

# A Bibliometric Analysis on Sustainable Development Goals Disclosure in Integrated Reporting

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#### **Abstract**

The current study examines the Sustainable Development Goals disclosure (SDGs) in corporates' integrated reports as attempt to encourage SDGs adoption in the companies' integrated strategies towards improving stakeholder value. This study utilized bibliometric analysis via the VOS viewer software to carry out the publications trends analysis, keyword mapping analysis, and citation analysis, amongst others. The data for analysis were derived from the Scopus database, entailing 1763 articles published between 2013 and 2023. Moreover, through visualization, the name of the author and the nodes' size indicate the author's number of publications, showing the most cited authors in each subfield, etc., from the different results. Finally, the findings showed a summary of recent studies related to the keywords in this study. A systematic, transparent, and repeatable review of multiple studies on integrated reporting and the SDGs was made possible through the bibliometric analysis. In addition, it helps researchers find the most impactful research and map the research areas where subjective bias is the least. Furthermore, it enables more objective analysis, better audit quality, and greater reliability.

**Keywords:** Bibliometric Analysis, Integrated Reporting, Scopus, Sustainable Development Goals, VOS Viewer

#### Introduction

Traditional corporate measurement and reporting practices—including their structure, contents, and guidelines—have been discussed and criticized for not properly and accurately communicating information to the stakeholders (Hörisch et al., 2020; Humphrey et al., 2017). Stakeholders today including investors, governments, societies, creditors, and capitalists are recognizing the increasing significance of financial and non-financial data given prevailing challenges in the business landscape and the need for high transparency (Arvidsson, 2011;

Bhimani & Langfield-Smith, 2007) Previously, stakeholders had deemed the adequacy of financial reports in meeting their informational needs (Lipunga, 2015). But due to the incessant demand of attainment Sustainable Development Goals, global agendas were established with the aim of enhancing stakeholder demands and improving disclosures of accounting information. Resultantly, more coverage is given to non-financial data especially to sustainability aspects, governance, social responsibility, and environment (Noorhayati & Amosh, 2018). More firms have therefore begun to make changes to their reporting procedures by including sustainability and non-financial data to the scope of their disclosure. This has caused the value idea to be expanded (Hategan et al., 2018). In addition, financial and non-financial data is placed in a consolidated report (Dumay et al., 2016; Thomson, 2015). To culminate this prolonged process, in 2013, International Integrated Reporting Council (IIRC) introduced the International Integrated Reporting Framework as a mean of establishing content elements and guiding principles that would govern the entire integrated report and elucidate the basic concepts (Izzo et al., 2020b). Integrated reporting (IR) is " a concise communication about how an organization's strategy, governance, performance, and prospects, in the context of its external environment, lead to the creation, preservation or erosion of value over the short, medium and long term." (IIRC, 2021, p.10).

SDGs adoption by all member nations of UN in 2015 encourages businesses to build new business models and incorporate sustainable development (SD) concerns into their strategical goals. Organizations must therefore implement sustainable management techniques, concepts, and processes Ramos (2019), using the application of more recent nonfinancial reporting systems (NFR) that satisfy the informational requirements of stakeholders for understanding the connection between SD and value generation (Adams, 2017). According to Mensah (2019), coordinated efforts on a variety of levels, i.e., socially, environmentally, and economically are necessary to achieve sustainable growth. The foundation and ultimate objective of sustainable development is to accomplish a balance between these elements. Most accounting researchers (Farooq & de Villiers, 2019; Terblanche & De Villiers, 2019) underline the significance of prioritizing and guiding nonfinancial disclosure as organizational strategies focus on future activities as a means for preserving and generating shareholder and societal values. As a result of reporting more information to satisfy the requirements of stakeholders, sustainability reports have become lengthier and more complex. This has led to the introduction of a variety of accountability systems specifically for sustainability disclosure. Among such systems are integrated reporting (IR) framework and sustainability reporting (SR) guidelines (Hoang, 2018; Taliento et al., 2019).

Expansive databases like Scopus, Science Direct, and Web of Science are being used today to collect scientific articles. Scholarly articles can be evaluated by examining several aspects, including the keywords, topic, number of authors, number of citations, and institutional collaborations. With the usage of these sources, organizations can gain insight into the impact on individuals and groups. In addition, these sources can facilitate the understanding of emerging scientific trends by new researchers in a similar discipline. This makes it significantly dissimilar from a typical literature survey. An essential component of the academic evaluation process is this kind of cataloging service. Bibliometric analysis and the determination of the relationship between articles on the basis of citation numbers were

introduced by (Price, 1964). Bibliometrics technology is used for estimating, analyzing, and visualizing scientific field constructions. Additionally, it describes an area of knowledge and its expansion (Holden et al., 2005), on top of producing measurements for publications based on aspects like publishers, citations, and countries of origin (Lewison, 2005).

Social science scholars have started to use quantitative (e.g., bibliometric analysis) and qualitative (e.g., content analysis) methodologies for analyzing data. Despite the underutilization of these methods in business research. In the future, economists and financiers will tend to identify trends in economics and finance research (Popov, 2017). Bibliometric research on integrated reporting and sustainable development goals disclosure remains lacking. Hence, the current study utilized the bibliometric method to assess publications that can be accessed by academics, especially those related to integrated reporting and SDGs disclosure. The identification of key research directions can be facilitated by bibliometric reviews which offer a wide-ranging outline of research trends, growth, and emerging topics. This in turn helps researchers in mapping the intellectual aspect, identifying the gaps of research, and guiding future research. This review hence intends to map the disclosure of the SDGs via integrated reporting utilizing bibliometric analysis, elucidating prevailing insights and future research investigations. Below are the research questions being addressed by this study:

*RQ1.* How has research on integrated reporting and SDG disclosure evolved over the years? Which authors, organizations, countries, keywords, citations, and sources have the greatest influence in the field of current research?

*RQ2.* What is the relationship between the authors, organizations, and countries in terms of co-authorship, co-organization, and co-authorship countries?

