

Global Research Trends on the Integration of Local Wisdom and Students' Religiosity in Science Education: A Bibliometric Analysis of Scopus Publications (2020–2025)

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Abstract

Character education in the era of digital disruption faces serious challenges due to the decline of students' moral and spiritual values influenced by digital media exposure and global social transformation. Character education in the era of digital disruption faces serious challenges in the form of the weakening of students' moral and spiritual values due to the influence of digital media and global social changes. Although many studies have highlighted the importance of local wisdom in character education, most still focus on moral and ethical aspects, rather than specifically on strengthening students' religious values. There are not yet many conceptual models that systematically and measurably integrate local cultural practices with religious education. This study employed a quantitative approach using bibliometric research methods. The data were obtained from the Scopus database through a process of searching, screening, and selecting articles based on keywords related to students' religiosity and local wisdom. A total of 159 English-language journal articles were analyzed using Bibliometrix and Biblioshiny software. Data analysis was conducted through annual scientific production, co-authorship analysis, country collaboration, co-citation analysis, and thematic mapping to identify research trends and scientific collaboration networks. The findings indicate that publication trends increased significantly after 2022 and reached their peak in 2025. Indonesia emerged as the leading contributor in terms of publications and international research collaboration. Themes such as local wisdom, students, culture, and sustainability became dominant research topics that developed toward interdisciplinary approaches in character education and sustainable development. This study concludes that students' religiosity based on local wisdom holds a strategic position in strengthening character education in the global era. The study contributes by providing a comprehensive scientific mapping that can serve as a foundation for future research development and educational policies based on values, culture, and sustainability.

Keywords: Bibliometric Analysis; Character Education; Local Wisdom; Sustainability; Students' Religiosity

INTRODUCTION

The rapid advancement of science and technology in the twenty-first century has fundamentally transformed the educational paradigm. Education is no longer solely oriented toward the acquisition of knowledge but has increasingly shifted toward developing twenty-first-century competencies, including critical thinking, creativity, collaboration, communication, and character development to address complex global challenges. Contemporary issues such as climate change, environmental degradation, digital disruption, moral decline, and increasing social complexity require education systems to prepare human resources who are not only academically competent but also socially responsible, ethically grounded, and committed to sustainable development. These developments have driven the transformation of education toward more inclusive, sustainable, and adaptive learning systems capable of responding to

rapidly changing global demands. In 2024, UNESCO identified education as a global strategic priority by emphasizing peace education, climate action, digital transformation, artificial intelligence (AI), and strengthening teachers' capacities as fundamental pillars of sustainable development (UNESCO, [2024](#)). Consequently, contemporary education extends beyond cognitive achievement to encompass character development, cultural awareness, ethical values, and humanitarian principles as essential components of holistic learning.

Within this context, science education has undergone one of the most significant transformations. It is no longer regarded merely as a process of transmitting scientific concepts but rather as a means of developing scientific literacy, problem-solving skills, environmental awareness, evidence-based decision-making, and students' character development (Odden et al., [2021](#)). The Education for Sustainable Development (ESD) framework positions science education as a key instrument for achieving sustainable development by integrating knowledge, skills, values, and practical action (Eilks, [2015](#)). A recent three-level meta-analysis involving 120 effect sizes from 53 independent studies found that school science education had a significant positive effect on students' climate literacy, with the strongest impacts observed in learning approaches emphasizing inquiry, socio-scientific issues, and sustainability-oriented instruction (Chen et al., [2026](#)). These findings indicate that science education should move beyond knowledge transmission toward developing learners who are scientifically literate, environmentally responsible, and capable of addressing complex global challenges. Therefore, science education requires instructional approaches that are not only scientifically rigorous but also contextualized and closely connected to learners' socio-cultural environments (Damayanti et al., [2025](#)).

One of the rapidly growing approaches in science education is the integration of local wisdom as a contextual learning resource. Local wisdom is regarded as indigenous knowledge that embodies cultural values, ecological practices, and empirical experiences passed down through generations, making it an effective bridge for connecting scientific concepts with students' real-life experiences. Integrating local wisdom into science learning enables students to relate scientific theories to authentic phenomena in their surrounding environment, thereby creating more meaningful and contextual learning experiences. A meta-analysis synthesizing 25 studies on local wisdom-based science learning in Indonesia revealed that 64% of the studies focused on developing science learning models, 24% investigated improvements in students' learning outcomes, and 12% examined students' attitudes. Furthermore, the study identified Problem-Based Learning (PBL) as the most widely implemented instructional model, contributing an average of 85.8% to the development of local wisdom-based science learning. Beyond improving academic achievement, this approach was also found to enhance students' Higher-Order Thinking Skills (HOTS), scientific attitudes, communication skills, collaboration, and problem-solving abilities (Lubis et al., [2022](#)). These findings suggest that local wisdom serves not only as a means of preserving cultural heritage but also as an effective pedagogical approach for strengthening scientific literacy, character development, and twenty-first-century competencies through contextual and authentic science learning.

In addition to local wisdom, religiosity has increasingly been recognized as an essential dimension in promoting holistic science education. Rather than being confined to religious practices, religiosity represents a value system that shapes students' integrity, ethical awareness, social responsibility, and environmental stewardship. Within the context of science education, the integration of religious values contributes to the development of scientific ethics, responsible decision-making, and sustainability-oriented behavior, enabling students to understand scientific knowledge within broader moral and societal contexts. Previous studies have reported that students with higher levels of religiosity tend to demonstrate stronger prosocial behavior, greater environmental concern, higher academic responsibility, and more ethical attitudes toward scientific issues (Kelly et al., [2024](#)). Moreover, incorporating religious values into science learning has been shown to strengthen students' character development while fostering responsible citizenship and environmental awareness, both of which are essential competencies

for achieving sustainable development (Gitmiwati & Indrayuda, 2024). These findings suggest that religiosity complements local wisdom in creating science learning environments that are intellectually rigorous while remaining culturally and ethically grounded.

Recent studies have increasingly examined science education, local wisdom, and religiosity from diverse perspectives. Research on science education has primarily focused on enhancing scientific literacy, inquiry skills, and sustainability competencies, whereas studies on local wisdom have emphasized ethnoscience, indigenous knowledge, and contextual learning as strategies for improving students' understanding of scientific concepts and preserving cultural heritage (Sihombing et al., 2025). Meanwhile, research on religiosity has largely explored its contribution to character education, moral development, and environmental responsibility (Khoirurrijal et al., 2025). Although these studies consistently report positive educational outcomes, they have generally developed as separate streams of research with limited integration among the three domains (Downer et al., 2010). Furthermore, most previous studies have concentrated on instructional interventions, curriculum development, or classroom implementation within specific local contexts, while comprehensive analyses of global publication trends, intellectual structures, collaboration networks, thematic evolution, and emerging research directions remain limited (Alvarado & Galigao, 2024). Consequently, a comprehensive bibliometric investigation is needed to provide a holistic understanding of the global development of research concerning the integration of local wisdom and religiosity in science education.

