

# Bibliometric Analysis on Authentic Leadership

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*Abstract* - Studies on school leadership have proven that effective leadership is crucial for improving school outcomes. School leaders have an indirect impact on students' learning performance through their roles in influencing the teachers' attitudes and behaviour outcomes. Leaders with authentic leadership portray good values, lead with integrity, motivate their employees and be transparent with their intention, leading to desirable work attitudes and behaviours. This paper aimed to provide a detailed analysis of bibliometric review on authentic leadership with Publish or Perish software for incorporating the obtained data. Meanwhile, VOSviewer was employed for data visualization, and the Scopus database was utilized to collect all literature in authentic leadership. A total of 706 articles were clarified and evaluated from various authentic and qualified journals starting from 1997 to 2021 (24 years). The studies related to authentic leadership have a significant increase from the earliest 2 in 1997 to 100 articles in 2020. The United States of America, Canada, and United Kingdom made the three most contributions to the literature associated with authentic leadership research, while the top journal was Leadership Quarterly. Findings indicated that the numbers of related research on authentic leadership in the educational field were limited compared to other fields. Therefore, researchers and practitioners should give more attention to developing and improving the research on authentic leadership.

*Index Terms* - Authentic leadership, bibliometric review, Publish or Perish, Scopus index, VOSviewer.

## INTRODUCTION

The topic of authentic leadership has been introduced by leading scholars in the West over the past decade [21]. Scholars like [20] and [9] had given various definitions and meanings to authentic leadership based on their respective understandings and views. According to [7] the combination of leadership, ethics, and constructive organizational behaviour gave rise to the term authentic leadership. Authentic leadership is recognized as a positive leadership needed in the world where the environment is rapidly changing through technology to produce desirable outcomes. Meanwhile, according to [9], authentic leadership as "a pattern of leader behaviour that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development".

## BACKGROUND

Authentic leaders show high levels of morality and integrity, communicate clearly, demonstrate openness and transparent in communicating with followers and create positive conditions for accomplishing job goals. According to [10], the type of leadership which followers become more committed to carry out changes is authentic leadership. In today's challenging era in the educational field, effective leadership is vital for the improvement of schools [5], [4], [12], [15] and [17].

Previous studies show that most of the research done on authentic leadership was not in the educational field and most of the studies have focused on understanding authentic leadership from various perspectives, but little has been done to see if authentic leadership development is shared or cooperated on equally in different parts of the world. This question is crucial, since it is through authentic leadership school leaders can encourage collaboration and provide a supportive environment for their teachers in accepting the changes.

Therefore, this paper analyzes three primary research issues in order to conduct a bibliometric analysis of scholarly literature on authentic leadership: (a) how authentic leadership research has evolved and been distributed, (b) what key topic areas have been discussed in authentic leadership research, and (c) who the major players in authentic leadership research are and how have they collaborated.

## METHOD

This bibliometric study accessed the Scopus scientific database to analyze publications [1] and [16] with the word authentic or authentic leadership in their title. It considered all types of documents published in the Scopus database from the year 1997 until 2021. Scopus is one of the largest abstract and citation database of peer-reviewed literature [2] from various areas of knowledge. Such a large database is able to provide a comprehensive overview of the world's research output. Scopus is also regarded as one of the most important sources of useful information by the international scientific community [1] and [2].

The search strategy is shown in Fig. 1 below. A total of 706 articles were clarified and evaluated from various authentic and qualified journals starting from 1997 to 2021 (24 years). Publish or Perish software is used for incorporating the obtained data. Meanwhile, VOSviewer was employed for data visualization.

To characterise distribution patterns of research publications within specified topics and time periods, this study used bibliometric analysis as well as quantitative and statistical analysis [14]. The process involved identifying a keyword for search purposes. When querying the Scopus database for information on article titles only, we used the terms authentic leadership\* OR "authentic."

The search was conducted on August 13, 2021. The search was limited to results that were published between 1997 and 2021 (until the date of search).

