EXPLORING THE INTERSECTION OF SUSTAINABLE DEVELOPMENT GOALS AND BUSINESS PERFORMANCE: A BIBLIOMETRIC ANALYSIS

Afaf Izzati Nafhah Radzi *, Haslinda Yusoff **, Fadzlina Mohd Fahmi **, Nur Syuhada Jasni **

* Corresponding author, Faculty of Accountancy, Universiti Teknologi MARA, Sarawak, Malaysia
Contact details: Faculty of Accountancy, Universiti Teknologi MARA, Jalan Meranek, 94300 Kota Samarahan, Sarawak, Malaysia
** Faculty of Accountancy, Universiti Teknologi MARA, Puncak Alam, Selangor, Malaysia



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Abstract

There has been a growing focus on the connection between the Sustainable Development Goals (SDGs) and business performance, highlighting the increasing demand for companies to align their strategies with global goals. Nevertheless, the scholarly papers addressing this interrelationship are quite scattered (Awuah et al., 2024; Lin et al., 2025; Saha et al., 2024; Zhang-Hangjian et al., 2025). The review is intended to explore existing studies on how SDGs relate to business performance. The objectives are to discover the ongoing trends in publications, essential contributors, top-cited articles, and common themes. The research analysed 480 articles from Scopusindexed journals between 2017 and 2024 using biblioMagika, OpenRefine, Microsoft Excel, and VOSviewer. There was a sharp increase in publications addressing SDGs between 2017 and 2023. The paper identified five research themes: sustainability reporting, green innovation, stakeholder theory, gender equality, and circular economy. Insights from the results help researchers see the latest trends, the variety of participants, and the main themes that signal what is essential for global sustainability. Scholars, experts, and those in charge of making policies can rely on the results to guide their efforts and involvement in this field.

Keywords: SDGs, Business Performance, Bibliometric Analysis, VOSviewer, Scopus

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1. INTRODUCTION

In 2015, the United Nations introduced the Sustainable Development Goals (SDGs) to address the world's most pressing problems (United Nations, n.d.) through the "5Ps" (prosperity, planet,

peace, people, and partnerships). The SDGs include 17 primary goals with 169 targets, which will act as a blueprint and are hoped to be met by 2030.

SDG highlights the role of partnerships and collaboration in achieving collective action, aligning the contributions of diverse actors towards a better



future (Leal Filho et al., 2024). Companies must sustainably create their business plans by helping the world achieve its goals (Liu et al., 2021). Companies are under pressure from stakeholders to focus more on sustainable activities (Incio Chavesta et al., 2025; Kumar et al., 2016). Recent research has increasingly focused on how the SDGs influence corporate strategy. Heras-Saizarbitoria et al. (2022) highlight that integrating SDGs into business practices involves aligning internal organisational activities with broader sustainability objectives to achieve these global goals.

Empirical research shows that only a few companies have aligned their business with an SDG strategy despite an urgent demand to accomplish the SDGs by 2030. Many companies place little emphasis on the SDGs, and some of them do it primarily on a "symbolic" level (García-Meca & Martínez-Ferrero, 2021). Some companies realised the importance of SDGs in building strong relationships with stakeholders. However, there are currently no regulations requiring companies to disclose their sustainable business practices, and there is insufficient evidence that incorporating SDGs into their business strategy will improve their financial performance (Ramos et al., 2022). Hence, companies may not see it as a priority. Companies can be persuaded to engage in the SDGs if they are valuable to the organisation. Therefore, substantial evidence of the correlation between the SDGs and business performance is crucial for companies (Ramos et al., 2022).

The resource-based view theory can interpret the relationship between SDGs and business performance. The SDGs can be viewed as strategic resources that drive business performance. Companies that integrate SDGs into their core business operations meet ethical standards and create a better marketplace position, generating economic value. According to Al Lawati and Hussainey (2022), the resource-based view suggests that adopting the SDGs is positively related to financial performance, as the SDGs adopted by the company reduce risk.

Despite the increasing number of publications on SDGs and business performance, research gaps exist when there is insufficient insight into how research in this area has evolved since the 2030 Agenda was adopted. A bibliometric analysis enables longitudinal perspective on how scholarly attention to the SDGs has changed over time and which SDG areas have received the most attention. Therefore, further empirical research is required to enhance the current knowledge base and assess the level of integration of the SDGs into the business sector (Ferrero-Ferrero et al., 2023). This study contributes to the SDGs literature by thoroughly examining current studies on the SDGs and business performance. Identifying research themes and emerging research topic trends provides some points of reference that may assist researchers in determining the direction of future studies on this topic.

The primary aim of this study is to conduct a bibliometric analysis by mapping research about the SDGs and business performance. This study addresses the following research questions:

RQ1: What is the current state of SDGs and business performance research, and how have they changed over time?

RQ2: Who is the most productive contributor to SDGs and business performance studies regarding authors, institutions, countries, and source titles?

RQ3: What are the most cited documents in SDGs and business performance research?

RQ4: What are the essential keywords and themes in SDGs and business performance research?