Based on these considerations, this study aims to analyze global research trends on the integration of local wisdom and religiosity in science education through a bibliometric analysis of Scopus-indexed publications published between 2020 and 2025. Specifically, this study examines annual publication trends, the most influential journals, productive authors and institutions, international collaboration networks, thematic evolution, and emerging research directions. Unlike previous studies that primarily focused on empirical implementation or localized educational practices, this study provides a comprehensive scientific mapping of the field from a global perspective. The findings are expected to contribute in three major ways: (1) by offering a systematic overview of the intellectual structure and evolution of research on local wisdom and religiosity in science education; (2) by identifying emerging themes and potential research opportunities for future investigations; and (3) by providing evidence-based insights for researchers, educators, and policymakers in developing culturally responsive, value-based, and sustainability-oriented science education that supports the achievement of Sustainable Development Goal (SDG) 4: Quality Education and SDG 16: Peace, Justice and Strong Institutions. To the best of our knowledge, this study is among the first bibliometric studies to comprehensively map the integration of local wisdom and religiosity within the field of science education using Scopus-indexed publications

METHODS

This study employed a bibliometric research design to systematically analyze global research trends on the integration of local wisdom and religiosity in science education. Bibliometric analysis is a quantitative approach used to evaluate scientific publications through publication performance, citation analysis, collaboration networks, and conceptual structure mapping, thereby providing a comprehensive overview of the development of a scientific field (Rojas-Sánchez et al., 2023).

The bibliographic data were retrieved exclusively from the Scopus database, which was selected because it provides comprehensive international coverage, standardized bibliographic metadata, and high-quality peer-reviewed publications suitable for bibliometric studies (Hoang, 2025). Literature retrieval was conducted using the Scopus Advanced Search feature based on keywords related to local wisdom, religiosity, and science education. The search strategy was restricted to publications published between 2020 and 2025, written in English, and categorized as journal articles. The complete search query used in this study is presented below.

The document selection process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure transparency and reproducibility. The initial records retrieved from Scopus were filtered according to predefined eligibility criteria, including publication year, document type, language, and relevance to the research topic. Subsequently, title and abstract screening was conducted to exclude publications unrelated to the integration of local wisdom, religiosity, and science education. The complete selection process is illustrated in Figure 1.

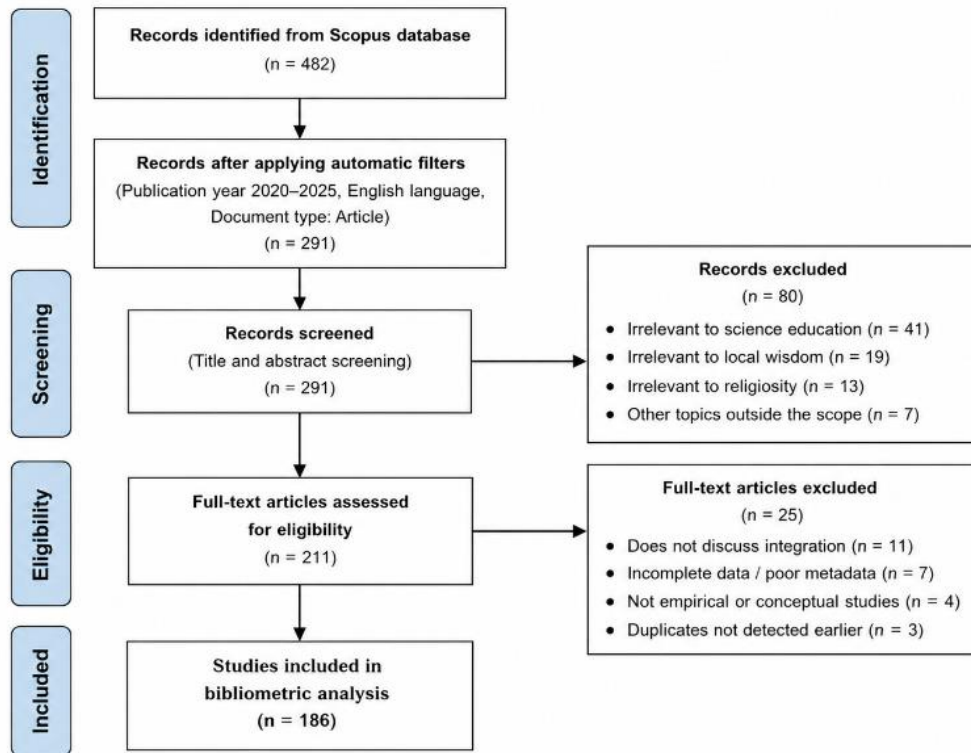


Figure 1. PRISMA 2020 Flow Diagram of The Study Selection Process

After the screening process, the eligible records were exported in BibTeX format and analyzed using the Bibliometrix package in the R environment through the Biblioshiny web interface (Zhang & Chen, 2025). The analysis included annual scientific production, source analysis, authorship analysis, institutional productivity, country collaboration, citation analysis, keyword co-occurrence analysis, thematic mapping, thematic evolution, and trend topic analysis. These analyses were performed to identify publication trends, collaboration patterns, conceptual structures, and emerging research themes related to the integration of local wisdom and religiosity in science education.

To enhance the reliability of the analysis, bibliographic metadata were verified before processing. Duplicate records were removed, author names and keywords were standardized, and the consistency of bibliographic information was manually checked prior to generating bibliometric visualizations. The resulting visualizations were produced using Biblioshiny to facilitate the interpretation of publication trends, collaboration networks, thematic structures, and future research directions.

Data collection for this study took place in April 2026, using a bibliometric approach to analyze trends, patterns of collaboration, and thematic maps related to research on students' religiosity and local wisdom in the context of education. The data were obtained from the Scopus database because it has a broad coverage of international publications and is academically verified (Aria & Cuccurullo, 2021; Donthu et al., 2021). Data retrieval was performed using the following query: (TITLE-ABS-KEY (students' religiosity values) OR TITLE-ABS-KEY (local wisdom)) AND PUBYEAR > 2021 AND PUBYEAR < 2025, which initially yielded 6,508 documents.

After filtering by the criteria of document type (article), source type (journal), language (English), and the year range 2021–2025, the number of eligible articles was reduced to 159 documents. The screening process was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and the replicability of results. Data analysis was performed using R and RStudio software, via the Bibliometrix package and the Biblioshiny graphical interface, which enabled the exploration of bibliometric metrics such as annual scientific production, co-authorship networks, co-citation analysis, and keyword co-occurrence mapping. Translated with DeepL.com (free version) (Cobo et al., [2021](#); González-Gómez et al., [2025](#)).

