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REVIEW

The Evolution of Islamic Education Research in Indonesia: A Bibliometric Analysis (1990–2025)

Zafrullah Zafrullah [1*] **, *Muhammad Akbar Perdana Putra*** [2] **, *Endang Wati*** [1] **, *Vick Ainun Haq*** [3] **, *Hasan Syukur*** [4] **, *Anugrah Arya Bakti*** [1]

[1] *Department of Educational Research and Evaluation, Universitas Negeri Yogyakarta, Yogyakarta 55281, Indonesia*

[2] *Faculty of Islamic Studies, Universitas Islam Indonesia, Yogyakarta 55584, Indonesia*

[3] *Faculty of Tarbiyah, Institut Agama Islam Faqih Asy'ari, Kediri 64293, Indonesia*

[4] *Faculty of Education, Universitas Bunga Bangsa Cirebon, Cirebon 45153, Indonesia*

ABSTRACT

This study examines the development of Islamic education research in Indonesia through a bibliometric approach, focusing on publication trends, keyword evolution, thematic clustering, and research innovation. Data were collected from the Scopus database and systematically filtered using the PRISMA method, resulting in 250 relevant documents selected from a larger corpus. Bibliometric analysis was conducted using the R Program to explore publication patterns, keyword dynamics, and thematic development over time, while VOSviewer was employed to visualize research clusters and identify emerging topics. Results show significant growth in Islamic education research since 2019, with increasing thematic diversity covering curriculum management, social change, and digital technology integration. The appearance of keywords like "Adversity Quotient" and "Online Learning" indicates a shift toward improving student resilience and adopting tech-based teaching methods. This innovation reflects how current Islamic education research in Indonesia is addressing post-pandemic challenges and accelerating digital transformation by incorporating emotional intelligence and technological skills. These trends align with national education reforms, such as the freedom to learn policy and Deep Learning integration, which promote deep understanding, conceptual mastery, and meaningful learning. The study

*CORRESPONDING AUTHOR:

Zafrullah Zafrullah, Department of Educational Research and Evaluation, Universitas Negeri Yogyakarta, Yogyakarta 55281, Indonesia;
Email: zafrullah.2022@student.uny.ac.id

ARTICLE INFO

Received: 3 September 2025 | Revised: 30 December 2025 | Accepted: 7 January 2026 | Published Online: 14 January 2026
DOI: https://doi.org/10.63385/ipt.v2i1.272

CITATION

Zafrullah, Z., Putra, M.A.P., Wati, E., et al., 2026. The Evolution of Islamic Education Research in Indonesia: A Bibliometric Analysis (1990–2025). Innovations in Pedagogy and Technology. 2(1): 112–126. DOI: https://doi.org/10.63385/ipt.v2i1.272

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highlights the need to develop a deep learning approach that encourages character building, creativity, and resilience through cross-disciplinary efforts, ensuring curricula meet 21st–century learning needs. Future research should aim to combine traditional Islamic values with technological advances using Deep Learning frameworks to boost academic success, character, and creativity, supporting Indonesia's vision of cultivating a globally competitive, adaptable Golden Generation by 2045.

Keywords: Islamic Studies; Islamic Education; Bibliometric Analysis; Biblioshiny Analysis

1. Introduction

Education is the main foundation in shaping human civilization, which is oriented toward national progress and society[1, 2]. Education plays a vital role in improving human resource quality and expanding access to knowledge across diverse communities[3, 4]. Collaboration among government, educational institutions, and society is essential to create a quality and sustainable education system[5]. Education can nurture social awareness and critical thinking that support moral and spiritual development. The dynamics of education continue to develop in line with technological change, globalization demands, and increasingly complex labor markets[6]. Therefore, innovation and adaptation become the key factors in strengthening the relevance of education in the modern era[7]. However, there is still a limited understanding of how these educational dynamics influence the direction and focus of Islamic education research in Indonesia.

As the nation with the largest Muslim population in the world, Indonesia experiences highly dynamic social developments. Rapid population growth presents major challenges for the education sector in ensuring equity and quality learning opportunities. Cultural and religious diversity requires an inclusive and fair education system that nurtures tolerance and unity among communities[8, 9]. Furthermore, technological progress and globalization demand curriculum adaptation to prepare younger generations for increasingly competitive global challenges. The active roles of society, government, and educational institutions are crucial in shaping high-quality human resources[10]. Therefore, strengthening the quality of school-based education has become a national priority to build adaptive and future-oriented generations. This context also emphasizes the crucial position of Islamic education in shaping students' moral and spiritual character amid modernization and globalization.

Schools are essential institutions where students acquire knowledge, life skills, and moral values necessary for their future[11]. Through structured learning processes, schools can instill discipline, responsibility, and cooperation as essential aspects of everyday behavior[12]. Teachers play a vital role in guiding students to think critically, act creatively, and build strong personal character[13]. Schools also serve as social environments that foster togetherness, tolerance, and mutual respect within a diverse society. Along with the changing times, schools must adapt to technological advancement and global challenges within their educational systems. The support of parents, communities, and governments is crucial to ensure inclusive and sustainable educational quality for all[14]. Ultimately, schools hold a strategic role in shaping character-driven generations, particularly through the reinforcement of spiritual values, namely Islamic education.

Islamic education is an essential pillar in shaping the character, morality, and religious identity of young generations in Indonesia[15, 16]. Islamic education can instill spiritual values, social ethics, and life principles that align with the teachings of religion[17]. Through institutions such as pesantren, madrasah, and Islamic-based schools, this education plays a strategic role in national development. The curriculum of Islamic education is designed to integrate general sciences with holistic religious understanding relevant to contemporary developments[18]. Technological progress and globalization encourage innovation within Islamic learning systems to remain adaptive and competitive at the global level. Collaboration among government, academics, and education practitioners is crucial to enhancing research quality and Islamic education practices. The dynamics of Islamic education research continue to grow alongside the increasing academic interest in integrating science and religion[19]. Consequently, many researchers have conducted studies on Islamic education in Indonesia within the Scopus Database. Nevertheless, there remains limited bibliometric evidence ex-

plaining how these studies evolve thematically and methodologically within the Indonesian context.

