

SUSTAINABILITY AND CORPORATE GOVERNANCE IN THE CONTEXT OF AGENDA 2030: A BIBLIOMETRIC SYSTEMATIC REVIEW.

DOI: <https://doi.org/10.53486/dri2026.54>

UDC: [005.35:502.131.1]:001.811

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Abstract: *The United Nations adopted the 2030 Agenda, bringing the concept of sustainability into the global economic discourse. Thus, the concept of sustainability and ESG metrics has become essential in corporate development strategies. The current research performs a bibliometric study of scientific publications dated from 2015 to 2026, with the aim of highlighting the evolution and the main trends and directions of development in the field. The study relies on a set of 9,460 documents indexed in the Web of Science database. Data analysis was conducted using the Bibliometrix software package (Biblioshiny interface), applying techniques for analyzing scientific output, thematic evolution, and strategic keyword mapping. The findings demonstrate an exponential growth in scientific production beginning in the 2021–2022 period. The research shows the high level of academic interest in general notion of social responsibility, its technical aspects, and quantifiable indicators, with reference to ESG performance, ESG scores, or risk. The study proves that the sustainability research field is gradually matured, and its key factors include the development of performance metrics. The study provides a reference framework for economic stakeholders as well as the academic community, emphasizing that the 2030 Agenda has succeeded in transforming sustainability from an ethical choice for companies into a measurable strategic objective.*

Keywords: *ESG, corporate governance, sustainability, Agenda 2030*

JEL: G32, G34, Q01, Q56

Introduction

Sustainability became a concept extensively analysed and discussed in the academic literature. Since the beginning of the century, the concept of sustainability has been examined from various perspectives, and the impact of integrating this concept into corporate governance is interpreted in different ways, as research indicates all sorts of impacts on governance.

The evolution of the concept of sustainability is complex and long-term, with different perceptions based on regional contexts. The relevance of the concept of sustainability starts from historical evolution and continues in its alignment with future global objectives.

The integration of sustainability into corporate governance is a timely topic that is rapidly evolving in the academic literature. The premise for this evolution was the international adoption of the 2030 Agenda for a sustainable future for future generations. An analysis of the specialized literature allows for an understanding of the main concepts identified, such as sustainability, corporate social responsibility, ESG factors, performance, and scores. This paper aims to highlight the main concepts by analyzing their temporal evolution and scientific output, identifying the intellectual pillars and foundational perspectives, as well as mapping the thematic landscape and detecting emerging trends to identify future research directions. For it, 9,406 articles were selected to meet the objectives, based on predefined criteria from the Web of Science database for the period 2015–2026, and the analysis was conducted using the Biblioshiny software, a tool integrated into R Studio. The study offers a synthetic perspective useful to both researchers and economic decision-makers, facilitating an understanding of the trajectory of sustainability from a theoretical concept to a strategic imperative at the national, regional, and international levels.

The paper continues with a brief literature review and continues in the third section with the bibliometric analysis of the recent scientific literature focused on the topics of ESG, SDG and corporate governance. Conclusions are highlighted in the fourth section of the paper.

Literature review

The concept of sustainability has gone through a series of phases, which have shaped its meaning. Thus, the first phase is the philanthropic one, marked by the introduction of the concept of social responsibility, which signifies a voluntary commitment by the business community. This commitment effectively helps alleviate economic problems and fully achieve economic goals. This phase also emphasizes the relationship between the state and the business community, through the government, which become partners in achieving public objectives (Bowen, 1953).

The second phase in the evolution of the concept of sustainability is the strategic phase, characteristic of the late 20th century, which gave rise to stakeholder theory and the triple bottom line theory, both of which emphasize the concept of stakeholders. Managers are directly responsible for implementing processes that would satisfy all stakeholders' needs, particularly those with a stake in the business. This has led to corporate social responsibility being viewed as a luxury add-on. The literature highlights the causal relationship between corporate social performance and financial performance, with studies from the late 20th century demonstrating that firms with high levels of corporate social performance experience an increase in the number of investors (Graves & Waddock, 1994). Furthermore, Elkington (1997) defines sustainability as the present actions of society being guided by principles that do not limit economic, social, and environmental options for future generations. Similarly, sustainability is defined from a corporate perspective in Elkington's view along three lines: social, economic, and environmental, explaining that society depends on the economy, and the economy in turn depends on the global ecosystem, with the environment considered the baseline.

