



# Mapping Sustainable Development Goals (SDGs) Research Landscape in Indonesia: A Bibliometric Analysis

Wiwik Mukholafatul Farida<sup>1</sup>, Achmad Iqbal<sup>2</sup>, M. Iswahyudi<sup>3</sup>

<sup>1</sup>Department of Accounting, Malang State Polytechnic, Malang

<sup>2,3</sup>Accounting Study Programme, Universitas 17 August 1945 Banyuwangi, Banyuwangi

Correspondence: E-mail: [faridawiwik@polinema.ac.id](mailto:faridawiwik@polinema.ac.id)

## ABSTRACT

Sustainable Development Goals (SDG's) is a global issue and has become the target of various country leaders, including Indonesia. Sustainable Development Goals has become a research topic that continues to increase since 2016 in Indonesia. As a developing country, Indonesia has complex challenges in achieving sustainable development. This study aims to see how research conducted by academics, researchers, and practitioners in Indonesia has contributed to the achievement of these sustainable development goals. Bibliometric analysis was used to achieve the research objectives through descriptive analysis and network analysis. Data analysis includes descriptive analysis and network analysis. The results showed that the trend of SDG's research in Indonesia continued to increase from 2016 to 2024. The results also show that some research themes related to SDG's in Indonesia need greater attention related to themes such as Jakarta, water management, water supply, biodiversity, deforestation, and livelihood. This is because research related to SDGs in Indonesia is still centred on the realm of government.

## ARTICLE INFO

### Article History:

Submitted/Received 12 May 2024

First Revised 1 June 2024

Accepted 1 July 2024

First Available online 20 July 2024

Publication Date 20 July 2024

### Keyword:

Bibliometrix, Indonesia, Sustainable Development Goals (SDG's)

## 1. INTRODUCTION

In this era of globalisation, the challenge of sustainable development has become a major focus for many countries, including Indonesia (Aditya, Sucaya, and Nugroho Adi 2021; Yusuf and Komarulzaman 2022). The Sustainable Development Goals (SDGs) launched by the United Nations (UN) in 2015 are the main reference in efforts to achieve sustainable development until 2030 (Affandi et al. 2019). The SDGs consist of 17 goals that cover various aspects, from poverty alleviation to environmental protection.

The SDGs are more of a political goal for developed or developing countries, although the SDGs in their implementation need to involve all relevant parties (Yuniza et al. 2023). One of the reasons is that self-regulatory programmes such as the United Nations Global Compact have so far been ineffective due to the absence of a monitoring system and clear objectives. Because of this lack of clarity, each country is given the freedom to set its own SDGs by considering local conditions because SDGs require strong political commitment.

Indonesia, as a developing country with a large population and a diversity of natural and cultural resources, has a very important role to play in achieving the SDGs (Agus et al. 2021). While much progress has been made, major challenges remain, including addressing social inequalities, improving the quality of education and health, and ensuring sustainable environmental protection.

In this context, research on trends related to SDGs in Indonesia is highly relevant (Negara et al. 2021). Efforts to understand and analyse the contribution of research to the achievement of the SDGs are not only important for measuring development progress, but also for formulating effective and sustainable policies. One approach that can be used to analyse research trends is the bibliometric approach, which has proven effective in presenting a comprehensive picture of research developments in a field of study.

This study was conducted by looking at the application of bibliometric analysis methods to all Scopus publications related to sustainable development goals (SDGs) in Indonesia. Bibliometric analysis provides a quantitative picture of scientific communication by establishing research frameworks, recurring themes and linkages (Handayani et al. 2024). A thorough study of various scientific aspects of the SDGs will provide benefits from the results of in-depth analysis so that it can increase understanding both theoretically and practically.

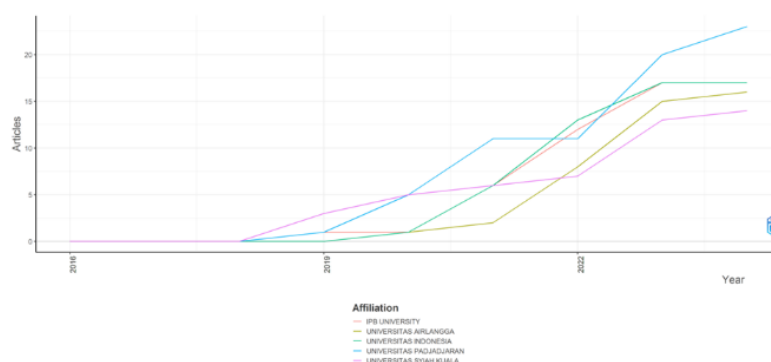


Figure 1. SDGs research in Indonesia

Figure 1 shows the research data generated and published on the Scopus database. There was an increase in research on SDGs between 2016 and 2023. The number of SDGs research is growing rapidly, as seen in the increasing graph of the number of studies from 2019 to 2023.

Indonesia is the fourth most populous country in the world and has a diverse culture, geography, and abundant natural resources. As a developing country, Indonesia has complex challenges in achieving sustainable development. The Indonesian government has established various programmes and policies to support the achievement of the SDGs, however, there is a need for a deeper understanding of the contribution of research in supporting the implementation of these policies. Bibliometric research aims to provide a deeper understanding of research trends, collaboration patterns, research focus, and the contribution of institutions or individuals in a particular field of study (Chaerani et al. 2023). In the context of the SDGs, bibliometric analysis can provide valuable insights into how research conducted by academics, researchers, and practitioners in Indonesia has contributed to the achievement of these sustainable development goals.

Bibliometric research has become an important tool in understanding research trends and scientific developments in various fields of study (Budihardjo et al. 2021). In the context of the SDGs, bibliometric research can provide valuable insights into how research conducted has contributed to the achievement of sustainable development goals. This research focuses on identifying and analysing research trends on SDGs in Indonesia. By utilising bibliometric data from journals published on the Scopus database. This research will outline the evolution of research, as well as the dominant research focus in the context of SDGs in Indonesia. Through this in-depth analysis of research trends, it is hoped that a better understanding of the contribution of Indonesia's SDGs-related research in achieving sustainable development goals, as well as the potential direction of future research development, can be obtained.

