



# Sustainability Reporting in Higher Education Institution (HEIs) Between Indonesia and Malaysia: Bibliometric Analysis

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**Abstract.** This research aims to present a bibliometric analysis on the theme of sustainability in higher education institutions (HEIs) in Asia published in the Scopus database. The data used for this research amounted to 35 articles published from 2015 to 2024. The data was analyzed and visualized using RStudio and Vos Viewer was used to perform additional analysis. Until now, as shown by annual publication trends, sustainability in higher education institutions is still an interesting topic to research, especially in Asian countries where there is still little research. Malaysia is ranked first as the most productive writing country, with 12 people and 9 writers from Indonesia producing articles. The most productive writers on the Asian continent are Brandli L., Fais, Habib M., Leal Filho, Salvia, Sepasi, and Zahid, with a total of two articles. Rodrigo Lozano's 2013 article was the publication's most influential, having been cited 665 times. In Indonesia, the most cited article is Maylia's article in 2023, which was quoted twice. Meanwhile, the most cited article in Malaysia is Leal Filho's 2019 article, with 87 citations. The International Journal of Sustainability in Higher Education is the journal that publishes the most articles on the sustainability of higher education in Asia. Writers from Malaysia most often collaborate between countries, with writers from England, or with writers from Portugal. Further research could link higher education institutions (HEIs) to sustainable development. Farsighted higher education institutions are driven by public policy or public pressure to adopt and incorporate sustainable development into curriculum, research, targets, and campus operations.

**Keywords:** Sustainability Reporting, Higher Education Institution, Bibliometric.

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## 1 Introduction

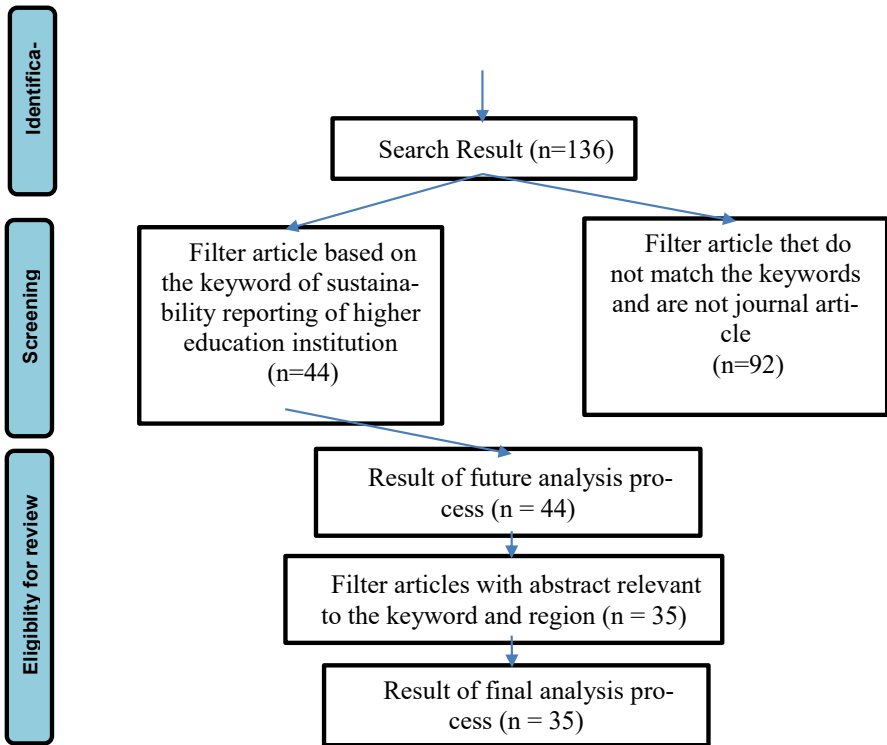
Sustainability reporting has become an important part of efforts to improve transparency and accountability of higher education institutions. Universities around the world, including in Indonesia and Malaysia, are increasingly realizing how important it is to incorporate sustainability principles into their operations. Not only related to social and environmental responsibility but also their role in shaping the next generation who realize the importance of sustainability. Higher education sustainability reporting is still relatively new in Malaysia and Indonesia. Nonetheless, there is a strong push from governments, non-governmental organizations, and the community to improve sustainable higher education practices. Universities in both countries have taken steps to adopt more sustainable policies and practices, such as waste management, energy efficiency, education and research on sustainability. Despite the great progress made, universities still face many challenges in implementing and reporting on sustainability. The lack of clear standards, limited resources, and lack of awareness and commitment from various parties involved are some of the challenges in implementing sustainable reporting in universities. Therefore, this study aims to investigate sustainability reporting practices in universities in Indonesia and Malaysia and find factors that affect the performance of such reporting.

