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Original Article

Analysis of the Interfaces Between GRI and SDGs: a bibliometric review on the WOS platform with a focus on Brazil

Análise das Interfaces Entre GRI E ODS: uma revisão bibliométrica na plataforma WOS com enfoque no Brasil

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ABSTRACT

Objective: This study aims to understand the relationship between the terms Global Reporting Initiative (GRI) and the Sustainable Development Goals (SDGs) of the 2030 Agenda, in publications on the Web of Science (WoS) platform and in greater depth those that address the Brazilian context.
Methodology: The research has a qualitative approach and exploratory strategy. Bibliometric research was carried out on the WoS platform, with subsequent descriptive analysis, with the production of maps and clusters using the VOSViewer software.
Results: There is a significant volume of publications in the WoS database that addresses the GRI and SDG themes separately and a smaller number of studies on the two themes together. There is a highlight for the relationship between GRI and SDGs in the port sector. Among the 17 SDGs, only a few are addressed in open access publications. Brazil is among the countries that have published articles relating the themes together.
Practical implications: We sought to quantify and characterize the publications that address the themes, analyzing the nature of the articles published, the predominance of themes, authors, countries and institutions highlighted, the proportion of articles that jointly address the two themes and which are the most addressed SDGs in publications that work with the GRI as a research object.
Originality: The other studies did not identify the countries that were published on the subject and did not even detect the networks of researchers. This study identified that most of the publications are in developed countries such as the United States, Italy, Spain and England. Latin America has a small share, while Brazil presented two publications.

Keywords: Global Reporting Initiative, Sustainable Development Goals, 2030 Agenda, Bibliometric Search, Web of Science.

RESUMO

Objetivo: Este estudo tem como objetivo entender a relação entre os termos Global Reporting Initiative (GRI) e Objetivos de Desenvolvimento Sustentável (ODS) da Agenda 2030, em publicações na plataforma Web of Science (WoS) e com maior profundidade aquelas que abordam o contexto brasileiro.
Metodologia: A pesquisa possui abordagem qualitativa e estratégia exploratória. Foi realizada uma pesquisa bibliométrica na plataforma WoS, com posterior análise descritiva, com a produção de mapas e clusters utilizando o software VOSViewer.
Resultados: Há na base WoS expressivo volume de publicações que abordam separadamente os temas GRI e ODS e uma quantidade menor de estudos sobre os dois temas em conjunto. Há um destaque para a relação entre GRI e ODS no setor portuário. Entre os 17 ODS, apenas alguns são abordados nas publicações de acesso aberto. O Brasil encontra-se entre os países que publicaram artigos relacionando os temas em conjunto.
Implicações práticas: Buscou-se quantificar e caracterizar as publicações que abordam os temas, analisando a natureza dos artigos publicados, predominância de temas, autores, países e instituições em destaque, proporção de artigos que abordam em conjunto os dois temas e quais são os ODS mais abordados nas publicações que trabalham o GRI como objeto de pesquisa.
Originalidade: Os demais estudos não identificaram os países que publicaram sobre o tema e nem mesmo detectaram as redes de pesquisadores. Este estudo identificou que a maior parte das publicações está em países desenvolvidos como: Estados Unidos, Itália, Espanha e Inglaterra. A América Latina tem uma pequena participação, enquanto o Brasil apresentou duas publicações.

Palavras-Chave: Global Reporting Initiative, Objetivos de Desenvolvimento Sustentável, Agenda 2030, Pesquisa bibliométrica, Web of Science.

1 INTRODUCTION

In order to guide companies with guidelines that would contribute to the preparation of their sustainability reports, the Global Reporting Initiative (GRI) was created in 1997 in Boston. Its creation resulted from a partnership between the *Coalition for Environmentally Responsible Economies* (CERES) and the Tellus Institute (CERES, 1997). From 2002, GRI became an independent and non-profit international institution. The initiative was the first in the world to propose a model for presenting sustainability reports and had its last version published in 2021 (GRI, 2024). Currently, the GRI reporting model is considered the most efficient in assessing corporate sustainability around the world (Souza, De Benedicto, & Silva, 2021).

Although any company may publish reports following the GRI framework, formal recognition as GRI-aligned requires full compliance with the reporting principles outlined in GRI 1 for the presentation of results, the disclosure of organizational general information in accordance with GRI 2, and the identification and definition of material topics as prescribed by GRI 3. (GRI, 2024).

GRI 1 focuses on establishing a roadmap for organizations to present their sustainability reports in a clearer, more accurate, and more comparable manner. It outlines principles and rules for disclosing elements such as economic impacts, material topics, engaged parties, due diligence processes, among others. GRI 2, in turn, pertains to the organization's governance structure, emphasizing the disclosure of both its governance framework and the communication mechanisms it maintains with relevant actors. It requires information about the organization, including operational and supply chain details, the entities covered by the sustainability report, the reporting period and frequency, internal and external assurance processes, and the incorporation of human rights, laws, and standards into the organizational structure (GRI, 2024).

GRI 3, in turn, addresses the identification and disclosure of material topics, understood as the organization's activities that generate the most significant economic, environmental, and/or social impacts. These material impacts encompass issues considered central by the GRI, such as anti-corruption practices, water and effluent management, the promotion of health, occupational safety, and other matters the organization deems relevant. To enhance the scope and ensure a more accurate definition of material topics for each industry, the GRI provides 40 sector-specific standards and 31 thematic standards, which organizations are expected to consider when determining and reporting their material topics (GRI, 2024). Given that the concern with corporate sustainability plays a central role in the fight against climate change and sustainable development, the GRI acts in line with the 17 SDGs of the United Nations and both organizations work in partnership (GRI, 2024).

Given the relevance of both the GRI and the SDGs to the sustainable development agenda (Costa, Menichini, & Salierno, 2022), there is a clear need for a bibliometric assessment capable of quantifying and characterizing publications that address the intersection between these two themes, particularly within the Brazilian context. Accordingly, this study seeks to answer the following research questions:

i) What is the nature and predominance of the published articles? ii) Are there authors, institutions, or countries that stand out as more influential? iii) What proportion of the publications address the two themes jointly, compared to those focusing exclusively on the GRI or the SDGs? iv) Are certain SDGs more frequently addressed within these publications? v) What is the relevance of Brazil in the literature that addresses both subjects?

Using the Web of Science platform as a basis, it was intended to observe whether there is an evolution in the volume of publications individually linked to the SDGs or GRI. In addition, there was an opportunity to measure the set of studies that relate the two themes and thus be able to quantify and characterize the publications that relate the GRI and the SDGs, especially in Brazil.

2 THEORETICAL FOUNDATION

The GRI aims to help companies and governments map and transparently disclose the results of their activities. In addition, it seeks to present to society and stakeholders the effects of business actions on the environment, as well as on the social and economic spheres, highlighting their contribution, both positive and negative, to sustainable development. The standards established in the GRI aim to assist in the creation of sustainability reports by public and private entities, allowing the presentation of data that reinforces the transparency of the organization's commitment to the sustainability of the planet (GRI, 2022).

Cressoni et al. (2024) indicate that, currently, a significant number of companies adopt the sustainability report model created by GRI to present their results, since this model offers guidelines that help in the standardization and transparency of information. The recommendation to adopt a global model makes it possible to implement improvements that can help in the dissemination of information related to sustainable development actions, ensuring the same quality of financial information.

Incorporating the SDGs into sustainability reporting and strategic plans is essential for companies to be in tune with global requirements for social, environmental, and economic responsibility. To integrate the SDGs effectively, it is necessary to adopt a strategy, prioritise, be transparent and involve stakeholders at all levels of the organisation. Considering that all actions implemented based on the SDGs can help reduce costs and reduce the environmental impacts caused by their activities, this will consequently result in the well-being of the entire society (Emeka-Okoli et al., 2024).

The Sustainable Development Goals (SDGs) constitute a global agenda adopted by the United Nations in September 2015. This agenda comprises 17 interconnected goals designed to address the world's most pressing challenges by 2030 (Sachs, 2015). These goals encompass a broad set of targets and indicators, covering areas such as health, education, gender equality, clean energy, water and sanitation, decent work, sustainable cities, the reduction of inequalities, peace, justice, and others. Each goal is both interconnected and interdependent, reflecting the complexity of global challenges and the need for integrated and collaborative approaches to effectively address them (Sachs, 2015).

The SDGs not only guide public policy efforts and business actions, but also provide a unifying framework for scientific research and action, driving global collaboration towards a more sustainable future (UNESCO, 2021). As it is the main model for publishing corporate sustainability results, and provides a positive correlation between the disclosure of performance results in sustainable actions, the GRI is key for companies to be in communion with the SDGs and effectively

contribute to the evolution of these goals by 2030, something that has been gradually explored by articles within the WoS platform (Danisch, 2021; Bulak, 2024; Cunha, Pereira, & Moneva, 2023; Machado & Carvalho, 2021; Macneil, Adams, & Walker, 2021; Hernández-Pajares, 2023).

Based on the assumption that the establishment of the 2030 Agenda has become a watershed in terms of global sustainability awareness (Sorooshian, 2024), its implementation by organizations represents a strategic opportunity to foster innovative solutions that favor sustainable and human development, integrating economic growth, social inclusion, and environmental protection (Azmat et al., 2023; Silveira et al., 2022). In this context, the SDGs call on organizations, governments, and society to commit to sustainability, implementing actions and strategies that promote economic growth in harmony with the environment and the community. Thus, it is essential that organizations adopt a commitment that transcends the simple pursuit of profit, guiding their actions to create lasting positive impacts on the planet (Silva et al., 2021).