Although there have been a number of studies on SDGs in Indonesia, there is still a need to comprehensively analyse the existing research trends. Using a bibliometric approach, this study will try to answer several key questions, such as what kind of research trends related to SDGs are dominant, as well as future developments regarding SDGs. This research aims to provide a better understanding of the contribution of research to the achievement of the SDGs in Indonesia. Through in-depth bibliometric analysis, it is hoped that valuable insights can be gained for policy makers, academics, and practitioners in formulating more effective sustainable development strategies.

## 2. METHODS

This research uses bibliometric analysis through 3 stages of data collection, namely 1) defining research parameters, 2) searching for research data in the database, 3) filtering research data. In the first stage, the researcher defined the research scope with the parameter " Sustainable Development Goals (SDG's) in Indonesia ". Determining the scope of this research is very important in guiding the research. The second step, researchers used the Scopus database for two reasons, namely Scopus is one of the largest repositories since 1900 to this day and includes publications from various fields with good quality. (Qing et al. 2022). The researcher used the keywords ("Sustainable Development Goals" OR "SDGs") AND ("Indonesia") and produced 953 research documents. Furthermore, in the third stage, researchers limited English-language documents to the fields of social science, Business, Management and Accounting, Economics, Econometrics, and Finance. The results of this filter

left 396 research articles to be analysed further. The stages of data source selection can be seen in Figure 2 as follows:

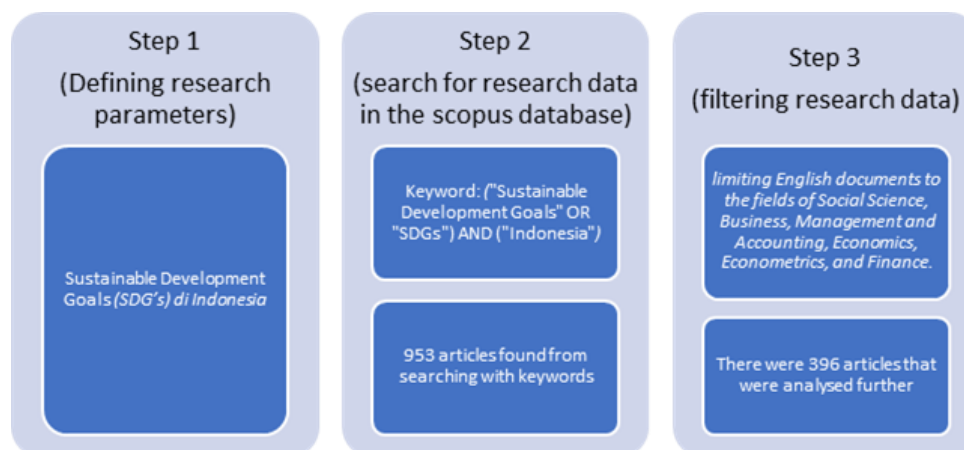


Figure 2. Data Determination Stage

Based on the 3 steps of determining research data, this study analysed 396 articles. Furthermore, researchers conducted data analysis by using RStudio in evaluating research documents in BibTex format. Aria & Cuccurullo (2017) explained that bibliometric analysis was carried out using Citation and co-citation analysis, collaboration networks, and thematic. This research uses 2 analyses, namely descriptive analysis and networking. Table 1 can provide a detailed explanation of the two analyses.

Table 1. Bibliometric Analysis

Analysis	Description	Aspects used
Descriptive Analysis	Descriptive analysis looks at scientific publications and summarises attributes and trends. Researchers can gain an understanding of the characteristics and distribution of research results. Descriptive analysis serves as a tool to understand fundamental aspects of scientific publications.	<ul style="list-style-type: none"> <li>• Data Description</li> <li>• Core journal based on Bradford's law</li> <li>• Production over time of core journal</li> <li>• Author, affiliations and corresponding country</li> <li>• Most cited documents</li> </ul>
Network Analysis	This analysis investigates the relationships between various elements of the literature (including authors, institutions, journals and publications). Researchers can gain an understanding of the formation and dissemination of scientific research including how it develops and trends.	<ul style="list-style-type: none"> <li>• Co-occurrence network Analysis</li> <li>• Thematic research network analysis</li> <li>• Thematic research quadrant analysis</li> </ul>

### 3. RESULTS AND DISCUSSION

#### Descriptive Analysis

##### *Data Description*

This research aims to see the development of studies on SDG's in Indonesia. The researcher used bibliometric analysis. The results of the analysis of the description of research data (see table 2) show that the topic of SDG's in Indonesia began to be studied since 2016 until now there are 396 documents. The average growth of research related to SDG's issues in Indonesia is 23.27% per year. Each published document has an average citation of 8,846 per document. The average age since a document was published is 2.52 years. This means that the issue of SDG's in Indonesia is still quite new and there are still many opportunities for development.

There are 990 keywords (*Keyword plus*) and 1409 *author keywords* related to SDG's in Indonesia with 1454 authors and 39 single authors. Research with international collaboration was 31.57%. This figure is still quite small so international collaboration still needs to be done. This is because SDG's is also a global issue.

The dominating document type related to SDG's in Indonesia is in the form of articles, totalling 323 articles. This means that during 2016-2024, the focus of SDGs in Indonesia is mainly on the discovery and development of SDGs. A total of 14 articles are also known to be submitted to seminars to be debated in the scientific arena.

