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Decoupling in Sustainability Reporting: A Systematic Literature Review

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ABSTRACT

Decoupling in sustainability reporting raises concerns about the credibility of sustainability disclosures. This study conducts a bibliometric review of 74 articles from 44 journals indexed in the Web of Science up to 2023, tracking key trends. The findings reveal two phases in research: an erratic growth from 2012 to 2017, followed by a surge from 2018 to 2023, with almost half of the publications in the last two years. Regulatory frameworks, particularly Directive 2014/95/EU, have notably influenced decoupling practises. Researchers use different proxies to measure decoupling, diverse theoretical lenses and empirical approaches, with China emerging as the most studied country. This study identifies five main research streams: characterisation, drivers, mitigating factors, impacts, and alternative views. Complementary analysis of recent publications confirms this trend, with the largest number of articles being published in 2024. The study contributes to the debate on the implications of decoupling for corporate transparency and accountability.

1 | Introduction

As stakeholder expectations continue to evolve, companies face growing pressure to demonstrate their commitment to sustainable and ethical practises (Di and Li 2023; Eliwa, Aboud, and Saleh 2023). Consequently, corporate social responsibility (CSR) has become a key element of 21st century business, not only as a way to mitigate reputational and legal risks but also as a means to create long-term value (Tăchiciu et al. 2020). Reporting plays a crucial role in CSR, allowing companies to communicate their efforts and achievements in key areas such as environmental management, social equity and corporate governance. As a result, the disclosure of environmental, social, and governance (ESG) information has significantly expanded in recent decades, driven by growing stakeholder demand for greater transparency regarding companies' environmental and social impacts (Hyatt and Berente 2017).

By disclosing information about their sustainability initiatives and performance, companies can not only increase their accountability to stakeholders but also shape how they are perceived (Crilly et al. 2016; Eliwa, Aboud, and Saleh 2023). ESG disclosure has thus become a strategic tool for companies seeking to manage stakeholder impressions and build and maintain a positive reputation, particularly in an era where corporate responsibility is increasingly valued (Du and Wu 2019; Bothello et al. 2023). Unlike financial reporting, which is heavily regulated and must adhere specific standards, sustainability reporting often allows for more flexibility in terms of content and presentation. Moreover, the subjectivity and qualitative nature

[Correction added on 25 April 2025, after first online publication: Affiliation 1 has been updated in this version.]

TABLE 1 | Definitions of decoupling in sustainability reporting.

Source	Definition
Crilly et al. (2012, p. 1429)	'A form of calculated deception'
Contreras-Pacheco et al. (2021, p.34)	'Disconnection between appearance and reality or more precisely as a process of detachment of what is declared from what is real'
García-Sánchez et al. (2022, pp. 118-119)	'The difference between what is being portrayed in CSR reports and what firms are actually doing'
Zhang (2022b, p. 620)	'The gap between how a firm communicates CSR (e.g., CSR reports) and its actual CSR performance'
He et al. (2023, p.1859)	'Misalignment between how firms report CSR and what firms actually practise with respect to CSR'

Source: Own elaboration.

of ESG information enables companies to construct narratives that may enhance their public image without necessarily reflecting actual changes in their business practises (Hawn and Ioannou 2016; Zhang 2022b).

Many companies exploit the flexibility and qualitative nature of ESG information to highlight their achievements while concealing their shortcomings, often making broad, vague, and at times misleading claims about their sustainability efforts (Marquis, Toffel, and Zhou 2016; García-Sánchez et al. 2022). As a result, firms may project an image of sustainability and social responsibility to meet stakeholder expectations and improve their reputation, even when their operations do not align with their stated goals (Yu, Luu, and Chen 2020). This discrepancy is known as decoupling (Walker and Wan 2012; Sauerwald and Su 2019), and it not only undermines stakeholder trust (Bothello et al. 2023) by fostering scepticism and scrutiny of ESG disclosures but can also have wider consequences (Zhang 2022b; Di and Li 2023). Furthermore, it can lead to public and regulatory complacency (Pizzi et al. 2023), limiting the potential for ESG reporting to serve a catalyst for genuine, positive change in both business practises and society at large.

Decoupling in sustainability reporting has emerged as a growing concern in both business world and academia, as it raises questions about the true effectiveness of CSR initiatives and the credibility of sustainability reporting (Talpur, Nadeem, and Roberts 2023). Academic attention to this phenomenon has intensified in recent years, with researchers seeking to understand its underlying causes and effects (Shahab et al. 2022; Velte 2023) and developing mechanisms to assess the accuracy of sustainability reporting. Understanding how researchers have approached decoupling, what issues have been explored, and what gaps remain is essential for advancing knowledge on this subject. Accordingly, there is a need for an updated literature review on decoupling in sustainability reporting to provide a comprehensive overview of the current state of research and its evolution on over time.

In recent years, bibliometric analyses have become a popular method for examining, organising and evaluating academic production on specific topics (Monteiro et al. 2021; Enciso-Alfaro & García-Sánchez, 2023). This study aims to contribute to the literature by conducting a bibliometric analysis and review of research on decoupling in sustainability reporting, offering a foundation for advancing the field in new and fruitful directions. Specifically, we aim to address two main questions: (1) What are the publication trends in research on decoupling in sustainability reporting? and (2) What is the knowledge structure of this research area? To answer these questions, we conduct a systematic literature review of papers on decoupling in sustainability reporting published in journals indexed in the Web of Science (WoS) database up to 2023.

Thus, this study contributes to the literature by identifying publication trends (e.g., temporal patterns, key journals, leading researchers, most cited papers, and main research keywords) and the knowledge structure (e.g., theoretical frameworks, methodologies, proxies, and topics) in research on decoupling in sustainability reporting. By critically analysing the research that has been conducted on this topic, the findings of this study offer a systematic overview of the current state of the literature, highlighting key characteristics, research designs, and existing gaps, thus providing valuable guidance for future research.

The paper is structured as follows. Following this introduction, the next section offers a conceptualisation of decoupling in sustainability reporting. The third section outlines the research methodology. The fourth section presents and discusses the results. The fifth section reports two complementary analyses of articles published in journals indexed in the Scopus database and those published in the WoS database in 2024. Finally, the last section summarises the main conclusions, discusses the implications of the findings, presents the study's limitations, and suggests avenues for future research.

2 | Conceptualising Decoupling in Sustainability Reporting

In the context of sustainability reporting, decoupling refers to the discrepancy between the socially responsible and sustainable image that companies project through their reports and public communications, and their actual CSR performance (Delmas and Burbano 2011; Sauerwald and Su 2019). This concept is grounded in organisational theory, particularly in the seminal work of Meyer and Rowan (1977), which explored

the separation between formal structures and actual practises within organisations. Table 1 provides definitions of decoupling in sustainability reporting.

Although this phenomenon can manifest in various ways, the two main forms are greenwashing and brownwashing (Testa et al. 2018; Falchi, Grolleau, and Mzoughi 2022; Amores-Salvadó, Martin-de Castro, and Albertini 2023). Both types of decoupling are closely related to impression management, a strategy by which companies seek to influence stakeholder perceptions of their actions (Higgins, Tang, and Stubbs 2020; García-Sánchez et al. 2022). These practises not only erode public trust and credibility but also present significant ethical and regulatory challenges to achieving a genuine transition towards corporate sustainability (Kurpierz and Smith 2020; Pizzi et al. 2023).

Greenwashing occurs when a company exaggerates or distorts its environmental and social practises in public disclosures to project a more sustainable image than is warranted (Kim and Lyon 2015). This may involve ambiguous or unclear claims, the use of vague terms, or non-standardised metrics to create a positive image without providing substantive evidence of real efforts. In more severe cases, companies may manipulate data to present improvements that are not supported by actual changes in their operations. The underlying motivation for greenwashing is often to project a favourable image to stakeholders, without making significant internal changes (Kim and Lyon 2015).

Conversely, brownwashing refers to companies that have strong CSR performance but provide little or insufficient disclosure about their activities and achievements in this area, thus downplaying their own sustainable initiatives (Kim and Lyon 2015; Huang, Francoeur, and Brammer 2022; Wei 2023). Companies may adopt this practise for various reasons, including avoiding additional scrutiny, minimising future expectations, or even corporate modesty (Montgomery and Robertson 2022).

3 | Method

3.1 | Data Collection

The review process begins with the identification of papers selected from the WoS database, which includes the most impactful academic journals (Monteiro et al. 2021) and has been widely used in bibliometric analyses and literature reviews on CSR and CSR information disclosure (Akhavan et al. 2016; Cillo et al. 2019). As search criteria, we defined the following combination of keywords typically used in research on this topic (Talpur, Nadeem, and Roberts 2023; Velte 2023), which had to appear in the title, keyword list, or abstract of the papers:

'Sustainability report*' OR 'ESG report*' OR 'Non-financial report*' OR 'NFR' OR 'Non-financial information' OR 'NFI' OR 'integrated report*' OR 'Corporate report*' OR 'CSR report*' OR 'CSR disclosure*' OR 'ESG disclosure*' OR 'Sustainability disclosure*' OR 'Non-financial disclosure*' AND 'CSR decoupling' OR 'ESG decoup*' OR 'CSR washing' OR 'greenwashing' OR 'brownwashing' OR 'ESG gap' OR 'CSR gap' OR 'CSR hypocrisy' OR 'CSR walk and talk'.