The increasing need to enhance transparency and accountability in the business sector, especially in light of the global shifts towards sustainability, has led to the importance of studying the bibliometric analysis of sustainable development goals disclosure within integrated reports. Consequently, it contributes to bridging the knowledge gap on how companies use integrated reporting as a tool to disclose their financial, social, and environmental activities towards the SDGs. Furthermore, bibliometric analysis provides a systematic way to measure and analyze patterns in the scientific literature, helping to understand research trends, identify knowledge gaps, and assess the impact of publications in a given field. Additionally, the current study is useful for companies and institutions to improve their practices in disclosing SDGs through integrated reports, as well as for investors who seek accurate information to make informed investment decisions. Moreover, it will be useful for policymakers to guide legislation towards enhancing sustainability, as well as for researchers and academics to develop additional studies in this field. The rest of the paper is organized as follows: part 2 presents the literature review, part 3 discusses the bibliometric methodology, part 4 presents the bibliometric results and discussion, and part 5 concludes the paper.

#### **Literature Review**

As a result of the crises that have been occurred around the world throughout the last decade, there has been convention among academics and practitioners that keep applying

the, existing procedures (current financial reports) will lead to a lot of criticism for financial accounting (Busco et al., 2013), given the need of stakeholders' for non-financial data (quantitative and descriptive) and the failure of the accounting information system with its present condition to supply these information, hence there is a necessity to evolve this system to generate financial and non-financial information, mostly environmental, social, governance and sustainable (Haji & Hossain, 2016). In light of the lack of linkage between information, stakeholders find it difficult to assess companies' performance in the short term in addition to predicting their performance in the future; hence, the shortcomings of traditional reports or even separate reports are the main reason behind the need to prepare integrated reports, which fulfill the requirements of a large segment of internal and external stakeholders (Owen, 2013). In terms of financial reports' criterions nature, the limitations are that they are difficult to understand and apply due to the contradictory perspectives taken during the development of those standards. Additionally, for very large and developed operations, the challenge lies in the usage of simple accounting terms (Dumitru et al., 2013). With regards to reports of sustainability, some criticisms has been pointed at these reports (Robertson & Samy, 2015) due to inconsistencies between the corporates disclosure and what is the request of the stakeholders. The cause of this is the separate preparation of current financial and non-financial reports, as well as it contains a big quantity of information, that makes these reports complicated, hard to understand and could not supply the stakeholders with comprehension of the information nature and the relationship between the nonfinancial and financial data. Hence, a gap exists between the company information disclosure and investors requirements to evaluate activities values and prospects (Hoque, 2017; Bernardi & Stark, 2018).

Lipunga confirms that the companies' ethical obligation results in the require for integrated reporting, as companies realized that their subsistence and persistence depend mostly on its support provision amount to the community, so those companies are ethically commits to promote its contribution to the community positively, that makes the interested anticipate companies' reports to reflect their function in the community and report the positive and negative performance (Lipunga, 2015). In a similar context, Eccles et al (2012), Eccles et al (2012), argue that corporates' requirement for transparency to progress their fame, obtain the stakeholders confidence, be in communication with them, and meet their informational requirements are the most significant motives for going towards integrated reporting. According to Guthrie and Martin-Sardesai (2020), the challenge lies with the Sustainable Development Goals of United Nations and the numerous tools utilized for disseminating the pertinent data. An agenda for people, planet, and prosperity development titled "Transforming Our World: The 2030 Agenda for Sustainable Development" was employed by 193 countries during 2015 at the general association of United Nations, as it consists of 17 Sustainable Development Goals (SDGs) in a wide-ranging action program encompassing 169 milestones or goals. At the international level, the SDGs denote a shared language that enables the actions of different governments to be promoted, monitored, and reported by deeply linking the social, economic, and environmental aspects to the goal of sustainable development of regions (Stafford-Smith et al., 2017).

Criticisms were directed to conventional financial reporting due to its failure to fulfill stakeholders' information requirement (Iredele, 2019; Kılıç & Kuzey, 2018b) particularly

because future-oriented information is not readily available (Rosati & Faria, 2019a). Through the integrated reporting and thinking cycle, the objective of the International Integrated Reporting Council (IIRC) "is to efficient and productive capital allocation, will act as a force for financial stability and sustainable development" (IIRC, 2021, p.2). Indeed, the core notions of Integrated Reporting (IR) are consistent with the creating value for organizations and society for the long-term, which in turn is crucial for the SDGs accomplishment (Adams, 2020).

Along this line, a joint initiative was launched by the United Nations Global Compact (UNGC) and the Global Reporting Initiative (GRI) (Orzes et al., 2018) with the objective of empowering "businesses to incorporate SDG reporting into their existing processes, empowering them to act and make the achievements of the SDGs a reality" (Rosati & Faria, 2019b, p.2). In view of the significance of corporate sustainability in ensuring the long-run success of organizations, the SDGs enable the development of business-driven solutions and technologies that would be advantageous for organizations. The organizations may participate in the SDGs through measuring and reporting them whilst taking advantage of various benefits including the ability to identify future business prospects and to strengthen engagement with stakeholders (Izzo et al., 2020a).

There are several recent studies from 2020 to 2023 that are related to bibliometric analysis about integrated reporting, integrated thinking, sustainability, and sustainable development goals, but they have done so separately (Bautista-Puig et al., 2021; Di Vaio et al., 2020; Effah et al., 2023; Meschede, 2020; Mishra et al., 2023; Nazari et al., 2021; Othman & Basnan, 2021; Petrushenko et al., 2020; Pizzi et al., 2020; Prieto-Jiménez et al., 2021; Raman et al., 2023; Sianes et al., 2022; Sweileh, 2020; Vasyl et al., 2022) Hence, this work addresses this gap as the first study collected bibliometric analysis for sustainable development goals disclosure in integrated reports as both financial and non-financial information are disclosed together, which has social, economic, and environmental influence (Anifowose et al., 2020; Hamad et al., 2023; Kılıç & Kuzey, 2018a).