Researchers have conducted numerous studies on Islamic education indexed in the Scopus database using various approaches. **Figure 1** shows that the publication trend on Islamic education consistently exceeds 1000 publications annually. This demonstrates that the topic of Islamic education is receiving widespread attention and continues to grow within the global academic community. Previous bibliometric analyses have mostly discussed diverse topics such as Islamic marketing, Islamic finance, learning models in religious education, and studies on madrasas, with a primary focus on publication trends, influential scholars, and dominant keywords [20–22]. However, to date, there has been no comprehensive bibliometric study that specifically highlights the trends, dynamics, and research contributions within the field of Islamic Education in Indonesia. Therefore, it is necessary to conduct research using bibliometric analysis to provide a clearer and more in-depth picture of the development of Islamic education in Indonesia.

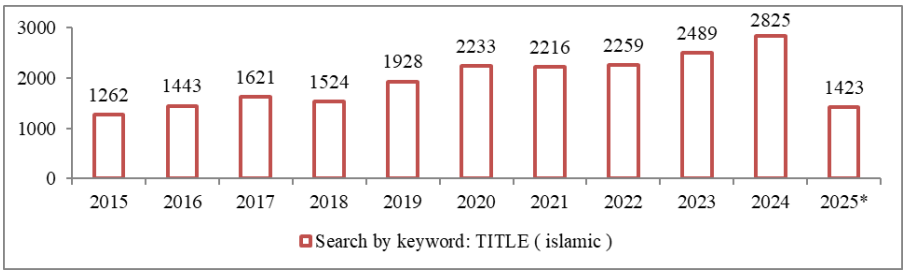


Figure 1. Publication Trends on Islam in the Scopus Database.

Note: *: Data Checked in August 2025.

This analysis boasts a high level of reliability because it is sourced from the more credible and internationally reputable Scopus database. The superiority of Scopus data allows researchers to obtain a more comprehensive picture of the development of Islamic education. This benefit includes providing recommendations for Indonesian researchers interested in conducting research using the Scopus database.

2. Materials and Methods

This analysis is a form of bibliometric study focusing on scientific publications in the field of education. The study utilized data from the Scopus database, which boasts a global reputation and high credibility. Bibliometric analysis is a scientific approach capable of mapping research trends, author collaborations, and the most frequently discussed topics [23–26]. Thus, this analysis provides a comprehensive overview of the development of Islamic education in Indonesia within the Scopus database. Before conducting the bibliometric analysis, the author first selected documents from the Scopus database to ensure the data were truly relevant and aligned with the research objectives. The document selection followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol to ensure transparency and accuracy in data screening [27, 28]. Although typically used in systematic reviews, PRISMA was applied here to make the selection process clear, replicable, and methodologically reliable. The Prisma process can be seen in **Figure 2**.

In the Identification stage, the author used keywords with the details TITLE (“islam* learn*”) OR TITLE (“islam* school*”) OR TITLE (“islam* educat*”) to reach relevant publications in the Scopus Database. The results of the initial search produced 980 documents that matched the keywords used. In the Screening stage, the author then limited the documents by selecting the “Social Sciences” category, the publication type only “Article”, authors from “Indonesia”, and documents in English. This limitation process succeeded in eliminating 721 documents from the initial total, leaving 259 more focused documents. Next, in the Eligibility stage, the author conducted a thorough check to ensure the suitability of the document content with the research topic being studied. From the results of this check, 9 documents were eliminated because they were not relevant to the established criteria. Ultimately, 250 documents made it to the final stage or were included, so they were ready for further analysis using bibliometric analysis methods.

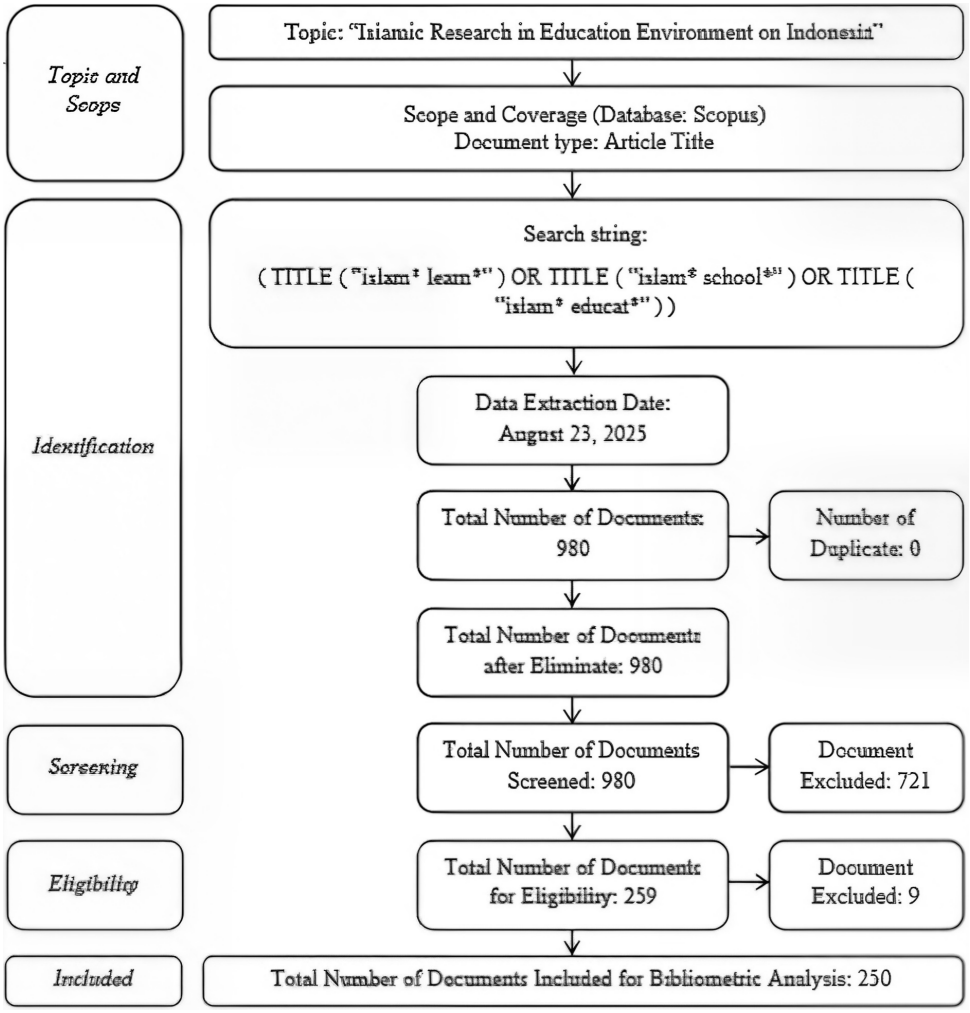


Figure 2. Document Selection Process in the Scopus Database using the PRISMA Method.

