

## A BIBLIOMETRIC ANALYSIS OF SUSTAINABLE DEVELOPMENT GOALS SDGS FROM 2015 TO 2023

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### ABSTRACT

The United Nations' Sustainable Development Goals (SDGs) have emerged as a pivotal framework to address pressing global challenges and promote sustainable development worldwide. This study presents a comprehensive bibliometric analysis of scholarly publications related to the SDGs from the years 2015 to 2023. By employing advanced bibliometric techniques, we aim to explore the growth, trends, and patterns in research output on the SDGs over this period. The research data was collected from a Scopus database, encompassing academic articles, conference papers, and other scholarly contributions that directly referenced the SDGs or related themes. Key bibliometric indicators, such as publication trends, citation counts, authorship patterns, and collaboration networks, were analyzed to uncover the scholarly community's engagement with the SDGs. Preliminary findings indicate a notable surge in SDGs-focused research output during the observed timeframe, reflecting the increasing attention and urgency surrounding sustainable development issues. The analysis further reveals prevalent thematic areas and the interconnectivity of SDGs across different research disciplines. It highlights influential authors and institutions contributing significantly to the discourse, fostering global collaborations. Moreover, the study examines the geographic distribution of publications, emphasizing the involvement of different countries and regions in SDGs-related research activities. Insights from this analysis offer valuable perspectives on the distribution of knowledge and resources, aiding policymakers in their efforts to address global challenges through targeted interventions. Overall, this bibliometric analysis contributes to a better comprehension of the evolution of research on SDGs and offers a comprehensive overview of the scholarly landscape surrounding sustainable development. The study's findings are instrumental for policymakers, researchers, and stakeholders in formulating evidence-based strategies and actions to advance progress towards achieving the ambitious 2030 Agenda for Development.

**Keywords:** Sustainable Development Goals, SDGs, SLR, Systematic Literature Review

### INTRODUCTION

The Sustainable Development Goals are crucial in tackling pressing global challenges such as poverty, inequality, environment and climate change, and degradation (United Nations General Assembly, 2015). These challenges require a coordinated and comprehensive approach that spans across countries and sectors to achieve meaningful and sustainable outcomes. The SDGs recognize the interconnections between different

dimensions of sustainable development, including economic, social, and environmental aspects (United Nations General Assembly, 2015). By adopting an integrated approach, the SDGs promote the understanding that progress in one goal can positively impact progress in others, leading to more effective and synergistic solutions. One of the key strengths of the SDGs lies in their universal applicability, which

encompasses all countries and takes into account the unique challenges faced by each (United Nations General Assembly, 2015). The SDGs emphasize the importance of inclusivity and leaving no one behind, ensuring that the most vulnerable populations are included in development efforts. The SDGs recognize the need for broad participation and collaboration among governments, civil society, private sector, and other stakeholders (United Nations General Assembly, 2015). This multi-stakeholder approach facilitates knowledge sharing, resource mobilization, and the implementation of innovative and sustainable solutions. The SDGs provide a shared vision for a sustainable future, setting ambitious targets to be achieved by 2030 (United Nations General Assembly, 2015). They serve as a roadmap for countries and organizations to guide their policies, investments, and actions toward long-term sustainable development. The SDGs establish a robust monitoring and accountability framework to track progress and ensure transparency (United Nations General Assembly, 2015). By regularly monitoring indicators and targets, countries can assess their performance, identify gaps, and take corrective actions to accelerate progress towards the SDGs.

The COVID-19 pandemic has had a vast impact on healthcare systems and health outcomes worldwide (United Nations, 2020a). Resources and efforts have been redirected to combat the virus, leading to disruptions in routine healthcare services, such as immunizations and maternal care (United Nations, 2020b). The pandemic has highlighted the need for resilient health systems and strengthened global health cooperation. The pandemic has caused an increase in poverty and food insecurity globally (United Nations, 2020a). Economic disruptions, job losses, and reduced access to markets and income-generating activities have pushed more people into poverty and hunger (United Nations, 2020c). Efforts to eradicate poverty and achieve food security have faced setbacks due to the pandemic. The COVID-19 pandemic has disrupted the education systems and vast challenges to access to good education (United Nations, 2020a). School closures and the shift to remote learning have

