

Mapping the field of Islamic banking and finance education: A bibliometric analysis and future research agenda

Rofiul Wahyudi^{1,2}, Lina Handayani³, Zalik Nuryana⁴, Riduwan Riduwan¹

¹Department of Islamic Banking, Faculty of Islamic Studies, Universitas Ahmad Dahlan, Yogyakarta, Indonesia

²Department of Business Administration, Faculty of Technology and Business Management, Universiti Tun Hussein Onn Malaysia, Parit Raja, Malaysia

³Department of Public Health, Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, Indonesia

⁴Department of Islamic Education, Faculty of Islamic Studies, Universitas Ahmad Dahlan, Yogyakarta, Indonesia

Article Info

Article history:

Received May 13, 2023

Revised Sep 29, 2023

Accepted Oct 09, 2023

Keywords:

Bibliometric

Co-citation analysis

Co-word analysis

Islamic banking education

Islamic finance education

ABSTRACT

This article examined trends in Islamic education and finance publications using bibliometric analysis. The authors used co-citation and co-word analysis to examine 449 Islamic education and finance studies from Scopus database. In the co-citation analysis, 10 themes in Islamic education and finance were identified. After that, co-word analysis is used to understand and identify each research theme's potential future research directions. The results showed that per year the average publication of articles was 2.65. There has been extensive research on this topic in the United States (US) and the United Kingdom (UK), and the most popped-up keywords are 'education', 'finance education', 'banking education' and very limited 'Islamic finance education'. Further research can be developed using Islamic jurisprudence education, Islamic insurance education, Islamic capital market education, *zakat* education and *waqf* as keywords. In addition, the study offers a visualization map of theme patterns for future studies to create educational fields for Islamic banking and finance education, particularly in Muslim-majority nations like Indonesia, Malaysia, and the Middle East. This research contributes as a foundation for further research in enriching and developing knowledge about Islamic education and finance, especially in majority countries.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Rofiul Wahyudi

Department of Islamic Banking, Faculty of Islamic Studies, Universitas Ahmad Dahlan

Ahmad Yani Street, Tamanan, Banguntapan, Bantul, Yogyakarta, 55166, Indonesia

Email: rofiul.wahyudi@pbs.uad.ac.id

1. INTRODUCTION

One of the sectors that has experienced tremendous expansion over the past few decades is the Islamic banking and finance sector [1]. This is especially noticeable on a global scale, where the sector has one of the fastest rates of growth [2]. Its growth was influenced by various factors, such as the increase in the number of Islamic banks and financial institutions established in various countries [3]. In recent years, Islamic banking and finance (IBF) is one of the fastest-growing businesses in both Muslim countries and other world countries [4], [5]. In line with that, various countries began to offer study and education programs in the field of Islamic banking and finance, as well as developing curricula and training programs in the field of IBF [6], both at the undergraduate and postgraduate levels such as several Asian regions such as Indonesia, Malaysia and the Middle East, European regions such as the United States (US) and United Kingdom (UK). The role of study and education programs in the field of IBF is essential to ensure that the

workforce in the IBF industry has the necessary knowledge and skills to manage finance and investments in accordance with *shariah* (the holy laws of Islam that cover all parts of a Muslim's life) principles [7].

Along with that growth, many researchers have been interested in conducting studies on various aspects in the field of IBF. IBF have increasingly become a popular area of interest among economists and educators for more than three decades [8]. Thus, research in this field will continue to develop in the future. Previous research analyzed bibliometric approaches with the theme of health education [9]–[12], theme with mathematics education [13], [14], artificial intelligence in education [15], and robotics in education [16]. In addition, research has explored the use of technology in higher education [17], big data in education [18], distance education [19], e-learning in higher education [20], and technology in physical education [21]. Furthermore, active methodologies in education [22], highlight innovative teaching approaches, entrepreneurship education [23], promotes business skills development, trends in autism research in the field of education [24], shed light on evolving research directions, and urban education [25] addresses educational challenges in urban settings.

In addition, research has explored moral education [26], curriculum education [27], self-esteem-based curriculum [28], developing self-esteem-based curriculum [29], and science, technology, engineering, and mathematics (STEM) education [29]. Further research exploring the themes of the evolution of leadership [30], the term equity in education [31], educational administration [32], shadow education [33], initial teacher education for inclusive [34], virtual and remote labs in education [35], and language education [36]. Previous studies have also explored features of educational methods such as gamification in education [37], and the metaverse in education [38]. It is also interesting that several studies discuss education during the COVID-19 pandemic [39]–[42]. Nonetheless, there is a lack of research analyzing the research structure of IBF using bibliometric analysis.

