: Phenomenologizing Filipino College Deans' Ethical Dilemmas in Academic Administration*", cited six times.

3.4. Countries and Affiliations

Research and development lead to innovations in science and technology. Therefore, most countries recognize and support research that is vital for economic, social and educational growth (Crespi et al., 2011). Research is also crucial for addressing environmental challenges and developing sustainable solutions. Research institutions support the training of skilled researchers and provide opportunities for students to engage in research, contributing to a skilled and knowledgeable workforce (Borgatti & Halgin, 2014). Social sciences, humanities, and arts research contribute to cultural and social development. (Crespi et al., 2011; Sulo et al., 2012).

Research is crucial in responding to natural disasters, pandemics, and public health emergencies. Countries invest in research to develop strategies for crisis management, preparedness, and recovery. Research improves quality of life by addressing societal challenges and improving living conditions. It leads to innovations in transportation, housing, energy, and communication (Nejati et al., 2011; Singh

& Chander, 2014). The most active universities are presented in Figure 11 based on data from VOSviwer.

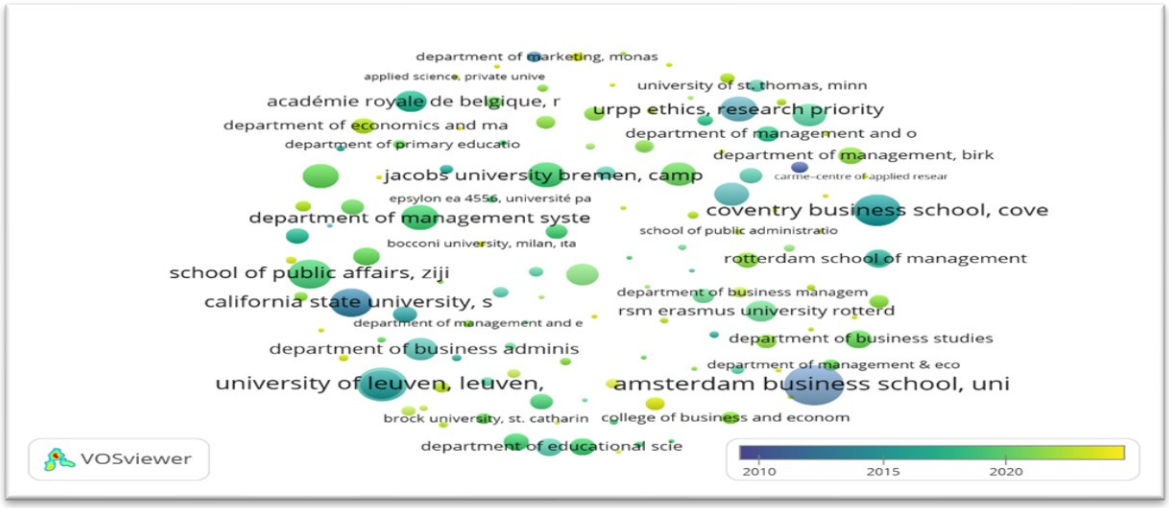

Figure 11: The Most Active Universities on Ethical Leadership according to VOSviwer Based on Scopus Data

Figure 11 illustrates the results of a VOSviewer data analysis obtained from the Scopus database. The University of Leuven in Belgium is the most active institution in the field of Ethical Leadership, with 152 citations and two publications. The Rotterdam School of Management follows with 33 citations and two publications. Figure 12 illustrates the universities with the highest level of activity, as identified by the Scopus database on ethical leadership.