This bibliometric analysis focuses on several important aspects deemed relevant to mapping the development of Islamic education in Indonesia, namely publication trends, keyword evolution, keyword clustering, and the novelty of keywords appearing in research. All of these aspects are analyzed more systematically using two main software programs: the R Program and VOSviewer, which have been widely used in international bibliometric research (**Appendix A**). R Program is specifically used to analyze publication trends to determine the dynamics of the number of scientific papers from year to year, while also analyzing keyword evolution to understand shifts in research focus over time. Meanwhile, VOSviewer is used to group keywords based on the interrelationships between terms, thus visualizing research clusters formed in the field of Islamic education. Furthermore, VOSviewer also plays a crucial role in identifying emerging keyword novelties, thus providing an indication of potential research directions for development. This analytical approach, combining the R Program and VOSviewer, produces a comprehensive picture of the research landscape of Islamic education in Indonesia within the Scopus Database. Thus, the results of the analysis are not only able to show the direction of research that is currently developing but also open up opportunities for researchers to conduct new studies that are more innovative and in accordance with the needs of the times. To ensure reliability, validity, and triangulation of data, this study employed several strategies. The reliability of the dataset was ensured by utilizing the Scopus database, a globally recognized and credible source of peer-reviewed publications. Validity was maintained through a PRISMA-based document selection process that guaranteed the inclusion of only relevant and high-quality studies. Furthermore, triangulation was achieved by applying multiple bibliometric tools, R and VOSviewer, to cross-validate and confirm the

accuracy and consistency of the analytical results.

3. Results

Before conducting a more in-depth analysis, the author first displays the main information, which contains general search results (**Figure 3**). The Main Information aims to provide an initial overview of the number of documents, publication period, document type, and research category [29]. This information can serve as a solid foundation for understanding the initial context before conducting a more comprehensive bibliometric analysis.

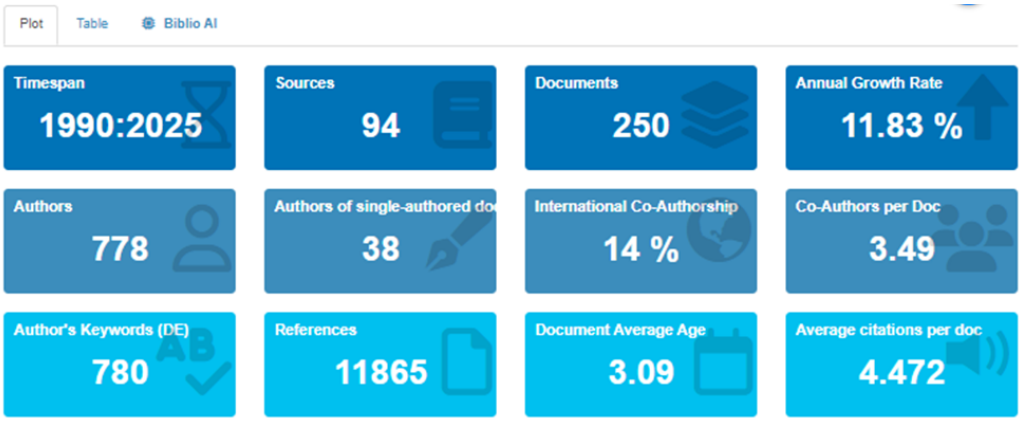


Figure 3. Main Information.

The analysis shows that the documents reviewed cover the publication period from 1990 to 2025, with a total of 250 articles indexed in Scopus. These 250 articles were published in 94 indexed sources or journals, confirming a high level of scientific credibility. The average annual publication growth rate reached 11.83 percent, indicating an increase in research consistency in the field of Islamic education. In addition, the average age of the documents was only 3.09 years, showing that the majority of the research analyzed was relatively new and highly relevant to current conditions. These findings highlight a dynamic research trend focused on contemporary issues.

The impact of this research is evident from the number of citations received. Each document received an average of 4472 citations, reflecting significant attention and widespread recognition from the academic community. The total number of references used in all documents reached 11,865, demonstrating the depth of the scientific reference base on which the research was founded. This underscores the researchers' efforts to base their work on solid and comprehensive literature. The focus of the research analyzed is entirely in the form of articles (250 in total), without including other types of documents such as book chapters or proceedings, confirming scientific articles as the main means of disseminating knowledge.

Content analysis of the documents reveals 16 Keywords Plus (ID) and a large number of 780 Author's Keywords (DE), indicating a wide variety of research topics. The number of authors involved in the entire document reached 778 people, showing massive academic participation in this field. Although many authors were involved, there were 38 authors who produced documents independently (single-authored), indicating strong individual contributions. However, the high number of keywords shows that researchers explored many different aspects of Islamic education. This diversity is evidence of the maturity and depth of the field of study being analyzed.

The average number of collaborators per article was 3.49, implying a strong and dominant trend toward collaborative research in the field of Islamic education. This figure clearly emphasizes the importance of teamwork in producing quality scientific output. These results show that research in this field is no longer conducted in isolation but through active networks of cooperation. This collaborative trend is an important asset for improving the complexity and quality of research methodology. Strong collaboration can accelerate the dissemination and validation of scientific knowledge.

Although domestic collaboration appears to be very

dominant, the level of international collaboration is recorded at 14 percent. This figure indicates cross-border contributions, where Indonesian academics collaborate with partners from abroad. However, this percentage is still relatively limited when compared to internal collaboration between Indonesian authors. This limitation shows that there are still great opportunities to expand research networks to the global level. Increased international collaboration can bring new perspectives and enhance the competitiveness of publications on the world stage.

