

A Bibliometric Mapping and Research Gap Analysis of Greenwashing Studies in Scopus (2012–2025)

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Abstract

Purpose:

This paper aims to formulate research opportunities on greenwashing. It is motivated by the growing prominence of environmental issues in accounting research and the emergence of greenwashing practices, which create the impression that a company's environmental performance is strong without requiring substantial financial investment.

Method:

This study employs bibliometric analysis based on 138 articles published between 2012 and 2025, sourced from the Scopus database. Frequency analysis was conducted using Microsoft Excel, with the results visualized through VOS viewer and Harzing's Publish or Perish citation matrix.

Findings:

There are research opportunities on greenwashing in relation to ESG, reporting assurance, SDG washing, CSR decoupling, the circular economy, bank financing, stock price crash risk, sustainable investment, social media, green bonds, transparency, institutional investors, corporate reputation, and environmental disclosure.

Novelty:

There are research opportunities on greenwashing in relation to ESG, reporting assurance, SDG washing, CSR decoupling, the circular economy, bank financing, stock price crash risk, sustainable investment, social media, green bonds, transparency, institutional investors, corporate reputation, and environmental disclosure.

Keywords: Bibliometric Analysis, Scopus Data, Greenwashing, Research Gap

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Introduction

The issue of climate change has received significant attention from both national and international institutions. Companies are increasingly encouraged to assume greater environmental responsibility. However, the pressure to disclose environmental activities, combined with the desire to minimize costs, can drive companies to engage in greenwashing. Greenwashing is understood as the confluence of two corporate behaviours: poor environmental performance and positive communication about environmental performance (Delmas & Burbano, 2011).

Currently, there are several definitions of greenwashing. According to the Oxford English Dictionary, greenwashing is defined as "disinformation disseminated by an organization so as to present an environmentally responsible public image" (Wang & Sarkis, 2017), or in other words, disinformation

spread by an organization to create the impression of environmental responsibility. According to Greenpeace, greenwashing is “the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service.” The *Cambridge Dictionary* defines greenwashing as “behavior or activities that make people believe that a company is doing more to protect the environment than it really is.” Another definition also frames greenwashing as the confluence of poor environmental performance and positive communication about environmental performance (Delmas & Burbano, 2011).

The practice of greenwashing can be viewed as a managerial behavior aimed at creating a favorable impression of a company’s environmental responsibility without substantial investment (Zhou et al., 2024). In greenwashing practices, companies highlight only the positive aspects of their environmental performance while lacking transparency regarding their actual performance. In other words, there exists a gap between the projected image and the company’s actual environmental responsibility actions (Zioło et al., 2024; Yang et al., 2020; Sneideriene & Legenzova, 2025). Poor performance accompanied by positive communication and a favorable image—without real actions toward environmental responsibility—indicates that greenwashing represents an attempt to send false signals to stakeholders (Kathan et al., 2025).

One alleged case of greenwashing involves **Unilever**. The Competition and Markets Authority (CMA) raised concerns about Unilever’s use of colors and imagery—such as green leaves—which could reinforce the impression that its products are more environmentally friendly than they actually are (Gov.UK, 2023). Another case concerns **Coca-Cola** and **Nestlé**, who were accused of making misleading claims about their so-called “100% recycled” plastic water bottles (Leggett & Edser, 2023).

Several systematic review studies have also examined the theme of greenwashing. Navaro (2021) traced the evolution of greenwashing research in articles related to agriculture, the food industry, and food retail, identifying three phases: *ground setting* (2003–2010), *trail-blazing* (2011–2015), and *remarkable growth* (2016–2020). More recently, a study conducted in 2023 reviewed the rise of greenwashing and its implications for green marketing strategies. This study provided a modern understanding of greenwashing by proposing a new framework on the typology of its drivers and consequences (Vangeli et al., 2023).

Further systematic review research is expected in 2024, such as the studies by Galletta, Nugraha, Santos, and Shakil. Galletta (2024) examined greenwashing practices in the banking industry using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework and bibliometric methods. The findings indicate that the concept of greenwashing has received significant attention, with the number of related studies increasing in recent years. The banking industry, in particular, has been accused of greenwashing by exaggerating sustainability policies and commitments to environmental goals without proper implementation (Galletta et al., 2022).

Systematic review research on the food industry revealed that the number of greenwashing-related studies remains limited. Several factors contributing to greenwashing practices in this industry were identified, including advertising, access to information, transparency, knowledge, trust, and labelling (Nugraha et al., 2024). In addition, a systematic review of greenwashing from a stakeholder perspective focused on the evolution of the phenomenon, particularly its effects on stakeholders. Research in this area has examined the influence of greenwashing on branding, consumer attitudes and intentions—especially purchasing behaviour—B2B relationships, and the taxonomic definitions of greenwashing (Santos et al., 2025).