affected learning outcomes, with marginalized communities facing difficulties in accessing remote learning opportunities (United Nations, 2020b). The pandemic has disproportionately affected women and girls, exacerbating existing gender inequalities (United Nations, 2020a). Increased domestic responsibilities, loss of livelihoods, and heightened risks of gender-based violence have been reported (United Nations, 2020d). The pandemic has highlighted the need for gender-responsive policies and support for women's empowerment. The global economy has experienced a severe contraction due to the pandemic, leading to job losses, reduced economic activity, and disruptions in supply chains (United Nations, 2020a). The informal sector, which comprises a significant portion of the workforce in many countries, has been particularly impacted (United Nations, 2020e). The pandemic has underscored the importance of resilient and sustainable economic growth.

This study aimed to address conceptual and theoretical questions related to sustainable development goals (SDGs) by employing a systematic literature review methodology. It sought to investigate various aspects of the SDGs, including their definition, current practices, goals, limitations, and potential opportunities. The study also aimed to identify major research streams, their origins, areas of convergence, and points of divergence. Additionally, it explored the antecedents of SDGs and their outcomes. To achieve these objectives, the following relevant research questions were formulated

*"What are the key challenges, trends, and success factors in implementation of the United Nations' Sustainable Development Goals (SDGs) across different sectors and regions?"*

This research question aims to conduct a comprehensive systematic review of existing literature to gain insights into the progress, obstacles, and critical factors that influence the achievement of the SDGs. By exploring various studies from diverse sectors and regions, the SLR seeks to identify patterns, best practices, and potential gaps in the efforts to meet the 2030 Agenda for SDGs. The comprehensive approach used to accomplish this systematic literature evaluation on strategic development goals was

presented in the next section. The results section contains thorough findings concerning SDGs that was discovered by this study.

**METHODOLOGY**

The literature on Sustainable Development Goals (SDGs) was meticulously explored through a systematic approach to ensure utmost objectivity. The search encompassed publications from 1995 to August 1, 2023, focusing on studies related to SDGs to include influential works such as the paper by (Assembly, 2015a; Chaerani et al., 2023) on reconciling SDGs, as well as other noteworthy contributions like those conducted by(Assembly, 2015b; Gyimah et al., 2023). An extensive search for literature on SDGs was conducted in the Scopus databases. The key term "sustainable development goals" ("SDGs") was used in the search, enclosed within inverted commas. The search was filtered for articles published between 2015 and 2023, and the last search was performed on August 1, 2023. In total, the search yielded 2250 articles from the database. The detailed criteria used for the literature search are provided in the following table:

**Table 1: Literature Criteria for Search**

Sr.	Search Factor	Particulars
1	Literature Search	Sustainable Development Goals
2	Search Discipline	Management Sciences
3	Language	English
4	Publication Period	2015 – 2023
5	Electronic data bases	Scopus
6	Search Key word	"SDGs" "Sustainable Development Goals"

The criteria mentioned above were employed to search the literature on Sustainable Development Goals (SDGs). However, it is essential to acknowledge a potential limitation on the part of the researchers. The limitation lies in the accessibility of databases that were utilized for the search and the specific use of the key terms "Sustainable Development Goals" ("SDGs"). As

a result, there is a possibility that some significant contributions may have been missed in the search process.

**Eligibility criteria**

After conducting the basic search on the Scopus database below in Table 1, the research studies were assessed based on the following eligibility criteria for inclusion in the systematic review on sustainable development goals (SDGs).