The data analysis consisted of four sequential stages: (1) data importation and cleaning to remove duplicate records and ensure data consistency; (2) descriptive bibliometric analysis to examine annual scientific production, the most productive journals, leading authors, affiliated institutions, and major contributing countries; (3) network analysis, including co-authorship, country collaboration, and co-citation analyses, to explore scientific collaboration and intellectual relationships; and (4) thematic analysis using keyword co-occurrence analysis, thematic mapping, and trend topic analysis to identify the conceptual structure, thematic evolution, and emerging research trends within the field. The results were visualized using the Biblioshiny dashboard, which generated graphical representations of publication trends, collaboration networks, thematic maps, keyword co-occurrence networks, and thematic evolution.

To ensure the reliability and accuracy of the findings, metadata verification was conducted by cross-checking the exported Scopus records, removing duplicate documents, and manually verifying highly cited publications as well as the consistency of the bibliographic metadata prior to analysis. (Aparicio et al., [2022](#); Sweileh, [2023](#)). Biblioshiny was selected for its open-source nature, flexibility in visualization, and ease in handling multidimensional data structures from Scopus/WoS. The results of this bibliometric analysis are expected to provide a comprehensive overview of global research trends and directions regarding the strengthening of students' religiosity based on local wisdom, while also identifying opportunities for further research in the context of character education and spirituality in the digital age.

RESULT AND DISCUSSION

Annual Scientific Production

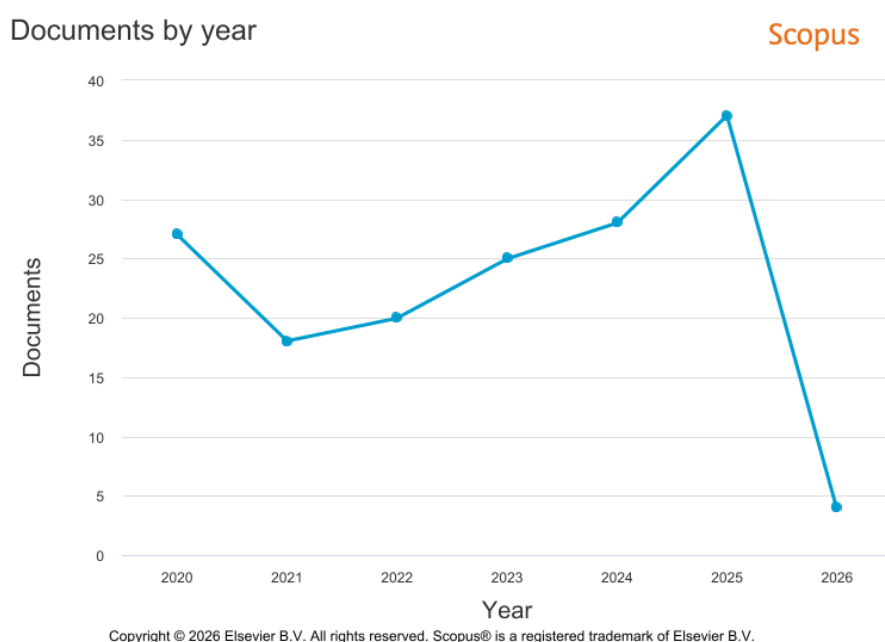


Figure 2. Document by year

Figure 2 illustrates the annual scientific production on students' religiosity and local wisdom indexed in the Scopus database during the 2020–2026 period. Overall, the publication trend exhibits a fluctuating yet steadily increasing pattern, indicating growing scholarly interest in this research area. At the beginning of the observation period, approximately 27 publications were recorded in 2020, followed by a decline to around 18 publications in 2021. Subsequently, the number of publications increased steadily from 2022 and reached its peak in 2025 with approximately 38 documents, reflecting the growing academic attention devoted to students' religiosity and local wisdom within the field of education. In contrast, the sharp decline observed in 2026, with only about five publications, should be interpreted cautiously, as it is most likely attributable to the incomplete indexing of Scopus records for the ongoing year rather than an actual decrease in research productivity. Overall, these findings indicate that research on students' religiosity and local wisdom has experienced substantial growth over recent years, highlighting the increasing relevance of this field in response to the global emphasis on character education, culturally responsive pedagogy, and the integration of local wisdom into educational practices. The upward publication trend also reflects the expanding recognition of local wisdom as an essential foundation for fostering students' moral, spiritual, and cultural development while creating new opportunities for future interdisciplinary research and international scientific collaboration.

The publication trend presented in Figure 2 reflects the growing scholarly attention devoted to students' religiosity and local wisdom over the past five years. The substantial increase in publications between 2022 and 2025 may be interpreted as an academic response to contemporary educational challenges, including concerns over the moral and spiritual development of younger generations in the digital era and the increasing demand for culturally responsive character education (Kurniawan, [2023](#)). This upward trend also indicates a growing recognition of the strategic role of integrating religious values and local wisdom into educational practices to foster students' moral integrity, cultural identity, and social responsibility. Moreover, the increasing number of publications suggests that this research area has evolved into an interdisciplinary field, attracting greater attention from scholars in education, religious studies, cultural studies, and the social sciences. These findings reinforce the view that local wisdom-based religiosity has become an increasingly relevant topic in global educational research and provides a strong foundation for further investigation into its conceptual development, collaborative networks, and emerging research themes.

The peak in publication output observed in 2025 indicates that this research area has gained increasing scholarly attention and has become an emerging field within educational and cultural studies. The growing number of publications suggests an expanding academic interest in issues related to local wisdom-based learning, the integration of cultural values into religious education, and contextually grounded approaches to spirituality in multicultural educational settings. These findings also provide preliminary evidence that research on students' religiosity and local wisdom is becoming increasingly diverse and interdisciplinary, a pattern that is further explored through the subsequent analyses of keyword co-occurrence, thematic mapping, and trend topics (Sudarmono et al., [2022](#)). Sementara itu, penurunan drastis pada tahun 2026 kemungkinan bukan disebabkan oleh berkurangnya minat penelitian, melainkan karena data tahun berjalan yang belum sepenuhnya terindeks dalam Scopus fenomena umum dalam analisis bibliometrik tahunan (Aparicio et al., [2022](#)). Olehnya itu, topik religiusitas dan kearifan lokal terus mengalami momentum akademik yang positif, mencerminkan pergeseran paradigma pendidikan dari sekadar transfer pengetahuan menuju pendidikan yang berakar pada spiritualitas, budaya, dan identitas bangsa.