The main focus of the research specifically addressed issues of Islamic education in Indonesia. This data reinforces the image that this field of research is very active and growing rapidly. The clear orientation of the research towards the publication of credible scientific articles confirms a commitment to the dissemination of reputable knowledge. Strong collaborative trends, both domestic and international (albeit limited), can be important capital and assets for further research development in the future. This collaborative framework promises the potential to produce more comprehensive and impactful solutions.

3.1. Publication Trends

The main objective of this publication trend analysis is to quantitatively evaluate the development and dynamics of research over time. This analysis is very important because it provides an objective picture of scientific activity that has taken place in related fields of study. By measuring the frequency and growth of publications, researchers can understand how active and consistent the academic community is in producing work. Therefore, this step is a crucial foundation before conducting more in-depth content analysis or network mapping.

Through this quantitative assessment, authors can identify patterns of growth, stability, and decline in research productivity, specifically in issues of Islamic education in Indonesia. The discovery of these patterns allows conclusions to be drawn about whether the field is experiencing a surge of interest, reaching a saturation point, or even experiencing a decline in certain periods. Identifying these dynamic patterns is very useful for predicting the direction of future research and formulating appropriate policy recommendations for stakeholders in the Islamic education sector.

The publication data in **Figure 4** shows a relatively long period of absence, especially between 1991 and 2005, and 2007 and 2010. This indicates that during that period, there was very little research on Islamic education in Indonesia indexed by Scopus, or even none at all. New publications began to appear gradually from 2011 to 2018, although the number remained very limited, ranging from only one to four articles per year. This fact shows that before 2019, academic attention to this topic had not gained significant momentum. This absence also implies that related research is still sporadic and has not become a major focus in international academic forums. Therefore, this early period can be categorized as a pioneering phase in the development of Islamic education research in Indonesia.

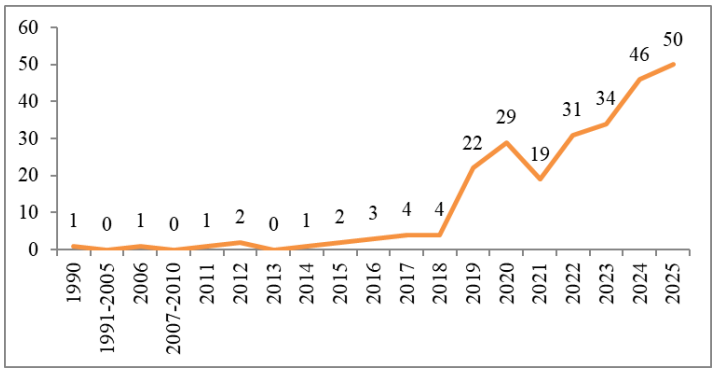


Figure 4. Publication Trends in Islamic Studies in Indonesia's Education Sector.

The period before 2019 was marked by very low productivity, reflecting the lack of publications that made it into the Scopus index. The number of articles published during this period did not show any consistency or massive research waves. The fact that publications only appeared occasionally confirms that the topic of Islamic education was not consid-

ered a major research priority in the global or even national arena indexed by Scopus. This could be due to a lack of institutional encouragement, limited international collaboration, or a research focus that was not oriented towards reputable journal publications. These conditions placed Islamic education research in a marginal position at the beginning of the 21st century. This period stands in stark contrast to the rapid developments that occurred in the following years.

Starting in 2019, there was a significant increase in the number of publications, with 22 articles that year. This figure then showed a steady increase in the following years, reaching 50 publications in 2025. This dramatic increase indicates a growing academic interest in Islamic education issues in Indonesia. This phenomenon is in line with the increasing demands of globalization and the integration of knowledge across various disciplines. The year 2020 also recorded a relatively high number with 29 articles, although there was a slight decline in 2021.

Although it dropped to 19 articles in 2021, the trend then rose strongly again. The highest publication peak was reached in 2025 with 50 articles, although this data is still preliminary because the current year is not yet complete. This fact strongly indicates that the trend of Islamic education research will continue to increase sharply in the near future. The period after 2019 can thus be considered a phase of rapid growth and consolidation of Indonesian Islamic education research at the international level. This increase reflects the success of Indonesian academics in publishing their research results in reputable journals.

3.2. Keyword Evolution

Keyword evolution analysis using R aims to systematically track the development of research keywords over time. This analysis allows the author to identify shifts in research focus and the emergence of new topics in the field of Islamic education issues in Indonesia. **Figure 5** presents the results of keyword evolution analysis, which clearly shows the development of research themes related to Islamic education in Indonesia from 1990 to 2025. This analysis serves to map how academic focus has shifted over time, reflecting changes in priorities and issues considered relevant. Understanding the evolution of these themes is crucial to seeing the depth and scope of research in this field. This pattern of development shows a significant transformation from basic concepts to more specific and contextual topics. Overall, this evolution underscores researchers' efforts to keep their studies relevant to the conditions of society.

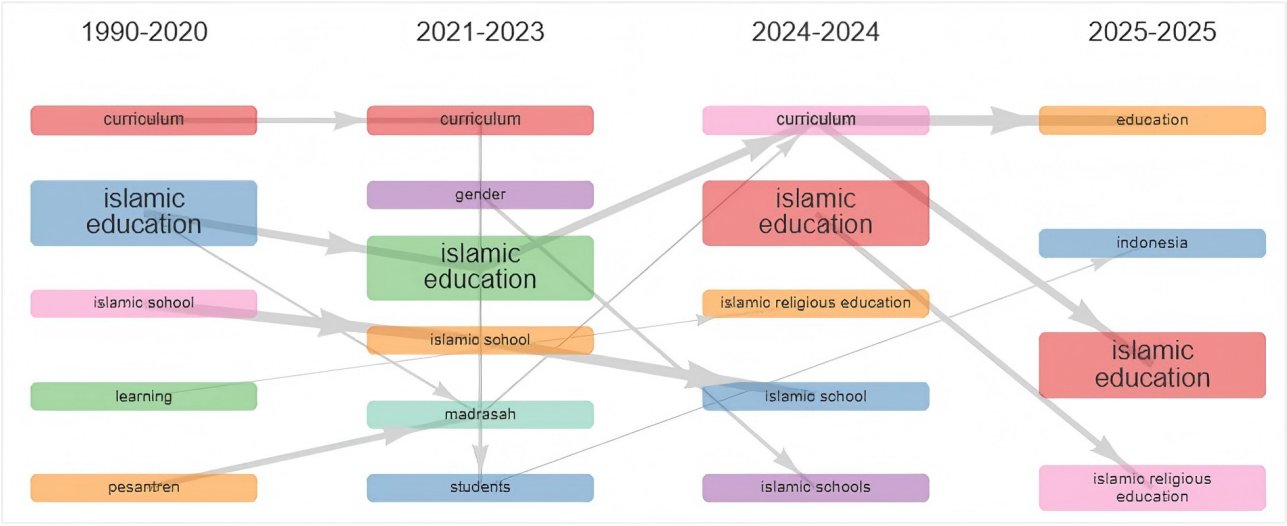


Figure 5. Keyword Evolution on Topics in Islamic Studies in Indonesia's Education Sector.