These keywords were identified following the strategy proposed by Monteiro et al. (2021): we selected several journals known to publish articles on sustainability reporting (e.g., Corporate Social Responsibility and Environmental Management, Journal of Cleaner Production, Business Strategy and the Environment, Journal of Business Ethics or Sustainability) and searched for articles related to decoupling in sustainability reporting. Based on these articles, we compiled a list of commonly used keywords, which was refined after several tests.

The analysis period covers papers published up to 2023, and only those published in English were considered. The initial search yielded a sample of 165 publications. In the next step, several filters were applied (Monteiro et al. 2021; Talpur, Nadeem, and Roberts 2023). Specifically, we excluded reviews (12 papers), conference proceedings (3 papers), and early view articles (17 papers), to ensure that all the papers had a publication date no later than 2023, as some journals have long publication lead times.

After reviewing the titles and abstracts of the remaining articles, we discarded those that did not focus on ESG decoupling and non-financial reporting (25 articles). Additionally, all articles from 2024 (34 articles) were excluded. The final sample consisted of 74 articles. The paper selection process is summarised in Figure 1.

3.2 | Analytical Methodology

Following Enciso-Alfaro and García-Sánchez (2023), the selected papers were analysed using VOSviewer version 1.6.17 and CiteSpace version 6.1.R1. These software tools allow for the graphical representation of bibliometric patterns in an easily interpretable way, enabling the identification of changes and emerging trends within academic fields.

4 | Results

4.1 | Publication Trends

4.1.1 | Time Evolution

Figure 2 illustrates the trend of publications on decoupling in sustainability reporting over time. As shown, research on this topic began in 2012. Its development over time can be divided into two phases. The first phase covers the initial six years

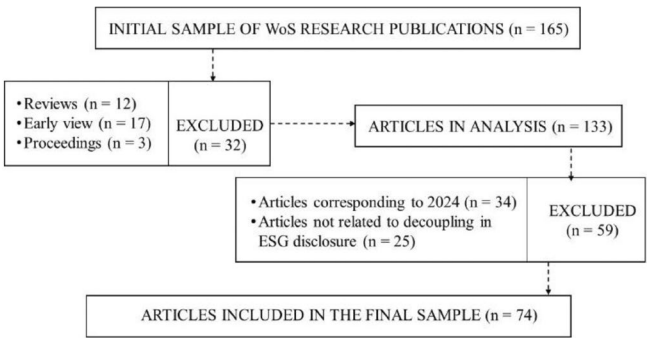

FIGURE 1 | Sample selection process. *Source:* Own elaboration.

(from 2012 to 2017) and exhibits an erratic trend, with fluctuations in the number of published articles. The second phase, spanning from 2018 to 2023, is characterised by a significant increase in publications, with a notable surge in the last two years (2022 and 2023), during which nearly half of all articles on the topic were published.

The earliest papers in the sample are by Walker and Wan (2012), Crilly, Zollo, and Hansen (2012), and Lim and Tsutsui (2012). Walker and Wan (2012) focused on the environmental reporting of Canadian firms, analysing the financial implications of decoupling by distinguishing between symbolic and substantive environmental disclosures. Their findings were explained through institutional and signalling theory. Lim and Tsutsui (2012), using an international sample and drawing on institutional and political economy theory, examined how institutional pressures influence the adoption of ceremonial versus substantive CSR. Crilly, Zollo, and Hansen (2012) analysed the variation in firms' responses to institutional pressures, exploring whether the factors that explain decoupling in sustainability reporting change with the external pressures companies face.

The years 2013, 2014 and 2015 saw only one study each. Mahoney et al. (2013), applying signalling theory lens, compared the decoupling in CSR performance between US firms that issue CSR reports to those firms that do not. Marquis and Qian (2014), grounded in institutional theory, examined how government monitoring affects the extent to which Chinese firms engage in decoupling in sustainability reporting. In 2015, Kim and Lyon (2015) explored the potential determinants influencing US firms' decisions to engage in greenwashing versus brownwashing when reporting on greenhouse gas emissions reductions.

FIGURE 2 | Publications time trend. *Source:* Data collected from WoS database using VOSviewer.

Four studies were published in 2016. Marquis, Toffel, and Zhou (2016), using institutional theory, examined the organisational and institutional drivers of decoupling in sustainability reporting in an international sample. Schons and Steinmeier (2016) applied neo-institutional theory and stakeholder theory to explore the relationship between a firm's financial performance and its CSR actions, whether symbolic or substantive. Hawn and Ioannou (2016) similarly examined impact of decoupling in sustainability reporting on market value. Finally, through a qualitative study, Thijssens, Bollen, and Hassink (2016) analysed the organisational factors that shape how six Dutch companies manage sustainability disclosures, observing that half of the firms engaged in decoupling despite being ranked highly first in two sustainability reporting benchmarking.

In 2017, the number of published articles dropped again, with only one study published. Luo, Wang, and Zhang (2017), using institutional theory, identified decoupling in sustainability reporting as a response by Chinese listed firms to conflicting demands from central and local governments. However, starting in 2018, the number of published studies began to rise, coinciding with the first year that European companies within the scope of Directive 2014/95/EU were required to report sustainability information for the 2017 financial year. By 2023, 18 articles had been published. During this period, the research topics diversified, although studies on the impact of regulation on decoupling were predominant (e.g., Di Marco et al. 2023; Islam et al. 2021; Ryan and Turner 2021; Khan

TABLE 2 | Number of journals publications with more than 2 articles.

Journal	TP	TC	TLS	Web of Science core collection	JIF quartile
Business Strategy and the Environment	10	359	1098	SSCI	Q1
Corporate Social Responsibility and Environmental Management	6	292	763	SSCI	Q1
Journal of Business Ethics	5	554	443	SSCI	Q1
Journal of Cleaner Production	4	285	336	SSCI	Q1
Sustainability	3	84	237	SSCI	Q2
Organization Science	3	1722	401	SSCI	Q1
Business Ethics, the Environment & Responsibility	2	65	267	SSCI	Q2
Academy of Management Journal	2	794	195	SSCI	Q1
Strategic Management Journal	2	318	295	SSCI	Q2
Journal of Applied Accounting Research	2	32	401	ESCI	Q1
Australasian Accounting Business and Finance Journal	2	5	144	ESCI	Q3

Abbreviations: TP—Total publications; TC—Total Citations; TLS—Total Link Strength; JIF quartile—Journal Impact Factor Quartile 2023; SSCI—Social Sciences Citation Index; ESCI—Emerging Sources Citation Index.
Source: Data collected from WoS database using VOSviewer.

TABLE 3 | Publications per author.

Author	TP	TC	TLS
Nazim Hussain	6	277	2250
Isabel-Maria Garcia-Sanchez	3	190	1242
Sana Akbar Khan	3	122	1283
Ammar Ali Gull	3	110	957
Christopher Marquis	2	1415	130
Ioannis Ioannou	2	318	353
Jennifer Martinez-Ferrero	2	139	908
Yasir Shahab	2	73	513
Rizwan Mushtaq	2	58	432
Weiqi Zhao	2	37	679
Ma Zhong	2	37	679
Muhammad Nadeem	2	33	796
Marcus Conrad	2	19	1174
Dirk Holtbruegge	2	19	540

Abbreviations: TP—Total Publications; TC—Total Citations; TLS—Total Link Strength.
Source: Data collected from WoS database using VOSviewer.

TABLE 4 | Institutional affiliation of articles.