Given that companies play a fundamental role in the economic growth of a country, generating jobs, providing goods and services, and being integrated into the daily lives of the population, it is relevant to create a direct connection between business performance and sustainability (Vieira da Silva et al., 2022). In this scenario, it is essential that companies not only admit their responsibility in this process, but also analyze their performance in relation to the SDGs, in order to contribute to the achievement of their goals. To this end, corporate reports must include practical actions aimed at sustainability, ensuring the transparency of information and its accessibility to society in general (PWC, 2017).

Therefore, sustainability reports along the lines of the GRI serve as strategic tools for communication between companies and society and should foster a clear dialogue about the sustainable practices implemented. This requires companies to present the information clearly and concisely to stakeholders (Laine, Tregidga, & Unerman, 2021).

Chopra et al. (2024) argue that these reports not only present the results of corporate activities, but also highlight the social and environmental impacts, enabling society to monitor the performance of organizations. In addition, transparency is essential for society to fully understand the actions of companies and how these initiatives can help achieve the SDGs.

According to Santos et al. (2024), it is increasingly evident that companies are striving to integrate the SDGs into their daily operations. However, it is essential that they persist in this strategy to achieve the goals for which the SDGs were established and, in this way, contribute to global sustainable development.

Chart 1 presents some benefits pointed out in the literature for the adoption of sustainability reports in the GRI model in association with the SDGs.

Chart 1 – Benefits provided by the GRI and SDGs

Benefits	Description	Sources
Transparency and legitimacy	GRI and SDG reports increase the confidence of investors, customers and society	Lashitew (2021) Nicolo' et al. (2024)
Improved decision-making	Integration of the SDGs into the GRI guides sustainability strategies and priorities	Gutiérrez Ponce (2023) Al-Hiyari, Kolsi e Dungore (2025)
Competitive advantage and access to capital	Companies that report in accordance with the GRI/SDGs attract more institutional investors	Elalfy, Weber e Geobey (2021) Nguyen and Duong (2025)
Comparability and standardization	The adoption of GRI/SDGs facilitates the comparison between companies and sectors, promoting best practices	Luo e Tang (2022) Machado and Carvalho (2021)
Improving the quality of information	Detailed reports associating GRI/SDGs help analysts and the market to assess risks and opportunities	Curtó-Pagès et al. (2021) Wilburn and Wilburn (2020)
Demonstration of commitment	Reports associating GRI/SDGs demonstrate the organization's commitment to society and the environment	Gutiérrez Ponce (2023) Kong e Majhi (2025)

Source: Elaborated by the authors based on the sources mentioned.

Chart 1 presents the main benefits arising from the integration between the GRI indicators and the SDGs, showing how this articulation contributes to the strengthening of corporate governance and organizational sustainability. The literature analyzed highlights that the joint adoption of these benchmarks promotes greater transparency and legitimacy before stakeholders, in addition to improving strategic decision-making by aligning business goals with global sustainability priorities. It is observed that the application of the GRI and SDG indicators confers a competitive advantage, expanding access to capital and institutional investors, while the comparability and standardization of the reports facilitates the dissemination of best practices across sectors. In addition, the combination of GRI indicators with the SDGs improves the quality of information, better expressing a demonstration of socio-environmental commitment and consolidating the role of organizations as responsible agents in the transition to a sustainable and inclusive economy.

3 METHODOLOGY

This research adopts a qualitative approach, along with an objective exploratory strategy (Gil, 2010). The research was carried out through bibliometrics, as it is the most appropriate technique in this case, as it consists of analyzing, quantifying and evaluating academic publications (Araújo & Alvarenga, 2011).

The technique used to collect data for this research is the Systematic Literature Review (RSL). According to Ferrari and Schlünzen (2024), the RSL is useful to unite the most varied studies carried out autonomously, on the same subject, which can result in convergent or even divergent and conflicting conclusions. In addition, this procedure helps to identify themes that need greater evidence, contributing to the development of new lines of research, especially to the advancement of the research in question.

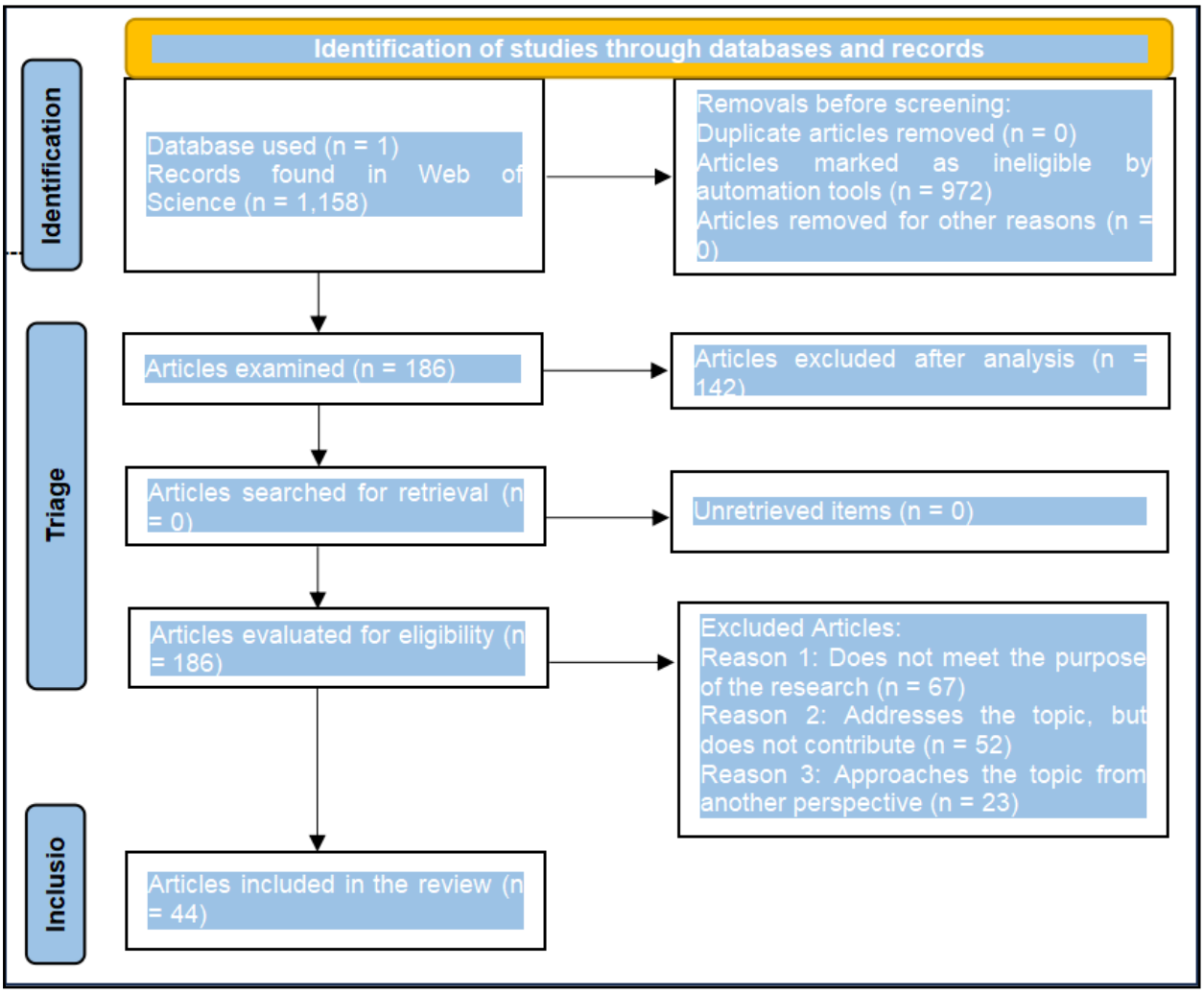
The RSL was carried out using the Web of Science platform, due to its rigorous indexing criteria, which directly reflect on the quality of the journals and works present in it (Silva & Grácio, 2017).

The search was directed to articles that directly relate the GRI to the SDGs, through the use of the keywords ("SDG" OR "SDGs") OR ("sustainable development goals") + ("GRI" AND "global reporting initiative") OR ("GRI standards" OR "GRI guidelines"), without restriction of periods, using the filters "Abstract", in order to present the following data: authors; country and institution of origin; volume and frequency of publications. Subsequently, an analysis of the volume of publications exclusively on GRI was made, using the keywords ("GRI" AND "global reporting initiative") OR ("GRI standards") OR ("GRI guidelines") and exclusively the SDGs, using the keywords ("SDG" OR "SDGs") AND ("sustainable development goals"), to compare the set of publications that relate the two themes (GRI + SDGs). Finally, the VOS Viewer software was used for data export, descriptive analysis and production of maps and bibliometric clusters.

To make the RSL effective in terms of scientific and academic foundation, the PRISMA Methodology (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) was used. The purpose of the PRISMA Methodology is to improve the elaboration and understanding of RSLs. The PRISMA flowchart presents a visualization of the steps of the scoping review: identification, screening, eligibility, and inclusion (Page et al., 2021). The PRISMA flowchart is detailed in Figure 1, synthesizing the entire procedure and the definition of filters and the choice of searches.

Figure 1 systematically presents the process of identification, screening, eligibility, and inclusion of studies in the review. Initially, 1,158 records were identified in the Web of Science database, of which 972 were automatically excluded because they did not meet the eligibility criteria. After screening and detailed analysis of the remaining 186 articles, 142 were excluded because they did not directly contribute to the research objectives, resulting in the final inclusion of 44 studies. In all, therefore, 44 publications were analyzed, of which: 39 articles, three Early Access, one Data Paper and one Proceeding Paper. Of this total, 25 publications are open access, comprising: 21 articles containing field research, two review articles, one Early Access and one Data Paper.

Figure 1– PRISMA Flowchart



Source: Adapted from Page et al. (2021).