In the early period, between 1990 and 2020, research themes predominantly focused on the basic concepts of Islamic education. Keywords that emerged included Islamic education, curriculum, Islamic schools, Islamic boarding schools, and learning. This choice of themes indicates that research at that time focused more on the traditional foundations and institutional structures of Islamic education. Research tended to be descriptive in nature, focusing on estab-

lished practices. The focus on institutions such as Islamic schools and Islamic boarding schools (pesantren) reflects an effort to document the role of these institutions. This period served as the conceptual basis for further research development.

Entering the period from 2021 to 2023, there was a significant diversification of research themes with the introduction of new keywords. Topics such as gender, madrassah, and students began to emerge and gain attention. This diversification signaled an expansion of the scope of research to touch on social issues and issues directly related to learners. Research began to respond to modern dynamics, especially the inclusion of aspects of equality and identity in the issue of Islamic education in Indonesia. This shift showed that the academic community was becoming more sensitive to the social context and changes of the times.

In the most recent period, namely 2024–2025, there has been a clear shift towards more contextual and specific topics. Keywords such as Islamic religious education, education, and their direct relevance to Indonesia have become increasingly prominent in publications. This indicates that studies are beginning to focus on efforts to strengthen the unique identity of Islamic education in Indonesia. The direction of research is now geared toward responding to global and local needs simultaneously. This increasingly specific focus indicates a higher level of maturity in the selection of research issues.

The strong focus on keywords directly related to the Indonesian context confirms efforts to define and deepen understanding of Islamic education within the national framework. Research no longer merely discusses general concepts but seeks solutions that are appropriate to the education system and culture in Indonesia. This shows that the academic community is trying to make their research more relevant and directly applicable to the national education system. This shift reflects a commitment to producing knowledge that can support policies and practices at the local level.

At its peak in 2025, the theme of Islamic education remained dominant as the main category of research. However, this theme was enriched with the addition of new, more specific keywords, indicating a higher level of detail. The addition of terms such as Islamic religious education and Indonesia further clarified the direction of the research. This confirmed that the focus of the research was now highly targeted at the Indonesian national context. This finding is very consistent because it describes the transformation of knowledge from a general concept.

This change is a clear illustration of research that is now more needs-oriented towards Indonesian society and its education system. Research is no longer driven solely by academic interest, but by the need to solve real problems in the field. The transformation of knowledge from basic concepts to contextual applications demonstrates the maturity of the discipline of Islamic education. It also strengthens the role of research as a tool to support the development of effective and relevant educational policies and practices in Indonesia.

3.3. Focus Research

The focus research analysis aims to identify the relationships between frequently occurring concepts in research (**Figure 6**)[29]. This allows for an understanding of the main clusters that are the focus of the study and the direction of Islamic education research development in Indonesia.

By using VOSviewer and the minimum occurrence ≤ 2. There are 37 keywords divided into 5 groups, which can be seen in **Table 1**.

The cluster titled “Frameworks for Academic Progression” discusses how conceptual and practical frameworks in educational development are linked to curriculum, strategy, and school management. This topic emphasizes the importance of educational innovation and curriculum relevance, including the implementation of the much-discussed Independent Curriculum in the Indonesian context. The management of Islamic educational institutions is seen as a crucial factor in improving the quality of learning, making it more adaptive and progressive. Furthermore, the learning model also demonstrates a link to student character development, a key component of education’s primary mission. This development demonstrates that education is understood not only as a process of transferring knowledge but also as a means of developing identity and life skills. Therefore, this cluster represents a research direction that emphasizes educational management, policy relevance, and quality improvement strategies. Therefore, this cluster serves as a primary foundation for examining how the Indonesian education system can evolve to meet the needs of the times.