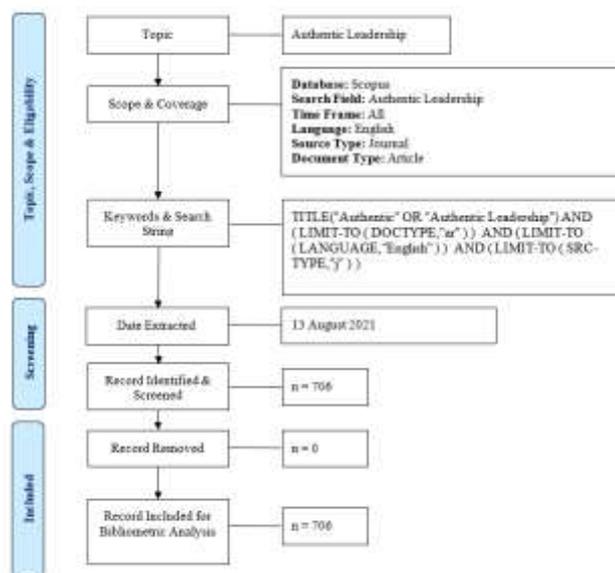


Fig. 1. Flow diagram of the search strategy

## RESULTS

This section discusses the findings of the bibliometric analysis on the following topics: (a) how authentic leadership research has evolved and been distributed, (b) what key topic areas have been discussed in authentic leadership research, and (c) who the major players in authentic leadership research are and how they have collaborated.

This study examined the following data to answer the question of the evolution of authentic leadership research and trends in its dissemination: (a) number of publications by year, (b) source title, (c) source and document type, and (d) document language.

### A. Evolution and Dissemination of Authentic Leadership Research

#### Publications by Year

Table 1 provides annual authentic leadership research publishing statistics from 1997 to 2021, indicating an upward trend in the number of publications.

Table 1: Publications by Year

Year	Number of Document	Percentage (%)
2021	89	12.61%
2020	100	14.16%
2019	75	10.62%
2018	79	11.19%
2017	71	10.06%
2016	59	8.36%
2015	29	4.11%
2014	42	5.95%
2013	43	6.09%
2012	26	3.68%
2011	19	2.69%
2010	14	1.98%
2009	17	2.41%
2008	7	0.99%
2007	6	0.85%
2006	10	1.42%
2005	11	1.56%
2004	1	0.14%
2003	2	0.28%
2002	1	0.14%
2001	2	0.28%
1999	1	0.14%
1997	2	0.28%

Only about 20 documents on authentic leadership were documented in the Scopus database from 1997 to 2011. Surprisingly, the number of documents released on authentic leadership increased dramatically starting in 2013, with 43 documents published that year. From 2013 to 2020, the number gradually increased, indicating a growing interest in authentic leadership research.

▪ **Sources and document types**

By examining the data based on document source categories, the researchers were able to discover where real leadership materials had been published. Table 2 reveals that journals were the most popular source, accounting for 620 (87.82%) of all submissions, followed by books (n = 59; 8.36%) with a huge difference that is 79.46%. The least common document category was trade journals, which were usually meant for a specific industry, trade, or type of business and usually published in the form of a magazine periodical with the topical subject (n = 1; 0.14%).

Table 2: Sources for Authentic Leadership Research

Source Type	Number of Document	Percentage (%)
Journal	620	87.82%
Book	59	8.36%
Conference Proceeding	21	2.97%
Book Series	5	0.71%
Trade Journal	1	0.14%

The data was also analyzed into document types. The Scopus database focuses on primary document types from serial publications, implying that the author is also the researcher responsible for the findings published [18]. As a result of our study, we discovered the number of researchers working on authentic leadership research and their publications.

As shown in the Table 3, 80.45% of the total publications came from articles. This was followed by Book Chapter that is 52 (7.37%), documents presented at a conference or symposium (n = 27; 3.82%) and review paper with total publication of 25 that is 3.54%. Other sorts of documents, such as editorials, erratum, notes, books, and letters, each accounted for less than 2% of the total publications.