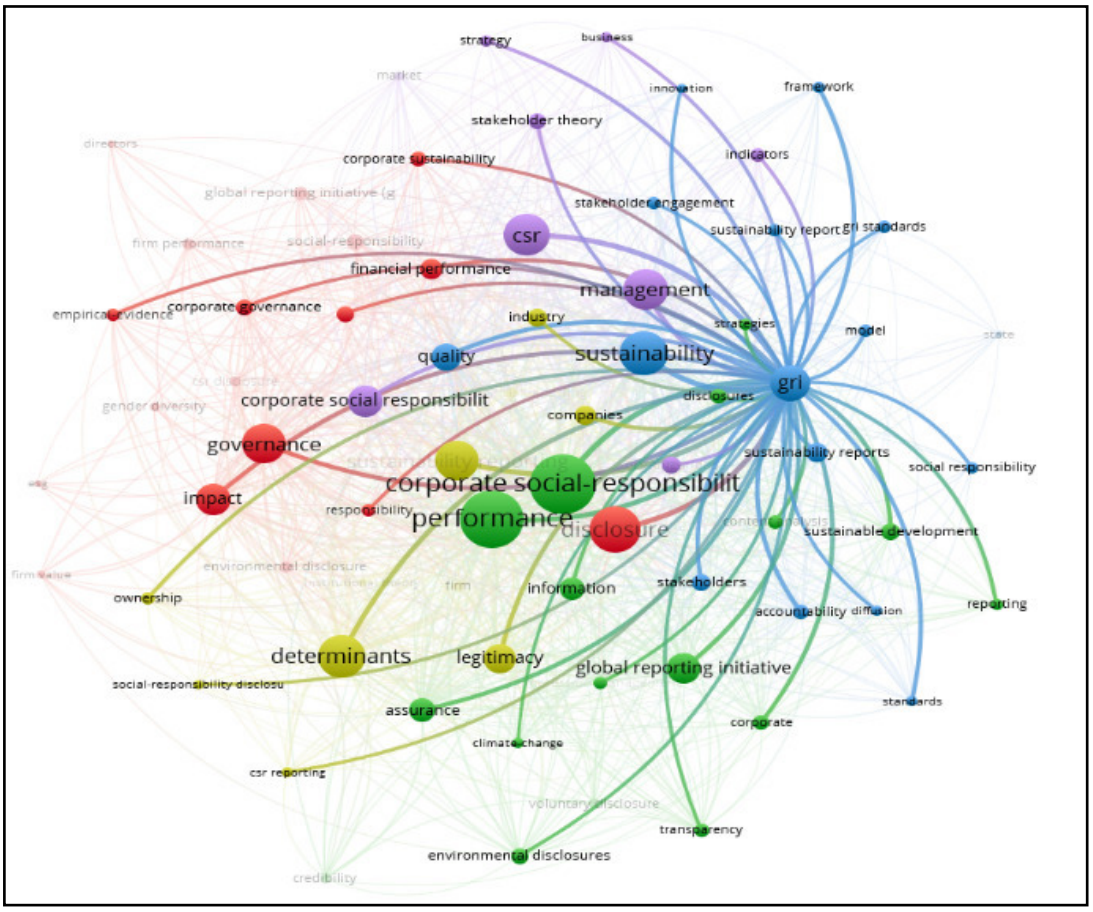
4 RESULTS

4.1 Presentation and analysis of the results

During the study, it was possible to identify that the keywords ("GRI" AND "global reporting initiative") OR ("GRI standards") bring the publications about the GRI. The keywords ("SDG" OR "SDGs") AND ("sustainable development goals") generally present publications related to the SDGs. Relevant data were collected from each of these sets to compare the results with the search for articles that correlated the two terms.

Figure 2 presents a survey of the keywords about the GRI, Global Report Initiative and GRI standards, with “GRI” as the central term of the search.

Figure 2 – Survey of the keywords GRI, Global Report Initiative and GRI standards, with a focus on the “GRI”

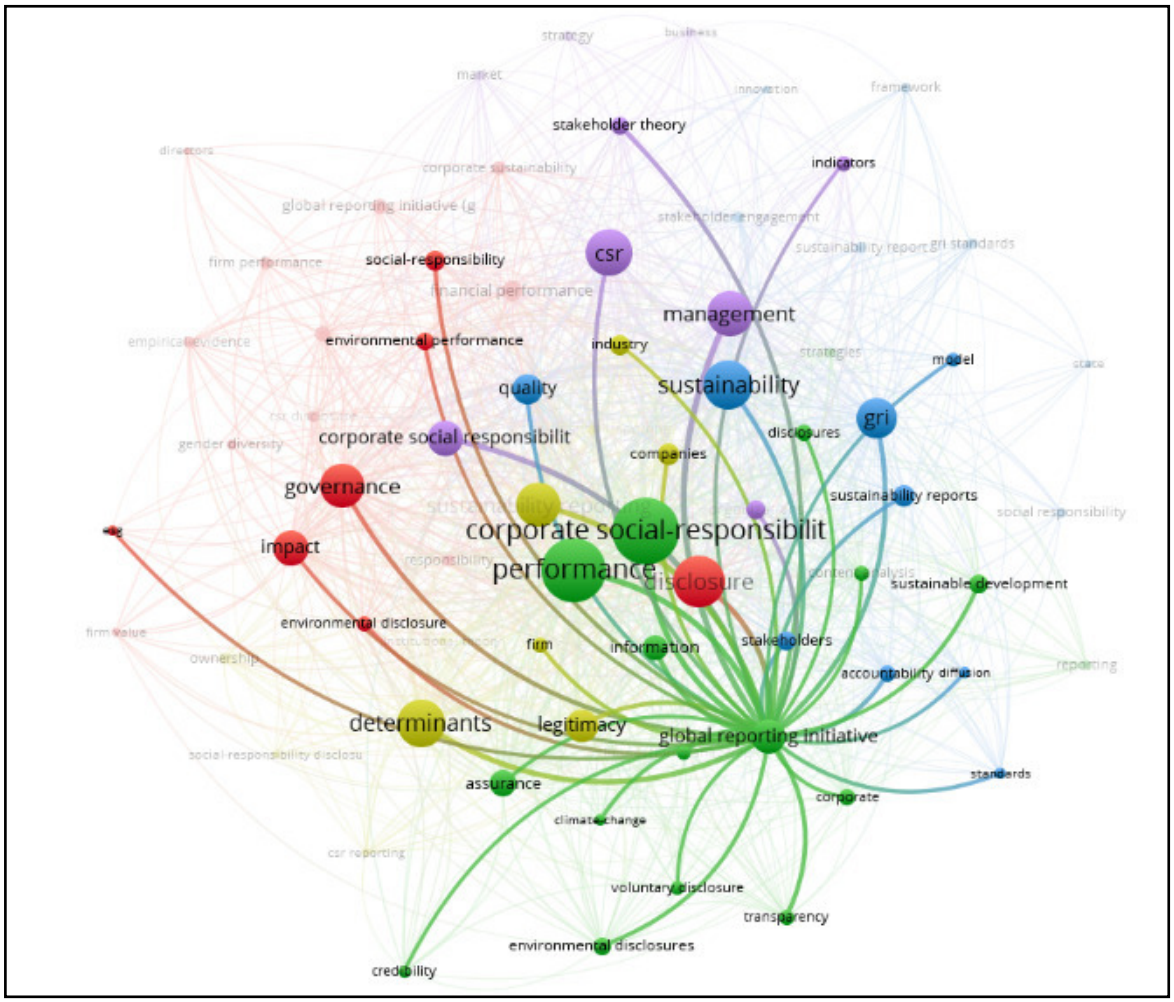


Source: survey data (2024).

Figure 2 shows that the main topics that emerged in the survey of the keywords about the GRI and Global Reporting Initiative are: the GRI itself, the Global Report Initiative, “corporate sustainability”, “sustainability”, “management”, “performance”, “disclosures”, “legitimacy”, “corporate social responsibility”, “impact, governance” and “CSR”. Specifically, the acronym GRI is interconnected mainly with the terms “sustainability”, “quality”, “sustainability reports”, “stakeholders” and “stakeholder engagement”, “model”, “diffusion” and “GRI standards”.

Figure 3 presents a survey of the keywords about the GRI and Global Reporting Initiative, but with a focus on the “Global Reporting Initiative”.