Organization (country)	TP	TC	TLS
Groningen University (Netherlands)	7	296	503
Lyon Catholic University (France)	5	226	1609
Salamanca University (Spain)	4	212	1418
Ecole Supérieure des Sciences Commerciales d'Angers (France)	4	129	490
London Business School (United Kingdom)	3	762	2144
Michigan University (USA)	3	656	251
Vietnam National University (Vietnam)	3	87	1621
Harvard University (USA)	2	1415	1103
York University (United Kingdom)	2	367	379
South Carolina University (USA)	2	301	644
Massachusetts Lowell University (USA)	2	282	232
Capital University of Economics and Business (China)	2	87	3563
Xijing University (China)	2	73	362
Mansoura University (Egypt)	2	61	330
Aberdeen University (United Kingdom)	2	59	1562
Rennes School of Business (France)	2	45	357
Nanjing Forestry University (China)	2	37	2027
China University of Mining and Technology (China)	2	24	511
Massey University of New Zealand (New Zealand)	2	11	136

Abbreviations: TP—Total publications; TC—Total citations; TSL—Total Link Strength.
Source: Data collected from WoS database using VOSviewer.

and Lockhart 2022; Wahab, Rahin, and Mustapha 2022; Zhao et al. 2022; Pizzi et al. 2023; Tang et al. 2023). In addition, extensive analyses were conducted on the determinants (e.g., Hyatt and Berente 2017; Sauerwald and Su 2019; Tashman, Marano, and Kostova 2019; Yu, Luu, and Chen 2020; García-Sánchez et al. 2020, 2022; Parra-Domínguez, David, and Azevedo 2021; Huang, Francoeur, and Brammer 2022; Ruiz-Blanco, Romero, and Fernandez-Feijoo 2022; Zhang 2022a; Zhang 2022b; Eliwa, Aboud, and Saleh 2023; Gull et al. 2023a, 2023b, 2023c) and the effects of decoupling in sustainability reporting (e.g., García-Sánchez et al. 2021).

4.1.2 | Journals

The sample comprises 74 papers published across 44 journals. Of these, 11 journals feature more than two publications (Table 2), while 33 have only one paper on the topic. Two journals stand out: Business Strategy and the Environment, with 10 articles, and Corporate Social Responsibility and Environmental Management, with 6 articles. These are followed by the Journal of Business Ethics with 5 articles, and the Journal of Cleaner Production with 4 papers. Both Organisation Science and Sustainability recorded 3 articles each, while five journals published 2 articles on the topic (Academy of Management Journal, Strategic Management Journal, Business Ethics the Environment & Responsibility, Journal of Applied Accounting Research and Australasian Accounting Business and Finance Journal).

Table 2 also highlights the Journal Impact Factor (JIF) quartile for 2023. As shown, the majority of these journals are indexed in the Social Sciences Citation Index (Journal Citation Reports), indicating the high quality of research on the subject. Only two journals, Journal of Applied Accounting Research and Australasian Accounting Business and Finance Journal, are listed in the Emerging Sources Citation Index. In terms of citations, Organisation Science leads with 1722 citations, followed by the Academy of Management Journal with 794, and the Journal of Business Ethics with 554. All other journals have fewer than 400 citations.

4.1.3 | Authors' Productivity and Impact

A total of 205 authors have contributed to the literature on this topic. Most papers are co-authored, with an average of 3.0 authors per paper. As shown in Table 3, Nazim Hussain is the most prolific contributor to the literature on decoupling in sustainability reporting, with 6 publications. He is followed by Isabel-Maria García-Sánchez, Sana Akbar Khan, and Ammar Ali Gull,

each with 3 publications. Christopher Marquis emerges as the most cited author, with approximately 1415 citations, followed by Ioannis Ioannou and Nazim Hussain.

4.1.4 | Authors' Affiliation

Regarding author affiliation, 148 institutions are represented in the dataset. As shown in Table 4, the University of Groningen (Netherlands) stands out, followed by the Catholic University of Lyon (France). In third place are the University of Salamanca (Spain) and the Ecole Supérieure des Sciences Commerciales d'Angers (France), followed by the London Business School (United Kingdom), Michigan University (USA) and Vietnam National University (Vietnam).

As illustrated in Figure 3, the institutions are geographically dispersed, with a strong concentration in Europe (50%), followed by North America (23%), Asia (17%), Oceania (6.80%), Africa (2.50%) and South America (1%). Most institutions are based in developed countries (78.28%); however, it is noteworthy that 32 universities from developing countries contribute to the dataset (21.72%).

In terms of researcher's country or region of origin (Figure 4), the USA leads with 20 papers, followed by France (12), England (11), Spain (9), Canada and the Netherlands (8 each), New Zealand (6), and Germany, Scotland and Australia (3 each). Finland, Italy, Portugal and Sweden each account for 2 papers. The higher research output from developed countries can be attributed to better access to funding, databases, and international collaborations, which facilitate the production of rigorous studies. Nevertheless, some developing countries are also well-represented, such as China (second with 15 papers), Vietnam (3 papers), Egypt and Pakistan (2 papers each), accounting for 20% of the publications on the topic.

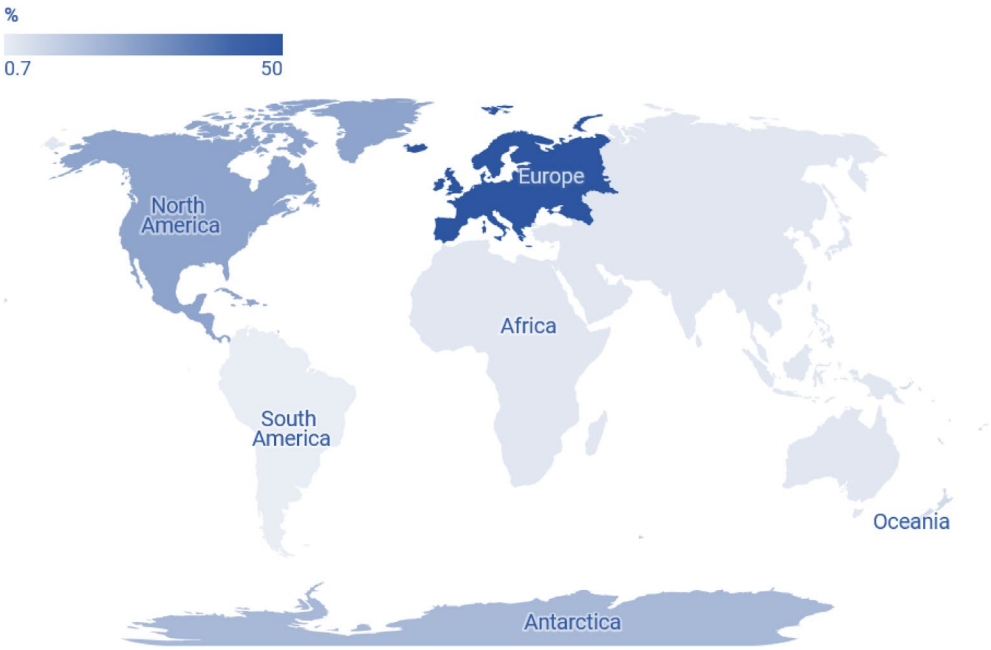

FIGURE 3 | Distribution of authors' institutions by continent. *Source:* Own elaboration.

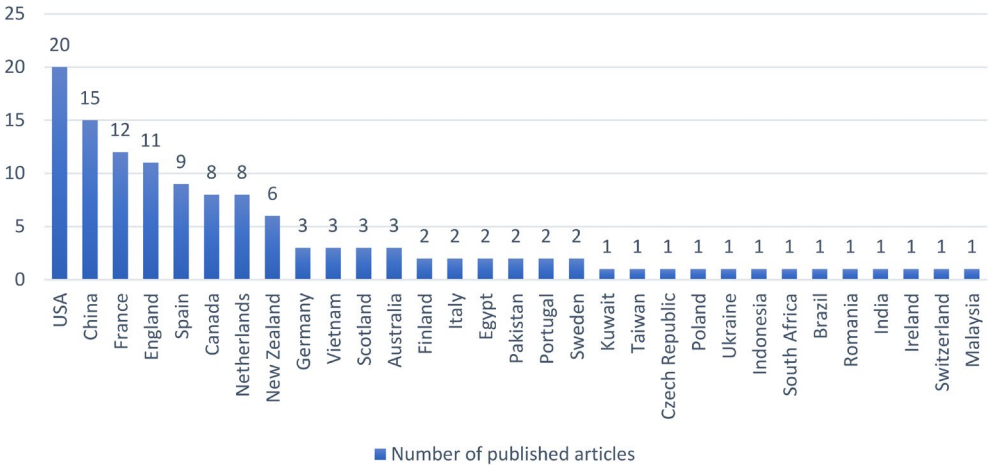

FIGURE 4 | Publications per country/region of origin of researchers. *Source:* Data collected from WoS database using VOSviewer.

4.1.5 | Most Impactful Articles

Citation analysis helps measure the impact of articles on decoupling in ESG reports. Table 5 lists the ten most cited papers. The most highly cited article is Marquis and Qian (2014), with 977 citations—more than double the count of the second most cited paper, Crilly, Zollo, and Hansen (2012). In third and fourth place are Marquis, Toffel, and Zhou (2016) with 438 citations, and Walker and Wan (2012) with 422 citations. Luo, Wang, and Zhang (2017) rounds out the top five with 350 citations.

4.1.6 | Keywords

Figure 5 displays the most frequently used keywords in articles on decoupling in ESG reporting. The most common keywords include 'CSR', 'performance', 'greenwashing', and 'decoupling', which are particularly prominent in papers published between 2020 and 2022 (in orange and red, respectively). Older studies (2017–2019) (in green) frequently used terms such as 'impression management', 'institutional theory', and 'organisation', while earlier papers (2012–2016) (in dark and light blue) favoured keywords like 'zdiffusion' and 'self-regulation'. The most recent keywords (in red) include 'brownwashing', 'woman' and 'corporate'.