Another study conducted a comprehensive review and in-depth analysis of ESG controversies. The results revealed three main research clusters (Shakil, 2024). The first cluster encompasses studies on ESG controversies, governance, and sustainability across industries. The second cluster relates to media representation, investor reactions, and ESG controversies. The third cluster involves research on audit committees, audit quality, and controversy dynamics.

By 2025, Bhullar explores key issues from a qualitative perspective to better understand the determinants and potential impacts of greenwashing on ongoing ESG practices within the business community. The study identifies key trends and emerging topics, offering valuable insights into the lesser-known dimensions of greenwashing and ESG. It emphasizes the efficiency of capital markets and the role of ESG disclosure in minimizing information asymmetry and pricing errors in equity markets. The study also recommends the implementation of ESG audits as a mechanism to address greenwashing, with a focus on enhancing transparency and accountability (Bhullar et al., 2025).

Feghali (2025) synthesizes contemporary research on greenwashing by examining its conceptual foundations, practices, impacts, and the effectiveness of regulatory frameworks designed to curb its spread in the environmental literature. The findings reveal that existing research primarily investigates the social constructs of greenwashing symbolism, including its driving factors, strategic tactics, and consequential impacts, while also identifying key deterrent mechanisms. The phenomenon of greenwashing is analysed through a distinctive socio-cultural and geopolitical lens, thereby challenging the prevailing homogeneous theoretical discourse (Feghali et al., 2025).

ESG disclosure and greenwashing prevention were also examined by Sneideriene and Legenzova (2025) through bibliometric analysis and a systematic literature review. Their study shows that greenwashing is a complex phenomenon characterized by diverse forms and levels, which creates challenges for detection, measurement, and the development of prevention tools. The results reveal an increasing trend in academic literature on greenwashing, with a strong focus on establishing detection measures and developing prevention mechanisms to ensure the reliability, comparability, and quality of corporate sustainability reporting (Sneideriene & Legenzova, 2025).

The growing number of allegations of greenwashing has made this theme widely researched. Previous systematic review studies have highlighted greenwashing practices in the banking industry, stakeholder perspectives, driving factors, impacts, and prevention mechanisms. In contrast to prior studies that focused on specific industries or individual aspects of greenwashing practices, this study investigates research opportunities on greenwashing across all industries.

Literature Review

Agency Conflicts in Corporate Environmental Responsibility

Agency conflicts between management and shareholders arise when managerial interests are not aligned with those of shareholders. One manifestation of agency conflict is in corporate social responsibility (CSR) activities. CSR initiatives are sometimes perceived as not benefiting shareholders, but rather as tools used by management to pursue their own interests (Nguyen et al., 2023; Jo et al., 2016; Hussaini et al., 2021). Similar to CSR, charitable giving can also be employed by management as an earnings management mechanism to stabilize company profits (Greiser et al., 2021). The practice of greenwashing further reflects agency conflicts between management and shareholders, particularly in the context of corporate environmental responsibility (Ongsakul et al., 2025; Uyar et al., 2023; Zhu et al., 2024).

Greenwashing Practices in Environmental Disclosure Reporting

An increasing number of companies are using sustainability reports to demonstrate their green credentials; however, some continue to engage in greenwashing (Poiriazi et al., 2025; Fan et al., 2025; Yu et al., 2020; Sneideriene & Legenzova, 2025; Chen & Duan, 2023; X. Xu et al., 2025; Kathan et al., 2025; M. Xu et al., 2025). Greenwashing represents an attempt by companies to portray themselves as environmentally friendly in ways that do not reflect reality, thereby reducing stakeholder trust. Trust in corporate environmental responsibility reports has been declining (Delmas & Burbano, 2011). As a result, stakeholders are often reluctant to engage in a company's green initiatives if they suspect that such initiatives are merely image-driven (Walker & Wan, 2012). Media exposure of greenwashing practices can trigger corporate reputation crises, adverse consumer selection (Srisathan &

Naruetharadhol, 2025), and a decline in stock value due to reduced investor confidence (Liu et al., 2024).

Preventing greenwashing practices can be achieved through external verification of sustainability reports. Third-party assurance enhances the credibility of these reports and reduces the risk of greenwashing. Empirical evidence shows that independent assurance (third-party verification) of sustainability reports improves accountability and the reliability of information (Marquis et al., 2015).

The Evolution of Greenwashing Research Themes

The focus of greenwashing research has shifted over time. Until 2022, research primarily focused on corporate studies, conceptual analyses, and environmental certification. For example, Font et al. (2012) provided empirical evidence of a gap between corporate social responsibility claims and actual practices. In the supply chain context, Blome et al. (2017) examined factors influencing green supplier championing and greenwashing, highlighting two opposing leadership dimensions based on the concepts of ethical leadership and transactional leadership.