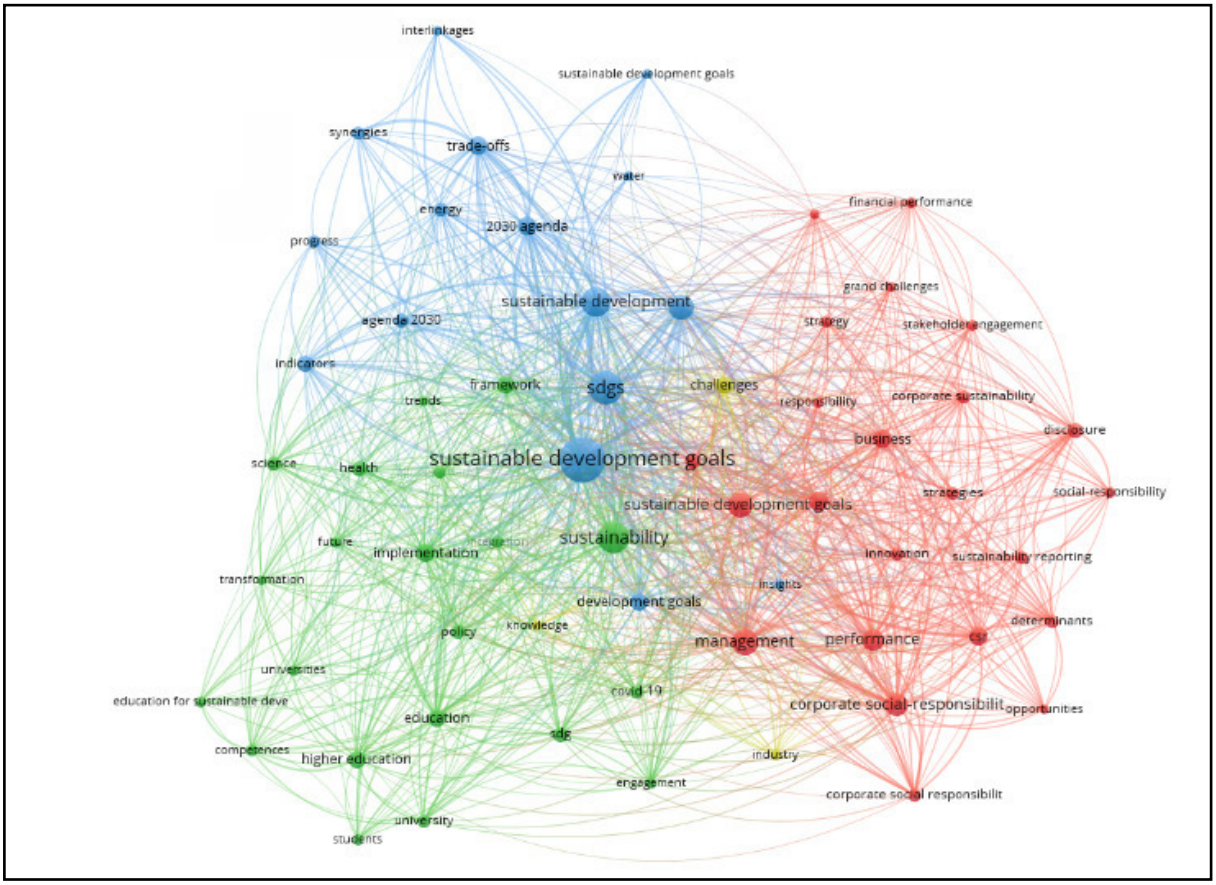
Figure 3 – Survey of keywords about the GRI and Global Reporting Initiative, with a focus on the “Global Reporting Initiative”



Source: survey data (2024).

As shown in Figure 3, from the filter by *Global Reporting Initiative*, a greater connection was observed with the terms *“corporate social responsibility”, “performance”, “assurance”, “information”* and *“sustainable development”*. Figure 4 shows a survey of the keywords only about *Sustainable Development Goals* and *SDGs.*

Figure 4 – Survey of keywords only about the *Sustainable Development Goals* and *SDGs*

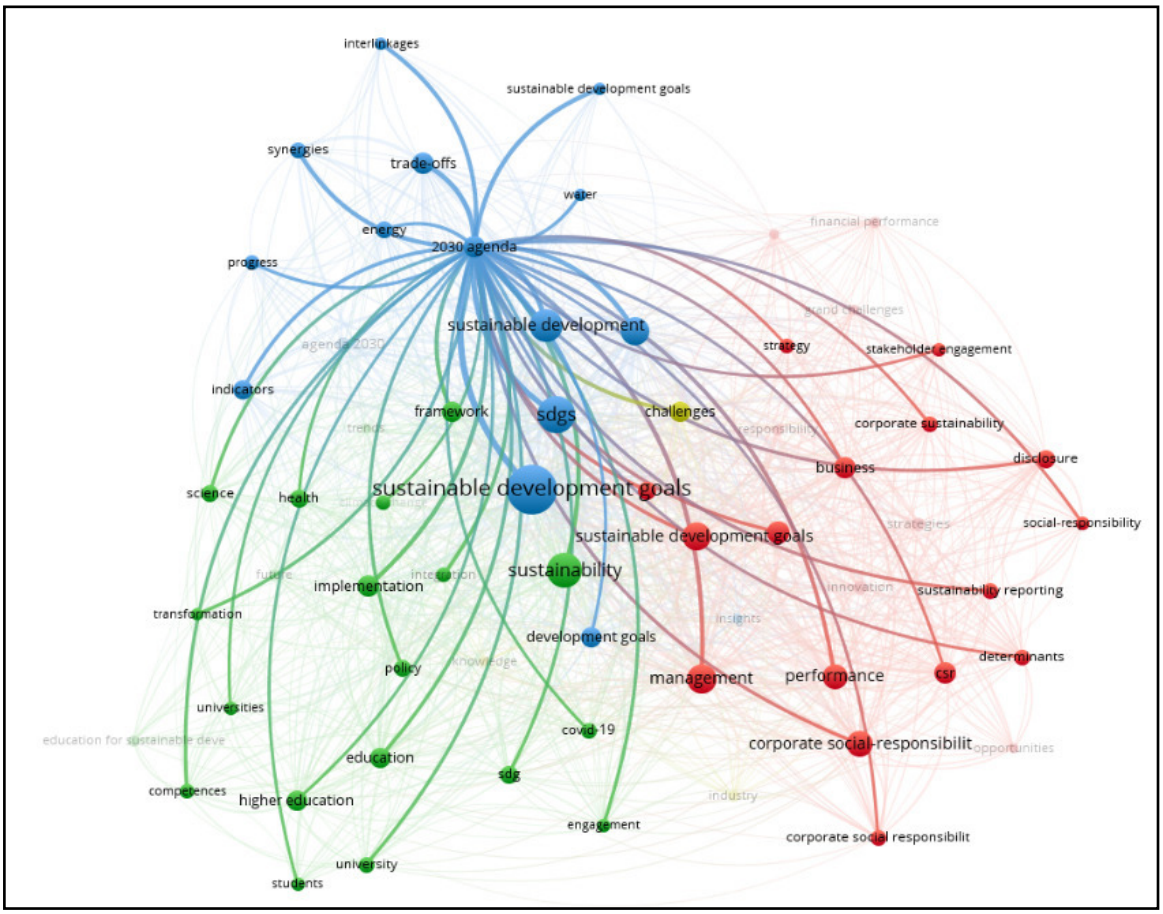


Source: survey data (2024).

Regarding the search terms "Sustainable Development Goals" and "SDGs", Figure 4 shows that the most frequently appearing themes are: "Sustainable development", "Sustainability", "Development Goals" and "2030 agenda", "Management", "Corporate social responsibility", "Implementation", "Challenges", "SDG", "Education" and "Higher education", "Performance", and "Financial performance".

Figure 5 presents the search terms Sustainable Development Goals and SDGs, with a focus on the "2030 agenda".

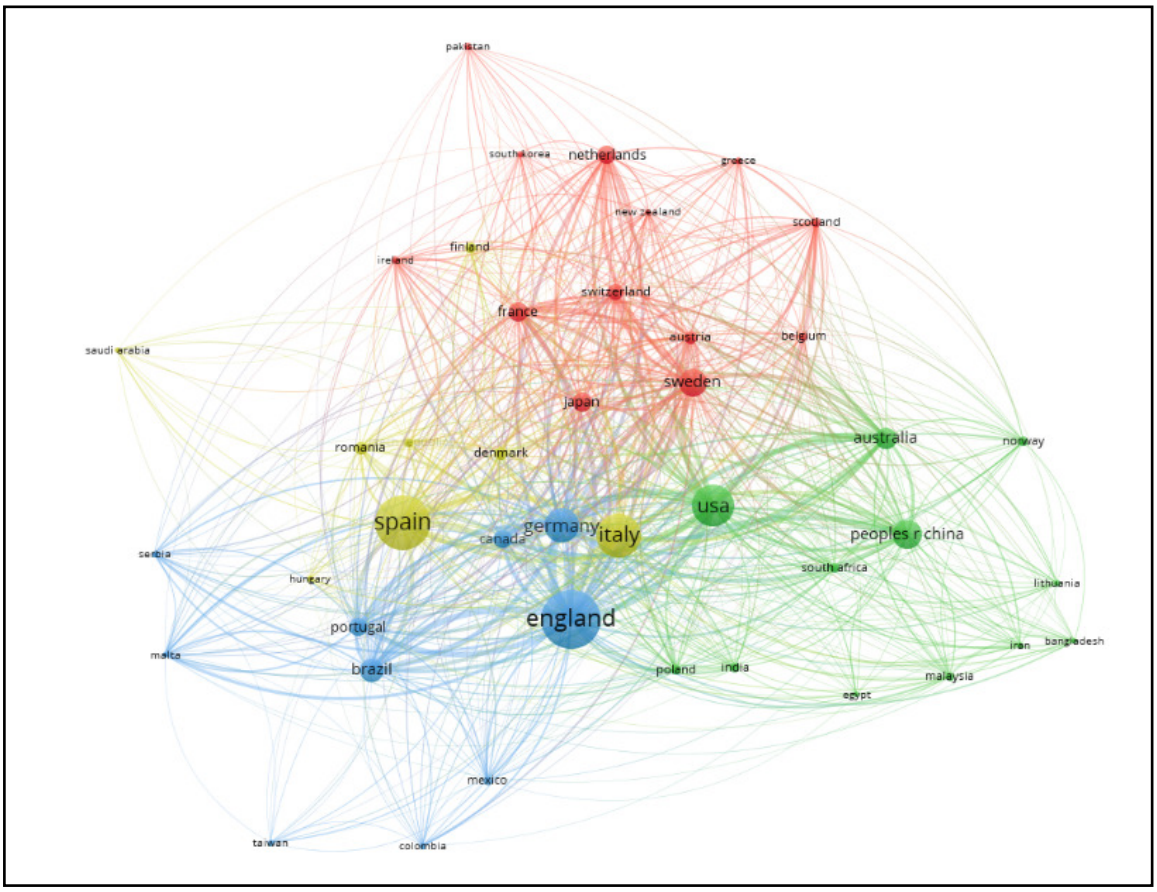
Figure 5 – Survey of keywords only about the Sustainable Development Goals and SDGs, with a focus on the “2030 agenda”



Source: survey data (2024).