4.2 | Knowledge Structure

4.2.1 | Main Theories

Researchers studying decoupling in sustainability reporting have drawn upon a variety of theoretical frameworks. The most common include institutional theory, neo-institutional theory, agency theory, legitimacy theory, signalling theory, and stakeholder theory, each offering distinct perspectives on the motivations, drivers, and consequences of sustainability reporting decoupling. In many studies (e.g., Thijssens, Bollen, and Hassink 2016; Norberg 2018; Testa et al. 2018), these theories are used complementarily to provide a more comprehensive understanding of the dynamics behind decoupling. This multi-theoretical approach allows researchers to explore the phenomenon more deeply, capturing the complexity of interactions between organisations and their environment, and offering a more robust explanation.

As shown in Table 6, most studies employed a single theoretical framework (33 articles, 44.6%), while 14.9% (11 articles) use multiple theories, and 30 articles (40.54%) do not specify a theoretical framework. The most frequently used theory is institutional theory: 17.6% of the articles use it as the sole theoretical lens, and 5.5% apply it in combination with other frameworks (e.g., Crilly, Zollo, and Hansen 2012; Walker and Wan 2012; Marquis and Qian 2014; Luo, Wang, and Zhang 2017). This prevalence is likely due to its focus on explaining how organisations respond to external pressures and seek to legitimise their actions. According to institutional theory, companies disclose ESG information not only out of a genuine desire to meet stakeholders' informational needs and enhance transparency, but also to conform to the normative, cultural and social expectations of their institutional environment. This allows them to maintain and reinforce their legitimacy, even if they do not fully integrate CSR principles into their daily operations, enabling them to balance stakeholder expectations and internal operational realities.

Neo-institutional theory and agency theory are the second most frequently applied frameworks. Neo-institutional theory builds on traditional institutional theory, introducing a more dynamic and nuanced view of how organisations interact with their institutional environment. It emphasises the complexity and variability of these interactions, helping to explain why firms adopt and communicate CSR practises to stakeholders (Tashman, Marano, and Kostova 2019; Bothello et al. 2023; Li et al. 2023). Agency theory, meanwhile, focuses on potential conflicts of interest and information asymmetries between principals and agents, exploring mechanisms by which principals can ensure that agents act in their best interests. This theory has been employed to examine how decoupling in sustainability reporting can be reduced (Sauerwald and Su 2019; García-Sánchez et al. 2020; Gull et al. 2023a) and how corporate transparency in relation to CSR can be improved.

Legitimacy theory is the third most commonly applied theoretical framework in the study of decoupling in sustainability reporting. This theory posits that companies seek to enhance their legitimacy by disclosing ESG data that projects an image of responsibility and commitment to sustainability, without necessarily making substantial changes to their operational practises. By selectively disclosing their sustainability and social responsibility practises, companies can build and maintain legitimacy (Thijssens, Bollen, and Hassink 2016; Martins, Gomes, and Branco 2021; García-Sánchez et al. 2022). Legitimacy theory thus explains why companies may choose to decouple their disclosed and actual performance, emphasising the role of public perception and social acceptance in organisational survival and success.

Other theoretical frameworks frequently used in research on decoupling in sustainability reporting include stakeholder theory (e.g., Testa et al. 2018; Ryan and Turner 2021; Al-Shammari, Al-Shammari, and Banerjee 2022), signalling theory (e.g., Thijssens, Bollen, and Hassink 2016; Papoutsi and Sodhi 2020) and, more recently, upper echelons theory (e.g., Eliwa, Aboud, and Saleh 2023; Wang et al. 2023).

4.2.2 | Research Methods

Regarding the type of studies, Table 7 shows that empirical studies (65 articles, 87.8%) predominate over theoretical ones (9 articles, 12.2%). Among the empirical studies, quantitative research methods are the most common (77%), followed by qualitative methods (8.1%) and mixed methods (2.7%). Researchers use quantitative methods to identify the determinants of decoupling and measure its impact across various organisational and market dimensions. The data is mainly obtained through content analysis (e.g., Pimonenko et al. 2020; Conrad and Holtbrügge 2021; Islam et al. 2021; Zharfpeykan 2021; Sterbenk et al. 2022). The most frequently used data sources are the Refinitiv database (17 articles) and the Bloomberg database (12 articles). Qualitative methods include case studies based on semi-structured interviews and documentary reviews (e.g., Kougiannou and Wallis 2020; Li and Wu 2020; Negash and Lemma 2020).

TABLE 5 | Top 10 cited articles.

RO	Author/s	Year	Title	Journal	TC	TLS
1	Marquis, C; Qian, CL	2014	Corporate social responsibility reporting in China: symbol or substance?	Organization Science	977	20
2	Crilly, D; Zollo, M; Hansen, MT	2012	Faking it or muddling through? Understanding decoupling in response to stakeholder pressures	Academy of Management Journal	444	16
3	Marquis, C; Toffel, MW; Zhou, YH	2016	Scrutiny, Norms, and Selective Disclosure: A Global Study of Greenwashing	Organization Science	438	26
4	Walker, K; Wan, F	2012	The harm of symbolic actions and green washing: corporate actions and communications on environmental performance and their financial implications	Journal of Business Ethics	422	19
5	Luo, XR; Wang, DQ; Zhang, JJ	2017	Whose call to answer: institutional complexity and firms' CSR reporting	Academy of Management Journal	350	14
6	Mahoney, LS; Thorne, L; Cecil, L; LaGore, W	2013	Research notes on standalone corporate social responsibility reports: Signalling or greenwashing?	Critical Perspectives on Accounting	328	8
7	Kim, EH; Lyon, TP	2015	Greenwash vs. Brownwash: exaggeration and undue modesty in corporate sustainability disclosure	Organization Science	307	24
8	Hawn, O; Ioannou, I	2016	Mind the gap: The interplay between external and internal actions in the case of corporate social responsibility	Strategic Management Journal	299	17
9	Yu, EPY; Van Luu, B; Chen, CH	2020	Study mechanisms to lessen firms' greenwashing behaviour in ESG dimensions holistically	Research in International Business and Finance	289	10
10	Tashman, P; Marano, V; Kostova, T	2019	Walking the walk or talking the talk? Corporate social responsibility decoupling in emerging market multinationals	Journal of International Business Studies	236	234

Abbreviations: TC—Total citations; TLS—Total Link Strength.
Source: Data collected from WoS database using VOSviewer.

