Global Trends of Islam and Science Research: A Bibliometric Analysis from 2014 to 2023 and the Integration in Learning

Zulfah[1*], Muhammad Faisal[2]
[1,2]STAIN Sultan Abdurrahman, Jl. Lintas Barat KM. 19 Ceruk Ijuk, Bintan, Indonesia. 29157
zulfah@stainkepri.ac.id[1*], faisal@stainkepri.ac.id[2]

Abstract

Islam and science have had a long history and a relationship that often supports and influences each other. This research aims to study global trends in publications related to Islam and science from 2013 to 2024, which can be considered in implementing learning. Islamic and scientific research uses Biblioshiny and Vosviewer analysis to understand global trends thoroughly. Documents were taken from Scopus data with a total of 2685 which were then filtered into 323 documents using the prism method. The results of Biblioshiny's analysis show the distribution of articles per year, journal sources that publish a lot, affiliations and countries that write a lot. The results of the Vosviewer analysis in the overlay visualization show that topics related to systematic reviews, meta-analysis, and integration are the current topics carried out by researchers. Meanwhile, the topics of Islam, science, religion, and roles are often researched, while topics related to systematic reviews, meta-analysis, and integration, apart from being current topics, are also research topics that people rarely do, so they have the potential to continue to be developedThe topic of integration, which has not been widely discussed, can inspire teachers and lecturers to combine Islam and science in their classroom lessons. This approach can help students recognize that Islam sees science as a way to understand the signs of God's greatness in the universe.

Keywords: integration; Islam; learning; science

Article History: *Submitted 10 February 2025; Revised 22 March 2025; Accepted 28 April 2025*
How to Cite: Zulfah & Faisal, M. (2025). Global trends of Islam and science research: a bibliometric analysis from 2014 to 2023 and the integration in learning. *Al asma: Journal of Islamic Education*, *7*(1), 33-43. https://doi.org/10.24252/asma.v7i1.55358

INTRODUCTION

Islam has a long history of encouraging the pursuit of knowledge and technological advancement, as evidenced by the significant contributions of Muslim scholars during the classical period (2nd to 9th centuries) in fields such as medicine and astronomy (Nurmayani, 2013). The study of Islam and science has been a topic of interest to scholars and intellectuals for centuries. Since the golden age of Islamic civilization in the 8th to 14th centuries, the Islamic world has played a significant role in the development of science. Many Muslim scientists of that era, such as Al-Khwarizmi, Ibn Sina (Avicenna), and Al-Razi, made major contributions in fields such as mathematics, medicine, astronomy, physics, and philosophy. Islam and science are two fields traditionally considered at odds, but there has been a growing interest in exploring the intersections between the two in recent years. Interdisciplinary approaches to teaching Islam and science have emerged to bridge the gap between the two fields and encourage critical thinking (Sulaiman, 2023). Religion has sacred, profane and creedal values, while science has contextual and temporal values (Karwadi, 2020), with the awareness of these values, what happens is that they

complement each other and fill each other so that the discourse of conflict between science and religion can be neutralized.

In the modern context, research on the relationship between Islam and science is often framed in two perspectives: the continuity of the Islamic scientific tradition and the challenges of integrating modern science. On the one hand, many contemporary Muslim scholars argue that Islam supports the unlimited pursuit of knowledge as long as it is conducted within the framework of Islamic ethics. They emphasize that scientific research should be guided by moral values which align with the teachings of the Qur'an and the Sunnah. Some people argue that scientific and religious knowledge share the same metaphysical foundation, aiming to uncover God's signs in the universe (Saifulloh, 2017). Integrating science from an Islamic perspective promotes research that aligns with Islamic teachings and fosters technology development for humanity's benefit. This approach allows Muslims to embrace modern scientific advancements while upholding their spiritual values (Alinata et al., 2024). However, there is also debate about how to reconcile the findings of modern science with the interpretation of religious texts. Some fields, such as evolutionary theory, cosmology, and biotechnology, sometimes trigger debates between scientists and scholars, especially in interpreting whether scientific findings are in accordance with or in conflict with Islamic beliefs. Islamic scholars generally accept scientific findings that align with the teachings of the Quran, viewing creation as God's will, which encompasses both physical and spiritual dimensions (Dina et al., 2024). While many Muslim biology students accept evolution as the basis for biodiversity, they often reject the idea of common ancestry (Helmi et al., 2019).