Bibliometric analysis is an innovative methodology that aims to quantitatively analyze a collection of publications or scientific papers, such as journals, books, conference papers, and so on. Through a bibliometric network analysis can help in identifying collaborations between authors or institutions, relationships between different research topics, identifying groups of researchers working on the same topic, as well as finding possible bridges between different research topics. Therefore, the current study fills this gap and uses bibliometric networks to investigate scientific publications of IBF education. The aim of this study is to analyze the bibliometrics of all publications in Scopus on IBF education. Researchers integrate two bibliometric method techniques, including co-citation and co-word analysis, to develop scientific maps while providing insight into the evolution of Islamic banking education literature and *zakat* (a donation that Muslims regard as a mandatory act within their faith). The following are the study's particular goals: i) Conducting descriptive statistics on IBF education publications; ii) Using co-word analysis to foretell future study; and iii) Exploring the structure of IBF education.

2. RESEARCH METHOD

Researchers used VosViewer software and statistical computing R version 4.1 to develop citation analysis and joint analysis. Based on the quantity of articles and citations, significant authors are determined. Authorship concentration is evaluated using Lotka's law [43]. The most frequently cited articles in IBF educational research are found using citation analysis. For sequential IBF educational citations (i.e., historiographic networks), keyword common events, conceptual structure, and thematic material, graphical network maps are also created using VosViewer software and R-statistical computing. These techniques ensure the completion of a thorough assessment of IBF educational research. The most popular software tools for creating graphical maps for objects of interest are VosViewer and R statistical computations. More visualization of the literature on IBF education is possible using bibliometric analysis, which also allows for the observation of research theme trends and co-citation and co-word analysis units.

2.1. Data collection and screening

The Scopus database allows searches of collections of English-language articles, books, editorial content, book chapters, notes, and letters. The keyword [(TITLE-ABS-KEY ("Islamic banking education") OR TITLE-ABS-KEY ("Finance education") OR TITLE-ABS-KEY ("banking education"))] in the Scopus database. The study examined publications published before December 2022. An initial search yielded 449 publications. All articles' titles and abstracts were thoroughly screened for keyword relevancy [(TITLE-ABS-KEY ("Islamic banking education") OR TITLE-ABS-KEY ("Finance education") OR TITLE-ABS-KEY ("banking education"))], or these publications were not included in the sample, either. As a consequence, 449 publications altogether were kept for the following round.

2.2. Analysing the data

There are three steps in the data analysis process, they are: i) Descriptive statistics are offered to demonstrate the following information (a) number of pertinent papers published annually, (b) geographic distribution of selected publications, (c) research areas in IBF education, and (d) distribution of publications by journals; ii) Using VosViewer software, a co-citation network was created and shown for the topic of IBF. In addition, it was decided that the study theme would examine the research design in IBF education; and iii) All the keywords from all the chosen publications are categorized into a co-citation research theme using co-word analysis. For recommendations of potential future research directions on IBF education will be visualized by VosViewer software. The author bases his or her suggestions for the direction or focus of additional research on the appearance of new keywords.

3. RESULTS AND DISCUSSION

The author bases his or her suggestions for the direction or focus of additional research on the appearance of new keywords. In the following section, this article delves into the results and discussions surrounding key aspects of the research landscape in IBF education. Bibliometric analysis is a method used to analyze publishing trends and growth in a particular field of study. In the case of Islamic finance, bibliometric analysis has been used to examine the current status of literature, publishing trends, top countries, authors, organizations, authorship patterns, keywords, and articles with the highest citations [44]–[47]. Recent studies used bibliometric analysis to examine the future trends of Islamic finance in the era of financial technology [48]–[50]. However, there has been no specific bibliometric article on IBF education, therefore, this article seeks to fill these gaps.

3.1. Year of publication

The annual trend in the number of publications from 1972 to 2022 is shown in Figure 1. Since 1972, there has not been a significant growth in the number of "Islamic banking education", "finance education," and "banking education" materials issued. The average number of publications per year is 2.65, indicating that the academic community pays little attention to Islamic economics and financial education.