As can be seen in Figure 5, both the search term Sustainable Development Goals and SDGs are interconnected with practically the same themes, it is possible to observe that the great connection for all Clusters is the “2030 agenda”. Figure 6 shows the survey of the keywords Sustainable Development Goals and SDGs, by country.

Figure 6 – Keywords only about the Sustainable Development Goals and SDGs, by country.



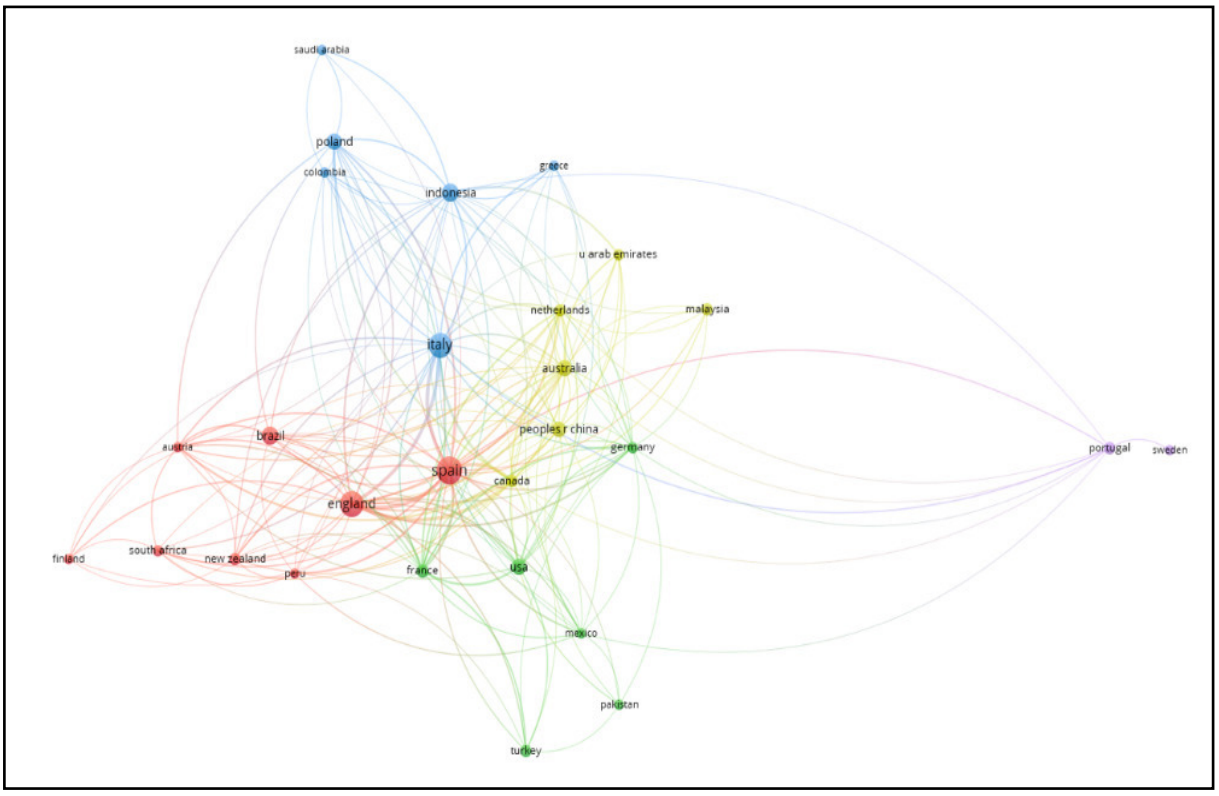
Source: survey data (2024).

In the distribution by country presented in Figure 6, it is observed that the publications found through the Boolean operators (“SDG” OR “SDGs”) AND (“sustainable development goals”) are concentrated in England, Spain, Italy, the United States and Sweden.

The publications in England are mainly connected with those in Germany, Canada, Portugal and Brazil. The publications found in Spain are more linked to Italy, Romania, Denmark and Finland. U.S. publications connect with Australia, China, South Africa, Norway, and Poland. Swedish publications, on the other hand, are more interconnected with those of Japan, Switzerland, France, Belgium and the Netherlands. The survey (...) resulted in 902 publications. The first publication appeared in 2013, and the frequency has grown since 2016.

Figure 7 presents the same cut by country, but in relation to the keywords only about the GRI and Global Reporting Initiative.

Figure 7 – Keywords linked only to the GRI and Global Reporting Initiative, by country.



Source: survey data (2024).

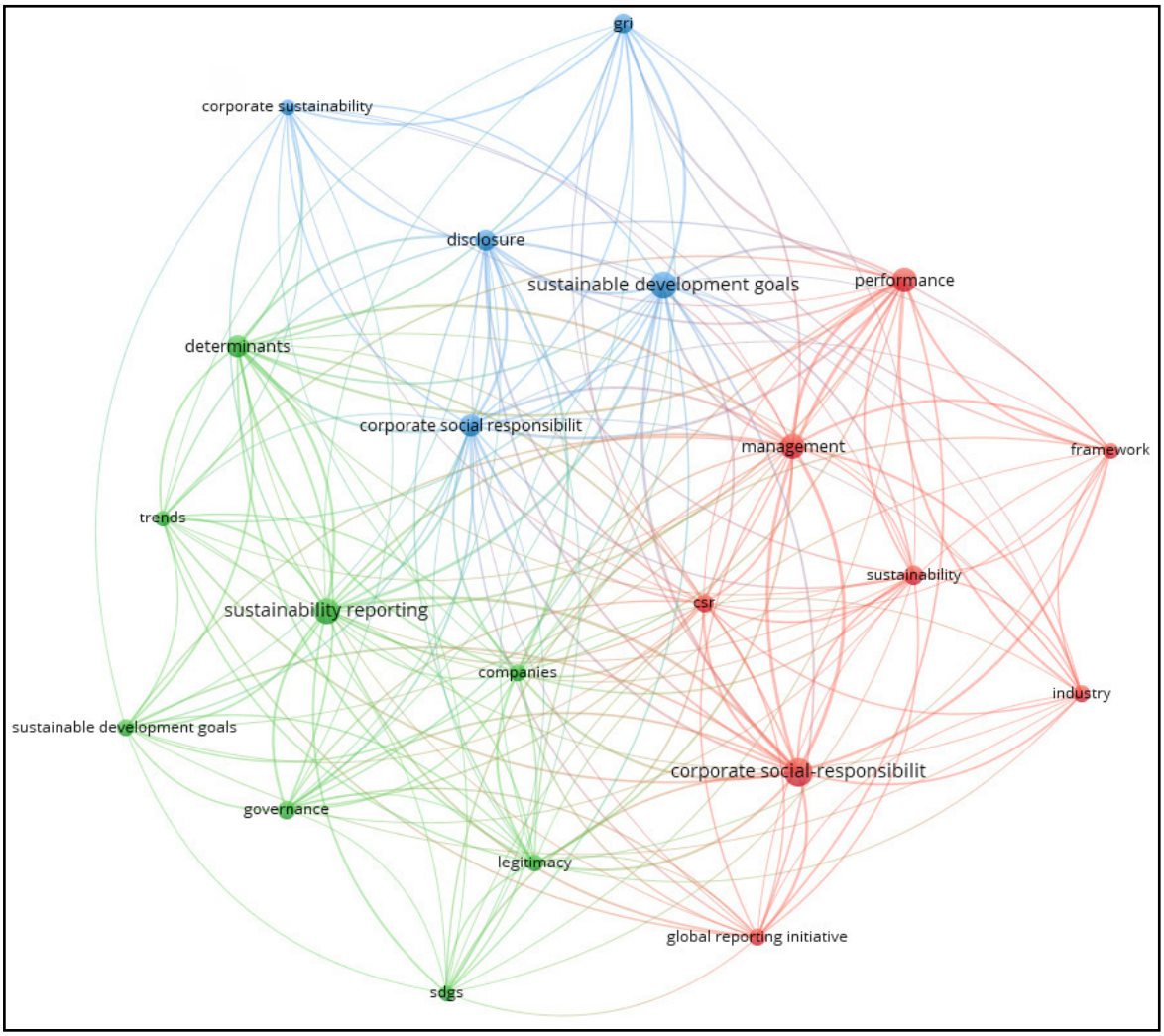
The publications found from the Boolean operators ("GRI" AND "global reporting initiative") OR ("GRI standards") are concentrated in Spain, England, Italy, Indonesia, Poland, Brazil, Australia and Canada. Spain's publications have a greater connection with those in England, Brazil, Austria, Finland, South Africa, New Zealand and Peru. Italy's publications connect with those in Indonesia, Poland, Greece, Colombia and Saudi Arabia. Australia's publications mainly connect with New Zealand, China, Canada, the United Arab Emirates and Malaysia. Publications from the United States, on the other hand, are more closely related to those from France, Germany, Mexico, Turkey and Pakistan. It is worth noting that the 8 publications from Portugal do not have a significant relationship with any specific country, except for Sweden, which has only one publication.

In total, the search through Boolean operators ("GRI" AND "global reporting initiative") OR ("GRI standards") presented 256 results. The first publication on the WoS platform took place in 2007 and the frequency of publications has been growing since 2017.

4.2 Analysis of publications (GRI + SDGs)

In the survey with Boolean operators ("SDG" OR "SDGs") OR ("sustainable development goals" Title) + ("GRI" AND "global reporting initiative") OR ("GRI standards" OR "GRI guidelines" Title) 44 publications were found on the WoS platform, of which 25 are open access, all in English. From the analysis through VOS Viewer, three clusters and three main themes brought up by the publications were identified, as shown in Figure 8.