In 2023, research increasingly addressed topics related to decoupling and corporate practices. Eliwa et al. (2023) examined the relationship between board gender diversity and environmental, social, and governance (ESG) decoupling, as well as the moderating effect of religiosity. Their findings provided empirical evidence that firms with more gender-diverse boards were less likely to engage in ESG decoupling, and this relationship was stronger in countries with low levels of religiosity. Another study found that apex firms within business groups were more likely to engage in CSR decoupling compared to non-parent firms, with parent companies being partially shielded from market perceptions of greenwashing (Bothello et al., 2023).

In 2024, research shifted toward the perception of behavior and the impact of greenwashing on the public and corporate reputation. Ibrahim Nnindini and Dankwah (2024) found a positive correlation between greenwashing and four dimensions of consumers' negative emotional outcomes. Guidolin and Magnani (2024) tested whether ESG and non-ESG mutual funds exhibited identical investment choices. Their results found no strong evidence to support this, thus rejecting the hypothesis of widespread greenwashing practices. In 2025, the focus on consumers remains dominant but is increasingly combined with themes of "effect" and "analysis," reflecting a more evaluative approach. For instance, Fernandez (2025) examined greenwashing practices and eco-initiatives in more than 27,000 family and non-family businesses across 41 countries. The study revealed that family firms tend to be less engaged in greenwashing and show stronger commitment to green initiatives compared to non-family firms.

Method

The data source for this paper is Scopus, which was used to collect publications on greenwashing. Table 1 presents the sample criteria. The study period spans 2012–2025. Navaro (2021) found that the evolution of greenwashing research consists of three stages: the initial *ground-setting* stage (2003–2010), the emergence of greenwashing as a research theme beginning in 2011, and the period of remarkable growth starting in 2020.

This study focuses on greenwashing research beginning in 2012, based on the argument that research on this theme started to flourish and broaden its scope from that year onward. The end of the study period, 2025, was chosen to capture the most up-to-date data, with data collection conducted on May 22, 2025. A total of 138 documents were selected, with an average of 36.35 citations per item. The data were subsequently processed using VOSviewer, with the parameters set to a minimum occurrence of 1 and the full counting method.

Table 1. Sample Criteria

Purpose	Investigating Research Opportunities in Greenwashing
Research design	This study employs bibliometric analysis to synthesize the evidence in the literature.
Criterion	The criteria for the document analysed were in the form of articles and mapped with bibliometric analysis.
Publication time range	2012-2025
Language	English
Field	Business, Management and Accounting
Accessibility	Open access
Sample	138 articles

The article filtering process is illustrated in the following figure:

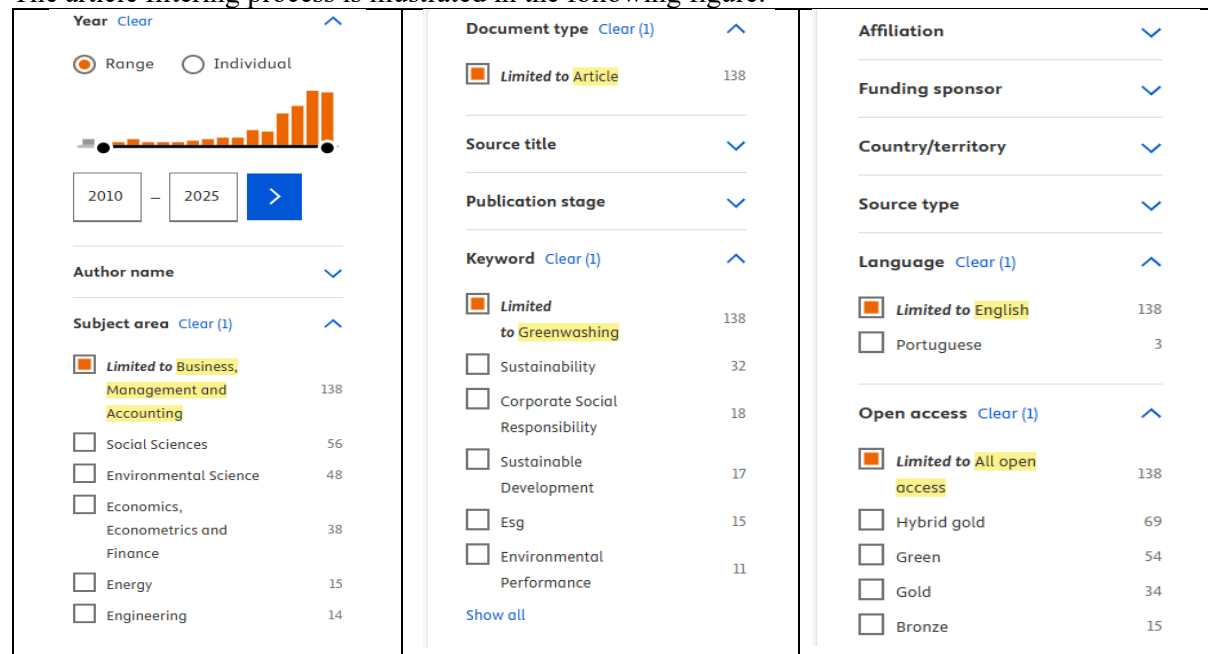


Figure 1. Article Filter Process

Results and Discussion

Descriptive Analysis

This section presents the number of articles published each year, the countries of origin, and the sources and publishers of the documents analysed. The annual distribution of articles is shown in Figure 2 below:

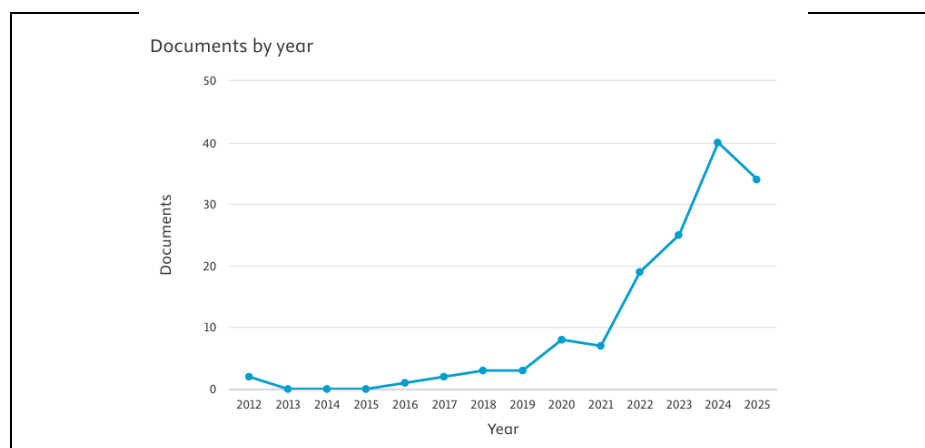


Figure 2. Number of articles per year

Based on the number of articles, research on greenwashing began to grow significantly in 2020 and has increased sharply over the past three years. The apparent decline in 2025 is due to data collection being conducted in May, meaning that the recorded articles only cover the period from January to May. The following graph presents the distribution of articles by country:

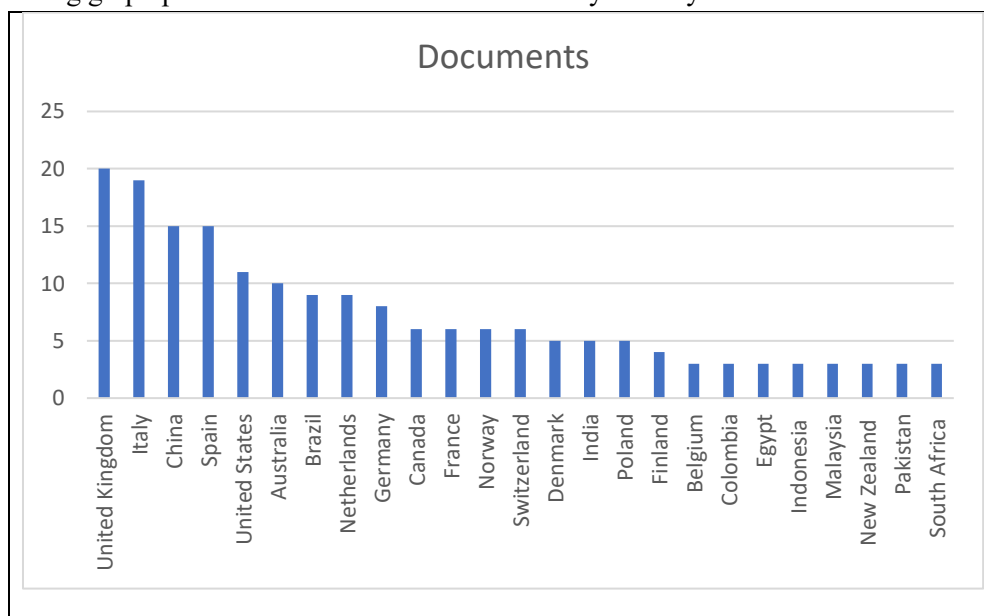


Figure 3 Article Source Countries

Figure 3 shows that the United Kingdom ranks first with 20 articles, followed by Italy with 19. Indonesia, along with Belgium, Colombia, Egypt, Malaysia, New Zealand, Pakistan, and South Africa, ranks lowest with three articles each. Overall, developed countries appear to dominate the number of publications.