Most Relevant Sources

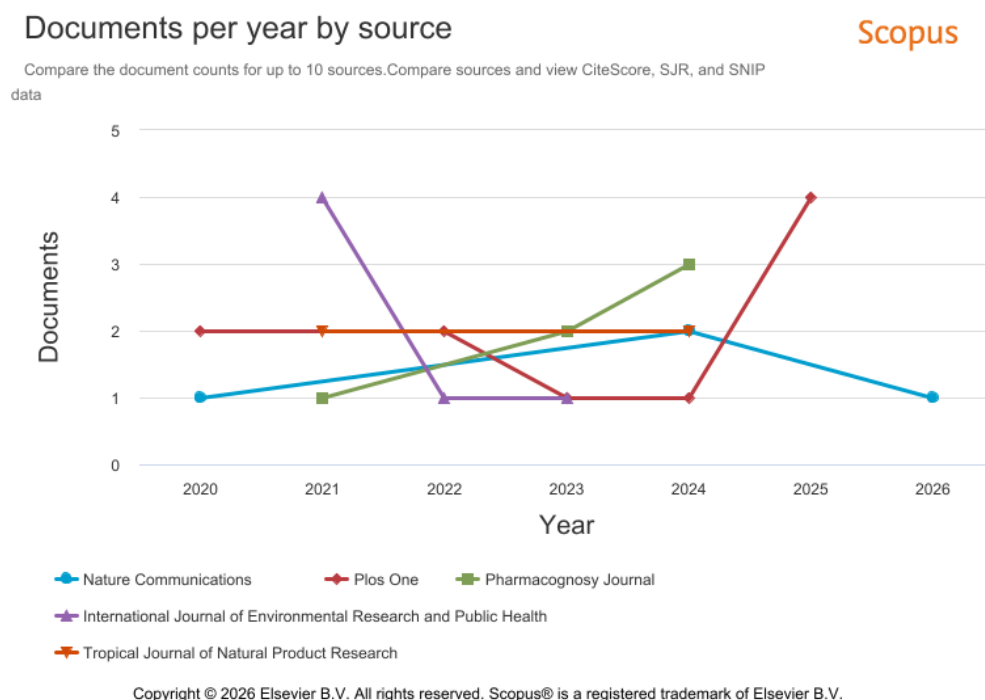


Figure 3. Documents per year by source

Figure 3 presents the annual distribution of publications by source journal on students' religiosity and local wisdom indexed in the Scopus database during the 2020–2026 period. The results indicate that several journals have emerged as the leading publication outlets in this research field, including *Nature Communications*, *PLOS ONE*, *Pharmacognosy Journal*, *International Journal of Environmental Research and Public Health*, and *Tropical Journal of Natural Product Research*. The presence of these journals demonstrates that research on students' religiosity and local wisdom has attracted scholarly attention across diverse disciplinary domains, including education, public health, environmental studies, and interdisciplinary social sciences. Research is no longer confined to a monolithic approach. Religiosity is no longer viewed merely as a moral doctrine or religious ritual, but rather as a social determinant that has a tangible impact on students' healthy lifestyles and mental well-being. This approach aligns with the One Health concept—or social well-being—which emphasizes that physical, mental, and environmental health are interrelated.

Overall, the figure illustrates variations in publication productivity across journal sources, indicating that research on students' religiosity and local wisdom has an interdisciplinary character. The topics of religiosity and local wisdom are discussed not only within educational and social contexts but are also associated with public health, environmental studies, and the development of ethical values in both the natural and social sciences. For example, the increasing number of publications in *Pharmacognosy Journal* and *Tropical Journal of Natural Product Research* suggests a growing interest in linking local wisdom with the development of natural medicines and traditional culture-based health practices, in line with research priorities in the fields of health and natural products (Nuraini et al., 2023).

The peak in publications in *PLOS ONE* in 2025 indicates growing global attention to the dimension of students' religiosity in education and multicultural societies, reflecting a shift toward interdisciplinary approaches in the study of moral, social, and students' mental health issues (Rahmawati & Hasan, 2024). Meanwhile, the fluctuations observed in the *International Journal of Environmental Research and Public Health* demonstrate the relevance of this research area to ecological and sustainability issues, particularly in understanding how religious values and local wisdom can strengthen students' environmentally responsible behavior (Sitorus et al.,

[2022](#)).

From a bibliometric perspective, this trend indicates that research on students' religiosity and local wisdom has evolved from a predominantly cultural issue into a multidisciplinary research field encompassing health, environmental sustainability, and scientific ethics. This finding is consistent with the direction of Indonesia's *Asta Cita* Priority 4, which emphasizes the strengthening of human resources and values-based education, and also supports the National Research Master Plan (*Rencana Induk Riset Nasional* [RIRN]) in promoting research productivity oriented toward sustainable development. Therefore, this figure not only illustrates variations in publication output across journal sources but also reflects the conceptual and thematic evolution of research on students' religiosity based on local wisdom, extending from the domain of moral education to its integration with global issues such as health, sustainability, and ecological spirituality.

Most Active Authors and Affiliates

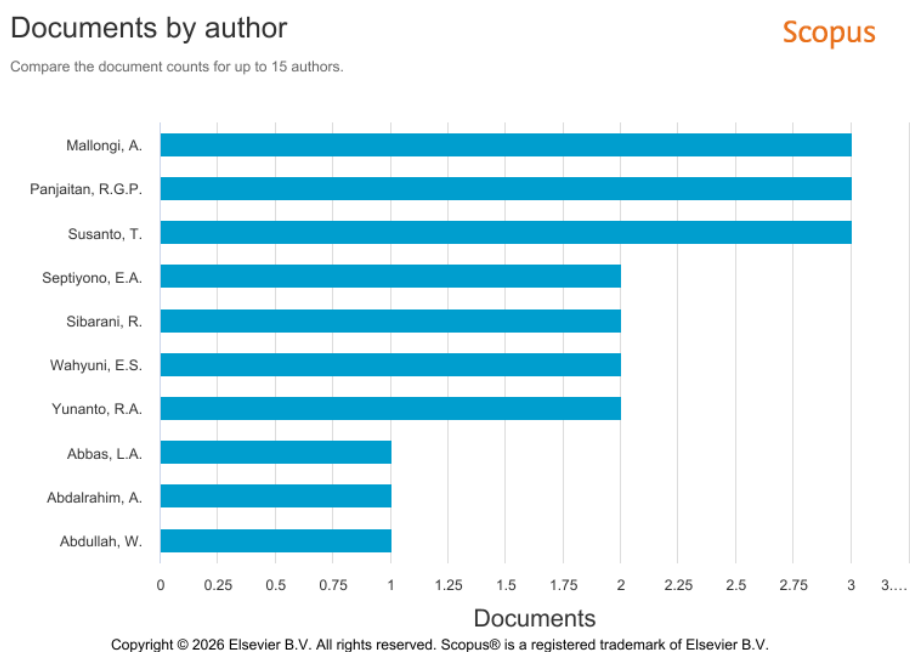


Figure 4 Documents by Author

Figure 4 presents the distribution of publications by author in studies on students' religiosity and local wisdom indexed in the Scopus database during the 2020–2026 period. As shown in the figure, Mallongi, A., Panjaitan, R.G.P., and Susanto, T. were the most productive authors, each contributing three publications. They were followed by Septiyono, E.A., Sibarani, R., and Wahyuni, E.S., with two publications each, while other authors, including Yunanto, R.A., Abbas, L.A., Abdalrahim, A., and Abdullah, W., contributed one publication each. Overall, the distribution suggests that research on students' religiosity and local wisdom remains relatively fragmented and is not dominated by a single leading scholar. Instead, the field has evolved through collaborative and multidisciplinary research efforts involving scholars from various disciplines, including education, anthropology, theology, and public health (Rahmawati & Hasan, [2024](#)).