The third phase is considered the financial integration phase, where unlike the earlier phases, in which corporate social responsibility lacked a comprehensive measurement method, this phase offers the possibility of quantifying the concept of sustainability through the introduction of ESG factors (Economic, Social, and Governance) according to the 2004 UN report. The UN report offers the same perspective regarding successful investments, which depend on a vibrant economy, a healthy civil society, and a sustainable planet. The effective integration of ESG factors into investment decisions contributes to more stable and predictable markets, which is in the interest of all stakeholders. The inclusion of ESG factors in financial reporting is also extremely important for emerging economies, which will gain ground in delivering sustainable economic growth and attracting investors seeking to diversify their portfolios. Similarly, transparency and disclosure are key to the synergy between ESG factors and financial reporting, and the number of companies reporting both qualitatively and quantitatively has increased significantly, from approximately 45% of the top 500 companies by revenue in 2004, when the term ESG was first introduced, and by 2024, this figure had risen to 96% (KPMG 2004, 2024).

The last and most recent stage of evolution is the regulatory stage, which pertains to the global standardization of sustainability disclosure and reporting. The problem of sustainability has been one of the main problems discussed at international organizations and governments for more than three decades. The concept of sustainability became institutionalized in the framework of the United Nations Framework Convention on Climate Change (UNFCCC), which set the basis for intergovernmental and corporate collaboration (UNFCCC, 1992). Later, this effort was complemented with the introduction of the Kyoto Protocol (1997), a landmark agreement that established mandatory emission reduction targets for industrialized countries.

In this regard, the European Union has introduced the EU ETS (Emissions Trading System), a market-based mechanism that caps emissions and allows for the trading of allowances granting the right to emit a limited quantity of greenhouse gases. The key development in global climate governance came with the Paris Agreement (2015). With the growing significance of transparency in business

operations, companies have progressively integrated ESG (Environmental, Social, Governance) factors since 2016. This trend was regulated by the EU Taxonomy, which standardized the reporting and classification of sustainable economic activities. The final framework was developed in 2019 in the form of the European Green Deal, which charted the EU's roadmap toward climate neutrality. An important boost came from the United States' re-entry into the Paris Agreement in 2020. In 2021, the financial sector aligned with these goals through the Net Zero Asset Owner Alliance, reinforcing the intrinsic link between investment decisions and sustainability.

The medium-term forecast (2023–2025) will be marked by the development of international policies aimed at the decarbonization of industries. This includes the full implementation of ESG regulations and new initiatives, such as the Clean Industrial Deal, which primarily target heavy industry and the energy sector. These policies are an addition to the existing program, named "Fit for 55" legislative package, which confirms the European Union's engagements to cutting down greenhouse gas emissions by at least 55% by 2030. Regulatory mechanisms entail the integration of global standards such as the Global Reporting Initiative and the Sustainability Accounting Standards Board. As a result, the first mechanism was adopted by the European Union and transposed into the Corporate Sustainability Reporting Directive (CSRD), adopted in 2022. The directive mandates mandatory sustainability reporting in the management report, as well as the audit of the sustainability report by an external auditor, which is mandatory for all large companies and those listed on the stock exchange. A preliminary review of the literature reveals that research focuses on the impact of sustainability integration at the microeconomic and macroeconomic levels. At the microeconomic level, studies examine the impact of integrating ESG factors, through various indicators such as ESG scores or proxy indicators like the implementation of environmental management systems, greenhouse gas emissions, energy efficiency, employment rates, and investments in education, on financial and economic performance, including profitability, sales growth, market share, or Tobin's Q.