**Table 2. Descriptive Data**

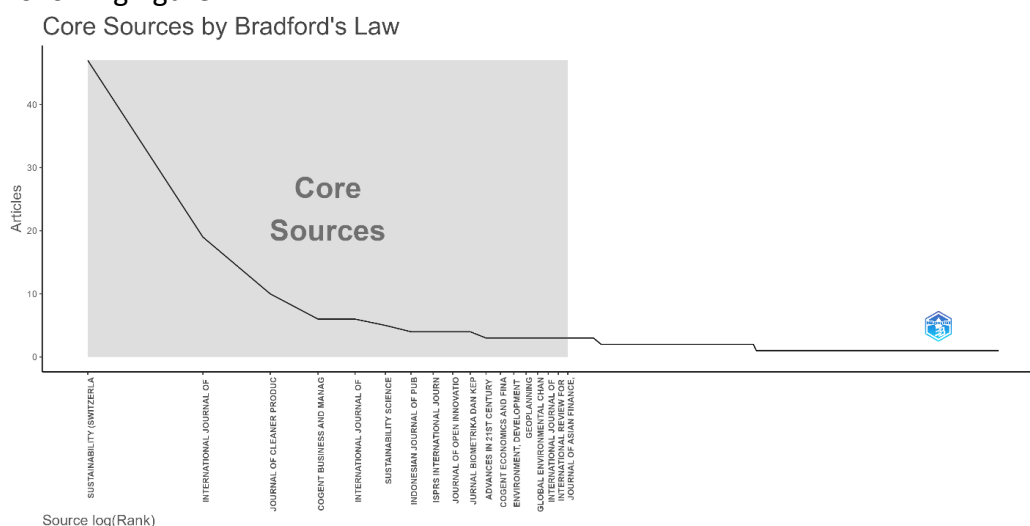
Description	Result
<b>MAIN INFORMATION</b>	
Timespan	2016:2024
Sources (Journals, Books, etc)	241
Documents	396
Annual Growth Rate %	23.27
Document Average Age	2.52
Average citations per doc	8.846
References	0
<b>DOCUMENT CONTENTS</b>	
Keywords Plus (ID)	990
Author's Keywords (DE)	1409
<b>AUTHORS</b>	
Authors	1454
Authors of single-authored docs	39
<b>AUTHORS COLLABORATION</b>	
Single-authored docs	40
Co-Authors per Doc	3.92
International co-authorships %	31.57
<b>DOCUMENT TYPES</b>	
article	323
article article	3
book	8

book chapter	32
conference paper	14
editorial	1
letter	1
review	14

Source: biblioshiny output by Rstudio

*Description of Data Source*

In terms of data sources, the researcher used the *Bradford law* to determine the fundamental journals or sources on a particular topic. The results of the analysis can be seen in the following figure.



**Figure 3. Core Source by Bradford's Law**

source: biblioshiny output by Rstudio

**Table 3. Top 10 Journals based on Bradford's Law**

SO	Rank	Freq	cumFreq	Zone
Sustainability (Switzerland)	1	47	47	Zone 1
International Journal Of Sustainable Development And Planning	2	19	66	Zone 1
Journal Of Cleaner Production	3	10	76	Zone 1
Cogent Business And Management	4	6	82	Zone 1
International Journal Of Energy Economics And Policy	5	6	88	Zone 1
Sustainability Science	6	5	93	Zone 1
Indonesian Journal Of Public Health	7	4	97	Zone 1
Isprs International Journal Of Geo-Information	8	4	101	Zone 1
Journal Of Open Innovation: Technology, Markets, And Complexity	9	4	105	Zone 1
Journal of Biometrics and Population	10	4	109	Zone 1

Source: biblioshiny output by Rstudio

Bradford's Law helps in seeing and finding references that have a high *impact factor*, rigorous review procedures, and in-depth discussions. Based on the results of Bradford's Law

analysis (Figure 3 and Table 3), it is known that there are 10 best journals among all journals studied in this research data. These results provide an illustration for researchers, academics, and practitioners to prioritise the 10 journals in Table 3 as the main reference sources in studying SDGs in Indonesia. The journal "Sustainability (Switzerland)" is the most frequently appearing journal in the research data with 47 publications, International Journal of Sustainable Development and Planning with 19 publications, and Journal of Cleaner Production with 10 publications. Next, journals such as Cogent Business and Management and International Journal of Energy Economics and Policy with 6 publications each, Indonesian Journal of Public Health with 5 publications, while Indonesian Journal of Public Health, Isprs International Journal of Geo-Information, Journal of Open Innovation: Technology, Market, And Complexity, and Journal of Biometrics and Population each have 4 publications.

The impact of a journal can be seen using various indices such as, m-index, g-index, and h-index. This index provides an overview of the position of an article in the scientific realm. The 10 journals with the highest impact factor can be seen in Table 4.

**Table 4. Impact Source**

Element	H-index	G-index	M-index	TC	NP	PY_start
Sustainability (Switzerland)	13	19	1.857	451	47	2018
Journal Of Cleaner Production	8	10	1.333	726	10	2019
Sustainability Science	5	5	0.833	75	5	2019
International Journal Of Sustainable Development And Planning	4	7	0.8	57	19	2020
Environment, Development And Sustainability	3	3	1.5	20	3	2023
International Journal Of Ethics And Systems	3	3	1	12	3	2022
Isprs International Journal Of Geo-Information	3	4	0.6	38	4	2020
Journal Of Asian Finance, Economics And Business	3	3	0.6	14	3	2020
Advances In 21st Century Human Settlements	2	3	0.4	9	3	2020
Cogent Business And Management	2	4	0.4	18	6	2020

Source: biblioshiny output by Rstudio

Based on table 4, it is known that the journal "Sustainability (Switzerland)" is the journal with the highest impact factor since 2018. However, Journal of Cleaner Production has the highest number of citations, namely 726 citations. The Environment, Development and Sustainability journal is the latest journal (since 2023) but has a fairly high m-index of 1.5 even this figure is higher than the 3 journals above it such as Journal of Cleaner Production, Sustainability Science, and International Journal of Sustainable Development and Planning.