Interestingly, several prominent authors, including Mallongi, A. and Susanto, T., have contributed to research spanning environmental health and values-based education rooted in local wisdom. This pattern suggests that studies on students' religiosity and local wisdom have increasingly extended beyond moral and spiritual perspectives to encompass broader issues related to social well-being, public health, and interdisciplinary educational research (Nuraini et al., [2023](#)). In other words, the existing body of research tends to adopt an interdisciplinary

approach that integrates cultural, religious, and applied social science perspectives.

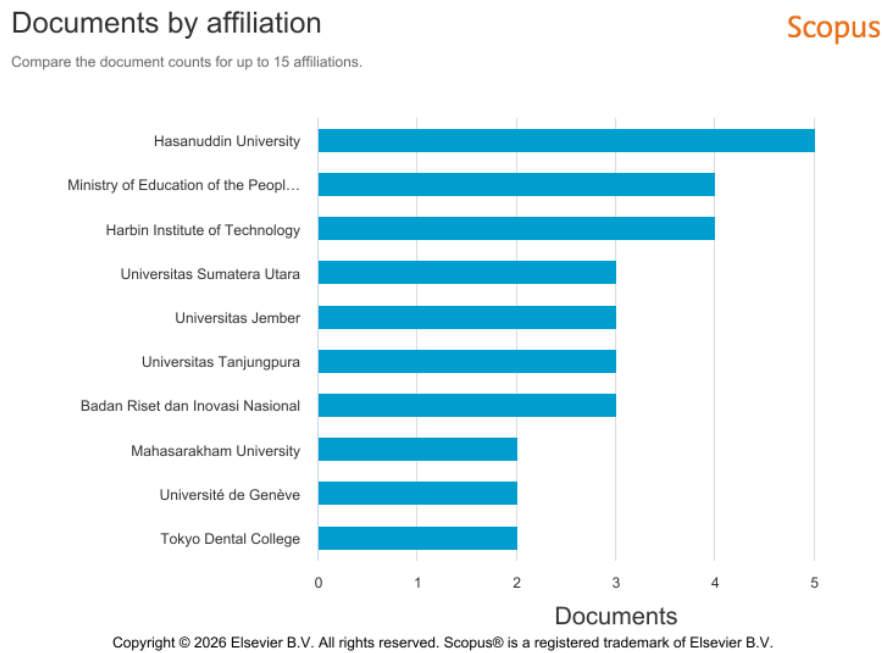


Figure 5. Documents by Affiliation

Figure 5 presents the distribution of publications by institutional affiliation contributing to research on students' religiosity and local wisdom indexed in the Scopus database. As shown in the figure, Hasanuddin University was the most productive institution, contributing approximately five publications, followed by the Ministry of Education of the People's Republic of China and Harbin Institute of Technology, each with approximately four publications. Several Indonesian universities, including Universitas Sumatera Utara, Universitas Jember, and Universitas Tanjungpura, also made significant contributions, with approximately three publications each. The involvement of national institutions such as the National Research and Innovation Agency (BRIN) highlights the Indonesian government's support for research on values-based education and local wisdom. Meanwhile, the presence of international institutions, including Mahasarakham University (Thailand), Université de Genève (Switzerland), and Tokyo Dental College (Japan), indicates that research on students' religiosity and local wisdom has attracted global scholarly attention and continues to develop within cross-cultural and multidisciplinary contexts, in line with global research trends in character education and sustainable human development.

The two figures, *Documents by Author* and *Documents by Affiliation*, are closely interconnected in illustrating the scientific network and global research collaboration on students' religiosity and local wisdom. The first figure shows that research contributions are distributed among a diverse group of authors, with no single author dominating the field, indicating a collaborative and decentralized research structure. The second figure further clarifies the institutional basis of this collaboration, highlighting Indonesian universities such as Hasanuddin University, Universitas Sumatera Utara, and Universitas Jember as major contributors, while also demonstrating collaborative links with international institutions, including Harbin Institute of Technology (China) and Université de Genève (Switzerland).

From an analytical perspective, the relationship between these two figures illustrates a pattern of networked scholarship, in which researchers from different institutions contribute to a shared body of knowledge on students' religiosity and local wisdom. The distribution of productive authors and institutional affiliations indicates that Indonesian universities, including Hasanuddin University, Universitas Sumatera Utara, and Universitas Jember, play an important role in advancing this research field alongside internationally recognized institutions.

Furthermore, this pattern suggests that research on students' religiosity and local wisdom has evolved from a predominantly local topic into a transnational research discourse, where contributions from diverse authors and institutions enrich methodological approaches and broaden the scientific impact of the field.