Hence, companies with robust and transparent reporting, as well as high ESG scores, are viewed as less risky (Apergis et al., 2022 in Subhani et al., 2025) and are considered socially responsible investments. Furthermore, integrating sustainability strategies enhances financial performance, and strengthening the three pillars leads to greater economic efficiency for companies (Tomšič, N. et al., 2015). This is also confirmed in the research by Albuquerque et al. (2019), which posits that sustainability serves as a product differentiation tool when economic conditions deteriorate, where financial or systematic risk is associated with general market fluctuations that can affect a firm's value. Thus, the authors confirm that firms with high ESG scores have significantly lower systematic risk, because sustainability fosters consumer loyalty, thereby stabilizing profits during periods of economic crisis.

The integration of ESG factors has also become a crucial element in investors' decisions, as they, in turn, tend to evaluate companies' efforts in social activities. Sustainability can create value for investors by reducing uncertainty and risk in investment decision-making (Godfrey, 2009, in Landi et al., 2022). However, there is controversy surrounding the introduction of sustainability, with some researchers arguing that it serves as a means of destroying firm value (Hill, 2001 in Landi et al., 2022). Accordingly, investment risk increases because sustainability is viewed by investors as a band-aid to legitimize questionable business practices. If investors perceive the true intentions, they penalize companies on the stock market. Consequently, a commitment to sustainability can increase investors' uncertainty in decision-making (Jo & Na, 2012, in Landi et al., 2022).

At the macroeconomic level, efforts are geared toward examining the impact of sustainability at a national, regional, or even international level. In today's research, sustainability is primarily quantified by using the SDG index, a composite indicator that includes the 17 Sustainable Development Goals, while economic performance has been evaluated based on changes in GDP and foreign direct investment (FDI) flows. For example, Rapsikevičius et al. (2022), using panel regression, demonstrate that SDG implementation is conditioned by EU-specific social models:

capital freedom supports sustainability in the Eastern European model, but not in the Nordic one, with the relationship being mediated by institutional quality. Iwanicz-Drozdowska et al. (2025), using dynamic GMM estimators, identify a pro-cyclical nature of sustainability in Europe, as ESG performance and economic growth are mutually reinforcing, with the governance (G) pillar exerting the strongest impact on GDP and validating the European model as a global leader in ESG standards. On the opposite, sustainability can also be measured by the Environmental Performance Index, and the study by Pata et al. (2025) highlights that the BRICS countries, as the primary contributors to a massive portion of global emissions. Accordingly, significant steps in adopting sustainability policies attract foreign investments, turning sustainability into a driver of economic growth. The study also demonstrates a long-term correlation between sustainability policies that would stimulate renewable energy and foreign investment, establishing a co-integration relationship that yields the greatest improvements in environmental and economic performance.

The key value of bibliometric analysis is that it serves as the validation of existing theoretical pillars, which forms a basis for theoretical studies in the future. Apart from laying the groundwork for theory development, literature review plays an important role in recognizing paradigm shifts and tracking trends, aiming to identify gaps for further investigations.

Bibliometric analysis

The academic literature on sustainability has exploded following the adoption of these principles at the international level and the 2015 Paris Conference. Since then, sustainability has been the central pillar of researchers' work, being directly linked to economic growth, financial performance, and institutional attractiveness. In this regard, the current bibliometric analysis research is set up for the following objectives:

- Analyzing the temporal evolution and scientific output from the adoption of the 2030 Agenda in 2015 to the present.
- To identify the intellectual pillars through the authors and seminal works in the field of sustainability.
- To map the thematic landscape to identify the abundance of research at the micro and macro levels.
- To detect emerging trends to identify current and less current research niches.

To achieve these objectives, the primary data source was the Web of Science (WoS) database, which is characterized by high-quality academic literature with real impact, as well as historical consistency that allows for analysis over long periods of time. The software used to identify and understand literature is Biblioshiny, an R package that enables everything from descriptive statistics to complex network analyses and conceptual structures.