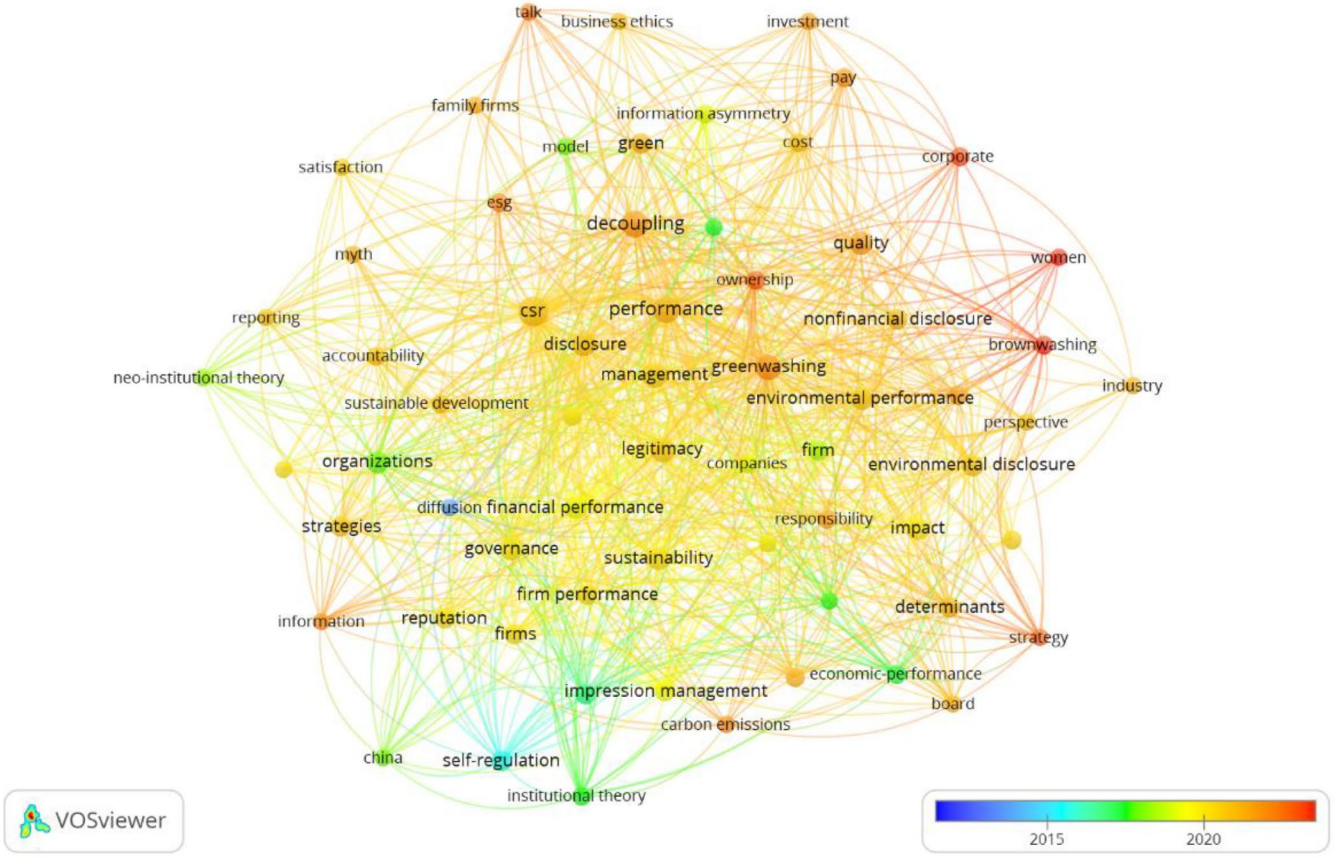

FIGURE 5 | Keywords occurrence. *Source:* Data collected from WoS database using VOSviewer.

Most of the papers focus on listed companies (58 articles, 78.4%), although some analyse both listed and unlisted companies (6 articles, 8.1%), and one paper focuses on family-owned companies. The analysis period spans from 1996 to 2020. Most studies (77%) are longitudinal, with a predominant timeframe from 2002 to 2017. In terms of the type of report analysed, most studies (53.4%) examine various types of reports, such as CSR reports, integrated reports, and annual reports as well as company websites. However, some studies (e.g., Hora and Subramanian 2019) focus on press releases.

4.2.3 | Countries/Regions Studied

In terms of the countries/regions where the companies are based (Table 8), most studies focus on a single country or region (34 articles, 45.9%), primarily China (12 articles, 16.2%), followed by the USA (11 articles, 14.9%), while 43.2% of the articles take an international perspective with samples from multiple countries. The prominence of studies on China can be attributed to the integration of Chinese companies into international markets and their crucial role in global supply chains, which has sparked researchers' interest in how Chinese companies respond to increasing expectations and pressure from global stakeholders to adopt sustainable and transparent practises. The size and diversity of the Chinese business sector also provide significant research opportunities. Despite China's importance, most research on decoupling in sustainability reporting has focused on developed countries (European countries, Australia and Canada), where companies face greater stakeholder pressure to adopt sustainability and transparency practises, leading them to be more proactive in disclosing their sustainability initiatives.

4.2.4 | Decoupling Proxies

Researchers have used different proxies to measure decoupling. Hawn and Ioannou (2016) developed a proxy based on the absolute difference between a firm's internal (policies) and external (disclosures) CSR actions, measured by dummy variables constructed from selected ESG items in the Asset4 database (Refinitiv). This measure has been used in the studies by García-Sánchez et al. (2020); Parra-Domínguez, David, and Azevedo (2021); Zhao et al. (2022); Gull et al. (2023c); Bothello et al. (2023); and Tang et al. (2023). However, as noted by Velte (2023), this proxy may lead to multicollinearity problems. Additionally, he cautions that changes to ESG items in the Refinitiv database may require a reassessment of the items used in the Hawn and Ioannou (2016) proxy in any new studies based on this measure.

Some authors combine two databases to construct their decoupling proxy. For example, Yu, Luu, and Chen (2020) quantified decoupling through a firm's peer-relative greenwashing score, calculated by comparing a firm's relative position compared to its peers in the Bloomberg ESG Disclosure Score distribution with its relative position in the modified Asset4 ESG performance score distribution. Di and Li (2023) adopted a similar

approach, using ESG performance data from Huazheng. García-Sánchez et al. (2021) measured decoupling by comparing the Bloomberg ESG disclosure scores with the KLD performance scores. Gull et al. (2023a, 2023b) calculated decoupling by subtracting a firm's ESG performance score from the Asset4 database (Refinitiv) from the Bloomberg ESG disclosure score. Higher scores indicate greater decoupling, while negative scores indicate better ESG performance than reported. Similarly, Eliwa, Aboud, and Saleh (2023) calculated ESG decoupling as the absolute difference between a firm's ESG performance score (from the Refinitiv ESG database) and its Bloomberg ESG disclosure score.

Sauerwald and Su (2019) measured decoupling as the difference between the optimistic tone of a firm's CSR report and its corporate social performance (CSP). The optimistic tone is derived from the proportion of positive and negative words in the CSR report, while CSP is quantified using data from the KLD database. Both measures are standardised to z-scores, and their difference indicates the degree of decoupling, with higher scores reflecting greater discrepancies between reported and actual ESG performance. Zhang (2022a) followed the same approach, though the data on CSR performance is obtained from Hexun.com.

Other authors, such as Walker and Wan (2012), manually coded symbolic and substantive actions using information from the websites of the top 100 Canadian firms, calculating decoupling as the difference between these two measures. Marais, Reynaud, and Vilanova (2020) used a similar approach in their case study of Danone, analysing internal data, press releases, and corporate reports. Islam et al. (2021) also coded the annual and CSR reports of the top 100 firms listed on the London Stock Exchange.

TABLE 6 | Theoretical frameworks.

Theory application	TP	%
Single theory	**33.00**	**44.6%**
Institutional theory	13.00	17.6%
Neo-institutional theory	5.00	6.8%
Agency theory	5.00	6.8%
Legitimacy theory	4.00	5.4%
Signalling theory	2.00	2.7%
Stakeholder theory	2.00	2.7%
Upper echelon theory	2.00	2.7%
No theory	**30.00**	**40.5%**
Multi-theory	**11.00**	**14.9%**
Institutional and signalling	2.00	2.7%
Institutional and legitimacy	1.00	1.4%
Institutional, stakeholder and agency	1.00	1.4%
Legitimacy and neo-institutional	1.00	1.4%
Neo-institutional and stakeholder	1.00	1.4%
Neo-institutional, signalling and legitimacy	1.00	1.4%
Signalling and legitimacy	1.00	1.4%
Stakeholder and legitimacy	1.00	1.4%
Stakeholder and signalling	1.00	1.4%
Stakeholder, legitimacy and signalling	1.00	1.4%
Total	**74.00**	**100.0%**

Abbreviation: TP—Total publications.
Source: Own elaboration.

4.3 | Themes Analysed

4.3.1 | Bibliographic Coupling

Using co-citation clustering, we applied CiteSpace software to explore research clusters based on keywords and examine their frequency to identify key terms used by authors (Chen 2006). This analysis produced 294 nodes (key terms) with 1236 academic links related to decoupling in sustainability reporting. The key terms are displayed in Figure 5, which highlights the most frequently used research terms from articles with over 20 citations. Following Enciso-Alfaro and García-Sánchez (2023), clusters with fewer than 20 keywords were excluded. As a result, the program identified seven clusters, generated using the log-likelihood ratio clustering algorithm. Cluster size is determined by the number of articles in a cluster, with clusters ranging from 0 to 6 and the number of articles it contains, ranging from 52 to 20 articles per cluster (Table 9).

The silhouette, ranging from 0 to 1, reflects the level of uncertainty in defining the core of each cluster (Issah and Rodrigues 2021), with higher values indicating stronger consistency within clusters. In our case, all clusters received scores near 1, indicating that articles were accurately grouped. The top research terms or clusters

TABLE 7 | Research methodology.

	Quantitative		Qualitative		Mixed methods		Total	
	TP	%	TP	%	TP	%	TP	%
Empiric	57	77.0%	6	8.1%	2	2.7%	**65**	**87.8%**
Theoretical	0	0.0%	9	1.22%	0	0.0%	**9**	**12.2%**
Total	**57**	**77.0%**	**15**	**20.3%**	**2**	**2.7%**	**74**	**100.0%**

Abbreviation: TP—Total publications.
Source: Own elaboration.

TABLE 8 | Research country.

Type	TP	%
Non-country	**8**	**10,81%**
Cross country	**32**	**43,24%**
Single country	**34**	**45,95%**
China	12	16,23%
USA	11	14,87%
Australia	1	1,35%
Canada	1	1,35%
Netherlands	1	1,35%
France	1	1,35%
Germany	1	1,35%
Grece	1	1,35%
India	1	1,35%
Ireland	1	1,35%
Sweden	1	1,35%
United Kingdom	1	1,35%
Ukraine	1	1,35%
Total	**74**	**100,00%**

Abbreviation: TP—Total publications.
Source: Own elaboration.

are 'Board gender diversity', 'Symbolic management', 'Reporting', 'Nonmarket strategy', 'Corporate citizenship', 'Carbon emissions' and 'Environmental policy' (Figure 6).