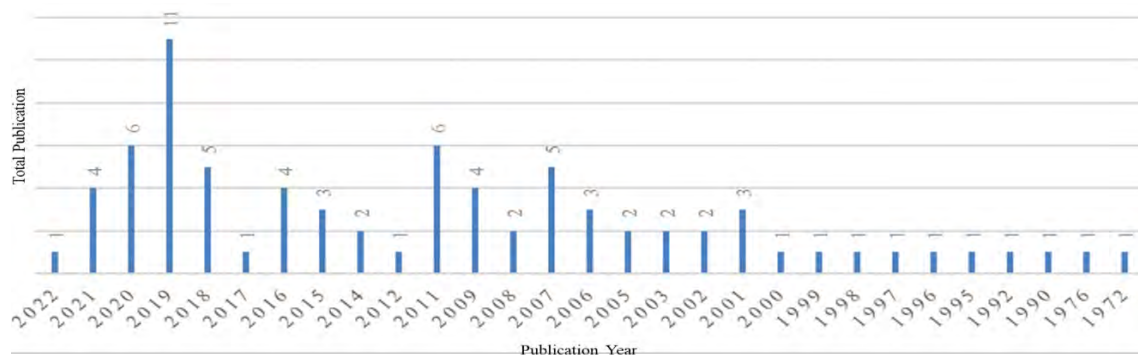


Figure 1. Trend in total publications from 1972 to 2022

3.2. Country

The US and the UK are among the nations with an abundance of research on Islamic economics and finance education, according to the publication's geographic area statistics as seen in Table 1. This is understandable given that these two nations are the leaders in developing Islamic economics and finance education. The remaining nations are largely in China, Australia, and India. Asia only has Malaysia and Indonesia on this list. Additionally, the South African nation noted that given the increasing diversity of Islamic economic and financial education, future studies should concentrate on nations on these two continents.

Table 1 presents a ranking of countries based on the number of publications related to research on Islamic economics and finance education. The US leads the list with 107 publications, indicating a significant focus on this subject within academic circles in the country. Following closely behind are the UK with 43 publications and India with 41, highlighting a substantial presence of research activity in these countries as well. China, Australia, Turkey, Canada, and Malaysia also make notable contributions to the field with

varying numbers of publications, ranging from 25 to 13. Indonesia and South Africa are tied at the 10th position with 11 publications each, underlining the global interest in the study of Islamic economics and finance education across diverse geographic regions. Table 1 provides insights into the distribution of research efforts in this specialized area of study.

Table 1. Countries where research on Islamic economics and finance education has been published

Rank	Country	Total publications
1	United States	107
2	United Kingdom	43
3	India	41
4	China	25
5	Australia	22
6	Turkey	21
7	Canada	18
8	Malaysia	13
9	Indonesian	11
10	South Africa	11

3.3. Journal

Learning is very important when conducting a literature review [51]. Additionally, steering to relevant journals aids people with an interest in cutting down on search time and concentrating more on well-known, high-ranking journals. The periodicals with the most articles on Islamic finance and economics are shown in Table 2. The table presents a distribution of publications based on the journals in which they have been published. Table 2 ranks journals by the number of publications they have received. At the top of the list, both International Conference Proceeding Series (ICPS) and Lecture Notes in Networks and Systems have the highest number of publications, with seven each. Lecture Notes in Computer Science follows closely with six publications. The list continues with various journals, such as Accounting Education and Journal of Education for Business, each having five publications, and several others with decreasing publication counts down to the 10th-ranked Journal of Higher Education Theory and Practice, which has three publications. Table 2 provides a quick overview of where the research has been published, offering insights into the distribution of scholarly output across different journals in the given field.

Table 2. Publication distribution according to journal

Rank	Journal	Total publications
1	International Conference Proceeding Series (ICPS)	7
2	Lecture Notes in Networks and Systems	7
3	Lecture Notes in Computer Science	6
4	Accounting Education	5
5	Journal of Education for Business	5
6	Human Resources for Health	4
7	Educational Philosophy and Theory	3
8	Journal for Critical Education Policy Studies	3
9	Journal of Financial Counseling and Planning	3
10	Journal of Higher Education Theory and Practice	3

3.4. Research area

Islamic finance and economics education is a subject that focuses on many different areas, including economics, banking, Islamic banking, higher education, and financial education. Table 3 lists the topics of study for Islamic finance and economics. Scopus database ranks 1-20 contains 38 educational publications, 22 on financial education, 19 on financial issues, 15 on economic and banking education, learning, blockchain, financial education and higher education and other topics.

According to the quantity of publications in each study area. Table 3 ranks them in the subject of Islamic economics and finance education. The research area "Education" tops the list with 38 publications, indicating a significant focus on educational aspects within this field. Following closely are "Finance Education" with 22 publications and "Finance" with 19 publications, highlighting the importance of financial education and finance-related topics. The "Banking Education" and "Economics" tie with 15 publications each, emphasizing the attention given to banking and economic subjects in Islamic finance education research. This table also shows that various other areas such as "Students," "Teaching," "Blockchain," and "Financial Education" have received substantial research attention. Overall, this table provides an overview

of the diverse research landscape within Islamic economics and finance education, reflecting the multifaceted nature of this academic discipline.