Author Description

Author description is important to know one's position in the scientific domain. This research analyses several things, such as Most Relevant Author, Author's Production Over Time, Author Impact. Through the examination of the number and percentage of articles written, we can evaluate the influence of authors and the tendency of their co-operation in the scientific domain. This can be seen from the fractional number by dividing the total co-authors by the total number of author articles. A smaller fractional number than the total number of articles indicates that collaboration is more frequent. Here are the 10 authors with the highest fractional numbers.

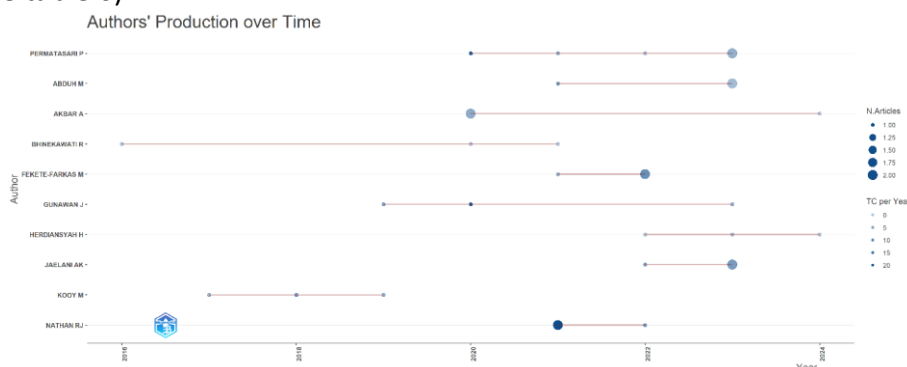
**Table 5. Top 10 Most Relevant Author**

Authors	Articles	Fractionalised Articles
Permatasari P	5	1.28
Abduh M	3	0.73
Akbar A	3	0.70
Bhinekawati R	3	1.70
Fekete-Farkas M	3	0.78
Gunawan J	3	1.00
Herdiansyah H	3	1.08
Jaelani AK	3	0.95
Kooy M	3	1.17
Nathan RJ	3	0.65

Source: biblioshiny output by Rstudio

Based on Table 5, it is known that Bhinekawati R is the author with the highest collaboration rate of 1.70 with 3 articles. The number in the fractional column that is smaller than the total articles shows that Bhinekawati R is the author with more frequent collaboration. The author with the most total articles is Permatasari P with a total of 5 articles and a fractional number of 1.28. Overall, the fractional number in the "Articles Fractionalised" column is lower than the number of articles from each author. This means that the 10 authors in Table 5 are authors who tend to collaborate more often.

The next author description relates to author productivity. As shown in Figure 4, from 2016-2024, there are 10 authors who have high productivity. In addition to the number of articles, author productivity can also be seen from the number of citations on the articles they publish (see table 6).



**Figure 4. Author's Production over time**  
source: biblioshiny output by Rstudio



Author	Year	Freq	TC	TCpY
Abduh M	2021	1	32	8
Abduh M	2023	2	5	2.5
Akbar A	2020	2	26	5.2
Akbar A	2024	1	0	0
Bhinekawati R	2016	1	6	0.667
Bhinekawati R	2020	1	2	0.4
Bhinekawati R	2021	1	0	0
Fekete-Farkas M	2021	1	15	3.75
Fekete-Farkas M	2022	2	30	10
Gunawan J	2019	1	39	6.5

Source: biblioshiny output by Rstudio

Table 6 provides information about the year of publication (year), frequency (freq), Total Citation (TC) and Total Citation per Year (TCpY). The author with the highest citation was Gunawan J in 2019 with a total citation of 39 and the average citation per year was 6.5. The latest research on SDG's in Indonesia was conducted by Akbar A in 2024, but because it is still new, this article does not yet have citations. Furthermore, Abduh M, author with a total of 32 citations on 1 article published since 2021 has the highest average citations per year, namely 8 citations.

Based on author impact (see table 7), we can see which author has the highest impact. This is based on several indices such as H-index, G-index, and M-Index. Permatasari P is the author with the highest H-index and G-index with values of 4 and 5 respectively since 2020 (5 published articles). Gunawan J is the author with the highest m-index, which is 1 and has the highest number of citations, namely 146 citations since 2019. The PY\_Start column shows the start of an author's publication related to the SDG's theme in Indonesia. It can be seen that the oldest publication year is 2017 and the most recent is 2022. This shows that the topic of SDG's still needs to be explored by researchers in the future.

**Table 7. Top 10 Author Impact**

Element	h_index	g_index	m_index	TC	NP	PY_start
Permatasari P	4	5	0.8	131	5	2020
Fekete-Farkas M	3	3	0.75	45	3	2021
Gunawan J	3	3	0.5	146	3	2019
Jaelani AK	3	3	1	36	3	2022
Kooy M	3	3	0.375	94	3	2017
Nathan RJ	3	3	0.75	112	3	2021
Nugroho HYSH	3	3	0.75	65	3	2021
Salim W	3	3	0.6	17	3	2020
Setiawan B	3	3	0.75	112	3	2021
Syahza A	3	3	0.75	26	3	2021

Source: biblioshiny output by Rstudio

### Affiliation Description

The affiliation of an author plays a very important role in supporting and providing facilities and infrastructure, resources, and a good academic culture. The affiliations of authors who published on SDGs in Indonesia can be seen in Figure 5. Padjadjaran University is the most relevant affiliation with 23 published articles. However, in the scopus dataset used by the researcher, the same affiliation name is seen but in the figure is associated differently, namely the University of Indonesia and the University of Indonesia. Thus, the highest affiliation was obtained by the University of Indonesia with a total of 29 articles (17+12). Figure 5 also shows that affiliations are still dominated by state universities in Indonesia. This means that authors from private universities have not been productive in researching issues related to SDGs. There is 1 affiliation that is also relevant to SDG's research from outside Indonesia, namely Universiti Utara Malaysia. This is because regionally Malaysia and Indonesia are in the ASEAN group. Thus, other countries' issues are also still relevant to be researched in different countries. This finding also indicates that the issue of SDG's in Indonesia is also the focus of foreign researchers. This is also evident from the results of the analysis based on Corresponding Author's Countries (Figure 6). It can be seen that there are several corresponding authors from various countries who also research SDG's in Indonesia, including the Netherlands, Australia, China, United Kingdom, Japan, USA, and Brazil.