Cluster 1 (Board gender diversity) examines the effect of board gender diversity, noting that decoupling may occur where firms promote diversity without making substantive changes. This dynamic can also affect a firm's sustainability performance and overall strategy. Cluster 2 (Reporting) focuses on how companies disclose ESG information, which allows them to showcase sustainability practises, manage reputation, and signal sustainability efforts, though these may sometimes diverge from real actions aimed at improving financial performance and public image. Cluster 3 (Nonmarket strategy) pertains to political strategy, especially in emerging markets, where business groups navigate regulatory and political environments to gain a competitive edge. Cluster 4 (Corporate citizenship) emphasises the diffusion of CSR practises, driven by stakeholder engagement and formal structures, with neo-institutional and stakeholder theories highlighting employee support and substantive actions to enhance financial performance. Cluster 5 (Carbon emissions) addresses the ongoing debate over reducing greenhouse gas emissions and the accuracy of related disclosures, focusing on how companies may mislead stakeholders about their environmental performance. Finally, Cluster 6 (Environmental policy) looks at how environmental policies can reduce CSR decoupling practises.

As shown in Figure 7, clusters 1 and 3 correspond to the older papers (with averages from 2011 and 2012, respectively), while clusters 0, 2, 5 and 6 are associated with more recent literature (average 2019). Larger nodes represent the most frequently used terms, and the curved lines between them indicate co-occurrence. This suggests that recent research has concentrated on the decoupling analysis in the sustainability reporting, with emphasis on board gender diversity, carbon emissions, and the corporate environmental policy adoption.

4.3.2 | Research Characterisation

In addition to the bibliometric analysis, an in-depth reading and analysis of the sample articles allowed us to categorise the literature on decoupling in sustainability reporting into five main strands. The first focuses on the definition and characterisation of decoupling and the distinction between different types, such as greenwashing and brownwashing. Martins, Gomes, and Branco (2021) propose a framework contrasting accountability with impression management. Crilly, Zollo, and Hansen (2012) explore the causal conditions leading to decoupling, identifying two pathways: 'evasive decoupling', where ESG policies are inconsistently implemented due to low consensus within a firm's management on the benefits of ESG actions, and 'emergent decoupling', where conflicting stakeholder demands create uncertainty, leading to internal disagreement over ESG policy implementation. Through linguistic analysis, Conrad and Holtbrügge (2021) detect firms' decoupling tendencies by analysing the morphology, syntax, semantics, and pragmatics of reports. They find that reports by decoupling firms exhibit lower linguistic sophistication, with shorter phrases, less formal language, fewer temporal references, and fewer conjunctions. Additionally, decoupling reports contain fewer emotional appeals, more self-references, and a greater use of masculine language. Holtbrügge and Conrad (2020) exemplify these practises through their analysis of Volkswagen's CSR reports compared to its main competitors. Montgomery and Robertson (2022) examine three strategies companies use to decouple: location, channel and timing.

Amores-Salvadó, Martin-de Castro, and Albertini (2023) develop a model that maps corporate attitudes along two axes: 'green quiet companies' (high ESG performance but low ESG disclosure), 'green leadership companies' (high ESG performance and disclosure), 'blackbird companies' (low ESG performance and ESG disclosure), and 'green parrot companies' (low ESG performance but high ESG disclosure). The first and last correspond to decoupling practises and reflect the two main stances identified by Kim and Lyon (2015): brownwashing and greenwashing, respectively. Conversely, Schoeneborn, Morsing, and Crane (2020), considering the formative role of sustainability reporting, differentiate between three scenarios: 'Walking-to-talk', where CSR practises precede reporting; 'talking to walk', where reporting precedes CSR practises but is seen as aspirational rather greenwashing; and 't(w)alking', where reporting and CSR practises occur in parallel. Uyar, Karaman, and Kilic (2020) investigate the presence of greenwashing in the logistics sector, while Papoutsi and Sodhi (2020) explore it across 331 companies in 38 industries. Falchi, Grolleau, and Mzoughi (2022) focus on firms that opt for 'green blushing', avoiding the communication of significant sustainability achievements (i.e., brownwashing), and investigate the underlying reasons for this behaviour.

TABLE 9 | CiteSpace clustering structure.

Cluster ID	Size	Silhouette	Mean (Year)	Main term	Top terms (Log-likelihood ratio, p-level)
0	52	0.764	2020	Board gender diversity	board gender diversity (7.22, 0.01); independence (7.22, 0.01); decoupling (7.06, 0.01); firm (3.6, 0.1); environmental (3.6, 0.1)
1	40	0.894	2012	Symbolic management	symbolic management (5.86, 0.05); sustainability (4.64, 0.05); information disclosure (3.85, 0.05); civil society (3.85, 0.05); social movements (3.85, 0.05)
2	32	0.846	2018	Reporting	reporting (4.84, 0.05); environmental practises (4.84, 0.05); decoupling practises (4.18, 0.05); market-value equation (4.18, 0.05); external and internal actions (4.18, 0.05)
3	31	0.782	2011	Nonmarket strategy	nonmarket strategy (4.77, 0.05); political strategy (4.77, 0.05); emerging markets (4.77, 0.05); China (4.43, 0.05); business groups (2.19, 0.5)
4	28	0.85	2015	Corporate citizenship	corporate citizenship (3.46, 0.1); green-washing (3.46, 0.1); taking responsibility (3.46, 0.1); stakeholder proximity (3.46, 0.1); amorality (3.46, 0.1)
5	20	0.826	2019	Carbon emissions	carbon emissions (5.45, 0.05); qualitative (5.32, 0.05); financial sector (5.32, 0.05); case study (5.32, 0.05); community engagement (5.32, 0.05)
6	20	0.903	2019	Environmental policy	environmental policy (5.67, 0.05); media reports (4.62, 0.05); media coverage (4.62, 0.05); local environmental regulation (4.62, 0.05); environmental information disclosure (4.62, 0.05)

Note: Size—Number of words per cluster.
Source: Data collected from WoS database using CiteSpace.

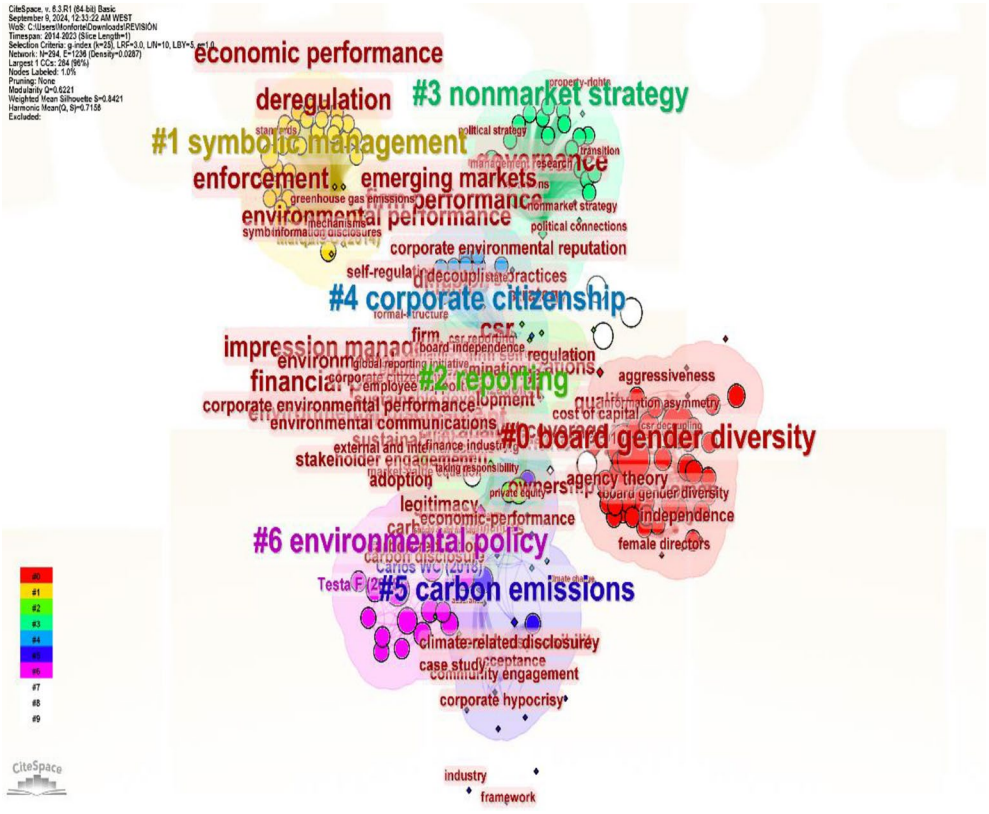

FIGURE 6 | Top research terms by co-citation. *Source:* Data collected from WoS database using CiteSpace.