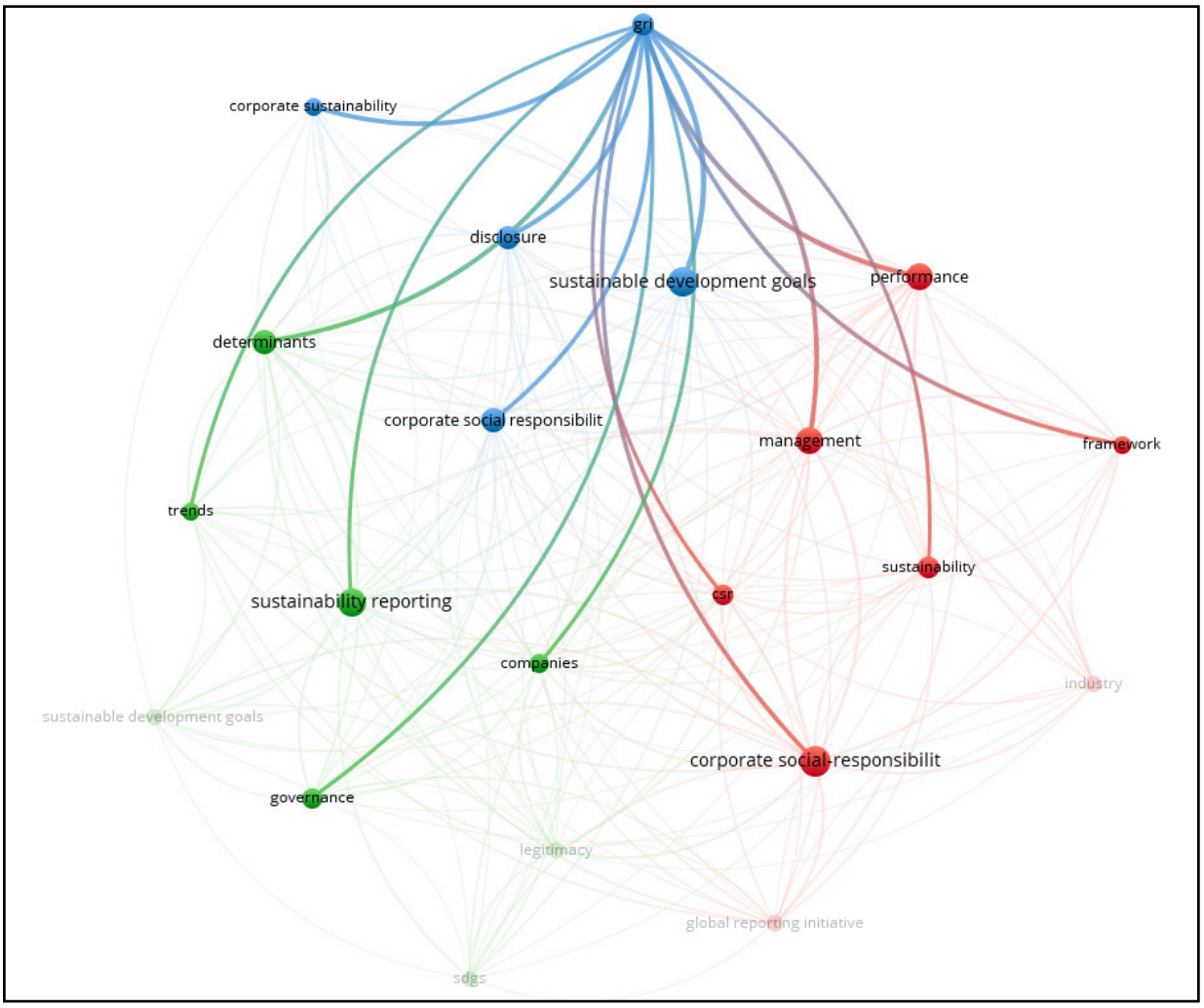
Figure 8 – Survey of keywords (GRI + SDGs), by theme.



Source: survey data (2024).

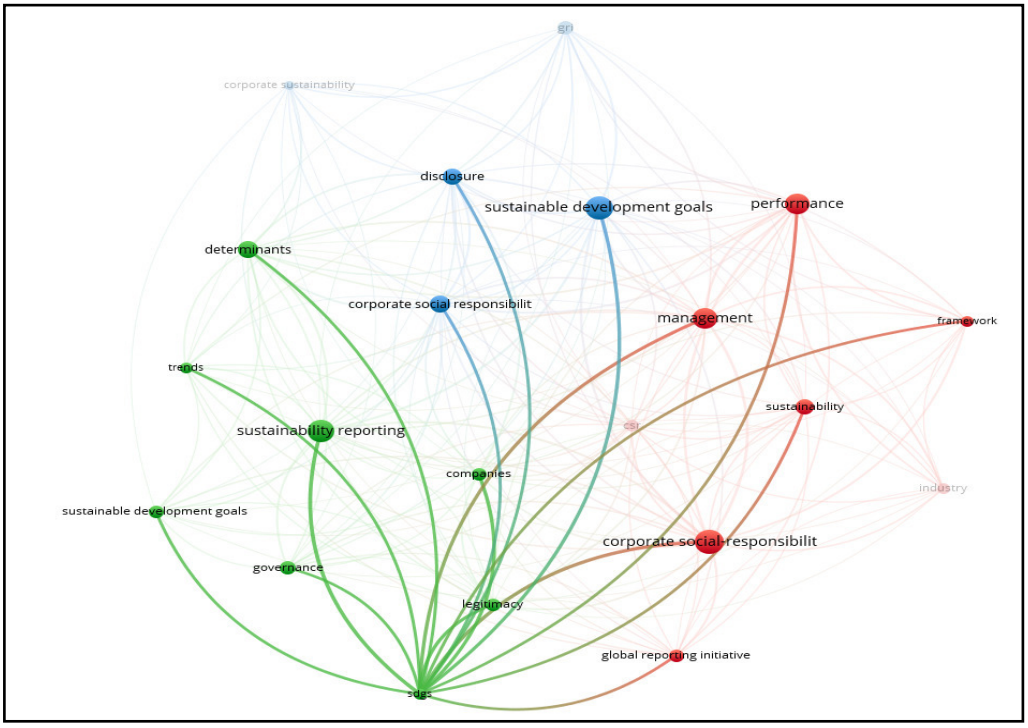
The three main sets of themes found, highlighted in Figure 8 (“Sustainable Development Goals”, “Corporate social-responsibility” and “sustainability reporting”) have a strong connection with the other themes found in the research, indicating the relevance of these topics for the articles related to the GRI + SDGs. Figures 9 and 10 present the same survey based on the keywords GRI + SDGs but focusing on the term “GRI” in Figure 9 and the term “SDGs” in Figure 10.

Figure 9 – Survey of the keywords GRI + ODS, with a focus on “GRI”.



Source: survey data (2024).

Figure 10 – Survey of the keywords GRI + SDGs, with a focus on “SDGs”



Source: survey data (2024).

As shown in Figure 9, the term “GRI” exhibited a stronger connection with “Corporate Sustainability”, “Disclosure”, “Corporate Social Responsibility”, and “Sustainable Development Goals”. In Figure 10, it can be observed that the term “SDGs” is more closely related to the themes “Sustainable Development Goals”, “Governance”, “Sustainability Reporting”, “Legitimacy”, “Companies”, “Trends”, and “Determinants”.

The keywords GRI + SDGs were also surveyed, focusing on the themes covered in the 44 publications, as shown in Chart 2.

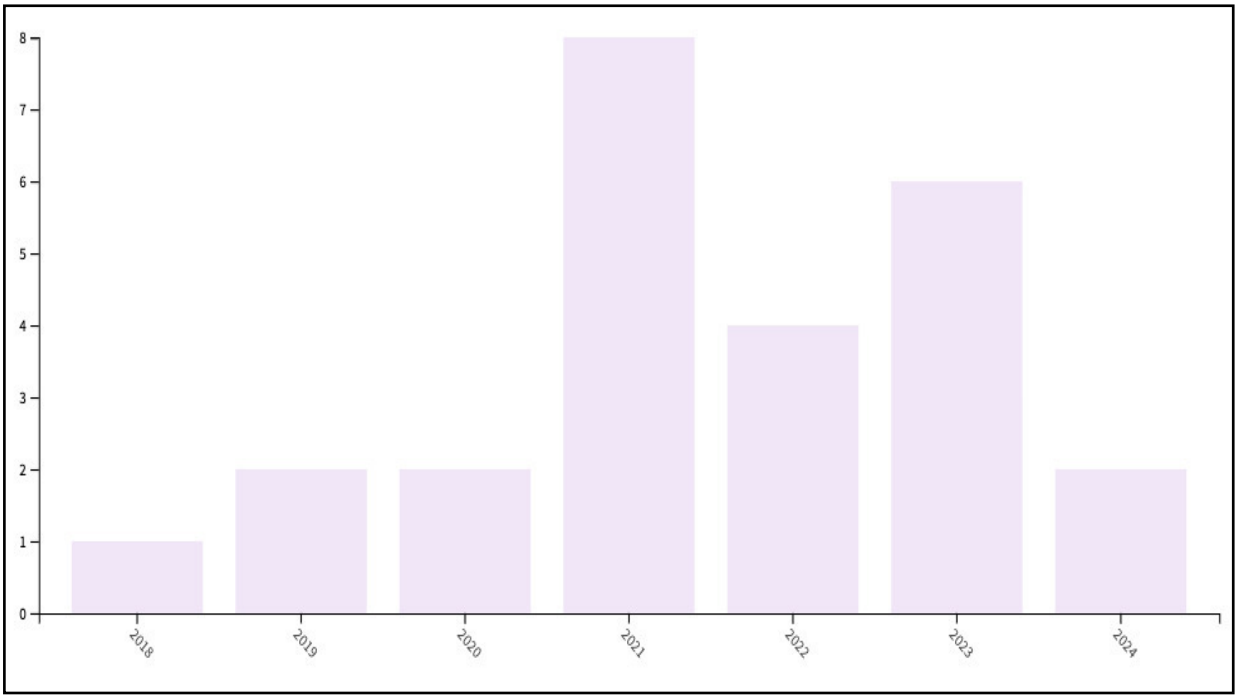
As can be seen in Chart 2, the 44 studies found focus on six themes, but with quite varied numbers of publications on each subject. Open access publications follow a similar pattern in terms of themes and percentages. Figure 11 shows the history and frequency of the 25 open access publications.