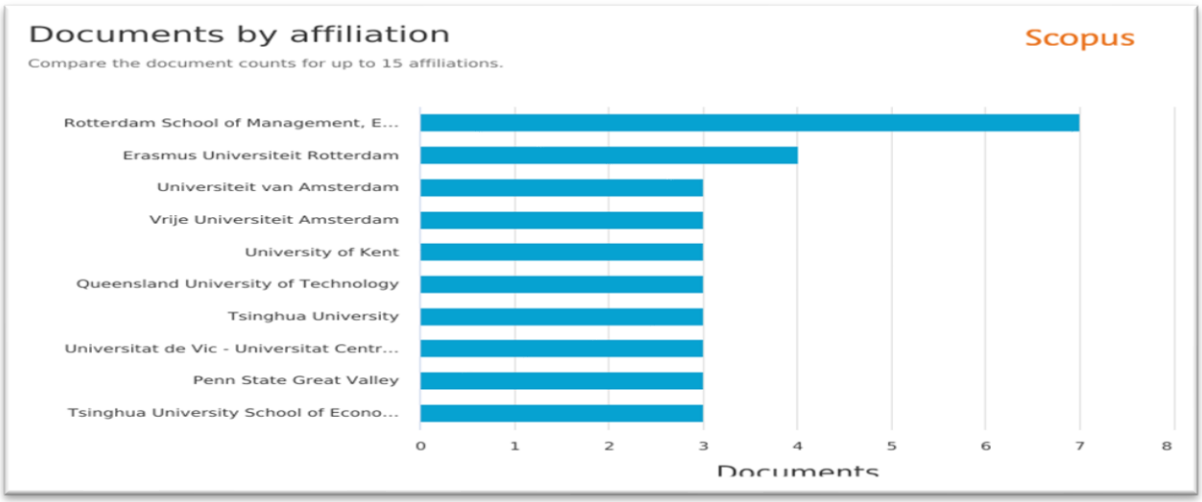

Figure 12: The Most Active Universities on Leadership according to the Scopus Database

Figure 12 shows that Rotterdam School of Management, Erasmus University, has published the most research in the area of ethical leadership, with 8 publications in the Scopus database. Erasmus University Rotterdam follows closely with 5 articles. Table 3 illustrates the universities with the highest level of activity, as identified by the Web of Science database on ethical leadership.

Table 3. The Most Active Universities on Ethical Leadership according to the Web of Science Database

Ranks	Universities	Publication number
1.	Queensland University of Technology (QUT)	4
2.	University of Newcastle	3
3.	University of Southampton	3
4.	AGA Khan University	2
5.	California State University	2
6.	Cardiff Metropolitan University	2
7.	Cardiff University	2
8.	Deakin University	2
9.	Eskişehir Osmangazi University	2
10.	George Mason University	2

As illustrated in table 3, based on the Web of Science analysis data, Queensland University of Technology (QUT) has the highest number of publications, with 4, followed by the University of Newcastle and the University of Southampton, which have 3 publications each. Figure 13 illustrates the countries with the highest level of activity, as identified by the Scopus database on ethical leadership.