Sayyed Hosein Nasr believes that Islamic science is science developed by Muslims since the second Islamic century. More than that, Islamic science has spiritual and intellectual meaning, where Islamic science is not only important from the point of view of science as understood by the West today (Hosein Nasr, 1995). There is a reciprocal relationship between human civilization and science. Human civilization has always been influenced by science. As a result of their success in various fields of science, the living conditions of Muslims have improved tremendously (Sutrisno, 2015). Basically, Islam develops universal knowledge and never recognizes a dichotomy between religious and scientific texts. Nurcholish Madjid, a progressive Islamic scholar, advocates an inclusive method of understanding religion, highlights the importance of communication between Islam and science, and encourages the adaptation of Islamic ideals to contemporary circumstances (Iswanto & Mawardi, 2024).

There are various efforts to revive the scientific tradition in the Islamic world. Countries such as Malaysia, Turkey, and Iran have increased their scientific research and education investments. Organizations such as the Islamic World Academy of Sciences (IAS) have also worked to promote research among Muslim countries. Recent initiatives to revitalize scientific traditions in the Islamic world have concentrated on integrating science and technology with Islamic perspectives. This approach seeks to advance scientific knowledge within a moral and ethical framework that aligns with religious teachings (Kamil et al., 2021).

The emphasis on this science is rooted in the teachings of the Quran and Hadith (Pribadi & Sestri, 2020). Islam also encourages its people to research, always making the Quran a scientific guideline (Rizky Ramadhandy Budianto et al., 2021). However, some

Islamic sects, especially traditionalist puritans, reject the integration of science into Islam. In response to the dominance of Western science, scholars such as Sayyed Nasr Nasr proposed a harmonious blend of Islam and science, and advocated a Sufi approach to counter what he considered to be the sterile nature of secular Western science (Bistara, 2020).

Integrating Islam and science in learning is an educational approach that aims to unite modern science with Islamic values and teachings. In science education, teachers can design and implement integrated learning that includes Islamic values. For example, they can provide materials on ecological and environmental ethics linked to the concept of *khalifah fil ardh* (humans as guardians of the earth) in the context of environmental management, as highlighted in the Quran. This approach seeks to form students who not only master scientific knowledge but also have a deep understanding of religious, ethical, and moral values. Reading and analyzing research related to Islam and science is essential to gain an overview of both trends. Here are some research questions that will be carried out in this literature review process:

Research questions:

1. How is the distribution of the number of research articles on Islam and Science from 2014 to 2023 worldwide?
2. How is the distribution of research publication journal sources on Islam and Science from 2014 to 2023 worldwide?
3. How is the distribution of research on Islam and Science from 2014 to 2023 across affiliates and countries worldwide?
4. How is the visualization of the results of research trends on Islam and science from 2014 to 2023?
5. How to design and implement the integration of Islam and science in education?

METHOD

This study uses a quantitative descriptive research method with the help of Bibliometrix R-Studio and Vosviewer software. Bibliometric analysis is used for quantitative examination of academic publications commonly used in systematic literature reviews (Donthu et al., 2021);(Lim & Kumar, 2024). To review the literature in this study, quantitative approaches and procedures were used in reviewing papers published between 2014 and 2023. Research articles published during that period were then filtered to obtain relevant articles based on various specified criteria.