Table 3. Research areas in Islamic economics and finance education

Rank	Research area	Total	Rank	Research area	Total
1	Education	38	11	Financial literacy	10
2	Finance education	22	12	Developing countries	9
3	Finance	19	13	Developing country	7
4	Banking education	15	14	Learning	7
5	Economics	15	15	Personal finance	7
6	Students	15	16	Commerce	5
7	Teaching	13	17	Cryptography	5
8	Blockchain	13	18	Human capital	5
9	Financial education	12	19	Human resource management	5
10	Higher education	11	20	Islamic finance education	5

3.5. The co-citation networks

Figure 2 depicts the co-citation of studies on Islamic economic and financial education. The number of standard citations the article receives is represented by the bubble size, and the strength of the citation link is indicated by the line thickness. The relationship of co-citation is determined by the proximity and separation of the two documents. Every hue corresponds to a cluster that is related to the publication. Each bubble bears the last name of the author, the year of publication, and the journal's abbreviation. The publishing of Islamic economic and financial education creates five topics, according to the findings of the co-citation study as can be seen in Figure 1. To determine the key findings presented by each study depicted in Figure 3, the author carefully reviews the primary studies in each of these categories, constructing a comprehensive and insightful phrase network that reveals the interconnectedness and thematic richness of the research in this field.

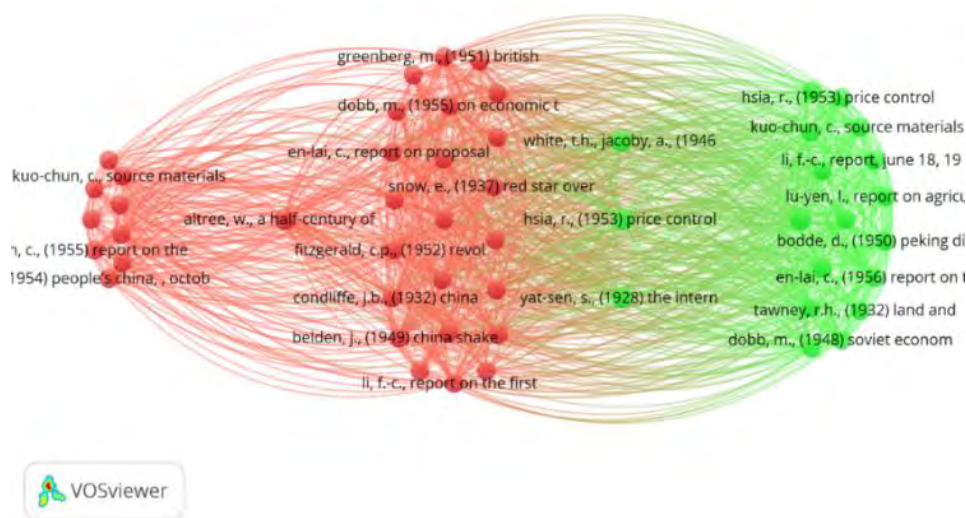


Figure 2. Visualised co-citation network

3.6. Keyword analysis and co-word networks

There were 449 documents with 2,704 keywords from the years 1972 to 2022 reviewed in order to examine possible research topics in Islamic economics and finance education. Co-word networks are created using the VOSviewer program [52]. The co-citation analysis was then used by the authors to identify keywords and group themes. Further study directions are based on the frequency of keywords during the observation period and the emergence of new keywords. Figure 3 shows a network of keywords from 1972 to 2022 with the minimum number of keyword occurrences being three. The size of the bubble indicates how frequently a term occurs, and the thickness of the line between two keywords indicates how frequently a term occurs in relation to another.

In the first topic, terms like "artificial intelligence," "big data," "data mining," "machine learning," and others that were popular throughout this time period can reveal trends in this area of educational study. This implies that the subject matter of the current study is "artificial intelligence education in banks and finance". Additionally, there needs to be greater discussion of "blockchain" and "security" in Islamic economics and finance curricula. The study of Islamic finance and economics in comparison to artificial intelligence education could be a future research area.