Contributing Disciplines

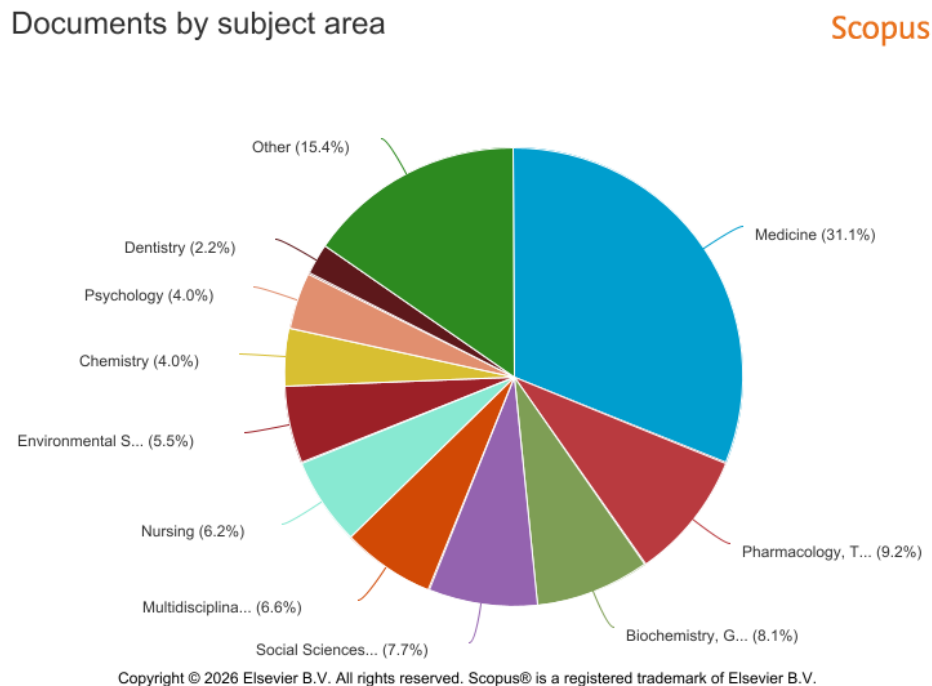


Figure 6. Documents by Subject Area

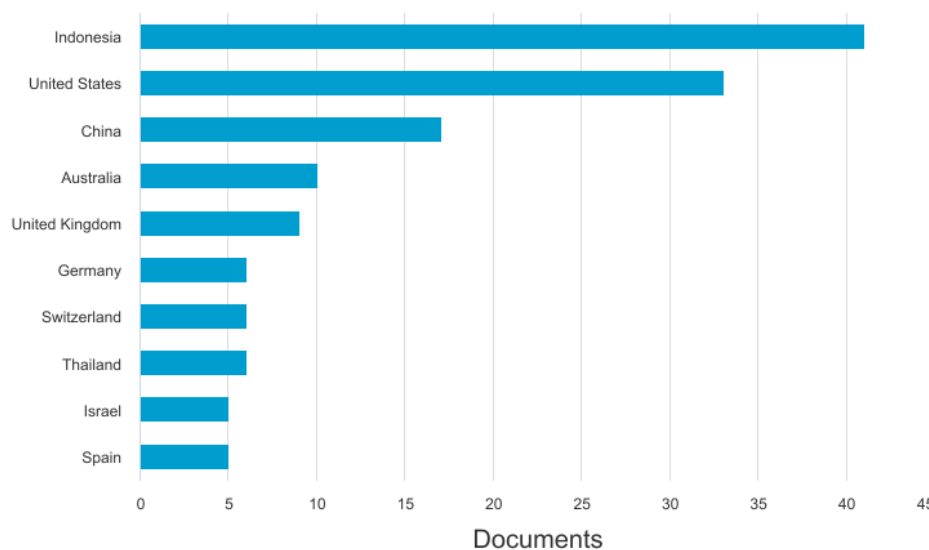
Figure 6 illustrates the distribution of research by subject area in studies on students' religiosity and local wisdom indexed in the Scopus database. Medicine represents the largest proportion, accounting for 31.1% of the publications, followed by Pharmacology, Toxicology and Pharmaceutics (9.2%), Biochemistry, Genetics and Molecular Biology (8.1%), and Social Sciences (7.7%). Other disciplines, including Nursing (6.2%), Environmental Science (5.5%), Psychology (4.0%), and Chemistry (4.0%), also make significant contributions. This distribution indicates that research on students' religiosity and local wisdom is no longer confined to socio-cultural contexts but has expanded into interdisciplinary research, particularly in studies examining the relationships between spiritual and cultural values, public health, medical ethics, and human well-being. The predominance of health and science-related disciplines further suggests an increasing integration of religious values and local wisdom into holistic approaches to education, healthcare, and sustainable development. Science education that integrates religious values (such as the concept of environmental conservation (Hifzh al-Bi'ah) in Islam) has proven effective in fostering a deeper ecological awareness and environmental concern among students, and—in terms of Religious Values in Science—this approach rejects the dichotomy between religion and science. Natural phenomena are studied through empirical work (the scientific method) while also serving as a means to strengthen spiritual faith and foster awe for God's creation. Furthermore, in Character Education, science activities demand objective honesty and responsibility. When combined with religious values, this fosters a strong, resilient moral character that upholds scientific ethics.

Contributing Countries and International Collaboration

Documents by country or territory

Scopus

Compare the document counts for up to 15 countries/territories.



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Figure 7. Documents by Country or Territory

Figure 7 presents the distribution of publications by country or region indexed in the Scopus database. Indonesia ranked first with approximately 42 publications, followed by the United States with approximately 37 publications. China ranked third with approximately 20 publications, while Australia and the United Kingdom contributed approximately 10–12 publications each. Other countries, including Germany, Switzerland, Thailand, Israel, and Spain, contributed fewer publications, ranging from approximately 5 to 8 documents. Overall, Indonesia emerged as the leading contributor to the scientific publications included in this dataset.

Country Collaboration Map

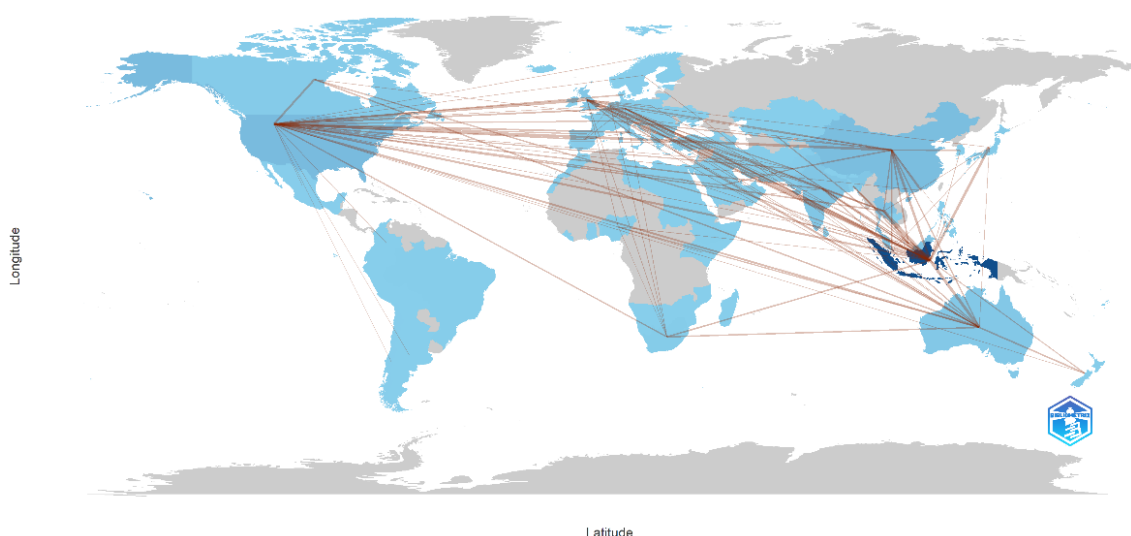


Figure 8. Country Collaboration Map

The country collaboration map illustrates the international research collaboration network involving countries from different regions of the world, with Indonesia emerging as the central hub of collaboration. The connecting lines represent research collaborations between

<https://siducat.org/index.php/isej/>

Indonesia and several other countries, including the United States, European countries such as the United Kingdom, Germany, and Switzerland, as well as countries in Asia and Oceania, including China, Thailand, and Australia. This pattern indicates that Indonesia has established broad and active scientific collaborations with a diverse range of global partners in research activities.