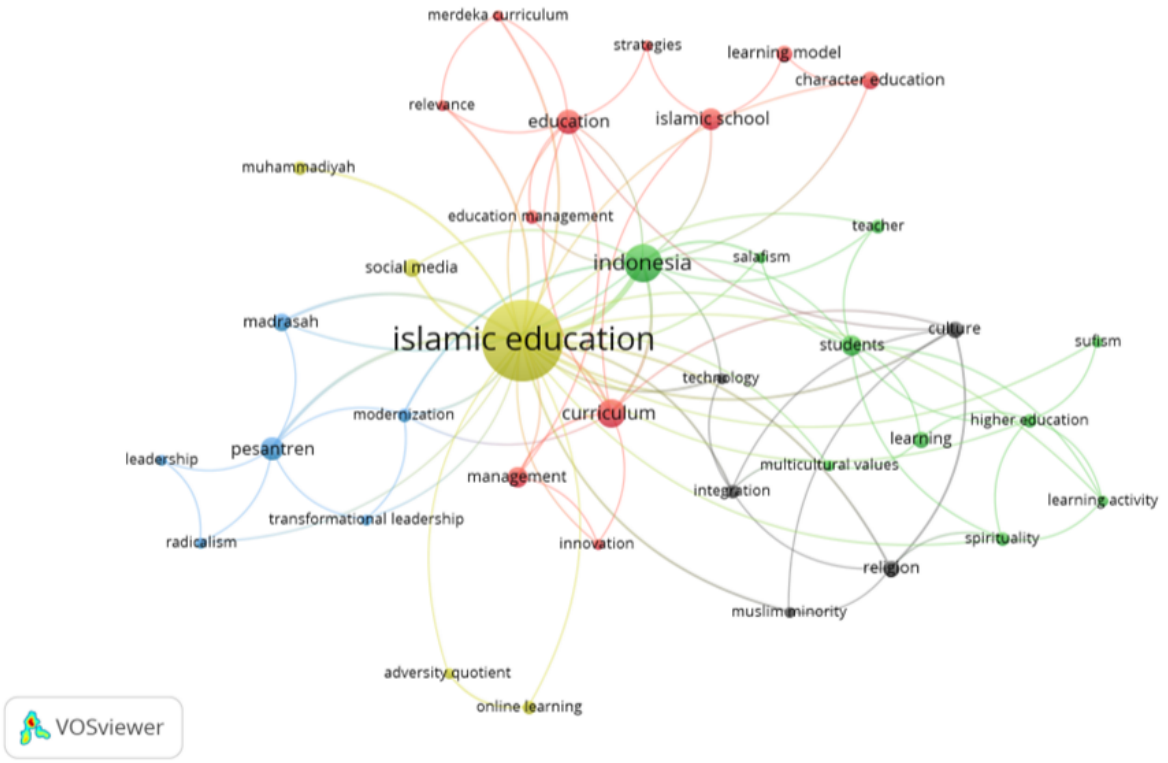


Figure 6. Focus Research on Topics in Islamic Studies in Indonesia's Education Sector.

Table 1. Keyword Grouping on Topics in Islamic Studies in Indonesia's Education Sector.

No	Cluster Color	Keywords	Cluster Name
1	Red (11 items/29.72%)	Character Education, Curriculum, Education, Education Management, Innovation, Islamic School, Learning Model, Management, Merdeka Curriculum, Relevance, Strategies	Frameworks for Academic Progression
2	Green (10 items/27.02%)	Higher Education, Indonesia, Learning, Learning Activity, Multicultural Values, Salafism, Spirituality, Students, Sufism, Teacher	Perspectives on Knowledge and Society
3	Blue (6 items/16.21%)	Leadership, Madrasah, Modernization, Pesantren, Radicalism, Transformational Leadership	Dynamics of Authority and Change
4	Yellow (5 items/13.51%)	Adversity Quotient, Islamic Education, Muhammadiyah, Online Learning, Social Media	Adaptation in Contemporary Contexts
5	Black (5 items/13.51%)	Culture, Integration, Muslim Minority, Religion, Technology	Identity Transformation in the Modern Era

Source: VOSviewer and modification by authors.

The cluster titled "Perspectives on Knowledge and Society" explores how education is positioned within social, spiritual, and multicultural contexts. Themes such as multicultural values, Sufism, Salafism, and spirituality reveal that learning is not confined to academics but also involves social and religious transformation. This reflects an effort to bridge tradition with modernity, where teachers and students play central roles in fostering inclusive environments. Moreover, Indonesian society's plural context becomes an important testing ground for integrating knowledge values into daily life. In this sense, the cluster highlights education as a tool for building a harmonious and competitive society. It also demonstrates that globalization strengthens the need for ethics and spirituality within education systems. Consequently, this cluster underscores the close relationship between knowledge, diversity, and social development.

The cluster titled "Dynamics of Authority and Change" focuses on leadership, modernization, and challenges of radicalism within institutions such as pesantren and madrasah. The main concern lies in how educational authority is ex-

ercised through transformational leadership to drive institutional change. While pesantren and madrasah are often viewed as traditional, they are undergoing modernization to remain relevant to societal needs. Research in this cluster also addresses radicalism, framing education as a significant safeguard against such tendencies. Transformation occurs not only in pedagogical approaches but also in organizational structures and institutional visions. This indicates that leadership plays a crucial role in shaping the trajectory of educational development. Hence, the cluster illustrates the interplay between tradition, authority, and contemporary challenges in the educational domain.

The cluster titled "Adaptation in Contemporary Contexts" examines how Islamic organizations and institutions, such as Muhammadiyah, adapt to modern challenges through technology, online learning, and social media. Themes such as the adversity quotient highlight the importance of resilience in navigating barriers to education. Online learning, particularly during the pandemic, reflects how technological transformation reshaped educational delivery. At the same time, social media emerges as both a channel for spreading Islamic values and a challenge in terms of information quality. Research in this cluster underscores that digital innovation creates opportunities but requires careful strategies to preserve traditional values. The prominent role of organizations such as Muhammadiyah demonstrates how institutions act as dynamic agents of change. Thus, this cluster highlights resilience, innovation, and adaptive strategies in response to contemporary shifts.

The cluster titled "Identity Transformation in the Modern Era" investigates how culture, religion, Muslim minorities, and technology interact to shape new Muslim identities in modern contexts. Themes such as cultural integration and the role of technology reveal significant shifts in how individuals and groups express and negotiate their Islamic identity. For Muslim minorities, education becomes a critical avenue for strengthening their presence and redefining their social standing. Identity transformation encompasses not only religious aspects but also cultural and social values evolving alongside modernization. Technology provides space for emerging identities that are flexible yet often challenged by globalization. Research within this cluster indicates that identity change is a complex phenomenon shaped by education, culture, and technology. Therefore, this cluster stresses the importance of understanding the multidimensional interactions shaping Muslim identity in modern times.

3.4. Keyword Novelty

Keyword novelty indicates the emergence of new terms that represent the direction and focus of current research in a particular field [30]. This analysis is important because it can uncover research opportunities that have not been widely explored by previous researchers. The novelty keywords in **Figure 7** show that terms displayed in bright colors, such as "Adversity Quotient" and "Online Learning," are relatively new keywords in Islamic Education research in Indonesia. The emergence of these terms indicates a shift in research focus from traditional issues to relevant contemporary challenges. This shift demonstrates researchers' efforts to link Islamic education with modern dynamics and global needs. It indicates that this field of study is becoming more adaptive and responsive to rapid changes in society and technology. Thus, researchers are now beginning to explore new dimensions that go beyond basic institutional concepts.

The keyword "Adversity Quotient" highlights the importance of resilience and students' ability to cope with difficulties, a theme that is becoming increasingly relevant in modern education. This aspect is important for shaping students' character to be resilient and not easily give up under pressure. Meanwhile, "Online Learning" has become a rapidly growing topic since the COVID-19 pandemic, driven by the urgent need for effective distance learning. These two keywords indicate great research potential, which can make a significant contribution to the development of value-based and technology-based education. Through in-depth study of this topic, researchers have a great opportunity to expand the academic literature.