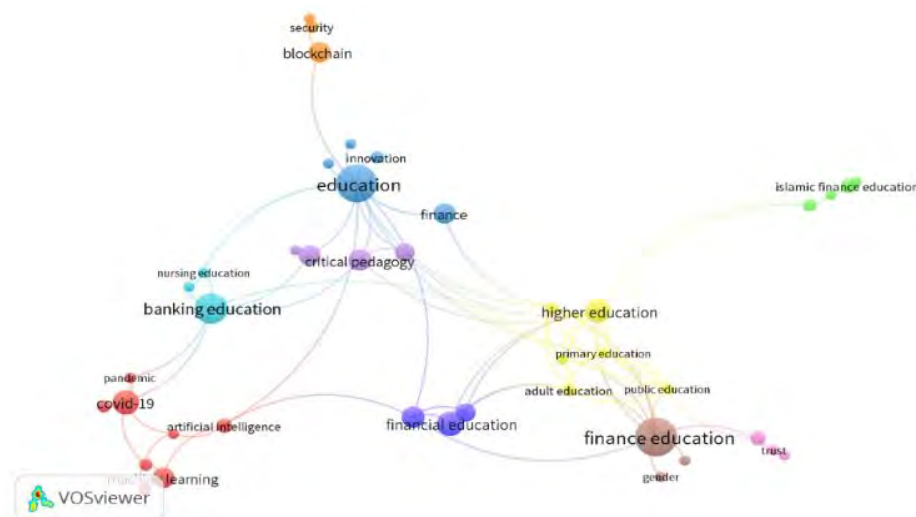


Figure 3. Keyword network

The study of this time period concentrates on topics connected to the "level of education" in the second and third themes. This is indicated by trending keywords that appear in this research theme, such as, adult education, primary education, higher education, public education, vocational education, finance, education, and student. Future research could examine the relationship between educational attainment and knowledge of Islamic finance and economics using both qualitative and quantitative methods. In the literature of Islamic economics and finance education, the 4th theme has undergone the most development. The theme of this research is emerging keywords like, Islamic banking, Islamic finance education and Malaysia. Studies in this group focus on shedding light on themes directly related to Islamic banking and finance education. This is clearly a challenge and research opportunity in the future.

The 5th and 6th themes, keywords such as social justice, banking education and others were the focus of the researchers. This enables potential opportunities for future research themes by linking with Islamic banking and finance education. In the 7th and 8th themes keywords that often appear such as entrepreneurship education, finance education, and blockchain. This suggests that research opportunities in Islamic banking and finance need to be highlighted in this field. In the 9th and 10th themes, keywords such as financial education, financial literacy, personal finance and human capital became the focus of the research theme. Finally, further research can be developed using Islamic *muamalah* (commercial and civil acts or dealings under Islamic law) education, Islamic insurance education, Islamic capital market education, *zakat* education and *waqf* (Islamic endowment of property to be held in trust and used for a charitable or religious purpose) as keywords. Furthermore, the study provides a visualization map of thematic trends for future research to develop educational areas on Islamic banking and finance education, particularly in Muslim-majority countries such as Indonesia, Malaysia and the Middle East.

4. CONCLUSION

The following can be concluded about the literature on IBF education based on the author's keyword analysis: i) There are 2.65 papers published on average each year; ii) The US and UK are the two nations that have conducted the most research on this subject; and iii) The keywords "education," "finance," and "banking," as well as a relatively small number of others, are the ones that appear most frequently. Due to the author's subjective judgment, theme classification, and naming of this theme may be biased. Additionally, because there are not many keywords in the article, the keywords might not accurately reflect

the content. Therefore, it is possible that some terms are omitted. Future studies could combine different methodologies to conduct a theoretical analysis of Islamic money and education. The article contribution lies in shedding light on the state of the literature surrounding IBF education through a meticulous keyword analysis. By revealing that the average annual publication rate is 2.65 articles, this article offers a quantitative perspective on the field's scholarly output. The future research to employ a multifaceted approach for a more comprehensive theoretical review demonstrates a forward-looking perspective and an aspiration for enhanced understanding in the realm of Islamic education and finance.