**Table 2: Criteria for Articles Eligibility**

Sr.	Eligibility Factors	Particulars
1	Studied Area	Studies working of Sustainable development goals SDGs Core issue must be Sustainable development goals reflected in their abstracts , titles , topics and objectives
2	Topic of Study	Studies having SDGs, sustainable development goals keyword included. Both Conceptual and empirical studies were eligible all the research methods and designs are included
3	Study Design	Only published research articles were taken as a part of systematic literature review
4	Publication	

Upon applying the search criteria to the Scopus database, a total of 3250 search results appeared. Following the eligibility criteria, 2250 research articles were selected after eliminating duplications and book reviews. Figure 1 illustrates the selection process employed for article inclusion. The selected articles underwent thorough screening by the researchers, with careful examination of their titles and abstracts. Subsequently, these chosen articles were

meticulously analyzed, and an Excel spreadsheet was maintained to ensure maximum quality. Data concerning the articles' publication year, title, journal, study objectives, research questions/hypotheses, variables, main research findings, and contributions were extracted from the 2250 selected articles. Additionally, information on research questions, research streams, limitations, possibilities, influencing factors, and outcomes were collected to address the inquiries posed by this systematic review.

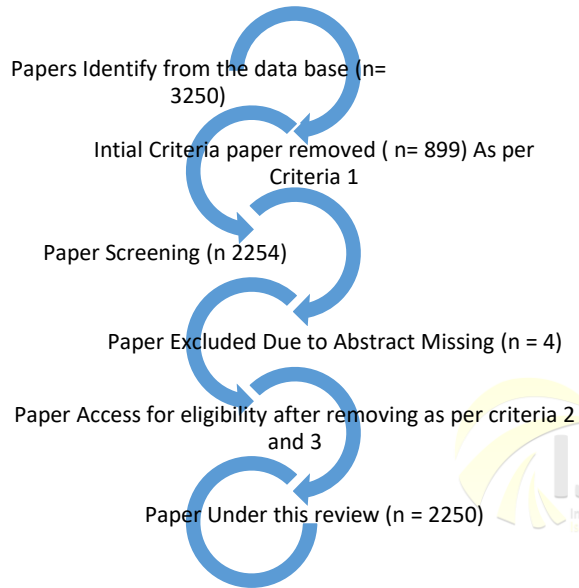


Figure 1: Flow Chart

**Results of Systematic Literature Review**

In this section we present you all the charts and tables to show how much work was done on SDGs so you can find out the future directions.

**Average Citation Per Year**

In figure 2 you can see that from 2014 citation was low but after the SDGs announced by the United nation people start working and cite the relevant articles that shows that direction given by the UN.

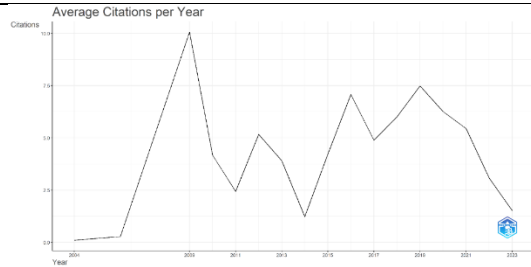


Figure 2

**Top Journals**

The details of journals that work on SDGs are given below in figure 3. The Journal of clear production was the top most journal working for SDGs 59 publication followed by Journalism of sustainable tourism (21) and technology forecast (22) other journals details are given below:

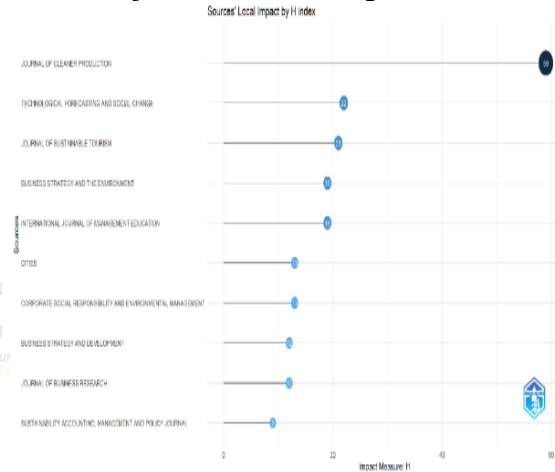
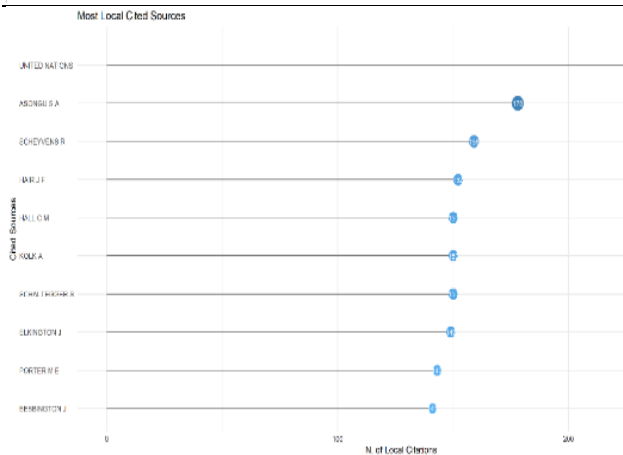