Table 3: Document Types for Authentic Leadership Research

Document Type	Number of Document	Percentage (%)
Article	568	80.45%
Book Chapter	52	7.37%
Conference Paper	27	3.82%
Review	25	3.54%
Editorial	9	1.27%
Erratum	7	0.99%
Note	7	0.99%
Book	6	0.85%
Letter	2	0.28%
Total	709	100.00

▪ **Source titles**

The most publications on authentic leadership were contributed by the Journal Leadership Quarterly (n = 31). This was followed by the Leadership and Organization Development Journal (n = 29) and Authentic Leadership Clashes Convergences and Coalescences (n = 19), Journal of Nursing Management (n = 17), and followed by Leadership (n = 15). The rest are below 15 number of publications (Table 4).

Table 4: Sources for Authentic Leadership Research

Source Title	Number of Document	Percentage (%)
Leadership Quarterly	31	4.39%
Leadership And Organization Dev. Journal	29	4.11%
Authentic Leadership Clashes Convergences and Coalescences	19	2.69%
Journal Of Nursing Management	17	2.41%
Leadership	15	2.12%
Journal Of Business Ethics	12	1.70%
Advances In Dev. Human Resources	10	1.42%
Frontiers In Psychology	10	1.42%
Journal Of Leadership and Org. Studies	10	1.42%
Edu. Management Admin. and Leadership	9	1.27%
Journal Of Nursing Administration	9	1.27%
Journal Of Leadership Studies	8	1.13%
Sustainability Switzerland	8	1.13%
Human Resource Management Int. Digest	7	0.99%
Journal Of Management	7	0.99%
Leadership In Health Services	7	0.99%
Current Psychology	5	0.71%
Int. Journal of Educational Management	5	0.71%
Int. Journal of Leadership in Education	5	0.71%
AACN Advanced Critical Care	4	0.57%
Cogent Business and Management	4	0.57%

▪ **Languages Used in Documents**

Table 5 shows that English was the most widely used language, accounting for 96.78 percent of the 709 authentic leadership publications. Spanish was the second most popular language, accounting for about 0.98 percent of all responses. The remaining materials were published in six different languages, namely Korean, Portuguese, German, Japanese, Polish and Turkish. While publications on authentic leadership appeared in languages other than English, they accounted for only a small percentage.

Table 5: Languages Used for Authentic Leadership Research

Language	Number of Document	Percentage (%)
English	691	96.78%
Spanish	7	0.98%
Korean	6	0.84%
Portuguese	5	0.70%
German	2	0.28%
Japanese	1	0.14%
Polish	1	0.14%
Turkish	1	0.14%

B. *Key Areas of Authentic Leadership Research*

The key subject areas of authentic leadership research were analyzed in terms of (a) main subject area, and (b) keyword frequency.

▪ **Subject area**

The materials were classified in this study based on their subject areas, as shown in Table 6. According to the statistics, authentic leadership research has evolved in a range of subject areas. Nearly 58.36 percent of studies considering authentic leadership (n = 412) were in the field of Business, Management, and Accounting, followed by a significant number of publications in the Social Sciences (n = 243; 34.42%). This is followed by Psychology with 137 publications (19.41%). The subject areas of Economics, Econometrics and Finance, Nursing, Arts and Humanities and the rest of the field each accounted for less than 100 documents on authentic leadership.

Table 6: Subject Area for Authentic Leadership Research

Subject Area	Number of Document	Percentage (%)
Business, Management and Accounting	412	58.36%
Social Sciences	243	34.42%
Psychology	137	19.41%
Economics, Econometrics and Finance	89	12.61%
Nursing	76	10.76%
Arts and Humanities	50	7.08%
Medicine	48	6.80%
Decision Sciences	37	5.24%
Engineering	28	3.97%
Environmental Science	18	2.55%
Computer Science	14	1.98%
Energy	11	1.56%
Health Professions	7	0.99%
Mathematics	5	0.71%
Pharmacology, Toxicology and Pharmaceutics	4	0.57%
Multidisciplinary	3	0.42%
Physics and Astronomy	3	0.42%
Agricultural and Biological Sciences	2	0.28%
Earth and Planetary Sciences	2	0.28%
Neuroscience	2	0.28%
Biochemistry, Genetics and Molecular Bio.	1	0.14%
Materials Science	1	0.14%

**Frequency of Keywords**

Fig. 2 shows a network visualisation of the author keywords, each of which had at least 10 occurrences. To map authors' keywords, researchers utilised VOSviewer, a software tool for creating and displaying bibliometric networks. The colour of the connecting lines, the size of the circles, the font size, and the thickness of the connecting lines all show associations with other keywords. Keywords of the same colour, for example, were frequently grouped together [22]. So, in this study, Authentic Leadership, Authentic, Leadership development, values and identity and values suggesting that these keywords were closely related and usually occurred together.