The methodology encompasses an analysis of publications related to the SDGs and business performance in Scopus-indexed journals. The relevance scope, keywords, and search string were identified for that analysis.

The rest of this paper is structured as follows. Section 2 reviews the relevant literature. Section 3 analyses the methodology used to conduct empirical research on the SDGs and business performance. Section 4 presents the results and discusses the findings. Section 5 presents the main conclusions and outlines future lines of research.

2. LITERATURE REVIEW

2.1. Sustainable Development Goals (SDGs)

The Brundtland Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development [WCED], 1987, p. 37). The SDGs aim to improve human well-being and economic prosperity while protecting the Earth's essential natural processes and ecosystem services. The SDGs were officially launched in September 2015 at the United Nations General Assembly in New York (De Souza et al., 2021). These goals are designed to eradicate poverty and other challenges, ensure everyone has equal to healthcare and education, reduce inequalities, promote economic growth, tackle climate change, and protect oceans and forests (United Nations, n.d.). The responsibility to enforce the SDGs reaches all countries and sectors, public, social, and private, as Sachs (2012) recommended. Organisations in the government and private sectors should develop strategies and plans to meet these goals by 2030 (Racowski & Neto, 2021).

2.2. SDGs and business performance

SDGs enable companies to update investors on their efforts to be sustainable, which can result in improved economic value. It is argued that using the SDGs can create value for businesses by offering competitive edge and boosting business performance. Mann et al. (2024) state that sharing information about the SDGs with stakeholders is essential for companies and helps their economic performance. Research done in the past revealed that SDGs and business performance are connected. Lin et al. (2025) analyse how implementing the SDGs and companies' finances affect the motor vehicle manufacturing sector. Examining 380 companies from 2016 to 2022, the study demonstrates that disclosing SDG-related information helps to improve the company's profitability and market value, as shown by indicators like return on assets (ROA), return on equity (ROE), return on invested capital (ROIC), and Tobin's Q. There is evidence that businesses with detailed SDG strategies and good

stakeholder involvement achieve greater financial success. Similarly, Muhmad and Muhamad (2021) indicated that sustainability-related practices by companies will lead to positive financial profitability.

Khan et al. (2022) indicate that adopting environmental SDG practices allows companies to minimise production costs by lowering environmental hazards. This helps to gain a competitive advantage and benefits businesses' long-term financial health. Abdi et al. (2022) and Debnath et al. (2025) also agree that improving the environment and social sustainability could decrease the cost of their operations, consequently enhancing their economic performance. Furthermore, companies that highlight environmentally and socially responsible practices can gain benefits in terms of brand image, consumer loyalty, employee morale, and reduced production costs (Saha et al., 2024). In addition, taking action for sustainability can lead to innovation, resilience, and long-term competitiveness.

However, extensive research indicates that some companies face a dilemma in balancing their objective of creating value for stakeholders with the broader goal of creating value at the societal level. It represents a significant challenge for most companies. Although a broad area of studies confirms the positive relationship between sustainable prospects and innovative performance, contrasting literature also exists, arguing for integrating sustainability strategies into business plans to shape perceptions rather than mitigating environmental or social hazards.

García-Meca and Martínez-Ferrero (2021) investigated the effect of SDG reporting on firm performance by examining both the symbolic and substantive aspects of this reporting and the industry factors that influence its relationship with performance. The study results indicate no significant effect of SDG reporting on firm performance. This suggests that firms may use SDG reporting to mask their actual performance rather provide meaningful information stakeholders. Investors often view this process of SDG reporting as merely window dressing, with little relevance to a company's value. Nonetheless, the study reveals the positive performance effects of SDG reporting in controversial sectors, such as alcohol, gambling, tobacco, and firearms, as well as in environmentally sensitive industries. Sectorspecific issues often mean that common goals relevant to SDG reporting are viewed differently among companies in these areas, and they may value contributing to these goals differently, especially if they are subject to social scrutiny or work with stakeholders sensitive to ethical and environmental concerns. This indicates that in some industries, SDG reporting positively enhances firm performance.

According to Lopez (2020) and Antorine et al. (2024), some organisations implement a corporate social responsibility approach for the sake of their image and reputation. Some companies employ greenwashing practices, which are a deceptive tactic where companies misrepresent their environmental impact to create a false impression of ecological responsibility (Feghali et al., 2025). Besides, Awuah

et al. (2024) also revealed that corporate SDGs reporting lacks any value-enhancing effect on company performance, supporting the symbolic perspective of sustainability management. Zhang-Hangjian et al. (2025) studied the effect of corporate sustainability on stock value performance. Empirical findings revealed that SDG performance can reduce financing constraints and risk but does not significantly enhance economic performance, resulting in market capital outflows from high SDG-performing firms. High SDG-performing firms are undervalued and do not add more information content to stock prices, which might be the main reason for the negative effect of SDG performance.

3. RESEARCH METHODOLOGY

Bibliometric analysis examines trends in global research on a topic by analysing academic papers from databases such as Scopus or Web of Science (WoS) (Alsharif et al., 2020). It can help find out what is known about a subject and how it has changed over the years (Oshodi et al., 2020). Researchers can use bibliometric analysis to find gaps in a study area, form new research plans, and contribute directly to the field (Donthu et al., 2021).