Moving on to journal and publisher data, the information is presented in the following table:

Table 2. Journals and Publishers

	Journal	Quartile	Document	Publisher
1	Business Strategy and the Environment	Quartet 1	21	John Wiley and Sons Ltd
2	Corporate Social Responsibility and Environmental Management	Quartet 1	13	John Wiley and Sons Ltd
3	Journal of Cleaner Production	Quartet 1	6	Elsevier Ltd
4	Cogent Business and Management	Quartet 2	6	Cogent OA
5	Research in International Business and Finance	Quartet 1	6	Elsevier Ltd
6	Journal of Business Ethics	Quartet 1	4	Springer Science and Business Media B.V.
7	Brazilian Marketing Magazine	Quartet 4	4	Universidade Nove de Julho-UNINOVE
8	Administrative Sciences	Quartet 2	2	Multidisciplinary Digital Publishing Institute (MDPI)
9	Brazilian Business Review	Quartet 3	2	FUCAPE Business School
10	Corporate Governance and International Review	Quartet 1	2	John Wiley and Sons Inc

Source: Scopus

The journal *Business Strategy and the Environment*, published by John Wiley & Sons Ltd., produced the highest number of articles on greenwashing. This publisher dominated the top 10 journals

with the most greenwashing-related publications. Slightly below is Elsevier Ltd., with two journals. In addition, Cogent OA, Springer Science and Business Media BV, Universidade Nove de Julho (UNINOVE), MDPI, and FUCEPE Business School each contributed one journal.

Network Analysis

Network analysis is conducted to identify research themes that are underexplored and emerging as potential research opportunities. The analysis includes co-occurrence network analysis, co-occurrence overlay analysis, and co-occurrence density analysis, which are presented in Figures 4, 5, and 6 as follows:

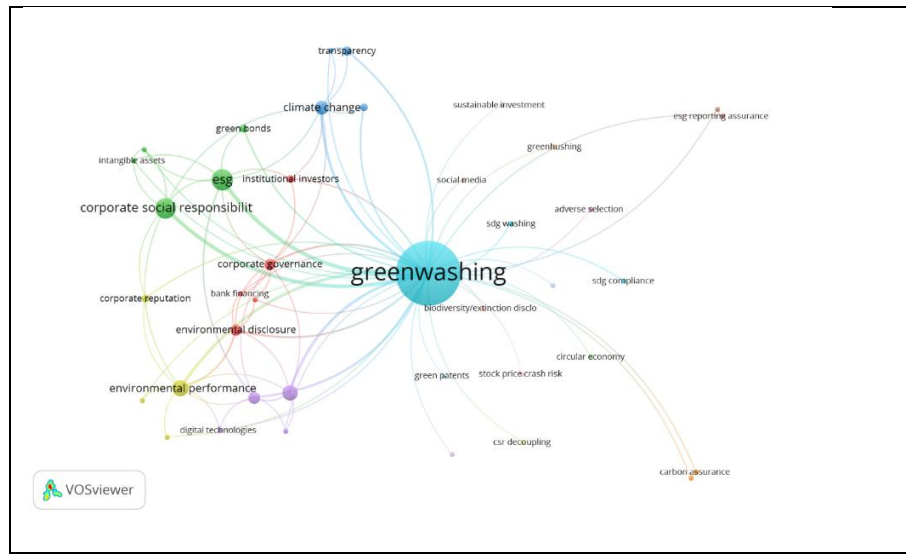


Figure 4. Co-occurrence network analysis

Source: Scopus, data processed

The co-occurrence network analysis indicates that several greenwashing-related themes remain underexplored. These include sustainable investment, social media, greenhushing, SDG washing, adverse selection, SDG compliance, biodiversity disclosure, circular economy, stock price crash risk, green patents, CSR decoupling, digital technologies, bank financing, corporate reputation, intangible assets, green bonds, institutional investors, and transparency. The mapping of these emerging research themes is presented in Figure 5 below:

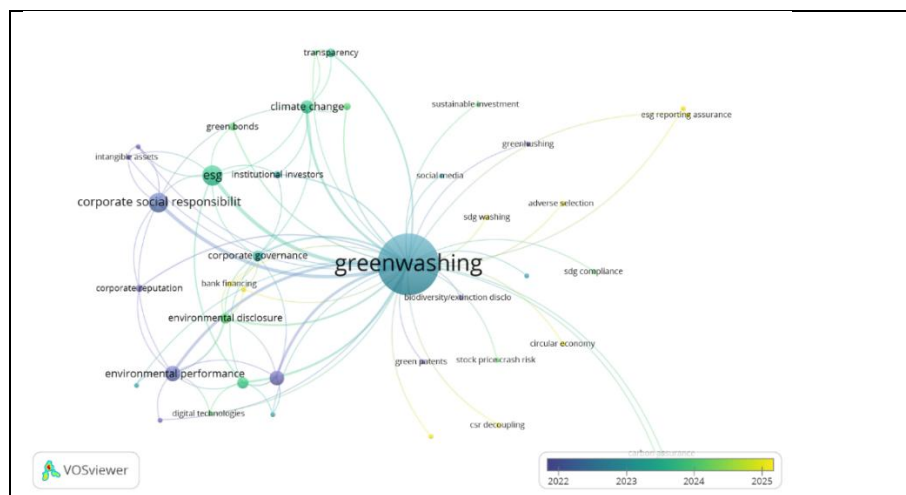


Figure 5. Co-occurrence overlay analysis

Source: Scopus, data processed

The most recent greenwashing research themes include ESG reporting assurance, SDG washing, CSR decoupling, the circular economy, and bank financing. However, several themes remain underexplored and warrant further investigation, such as stock price crash risk, sustainable investment, social media, green bonds, transparency, institutional investors, corporate reputation, and environmental disclosure. Figure 6 illustrates the density of each research theme:

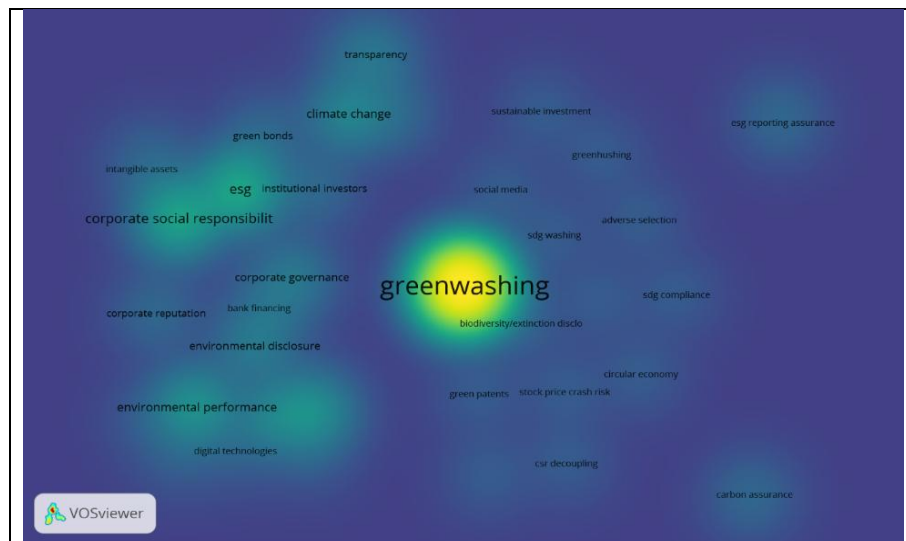


Figure 6. Co-occurrence density analysis

Source: Scopus, data processed

The density analysis shows that only the keyword *greenwashing* has been extensively researched. This implies that the research themes identified as up-to-date in the overlay analysis (Figure 6) remain underexplored and are therefore still worth investigating.

Research Trends

Based on the network, overlay, and density analyses, greenwashing research has primarily focused on the themes of corporate social responsibility (CSR) and ESG. Among these, research on CSR has begun to decline, while ESG remains a highly active theme.

Themes that have been widely studied but are starting to decline include CSR, intangible assets, corporate reputation, environmental performance, green patents, and biodiversity disclosure. In contrast, themes that continue to receive significant attention include ESG, climate change, green bonds, transparency, corporate governance, environmental disclosure, digital technologies, stock price crash risk, SDG compliance, sustainable investment, and SDG washing.

Meanwhile, themes that remain underexplored and warrant further research consist of ESG reporting assurance, adverse selection, the circular economy, CSR decoupling, SDG washing, and bank financing.

Discussion

This study maps the research agenda and identifies research opportunities for the next five years based on network analysis. The analysis highlights greenwashing research topics that are both underexplored and emerging. The themes that remain under-researched include Sustainable Development Goal (SDG) washing, the relationship between greenwashing and the cost of debt, consumer perceptions of greenwashing, adverse selection behavior as a reaction to greenwashing practices, and the effects of greenwashing on corporate financial performance and stock price crash risk. Each of these topics is discussed below.