# Methodology

Sampling Method and Data Collection

The sample size was built using the database of Scopus which is the biggest database for citations and abstracts of peer-reviewed research. Established in 2004, the database can be used for tracking, screening, and displaying a wide range of researches and literatures. It mainly seeks to simplify the efficient and effective pursuit of scientific research. This database carries over 24,500 active titles by over 5,000 publishers globally about the social sciences, science, technology, medicine, and humanities areas. We used this database to search for the most suitable data collection method for this study using the key terms "integrated reporting" and "sustainable development goals" focusing on the (a) title of the article, (b) abstract, and (c) keywords. As many as 1763 documents were identified in the Scopus search covering the period from 2013 to 2023.

#### **Bibliometrics Analyses**

This study used VOS viewer software to derive a graphical analysis of the bibliometric information (Wong, 2018). Essentially a scientific software, VOS viewer enables the collection of data and generation of maps using the combination of bibliographies, citations, and

repeated keywords, using its own clustering method (Eck & Waltman, 2017). This software facilitates the visualization and analysis of patterns and trends in scientific literatures. Via the combination of network visualization and automatic cluster drawing, it analyzes possible knowledge structures in the literature. The software has numerous visual analytics and functions. Additionally, it facilitates the identification of intellectual foundations, hotspots, emergent trends, and knowledge networks in a similar academic field. It analyzes the collected data in terms of the authors, cited authors, cited references, cited journals, keywords, categories, institutions, and countries. Various formats are used to display the visualization map including density, mass, plot, and label model, whereby each dataset is differentiated using a distinct color (Murdayanti & Khan, 2021). The results are presented in the next section in the form of several types of bibliometric analysis with the use of figures.

#### **Result and Discussion**

Figure 1 shows the publications number by year. The findings revealed a piecemeal rise in annual publications during the first three years. After 2018, the growth rate significantly increased in the fourth, fifth, and sixth years. This is attributable to the current worldwide trend centering on the topics of integrated reporting and SDGs due to their crucial relevance to transparency, the disclosure of accounting information, and the provision of financial and non-financial data serving internal and external parties and enhancing the social, economic, and environmental parts.

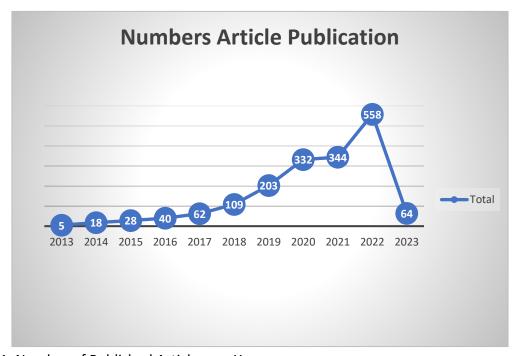


Figure 1. Number of Published Articles per Year

VOS viewer software was used to visualize research results and analyze bibliometric data (Wong, 2018). The VOS viewer software collects data and generates maps derived from the combination of bibliographies, citations, and keyword repetitions (Eck & Waltman, 2017). In order to address RQ1 and RQ2 of our study, this technique was used to obtain six main categories of bibliographic analysis:

#### **Co-Authorship Analysis**

Based on the author network co-authoring analysis and network visualization, it meets the minimum of 195 authors of documents per authority for three, thus meeting the threshold of 33 (see Figure 2). In visualizing the author network, VOS viewer displays the datasets gathered over the 2013–2023 period. "Author" was chosen to denote the node type whilst identifying the 33 most frequent citations. Next, VOS viewer was utilized to attain Figure 2, indicating the collaboration network of the creator. The number of author posts is denoted by the author's name and node size whilst the collaboration's strength is denoted by the thickness of their links. Each group's keywords are elucidated by the author's network whilst displaying the authors with the most citations in the sub-areas of Integrated Reporting and SDG disclosure. Essentially, number 1 maps the author's network (co-authorship) developed based on the criterion which the author has a minimum of five published articles. The grid visualization displays 33 linked writers, indicated by the solid lines linking the points of author's name with that of the other authors. Eight groups are formed based on the coauthorship presented in Figure 2. A normal view of the groups can be seen based on the font color linking the author's name points, i.e., red, green, blue, yellow, violet, orange, light blue, and rose. The data shows 195 authors connected to each other (collaborators of articles). Only 33 authors are visualized to have the most significant relationships based on the VOS viewer Request.

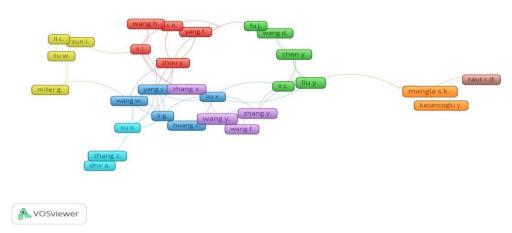


Figure 2. Author's Network

#### **Co-Organization Analysis**

The organization with the strongest links in the publication of integrated reports and the SDGs is the Business and Economics School, Linnaeus University, Kalmar, Sweden which has 13 documents overall and a total link strength of 31. Meanwhile, Yonsei Frontier Lab of Yonsei University, Seoul, South Korea is ranked the lowest with merely two documents overall and a total strength link of two. A total of 204 organizations have been identified to have written about integrated reporting and the SDGs between 2013 and 2013. Even so, these organizations are not all connected to each other. Figure 3 and Table 1 show that only 2 organizations have strength link namely Business and Economics School, Linnaeus University, Kalmar, Sweden and Management, Marketing, and Entrepreneurship Department, University of Canterbury, Christchurch, New Zealand.