3.1. Data collection

The research analysed the SDGs and business performance. The research strategy is shown in Figure 1 as a flow diagram. All articles in this study were found on Scopus since it has broad coverage and is a popular resource for bibliometric studies (Huan & Meng, 2021). Scopus covers the most extensive abstracts and citations from scientific journals, books, and conferences worldwide. Scopus helps researchers view the research being done worldwide in the fields of science, technology, medicine, social sciences, arts, and humanities (Elsevier, 2023). The study reviewed academic papers that are related to SDGs and business performance up to June 28, 2024.

The subsequent query was used to achieve objective: TITLE the research ("sustainable development goals" OR "sdg" OR "sdgs" OR "2030 agenda" OR "agenda 2030") AND ("business" OR "businesses" OR "company" OR "companies" OR "firm" OR "firms" OR "corporate" OR "corporation" OR "organi*ation") AND ("economic performance" OR "financial performance" OR "business performance" OR "company performance" OR "firm performance" OR "corporate performance" OR "organi*ation performance"). The search query returns 635 articles. The abstracts were checked to see if they touched on the SDG and business performance, which was the primary focus of the study. Only articles discussing this topic will be part of the research during this step. After filtering, 155 publications were removed because the articles addressed country, city, or higher education institution performance rather than business performance. As a result, only 480 articles were used to perform further bibliometric analysis.

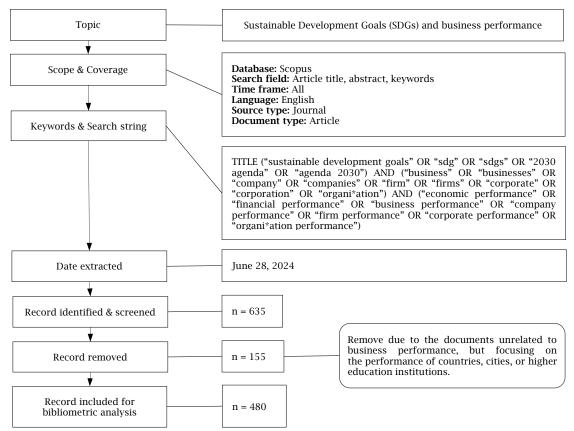


Figure 1. Flow diagram of the search strategy

Source: Alam et al. (2023) and Mansour et al. (2022).

A systematic literature review (SLR) is another research method. An SLR can be done to combine current information, point out what is missing from the research, propose new study directions, and underline the most important themes in the area (Feghali et al., 2025; Sivarajah et al., 2017).

3.2. Analysis tools

The bibliometric analysis was performed using biblioMagika 2.5 (Ahmi, n.d.), OpenRefine, Microsoft Excel, and VOSviewer (van Eck & Waltman, 2023). They were applied in the latest investigation to shape and improve the data thoroughly. The first step was to import Scopus data into biblioMagika. BiblioMagika included a range of advanced tools for data, such as counting papers, measuring citations, and calculating indices. BiblioMagika included special features for bibliometric analysis, checking publication figures, citation rates, and index calculations. BiblioMagika makes it possible to transform Scopus data into h-index, g-index, citation counts, and similar (Ahmi, n.d.). BiblioMagika cleans and aligns author, affiliation, and country data, ensuring the information is accurate. The data was then cleaned and made consistent with the help of the data cleaning tool, OpenRefine. OpenRefine is designed to help with messy data, allowing users to analyse, clean, and transform data into different formats (Kusumasari, 2016). The software VOSviewer version 1.6.20 was utilised to analyse the cleaned data. It uses network data to create maps and gives users visual tools and the ability to explore the network (van Eck & Waltman, 2023). Users can use it to form networks that connect scientific publications, articles, researchers, research groups, countries, keywords, or terms. Links in these networks can be formed using co-authorship, co-occurrence, citation, bibliographic coupling, and co-citation (van Eck & Waltman, 2023).

4. RESULTS AND DISCUSSION

To answer the research questions, this study evaluated publications yearly, identified the top contributors (authors, institutions, countries, and source titles), looked at highly cited articles, recognised primary keywords and themes in SDGs and business research, and analysed business performance. Most of the data is supplied in terms of frequency. The data extracted from biblioMagika encompassed publications by year, the top 20 most productive authors, the top 20 most productive institutions, the top 20 countries, the top 20 most active source titles, and the top 20 highly cited articles that contributed to the publications. VOSviewer software analysed the co-occurrence of the author's keywords using network and overlay visualisation.

4.1. Current state of SDGs and business studies

Figure 2 illustrates the annual trend of total publications and citations. This is to answer *RQ1*. The data reveals that between 2017 and June 2024, 2023 had the most significant volume of publications on Scopus, with 155 research articles. This publication surge can be attributed to the historic United Nations Summit in September 2015, during which world leaders endorsed the 17 SDGs (United Nations, n.d.).