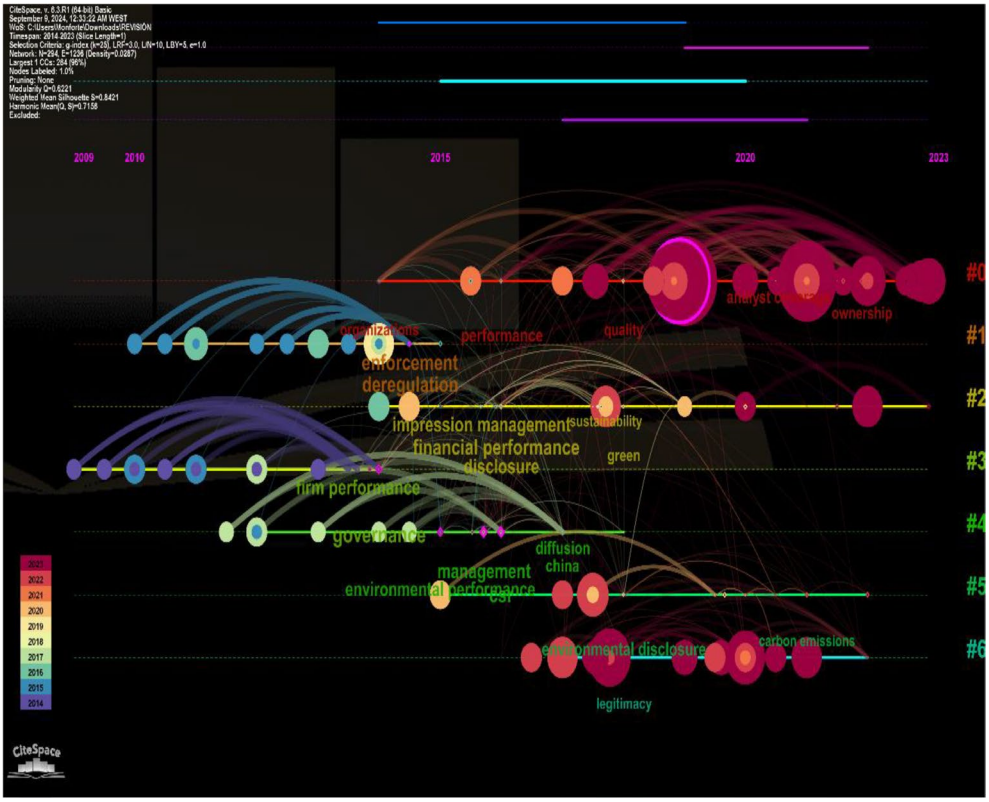

FIGURE 7 | Dynamic development of key terms. *Source:* Data collected from WoS database using CiteSpace.

The second strand related to the drivers of decoupling in sustainability reporting. In their seminal work, Delmas and Burbano (2011) classify these drivers into three categories: external, organisational, and individual. External factors involve pressures from both market and non-market actors (Crilly et al. 2012). Research shows that institutional pressures (Negash and Lemma 2020), governmental pressures (Luo, Wang, and Zhang 2017) and non-governmental organisations' pressures (Lim and Tsutsui 2012) can foster decoupling. Khan and Lockhart (2022) and Hauser, Godinez, and Steckler (2023) highlight institutional conditions in developing countries that facilitate decoupling, while Tashman Marano, and Kostova (2019) refer to institutional voids at the country level, and Lim and Tsutsui (2012) examine the role of liberal economic policies in developed countries.

In terms of organisational factors, studies focus on corporate governance mechanisms (Velte 2023), demonstrating that board gender diversity (Eliwa, Aboud, and Saleh 2023; Gull et al. 2023b) and board independence (Yu, Luu, and Chen 2020), and the existence, size, independence, and tenure of CSR committees (Gull et al. 2023a; Huang, Francoeur, and Brammer 2022) reduce decoupling. In contrast, board network (Zhao et al. 2022) increase it. Industry membership (Marquis, Toffel, and Zhou 2016; Ruiz-Blanco, Romero, and Fernandez-Feijoo 2022), industry position (Huang, Francoeur, and Brammer 2022), internalisation (Tashman, Marano, and Kostova 2019), financial constraints (Tang et al. 2023; Zhang 2022b), low bargaining power (Tang et al. 2023), financial performance (He et al. 2023), earnings management (García-Sánchez et al. 2020), and being part of a business group (Bothello et al. 2023) foster decoupling, while family ownership (Parra-Domínguez, David, and Azevedo 2021), institutional ownership (Yu, Luu, and Chen 2020), and cross-listing (Yu, Luu, and Chen 2020) reduce it. Individual factors include CEO characteristics such as power (Shahab et al. 2022; Gull et al. 2023c), narcissism (Al-Shammari, Al-Shammari, and Banerjee 2022), overconfidence (Sauerwald and Su 2019), managerial entrenchment (García-Sánchez et al. 2020), and low religiosity (Eliwa, Aboud, and Saleh 2023) as drivers of decoupling.

The third strand concerns mitigating factors of decoupling in sustainability reporting, encompassing both external and internal factors. External factors include environmental and reporting regulations (Lim and Tsutsui 2012; Kim and Lyon 2015; Islam et al. 2021; Mateo-Márquez, González-González, and Zamora-Ramírez 2022; Li et al. 2023; Pizzi et al. 2023), corruption levels (Yu, Luu, and Chen 2020), government monitoring (Marquis and Qian 2014; Wedari, Jubb, and Moradi-Motlagh 2021), analyst coverage (Zhang 2022b), and media scrutiny (Cormier and Gomez-Gutierrez 2018; Wang et al. 2023). Internal factors include environmental management systems (Huang, Francoeur, and Brammer 2022), reporting guidelines (Lim and Tsutsui 2012; García-Sánchez et al. 2022; Ruiz-Blanco, Romero, and Fernandez-Feijoo 2022), and sustainability assurance (García-Sánchez et al. 2022; Ruiz-Blanco, Romero, and Fernandez-Feijoo 2022). Some of these elements also mitigate the effects of decoupling drivers. For instance, Huang, Francoeur, and Brammer (2022) found that environmental management systems and CSR committees negatively moderated the likelihood of industry leaders engaging in brownwashing.

The fourth strand examines the impact of decoupling, specifically its financial and reputational consequences. Financially, decoupling in sustainability reporting is linked with lower

return on assets (ROA) (Walker and Wan 2012; He et al. 2023; Li et al. 2023), lower Tobin's Q (Hawn and Ioannou 2016; C. Liu et al. 2024; Xu, Li, and Xu 2023), and a higher cost of capital (García-Sánchez et al. 2021). It also reduces labour investment efficiency (Di and Li 2023) and complicated access to finance (García-Sánchez et al. 2021). However, these effects are mitigated by factors such as regulation (C. Liu et al. 2024) and stakeholder proximity (Schons and Steinmeier 2016). Additionally, Bothello et al. (2023) show that decoupling's impact on Tobin's Q varies depending on a firm's position within its business group. Decoupling has also been shown a harm corporate reputation (Hawn and Ioannou 2016; Morales-Raya, Martín-Tapia, and Ortiz-de-Mandojana 2019; Ginder and Byun 2022).

In addition to these major strands, a subset of articles examines decoupling in the context of corporate crisis. For example, Contreras-Pacheco, Claasen, and Garrigós-Simón (2021), using case studies, describe how Latin American firms use decoupling in response to environmental crises, arguing that these practises reveal deeper organisational contradictions. Zhong, Zhao, and Shahab (2022) find that decoupling negatively correlates with philanthropic donations by Chinese firms in the COVID-19 crisis. Wahab, Rahin, and Mustapha (2022) further argue that decoupling parallels tax avoidance from a moral standpoint, with firms that decouple also more likely to engage in tax avoidance. Lastly, some researchers focus on decoupling in carbon reporting. These studies suggest that while climate change ratings can pressure firms to improve their scores without reducing emissions (Bui, Chelli, and Houqe 2022), stricter regulations decrease greenwashing (e.g., Kim and Lyon 2015; Mateo-Márquez, González-González, and Zamora-Ramírez 2022), and companies with worsening environmental performance provide minimal climate-related disclosures (Wedari, Jubb, and Moradi-Motlagh 2021). Finally, Asif, Searcy, and Castka (2023) look at the role of new technologies in improving sustainability disclosure and reducing decoupling.

5 | Suplementary Analyses

Given the recent surge in publications on decoupling in sustainability reporting and to provide the most up-to-date overview, we have also analysed the articles published in the last year (2024), which were initially excluded as the year is still ongoing. We have further expanded our review by including publications from Scopus, another reputable database. These complementary analyses provide a more comprehensive and up-to-date overview of the literature trends.