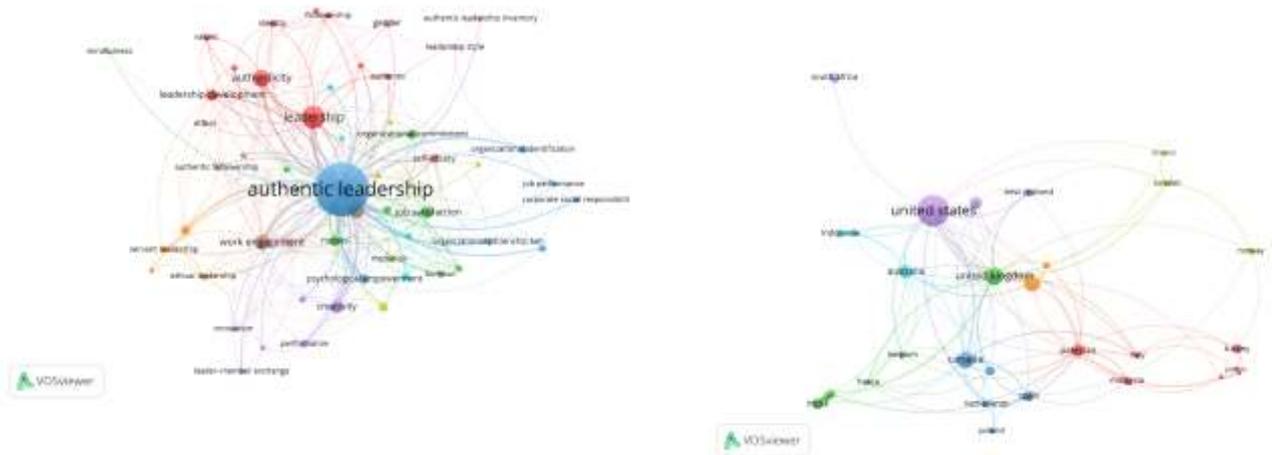


Fig. 2: Network visualization map of author keywords

The most commonly used keywords in authentic leadership studies are summarised in Table 7. The crucial keywords appearing more than 100 times were (a) authentic leadership (b) leadership and (c) human. These keywords were clustered mainly around art and humanities field.

Table 7: Frequently Used Keywords for Authentic Leadership Research

Keywords	Number of Document	Percentage (%)
Authentic Leadership	423	59.92%
Leadership	209	29.60%
Human	122	17.28%
Humans	79	11.19%
Article	71	10.06%
Adult	59	8.36%
Female	54	7.65%
Male	54	7.65%
Job Satisfaction	47	6.66%
Authenticity	46	6.52%
Psychological Capital	39	5.52%
Questionnaire	39	5.52%
Work Engagement	35	4.96%
Psychology	33	4.67%
Workplace	31	4.39%
Cross-sectional Study	30	4.25%

C. *Major Players and Collaboration in AL Research*

The characteristics of scientific collaborations on authentic leadership research were explored in this study by examining (a) the countries that contributed the most, (b) the primary institutions involved in authentic leadership research, (c) authorship analysis, and (d) citation analysis.

▪ **Countries contributing most to Authentic Leadership Research**

The visual (Fig. 3) shows the countries from where most authentic leadership research originated. The United States (29.032%) had the leading position, followed by Canada (8.78%) and The United Kingdom (8.78%). The remaining writers' country affiliations accounted for less than 8% of the total and were dispersed across the globe - China, Australia, Pakistan, South Korea, India, Spain, France, Malaysia, Italy, Brazil, Indonesia, and many other countries. Clearly, authentic leadership play an important role in a wide range of geographic areas.