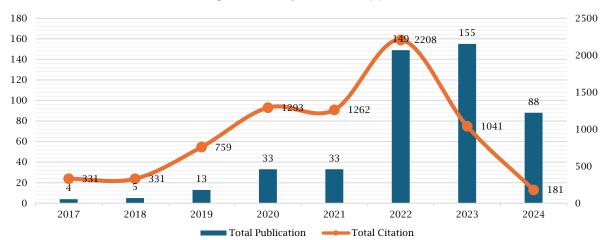


Figure 2. Total publications by year

Table 1 shows the performance of citations from documents discussing SDGs and business performance studies over the years. The number of citations increased steadily from 2018 to 2020, but fluctuated from June 2024 onwards. However, it

increased drastically from 2021 to 2022. The highest total citations were recorded in 2022 (2208 total citations), while the lowest was in 2024 (181 citations).

Table 1. Total citations

Year	TP	NCP	TC	C/P	C/CP	h	g
2017	4	4	331	82.8	82.8	4	4
2018	5	5	331	66.2	66.2	5	5
2019	13	13	759	58.4	58.4	9	13
2020	33	33	1293	39.2	39.2	19	33
2021	33	33	1262	38.2	38.2	18	33
2022	149	140	2208	14.8	15.8	27	37
2023	155	128	1041	6.7	8.1	16	24
2024	88	41	181	2.1	4.4	8	11
Total	480						

Note: TP = total number of publications; NCP = number of cited publications; TC = total citations; C/P = average citations per publication; C/CP = average citations per cited publication; C/CP = average cited publication; C/CP = average cited publication; C/CP = average cited publication per cited publication per cited publication per cited publication per cited publication pe

4.2. Productive contributors

This subsection presents the most productive contributors to SDG and business performance studies, including authors, institutions, countries, and source titles, to answer RQ2. It provides the statistics of the top 20 most productive authors, the top 20 most productive institutions, the top 20 countries, and the top 20 most active source titles.

4.2.1. Publications by authors

As depicted in Table 2, Rakesh D. Raut, from India, published the most significant number of research works, with five publications. The author dominates SDG publications due to his consistent article publication since 2022. His latest research document is an article titled "Attaining Sustainable Development Goals through embedding circular economy principles: Evidence from food processing small- and medium-sized enterprises in India", published in *Business Strategy and the Environment* in 2024.

Table 2. Top 20 most productive authors (Part 1)

Author's name	Affiliation	Country	TP	NCP	TC	C/P	C/CP	h	g
Raut, Rakesh D.	Indian Institute of Management Mumbai	India	5	5	223	44.6	44.6	4	5
Muhmad, Siti Nurain	Universiti Malaysia Terengganu	Malaysia	4	3	59	14.8	19.7	2	4
Khan, Parvez Alam	Universiti Teknologi PETRONAS	Malaysia	4	4	182	45.5	45.5	4	4
Lai, Fong-Woon	Universiti Teknologi PETRONAS	Malaysia	4	4	153	38.3	38.3	4	4
Di Vaio, Assunta	Parthenope University of Naples	Italy	4	4	162	40.5	40.5	4	4
Teixeira, Talita Borges	Universidade Estadual Paulista (UNESP)	Brazil	3	3	65	21.7	21.7	2	3
Jan, Ahmad Ali	Universiti Teknologi PETRONAS	Malaysia	3	3	131	43.7	43.7	3	3
Akhtar, Shakeb	Galgotias University	India	3	3	111	37.0	37.0	3	3
Teixeira, Adriano Alves	Universidade Federal de Mato Grosso do Sul (UFMS)	Brazil	3	3	65	21.7	21.7	2	3
Rahman, Haseeb Ur	University of Science &		3	3	16	5.3	5.3	2	3

Table 2. Top 20 most productive authors (Part 2)

Author's name	11		TP	NCP	TC	C/P	C/CP	h	g
Govindan, Kannan	The University of Adelaide	Australia	3	3	394	131.3	131.3	3	3
Varriale, Luisa	Parthenope University of Naples	Italy	3	3	134	44.7	44.7	3	3
Johl, Satirenjit Kaur	Universiti Teknologi PETRONAS	Malaysia	3	3	172	57.3	57.3	3	3
Agyenim-Boateng, Cletus	University of Education Winneba	Ghana	2	2	13	6.5	6.5	2	2
Nayal, Kirti	Symbiosis Institute of Operations Management	India	2	2	165	82.5	82.5	2	2
Booth, Colin A.	University of the West of England	United Kingdom	2	2	14	7.0	7.0	2	2
Nedungadi, Prema	Amrita University	India	2	2	11	5.5	5.5	2	2
Guerra, José Baltazar Salgueirinho Osório de Andrade	Cambridge Centre for Environment, Energy and Natural Resource Governance	United Kingdom	2	2	5	2.5	2.5	2	2
Muhamad, Rusnah	Universiti Malaya	Malaysia	2	2	57	28.5	28.5	2	2
Bose, Sudipta	The University of Newcastle	Australia	2	2	56	28.0	28.0	2	2

Note: TP = total number of publications; NCP = number of cited publications; TC = total citations; C/P = average citations per publication; C/CP = average citations per cited publications per ci

4.2.2. Publications by institutions

Table 3 presents the top 20 most productive institutions, which have a minimum of three publications. Universiti Malaysia Terengganu and Universiti Teknologi PETRONAS are ranked first and second, respectively, with seven publications. These two institutions are both from Malaysia. It can be concluded that developing countries are also actively involved in SDG research. The publications from these two universities were primarily funded by Universiti Malaysia Terengganu, Universiti Teknologi PETRONAS, and the Ministry of Higher Education (MOHE), Malaysia.