The first step is to select the database to be processed using Biblioshiny, and the criteria are outlined in Figure 1. We selected the papers with topics related to ESG or SDG and corporate governance. Upon importing the 9,406 results from WoS, the Biblioshiny software identified the following: 1,660 sources, with 31,853 authors (including 620 individual authors), 17,789 keywords, and 276,554 citations.

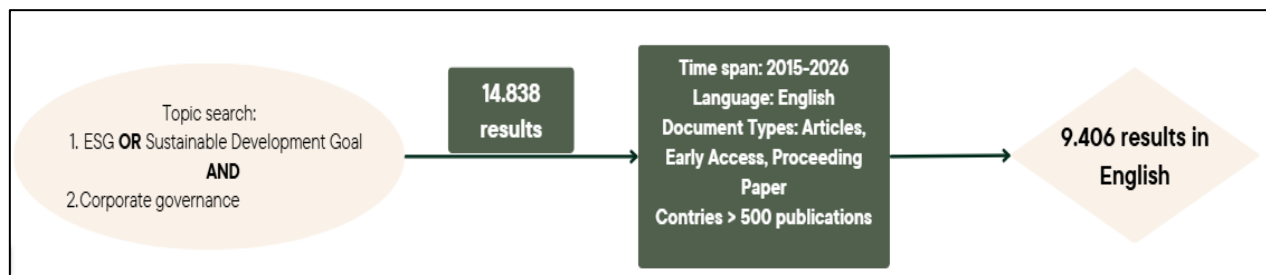


Figure 1. Filtering the results obtained from WOS

Source: compiled by the author

The software also provided the ability to view annual scientific output, as shown in Figure 2. As a result, the selected analysis period is from 2015 to the present, and the annual scientific output has been consistent but low since 2015, following the Paris Agreement. Starting in 2019, the output began to increase, driven by legislative factors, as the European Commission launched the European Green Deal, thereby transforming sustainability from a voluntary option into a legal obligation. Also, during this period, the introduction of the EU Taxonomy forced the academic and business communities to adopt activities that are truly considered sustainable according to taxonomy. The year 2019 marks the beginning of the COVID-19 pandemic, which has heightened the need for a resilient economy, as well as a focus not only on the environmental pillar (E) but also on the social (S) and governance (G) pillars. Consequently, 170 articles were published in 2019, and by 2025, more than 3,000 articles are projected, representing an increase of about 188%, with an annual growth of approximately 33%.

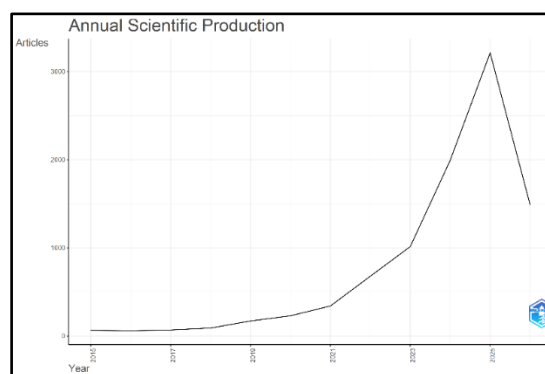
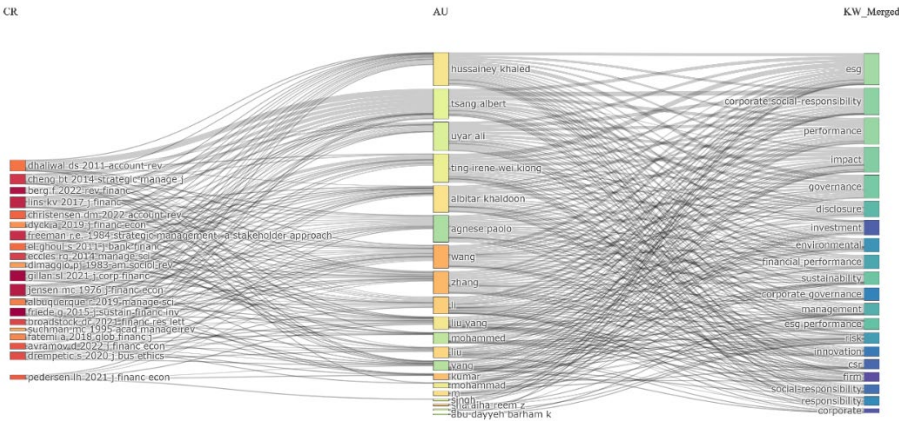