Chart 2 – Survey of the keywords GRI + SDGs, focusing on the themes covered in the total number of publications

Themes identified in the publications	Number of publications	Percentage
Green & Sustainable Science & Technology	15	34,10%
Environmental Sciences	12	27,28%
Environmental Studies	10	22,73%
Business Finance	4	9,10%
Business	2	4,54%
Environmental Engineering	1	2,28%

Source: survey data (2024).

Figure 11 – Survey of the keywords GRI + SDGs regarding the history and frequency of open access publications



Source: survey data (2024).

It was possible to observe that, from the first publication in 2018, the number of publications that relate the two themes has been growing within the WoS platform

until 2023, although the year with the highest number of publications was 2021. The same pattern was observed considering all 44 publications analyzed.

When conducting a survey of the keywords GRI + SDGs by institutional affiliation, considering the universe of 44 publications (25 open access and 19 closed access), the following results were found (Chart 3):

Chart 3 – Survey of the keywords GRI + SDGs by institutional affiliation, considering the set of 44 publications

Institution	Number of publications
University of Salento (Italy)	3
Osun State University (Nigeria)	2
University of Santiago de Compostela (Spain)	2
University of Nicosia (Cyprus)	2
Other institutions	1 (each)

Source: survey data (2024).

When considering the universe of 44 publications, eight authors were also found with two publications each. The other authors have one publication each.

Chart 4 highlights the 25 open access publications by institutional affiliation, when considering the keywords GRI + SDGs.

Chart 4 – Survey of the keywords GRI + SDGs, considering the institutional affiliation of open access publications

Institution	Number of publications
University of Salento (Italy)	2
Other institutions	1 (each)

Source: survey data (2024).

As can be seen in Chart 4, among the open access studies, only the University of Salento (Italy) has two publications, and the other institutions have only one publication each. Among these open access studies, it was not possible to identify authors with more than one publication.

Chart 5 highlights the 25 open access publications, by country of origin, when considering the keywords GRI + SDGs.

Chart 5 – Survey of the keywords GRI + SDGs, considering the country of origin of the open access publications

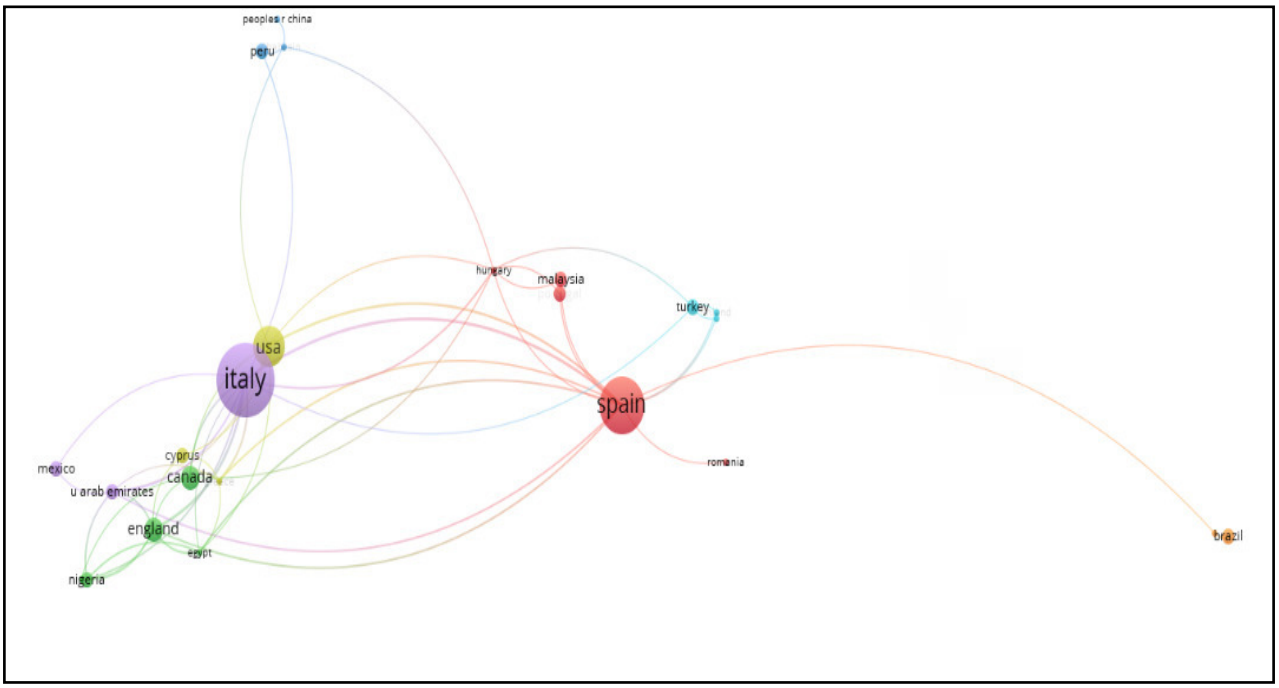
Country	Number of publications
Italy	5
Spain	4
United States and England	3 (each)
Brazil, Malaysia, Mexico, Portugal and Turkey	2 (each)
Bahrain, Canada, Cyprus, Finland, Greece, Hungary, Indonesia, Nigeria, Peru, Sri Lanka and Sweden	1 (each)

Source: survey data (2024).

As can be seen in Chart 5, in terms of countries of origin, among the 25 open access publications, the three positions with the highest number of publications are Italy (5 articles), Spain (4 articles), the United States (3 articles) and England (3 articles). Brazil is in fourth position, along with Turkey, Mexico, Malaysia and Portugal with two publications each. The other countries - Bahrain, Canada, Cyprus, Finland, Greece, Hungary, Indonesia, Nigeria, Peru, Sri Lanka and Sweden - have one publication each.

Considering all 44 publications, one of the two Brazilian articles shows relevant connections with foreign articles, as can be seen in Figure 12.

Figure 12 - Survey of the keywords GRI + SDGs, considering all 44 publications, by country



Source: survey data (2024).

Based on Figure 12, when all 44 publications are taken into account, it is observed that the publications are concentrated in Italy, Spain and the United States. It is worth noting that Brazil has two connections with foreign articles present in this search on the WoS platform. The article by Brazilian authors Cunha, Pereira, and Moneva (2023) cited the article by Michalska-Szajer, Klimek, and Dabrowski (2021), from Poland. On the other hand, the article by Bulak (2024), from Bahrain, refers to the article by Cunha, Pereira and Moneva (2023).

Regarding the relationship of the publications with the SDGs, after applying the "SDG" filter of the WoS platform, it was possible to verify that of the total of 17 SDGs, three were directly addressed by five of the 44 publications found, that is, SDG 09 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities) and SDG 12 (Responsible Consumption and Production). Three open access articles were identified that address topics related to sustainability in ports, two of which

connect SDG 11 and one with SDG 09. A closed access article was also identified that deals with sustainability in the port sector making a connection with the SDGs. That is, of the 25 open access articles, four address the same theme, of which three have connections between them.

4.3 Analysis of relevant articles

In the article related to SDG 09 (according to the Wos filter), Bulak (2024), addresses sustainability in ports from a non-parametric analysis (Data Envelopment Analysis) of the performance of ports in sustainable management, with the aim of proposing models to assess sustainability in the port sector. Based on the parameters adapted from the GRI and Charnes, Cooper and Rhodes (1978), the authors listed how sustainable the 21 busiest ports in the world are (Green Ports) according to the criteria of eco-efficiency.

Among the points considered are the amount of emissions generated by the port's direct and indirect operations, the use of technology and materials that reduce environmental impacts, design and sustainable management of resources. Based on the research, Bulak (2024) reinforces the importance of establishing an assessment model along the lines of the GRI for the port sector to comply with SDG 14 (maritime ecosystem) and SDG 13 (climate mitigation), aiming to meet the 2030 Agenda.

The first work, which was related to SDG 11 by WoS, was published in 2021 in Canada (Macneil et al., 2021). The article proposes a model for Canadian ports to be able to meet 36 targets extracted from the SDGs, which are considered fundamental to the achievement of port objectives. This will be done through the integration of the GRI model in the publication of results and port planning. The authors pointed to the GRI as an important complementary tool in the study, since the model allows assessing whether the economic, environmental, and social indicators of ports are in fact meeting the relevant SDG targets (Macneil et al., 2021).

The second work related to SDG 11 was published in Brazil by Cunha, Pereira and Moneva (2023), and explored sustainability in Brazilian public ports. The article measured the percentage of ports that publish reports in the GRI model and develop sustainability actions aiming at the UN 2030 Agenda. Its results indicate that only eight of the 35 ports analyzed followed the GRI model for the presentation of sustainability actions.

The article also highlighted that 30% of ports reported facing operational challenges due to climate change, and among these ports, only 35% have taken actions to adapt to anticipated adversities. Indirectly, ports have also been developing actions within the scope of the SDGs, for example, monitoring air quality and showing interest in implementing sustainable energy models. In general, this article indicated that Brazilian public ports do not yet apply ESG publication models or report actions directly linked to the SDGs but have been showing interest and planning actions in this regard.