Table 3. Top 20 most productive institutions with a minimum of three publications

Institution	TP
Universiti Malaysia Terengganu	7
Universiti Teknologi PETRONAS	7
Universiti Teknologi MARA	6
Universiti Utara Malaysia	6
University of Naples Parthenope	6
University of Belgrade	5
Bina Nusantara University	5
Aston University	4
National Institute of Industrial Engineering (NITIE)	4
NEOMA Business School	4
O P Jindal Global University	4
Rey Juan Carlos University	4
Princess Nourah bint Abdulrahman University	4
University of Portsmouth	4
University of Zaragoza	4
Universiti Sains Malaysia	4
Nankai University	4
Excelia Business School	4
University of Foggia	4
Chaoyang University of Technology	3

Note: TP = total number of publications.

4.2.3. Publications by countries

Table 4 shows the top 20 countries that contributed to the publications. India dominated SDG research and business performance, with 57 documents published, followed by China with 52 articles, Italy with 46 documents, the United Kingdom with 45 documents, and Spain with 44 articles. Most publications are published by developing countries

(China and India), followed by developed countries (Italy, the United Kingdom, and Spain).

Table 4. The top 20countries contributed to the publications

Country	TP
India	57
China	52
Italy	46
United Kingdom	45
Spain	44
Malaysia	41
United States	31
Australia	30
Brazil	29
Indonesia	19
France	19
United Arab Emirates	18
Portugal	17
Saudi Arabia	16
Pakistan	14
Germany	11
Taiwan	10
Mexico	9
Thailand	8
Turkey	8

Note: TP = total number of publications.

4.2.4. Publications by source titles

Table 5 shows the top 20 most active source titles. Sustainability leads with the most publications, with 107 publications 1403 total and citations. The Journal of Cleaner Production is second on the list of most active source titles, with 40 articles and 2181 citations. Sustainable Development and Business Strategy and the Environment are next, with 19 documents each. Corporate Social Responsibility and Environmental Management published 13 documents. Even though the number of publications from the Journal of Cleaner Production is less than Sustainability, the journal has more citations. According to Sjögårde and Didegah (2022), articles in fast-growing topics get more citations than those in slowly growing or declining fields. Thus, it can be assumed that most articles published in the Journal of Cleaner Production are related to emerging areas.

Table 5. Top 20 most active source titles

Source title	TP	TC	NCP	h	g	m	PYS
Sustainability	107	1403	96	19	34	2.8	2017
Journal of Cleaner Production	40	2181	37	23	40	2.9	2017
Sustainable Development	19	274	18	8	16	1.3	2019
Business Strategy and the Environment	19	627	18	11	19	1.4	2017
Corporate Social Responsibility and Environmental Management	13	88	11	6	9	2.0	2022
Resources Policy	9	215	8	6	9	1.5	2021
Business Strategy and Development	8	40	8	5	6	1.3	2021
Sustainability Accounting, Management and Policy Journal	7	111	7	5	7	1.3	2021
Technological Forecasting and Social Change	7	175	7	7	7	1.8	2021
Corporate Governance (Bingley)	5	67	3	3	5	0.6	2020
Journal of Risk and Financial Management	5	101	3	3	5	0.8	2021
Cogent Business and Management	4	9	1	1	3	0.3	2022
Journal of Enterprise Information Management	4	52	4	4	4	1.3	2022
Journal of Applied Accounting Research	3	77	3	3	3	0.5	2019
Research in International Business and Finance	3	32	2	2	3	0.7	2022
Intangible Capital	3	4	1	1	2	0.5	2023
TQM Journal	3	25	3	2	3	0.3	2019
Journal of Business Research	3	60	3	3	3	1.0	2022
International Journal of Sustainable Development and Planning	3	0	0	0	0	0.0	2023
Administrative Sciences	2	14	1	1	2	0.5	2023

Note: TP = total number of publications; TC = total citations; CiteScore = average citations received per document published in the source title; SIR = SCImago Journal Rank measures weighted citations received by the source title; SNIP = source normalised impact per article measures actual citations received relative to citations expected for the source title's subject field.

4.3. Highly cited documents

Table 6 presents the top 20 documents with at least 79 citations each. This part addresses *RQ3*. Citations per publication were used to assess the relative impact on the whole field (Serenko & Bontis, 2009). The most cited document was "Industry 4.0 based sustainable circular economy approach for smart waste management system to achieve Sustainable Development Goals: A case study of Indonesia" by Fatimah et al. (2020), which had 335 citations, averaging 67 citations per year.