This research is expected to increase understanding of sustainability reporting in universities in both countries. Therefore, these findings can be used as a basis for making better policies and methods to support higher education sustainability reporting.

## 2 Method

The Scopus database is used to collect document data with the theme Sustainability Reporting in Higher Education Institutions. Scopus is an extensive database of multi-disciplinary publications. Scopus provides citations and abstracts from various publications, such as peer-reviewed papers, journals, books, patents, and conference publications. Scopus has filters that include access type, author name, year, document type, and language to make search easier. In addition, Scopus provides tools to store document data, including citation and bibliographic information, as well as abstracts and keywords in plain text, RIS, CSV, and BibTeX formats (Figure 1).

Literature search database: Sco-



**Figure 1.** PRISMA search for relevant journal articles.

### 3 Result and Analysis

#### Key Data Information

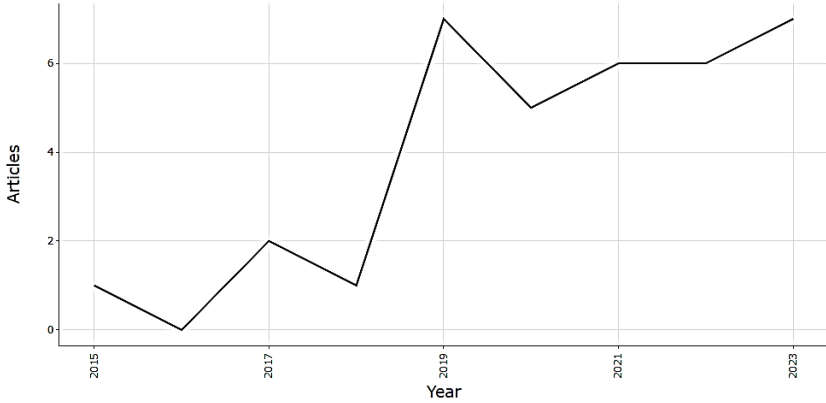
This study uses publications from 2015 to 2023, approximately eight years. This publication comes from 35 documents, with 26 articles and 113 keywords coming from the author. There are 125 authors, with 6 authors not collaborating on 6 articles. Table 1 shows more complete data.

**Table 1.** Main Data Information

<b>Description</b>	<b>Results</b>
<b>Main Information About Data</b>	
Timespan	2015:2023
Sources (Journals, Books, etc)	28
Documents	35
Annual Growth Rate %	27,54
Document Average Age	3,46
Average citations per doc	16,6
References	1
<b>Document Contents</b>	
Keywords Plus (EN)	126
Author's Keywords (DE)	113
<b>Authors</b>	
Authors	125
Authors of single-authored docs	6
<b>Authors Collaboration</b>	
Single-authored docs	6
Co-Authors per Doc	3,77
International co-authorships %	22,86
<b>Document Types</b>	
Article	26
book chapter	2
Conference Paper	4
Reviews	3