The topic of SDG washing is one of the areas that has received little scholarly attention. Costa et al. (2025), in their article “SDG Walking or Washing? A Cross-Sectoral Analysis of Business Contribution to the SDGs” published in *Business Strategy and the Environment* (Vol. 34, pp. 3561–3576, John Wiley & Sons Ltd.), examined whether corporate SDG reporting reflects a substantive commitment to sustainability or merely a symbolic strategy to maintain public legitimacy. The study employed manual content analysis of sustainability reports across countries and developed two indices as indicators of SDG washing: the SDG Coverage Index, which measures report completeness, and the SDG Commitment Index, which measures the level of commitment or depth. The results revealed a high SDG Coverage Index but a low SDG Commitment Index, indicating that companies may be oriented toward symbolic legitimacy and potentially engaging in SDG washing (Costa et al., 2025).

This study has several limitations that open avenues for future research. First, the reliance on manual content analysis makes the approach susceptible to researcher subjectivity and is time-consuming; subsequent studies could address this limitation using machine learning or other advanced technologies. Second, the study only compared reporting breadth and depth without testing the real impacts of corporate SDG commitments. Future research could extend this work by examining the actual effects of SDG commitments, such as reductions in emissions or improvements in community well-being.

The next theme connects greenwashing with the cost of corporate debt, as examined by Attig et al. (2025) in the article “Creditors at the Gate: Effects of Selective Environmental Disclosure on the Cost of Debt.” This paper was published in *Corporate Governance: An International Review* (Vol. 33, pp. 202–230, John Wiley & Sons Ltd.). The study investigates whether greenwashing has economic consequences for firms in the form of higher debt costs, focusing on companies listed on U.S. stock exchanges.

The independent variable, Selective Environmental Disclosure, measures the gap between disclosure content and actual environmental performance. A high disclosure score combined with low environmental performance indicates greenwashing. The dependent variable, cost of debt, is measured using yield spreads, credit ratings, and debt covenants. The study provides empirical evidence that greenwashing practices increase debt costs (Attig et al., 2025).

However, this study only focuses on U.S.-listed firms, suggesting opportunities to replicate the analysis in developing countries where different institutional and market characteristics may produce different outcomes. Another extension would be to incorporate **sustainability assurance**, which may strengthen creditors’ trust and potentially moderate the relationship between greenwashing and debt costs.

Closely related to financing issues, green bonds also present opportunities for greenwashing research. García et al. (2023), in their paper “Exploring the Determinants of Corporate Green Bond Issuance and Its Environmental Implications: The Role of the Corporate Board” published in *Technological Forecasting & Social Change* (Vol. 189, Elsevier Inc.), analyse the factors influencing firms’ decisions to issue green bonds and the environmental implications of such issuance. Using cross-country data on non-financial firms for the period 2010–2021, the dependent variable (green bond issuance) is measured by the probability of issuance, while environmental performance is assessed using ESG scores.

The findings show that larger firms and those with stronger environmental performance are more likely to issue green bonds. Moreover, after issuance, firms tend to experience significant improvements in ESG performance (García et al., 2023). However, the study focuses only on non-financial firms, without differentiating between industries, and relies on third-party ESG scores. Future research could examine industry-specific effects and measure ESG outcomes based on the actual projects funded by green bonds.

Another underexplored theme is the link between greenwashing and adverse selection. Srisathan and Naruetharadhol (2025), in their article “*Exploring Moral Hazard and Adverse Selection in the Context of Greenwashing and Organic Product Consumption*” published in the *Journal of Retailing and Consumer Services* (Vol. 84, Elsevier Ltd.), investigate how greenwashing contributes to moral hazard and adverse selection in the organic product market in Thailand.

The study examines the impact of greenwashing perceptions on consumer skepticism, the relationship between green scepticisms and information asymmetry in the organic product market, the role of information asymmetry in contributing to moral hazard in greenwashing practices, and the effect of information asymmetry on adverse selection. A correlational design was employed, with survey data analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM).

The results indicate that perceptions of greenwashing in organic products significantly increase consumer scepticisms (Srisathan & Naruetharadhol, 2025). However, the study does not explore additional mediators or moderators, such as consumer awareness, regulatory frameworks, or cultural differences, which may shape the relationship between greenwashing and consumer behaviour. This limitation highlights opportunities for future research by incorporating mediation or moderation variables that may explain how greenwashing influences adverse consumer selection.