Fatimah et al. (2020) conducted a study to implement an integrated waste management system incorporating Industry 4.0 technologies. The study proposes an innovative design for smart and sustainable waste management to enhance waste management's economic, social, and environmental performance. The study was conducted in Indonesia. The system employed a multidimensional approach to address waste issues and develop a new strategy. system design was developed through a literature review, focus group discussions, and observation in Indonesian cities. The proposed system categorises waste based on its natural characteristics. Then, the waste material is classified, and the appropriate treatment technology is selected. The amount of waste includes information about its level, content, volume, and characteristics, and is measured by specific sensors introduced in the dashboard system. Through this provided real-time dashboard, the company

monitoring, enhanced decision-making, and the right technology for treating waste, effectively resulting in economically, socially, and environmentally sound waste management. This paper received high citation numbers due to its useful findings, and most researchers who have cited this journal have produced articles related to waste management, smart recycling systems, zero waste management, smart cities, and the circular economy.

Naciti (2019) examined the effect of board composition on a company's sustainable development performance. Based on an analysis of data from 362 firms in 46 countries, the study finds that board diversity and the separation of chair and chief executive officer (CEO) roles are associated with sustainability performance. This study highlights the importance of corporate governance in achieving sustainability goals. A study by Morioka et al. (2017) focused on sustainable business models (SBMs) as a way for organisations to align their business decisions with sustainability goals. Based on multiple case studies, this study provides a framework to help organisations deal with the adoption of SBMs. They also found that systemic SBMs fill the gap in the classical business perspective. These findings imply that SBMs are not merely targeted solutions or a method of resolving specific social or environmental challenges, but a global solution for sustainable management across all business sectors, creating values that are good for the world.

Table 6. Top 20 highly cited articles (Part 1)

No.	Authors	Title	Cites	Cites per year
1	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	335	67
2	Naciti (2019)	Naciti (2019) Corporate governance and board of directors: The effect of a board composition on firm sustainability performance		55
3	Morioka et al. (2017)	Transforming sustainability challenges into competitive advantage: Multiple case studies kaleidoscope converging into sustainable business models	162	20
4	Taliento et al. (2019)	Impact of environmental, social, and governance information on economic performance: Evidence of a corporate 'sustainability advantage' from Europe	146	24
5	Khaled et al. (2021)	The Sustainable Development Goals and corporate sustainability performance: Mapping, extent and determinants	127	32
6	Silva (2021)	Corporate contributions to the Sustainable Development Goals: An empirical analysis informed by legitimacy theory	126	32
7	Avrampou et al. (2019)	Advancing the Sustainable Development Goals: Evidence from leading European banks	115	19
8	Settembre-Blundo et al. (2021)	Flexibility and resilience in corporate decision making: A new sustainability- based risk management system in uncertain times	108	27

Table 6. Top 20 highly cited articles (Part 2)

No.	Authors	Title	Cites	Cites per year
9	García-Meca and Martínez-Ferrero (2021)	Is SDG reporting substantial or symbolic? An examination of controversial and environmentally sensitive industries		26
10	Tost et al. (2018)	The state of environmental sustainability considerations in mining	96	14
11	Mina et al. (2021)	Transition towards circular supplier selection in petrochemical industry: A hybrid approach to achieve Sustainable Development Goals	91	23
12	Mukhuty et al. (2022)	Strategic sustainable development of Industry 4.0 through the lens of social responsibility: The role of human resource practices	90	30
13	de Souza Cunha et al. (2020)	Can sustainable investments outperform traditional benchmarks? Evidence from global stock markets	90	18
14	Jan et al. (2021)	Developing an Islamic corporate governance framework to examine sustainability performance in Islamic banks and financial institutions	89	22
15	Nayal et al. (2022)	The impact of sustainable development strategy on sustainable supply chain firm performance in the digital transformation era	88	29
16	Khan et al. (2021)	Does adoption of ISO 56002-2019 and green innovation reporting enhance the firm Sustainable Development Goal performance? An emerging paradigm	88	22
17	Dangelico (2017)	What drives green product development and how do different antecedents affect market performance? A survey of Italian companies with eco-labels	88	11
18	Silva and Figueiredo (2020)	Practicing sustainability for responsible business in supply chains	82	16
19	Izzo et al. (2020)	The challenge of Sustainable Development Goal reporting: The first evidence from Italian listed companies	80	16
20	De Lucia et al. (2020)	Does good ESG lead to better financial performances by firms? Machine learning and logistic regression models of public enterprises in Europe	79	16

4.4. Themes in SDG and business studies

Figure 3 presents a network visualisation of the most frequently used author's keywords in SDGs and business performance. This section is to answer *RQ4*. A threshold of five keywords was applied to the dataset consisting of 480 documents, resulting in 35 keywords meeting the criteria out of 1,587 author's keywords. The study used VOSviewer for mapping analysis. Figure 3 illustrates how the VOSviewer software visualises the co-occurrence

of each word. The nodes' size, colour, thickness, and connecting lines represent the relationships between the author's keywords. Based on these relationships, the analysis identified five different clusters in the study. Author's keywords play a crucial role in identifying research trends for scholars. Wen and Huang (2012) argue that conducting author keyword analysis is crucial for assessing the advancement of research topics. This analysis is considered essential in understanding how research topics evolve and how different authors influence them.