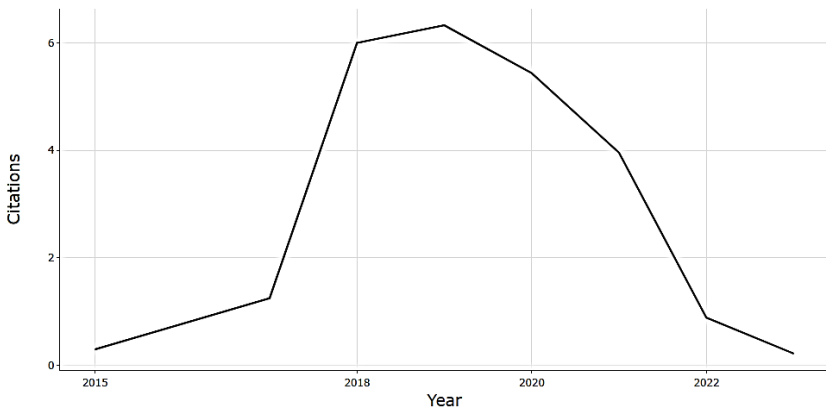
### **Publication and Citations Trends**

Publications with the theme Sustainability Reporting in Higher Education Institutions were found most in Scopus in 2015 and continue to increase until December 2023 (Figure 2). Publications with the theme Sustainability Reporting in Higher Education Institutions were found the most in 2023, with 7 articles, with an average trend growth of 3.89 percent.



**Figure 2.** Annual Scientific Production

Overall, publications with the theme Sustainability Reporting in Higher Education Institutions continue to increase. Meanwhile, citation trends have varied, with peaks in 2019 (Figure 3).



**Figure 3.** Average Citations Per Year

### **Relevant Journals with the Most Citations**

The International Journal of Sustainability in Higher Education and the Journal of Cleaner Production are the journals that publish the most articles with the theme Sustainability Reporting in Higher Education Institutions, with a total of 4 publications. There was no significant difference with other journals with similar themes (Figure 4).

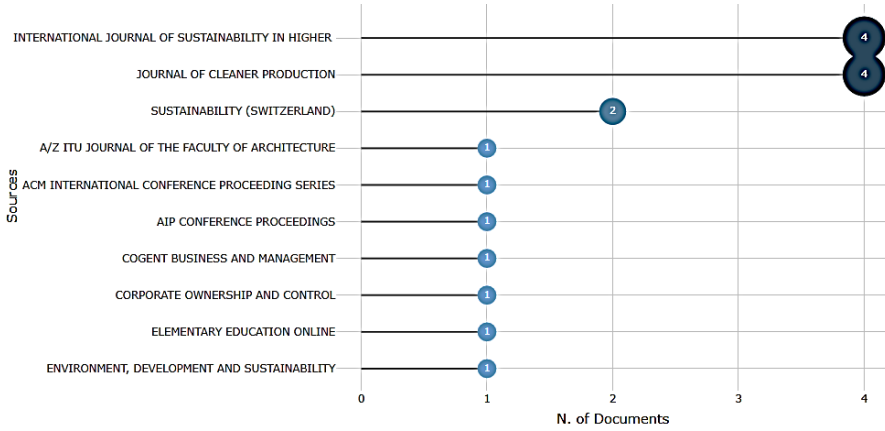


Figure 4. Most Relevant Sources

However, Figure 5 shows the most influential journals based on the total number of local citations; Locally, this means that based on the data used as many as 35 articles; The Journal of Cleaner Production has the highest number of citations of four, while other journals only accept citations from one.