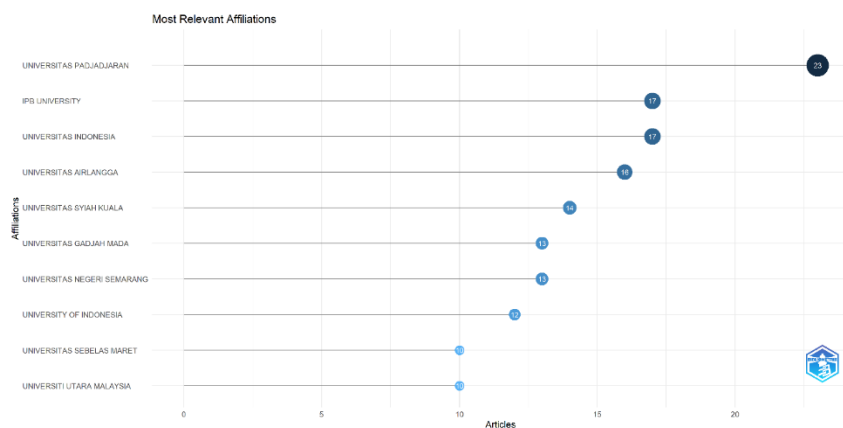
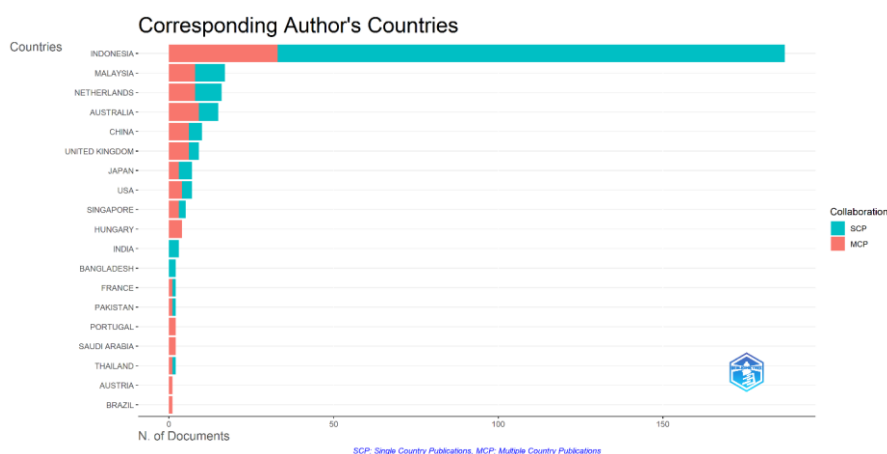


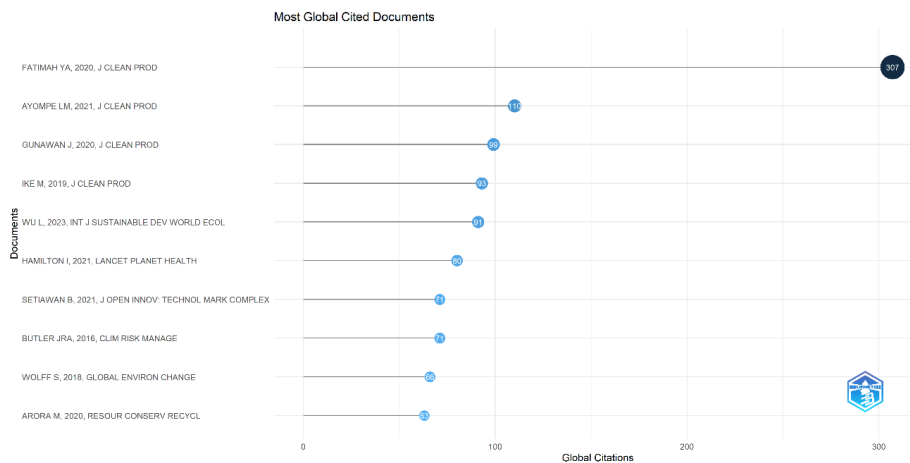
Figure 5. 10 Most Relevant Affiliations



Corresponding Author's Countries

*Most Globally Cited Document*

Most Globally Cited Document is an analysis of the most globally cited documents or articles in research related to the SGD's in Indonesia. These articles have been cited by researchers, academics, and practitioners in various countries because of their significant contribution to the understanding of the SDGs in Indonesia. Figure 7 and Table 8 show that globally, articles written by Fatimah et al. (2020) in the Journal of Cleaner Production has the highest citation of 307 citations. Ayompe, Schaafsma, and Egoh (2021) has 110 citations, Gunawan, Permatasari, and Tilt (2020) have 99 citations. These results provide insight that these authors globally have significant contributions to the development of SDGs in Indonesia.