The collaboration map indicates that Indonesia's research collaboration pattern is predominantly multilateral and strategically connected with countries that play influential roles in global research, including the United States, the United Kingdom, China, and Australia. These collaborative relationships may reflect efforts to enhance research quality through greater access to scientific expertise, research resources, and international publication networks. Furthermore, the involvement of European and East Asian countries suggests a diversification of research partnerships, which may strengthen Indonesia's participation in the global scientific community. The thicker connecting lines between Indonesia and several partner countries indicate stronger or more frequent collaborative relationships. Overall, this collaboration network suggests that Indonesia has become an active participant in international research collaboration within this research field, with an expanding network of partnerships and increasing engagement at the global level.

Articles with the Highest Citations

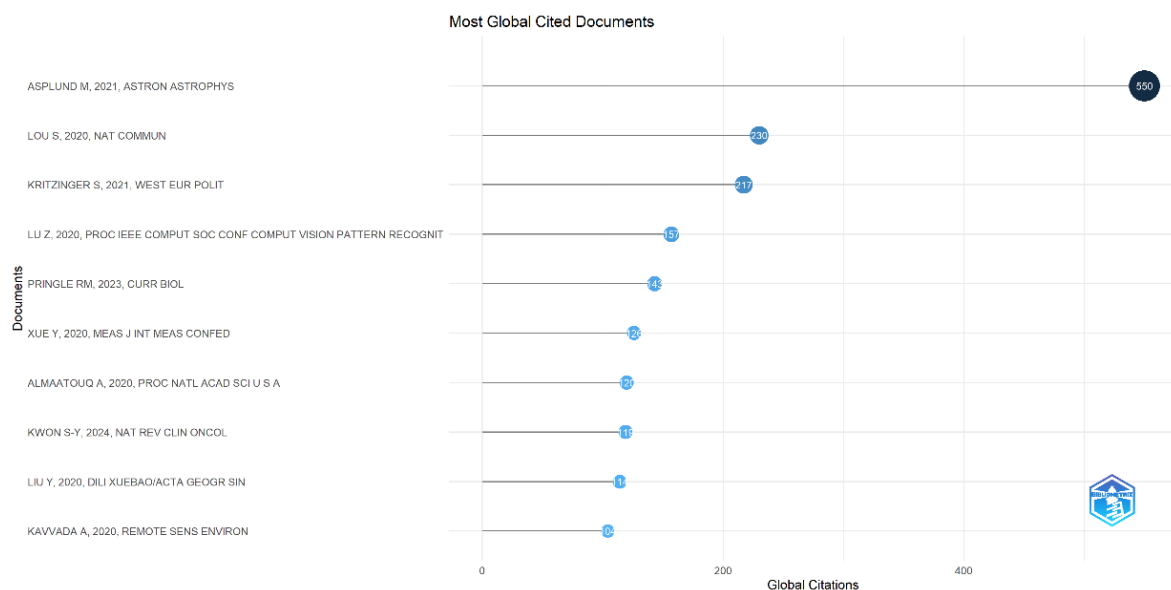


Figure 9. Most Global Cited Documents

Meanwhile, several other publications, including those by Lu, Z. (2020) published in the *IEEE Conference on Computer Vision and Pattern Recognition* and Pringle, R.M. (2023) published in *Current Biology*, demonstrated a moderate global impact, with approximately 150 citations each. Publications by Almaatouq, A., Kwon, S.-Y., Liu, Y., and Kawada, A. received comparatively lower citation counts, ranging from approximately 80 to 120 citations. Overall, the figure indicates that publications in the fields of astrophysics, political science, and computer science accounted for the highest global citation impact, reflecting a strong trend toward interdisciplinary research with broad scientific influence.

Research Themes and Future Research Directions



Figure 10. Relevance Degree

Figure 10 presents the thematic map, illustrating the positioning of research themes based on two principal dimensions: density, represented on the vertical axis, and centrality, represented on the horizontal axis. The thematic map is used to analyze the conceptual structure of the research field and to determine the relative position of each theme within the scientific knowledge domain.

In the upper-right quadrant (Motor Themes), the themes "Journal" "scientific paper," exhibit high levels of both centrality and density, indicating that they serve as the primary driving themes and occupy a highly influential position within the existing research network. These themes represent well-developed and conceptually mature areas that have become the focus of numerous interdisciplinary studies. In the right-central quadrant (Basic Themes), the cluster comprising "Indonesia," "sustainable development," and "sustainability" appears as a central research theme with high relevance but relatively lower thematic development, suggesting that sustainable development in the Indonesian context constitutes a fundamental research area with considerable potential for future investigation.

Meanwhile, the left quadrant shows the themes "local wisdom," "students," and "culture," which are classified as Emerging or Declining Themes. This indicates that although these topics exhibit a moderate level of thematic development (density), their relevance within the overall research network remains relatively limited, suggesting considerable potential for further development through stronger integration with global issues such as sustainability and intercultural education. In addition, themes such as "ethnobotany" and "knowledge" are positioned in the lower-left quadrant (Emerging or Declining Themes), indicating that research in these areas has received relatively limited attention or is experiencing a decline in global scholarly interest. Overall, the thematic map reflects the dynamic evolution of the research field, with sustainability serving as a central connecting theme, while cultural and ethnobotanical dimensions require further revitalization through stronger integration with broader global research agendas.

development.

From an interdisciplinary perspective, the distribution of publications across the fields of health, psychology, and environmental science reflects the conceptual evolution of this research area from personal morality toward broader issues of social and ecological well-being. Studies such as (Dewi et al., 2024) have shown that local wisdom-based education can strengthen students' environmental awareness and socio-ecological ethics, while studies such as (Abidin et al., 2021) have further confirmed the positive correlation between religious values and environmentally responsible behavior. Strong international collaboration between Indonesian universities and global research partners has accelerated this epistemological exchange, fostering the integration of local spirituality with modern scientific knowledge. From a practical perspective, the findings of this study offer several important implications: (1) providing a foundation for curriculum design that integrates local wisdom and students' religiosity; (2) strengthening students' moral and social resilience in the digital era; and (3) supporting the achievement of the Sustainable Development Goals (SDG 4: Quality Education and SDG 16: Peace, Justice and Strong Institutions). Overall, research on students' religiosity and local wisdom represents not only a response to contemporary moral challenges but also a strategic contribution to the development of a holistic, contextual, and sustainable educational paradigm.