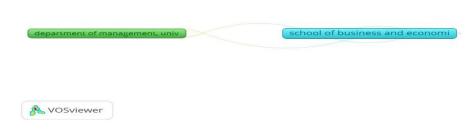


Figure 3. Organization's Network

Table 1
The Sequence of Most Organization for Documents

organization	documents	citations	total
			link strength
School of business and economics,	13	537	31
Linnaeus university, Kalmar, Sweden.	_		_
School of accountancy, university of the	12	396	0
Witwatersrand, Johannesburg, south			
Africa.			
Department of management, marketing	9	679	24
and entrepreneurship, university of			
Canterbury, Christchurch, new Zealand.			
Centre for excellence in sustainable	8	525	5
development, Goa institute of			
management, India.			
Department of accounting and	7	263	4
corporate governance, Macquarie			
university, Sydney, Australia.			
Les Roches international school of hotel	6	13	0
management, Crans Montana,			
Switzerland.			
Sumy state university, Ukraine.	5	18	1
Epartment of economics and	4	297	0
management, university Lum jean			
Monnet, Casamassima, Italy.			
Comsats university Islamabad, Lahore	3	473	5
campus, Pakistan.			
Yonsei frontier lab, Yonsei university,	2	26	2
Seoul, South Korea.			

Source: Created by authors

### **Co-Authorship-Countries**

A total of 138 countries have published topics on integrated reporting and sustainable development goals. Even so, these countries are not all linked to one another. Figure 4 shows that only 62 of the countries have a total strength link. The United Kingdom, Italy, and the Australia are major contributors to integrated reporting and sustainable development goals, with 255, 197, and 178 articles, respectively. They are among the most cited countries for the period from 2013 to 2023. In addition, having the most-strong links in publishing, as shown in Figure 4 and Table 2.

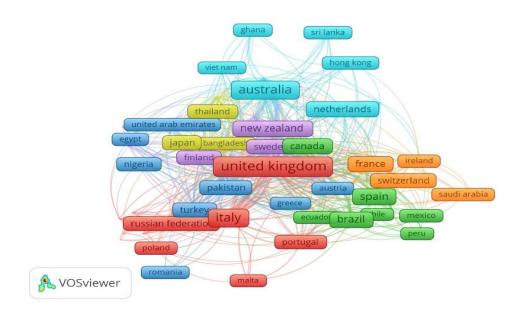


Figure 4. Network Visualization in Co-Authorship-Countries

Table 2
The Sequence of the Most Country for Document

country	documents
United Kingdom	255
Italy	197
Australia	178
China	174
United States	174
India	124
Germany	106
South Africa	103
Spain	99
Brazil	75

Source: Created by authors

# **Co-Occurrence – All Keywords Analysis**

The VOS viewer software was employed for bibliometric analysis based on keywords or co-occurrences. The analysis found 204 keywords relevant to integrated reporting and the

SDGs. The minimum co-occurrence in this analysis is 10, whereby the 204 identified keywords are divided into 7 clusters. Each cluster is marked with its own distinct color as shown in the visualization map. The bibliographic data used in this analysis covers the period from 2013 to 2023. Next, by using the VOS viewer, the keywords that occurred the most and their relationship to other topics were identified. The clustering result data is presented in Figure 5. Meanwhile, Figure 6 shows the most frequently occurring subjects related to the other findings about integrated reporting and SDGs namely "integrated reporting", "sustainability reporting", and "developing countries". Figure 5 shows that several research about listed companies from 2014 to 2022 related to the use of integrated reporting and theories of sustainable development goals uses legitimacy theory and stakeholder theory serving parties such as stakeholders and policymakers, and also uses content analysis, integrated approach, and business model.

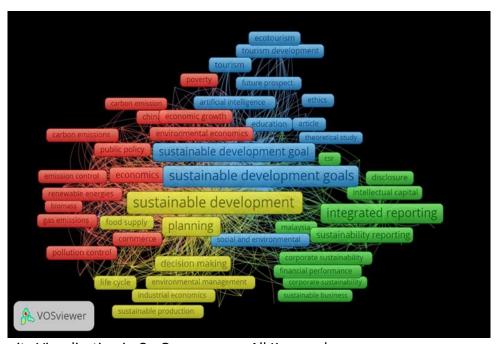


Figure 5. Density Visualization in Co-Occurrence – All Keywords

In Figure 6, the year of the article encompassing the published keyword is represented by the node keyword color in the overlay visualization. The length of time a topic will be covered in the research is indicated by the darker Colors of the Nodes.

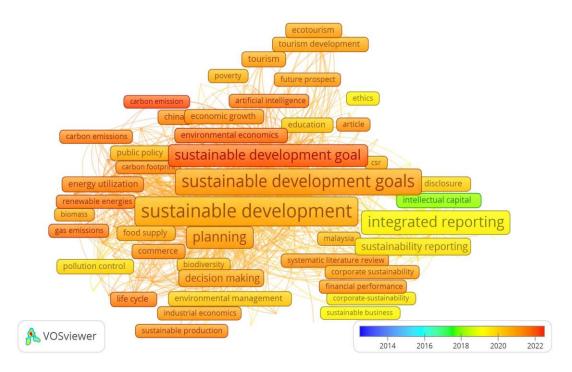
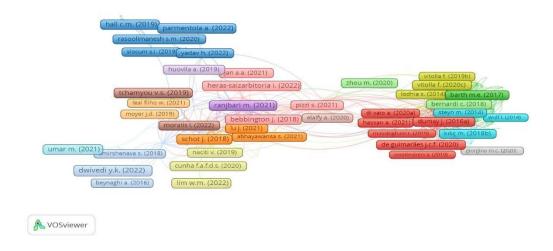


Figure 6. Overlay Visualization in Co-Occurrence-All Keyword

# **Citation Analysis**

To determine if the writing is affected by the distributions and screening, the explicit repetitions of author and article references were identified using the VOS viewer programming. The visual group relationships are shown in Figure 7 and Table 3. Out of all the distributions on topics related to integrated reporting and the SDGs published in 2018, Schot j. is the most frequently referenced, i.e., 514 times. Next is De Villiers c. who was cited 418 times in 2014. Various other authors also showed significant commitments to research on integrated reporting and the SDGs throughout the 2013-2023 period, and most of them were published in the *Journal of Strategic Organization* and *Business Strategy and the Environment*.