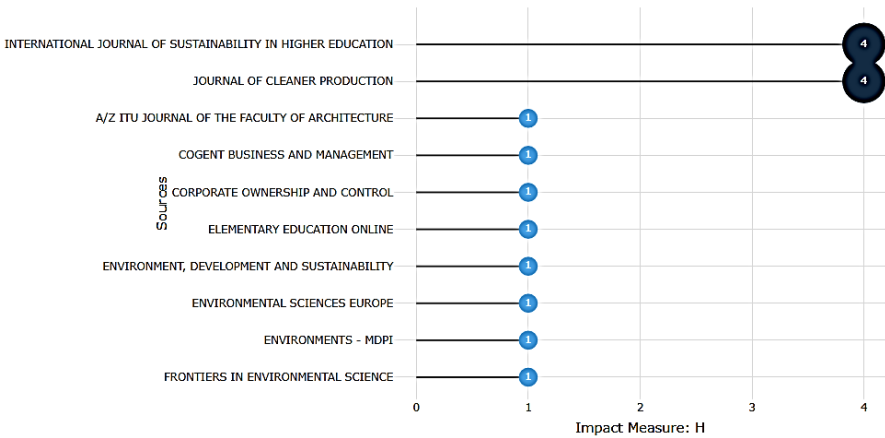


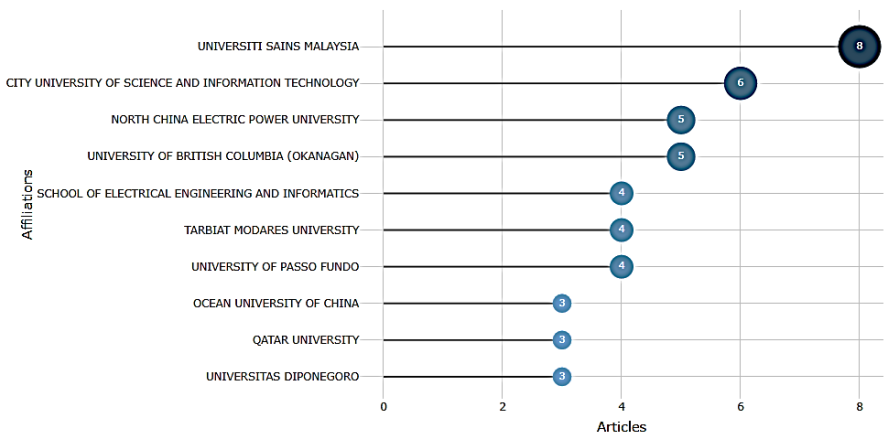
Figure 5. Source' Local Impact

### Most Relevant and Most Cited Affiliates

With respect to affiliation, the largest university is Universiti Sains Malaysia (Malaysia) with 8 documents, followed by City University of Science and Information Technology with 6 documents, and the rest of the documents range from 5 to 3 documents (Figure 6). Meanwhile, the affiliation of Diponegoro University from Indonesia ranks 10th with three documents. According to Figure 6, Shalini's article (1) in the International Journal of Sustainability in Higher Education in 2020 is the most signifi-

cant publication based on the number of global citations. The article is titled Synergizing education, research, campus operations, and community engagements towards sustainability in higher education: a literature review that has been cited 90. The article analyzed 229 peer-reviewed research studies in the 2005–2018 time period selected from 44 journals, this article states that only a few universities have implemented sustainability by integrating all the dimensions of the triple bottom line in a balanced manner. There is still no right way to build a holistic and well-permeated sustainability integration into all university functions, activities, and operations, as well as integrate the triple bottom line.

Walter Leal Filho also received second place as the most read article worldwide with the title The role of higher education institutions in sustainability initiatives at the local level [2]. The journal Clean Production published this article in 2019 with 87 citations. An understanding of how universities interact with local communities is crucial to this research. The opportunity to collaborate with local universities can also benefit the community and local government. They can take advantage of all the knowledge and information from the university (Figure 7).