The findings indicate that research on local wisdom and students' religiosity has been widely conducted by scholars from various Indonesian universities, including Universitas Pendidikan Indonesia, Universitas Negeri Yogyakarta, and Universitas Gadjah Mada, which actively collaborate with international institutions such as the University of Malaya and Monash University. This pattern reflects a strong synergy between national and international scholars in developing educational approaches grounded in cultural values and spirituality. The contributing authors predominantly represent the fields of education, psychology, and social sciences, working collaboratively across disciplines to explore how local wisdom and religiosity can strengthen students' character and enhance the relevance of education to Indonesia's socio-cultural context.

Substantively, this pattern of collaboration indicates that the research extends beyond formal teaching practices to emphasize the development of students' identity and moral character. Indonesian researchers play a significant role as major contributors due to their strong contextual understanding of local cultural values, while international partners contribute by enriching the research with diverse methodologies, theoretical perspectives, and global insights. As a result, these collaborative efforts have produced more comprehensive and impactful research, contributing not only to high-quality scientific publications but also to the development of character-based curricula and sustainable education. This cross-institutional collaboration demonstrates that the integration of modern scientific knowledge with cultural values can foster a more humanistic, contextual, and globally relevant educational paradigm.

Based on the bibliometric findings (2020–2026), research on students' religiosity and local wisdom has shifted from a predominantly normative approach toward more interdisciplinary and applied perspectives. Recent studies have increasingly focused on integrating religious values and local wisdom into character education, public health, and social sustainability. Research in this field has been conducted primarily within the domains of moral education, public health, and environmental studies (Nuraini et al., 2023; Sitorus et al., 2022). The prominence of publications in journals such as the *International Journal of Environmental Research and Public Health* and *PLOS ONE* indicates that this topic has become part of the global discourse on holistic education and sustainable human development.

This phenomenon is consistent with the Human Development and Capability Approach (Nussbaum, 2011; Sen, 1999) which emphasizes the importance of moral, cultural, and spiritual values in fostering holistic human development. In the educational context, this perspective has been translated into the paradigm of education for character and sustainability, where local wisdom and religious values serve as the foundation for strengthening the identity and moral character of younger generations in the digital era (Rahmawati & Hasan, 2024). Recent studies

have increasingly adopted empirical approaches, including mixed-methods research, school ethnographic studies, and values-based interventions, to examine the impact of integrating culture and religiosity on students' behavior (Sudarmono et al., [2022](#)).

Meanwhile, the thematic mapping results indicate that topics such as local wisdom, students, and culture remain within the category of Emerging Themes, suggesting that these areas have considerable potential to become major focuses of future research, particularly when integrated with global issues such as Education for Sustainable Development (ESD), digital ethics, and spiritual ecology. Future research may therefore focus on how local values can be adapted to digital education, technology-enhanced learning, and cross-cultural curriculum development. Over the next five years, research is expected to shift toward exploring the interconnections between spirituality, technology, and sustainability, particularly through emerging topics such as digital religiosity, virtual local wisdom preservation, and eco-religious education. This direction is consistent with the Ecological Systems Theory (Bronfenbrenner, [1979](#)) which views individuals, including students, as part of a broader socio-cultural ecological system. This perspective provides a foundation for developing educational models that position religious values and local wisdom as essential resources for mitigating the impacts of modernization and globalization on the character development of younger generations (Kurniawan, [2023](#)).

Furthermore, future research should place greater emphasis on transdisciplinary approaches by fostering collaboration among the fields of education, psychology, technology, and cultural sociology. Such an approach will broaden the relevance of this research to both national and global educational policies, particularly in supporting Sustainable Development Goal (SDG) 4: Quality Education and SDG 16: Peace, Justice and Strong Institutions.

CONCLUSION

Based on the bibliometric analysis of publications on students' religiosity and local wisdom during the 2020–2026 period, it can be concluded that research in this field has experienced significant growth, reflecting increasing academic awareness of the importance of integrating spiritual values and local wisdom into educational systems. The publication peak observed in 2025 indicates that this topic has become a mainstream area of interdisciplinary research, encompassing education, public health, environmental studies, and psychology, with Indonesia emerging as the leading regional contributor through extensive collaboration with international institutions. These findings demonstrate that students' religiosity and local wisdom are increasingly regarded not merely as moral constructs but also as fundamental pillars for character development and social sustainability. Limitations of Search Strings Limitations in formulating search strings (keywords) may exclude important literature that uses alternative terms, synonyms, or local languages (other than English). Scopus Database Bias Reliance on a single primary database leads to Scopus database bias, whereby publications are more oriented toward mainstream international academic journals and less likely to include formats such as books, book chapters, or locally published literature. Potential Noise in Metadata Potential noise or errors in metadata (such as errors in institutional affiliations, misspelled author names, or incorrect document classification) can reduce the accuracy of network visualization mapping results.

From a theoretical perspective, this study highlights the strong relevance of the Human Development and Capability Approach, which emphasizes the importance of cultural and spiritual values in fostering holistic human development, as well as the Ecological Systems Theory, which conceptualizes education as an integral component of interconnected socio-cultural systems. Together, these theoretical perspectives suggest that education grounded in religious values and local wisdom can strengthen students' moral, social, and ecological resilience in the face of globalization and digital transformation. Consequently, the integration of religiosity and local wisdom contributes not only to individual character development but also to the achievement of the Sustainable Development Goals (SDG 4: Quality Education) and SDG

16: Peace, Justice and Strong Institutions.

Nevertheless, this study has several limitations. First, the analysis relied exclusively on the Scopus database, which may not fully represent locally published or non-indexed studies, as well as conceptual works with significant theoretical contributions. Second, the bibliometric analysis did not examine in depth the methodological approaches, research designs, or empirical evidence employed in the selected studies. Therefore, future research should further investigate the methodological characteristics, research instruments, and empirical findings related to students' religiosity and local wisdom.

Based on these findings, several recommendations can be proposed. First, future studies should adopt more exploratory and empirical approaches to investigate the integration of religiosity and local wisdom within digital education. Second, interdisciplinary and international research collaboration should be strengthened to develop educational models that are globally relevant while remaining firmly rooted in local cultural values. Third, governments and educational institutions are encouraged to formulate curriculum design policies that incorporate spiritual, cultural, and ecological dimensions into teaching and learning processes.

Future research should also promote a transdisciplinary research paradigm integrating education, technology, and local culture to develop more holistic and sustainable educational systems. Accordingly, this study offers both theoretical and practical contributions. Theoretically, it broadens scholarly understanding of the relationship between students' religiosity and local wisdom in educational research. Practically, it provides an evidence-based foundation for educational policy formulation and the development of innovative learning models centered on character education, spirituality, and cultural identity in the global era.

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