Meanwhile, the other publishers cited very few articles on both the aforementioned subjects (see Figure 7 and Table 3).

Figure 7. Network Visualization in Citation – Documents

Table 3
The Sequence of the Most Cited Scientific Articles

Researcher and Year of Publication	Document Title	Number of Citation
(Schot & Steinmueller, 2018)	Three frames for innovation policy: R&D, systems of innovation and transformative change	514
(Villiers et al., 2014)	Integrated reporting: Insights, gaps and an agenda for future research	418
(Frias-Aceituno et al., 2012)	The role of the board in the dissemination of integrated corporate social reporting	366
(Allam & Dhunny, 2019)	On big data, artificial intelligence and smart cities	361
(Dumay, 2016)	A critical reflection on the future of intellectual capital: from reporting to disclosure	353
(Schandl et al., 2016)	Decoupling global environmental pressure and economic growth: scenarios for energy use, materials use and carbon emissions	309

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Researcher and Year of	Document Title	Number of
Publication		Citation
(Quayson et al., 2020)	Technology for Social Good Foundations: A Perspective from the Smallholder Farmer in Sustainable Supply Chains	302
(Adams, 2014)	The international integrated reporting council: A call to action	298
(Hall, 2021)	Constructing sustainable tourism development: The 2030 agenda and the managerial ecology of sustainable tourism	251
(Stubbs & Higgins, 2014)	Integrated reporting and internal mechanisms of change	250

Source: Created by authors

Table 3 presents a list of scientific articles with over 10 citations, in descending order. Some of the articles are frequently cited because they are of high quality and regarded as academically excellent or due to the fact that they were published during the initial years of integrated reporting and the SDGs, which might have an influential result in this field. At that time, the scientific community was still confused about the subjects of integrated reporting and the SDGs. But citations of scholarly articles on these subjects begun to increase between 2013 and 2023. As a result, integrated reports and sustainable development goals became topics of research describing a diversity of topics, which includes the uniformity of accounting information, transparency, financial and non-financial reporting, and accounting data comparability.

#### **Citation-Sources**

Statistics of the five primary publications sources on integrated reporting and the SDGs have been summarized in Figure 8 and Table 4. The Journal of Cleaner Production is one among the best sources that is a key platform that encourages, supports, and disseminates high-quality research on emerging technologies with broad applications. This global and interdisciplinary journal focuses on green production research and practices, sustainability, and the environment, with the objective of helping communities to become more sustainable. This journal addresses and deliberates on the practical and theoretical aspects of clean production, covering sustainability and environmental challenges faced by organizations, educational institutions, governments, communities, and regions. It covers the subject areas of Corporate Social Responsibility, Corporate Sustainability, Sustainable Development and Sustainability, and Sustainable Consumption, among many others. Due to the highly broad research topics related to integrated reporting and the SDGs, top-tier journals such as Scopus and indexed publishing sources are used to overcome the related challenges.

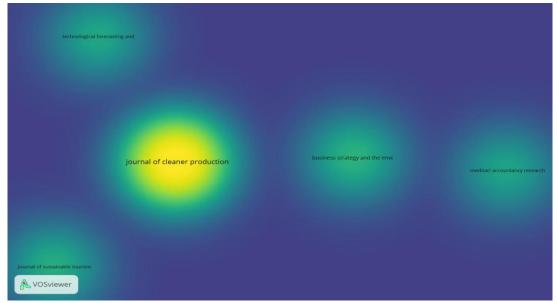


Figure 8. Density Visualization in Citation – Sources

Table 4
Top (Five) Publication Sources

Source Title	Number of Article Publications	citations
journal of cleaner production	367	9899
business strategy and the environment	59	1999
journal of sustainable tourism	52	1322
technological forecasting and social change	45	1446
meditari accountancy research	42	555

Source: Created by authors

#### Conclusion

From an accounting perspective, integrated reporting represents a new technical framework that can be fully leveraged. Despite its importance to SDGs' disclosure, there is still a dearth of SDGs disclosure research through integrated reporting. Therefore, the current study used a complete bibliometric analysis of the literature on "Integrated Reporting" and "Sustainable Development Goals" using the Scopus database covering the period from 2013 to 2023, using 1763 articles as the sample. Several aspects were examined in this paper including the shifting number of publications throughout the study period, the published document types, the publications sources, and the referred organizations and countries, among others. The findings revealed a substantial surge in the publication number about these topics, especially from 2018 until 2023. Moreover, by summarizing recent research articles from 2020 to 2023, this study offers a foundation for research topics and enhances opportunities for future research. In addition, according to the VOS viewer search results, six major groups were formed through the bibliometric analysis.

According to the network's research results, the current study can guide the researchers to find research gaps in the integrated reporting domain for disclosure of sustainable development goals, and at the company level it encourages the decision makers to use integrated reporting as a portion of the business strategy of the corporate to increase

the financial and non-financial information disclosure and transparency. However, the research limitation of this paper is that the data was created from Scopus database only. Future research can also take into account online databases like PubMed and Web of Science when selecting a data source. Additionally, meta-analysis can be used for data analysis. Companies are the economic engine of a country, and being SDGs disclosure responsible is not a decision but an obligation. Therefore, future studies should include other influencing factors such as company size, company age, and company sustainability. At the same time, governments should grant tax incentives to companies because they act a great role in enhancing the growth and sustainability of companies, as there is still not much clarity pertaining to the approval and implementation of these, especially in developing countries.