SDG reporting Structural equation modelling on-financial reporting Gender equality Contentianalysis Stakeholders Sustainability reporting Sustainability practices Sustainability assessment Sustainable development goals Supply chain management Corporate governance Stakeholder theory Supply chain Sustainability Performance

Figure 3. Network visualisation of the co-occurrence of the author's keywords

Table 7 presents an overview of the five themes in the research publication on SDGs and business performance. The study proposed these themes by identifying common keywords within each cluster.

Sustainable performance

These clusters can be categorised into five themes: Green innovation with intellectual capital as the vehicle for sustainable performance (red — eight items), sustainability reporting: stakeholder approach and

Digitalisation

Global Reporting Initiative (GRI) (green — eight items), gender equality in the SDG framework: SEM analysis of the effect of gender equality measures on sustainable development (blue —

four items), stakeholder theory and prospects for corporate governance (yellow — four items), and circular economy and supply chain management (purple — three items).

Table 7. Research themes in SDGs and business performance based on the author's keywords

Keywords	Cluster	Occurrences	Total link strength	Theme
Sustainability	1	66	24	
Performance	1	14	10	
Green innovation	1	10	7	Theme 1: Green innovation with intellectual
SMEs	1	8	6	capital as the vehicle for sustainable
Sustainable performance	1	8	4	performance
Digitalisation	1	6	4	performance
Intellectual capital	1	5	3	
Prisma	1	5	2	
Sustainability reporting	2	25	17	
Stakeholders	2	7	6	
GRI	2	6	4	
SDG reporting	2	5	4	Theme 2: Sustainability reporting: stakeholder
Agenda 2030	2	5	3	approach and GRI
Content analysis	2	5	3	
Non-financial reporting	2	5	2	
Sustainability practices	2	5	1	
Sustainable development goals	3	122	59	Thoma 2. Candar aquality in the CDC
Gender equality	3	6	3	Theme 3: Gender equality in the SDG framework: SEM analysis of the effect of gender
Sustainability assessment	3	5	3	equality measures on sustainable development
Structural equation modelling	3	5	2	equality incasures on sustainable development
Corporate governance	4	6	6	
Social	4	6	6	Theme 4: Stakeholder theory and prospects for
India	4	5	3	corporate governance
Stakeholder theory	4	6	3	
Circular economy	5	8	5	Theme 5: Circular economy and supply chain
Supply chain	5	5	4	, , , ,
Supply chain management	5	5	4	management

4.4.1. Theme 1: Green innovation with intellectual capital as the vehicle for sustainable performance

Due to the impact of business environmental changes, SMEs need to integrate green innovation and intellectual capital for sustainable performance. Green innovation or eco-innovation the "implementation of new, or significantly improved, products (goods or services), or processes, marketing methods or organisational business methods practices, workplace in organisation external relations. organisations practice green innovation in their firm activities, like reducing waste, saving energy, and decreasing adverse environmental impacts (Organisation for Economic Co-operation and Development [OECD], 2009, p. 40). Intellectual capital can be described as "all connected each other Knowledge Resources (material or nonmaterial, tangible or intangible) that the organisation disposes in creating value needed to gaining competitive advantage in long term" (Jurczak, 2008, p. 38). Intellectual capital comprises two main components: human capital and organisational capital. Human capital includes employees' knowledge, skills, and attitudes, which enable quick decision-making, problem-solving, and effective interpersonal relationships. Organisational capital depends on the organisation's productivity, structural assets, culture, and development capacity, reflecting investments in systems, tools, and philosophies that influence knowledge management processes. This theme explores the relationship between green innovation and intellectual capital and their impact on sustainability and business success. SMEs seeking to enhance their sustainable practices should integrating green innovation intellectual capital into their operations.

4.4.2. Theme 2: Sustainability reporting: Stakeholder approach and GRI

Organisations use sustainability reporting to share their results related to environmental, social and governance (ESG) issues. This theme concerns improving sustainability reporting by involving stakeholders and using the GRI guidelines. Torelli et al. (2020) studied how stakeholder involvement and the materiality principle are used in the nonfinancial reports of Italian public interest entities. It was found in the research that when stakeholders are engaged, the materiality principle is more likely to be realised. Firms that involve and listen to more stakeholders are more inclined to complete an effective materiality assessment and release reports that matter to each type of stakeholder. It states that involving standard setters like GRI can help organisations improve how they engage with stakeholders in sustainability reporting.

4.4.3. Theme 3: Gender equality in the SDG framework: SEM analysis of the effect of gender equality measures on sustainable development

Within the SDGs, gender equality is considered very important and is specified in SDG 5 (United Nations, n.d.). Gender equality means everyone has the same rights, responsibilities, and opportunities, regardless of gender. Studies by Faugoo (2024) and Alshaiba and Abu Khalaf (2024) have found that boosting women's roles in leadership supports gender equality and encourages the achievement of various SDGs. Examining data from different places and areas, the study highlights how women leaders help companies cooperate, make decisions for all, and create the right conditions for economic and social growth. SEM helps to examine the influence of gender equality efforts on sustainable development results.