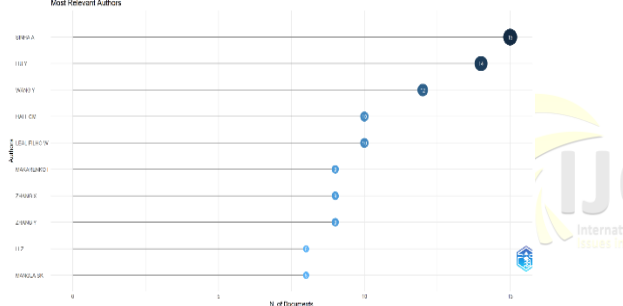
Figure 3

**Most Local Cited Sources**

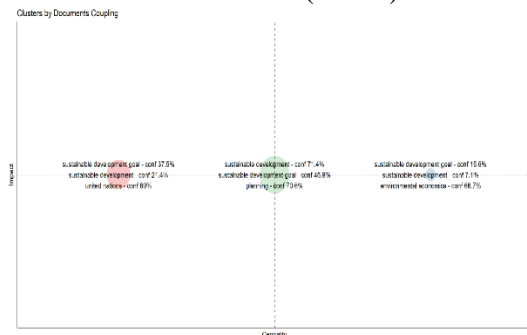
United States were the first one with 255 citation in the field of SDGs working followed by Asongu SA with 178. Other work are given below which tells us about the seminal work cited by different authors and different countries.



**Figure 4**  
**Most Relevant Authors**  
 Many authors working for SDGs but the SINHA A publish 15 articles along with LIU Y published 14 articles , Wang Y ( 12 ) , Hall CM (10), Lwal Filho W (10).

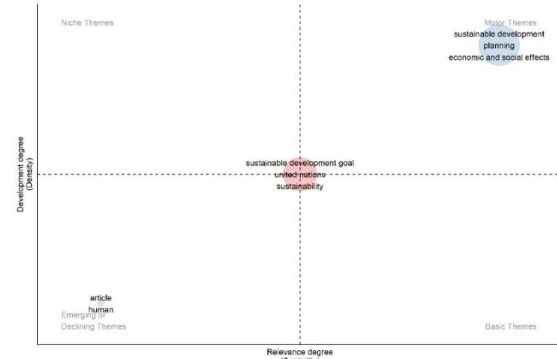


**Figure 5**  
**Cluster Coupling**  
 After analysis the raw data we arrange the three couples and cluster them into different themes  
 Sustainable Development (37.5%)  
 Sustainable planning (71.4%)  
 Environment Economics (66.7%)

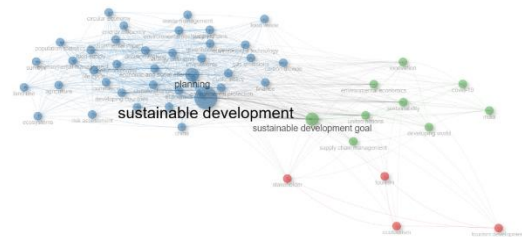


**Figure 6**  
**Themes:**

As you know there are four main themes Niche themes in which we consider Sustainability goals of different authors but the point to understand is that everyone working for SDGs external and internal environment of the nation, some are working for the external point of view and some are working for the internal development of the organizations.



**Figure 7**  
**Clusters Using Name:**  
 Majority of work was done in the sustainability part as we know there are different perspective in SDGs they have given many areas of work but as per the data from Scopus the main part the authors are working is sustainability and minor parts includes climate and environment.