#### References

- Adams, C. A. (2014). The International Integrated Reporting Council: A call to action. *Critical Perspectives on Accounting*, 1–6. https://doi.org/10.1016/j.cpa.2014.07.001
- Adams, C. A. (2017). Conceptualising the contemporary corporate value creation process. *Accounting, Auditing and Accountability Journal, 30*(4), 906–931. https://doi.org/10.1108/AAAJ-04-2016-2529
- Adams, C. A. (2020). Sustainable Development Goals Disclosure (SDGD) Recommendations: Feedback on the consultation responses (Issue January). www.integratedreporting.org
- Allam, Z., & Dhunny, Z. A. (2019). On big data, artificial intelligence and smart cities. *Cities*, 89, 80–91. https://doi.org/10.1016/j.cities.2019.01.032
- Anifowose, M., Abang, S., & Zakari, M. A. (2020). Integrated capitals reporting and companies' sustainable value: evidence from the Asian continent. *Asian Review of Accounting*, 28(4), 567–589. https://doi.org/10.1108/ARA-10-2019-0184
- Arvidsson, S. (2011). Disclosure of non-financial information in the annual report: A management-team perspective. *Journal of Intellectual Capital*, *12*(2), 277–300. https://doi.org/10.1108/14691931111123421
- Bautista-Puig, N., Aleixo, A. M., Leal, S., Azeiteiro, U., & Costas, R. (2021). Unveiling the Research Landscape of Sustainable Development Goals and Their Inclusion in Higher Education Institutions and Research Centers: Major Trends in 2000–2017. Frontiers in Sustainability, 2(620743), 1–18. https://doi.org/10.3389/frsus.2021.620743
- Bernardi, C., & Stark, A. W. (2018). Environmental , social and governance disclosure , integrated reporting , and the accuracy of analyst forecasts \*. *The British Accounting Review*, 50(1), 16–31. https://doi.org/10.1016/j.bar.2016.10.001
- Bhimani, A., & Langfield-Smith, K. (2007). Structure, formality and the importance of financial and non-financial information in strategy development and implementation.

  \*Management Accounting Research, 18(1), 3–31. https://doi.org/10.1016/j.mar.2006.06.005
- Busco, C., Frigo, M. L., Quattrone, P., & Riccaboni, A. (2013). Redefining Corporate Accountability through Reporting Integrated What happens when values and value creation meet? *Strategic Finance*, 8(August), 33–41.
- Di Vaio, A., Syriopoulos, T., Alvino, F., & Palladino, R. (2020). "Integrated thinking and reporting" towards sustainable business models: a concise bibliometric analysis. *Meditari Accountancy Research*, 29(4), 691–719. https://doi.org/10.1108/MEDAR-12-2019-0641
- Dumay, J. (2016). A critical reflection on the future of intellectual capital: from reporting to

- disclosure. *Journal of Intellectual Capital, 17*(1), 168–184. https://doi.org/10.1108/JIC-08-2015-0072
- Dumay, J., Bernardi, C., Guthrie, J., & Demartini, P. (2016). Integrated reporting: A structured literature review. *Accounting Forum*, 40(3), 166–185. https://doi.org/10.1016/j.accfor.2016.06.001
- Dumitru, M., Glăvan, M. E., Gorgan, C., & Dumitru, V. F. (2013). International integrated reporting framework: a case study in the software industry. *Annales Universitatis Apulensis Series Oeconomica*, 15(1), 24–39. https://doi.org/10.29302/oeconomica.2013.15.1.2
- Eccles, R. G., Krzus, M. P., Rogers, J., & Serafeim, G. (2012). The need for sector-specific materiality and sustainability reporting standards. *Journal of Applied Corporate Finance*, 24(2), 65–71.
- Eck, N. J., & Waltman, L. (2017). Citation-based clustering of publications using CitNetExplorer and VOSviewer. *Scientometrics*, 111(2), 1053–1070. https://doi.org/10.1007/s11192-017-2300-7
- Effah, N. A. A., Wang, Q., Owusu, G. M. Y., Otchere, O. A. S., & Owusu, B. (2023). Contributions toward sustainable development: a bibliometric analysis of sustainability reporting research. *Environmental Science and Pollution Research*, *30*(1), 104–126. https://doi.org/10.1007/s11356-022-24010-8
- Farooq, M. B., & Villiers, C. (2019). Understanding how managers institutionalise sustainability reporting. *Accounting, Auditing & Accountability Journal, 32*(5), 1240–1269. https://doi.org/10.1108/AAAJ-06-2017-2958
- Frias-Aceituno, J. V., Rodriguez-Ariza, L., & Garcia-Sanchez, I. (2012). The role of the board in the dissemination of integrated corporate social reporting. *Corporate Social Responsibility and Environmental Management*, 20(4), 219–233. https://doi.org/10.1002/csr.1294
- Guthrie, J., & Martin-Sardesai, A. (2020). Contemporary challenges in public sector reporting. New Trends in Public Sector Reporting: Integrated Reporting and Beyond, 1–14. https://doi.org/10.1007/978-3-030-40056-9\_1
- Haji, A. A., & Hossain, D. M. (2016). Exploring the implications of integrated reporting on organisational reporting practice Evidence from highly regarded integrated reporters. *Qualitative Research in Accounting &Management*, 13(4), 415–444. https://doi.org/10.1108/QRAM-07-2015-0065
- Hall, C. M. (2021). Constructing sustainable tourism development: The 2030 agenda and the managerial ecology of sustainable tourism. In 1st (Ed.), *In Activating critical thinking to advance the sustainable development goals in tourism systems*, 198–214. Routledge. https://doi.org/10.1080/09669582.2018.1560456
- Hamad, S., Lai, F. W., Shad, M. K., Khatib, S. F. A., & Ali, S. E. A. (2023). Assessing the implementation of sustainable development goals: does integrated reporting matter? Sustainability Accounting, Management and Policy Journal, 14(1), 49–74. https://doi.org/10.1108/SAMPJ-01-2022-0029
- Hategan, C. D., Sirghi, N., Curea-Pitorac, R. I., & Hategan, V. P. (2018). Doing well or doing good: The relationship between corporate social responsibility and profit in Romanian companies. *Sustainability (Switzerland)*, 10(4), 1041. https://doi.org/10.3390/su10041041
- Hoang, T. (2018). The role of the integrated reporting in raising awareness of environmental,