Researchers used literature data from the Scopus database to be analyzed in this study. The data analysis stage was carried out using Vosviewer and Biblioshiny analysis. Data exported from Scopus as RIS files were transferred to VosViewer software, while CSV file data was transferred to Biblioshiny. The steps for determining the sample were carried out using the prism method (Moher et al., 2009) as in the figure below:

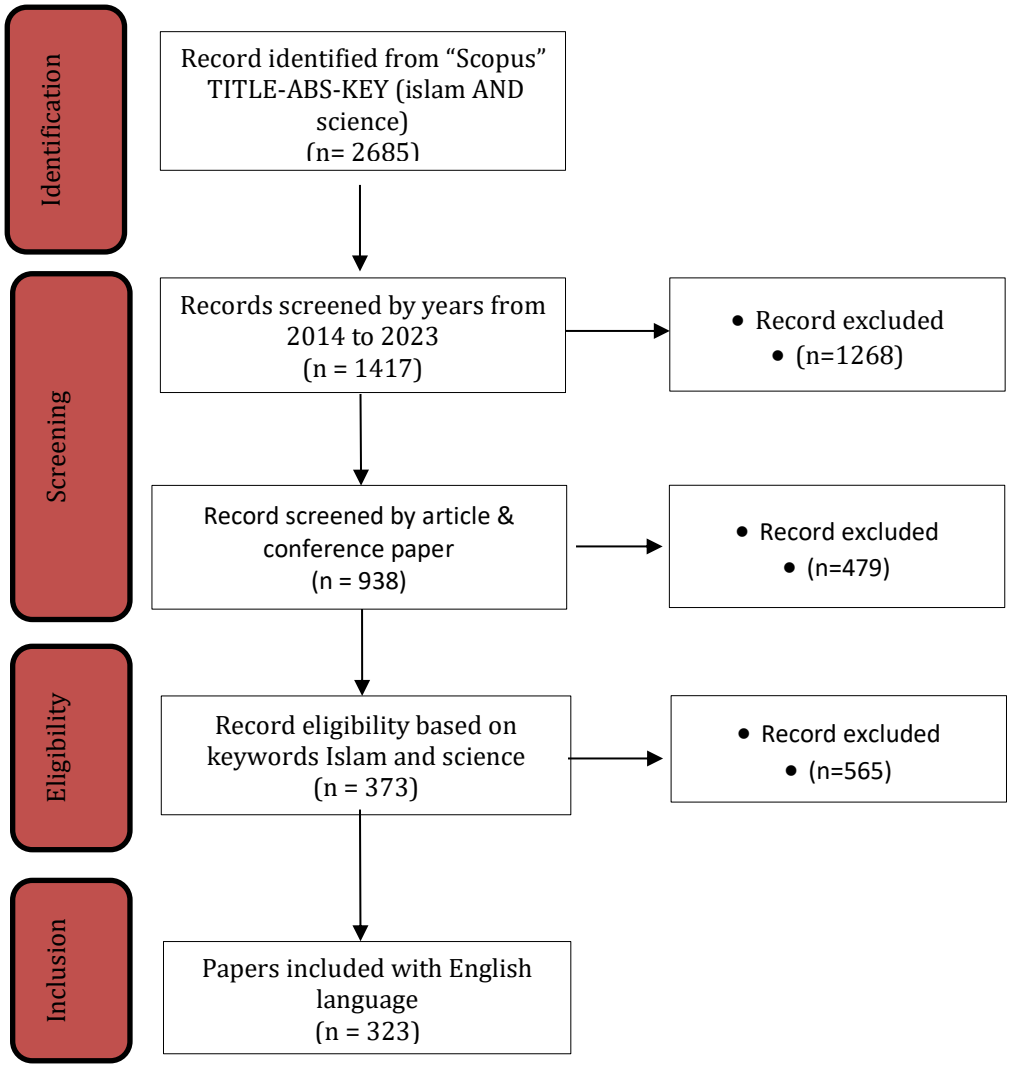

Figure1. Sample flow diagram by PRISMA

Query: TITLE-ABS-KEY (islam AND science) AND PUBYEAR > 2013 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (EXACTKEYWORD , "Islam") OR LIMIT-TO (EXACTKEYWORD , "Science")) AND (LIMIT-TO (LANGUAGE , "English"))