Among the 25 open access publications, in addition to the article by Cunha, Pereira and Moneva (2023) entitled “Port sustainability initiatives: a study of Brazilian public ports”. Another work published in Brazil by Machado and Carvalho (2021) called “Maturity Models and Sustainable Indicators — A New Relationship” was found.

The article by Machado and Carvalho (2021) involves an exploratory research that compared the indicators presented by technology companies that have adopted the Maturity Models and Information Technology Governance, with the requirements for publishing results according to the GRI and how much these indicators meet the Sustainable Development Goals (SDGs), in order to propose a sustainability and governance model aimed at companies in the technology sector.

The study by Machado and Carvalho (2021) pointed out that Maturity Models and Information Technology Governance, composed of the COBIT Structure (for governance and administration) and IT Governance (focused on the formation of control strategies and actions for Information Technology activities), include 50 indicators that are similar to the GRI reporting model and the SDGs. The study also indicated that, in general, the companies analyzed focused their reports on meeting four specific SDGs, namely: SDG

8 (Decent work and economic growth), SDG 13 (Climate action), SDG 3 (Good health and wellbeing) and SDG 9 (Industries, innovation and infrastructure).

One of the review articles found, entitled "Exploring the search on sustainability reporting: a comprehensive bibliometric and literature review in the Latin American context", authored by Hernández-Pajares (2023), carried out a bibliometric and literature review with the purpose of describing the origin and content of research related to corporate sustainability reports, published in Latin America on WoS platforms, Scopus, Scielo and REDIB.

The author seeks to understand the following points: i) What is the evolution of publications on sustainability reports analyzed by country?; ii) What is the origin of the articles by journal, university, author and respective country?; iii) What is the common level of citation of the authors of the articles?; iv) What are the main research approaches and theories addressed in the articles analyzed? (Hernández-Pajares, 2023, p. 7). This was done through a quantitative method for surveying and categorizing the articles, in parallel with a qualitative approach to describing the origin and nature of the articles (Hernández-Pajares, 2023).

Hernández-Pajares (2023) pointed out that there is a greater number of Latin American studies on the Scielo and REDIB platforms, but there is not a significant number of studies from this region on the platforms with the greatest impact, WoS and Scopus, until 2021. The author indicates a significant increase in publications related to corporate sustainability reports in the world between 2013 and 2021, in contrast to the Latin American context, which recorded a smaller increase.

The survey showed that, until 2021, Brazil was the country that brought together the largest number of publications in this sense, concentrating the largest number of publications on the REDIB and Scopus platforms. In addition, Latin American publications are very interconnected in terms of citations, with the exception of publications made in Brazil, which relate more to publications made in the country itself and less to their peers in Latin America (Hernández-Pajares, 2023).

The author also makes a brief analysis of the set of publications related to the GRI and the SDGs. According to Hernández-Pajares (2023), studies related to the GRI refer more to the impacts and possibility of including medium and small companies in this model. Publications that deal with the SDGs, on the other hand, are still poorly correlated with models for publishing corporate sustainability reports and ESG (Hernández-Pajares, 2023). This represents a relevant research gap, which can be explored in future investigations. It is worth noting that the author did not explicitly present studies that correlate the SDGs directly with the GRI.

Thus, the research gap identified and confirmed through this study is sufficient to justify conducting further research that explores the relevance of the connections between the GRI and the SDGs. The existing literature already suggests that the integration of these two approaches can provide substantial benefits to companies, especially with regard to the trust generated between investors, customers and society in general. As seen in the theoretical foundation, studies such as those by Lashitew (2021) and Nicolo' et al. (2024) demonstrate that reports that align the GRI with the SDGs increase the credibility of companies, contributing to strengthening their relationships with stakeholders and favoring the attraction of investments.

In this sense, the research developed by Elalfy, Weber, and Geobey (2021) and Nguyen and Duong (2025) highlight that companies that prepare reports integrating the GRI with the SDGs tend to attract more institutional investors, given that these reports offer a more transparent and reliable view of environmental, social, and governance performance. In addition, the association between GRI and SDGs allows analysts and the market to more effectively assess risks and opportunities, as reported by Curtó-Pagès et al. (2021) and Wilburn and Wilburn (2020).

Another relevant point, as pointed out by Luo and Tang (2022) and Machado and Carvalho (2021), is that the integration between GRI and SDGs facilitates understanding between companies and sectors, promoting the adoption of best sustainable practices. Reports that combine these two approaches are a strong indication of organizations'

commitment to society and the environment, as pointed out by Gutiérrez-Ponce (2023) and Kong and Majhi (2025). In addition, the incorporation of the SDGs in GRI reports guides companies in defining their sustainability strategies and priorities, which is essential to align their operations with global sustainable development challenges, as highlighted by Al-Hiyari, Kolsi and Dungore (2025) and Gutiérrez-Ponce (2023).

If, on the one hand, GRI reports are increasingly being adopted by companies as strategic communication tools, allowing a clear dialogue with stakeholders, on the sustainable practices adopted (Chopra et al., 2024), on the other hand, it is essential that companies integrate the SDGs into their daily operations, contributing to achieving the purposes for which the SDGs were established, that is, the promotion of global sustainable development (Santos et al., 2024).

5 CONCLUSION

In the context of corporate sustainability, the discussion and adoption of GRI reports associated with the SDGs are increasingly strategic for organizations as methods of measurement and performance. GRI and SDG reports are critical for organizations seeking transparency, legitimacy, and alignment with global sustainability standards. Despite the challenges of standardization and quality, the adoption of these practices tends to grow, driven by market demands, investors, and society. However, the study identified the existence of a limited number of publications that relate the GRI and the SDGs. It was observed that the publications are predominantly applied articles, and two bibliometric articles were found, one of them relevant to the Brazilian context.

The other studies on this topic did not identify the countries that published on the subject and did not even detect the networks of researchers. On the other hand, this study filled this research gap. The identification of the geographical distribution of publications on the association between GRI reports and the SDGs has significant scientific relevance, as it highlights global asymmetries in the production of knowledge

on corporate sustainability. The predominance of studies from developed countries - such as the United States, Italy, Spain, and England - indicates that the integration agenda between GRI and SDGs is still strongly influenced by more consolidated economic and institutional contexts, where there is greater regulatory maturity, research infrastructure, and corporate engagement with socio-environmental transparency. On the other hand, the low representation of developing countries, such as Brazil, Malaysia, Mexico, and Turkey, reveals an important scientific and practical gap, since these contexts present distinct challenges, such as lower reporting requirements, resource constraints, and different social and environmental pressures.

In terms of implications, this finding reinforces the need to expand empirical and comparative studies in emerging countries to understand how institutional, cultural, and economic variables influence the adoption of GRI reports aligned with the SDGs. For companies, this gap represents both a risk - due to the lack of local references for the implementation of good practices, and a strategic opportunity, as organizations that invest in GRI / SDG integration in these contexts can stand out as regional references in corporate sustainability, strengthening its legitimacy, competitiveness and ability to attract responsible investments. Thus, the advancement of this scientific agenda is essential to promote greater equity in the development of sustainable reporting models, adjusted to the realities of different economies and sectors.

The research points to a significant gap in sustainability studies in Latin America and recommends that the region strengthen the link between its research, combine reporting topics (such as the GRI) with the SDGs, and increase its visibility in the international academic scenario. The study shows that, within the GRI and SDG universe together, the two publications found bring prominence to the country, since it is a relatively new theme. However, Brazilian studies have little interaction with other countries in the region.

By analyzing the Brazilian publications in more depth, it was verified, on the one hand, that the country already has a significant contribution in terms of research on

corporate sustainability reports and on the SDGs, but dealing with these themes in isolation. On the other hand, it was evident that research on the GRI reporting model focuses on its effects and the inclusion of small and medium-sized enterprises, while studies on the SDGs remain scarce and rarely associated with sustainability reporting or ESG practices.

Therefore, the current research not only confirms the relevance of the topic but also reinforces the importance of promoting further research on the connection between the GRI and the SDGs, offering companies a strategic tool to strengthen their position in the market, attract investments, and align their actions with global social and environmental needs.

From this study, some research gaps were identified that open space for new studies in the future. It would be appropriate to explore whether there is (if so, what would be) the specific relationship of the GRI and/or other corporate sustainability reporting models with the three SDGs found from the WoS filter.

There is also a gap in the measurement and characterization of the SDGs addressed among the 44 publications found in the search, in addition to those identified through the WoS filter. By better analyzing the content of the publications (especially the 25 open access ones), it would be possible to observe whether more SDGs were directly or indirectly addressed in the publications. With this, it would also be possible to point out SDGs that could be addressed or further explored in this field of research (GRI + SDGs).

It would be relevant to further explore the articles found in this research that deal with sustainability in the port sector, to verify the state of the art involving the correlation between models for publishing results, such as the GRI, and the fulfillment of the SDGs with regard to the port sector. It would also be possible to analyze whether the models used by these articles to correlate the GRI with the fulfillment of the SDGs could be useful in other fields of study.

Finally, from the publications analyzed, it was possible to verify the relevance and potential contribution of the use of the GRI and similar models, for corporations to promote/contribute to the achievement of the SDGs. Therefore, it is recommended to increase the amount of research in this regard, within the WoS platform.

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2. Theoretical foundation	√	√		
3. Definition of methodological procedures	√	√		
4. Data collection	√	√		
5. Analysis and interpretation of data	√	√		
6. Data validation	√	√	√	√
7. Writing the manuscript	√	√	√	√
8. Critical revision of the manuscript	√	√	√	√
9. Project management	√	√	√	√
10. Supervision	√	√	√	√

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Data will be available upon request