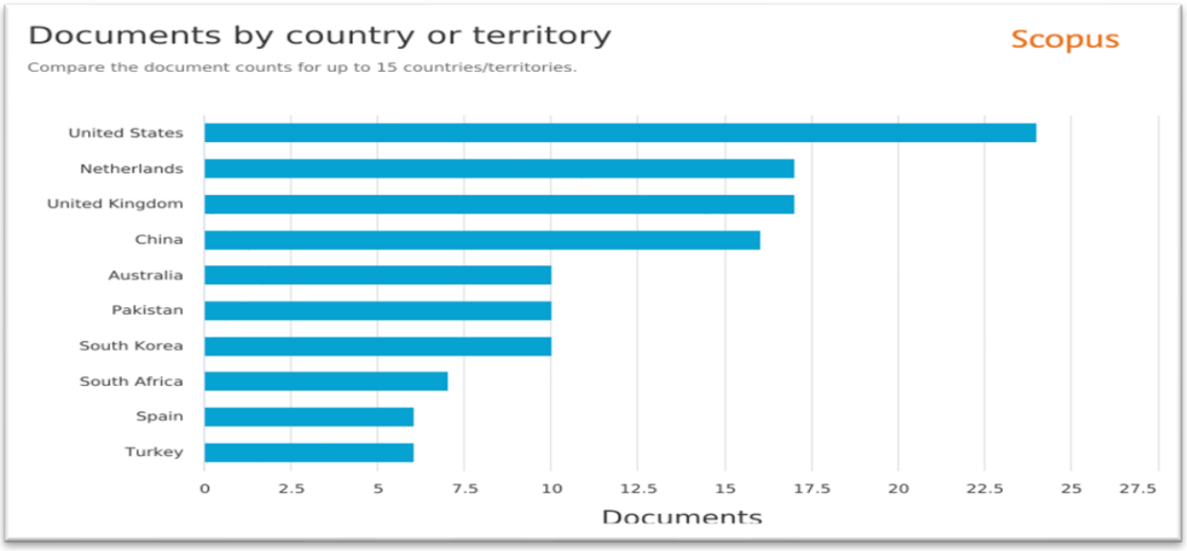

Figure 13: The Most Active Countries on Ethical Leadership according to the Scopus Database

The final analysis aimed to examine the country and academic affiliation of the researchers to gain insight into their geographical origin. The data obtained from Scopus reveals a rich tapestry of countries and academic institutions contributing to the field of leadership, highlighting the global nature of this research. The United States of America leads with 24 publications on the subject. The United States is followed by the Netherlands, with 18 publications. Additionally, the United Kingdom ranks third with 17 publications. Figure 14 illustrates the countries with the highest level of activity, as identified by the Voswiver based on Scopus database.

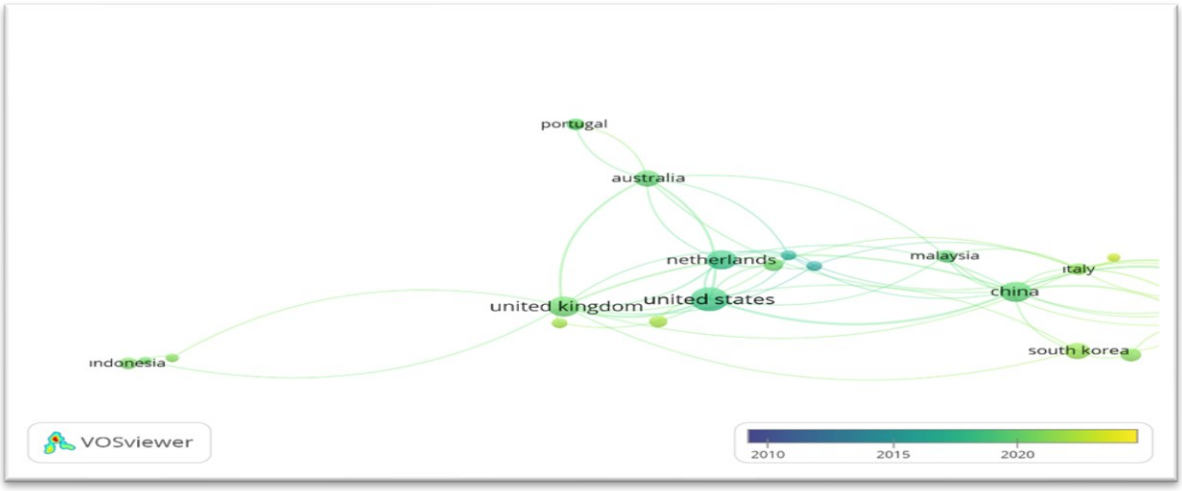

Figure 14: The Most Active Countries on Ethical according to VoSviwer Based on the Scopus Database

In bibliometric studies conducted in leadership, the United States of America ranks first and has published significantly in this field. The results obtained from Scopus match those obtained from the Voswiver data analysis. The countries with the highest level of activity, as indicated by the Web of Science, are presented in Figure 15.