RESULTS

Studies of articles highlighting Islam and science reveal various views regarding the relationship between the two disciplines. Conducting an analysis related to research in Islam and science is an important step to gain a comprehensive understanding of the global trends of research on both in the last 10 years. The following is the data information analyzed in this bibliometric study:

Table 1. General information related to Islam and Science articles from the Scopus database

Description	Results	Description	Results
Timespan	2014:2023	Author's Keywords (DE)	1130
Sources (Journals, Books, etc)	218	Authors	812
Documents	323	Authors of single-authored docs	139
Annual Growth Rate %	-3.22	Single-authored docs	148
Document Average Age	5.49	Co-Authors per Doc	2.75
Average citations per doc	8.006	International co-authorships %	20.12
References	13149	article	312
Keywords Plus (ID)	1505	conference paper	11

Results of publication trend analysis with the number of papers published per year, The sources of journals that publish the most, the affiliations and countries that write the most, and the visualization of topic trends are explained in detail as follows:.

a. Trends in Islamic and Science Research with Biblioshiny Analysis

The distribution of 323 Islamic and scientific articles from the Scopus database in the last 10 years was carried out with the help of Biblioshiny analysis. The distribution of articles from 2014 to 2023 can be seen in the following figure:

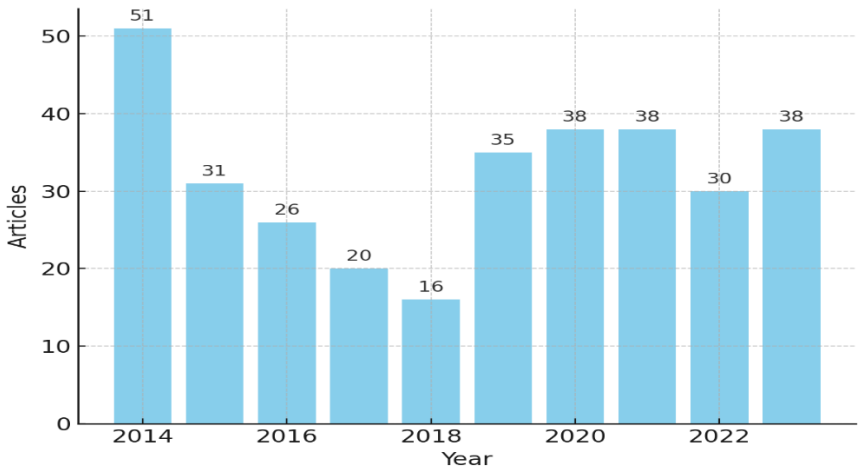

Figure 2. Distribution of articles per year

Figure 2 shows that the highest production of articles related to Islam and science occurred in 2014 while the lowest production was in 2018. Although 2014 was the year with the highest production of articles, it experienced a fluctuating number in the following years. Furthermore, there are 5 top journals that produced the most articles on Islam and science in the last 10 years as seen in Table 2.

Table 2. Journals with the most publications

Sources	Articles
JOURNAL OF RELIGION AND HEALTH	25
HTS TEOLOGIESE STUDIES / THEOLOGICAL STUDIES	13
ZYGON	12
RELIGIONS	9
THEOLOGY AND SCIENCE	8
SCIENCE AND ENGINEERING ETHICS	5
TUNISIE MEDICALE	5
ISLAMIC QUARTERLY	4
PLOS ONE	4
PUBLIC UNDERSTANDING OF SCIENCE	4

Research production from universities indicates various things that reflect the institution's quality, role and contribution in the realm of science and development. There are top ten affiliates that publish Islamic and scientific articles in the period 2014 to 2023, as seen in Table 3.