**Figure 8**  
**Cluster Using Abstract**  
 As per figure, nine using the abstract from the paper selected for SLR the main concern area of working was shown in Red that shows how much work was done in the sustainability area of SDGs. Other work shown in the picture clearly depict that maximum work is pending to be explore in the field of SDGs.





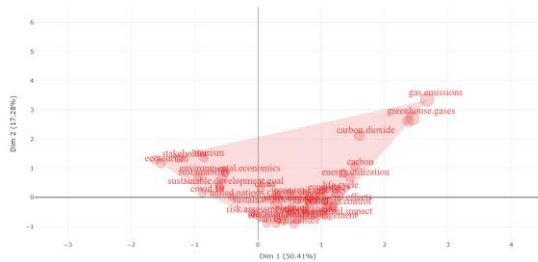


Figure 13

**WordCloud**

The main keyword found in this review was Sustainable development after COVID 19 many organizations are working on how to sustain in the market now it is the hot trend in the field of research. Table 4 shows the keyword counts.



Figure 14

**Table 4**

Sr.	Terms	Frequency
1	sustainable development	625
2	sustainable development goal	318
3	planning	282
4	united nations	101
5	economic and social effects	94
6	decision making	88
7	sustainability	86
8	climate change	80
9	environmental protection	75
10	economics	72

**Tree Map**



Figure 15

**DISCUSSION / ANALYSIS**

The bibliometric analysis conducted on the Sustainable Development Goals (SDGs) from 2015 to 2023 has provided valuable insights into the evolving landscape of research on global sustainable development. This study has shed light on the growth, trends, and patterns in scholarly publications related to the SDGs, offering a comprehensive overview of the academic community's engagement with this critical agenda.

Over the observed period, it is evident that the SDGs have gained significant traction in the research community, with a notable increase in research output. This surge in interest reflects the increasing recognition of the urgency to address complex global challenges and foster sustainable development worldwide. The comprehensive examination of thematic areas and interconnectedness between SDGs has showcased the multidimensional nature of sustainable development, emphasizing the need for integrated and holistic approaches.

The analysis of authorship patterns and collaboration networks has highlighted influential contributors to the field, and the identification of highly cited papers has demonstrated the pivotal works that have shaped the discourse on SDGs. This insight provides guidance for researchers, policymakers, and practitioners to navigate the vast pool of knowledge and build upon existing foundations to advance sustainable development endeavors.

**LIMITATION AND STUDY FORWARD**

Furthermore, the geographical distribution of publications has demonstrated the global nature of sustainable development research, involving contributions from diverse countries and regions. This diversity highlights the importance of global collaboration and the exchange of ideas and best practices to address challenges and opportunities in specific contexts.

### **FINDINGS / RESULTS**

The findings of this bibliometric analysis serve as a valuable resource for policymakers and stakeholders in crafting evidence-based strategies and policies to achieve the ambitious 2030 Agenda for Sustainable Development. Understanding the research landscape surrounding the SDGs facilitates informed decision-making, effective resource allocation, and targeted interventions to accelerate progress towards the goals.

However, it is essential to acknowledge the limitations of the study, including potential biases inherent in the data sources and the dynamic nature of research outputs. Additionally, as the analysis concludes in 2023, future research is necessary to track the ongoing developments and contributions to the SDGs beyond this timeframe.

### **CONCLUSION**

In conclusion, this bibliometric analysis has contributed to a deeper understanding of the research trends and dynamics surrounding the Sustainable Development Goals from 2015 to 2023. The SDGs represent a collective commitment to creating a more sustainable and equitable world, and the insights gained from this analysis can help harness the power of research and collaboration to transform these ambitious goals into meaningful actions for a better future. Present the materials, methods, survey, questionnaire etc used for the study. The author should explain whether this study is experimental, or review study or simulation-based or survey-based. Discuss software, hardware's used during the study with their brand names. Mention all research conditions, assumptions, theories followed. This section should be easy enough for any reader to repeat the

study under similar conditions. Methodology should be justified with requirements of current study.

### **CONFLICT OF INTEREST AND ETHICAL STANDARDS**

There was no conflict of interest between the authors

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