▪ **Main institutions Involved in Authentic Leadership Research**

The institutions that produced the majority of the authentic leadership publications are listed in Table 8. The University of Western Ontario (n = 29) contributed the most to publications on authentic leadership out of the 709 documents. This was then followed by Universidad Nacional de Educacion a Distancia (n=14), Texas Tech University (n = 11), University of Nebraska-Lincoln (n=10) and Polytechnic Institute of Leiria (n=10). The other institutions contributed less than 10 documents associated with authentic leadership.

Table 8: Main Institutions Contributing to Authentic Leadership Research

Institution	Number of Document	Percentage (%)
The University of Western Ontario	29	4.11%
Universidad Nacional de Educacion a Distancia	14	1.98%
Texas Tech University	11	1.56%
University of Nebraska–Lincoln	10	1.42%
Polytechnic Institute of Leiria	10	1.42%
University of Washington	8	1.13%
Deakin University	7	0.99%
Bar-Ilan University	6	0.85%
Arizona State University	6	0.85%
Zhejiang University	6	0.85%
College of Business	6	0.85%
Ludwig-Maximilians-Universität München	6	0.85%
Lunds Universitet	6	0.85%
School of Technology and Management	6	0.85%
Cranfield School of Management	6	0.85%
Lancaster University Management School	6	0.85%
The University of Auckland	5	0.71%

Universidade de São Paulo	5	0.71%
Prince Sultan University	5	0.71%
Texas A&M University	5	0.71%
Instituto Universitário de Lisboa ISCTE-IUL	5	0.71%

■ **Most Productive Author**

Table 9 lists the most productive authors who have contributed to authentic leadership research. The authors had the most authentic leadership articles with 14 publications, namely Avolio, and Gardner, with 13 publications. The third most productive authors publishing on Authentic Leadership were Laschinger, Walumbwa, and Wong (10 publications). All three of the most productive authors in the study of authentic leadership originated from European countries.

Table 9: Most Productive Author for Authentic Leadership Research

Author Name	Number of Document	Percentage (%)
Avolio, B.J.	14	1.98%
Gardner, W.L.	13	1.84%
Laschinger, H.K.S.	10	1.42%
Walumbwa, F.O.	10	1.42%
Wong, C.A.	10	1.42%
Moriano, J.A.	8	1.13%
Molero, F.	7	0.99%
Ribeiro, N.	6	0.85%
Shapira-Lishchinsky, O.	6	0.85%
Begley, P.T.	5	0.71%
Braun, S.	5	0.71%
Farid, T.	5	0.71%
Hannah, S.T.	5	0.71%
Iqbal, S.	5	0.71%
Iszatt-White, M.	5	0.71%
Ma, J.	5	0.71%
Alvesson, M.	4	0.57%
Bernardes, A.	4	0.57%
Caza, A.	4	0.57%
Dhar, R.L.	4	0.57%
Fida, R.	4	0.57%

■ **Citation analysis**

Table 10 shows the most cited article and authors. The article written by [7] was the most highly cited article, with 1561 citations. The title of the article is “Authentic leadership development: Getting to the root of positive forms of leadership”. The next author is [9] with 1180 citations in “Authentic leadership: Development and validation of a theory-based measure”. The least is [6] with only 267 total of citation with article entitled “Authentic leadership promoting employees' psychological capital and creativity”.

Table 10: Most Productive Author for Authentic Leadership Research

No.	Authors	Title	Year	TC	CPY
1	Avolio & Gardner	Authentic leadership development: Getting to the root of positive forms of leadership	2005	1561	97.56
2	Walumbwa, Avolio, Gardner, Wernsing, & Peterson	Authentic leadership: Development and validation of a theory-based measure	2008	1180	90.77
3	Bass, & Steidlmeier	Ethics, character, and authentic transformational leadership behavior	1999	1129	51.32
4	Ilies, Morgeson, & Nahrgang	Authentic leadership and eudaemonic well-being: Understanding leader-follower outcomes	2005	571	35.69
5	Gardner, Cogliser, Davis, & Dickens	Authentic leadership: A review of the literature and research agenda	2011	479	47.9
6	Shamir, & Eilam	"What's your story?" A life-stories approach to authentic leadership development	2005	458	28.63