REFERENCES

- [1] F. Saâdaoui and M. Khalfi, "Revisiting Islamic banking efficiency using multivariate adaptive regression splines," *Annals of Operations Research*, 2022, doi: 10.1007/s10479-022-04545-2.
- [2] S. A. Naz and S. Gulzar, "Impact of Islamic finance on economic growth: an empirical analysis of Muslim countries," *The Singapore Economic Review*, vol. 67, no. 01, pp. 245–265, Mar. 2022, doi: 10.1142/S0217590819420062.
- [3] M. Haseeb, "Emerging Issues in Islamic Banking & Finance: Challenges and Solutions," *Academy of Accounting and Financial Studies Journal*, vol. 22, p. 3685, 2018.
- [4] S. Rahayu, H. Hati, S. S. Wibowo, and A. Safira, "The antecedents of Muslim customers' intention to invest in an Islamic bank's term deposits: evidence from a Muslim majority country," *Journal of Islamic Marketing*, vol. 12, no. 7, pp. 1363–1384, 2021, doi: 10.1108/JIMA-01-2020-0007.
- [5] A. Bakhouché, T. El, and M. Alshiab, "Does Islamicity matter for the stability of Islamic banks in dual banking systems?," *Heliyon*, vol. 8, no. December 2021, p. e09245, 2022, doi: 10.1016/j.heliyon.2022.e09245.
- [6] R. Nu'man and S. N. Ali, "Islamic economics and finance education: consensus on reform," *Journal of Islamic Economics Banking and Finance*, vol. 12, no. 3, pp. 75–97, Jul. 2016, doi: 10.12816/0046325.
- [7] R. Muhammad and P. Nugraheni, "Sustainability of Islamic banking human resources through the formulation of an Islamic accounting curriculum for higher education: Indonesian perspective," *SAGE Open*, vol. 12, no. 1, p. 215824402210798, Jan. 2022, doi: 10.1177/21582440221079838.
- [8] K. Saim, "Islamic Banking And Finance Teaching: A Case Of The Faculty Of Economics In International Islamic University Malaysia," *Islam Hukuku Araştırmaları Dergisi*, vol. 16, pp. 299–314, 2010.
- [9] L. A. Maggio, J. A. Costello, C. Norton, E. W. Driessen, and A. R. A. Jr, "Knowledge syntheses in medical education: A bibliometric analysis," *Perspectives on Medical Education*, 2020, doi: 10.1007/s40037-020-00626-9.
- [10] H. B. V. Peter Kokol, Kaija Saranto, "eHealth and health informatics competences based on bibliometrics," *Kybernetes*, vol. 47, no. 5, pp. 1018–1030, 2018, doi: 10.1108/K-09-2017-0338.
- [11] H. Tian and J. Chen, "A bibliometric analysis on global eHealth," *Digital Health*, vol. 8, p. 205520762210913, Jan. 2022, doi: 10.1177/20552076221091352.
- [12] W. M. Sweileh, S. W. Al-Jabi, S. H. Zyoud, and A. F. Sawalha, "Bibliometric analysis of literature in pharmacy education: 2000–2016," *International Journal of Pharmacy Practice*, vol. 26, no. 6, pp. 541–549, Nov. 2018, doi: 10.1111/ijpp.12429.
- [13] Ö. Ali, "Bibliometric analysis of the studies in the field of mathematics education," *Educational Research and Reviews*, vol. 13, no. 22, pp. 723–734, 2018, doi: 10.5897/err2018.3603.
- [14] P. Drijvers, S. Grauwijn, and L. Trouche, "When bibliometrics met mathematics education research: the case of instrumental orchestration," *ZDM*, vol. 52, no. 7, pp. 1455–1469, 2020, doi: 10.1007/s11858-020-01169-3.
- [15] T. Talan and T. Artificial, "Artificial intelligence in education: a bibliometric study," *International Journal of Research in Education and Science (IJRES)*, vol. 7, no. 3, pp. 822–837, 2021, doi: 10.46328/ijres.2409.
- [16] J. López-Belmonte, A. Segura-Robles, A.-J. Moreno-Guerrero, and M.-E. Parra-González, "Robotics in education: a scientific mapping of the literature in web of science," *Electronics*, vol. 10, no. 3, p. 291, Jan. 2021, doi: 10.3390/electronics10030291.
- [17] C. Rodríguez Jiménez, M. Sanz Prieto, and S. Alonso García, "Technology and Higher Education: A Bibliometric Analysis," *Education Sciences*, vol. 9, no. 3, p. 169, Jul. 2019, doi: 10.3390/educsci9030169.
- [18] J.-A. Marín-Marín, J. López-Belmonte, J.-M. Fernández-Campoy, and J.-M. Romero-Rodríguez, "Big data in education. a bibliometric review," *Social Sciences*, vol. 8, no. 8, p. 223, Jul. 2019, doi: 10.3390/socsci8080223.
- [19] M. T. Hebebe, "The Bibliometric Analysis of Studies on Distance Education," *International Journal of Technology in Education*, vol. 4, no. 4, pp. 796–817, 2021, doi: 10.46328/ijte.199.
- [20] Y. Gao, S. L. Wong, M. N. M. Khambari, and N. Noordin, "A Bibliometric Analysis of the Scientific Production of e-Learning in Higher Education (1998-2020)," *International Journal of Information and Education Technology*, vol. 12, no. 5, pp. 390–399, 2022, doi: 10.18178/ijiet.2022.12.5.1632.
- [21] F. Calabuig-Moreno, M. H. González-Serrano, J. Fombona, and M. García-Tascón, "The emergence of technology in physical education: a general bibliometric analysis with a focus on virtual and augmented reality," *Sustainability*, vol. 12, no. 7, p. 2728, Mar. 2020, doi: 10.3390/su12072728.
- [22] A. Segura-robles, M. E. Parra-gonzález, and M. Á. Gallardo-vigil, "Bibliometric and Collaborative Network Analysis on Active Methodologies in Education," *Journal of New Approaches In Educational Research*, vol. 9, no. 2, pp. 259–274, 2020, doi: 10.7821/naer.2020.7.575.
- [23] G. Aparicio, T. Iturralde, and A. Maseda, "Conceptual structure and perspectives on entrepreneurship education research: A bibliometric review," *European Research on Management and Business Economics*, vol. 25, no. 3, pp. 105–113, 2019, doi: 10.1016/j.iedeen.2019.04.003.
- [24] N. Carmona-Serrano, J. López-Belmonte, J.-A. López-Núñez, and A.-J. Moreno-Guerrero, "Trends in autism research in the field of education in web of science: a bibliometric study," *Brain Sciences*, vol. 10, no. 12, p. 1018, Dec. 2020, doi: 10.3390/brainsci10121018.
- [25] J. Chen and M. Chen, "Bibliometric analysis of the papers on urban education," *Library Hi Tech*, vol. 37, no. 4, pp. 894–905, 2019, doi: 10.1108/LHT-01-2019-0009.
- [26] J. Julia, E. Supriatna, I. Isrokatun, I. Aisyah, A. Hakim, and A. A. Odebode, "Moral education (2010-2019): a bibliometric study (Part 2)," *Universal Journal of Educational Research*, vol. 8, no. 7, pp. 2954–2968, Jul. 2020, doi: 10.13189/ujer.2020.080724.
- [27] M. J. Page *et al.*, "PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews," *BMJ*, 2021, doi: 10.1136/bmj.n160.