This novelty keyword can be directly linked to the direction of education policy in Indonesia, which encourages the integration of technology and adaptive learning. For example, the Indonesian government emphasizes the importance of digital literacy and mastery of 21st-century skills, including innovations based on Deep Learning to support the learning process. "Online Learning" can be a gateway to connect Islamic Education research with the digital transformation taking place in schools and universities. This integration ensures that religious education remains relevant in the digital age.

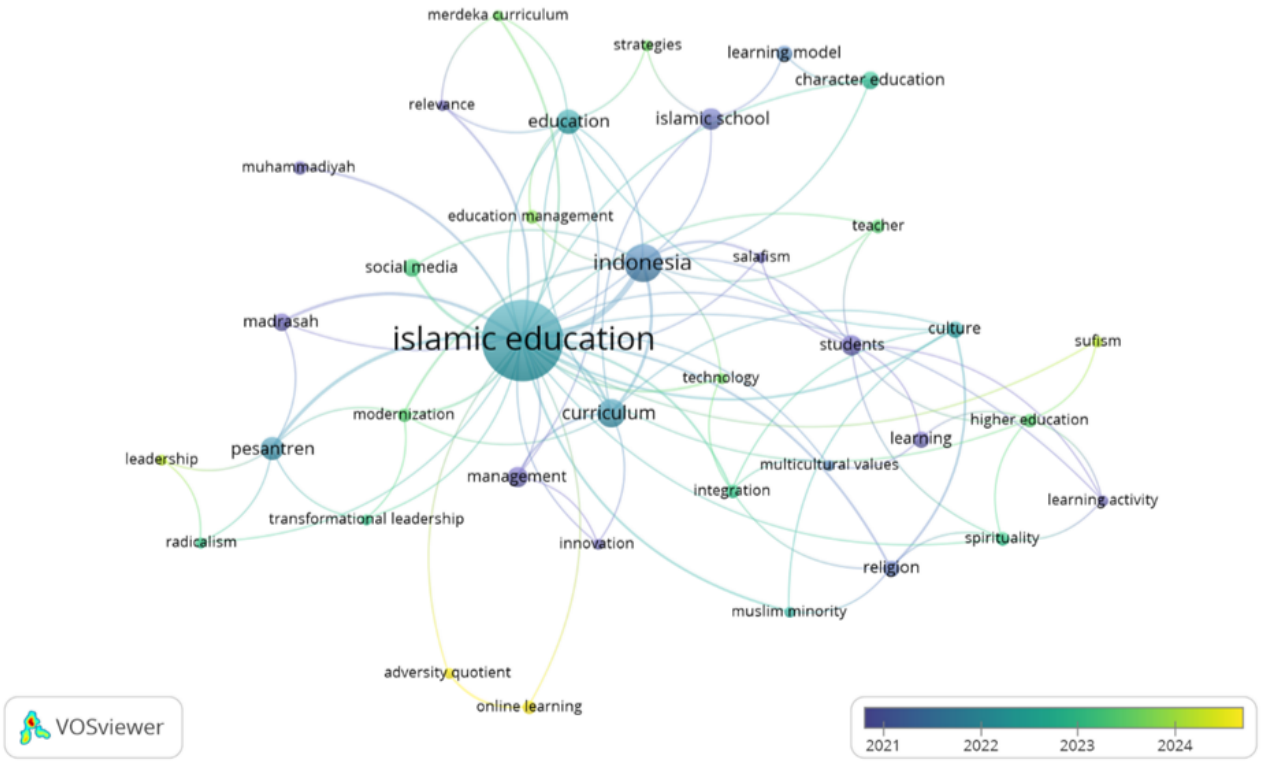


Figure 7. Keyword Novelty on Topics in Islamic Studies in Indonesia's Education Sector.

Meanwhile, the concept of "Adversity Quotient" strongly supports the agenda of strengthening character education, which is a national priority through the implementation of the Merdeka curriculum. Thus, the two main aspects digital technology and character education can be combined to create a learning model that is relevant, adaptive, and sustainable. Therefore, the novelty of the keywords in this research is academically important. It is also strategically relevant to support the government's priority in strengthening the competitiveness of Indonesian education in the global era.

4. Discussion

Bibliometric analysis clearly reveals a significant surge in the number of publications on Islamic education since 2019. This increase marks the beginning of a phase of strong and sustained growth in research in this field. This trend indicates that the academic focus on Islamic education is increasingly shifting towards innovation and relevant contemporary challenges. This change in focus demonstrates the maturity of the academic community in responding to social and technological dynamics. This surge also reflects the increased capacity of Indonesian researchers to publish their work in reputable international journals.

This increase in publications is not only quantitative but also reflects the increasingly relevant and contextual nature of the topics. These findings are in line with previous studies that noted that educational reforms such as the Merdeka Belajar (Freedom of Learning) program have encouraged curriculum evaluation. These reforms specifically focus on efforts to strengthen student character, which has become an interesting theme for research. The improvement in the quality of topics shows that Islamic education research is now more rooted in practical needs in the field. Thus, the resulting research now has higher applied value.

The dramatic increase in publications opens up great opportunities to strengthen Indonesia's research position in the global discourse on Islamic education. With more articles indexed by Scopus, the contributions of Indonesian academics are becoming more prominent on the international stage. This allows Indonesia to become not only a user but also a major producer of knowledge in Islamic education studies. This increase is crucial for building a solid academic reputation and influencing the direction of education policy at the global level.

Based on the data revealed, further research should be directed at mapping the impact of education policies that have been implemented. It is essential to examine the real contribution of curriculum reforms, such as Merdeka Belajar, to the overall quality of Islamic education. Further research needs to measure the effectiveness of new programs in improving student competence and character. Such research will provide a strong basis for policymakers to evaluate and refine reform programs.