7	Hoch, Bommer, Dulebohn, & Wu	Do Ethical, Authentic, and Servant Leadership Explain Variance Above and Beyond Transformational Leadership? A Meta-Analysis	2018	338	112.67
8	Eagly	Achieving relational authenticity in leadership: Does gender matter?	2005	277	17.31
9	May, Chan, Hodges, & Avolio	Developing the moral component of authentic leadership	2003	277	15.39
10	Rego, Sousa, Marques, & Cunha	Authentic leadership promoting employees' psychological capital and creativity	2012	267	29.67

Notes. TC=total citations; CPY=citations per year

## DISCUSSION

The first question of the study was on how authentic leadership research has evolved and been distributed. In order to access the productivity of research and publications in a particular research field, [13] suggested on the use a bibliometric analysis. As a result, the focus of this study is on authentic leadership papers found in the Scopus database. A specific search query was utilized to find 706 documents from the declared database in this study. In the year 2013, 43 documents were published. From 2013 to 2020, the number increased marginally, indicating a growing interest in real leadership. More than 80% of documents are published as journal articles, compared to other categories of publications. However, the majority of publications are written in English. The greatest number of publications on authentic leadership came from the journal *Leadership Quarterly*.

The second research objective was to determine which significant issue areas had been explored in authentic leadership research. More than 50% of studies came from the area of Business, Management, and Accounting with 412 documents, followed by Social Sciences with 243 documents. Because traits like integrity [20], [11], and [8] and trust [3] and [9] are theoretically linked to the concept of authenticity in authentic leadership, it is not surprising that more studies were conducted in those fields. This demonstrates that increased attention is placed on authentic leadership research in the realm of Social Sciences than the Science and Technology field. While for the keyword used frequently in authentic leadership research were 'authentic leadership', 'leadership', and 'human' with more than 100 documents. The terms or keywords used in searching the related article is incompletely adequate for finding. Future research should try to diversify the search using different term.

The third research question focuses on the key participants in authentic leadership research and how they have partnered to perform authentic leadership research. The United States of America contributed the most publications of authentic leadership research. While the main institution which had the highest publication was The University of Western Ontario ( $n=29$ ). The research on authentic leadership mostly came from the Western countries and need to be explored more in the Eastern countries. Regarding the most productive author with 14 publications was Avolio. The article "Authentic leadership development: Getting to the root of positive forms of leadership" was cited the most in regard with the research on authentic leadership.

There are a few limitations to this bibliometric study. To begin with, the data presented is confined to the Scopus database and the keywords used in document titles. Despite the fact that Scopus is one of the most extensive databases for academic research, it does not contain all published sources [22], and [1]. Future study could make advantage of more databases, such as Web of Science, Google Scholar, Dimensions, and others. Bringing all of these databases together can help produce exciting and valuable results. Second, the data in this study were from 1997 to 2021, and new studies are being published almost every day. Third, the citation count applied in assessing the research impact may not directly mirror the quality of each study [18] and [19].

Despite its limitations, this research adds to a better knowledge of current trends in authentic leadership research and publishing. Bibliometric methods are used to enhance and complement earlier findings on authentic leadership literature. The current study uncovers a number of fascinating findings that demonstrate the growing importance of authentic leadership in the educational environment around the world, as well as its distribution, and the need for future research that involves collaboration across regions and fields. More studies are needed to examine and help close the education gap that may exist in the context of developing authentic leadership.

## CONCLUSION

This study review 706 articles related with authentic leadership. Papers were extracted by utilizing the PoP Software. A total number of 706 article were obtained after the screening process which only included significant with authentic leadership. The research on authentic leadership experienced an increase of publication by year. According to the findings, there is still a scarcity of related research on authentic leadership in the educational area when compared to other fields. Therefore, researchers and practitioners should give more attention to developing and improving the research on authentic leadership.

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