- social and corporate governance (ESG) performance. *Developments in Corporate Governance and Responsibility*, *14*, 47–69. https://doi.org/10.1108/S2043-052320180000014003
- Holden, G., Rosenberg, G., & Barker, K. (2005). *Bibliometrics in Social Work*. Binghampton, New York, Haworth Press. https://doi.org/10.1093/bjsw/bcm077
- Hoque, M. E. (2017). Why company should adopt integrated reporting? *International Journal of Economics and Financial Issues*, 7(1), 241–248.
- Hörisch, J., Schaltegger, S., & Freeman, R. E. (2020). Integrating stakeholder theory and sustainability accounting: A conceptual synthesis. *Journal of Cleaner Production*, *275*, 124097. https://doi.org/10.1016/j.jclepro.2020.124097
- Humphrey, C., O'Dwyer, B., & Unerman, J. (2017). Re-theorizing the configuration of organizational fields: the IIRC and the pursuit of 'Enlightened' corporate reporting. *Accounting and Business Research*, 47(1), 30–63. https://doi.org/10.1080/00014788.2016.1198683
- IIRC. (2021). Integrated reporting: the international framework. In <a href="https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf">https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf</a>. 1-56.
- Iredele, O. O. (2019). Examining the association between quality of integrated reports and corporate characteristics. *Heliyon*, *5*(7), e01932. https://doi.org/https://doi.org/10.1016/j.heliyon.2019.e01932
- Izzo, M. F., Ciaburri, M., & Tiscini, R. (2020a). The challenge of sustainable development goal reporting: The first evidence from italian listed companies. *Sustainability*, *12*(8), 1–18. https://doi.org/10.3390/SU12083494
- Izzo, M. F., Strologo, A. Dello, & Granà, F. (2020b). Learning from the best: New challenges and trends in IR reporters' disclosure and the role of SDGs. *Sustainability*, *12*(14), 1–22. https://doi.org/10.3390/su12145545
- Kılıç, M., & Kuzey, C. (2018a). Assessing current company reports according to the IIRC integrated reporting framework. *Meditari Accountancy Research*, 26(2), 305–333. https://doi.org/10.1108/MEDAR-04-2017-0138
- Kılıç, M., & Kuzey, C. (2018b). Determinants of forward-looking disclosures in integrated reporting. *Managerial Auditing Journal*, *33*(1), 115–144. https://doi.org/10.1108/MAJ-12-2016-1498
- Larsson, J., & Ringholm, L. (2014). Governance Disclosures According to IIRC's Integrated Reporting Framework -Are Annual Reports of Swedish Listed Companies in Line with the Framework? University of Gothenburg, School of Economics, Business and Law.
- Lewison, G. (2005). The work of the Bibliometrics Research Group (City University) and associates. *Aslib Proceedings*, *57*(3). https://doi.org/10.1108/ap.2005.27657caa.001
- Lipunga, A. M. (2015). Integrated Reporting in Developing Countries: Evidence from Malawi. Journal of Management Research, 7(3), 130–156. https://doi.org/10.5296/jmr.v7i3.7195
- Mensah, J. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent Social Sciences*, *5*(1), 1653531. https://doi.org/10.1080/23311886.2019.1653531
- Meschede, C. (2020). The sustainable development goals in scientific literature: A bibliometric overview at the meta-level. *Sustainability*, *12*(11), 1–14. https://doi.org/10.3390/su12114461
- Mishra, M., Desul, S., Santos, C. A. G., Mishra, S. K., Kamal, A. H. M., Goswami, S., Kalumba, A.

- M., Biswal, R., da Silva, R. M., dos Santos, C. A. C., & Baral, K. (2023). A bibliometric analysis of sustainable development goals (SDGs): a review of progress, challenges, and opportunities. *Environment, Development and Sustainability*, 1–43. https://doi.org/10.1007/s10668-023-03225-w
- Murdayanti, Y., & Khan, M. N. A. A. (2021). The development of internet financial reporting publications: A concise of bibliometric analysis. *Heliyon*, 7(12), e08551. https://doi.org/10.1016/j.heliyon.2021.e08551
- Nazari, M. T., Mazutti, J., Basso, L. G., Colla, L. M., & Brandli, L. (2021). Biofuels and their connections with the sustainable development goals: a bibliometric and systematic review. *Environment, Development and Sustainability*, 23(8), 11139–11156. https://doi.org/10.1007/s10668-020-01110-4
- Noorhayati, & Amosh, H. A. M. Al. (2018). Sustainability and Corporate Reporting: a Review on Environmental and Social Accounting Disclosure. *International Journal of Accounting, Finance and Business*, *3*(8), 78–87. www.ijafb.com
- Orzes, G., Moretto, A. M., Ebrahimpour, M., Sartor, M., Moro, M., & Rossi, M. (2018). United Nations Global Compact: Literature review and theory-based research agenda. *Journal of Cleaner Production*, *177*, 633–654. https://doi.org/10.1016/j.jclepro.2017.12.230
- Othman, M., & Basnan, N. (2021). Assessing The Trend Of The Research On Integrated Reporting: A Bibliometric Review. *Journal of Management Information and Decision Sciences*, 24(1), 1–18.
- Owen, G. (2013). Integrated reporting: a review of developments and their implications for the accounting curriculum. *Accounting Education*, 22(4), 340–356. https://doi.org/10.1080/09639284.2013.817798
- Petrushenko, Y., Vadym, A., Vorontsova, A., & Ponomarenko, O. (2020). Sustainable development goals as a tool for strategic planning in communities: A bibliometric analysis of research. *E3S Web of Conferences*, *202*(03005). https://doi.org/10.1051/e3sconf/202020203005
- Pizzi, S., Caputo, A., Corvino, A., & Venturelli, A. (2020). Management research and the UN sustainable development goals (SDGs): A bibliometric investigation and systematic review. *Journal of Cleaner Production*, *276*(124033), 1–15. https://doi.org/10.1016/j.jclepro.2020.124033
- Popov, A. (2017). Evidence on finance and economic growth. In *ECB Working Paper*, 63-104. https://doi.org/10.2866/996857
- Price, D. J. D. S. (1964). The pattern of bibliographic references indicates the nature of the scientific research front. *Science*, *149*, 510–515.
- Prieto-Jiménez, E., López-Catalán, L., López-Catalán, B., & Domínguez-Fernández, G. (2021). Sustainable Development Goals and Education: A Bibliometric Mapping Analysis. *Sustainability*, *13*(2126), 1–20. https://doi.org/10.3390/su13042126
- Quayson, M., Bai, C., & Sarkis, J. (2020). Technology for Social Good Foundations: A Perspective From the Smallholder Farmer in Sustainable Supply Chains. *IEEE Transactions on Engineering Management*, 68(3), 894–898.
- Raman, R., Lathabhai, H., Mandal, S., Kumar, C., & Nedungadi, P. (2023). Contribution of Business Research to Sustainable Development Goals: Bibliometrics and Science Mapping Analysis. *Sustainability*, *15*(17), 2–37. https://doi.org/10.3390/su151712982
- Ramos, T. B. (2019). Sustainability assessment: Exploring the frontiers and paradigms of indicator approaches. *Sustainability*, *11*(3), 2–14. https://doi.org/10.3390/su11030824