Table 3. Affiliations with the most publications

Affiliation	Articles
TEHRAN UNIVERSITY OF MEDICAL SCIENCES	27
UNIVERSITY OF MALAYA	15
UMM AL-QURA UNIVERSITY	14
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA	9
UNIVERSITI PUTRA MALAYSIA	9
ZAHEDAN UNIVERSITY OF MEDICAL SCIENCES	8
KASHAN UNIVERSITY OF MEDICAL SCIENCES AND HEALTHCARE	7
STANFORD UNIVERSITY	7
UNIVERSITI SAINS ISLAM MALAYSIA	7
UNIVERSITY OF MANCHESTER	7
UNIVERSITY OF TEHRAN	7

If we look at Table 3 above, it can be seen that the Tehran University of Medical Sciences is a university located in Iran; this is in line with the most productive country in producing Islamic and scientific articles. Universities play an important role in producing quality human resources through research and community service (Heri, 2019). Next, let's look at the contribution of authors between countries in conducting this Islamic and scientific research. Here are the top 10 countries with the most authors in Islamic and scientific research from 2014 to 2023:

Table 4. Top ten of countries scientific production

Region	Freq
IRAN	134
USA	116
INDONESIA	106
MALAYSIA	72
UK	64
SAUDI ARABIA	37
TURKEY	33
CANADA	31
PAKISTAN	21

Research and innovation are vital to a country's economic development and global competitiveness. Evaluating research productivity through scientific publications is essential to assess institutional contributions and to inform policy-making in research and development (Sibarani, 2019). The state has a very important role in developing research, which is seen through the various forms of support provided. Through these contributions, the state plays a central role in building a strong research ecosystem, encouraging innovation, and supporting technological progress, which in turn brings great benefits to social, economic, and community welfare progress.

b. Visualizing Islamic and Science Research Trends with VOSviewer

To visualize data from 323 Scopus articles related to Islam and Science from 2024 to 2023, researchers used the VOSviewer application. The following are the visualization results obtained:

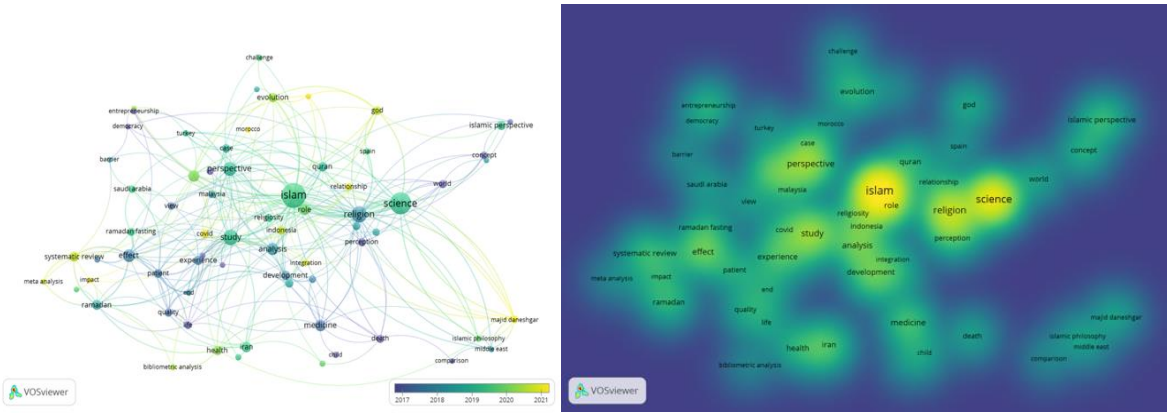

Figure 3. (a) left, overlay visualization. (b) right, density visualization.

In figure (a) overlay visualization shows current topics from the theme of Islamic and science research, seeing how elements in the network develop over time so that the image shows the difference in color from year to year. Dark blue colors such as "experience, perception, world" are topics that have been done for a longer time. While topics related to "systematic review, meta-analysis, integration" are the latest topics carried out by researchers, this is shown in bright yellow in the image. In figure (b) density visualization shows how dense certain areas are in the image. Areas with lighter colors indicate higher density as in the image above shown with the topic "Islam, science, religion, and role" which means it is often done while topics related to "systematic review, meta-analysis, integration" besides being current topics are also still topics that not many people have researched which is shown in a less bright color so that they have the potential to continue to be done and developed.