**Figure 7. Most Globally Cited Documents**

**Table 8. Most Globally Cited Document**

Author	Title	Journal	Total Citations	TC per Year	Normalised TC
Fatimah et al. (2020)	Industry 4.0 based sustainable circular economy approach for smart waste management system to achieve sustainable development goals: A case study of Indonesia	Journal of Cleaner Production	307	61.40	17.33
Ayompe et al. (2021)	Towards sustainable palm oil production: The positive and negative impacts on ecosystem services and human wellbeing	Journal of Cleaner Production	110	27.50	9.81
Gunawan et al. (2020)	Sustainable development goal disclosures: Do they support responsible	Journal of Cleaner Production	99	19.80	5.59

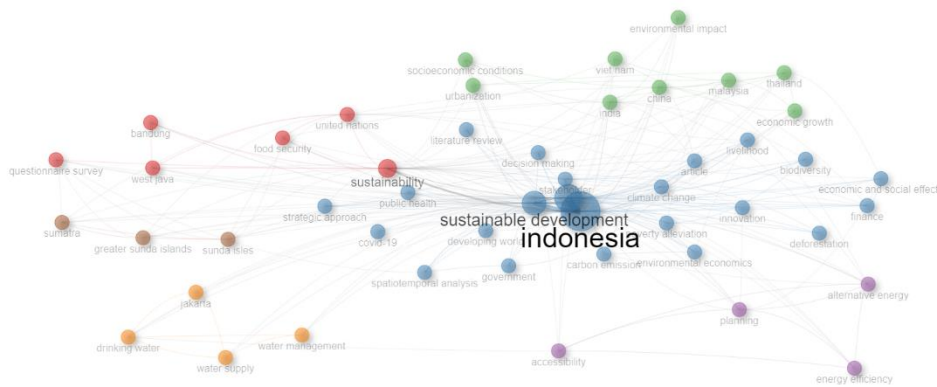
	consumption and production?				
Ike et al. (2019)	The process of selecting and prioritising corporate sustainability issues: Insights for achieving the Sustainable Development Goals	Journal of Cleaner Production	93	15.50	5.37
Wu et al. (2023)	The role of renewable energy consumption and financial development in environmental sustainability: implications for the Nordic Countries	International Journal of Sustainable Development and World Ecology	91	45.50	27.42
Hamilton et al. (2021)	The public health implications of the Paris Agreement: a modelling study	The Lancet Planetary Health	80	20.00	7.13
Setiawan et al. (2021)	User innovativeness and fintech adoption in indonesia	Journal of Open Innovation: Technology, Markets, and Complexity	71	17.75	6.33
Butler et al. (2016)	Scenario planning to leapfrog the Sustainable Development Goals: An adaptation pathways approach	Climate Risk Management	71	7.89	4.63
Wolff et al. (2018)	Meeting global land restoration and protection targets: What would the world look like in 2050?	Global Environmental Change	66	9.43	3.22
Arora et al. (2020)	Buildings and the circular economy: Estimating the urban mining, recovery and reuse potential of building components	Resources, Conservation and Recycling	63	12.60	3.56

## Network Analysis

### *Co-occurrence network Analysis*

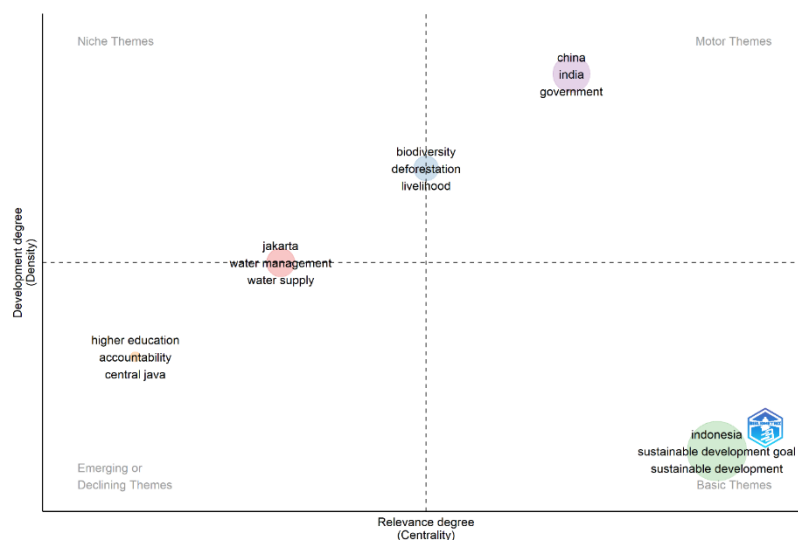
Bibliometric analysis uses co-occurrence networks by finding pairs of elements that frequently appear in the same document. (Liu et al. 2024). Elements in the dataset include those related to keywords, authors, institutions, or others. *Co-occurrence network analysis* is

used to study the structure of academic science and communication (Feicheng and Yating 2014).



**Figure 8. Co-occurrence Network**

Based on figure 8, it is known that there are 6 clusters (marked with red, blue, green, yellow, purple and brown nodes) of data analysed in this study. SDG's topics are related to the topics of *sustainability, united nations, west java, food security* in the red cluster. SDG's are related to topics such as *climate change, developing world, government, decision making, deforestation, biodiversity, finance, economic and social effect, poverty alleviation* in blue clusters. Green clusters describe the relationship of SDG's with *economic growth, environmental impact, socioeconomic conditions, urbanisation*. The yellow cluster describes the SDG's relationship with *drinking water, water supply, water management, Jakarta*. The purple cluster, illustrates the SDG's relationship with *accessibility, planning, energy efficiency, alternative energy*. Finally, the brown cluster, illustrates the SDG's relationship with *Sumatra, greater Sunda island, Sunda isles*. The relationship of SDG's topics with these 6 clusters provides a visualisation for future researchers related to SDG's in Indonesia.



**Figure 9. Thematic Map**

In addition to *co-occurrence network analysis, thematic maps* can also be used to see the conceptual structure of a research topic, highlight certain themes, and the highest trends of themes in a topic. (Aria et al. 2022). Furthermore, Nasir et al. (2020) explained that

*thematic maps* in bibliometrics can display thematic maps related to key topics and trends that help identify the most significant themes and their development in a research topic. Figure 9, shows there are 4 groups of research topics related to SGD's, namely *emerging or declining themes, basic themes, niche themes, motor themes*. *Emerging or declining themes* are themes that are experiencing a declining trend related to SDG's in Indonesia, these themes are related to *higher education, accountability and central java*. Meanwhile, themes that are between the *niche and emerging* categories include *Jakarta, water management, water supply*. Niche and motor themes include *biodiversity, deforestation, livelihood*. Meanwhile, themes that are at the centre of SDG's studies in Indonesia are related to *China, India, government*. Future researchers can focus on the Niche category, because the themes on this topic are still minimally explored in relation to SDG's in Indonesia.