**Figure 6.** Most Relevant Affiliation

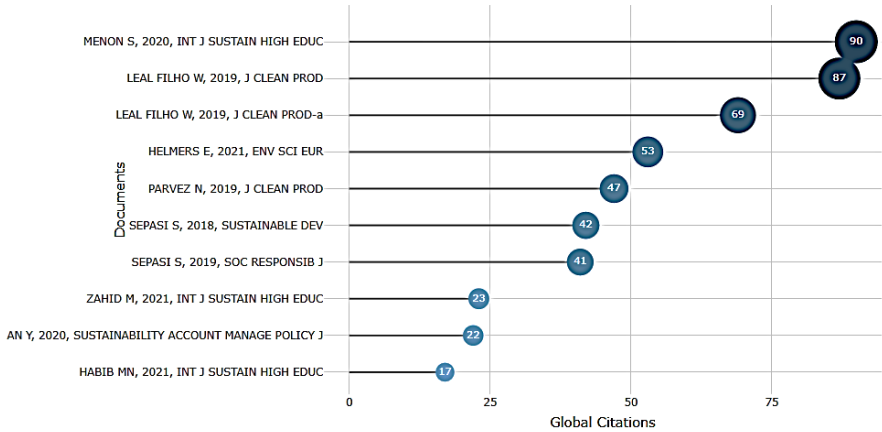


Figure 7. Most Global Cited Documents

**Most Productive Countries**

According to Table 2, the countries with the most cited (most cited) articles are China with 13 articles, Malaysia with 12 articles, and India with 10 articles. Turkey followed with 10 articles. Brazil, Indonesia and Pakistan with 9 articles. Other countries' articles range from 5-6.

Table 2. Country Scientific Production

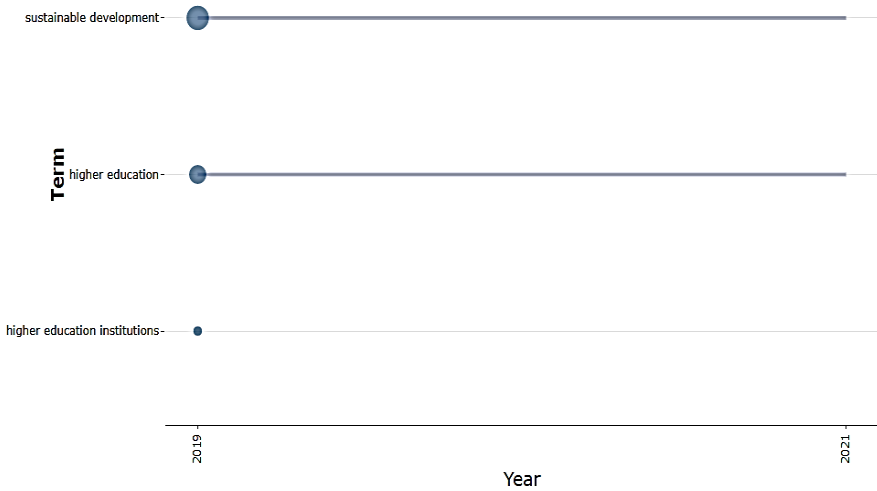
Country	Frequency
China	13
Malaysia	12
India	10
Turkey	10
Brazil	9
Indonesian	9
Pakistan	9
Canada	6
Qatar	6
Saudi Arabia	5

**Author Collaboration Between Countries**

Figure 8 shows that authors from Australia and New Zealand collaborate most often between countries. Writers from Brazil collaborate most often with writers from Portugal and the United Kingdom. Meanwhile, writers from Malaysia most often collaborate with British and Portuguese writers. It is noted that Indonesian writers have not published or collaborated with other countries.