4.4.4. Theme 4: Stakeholder theory and prospects for corporate governance

This theme explains how stakeholder theory and corporate governance can lead to changes in the social aspects of the business world. In 1984, Freeman introduced stakeholder theory, stating that companies should value the interests of all stakeholders in addition to those of shareholders. This theory underlines how doing business ethically and managing all stakeholder interests important for a company to succeed in the long run. Stakeholder theory can be used in corporate governance by adopting rules and actions that support labour rights, help develop communities, and protect the environment. Companies that follow strong corporate governance practices generally excel in their social responsibility activities, and effective management directly supports positive social responsibility outcomes (Stuebs & Sun, 2015).

4.4.5. Theme 5: Circular economy and supply chain management

Transitioning to a circular economy is crucial for sustainable development. It is crucial to integrate circular economic principles into supply chain management. The circular economy involves implementing practices that enable the "3R" principles: recycle, reduce, and reuse (Matarneh et al., 2024). The circular economy provides a guiding principle for increasing resource efficiency in an economic system through the adoption of systems of produced systems and industrial closed-loop cyclical. production, in urban and particularly management (Solomon et al., 2024).

Figure 4 illustrates the overlay visualisation of the author's keywords, which may be used to identify patterns in research subjects. The keywords were grouped by year. The analysis was carried out for the last four years and was divided into three periods. Period I was for 2021, Period II was for 2022, and Period III was for 2023. In Period II (2022) onwards, emerging research topic trends were related to digitalisation, gender equality, supply chain management, sustainable performance, and circular economy.

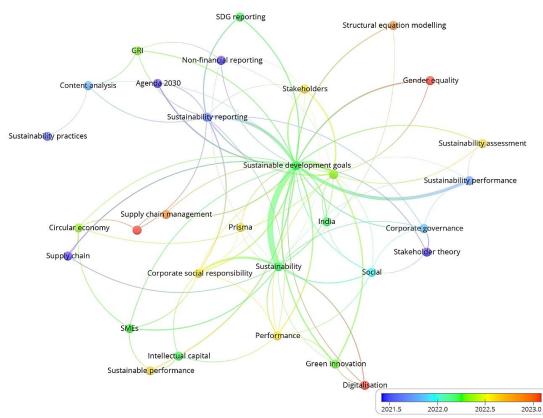


Figure 4. Overlay visualisation of the co-occurrence of the author's keywords

4.5. Discussion

The findings highlight the growing academic interest in the intersection of SDGs and business performance, with a significant surge in publications post-2015, following the adoption of the 2030 Agenda. The study reveals that developing and developed countries, particularly India, China, and Malaysia, are active contributors to this field, demonstrating a global commitment to aligning

corporate strategies with the SDGs. Key authors, institutions, and articles appear to be helping to form the main conversation. Many high-impact articles today focus on Industry 4.0, indicating that practical knowledge is gaining increasing importance. The research themes, which include green innovation, gender equality, and circular economy, demonstrate an approach that merges SDG ideas with other subjects.

5. CONCLUSION

This research gives a detailed summary of the connection between **SDGs** and business bibliometric performance using analysis. The number of publications in this field has increased from 2017 to 2023. The work presents this new discourse's major contributors, institutions, and journals, providing an integrated image of a fragmented field. The person who contributed the most to the study in terms of the number of publications is Rakesh D. Raut, with five publications. The institution with the most publications is Universiti Malaysia Terengganu (seven in total), the country with the highest number of contributions is India (57), and the source title publications with the most is Sustainability (107 publications). The top-cited article was by Fatimah et al. (2020), titled "Industry 4.0 based sustainable circular economy approach for smart waste management system to achieve Sustainable Development Goals: A Case study of Indonesia". The following five themes were explored in this study: sustainability reporting, green innovation, gender equality, stakeholder theory, and circular economy. This study is significant for mapping the knowledge structure, intellectual development, and future direction of the SDC related livering. and future direction of the SDG-related business

research. For academics, this review presents an important basis for further research on some topics, such as integrating the SDGs in SMEs, the impact of digitalisation on sustainability practices, or integrating circular economic principles related to these SDGs. For practitioners and policymakers, the results highlight that the business alignment towards SDGs is not just a symbolic gesture but also a driver of value creation and competitive advantage. However, this research has some limitations. The study is based on Scopusindexed sources and utilises a quantitative a substantive content approach, overlooking analysis. Future studies should combine bibliometric analysis with qualitative approaches to improve theoretical depth and practical application. Substantial empirical work is also required to examine further how SDG integration affects performance. It is suggested that future research may be able to complement bibliometric analysis with SLR or content analysis to enhance interpretive insights. Furthermore, the theoretical bases of the literature need to SDG-business be further developed through the concepts of resource-based view theory, legitimacy theory, or stakeholder theory to describe the mechanisms that link SDG practices with corporate financial success more precisely.

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