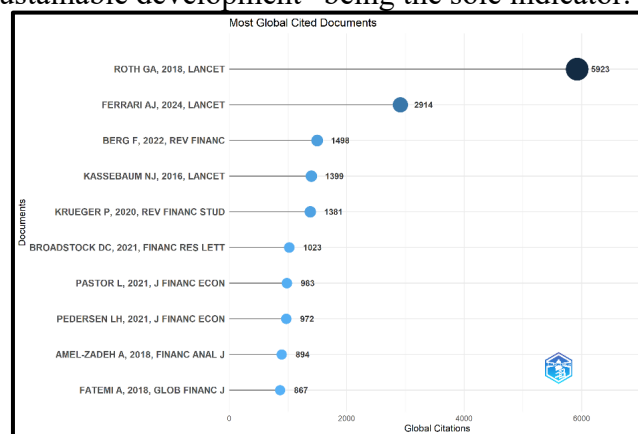
Figure 2. Annual Scientific Production obtained from WOS
Source: compiled by the author via Biblioshiny

The software also made it possible to identify the intellectual pillars through the authors and seminal works on sustainability, using a Sankey diagram, thereby illustrating the relationship between the most frequently cited references, the most active authors in the dataset, and relevant keywords. Therefore, we identify from Figure 3 key references such as the study by Dhaliwal et al. (2011), which confirms that the reporting and disclosure of sustainability reports reduces information asymmetry between management and investors, enabling a detailed assessment of the firm's risk profile and leading to lower compliance costs. The strong presence of this article confirms the grounding of the 9,000 articles in classical financial and management theories. Also, in second place is the study by Cheng et al. (2014), a study relevant to ESG scores, which highlights that companies with high scores face fewer barriers in accessing financing, as they are viewed as less risky due to high transparency, reduced agency risk, and alignment with long-term stakeholders. This is also confirmed by the presence of Freeman's (1984) stakeholder theory in the dataset, serving as the supreme theoretical pillar for ESG. Furthermore, the current thought leaders in the field of sustainability are authors Hussainey, Tsang, and Uyar, from whom strong connections originate, underscoring their relevance and importance.



Source: compiled by the author via Biblioshiny

The major themes found in the 9,000 articles are, of course, ESG factors and corporate social responsibility, which have the largest nodes. Additional central themes include economic or financial performance, the impact of sustainability, and governance. It can be observed that sustainability is no longer a voluntary or ethical concept, but one strongly anchored in the financial, economic, and reputational aspects of companies. The specialized literature focuses on researching the microeconomic impact of sustainability, identifying a few keywords that refer to the macroeconomic impact, with the term “sustainable development” being the sole indicator.



Source: compiled by the author via Biblioshiny

In addition, to help identify seminal works, Biblioshiny allows users to view the most cited seminal works, presented in Figure 4. The most cited document in the field of sustainability is medical study, but one that underpins Pillar S. This article highlights the analysis of life expectancy and causes of death worldwide, but it is important for academic studies in the field of sustainability due to its justification of public health policies as a driver of economic growth for measuring progress toward SDG 3, Good Health and Well-being.

In the third article in the diagram, author Berg (2022) is relevant to the academic community, presenting a critique of rating agencies. He highlights the issue of ESG scores. The literature notes a significant gap: for ESG factors, there are no specific indicators for each factor, only proxy indicators, which makes quantification and comparability between companies across different industries

problematic. Therefore, the authors demonstrate that rating agencies provide different ESG scores for the same companies. Conversely, Broadstock's (2021) research emphasizes that portfolios with high ESG scores were more resilient during the market crash caused by Covid-19 and in other periods of volatility, strengthening confidence in ESG scores contrary to Berg's (2022) research.