- [28] Z. Nuryana, W. Xu, and S. Lu, "Developing self-esteem-based curriculum as a foundation for sustainable education: A systematic literature review and bibliometric analysis," *Frontiers in Education*, vol. 8, p. 21, 2023, doi: 10.3389/educ.2023.957801.
- [29] H. L. T. Thu, T. Tran, T. T. T. Phuong, T. L. T. Tuyet, H. Le Huy, and T. V. Thi, "Two decades of STEM Education research in middle school: a bibliometrics analysis in Scopus database (2000–2020)," *Education Sciences*, vol. 11, no. 7, p. 353, Jul. 2021, doi: 10.3390/educsci11070353.
- [30] M. Esen, M. S. Bellibas, and S. Gumus, "The evolution of leadership research in higher education for two decades (1995-2014): a bibliometric and content analysis," *International Journal of Leadership in Education*, vol. 23, no. 3, pp. 259–273, May 2020, doi: 10.1080/13603124.2018.1508753.
- [31] P. J. de los Santos, A.-J. Moreno-Guerrero, J.-A. Marín-Marín, and R. S. Costa, "The term equity in education: a literature review with scientific mapping in web of science," *International Journal of Environmental Research and Public Health*, vol. 17, no. 10, p. 3526, May 2020, doi: 10.3390/ijerph17103526.
- [32] P. Hallinger and J. Kovačević, "A bibliometric review of research on educational administration: science mapping the literature, 1960 to 2018," *Review of Educational Research*, vol. 89, no. 3, pp. 335–369, Jun. 2019, doi: 10.3102/0034654319830380.
- [33] A. Hajar and M. Karakus, "A bibliometric mapping of shadow education research: achievements, limitations, and the future," *Asia Pacific Education Review*, vol. 23, no. 2, pp. 341–359, 2022, doi: 10.1007/s12564-022-09759-4.
- [34] D. M. Cretu, "Initial Teacher Education for Inclusive Education: A Bibliometric Analysis of Educational Research," *Sustainability*, vol. 12, p. 4923, 2020.
- [35] R. Heradio, L. De, D. Galan, F. Javier, E. Herrera-viedma, and S. Dormido, "Computers & Education Virtual and remote labs in education: A bibliometric analysis," *Computers & Education*, vol. 98, pp. 14–38, 2016, doi: 10.1016/j.compedu.2016.03.010.
- [36] Y. Lin and Z. Yu, "A Bibliometric Analysis of Peer Assessment in Online Language Courses," *Languages*, vol. 8, no. 1, p. 47, 2023, doi: 10.3390/languages8010047.
- [37] J. Swacha, "State of research on gamification in education: A bibliometric survey," *Education Sciences*, vol. 11, no. 2, pp. 1–15, 2021, doi: 10.3390/educsci11020069.
- [38] N. Tas and Y. İ. Bolat, "Bibliometric Mapping of Metaverse in Education," *International Journal of Technology in Education*, vol. 5, no. 3, pp. 440–458, 2022, doi: 10.46328/ijte.323.
- [39] E. Elihami, "Bibliometric analysis of islamic education learning loss in the COVID-19 pandemic," *Linguistics and Culture Review*, vol. 5, no. S1, pp. 851–859, 2021, doi: 10.21744/lingcure.v5ns1.1469.
- [40] U. Kaden, "Covid-19 school closure-related changes to the professional life of a k–12 teacher," *Education Sciences*, vol. 10, no. 6, pp. 1–13, 2020, doi: 10.3390/educsci10060165.
- [41] P. du Plessis, "Implications of covid-19 on the management of school financial resources in quintile 5 public schools," *South African Journal of Education*, vol. 40, no. 4, pp. 1–9, 2020, doi: 10.15700/saje.v40n4a2043.
- [42] P. Engzell, A. Frey, and M. D. Verhagen, "Learning loss due to school closures during the COVID-19 pandemic," *Proceedings of the National Academy of Sciences*, vol. 118, no. 17, p. 17, Apr. 2021, doi: 10.1073/pnas.2022376118.
- [43] R. C. Coile, "Lotka's frequency distribution of scientific productivity," *Journal of the American Society for Information Science*, 1977, doi: 10.1002/asi.4630280610.
- [44] B. Tijjani, M. Ashiq, N. Siddique, M. A. Khan, and A. Rasul, "A bibliometric analysis of quality research papers in Islamic finance: evidence from Web of Science," *ISRA International Journal of Islamic Finance*, vol. 13, no. 1, pp. 84–101, Jul. 2021, doi: 10.1108/IJIF-03-2020-0056.
- [45] N. Ismail and S. Aisyah, "Islamic Social Finance: A Bibliometric Analysis," *Global Review of Islamic Economics and Business*, vol. 9, no. 2, p. 019, Mar. 2022, doi: 10.14421/grieb.2021.092-02.
- [46] P. Pietro Biancone, B. Saiti, D. Petricean, and F. Chmet, "The bibliometric analysis of Islamic banking and finance," *Journal of Islamic Accounting and Business Research*, vol. 11, no. 9, pp. 2069–2086, Oct. 2020, doi: 10.1108/JIABR-08-2020-0235.
- [47] M. M. Alshater, M. K. Hassan, A. Khan, and I. Saba, "Influential and intellectual structure of Islamic finance: a bibliometric review," *International Journal of Islamic and Middle Eastern Finance and Management*, vol. 14, no. 2, pp. 339–365, 2021, doi: 10.1108/IMEFM-08-2020-0419.
- [48] M. Özdemir and M. Selçuk, "A bibliometric analysis of the International Journal of Islamic and Middle Eastern Finance and Management," *International Journal of Islamic and Middle Eastern Finance and Management*, vol. 14, no. 4, pp. 767–791, Jul. 2021, doi: 10.1108/IMEFM-06-2020-0277.
- [49] A. As-Salafiyah, Aam, and L. Marlina, "Mapping Research on Islamic Fintech Using Biblioshiny-R," *Journal of Islamic Economic Literatures*, vol. 3, no. 2, Nov. 2022, doi: 10.58968/jiel.v3i2.108.
- [50] H. Qudah, S. Malahim, R. Airout, M. Alomari, A. A. Hamour, and M. Alqudah, "Islamic Finance in the Era of Financial Technology: A Bibliometric Review of Future Trends," *International Journal of Financial Studies*, vol. 11, no. 2, p. 76, Jun. 2023, doi: 10.3390/ijfs11020076.
- [51] H. Snyder, "Literature review as a research methodology: An overview and guidelines," *Journal of Business Research*, vol. 104, no. March, pp. 333–339, 2019, doi: 10.1016/j.jbusres.2019.07.039.
- [52] N. J. van Eck and L. Waltman, *VOSviewer Manual*, Leiden: Univeriteit Leiden, pp. 1–53, 2013.