- Robertson, F. A., & Samy, M. (2015). Factors affecting the diffusion of integrated reporting a UK FTSE 100 perspective. *Sustainability Accounting, Management and Policy Journa*, 6(2), 190–223. https://doi.org/10.1108/SAMPJ-07-2014-0044
- Rosati, F., & Faria, L. G. D. (2019a). Addressing the SDGs in sustainability reports: The relationship with institutional factors. *Journal of Cleaner Production*, *215*, 1312–1326. https://doi.org/10.1016/j.jclepro.2018.12.107
- Rosati, F., & Faria, L. G. D. (2019b). Business contribution to the Sustainable Development Agenda: Organizational factors related to early adoption of SDG reporting. *Corporate Social Responsibility and Environmental Management*, 26(3), 588–597. https://doi.org/10.1002/csr.1705
- Roszkowska-Menkes, M. (2017). Integrated reporting: state of the art and future perspectives. *Responsible Corporate Governance: Towards Sustainable and Effective Governance Structures*, 223–246. https://doi.org/10.1007/978-3-319-55206-4
- Schandl, H., Hatfield-dodds, S., Wiedmann, T., Geschke, A., West, J., Newth, D., Baynes, T., Lenzen, M., & Owen, A. (2016). Decoupling global environmental pressure and economic growth: scenarios for energy use, materials use and carbon emissions. *Journal of Cleaner Production*, 132, 45–56. https://doi.org/10.1016/j.jclepro.2015.06.100
- Schot, J., & Steinmueller, W. E. (2018). Three frames for innovation policy: R & D, systems of innovation and transformative change. *Research Policy*, 47(9), 1554–1567. https://doi.org/10.1016/j.respol.2018.08.011
- Sianes, A., Vega-Muñoz, A., Tirado-Valencia, P., & Ariza-Montes, A. (2022). Impact of the Sustainable Development Goals on the academic research agenda. A scientometric analysis. *PLoS ONE*, *17*(3), 1–23. https://doi.org/10.1371/journal.pone.0265409
- Stafford-Smith, M., Griggs, D., Gaffney, O., Ullah, F., Reyers, B., Kanie, N., Stigson, B., Shrivastava, P., Leach, M., & O'Connell, D. (2017). Integration: the key to implementing the Sustainable Development Goals. *Sustainability Science*, *12*(6), 911–919. https://doi.org/10.1007/s11625-016-0383-3
- Stubbs, W., & Higgins, C. (2014). Integrated Reporting and internal mechanisms of change. *Accounting, Auditing & Accountability Journal*, 27(7), 1068–1089. https://doi.org/10.1108/AAAJ-03-2013-1279
- Sweileh, W. M. (2020). Bibliometric analysis of scientific publications on "sustainable development goals" with emphasis on "good health and well-being" goal (2015-2019). *Globalization and Health*, *16*(1), 1–13. https://doi.org/10.1186/s12992-020-00602-2
- Taliento, M., Favino, C., & Netti, A. (2019). Impact of environmental, social, and governance information on economic performance: Evidence of a corporate "sustainability advantage" from Europe. Sustainability, 11(6). https://doi.org/10.3390/su11061738
- Terblanche, W., & De Villiers, C. (2019). The influence of integrated reporting and internationalisation on intellectual capital disclosures. *Journal of Intellectual Capital*, 20(1), 40–59. https://doi.org/10.1108/JIC-03-2018-0059
- Thomson, I. (2015). "But does sustainability need capitalism or an integrated report" a commentary on "The International Integrated Reporting Council: A story of failure" by Flower, J. *Critical Perspectives on Accounting*, 27, 18–22. https://doi.org/10.1016/j.cpa.2014.07.003
- Vasyl, H., Oleh, V., & Olha, V. (2022). Integrated Reporting of Mining Enterprises: Bibliometric Analysis. *Studies in Business and Economics*, *17*(3), 90–99. https://doi.org/10.2478/sbe-2022-0048

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Villiers, C. de, Rinaldi, L., & Unerman, J. (2014). Integrated Reporting: Insights, gaps and an agenda for future. *Accounting, Auditing & Accountability Journal*, *27*(7), 1042–1067. https://doi.org/10.1108/AAAJ-06-2014-1736

Wong, D. (2018). VOSviewer. Technical Services Quarterly, 35(2), 219–220.

Zyl, A. S. N. (2013). Sustainability and integrated reporting in the South African corporate sector 1. *Journal of Sustainability Management*, 1(1), 19–42.