#### 4. CONCLUSION

Sustainable Development Goals (SDG's) have become an increasing research topic since 2016 in Indonesia. SDG's has been a global issue since 2000, marked by the Millennium Development Goals (MDGs) by the United Nations. Furthermore, in 2012, the Rio+20 summit conference first used the term SDG's to replace the MDGs. The peak of SDG's became a global issue in September 2015 when the UN adopted the 2030 Agenda and produced 17 goals in the SDG's. The results of this study prove that from 396 publications on the Scopus database, it can be concluded that the issue of SDG's began to develop in Indonesia since 2016 until now. Various publications ranging from articles, books, and conferences develop discussing the issue of SDG's in Indonesia. Not only academics, scientists, and practitioners from Indonesia who discuss the issue even authors from abroad such as the Netherlands, Australia, China, United Kingdom, Japan, USA, to Brazil. International collaboration is also found in the discussion of SDG's in Indonesia. Some of the affiliates that most often publish SDG's themes include the University of Indonesia, Bandung Institute of Technology (IPB), Padjadjaran University, Airlangga University, Syiah Kuala University, Gadjah Mada University, Semarang State University, and Sebelas Maret University. Many of their publications are published in journals such as Sustainability (Switzerland), Journal of Cleaner Production, Sustainability Science, International Journal of Sustainable.

The results of this study also found that topics related to SDG's in Indonesia are closely related to several topics including sustainability, united nations, west java, food security, climate change, developing world, government, decision making, deforestation, biodiversity, finance, economic and social effects, poverty alleviation economics growth, environmental impact, socioeconomic conditions, urbanisation, drinking water, water supply, water management, Jakarta, planning, energy efficiency, alternative energy, Sumatra, greater sunda island, Sunda isles. The relationship of SDG's topics with various topics provides an overview for future researchers who want to explore SDG's in Indonesia. In addition, future researchers can focus on several themes that are still rarely discussed in relation to SDG's in Indonesia, including Jakarta, water management, water supply, biodiversity, deforestation, and livelihood. This is because research related to SDG's in Indonesia is still centred on the realm of government.

Just like research in general, this research also has several limitations including, 1) researchers only focus on the Scopus database and only use articles in English. This resulted in researchers ignoring articles published in other languages, such as Indonesian, in other databases. Thus, the scope of the research becomes narrow. In other words, research published in Indonesia, for example, is ignored by researchers because it is difficult to validate the quality of the

research. 2) The researcher only used Rstudio in analysing the data, which resulted in some analyses being ignored by the researcher because the results could not be obtained in the biblioshiny. Based on these limitations, researchers suggest that future research can use other databases, for example WoS and combine analysing tools such as RStudio and VosViewer.

## 5. REFERENCES

- Aditya, Trias, I. Ketut Gede Ary Sucaya, and Fajar Nugroho Adi. 2021. "LADM-Compliant Field Data Collector for Cadastral Surveyors." *Land Use Policy* 104. doi: 10.1016/j.landusepol.2021.105356.
- Affandi, Roseno Aji, Aditya Permana, Yanyan Mochamad Yani, and Tirta Nugraha Mursitama. 2019. "Implementing SDG to Village Level by Integrating Social Capital Theory and Value Chain: (Case of Village Tourism Pentingsari in Yogyakarta, Indonesia)." *Journal of ASEAN Studies* 7(2):122 - 137. doi: 10.21512/jas.v7i2.5780.
- Agus, Cahyono, Pamungkas Buana Putra, Ayu Putri Kusumaningrum, Nur Aini Iswati Hasanah, and Pita Asih Bakti Cahyanti. 2021. *Climate Change and Sustainable Development Goals Programme in Indonesia*. Vol. 5. Springer International Publishing.
- Aria, Massimo, and Corrado Cuccurullo. 2017. "Bibliometrix: An R-Tool for Comprehensive Science Mapping Analysis." *Journal of Informetrics* 11(4):959-75. doi: 10.1016/j.joi.2017.08.007.
- Aria, Massimo, Corrado Cuccurullo, L. Daniello, Michelangelo Misuraca, and Maria Spano. 2022. "Thematic Analysis as a New Culturomic Tool: The Social Media Coverage on COVID-19 Pandemic in Italy." *Sustainability*.
- Arora, Mohit, Felix Raspall, Lynette Cheah, and Arlindo Silva. 2020. "Buildings and the Circular Economy: Estimating Urban Mining, Recovery and Reuse Potential of Building Components." *Resources, Conservation and Recycling* 154. doi: 10.1016/j.resconrec.2019.104581.
- Ayompe, Lacour M., M. Schaafsma, and Benis N. Egoh. 2021. "Towards Sustainable Palm Oil Production: The Positive and Negative Impacts on Ecosystem Services and Human Wellbeing." *Journal of Cleaner Production* 278. doi: 10.1016/j.jclepro.2020.123914.
- Budihardjo, Mochamad Arief, Bimastyaji Surya Ramadan, Soraya Annisa Putri, Indah Fajarini Sri Wahyuningrum, and Fadel Iqbal Muhammad. 2021. "Towards Sustainability in Higher-Education Institutions: Analysis of Contributing Factors and Appropriate Strategies." *Sustainability (Switzerland)* 13(12). doi: 10.3390/su13126562.
- Butler, J. R. A., E. L. Bohensky, W. Suadnya, Y. Yanuartati, T. Handayani, P. Habibi, K. Puspadi, T. D. Skewes, R. M. Wise, I. Suharto, S. E. Park, and Y. Sutaryono. 2016. "Scenario Planning to Leap-Frog the Sustainable Development Goals: An Adaptation Pathways Approach." *Climate Risk Management* 12:83 - 99. doi: 10.1016/j.crm.2015.11.003.
- Chaerani, Diah, Adibah Shuib, Tomy Perdana, and Athaya Zahrani Irmansyah. 2023. "Systematic Literature Review on Robust Optimisation in Solving Sustainable Development Goals (SDGs) Problems during the COVID-19 Pandemic." *Sustainability (Switzerland)* 15(7). doi: 10.3390/su15075654.
- Fatimah, Yun Arifatul, Kannan Govindan, Rochiyati Murniningsih, and Agus Setiawan. 2020. "Industry 4.0 Based Sustainable Circular Economy Approach for Smart Waste Management System to Achieve Sustainable Development Goals: A Case Study of Indonesia." *Journal of Cleaner Production* 269. doi: 10.1016/j.jclepro.2020.122263.