The topic of integration is one of the latest topics and is still rarely done in Islamic and scientific research. The Integration alternative is always chosen as the relationship between Islam and Science. The paradigm of integration as a relationship between Islam and Science is actually an initial stage that occurred at the beginning of the introduction of Islam to other civilizations (Taqiyuddin, 2021).There has been a call from Muslim scholars and clerics to bridge the gap between Islam and science, especially for the younger

generation of Muslims, by aligning science and Islam in education (Mustafa et al., 2021). In the axiological view, science is seen as neutral and value-free; the value of science is given by its users. This condition is what motivates Muslim scholars to reintegrate science and religion (Zein, 2014).

c. Integrating Islam and science in learning:

1. Holistic Approach: In this approach, education is not only seen from a cognitive aspect, but also includes spiritual and moral development. Science is taught as part of knowledge, which is also part of the greatness of God's creation. This helps students understand that science and Islam are not two separate things, but complement each other. Holistic learning requires teachers to understand the concept of integrated learning and strive for meaningful learning. Integration of religious and scientific curriculum and integrative learning is also needed so that students can develop their potential well (Isroani & Huda, 2022).
2. Integrated Curriculum: An integrated curriculum includes materials that combine scientific concepts with Islamic teachings. For example, in biology lessons, students can be taught about the creation of living things as a sign of Allah's greatness. In astronomy, lessons about the solar system can be connected to verses of the Qur'an that discuss the sky and celestial bodies. According to Drake, an integrated curriculum is a curriculum model that is designed and implemented by prioritizing various perspectives, in which various learning experiences are summarized, and reaches various realms of knowledge so that learning becomes more meaningful (Drake, 1998). What is meant by integrative is non-dichotomous/monotheistic, holistic, integrated, comprehensive, one system, one unity (Maksudin et al., 2020). One of the things seen from the education reform in Indonesia is the emergence of reform efforts in materials and methods. The field of materials is not only oriented solely to religious subjects, but in addition to religious subjects, general subjects are also included. To achieve the goal of integration between science and religion, the role of education (Islam) is absolutely necessary.
3. Emphasis on Ethics and Morals: Science is not only taught as technical knowledge, but is also viewed from an Islamic ethical perspective. For example, in technology or biotechnology, ethical issues such as genetic manipulation, cloning, or the use of technology for the good of humanity are discussed from an Islamic perspective.
4. Learning Methodology: Integrative learning methods involve reflective and contextual teaching. Teachers can invite students to discuss how certain scientific discoveries can be in line with Islamic teachings or trigger theological questions. This method also invites students to see science as a way to get closer to God. Integrating Islam and science into science learning is one alternative learning method to achieve national education goals that can improve students' intellectual and spiritual values (Ardi et al., 2024).
5. Utilization of Technology: Technology is used as a tool to support this integration. Digital platforms and online resources that combine science and Islamic content can be used in learning. For example, applications or websites that provide science learning in the context of Islamic values.
6. Character Development: Character education is an important part of this integration. Science is studied not only to develop cognitive abilities, but also to form a personality

with noble morals. An example of this practice is linking scientific principles with praiseworthy qualities in Islam, such as honesty, responsibility, and perseverance.

7. Research and Writing: Encourage students to undertake research that combines Islamic and scientific perspectives. For example, research projects that explore how scientific principles in the Qur'an can be studied and applied in the context of modern science.
8. Collaboration Between Scientists and Ulama: This integrative education can also involve collaboration between scientists and scholars in developing balanced teaching materials between science and Islam. This ensures that the material taught is scientifically accurate and in accordance with religious teachings. In this collaborative learning, it can be done by teachers who teach Islamic religious education with teachers who teach science education.
9. Value-Based Evaluation: Values: Learning evaluation is oriented toward mastery of scientific materials and students' understanding of how science can be used ethically in accordance with Islamic values.
10. Examples of Muslim Figures: Provide students with references to Muslim figures who contributed to science, for example Al-Khawarizmi, Ibn Sina, or Al-Biruni. By providing these examples, it is hoped that students will be inspired that Islam and science have actually been in line and have contributed to the advancement of public knowledge.