In order to create thematic maps, the most frequently used keywords in the specialized literature will be analyzed. As it can be seen in the figure, the thematic map is focused on the microeconomic environment. The words such as "ESG" (2,730 occurrences) and "corporate social responsibility" (1,678 occurrences) play a dominant role, marking the transformation from a philanthropic approach to one of reporting and measurement.

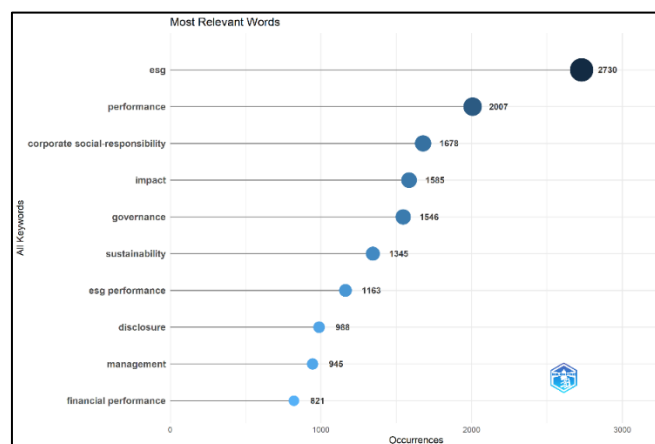


Figure 5. Most Frequent Words

Source: compiled by the author via Biblioshiny

Terms like "performance" and "financial performance" are also commonly used. This is because the academic interest is increasing to validate the hypothesis that integrating sustainability can drive financial and economic performance. The presence of terms such as "governance" denotes the integration of sustainability on a higher the macro level, specifically it acts as a link between impact and management—a trend particularly evident in the Asian region. This market has rigorous government regulations on sustainability and the mandatory requirement for companies to implement environmental governance practices.

The thematic map in Figure 6 clearly shows the polarization of the themes discussed in the study. The prominent cluster includes Corporate Social Responsibility, Impact, and Governance, thus proving the importance of the G pillar as the main driver of development in the indexed literature. The pink cluster, comprising the terms ESG, performance, and risk, hence, proves the thesis statement that sustainability is now viewed through the prism of financial pragmatism and resilience in the face of economic uncertainty. This demonstrates that integrating ESG strategies into corporate governance reduces the risk profile, making companies more attractive to investors, as confirmed by the research conducted by Subhani et al. (2025). Furthermore, the term "Innovation" is included in the green cluster, suggesting a link to social responsibility, which is essential in the context of sustainability. Emerging trends were recognized during the thematic evolution.

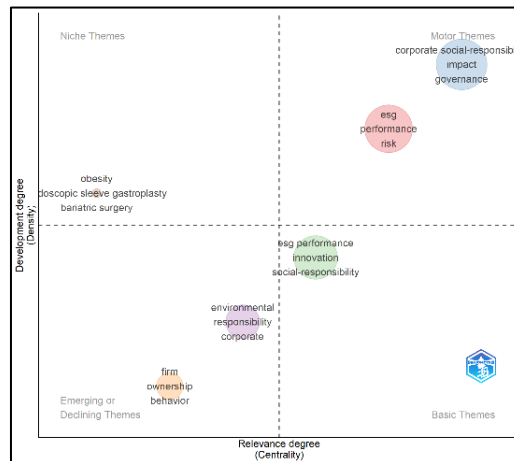


Figure 6. Thematic Map
 Source: compiled by the author via Biblioshiny

The thematic map highlights in Figure 6 a clear polarization in the research. The dominant cluster consists of Corporate Social Responsibility, Impact, and Governance, highlighting the importance of the G pillar as the primary driver of development in the indexed literature. The pink cluster, comprising the terms ESG, performance, and risk, also emerges as a driving theme, supporting the hypothesis that sustainability is now viewed through the lens of financial pragmatism and resilience in the face of economic uncertainty. This demonstrates that integrating ESG strategies into corporate governance reduces the risk profile, making companies more attractive to investors, as confirmed by the study by Subhani et al. (2025). Additionally, the word “Innovation” appears in the green cluster, suggesting a link to social responsibility, which is essential in the context of sustainability. Emerging trends were identified through thematic evolution.