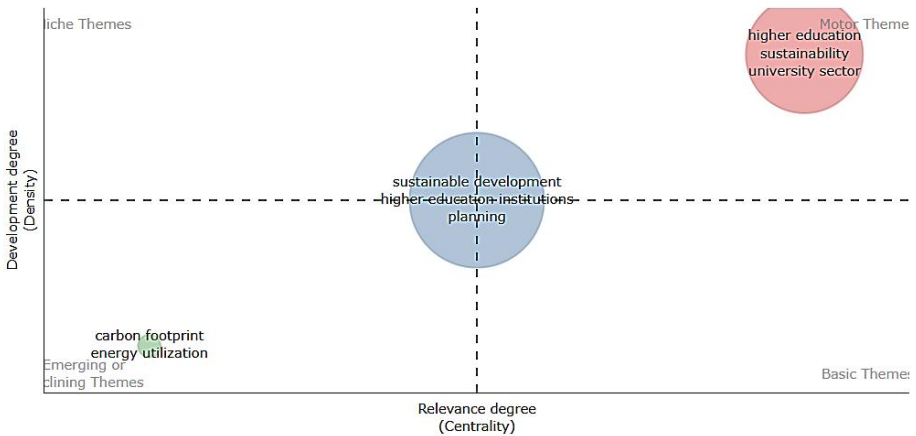






**Figure 10.** Trend Topics

One of the most important images for this study is Figure 11. By dividing the thematic map based on its density and centrality, the study divides it into four quadrants. The themes in the upper right quadrant should be studied further because they have a high density and centrality. Specific, rare, but highly developed themes with high density and low centrality are above the top left quadrant. Themes with a downward trend are in the lower left quadrant, while themes with low density are above the lower right quadrant. The three themes include sustainability development, universities, and planning are correlated in the Thematic Map. Due to its importance, further research on the relationship between sustainable development in higher education and sustainable development has great opportunities and is worth doing, but until now it has been rarely done.



**Figure 11.** Thematic Map

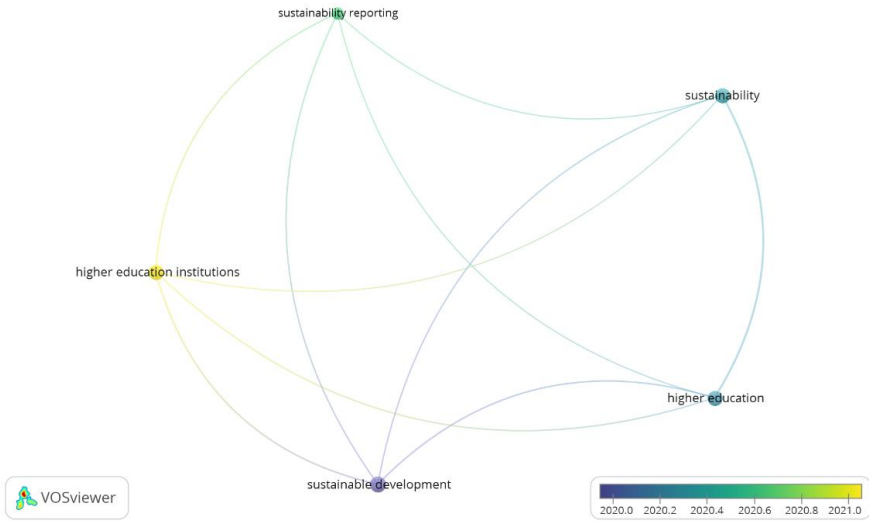
## Conceptual Structure

Additional analysis is carried out with Vos Viewer. Until now, as the trend of annual publications shows, sustainability in higher education institutions is still an interesting topic to research (Figure 12).



**Figure 12.** Thematic Map Vos Viewer

The keywords widely used by researchers related to Sustainability Reporting and higher education are shown in Figure 13. In 2019, some themes are still interesting to research, which are indicated by the color yellow. Research on the relationship between higher education institutions and sustainability reporting goals is one topic that future research can follow.



**Figure 13.** The Thematic Map Between Years

## 4 Conclusion

Sustainable reporting is an important part of the university's efforts to help with sustainable development[3]. Universities can improve transparency, accountability, and sustainable performance by implementing reporting practices that are in line with international standards. Despite the many challenges ahead, the long-term benefits of continuous reporting will be a valuable investment in the future of universities and the wider community. Sustainability Reporting in Higher Education Institutions was published in 2015 and is still interesting to research today. This research is expected to provide a reference for Indonesian authors who will conduct international publications with similar themes, because Malaysia is the most productive writer and has conducted research collaborations with other countries compared to Indonesia. The limitation of this study is that most of the data processing uses keywords without a reason for keyword selection.

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