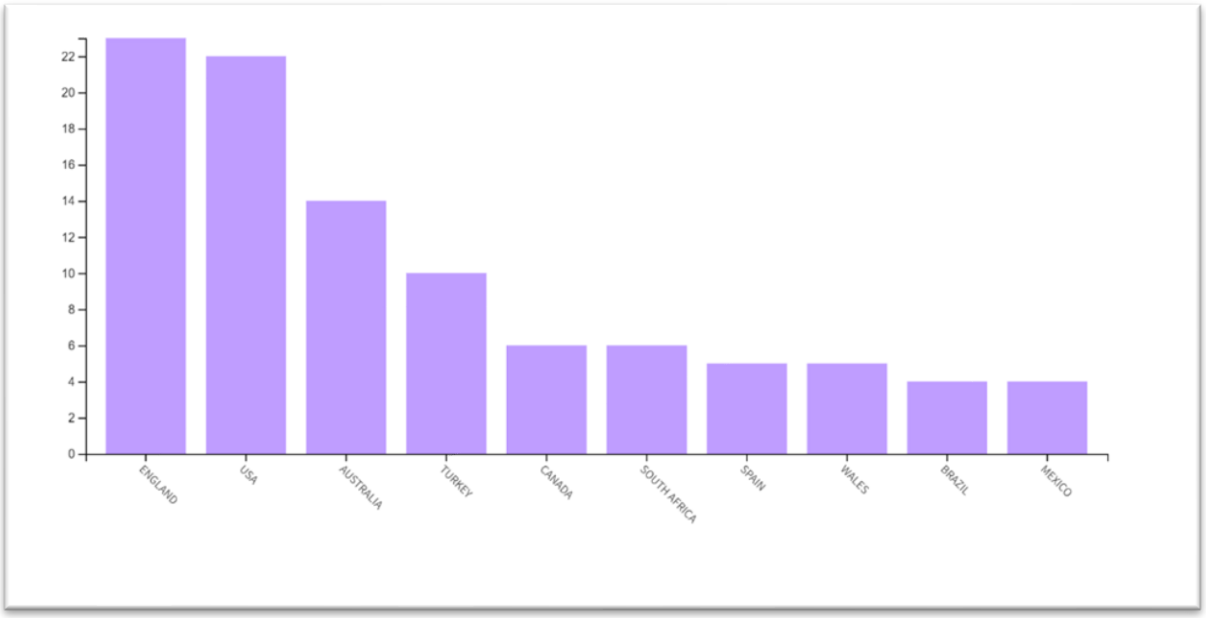

Figure 15: The Most Active Countries on Ethical Leadership according to the Web of Science Database

The data obtained from the Web of Science indicates that England is the most active country in ethical leadership, with a remarkable 23 publications. On the other hand, this surpasses even the USA, which has 22 publications, following England. Furthermore, Australia is in third place with 14 publications. Furthermore, Türkiye is in fourth place with 10 publications.

4. DISCUSSION & CONCLUSION

Bibliometric analysis is a statistical and quantitative method used to evaluate and understand scientific research by analyzing scientific publications and citation data. This study summarizes bibliometric information on English-language social science articles published in Scopus and Web of Science from 2010 to 2024. Besides, an objective perspective was carried out using the WoS and Scopus databases and Vos viewer analysis tools. The research has provided information about the most frequently used keywords and the most cited researchers, countries and universities. Moreover, the research result includes the years, the countries and the universities with the most publications, along with relevant figures. It is seen that leadership studies have increased since 2010 and continue to grow (Bachmann, 2016; Remišová & Lašáková, 2013).

Ethical challenges in education have become more evident to educational researchers. A growing interest in academic honesty, respect for human dignity, academic freedom, responsibility, trust, reliability, accuracy, objectivity, openness, self-criticism and social justice has led to a focus on ethical leadership. The educational environment has become more complex with diverse student populations, new technologies, and societal expectations. Moreover, educational policies and reforms often emphasize the importance of ethical views and ideas. Therefore, research on ethical leadership has increased throughout the years (Kimura & Nishikawa, 2018; Resick et al., 2011).

If we look at the results obtained from Scopus, Web of Science and Wosviewer, we can see that the most active countries are ranked differently. Although the United States is in first place according to Scopus and Wosviewer data, England is in first place according to Web of Science data. On the contrary, according to Scopus and Web of Science data, 2023 is the year with the most publications and citations. As a result of our research, we have obtained information about the research conducted in the field of Ethical Leadership and revealed the research gaps. Nevertheless, the search was limited to 2010-2024, and only open-access articles in English in social sciences were selected. Therefore, filtering with a broader range of years and research areas may yield different results.