For this analysis, a threshold was set in 2020, resulting in two important time spans, namely 2015 to 2020 (the post-adoption period of the 2030 Agenda) and the period 2021 to 2026 (the current period of accelerated implementation).

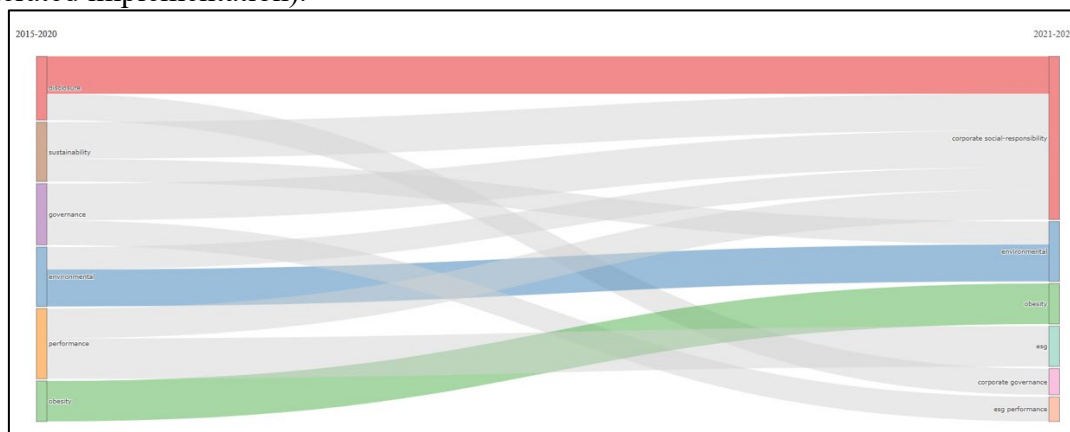


Figure 7. Thematic Evolution
 Source: compiled by the author via Biblioshiny

As indicated by Figure 7, the concept of “environmental” maintains a linear and constant trajectory between the two periods. This stability demonstrates that the environmental pillar remains a constant and unchanging priority in WoS literature, serving as a foundation for future studies. Similarly, the consolidation of the term “corporate social responsibility” is evident. Fundamental terms from the first period, such as “disclosure”, “sustainability”, and “governance”, converge heavily in the second period toward “corporate social responsibility”. An important branch extends from “performance” to

"ESG performance" and "ESG" (2021–2026), serving as clear evidence of a thematic shift from measuring performance, whether financial or economic, to the specific measurement of ESG performance. Thus, measurement and quantification become extremely relevant, with technical indicators taking priority.

Figure 8 demonstrates the trends emerging, revealing that the base period is from 2017 to 2021, wherein the social pillar becomes dominant, especially in medicine. The transition period takes place from 2021 to 2023 when sustainability starts being measured financially by discussing the investment opportunities in sustainable development through topics like ESG investments or portfolios that imply that sustainability impacts capital markets, and the research area moves from social pillars to economic ones. The contemporary period from 2023 to 2025 involves ESG technocracy and governance, where frequent topics include ESG, Performance, Innovation, and Corporate Social Responsibility (CSR). These topics incorporate other less frequent topics making the term "ESG" the norm. Some emerging areas include "Signaling" and "CSR Committee." "Signaling" can be considered an emerging niche due to the academic literature exploring whether ESG disclosure is a legitimate signal of the company's performance or just a form of greenwashing. "CSR Committee" is a more detailed form of the corporate governance pillar which focuses on internal organizational structures.