The keyword clustering analysis revealed five significant clusters reflecting the research theme's direction, ranging from curriculum management to modern identity. This demonstrates the multidimensionality of knowledge in the realm of Islamic education, encompassing academic frameworks, social change, and institutional transformation. The diversity of these clusters demonstrates that research focuses not only on institutional aspects but also simultaneously incorporates cultural and technological dimensions. This diversity is crucial for guiding future research toward greater integration and strategic alignment. Furthermore, these findings support the expansion of richer interdisciplinary studies, such as those between character education and digital learning. Future research could explore the synergy between traditional values and technological innovation in the context of Islamic education.

Keywords such as "Adversity Quotient" and "Online Learning" indicate the emergence of new issues relevant to the context of modern education in Indonesia. The emergence of these two terms indicates a shift in research focus toward strengthening student resilience and the use of digital technology. This shift in context is crucial, given that recent curriculum reforms emphasize mindful, meaningful, and joyful learning models with the application of deep learning principles[31]. Furthermore, the strategy of strengthening character through resilience is relevant to the goals of character education currently being pursued. These findings underscore the need to integrate novelty studies with digital education policies in Indonesia. Therefore, these new keywords can be prioritized for research to support technology innovation- and character-based Islamic education.

The Indonesian government's initiative to integrate coding and AI into the national curriculum reflects a strong commitment to strengthening digital literacy. This step also demonstrates a seriousness in adopting an adaptive deep learning approach across all levels of education. This integration aims to prepare the younger generation to face the challenges of the 21st century, which are increasingly dominated by technology. This policy emphasizes that education can no longer ignore the rapid developments in the field of artificial intelligence. Therefore, all sectors of education, including Islamic education, are encouraged to adapt to the demands of digitalization.

Consequently, Islamic education research must respond to these initiatives by integrating technologies such as AI and online learning into educational practices. Research should focus on developing models that combine Islamic values with the efficiency of digital technology. There is an urgent need to develop an ethical framework for the application of AI so that it does not conflict with religious principles. Thus, the use of digital technology not only increases the efficiency of the teaching and learning process. The use of technology must also strengthen the values of religious-based character education.

Although digital transformation offers significant opportunities to improve quality, the challenges remain substantial and real. The main challenge that must be overcome is the disparity in digital infrastructure between urban and rural areas. In addition, the readiness of teachers to adopt and apply new technologies in the classroom remains a crucial issue that requires serious attention. Research in this area is very important to support the ethical and inclusive application of technology in Islamic education. This ensures that the benefits of technology can be felt by all students without exception.

In the future, research collaboration between academics, practitioners, and policymakers will be a very strategic step. This synergy is needed to accelerate the transformation of technology-based education in an effective and focused manner. This cooperation allows policies to be made based on valid empirical evidence from field research. Such collaboration will help overcome challenges and ensure that technology implementation is in line with national education development goals. Thus, research will serve as the main catalyst in realizing sustainable educational change.

These bibliometric findings have direct and significant implications for Indonesia's educational revolution efforts towards the 2045 Golden Generation vision. The government, through various strategic initiatives, has pro-

moted training such as Digital Deep Learning & Creative Teaching to improve teachers' skills. This training aims to enable teachers to implement technology effectively in the classroom. Islamic education research must take an active role in supporting this grand agenda. Research support is realized by focusing on the development of contextual and value-based teaching solutions. This ensures that technological transformation is in line with character building objectives. Thus, research not only fills academic gaps, but also contributes significantly to the development of comprehensive national education.

Strengthening teacher capacity and providing equitable digital infrastructure are crucial factors in translating this policy into practical application in the field. Without equitable infrastructure support, the gap in access to education will widen. Therefore, research should be directed toward helping to address this disparity and formulating inclusive implementation strategies. Future research needs to examine the effectiveness of new digital models and their impact on equal access and student competency. Ultimately, the active role of research in testing and providing innovative solutions is essential to ensuring the success of Indonesia's educational transformation.

For the future, research must be explicitly directed toward testing new models that support the national education transformation agenda. Further research can specifically test the effectiveness of digital models in improving the overall quality of Islamic education. It is also very important to assess the impact of technology implementation on equitable access and significant improvements in student competency. Such studies will provide strong empirical evidence. This evidence is urgently needed to support better decision-making and the formulation of targeted policies. Thus, research should focus on developing innovative and adaptive educational solutions in line with the times.

Research must be directed towards supporting comprehensive national education development efforts, particularly in achieving Indonesia's vision of becoming a developed country by 2045. Through research focused on innovation, Islamic education can ensure its relevance in the digital age. Testing new models will ensure that technological investments result in tangible improvements in education quality and student output. Research must also examine how technology can be used to overcome disparities and achieve equitable access across all regions. Therefore, well-planned and strategic research is key to realizing sustainable and globally competitive educational change.

5. Conclusions

The analysis concludes that research on Islamic education in Indonesia has experienced significant growth since 2019, with increasingly diverse research areas ranging from curriculum management and social transformation to the use of digital technology. The emergence of new keywords such as "Adversity Quotient" and "Online Learning" indicates a shift in research focus toward strengthening student resilience and implementing technology-based learning. This aligns with national education reforms, including the Freedom to Learn policy and the integration of Deep Learning into the curriculum, which emphasize the development of deep intelligence, conceptual understanding, and meaningful learning relevant to current needs. Therefore, future research needs to integrate traditional values with technological innovation through a Deep Learning approach, thereby enhancing not only academic competence but also student character and creativity. This approach also supports the government's agenda to realize a Golden Generation of 2045 that is adaptive, innovative, and globally competitive.

Author Contributions

Z.Z.: Conceptualization, writing—original draft, editing and visualization; M.A.P.P.: Methodology and review & editing; E.W.: Conceptualization, formal analysis, methodology, review, and editing; V.A.H.: Validation and supervision; H.S.: Data curation, resources, review, and editing; A.A.B.: Visualization, software, review, and editing. All authors have read and agreed to the published version of the manuscript.

Funding

This work received no external funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

The data used in this study are available from the corresponding author upon reasonable request.

Acknowledgments

The authors would like to thank Universitas Negeri Yogyakarta for the support and facilities provided throughout the research process. In particular, we appreciate the access granted to conduct comprehensive data analysis.

Conflicts of Interest

The authors declare no conflict of interest.

Appendix A

The bibliometric analysis tools of this study can be downloaded at: R Program: https://cran.r-project.org/mirrors.html and VOSviewer https://www.vosviewer.com/download.

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