BIOGRAPHIES OF AUTHORS






Rofiul Wahyudi     is a lecturer at Ahmad Dahlan University, Yogyakarta, Indonesia. He is pursuing his Ph.D. degree at the Faculty of Technology and Business Management, Universiti Tun Hussein Onn Malaysia, Johor, Malaysia. His research interests include Islamic economics, Islamic banking, Islamic finance, and Islamic social finance. He can be contacted at email: rofiul.wahyudi@pbs.uad.






Lina Handayani    is a senior lecturer in the field of health education and promotion at the Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, Indonesia. She has more than 18 years of teaching experience in the university. Her field of specialization, research areas, publication and presentation cover a wide range of health education and promotion related aspects. Among these are breastfeeding promotion and education, health behavior, technology and behavior, and parenting. She can be contacted at email: lina.handayani@ikm.uad.ac.id.



Zalik Nuryana    is an assistant professor at Universitas Ahmad Dahlan Indonesia, Islamic Education Department. He is currently a Ph.D. student in School of Education Science, Nanjing Normal University, China. His areas of interest include curriculum development, teaching method, Islamic education, and online learning. He can be contacted at email: zalik.nuryana@pai.uad.ac.id, zalik@ascee.org, zalik@ieee.org.



Riduwan    is a lecturer at the Islamic Banking Study Program, Faculty of Islamic Religion, Universitas Ahmad Dahlan with expertise in Islamic economics, Islamic bank management, Islamic bank risk management, Islamic microfinance, and Islamic rural banks. He has long and expert experience as a practitioner of Islamic finance. He can be contacted at email: riduwan@pbs.uad.ac.id.