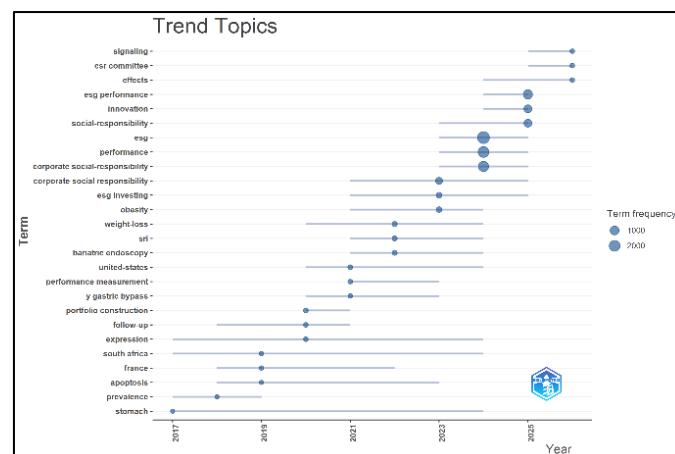


Figure 8. Trend Topics

Source: compiled by the author via Biblioshiny

The review of literature and bibliometric analysis helped confirm the validity of the initial research objectives. The fulfilment of the first objective was possible thanks to the discovery of an exponential growth of scientific production which is constantly accelerating and growing; this is a result of international motives which are being applied by institutions like the UN or the European Union through their directives. Moreover, the detection of the intellectual foundations of the domain has allowed concluding that the research carried out within the framework of sustainability continues to be based on theories of corporate governance, taking into consideration the microeconomic aspect rather than the macroeconomic one. It is proof that there is a shift in paradigms, since academics' interest has changed from discussing the theory to devising mechanisms for embedding sustainability in corporate governance by means of ESG, the rating agencies, and its effect on economic and financial performance, among others. It is evident that sustainability has become one of the key pillars of current business strategy.

Conclusions

The body of literature on sustainability continues to grow, with an organic development observed from 2015, following the Paris Agreement, to the present. There has been an increase in scientific

output and an evolution of core concepts, as well as the emergence of new concepts. Sustainability has evolved from the concept of corporate social responsibility, an act of goodwill and voluntary engagement, to a quantifiable concept that allows for performance measurement. Furthermore, while sustainability was characterized by a strong emphasis on the social pillar at the outset of the 2030 Agenda, the environmental and governance pillars are now central. Environmental initiatives adopted by companies provide them with a competitive edge and an attractive profile for all stakeholders. Integration of ESG aspects in corporate strategies reduces corporate risk, and innovation catalyzes this context. However, one of the main issues found in literature is related to the accuracy of ESG scores assigned by rating agencies. Empirical research supports the positive correlation between high ESG ratings and indicators such as market share, financial performance, and resilience during periods of economic volatility. Nevertheless, a critical dilemma persists in the literature regarding the validity and convergence of the metrics used to assess the consistency of these scores.

The main trend remains analysis at the microeconomic level rather than the macroeconomic level. Transparency in reporting remains the key element in research, even though many authors question whether voluntary disclosure is an act of honesty or a marketing ploy, and this line of research is a niche area that will soon gain ground. It is worth noting that the literature does not draw a clear geographical distinction between regions with higher or lower output of the studies in this field. The pioneers in research continue to refer to Asian countries, with strict government policies in the field of sustainability, while the European Union remains a pioneer in the legislative regulation of sustainability. In this regard, one research direction would be to clearly identify the countries that emphasize scientific output in the field of sustainability, a task complicated in this study due to the vast number of articles in the Web of Science. In this context, one of the possible future research directions might be to cluster countries according to their economic development, the implementation of governmental strategies, or legislation complexity. The future research should be directed at exploring the standardization of ESG indicators in order to fill the gaps mentioned in the critique of rating agencies' activities.

The limitations of this review can be attributed to the use of only the Web of Science database which prevents from seeing works published in other scientific databases. Another limitation might be associated with the period after 2015 when the term sustainability started to develop. In addition to this, there was a restriction in terms of selecting only English-language materials, which may not be representative of certain aspects.

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