CONCLUSION

Based on the results of the bibliometric analysis, a picture of the global trend of Islamic and scientific research from 2014 to 2023 was obtained that articles published in the Scopus database were mostly published in 2014, the journal that published the most articles was the Journal of Religion and Health, the most affiliations were Tehran University of Medical Sciences, while the most researchers came from Iran, USA and Indonesia. The results of topic visualization through Vosviewer analysis show that topics related to systematic reviews, meta-analysis, integration in Islamic and scientific research are still relatively recent and rarely studied. The integration of Islam and science in learning aims to produce individuals who are balanced in knowledge and morality, and are able to apply scientific knowledge in everyday life in accordance with Islamic teachings. Further research can be conducted to explore the integration of Islam and science within the educational context. This can include focusing on the development of curricula or learning models that can be directly implemented in teaching. The aim is to nurture individuals who are not only scientifically competent but also possess strong moral values in line with Islamic teachings.

REFERENCES

Alinata, R., Dinillah, S., Sari, W. A., Putri, Y. K. (2024). Integrasi sains dalam perspektif Islam: menjelajahi hubungan antara keilmuan dan kehidupan beragama (kajian tafsir tarbawi). *El-Fata: Journal of Sharia Economics and Islamic Education*, *3*(1), 37–50. https://doi.org/10.61169/el-fata.v3i1.94

Ardi, Lufri, Amran, A., Kosasih, A., & Hervi, F. (2024). The effect of Islam and science integration implementing on science learning in Indonesia: a meta-analysis.

International Journal of Evaluation and Research in Education, *13*(4), 2594–2602. https://doi.org/10.11591/ijere.v13i4.27632

Bistara, R. (2020). Islam dan sains menurut Sayyed Nasr Nasr. *Prosiding Konferensi Integrasi Interkoneksi Islam dan Sains*, *2*, 113–117. https://sunankalijaga.org/prosiding/index.php/kiiis/article/view/385

Budianto, M. R. R., Kurnia, S. F., & Galih, T. R. S. W. (2021). *Perspektif Islam terhadap ilmu pengetahuan dan teknologi. Islamika: Jurnal Ilmu-Ilmu Keislaman, 21*(1), 55-61. https://doi.org/10.32939/islamika.v21i01.776

Dina, D. W. S., Anwar, N., Anwar, S. M., & Maajid, A. S. M. A. (2024). Teologi Islam dan kosmologi: penciptaan alam semesta menurut Al-Qur'an, konsep multiverse, dan hubungan teori evolusi dengan ajaran Islam dalam perspektif sains modern. *Indo-MathEdu Intellectuals Journal*, *5*(5), 6396–6404. https://doi.org/10.54373/imeij.v5i5.1990

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: an overview and guidelines. *Journal of Business Research*, *133* (March), 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

Drake, S. M. (1998). *Creating Integrated Curriculu Proven Ways to Increase Student Learning*. Corwin Press.

Heri, T. (2019). Membangun produktivitas dosen di perguruan tinggi. *Rausyan Fikr: Jurnal Pemikiran dan Pencerahan*, *15*(2), 55-65. http://dx.doi.org/10.31000/rf.v15i2.1804

Hosein Nasr, S. (1995). *Menjelajah Dunia Muslim: Bimbingan untuk Kaum Muslim*. Mizan.