In addition, Zhu Weichun is the author who produced the most articles in the field of "Ethical Leadership" in 2015, publishing four articles. On the other hand, according to the results of Scopus' analysis, the author most cited was Den Hartog. He was cited 233 times with seven documents. Based on the data retrieved after filtering in Web of Science, Catacutan, MRG was the contributor with the most articles, having published two articles in the field of 'leadership' in 2015.

The results vary according to the database analysis of the most active universities in terms of research. The Rotterdam School of Management, Erasmus University, has published the most research in ethical leadership, with 8 publications on the Scopus database. On the contrary, according to the VOS viewer data analysis obtained from the Scopus database, the University of Leuven in Belgium is the most active in ethical leadership, with 152 citations and 2 publications. Furthermore, according to the Web of Science analysis data, the Queensland University of Technology (Qut) ranks first with 4 publications. The research shows that Eskişehir Osmangazi University in Türkiye ranks ninth on ethical leadership with 1 publication in the Web of Science database.

The research also reveals differences between the most active countries. Scopus data shows a remarkable diversity of countries and academic institutions contributing to the field of leadership. It is seen that The United States of America leads the field in conducting the research Regarding bibliometric studies in leadership, the United States of America ranks first and has published significantly in this field. Similar results have been obtained in studies conducted in the field (Chadegani et al., 2013; Resick et al., 2006; Thelwall, 2018).

The results obtained from Scopus are consistent with those obtained from the analysis of the VOSwiver data. Nevertheless, the analysis of the data obtained from the Web of Science shows that England is the most active country in ethical leadership, followed by the USA and England. Moreover, Türkiye is eleventh in the Scopus database with six publications.

Scopus and Web of Science have content policies covering different journals, conference papers, books and other academic resources. Scopus and Web of Science databases' content selection

criteria may lead to differences in indexed materials, and these databases update their content at different frequencies. Therefore, a publication indexed in a database may appear before or after another publication. Besides, these databases may index citations from different documents leading to differences in citation results for particular articles (Joshi, 2016; Vieira & Gomes, 2009).

Researchers often use Scopus and Web of Science databases to provide coverage in academic reviews and research Researchers often use Scopus and Web of Science databases to provide coverage in academic reviews and research. Although Scopus and WoS databases perform similar aims, differences in scopes and indexing methods can create variations in results for the same research (Mongeon & Paul-Hus, 2016; Yeung, 2019).

Expanding research efforts could help other countries climb higher in international rankings and contribute more significantly to global discussions on ethical leadership. The differences in content and citation results between Scopus and Web of Science highlight the importance of considering multiple databases when assessing research impact. Researchers should be aware of these discrepancies and use a combination of databases to get a comprehensive view of their work's reach and influence.

Understanding that Scopus and Web of Science have different content policies and update frequencies can help researchers and institutions strategize their publication and citation tracking. Tailoring research dissemination strategies to align with the strengths of each database could optimize visibility and impact. Given the differences in indexing and citation reporting between databases, it is crucial to regularly update and cross-check data from various sources to ensure accurate assessments of research impact. This approach will provide a more nuanced understanding of how research is disseminated and cited globally.

These suggestions aim to address the current gaps and leverage opportunities for enhancing research visibility and impact in the field of ethical leadership.

Appendix 1

Scopus

(TITLE-ABS
KEY (ethical AND leadership) AND KEY (ethical AND leadership)) AND PUBYEAR > 200 9 AND PUBYEAR < 2024 AND (LIMIT-TO (SUBJAREA, "SOCI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (EXACTKEYWORD, "Ethical Leadership")) AND (LIMIT-TO (OA, "all"))

Web of Science

Ethical Leadership (Topic) and **Article** (DocumentTypes) and **All Open Access** (Open Access) and **Education Educational Research** (Web of Science Categories) and **2010** or **2011** or **2012** or **2014** or **2015** or **2017** or **2016** or **2018** or **2020** or **20 19** or **2021** or **2022** or **2023** (Publication Years)

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- Yazarlar herhangi bir çıkar çatışması bildirmemektedir.
- Yazarlar çalışmaya eşit oranda katkıda bulunmuştur.