- Feicheng, Ma, and Li Yating. 2014. "Utilising Social Network Analysis to Study the Characteristics and Functions of the Co-Occurrence Network of Online Tags." *Online Information Review* 38(2):232-47. doi: 10.1108/OIR-11-2012-0124.
- Gunawan, Juniati, Paulina Permatasari, and Carol Tilt. 2020. "Sustainable Development Goal Disclosures: Do They Support Responsible Consumption and Production?" *Journal of Cleaner Production* 246. doi: 10.1016/j.jclepro.2019.118989.
- Hamilton, Ian, Harry Kennard, Alice McGushin, Lena Höglund-Isaksson, Gregor Kiesewetter, Melissa Lott, James Milner, Pallav Purohit, Peter Rafaj, Rohit Sharma, Marco Springmann, James Woodcock, and Nick Watts. 2021. "The Public Health Implications of the Paris Agreement: A Modelling Study." *The Lancet Planetary Health* 5(2): e74 - e83. doi: 10.1016/S2542-5196(20)30249-7.
- Handayani, Erna, Ali Akbar Anggara, Ira Hapsari, and Ching-Te Lin. 2024. "Developing an Instrument and Assessing SDGs Implementation in Indonesian Higher Education." *International Journal of Sustainable Development and Planning* 19(2):577 - 590. doi: 10.18280/ijstdp.190215.
- Ike, Masayoshi, Jerome Denis Donovan, Cheree Topple, and Eryadi Kordi Masli. 2019. "The Process of Selecting and Prioritising Corporate Sustainability Issues: Insights for Achieving the Sustainable Development Goals." *Journal of Cleaner Production* 236. doi: 10.1016/j.jclepro.2019.117661.
- Liu, Ning, Yansu Ji, Rui Liu, and Xin Jin. 2024. "The State of Astragaloside IV Research: A Bibliometric and Visualised Analysis." *Fundamental & Clinical Pharmacology* 38(2):208-24. doi: <https://doi.org/10.1111/fcp.12956>.
- Nasir, Adeel, Kamran Shaukat, Ibrahim A. Hameed, Siwei Luo, Talha Mahboob Alam, and Farhat Iqbal. 2020. "A Bibliometric Analysis of Corona Pandemic in Social Sciences: A Review of Influential Aspects and Conceptual Structure." *Ieee Access*.
- Negara, Danes Jaya, Ferdinand Ferdinand, Meitiana Meitiana, Maria Haryulin Astuti, Trecy Anden, Rita Sarlawa, and Ani Mahrita. 2021. "Knowledge Sharing Behaviour in Indonesia: An Application of Planned Behaviour Theory." *Journal of Asian Finance, Economics and Business* 8(3):1053 - 1064. doi: 10.13106/jafeb.2021.vol8.no3.1053.
- Qing, Lingli, Dongphil Chun, Young Seok Ock, Abd Alwahed Dagestani, and Xiang Ma. 2022. "What Myths about Green Technology Innovation and Financial Performance's Relationship? A Bibliometric Analysis Review." *Economies* 10(4). doi: 10.3390/economies10040092.
- Setiawan, Budi, Deni Pandu Nugraha, Atika Irawan, Robert Jeyakumar Nathan, and Zeman Zoltan. 2021. "User Innovativeness and Fintech Adoption in Indonesia." *Journal of Open Innovation: Technology, Markets, and Complexity* 7(3). doi: 10.3390/joitmc7030188.
- Wolff, Sarah, Elizabeth A. Schrammeijer, Catharina J. E. Schulp, and Peter H. Verburg. 2018. "Meeting Global Land Restoration and Protection Targets: What Would the World Look like in 2050?" *Global Environmental Change* 52:259 - 272. doi: 10.1016/j.gloenvcha.2018.08.002.
- Wu, Lichao, Tomiwa Sunday Adebayo, Xiao-Guang Yue, and Alican Umut. 2023. "The Role of Renewable Energy Consumption and Financial Development in Environmental Sustainability: Implications for the Nordic Countries." *International Journal of Sustainable Development and World Ecology* 30(1):21 - 36. doi: 10.1080/13504509.2022.2115577.
- Yuniza, Mailinda Eka, Ni Nengah Dhea Riska Putri Nandita, Gilda Talitha Putri, and Ni Putu Maetha Maharani. 2023. "Regulatory Impact Analysis (RIA) as a Mandatory



Legislative Drafting Method for Achieving Sustainable Development Goals (SDGs) in Indonesia." *World Journal of Entrepreneurship, Management and Sustainable Development* 19(1-2):87 - 96. doi: 10.47556/J.WJEMSD.19.1-2.2023.7.

Yusuf, Arief Anshory, and Ahmad Komaruzaman. 2022. *Measuring the Distance to 2030 Targets in Indonesia Which SDGs That Indonesia Needs to Prioritise? A Distance-to-Target Approach*. Springer Nature.