5.1 | Papers Published in Scopus Database

We identified four additional papers on decoupling in sustainability reporting published in Scopus-indexed journals that were not present in WoS. The earliest article, published by Janney and Gove in 2011, only briefly mentions the concept of decoupling. The remaining three papers were published between 2015 and 2017. Two of them mainly focus on characterising decoupling practises of European companies, both greenwashing (Vollero et al. 2016) and brownwashing (Font, Elgammal, and Lamond 2017), while the paper by Lee and Maxfield (2015) analyses the financial implications of decoupling in sustainability reporting of US listed companies.

5.2 | Papers Published in 2024

The year 2024 shows a high number of publications on decoupling in sustainability reporting. By 15 November 2024, 34 articles had been published on the topic, almost twice as many as in the whole of 2023, reflecting the growing academic prominence of the topic. Two out of the 34 identified articles were excluded because they were reviews. The remaining 32 articles (Appendix A) reflect the trends observed up to 2023.

Corporate Social Responsibility and Environmental Management published the most articles on decoupling in 2024 (eight), followed by Financial Research Letters and Polish Journal of Environmental Studies (two each). In addition, four other journals listed in Table 2 (Business Strategy and the Environment, Journal of Cleaner Production, Sustainability and Business Ethics, Environment & Responsibility) each published an article on the topic in 2024. This puts Corporate Social Responsibility and Environmental Management at the top of the journal ranking in terms of the number of publications on decoupling in sustainability reporting, although the top five journals remain the same.

Among the most prolific authors, four published two articles on this topic in 2024 (Ammar Ali Gull, Guangrui Liu, Hao Qian, and Tanver Ashan). Nazim Hussain remains the most prolific author with six publications on decoupling in sustainability reporting, followed by Ammar Ali Gull with five, and Isabel-María García-Sánchez, Sana Akbar Khan, Rizwan Mushtaq, and Ma Zhong with three publications each. In addition, 13 authors now have two articles on the topic.

Theoretical approaches remain varied: 53.1% of the studies use a single theory, 28.1% combine several theoretical frameworks, and 18.8% are atheoretical. Institutional theory and agency theory remain the most commonly used frameworks (five articles each), followed by stakeholder theory and legitimacy theory (four each) and signalling theory (three). New theoretical frameworks have also emerged, including catering theory and evolutionary game theory.

Empirical research continues to dominate and its share remains unchanged, accounting for 87.5% (28 out of 32) of the articles published in 2024 on decoupling in sustainability reporting, almost all of which use quantitative methods (27 articles) and longitudinal analysis, and focus on large, listed firms. Most studies continue to focus on corporate reports, although there are studies, such as that by Amin, Ali, and Mohamed (2024), that analyse disclosures on social media, specifically Twitter. The majority of studies focus on single countries, with eight articles analysing multi-country or international samples. Again, China is the most analysed country with 12 articles, followed by the US and the United Kingdom with three articles each.

The five main research streams identified remain robust, with most studies examining the drivers and mitigating factors of

decoupling in sustainability reporting. Key drivers include characteristics of the business and institutional environment (Huq and Carling 2024; Khanchel, Lassoued, and Gargouri 2024; G. Liu et al. 2024a, Qureshi et al. 2024), as well as firm characteristics (Q. Wang et al. 2024; Z. Wang et al. 2024; Yang, Fiedler, and Free 2024) and managerial characteristics (G. Liu et al. 2024b; Ren, Wu, and Hou 2024). Prominent mitigating factors include corporate governance mechanisms such as board size, board independence and board gender diversity, the existence of a sustainability committee and its characteristics, and institutional ownership (Abweny, Afrifa, and Iqbal 2024; Gidage, Bhide, and Bilan 2024; Gorovaia and Makrominas 2024; Gull et al. 2024; Q. Wang et al. 2024). Furthermore, Aboud, Saleh, and Eliwa (2024), Khamisu, Paluri, and Sonwaney (2024), Roszkowska-Menkes, Aluchna, and Kamiński (2024) and C. Liu et al. (2024) emphasise the value of regulation, highlighting the role of sustainability reporting standards, such as the European Union Directives and the Global Reporting Initiative (GRI) framework, in enhancing transparency and accountability. Parfitt (2024) argues, that despite criticism, accounting frameworks such as the Sustainability Accounting Standards Board (SASB) and the International Integrated Reporting Council (IIRC) promote ethical engagement through logical structuring of issues, albeit without significantly reducing CSR decoupling.

6 | Concluding Remarks

This study has identified publication trends and the knowledge structure of research on decoupling in sustainability reporting. Researchers have devoted considerable attention to defining, characterising and classifying decoupling in sustainability reporting, examining its drivers and mitigating factors, as well as its financial and reputational implications. Empirical studies dominate research on this topic. Complementary analysis of recent publications confirms these trends, with the largest number of articles published in 2024, almost double that of the previous year, reflecting the growing academic prominence of the topic as well as growing concerns about corporate sustainability transparency and the reliability and relevance of ESG reporting. Although the study focuses on articles published in WoS, there are no significant differences with respect to publications in Scopus.

Despite this substantial body of knowledge, the current changes in the regulatory framework for sustainability reporting aimed at increasing the transparency and accountability of ESG information provide an opportunity to reassess existing knowledge in the light of the new environment. Looking ahead, the implementation of regulations such as Directive 2022/2464/EU is likely to encourage further research into the effectiveness of these new frameworks in promoting accountability in sustainability reporting.

In this regard, by providing a comprehensive overview of the current state of research on decoupling in sustainability reporting, this study offers a critical reference point that can guide researchers in shaping the future direction of studies on this topic. Our analysis highlights the pressing need for more qualitative research that could capture the nuanced organisational dynamics often overlooked in quantitative studies. Furthermore, standardising the proxies used to measure decoupling would improve comparability and advance methodological rigour in the field. In this regard, the application of automated text analysis to corporate sustainability reports could be promising, offering a novel approach to uncovering implicit patterns of decoupling across different sectors. Our analysis reveals a notable bias towards environmental information (such as greenhouse gas emissions), which often overshadows other dimensions of corporate sustainability. This suggests an opportunity for researchers to explore less studied areas, such as social and governance disclosures, to provide a more complete picture of decoupling practises. Furthermore, given the documented moderating effects that certain variables have on the impact of other variables on decoupling, identifying these effects across a wider range of interacting factors is essential for a more holistic understanding of decoupling in sustainability reporting in different contexts.

For companies, regulators, and stakeholders, this review provides interesting insights by summarising the factors that previous research has identified as drivers or inhibitors of decoupling in sustainability reporting, as well as the strategic positions that companies take on this issue. By understanding these influences, companies can better align their reporting practises with genuine sustainability commitments rather than symbolic actions. Regulators can also gain insights to refine guidelines to reduce decoupling in sustainability reporting and increase transparency, and stakeholders can identify which companies are more or less likely to engage in decoupling in sustainability reporting.

Overall, this study contributes to the ongoing debate on corporate transparency by clarifying the conditions under which decoupling in sustainability reporting occurs, highlighting how it can be mitigated, and guiding decision-makers towards more credible and accountable sustainability disclosure practises. Such insights not only advance the academic discourse, but also support a pragmatic approach to sustainability that can drive meaningful change in corporate behaviour.

Despite this strong existing knowledge base, several research limitations must be acknowledged. This study relies on a single data source, which may limit the comprehensiveness of the review. Expanding the data collection to include additional databases could provide a more robust analysis. Furthermore, while this study highlights the importance of both qualitative and quantitative research, there is a need for more nuanced qualitative approaches to explore the underlying motivations, organisational cultures, and stakeholder interactions that contribute to decoupling in sustainability reporting. A promising avenue for future research is the application of automated text analysis techniques to sustainability reports, which could provide deeper insights into implicit instances of decoupling and reveal patterns of language and rhetoric indicative of symbolic versus substantive actions in sustainability reporting.

To gain a broader understanding of decoupling in sustainability reporting, future studies could examine this phenomenon across different industries and countries, with a particular focus on differences between developed and developing economies. Such comparative studies would not only deepen our knowledge of regional and sectoral variations, but also shed light on

how regulatory, cultural, and economic factors may influence the prevalence and nature of decoupling practises. In addition, our findings point to the need for more research into the moderating effects that different factors—such as corporate governance mechanisms, institutional pressures, and organisational characteristics—have on decoupling. Future research should explore the interplay of these factors, ideally through longitudinal studies that can capture how decoupling dynamics evolve over time in response to changing regulatory frameworks and market pressures.

In addition, given the predominant focus on environmental dimensions in decoupling research, future work could benefit from a balanced exploration of social and governance factors in sustainability reporting. These studies could help to delineate the extent to which different dimensions of sustainability are decoupled, thus providing a more holistic perspective on CSR practises. Finally, further research into the role of international reporting standards, in particular Directive 2022/2464/EU, could shed light on their effectiveness in mitigating decoupling by examining how organisations respond to these standards and whether their adoption promotes genuine transparency or strategic, symbolic compliance. This could provide important insights for policymakers aiming to improve sustainability reporting.

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Appendix A

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