Isroani, F., & Huda, M. (2022). Strengthening character education through holistic learning values. *Quality*, *10*(2), 289-306. https://doi.org/10.21043/quality.v10i2.17054

Iswanto, A. R., & Mawardi, K. (2024). Integrasi Islam dan sains: model neo-modernis prespektif nurcholish madjid. *Jurnal Kependidikan*, *12*(1), 69–84. https://doi.org/10.24090/jk.v12i1.9802

Kamil, M., Muhtadi, Y., Sentosa, B. M., & Millah, S. (2021). Tindakan operasionalisasi pemahaman sains dan teknologi terhadap Islam. *Al-Warits: Alphabet Jurnal Wawasan Agama Risalah Islamiah, Teknologi Dan Sosial*, *1*(1), 16-25. https://doi.org/10.34306/alwaarits.v1i1.24

Karwadi. (2020). *Membangun simbiosis mutualisme antara sains dan agama dalam pendidikan islam*. 1–16.

Lim, W. M., & Kumar, S. (2024). Guidelines for interpreting the results of bibliometric analysis: A sensemaking approach. *Global Business and Organizational Excellence*, *43*(2), 17–26. https://doi.org/10.1002/joe.22229

Maksudin, Yusuf, M. Y., & Robingun. (2020). *Thinking map: pendekatan integrasi-interkoneksi agama dan sains-teknologi* (I. Machali, Ed.). Fakultas Ilmu Tarbiyah dan Keguruan UIN Sunan Kalijaga.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. In *BMJ (Online)* (Vol. 339, Issue 7716, pp. 332–336). https://doi.org/10.1136/bmj.b2535

Mustafa, Z., Baharuddin, A., & Saifuddeen, S. M. (2021). Islam, science and education: delving into the progress, collaboration and biases. *Journal of Islamic Thought and Civilization*, *11*(2), 44–68. https://doi.org/10.32350/jitc.112.03

Nurmayani, N. (2013). Sumbangan Islam terhadap sains dan teknologi. *Jurnal Handayani*, *1*(1), 19-33. https://doi.org/10.24114/JH.V1I1.1251

Pribadi, S. A. T., & Sestri, E. (2020). Islam dan sains teknologi modern. *Jurnal Teknologi Informasi (JUTECH)*, *1*(1), 26–32. https://doi.org/10.32546/JUTECH.V1I1.850

Saifulloh, A. M. (2017). Telaah korelasi sains dan agama dalam paradigma Islam. Tarbiyatuna: Jurnal Pendidikan Islam, 10(2), 137–157. Retrieved from https://ejournal.iaisyarifuddin.ac.id/index.php/tarbiyatuna/article/view/258.

Sibarani, S. (2019). *Sumbangsih hasil penelitian dan pengembangan untuk Indonesia Lebih baik.* https://e-journal.trisakti.ac.id/index.php/semnas/article/view/5864/4601

Sulaiman, M. A. (2023). Exploring interdisciplinary approaches to teaching Islam and science: strategies, innovations and best practices. *Middle East Journal of Islamic Studies and Culture*, *3*(02), 5–13. https://doi.org/10.36348/mejisc.2023.v03i02.001

Sutrisno, H. (2015). Integrating science and Islam: a case study of State Islamic University (UIN. In R. Hashim & M. Hattori (Eds.), *Critical Issues and Reform in Muslim Higher Education* (pp. 178–197). IIUM Press.

Suwarjono, H., Rustaman, N. Y., Sudargo, F., & Hidayat, T. (2019). *Perspektif ilmiah dan keyakinan terhadap evolusi mahasiswa biologi di universitas berbasis agama*. *Jurnal Sosial Humaniora, 10*(2), 83-92. https://doi.org/10.30997/jsh.v10i2.1874

Taqiyuddin, M. (2021). Hubungan Islam dan sains: tawaran Syed Muhammad Naquib Al-Attas. *Maret*, *22*(1), 81–104. https://doi.org/10.30595/islamadina.v22i1.7216

Zein, M. (2014). Axiology on the integration of knowledge, islam and science. *Al-Ta Lim Journal*, *21*(2), 154–160. https://doi.org/10.15548/jt.v21i2.93