The relationship between greenwashing practices and consumers was examined by Baek and Lee (2025) in their paper “*Understanding Consumer Perception and Behaviour Toward Biodegradable Plastic Products Based on the MOA Model*” published in the *Asia Marketing Journal* (Vol. 26, Issue 4, Article 5, pp. 269–285, Korea Marketing Association). This study investigates the influence of consumer motivation, ability, opportunity, and attitudes on the intention to switch to biodegradable plastic products. Data were collected from South Korean consumers through an online survey, and hypotheses were tested using structural equation modelling (SEM). The findings show that internal motivational factors—such as environmental concern and perceived consumer effectiveness—positively influence consumers’ intention to switch to biodegradable plastic products. In other words, the greater consumers’ environmental concern and belief in the impact of their actions, the higher their intention to choose environmentally friendly products (Baek & Lee, 2025). However, this study only explores consumer intentions and does not examine actual behavioural changes, which provides opportunities for future research.

The relationship between greenwashing and financial performance was studied by Li et al. (2023) in their paper “*Effects of Greenwashing on Financial Performance: Moderation Through Local Environmental Regulation and Media Coverage*” published in *Business Strategy and the Environment* (Vol. 32, pp. 820–841, ERP Environment and John Wiley & Sons Ltd.). This study investigates whether greenwashing influences firms’ financial performance and tests the moderating role of the institutional environment. Signalling theory and stakeholder theory form the theoretical foundation. The sample consists of Chinese firms listed on the Shanghai and Shenzhen Stock Exchanges from 2013 to 2017. The dependent variable, return on assets (ROA), and the independent variable, greenwashing potential, were measured using content analysis that captures the gap between corporate green communication and actual environmental practices. The results show that greenwashing negatively affects financial performance, and stricter local environmental regulations strengthen this relationship (Li et al., 2023). However, the study focuses solely on environmental aspects and excludes social and economic dimensions, which could be explored in future research. Furthermore, the sample is limited to Chinese firms, which raises concerns about generalizability due to institutional differences between China and other countries. Future research could extend the analysis to companies listed on emerging market exchanges.

Greenwashing research related to carbon footprints has also gained attention. Datt et al. (2024), in their paper “*Voluntary Carbon Assurance and the Cost of Equity Capital: International Evidence*” published in the *Australian Journal of Management* (SAGE), examine the effect of carbon assurance

on the cost of equity capital using data from the Carbon Disclosure Project for the period 2010–2017. Carbon assurance was measured using a dummy variable indicating whether firms conducted external carbon assurance. The study provides empirical evidence that carbon assurance reduces the cost of equity capital, with the effect conditional on firm characteristics, legal enforcement, and economic growth (Datt et al., 2024). Carbon assurance sends a positive signal to investors, particularly in weakly regulated environments, thereby reducing firms' risk and equity financing costs. However, the study only includes the largest public companies in each country, excluding SMEs, which may yield different results. Future research could explore this gap, as well as examine the effect of carbon assurance on the cost of debt, which remains an important financing component in countries with underdeveloped capital markets.

Another line of research examines the impact of greenwashing on capital markets. Liu et al. (2024), in their paper “*Does ESG Report Greenwashing Increase Stock Price Crash Risk?*” published in the *China Journal of Accounting Studies* (Taylor & Francis), investigate whether greenwashing in ESG reports increases stock price crash risk. Stock price crash risk is measured using the negative return skewness coefficient (NCSKEW) and the up/down return volatility ratio (DUVOL), following Hutton et al. (2009) and Kim et al. (2014). ESG greenwashing was measured using the method of Yu et al. (2020) to minimize subjectivity in text analysis. The results demonstrate that greenwashing in ESG reports significantly increases stock price crash risk (Liu et al., 2024). However, because ESG scores were drawn from institutional rating data, some firms with incomplete data were excluded, which may affect generalizability. More accurate measurement of greenwashing in ESG reporting remains a methodological challenge and represents an important avenue for future research.

Hunter and De Giacomo (2023) examined B Corps in small and medium-sized enterprises (SMEs). Their paper, “*The Environmental Performance of B Corp SMEs and the Occurrence of Greenwashing,*” was published in *Sinergie Italian Journal of Management* (Vol. 41, Issue 3, 2023) by Fondazione CUEIM and the Italian Society of Management. This study investigated the B Corp scores of UK SMEs and compared them with their environmental performance disclosures, aiming to clarify whether greenwashing can still occur despite B Corp certification. The first stage involved a quantitative analysis of B Corp scores from UK SMEs, while the second stage consisted of a qualitative content analysis of reports from B Corp-certified firms. The results show that although UK SMEs obtained B Corp certification, which integrates both social and environmental aspects, many firms scored low on environmental dimensions and emphasized social aspects to gain certification. The study also found that some environmental claims were misleading, such as the use of symbols or statements exaggerating environmental benefits (Hunter & De Giacomo, 2023). This research focuses specifically on B Corp environmental scores, suggesting opportunities for future studies to examine other types of voluntary certification schemes to broaden understanding of greenwashing across different contexts.

Purnamasari and Umiyati (2024) tested the effect of greenwashing on financial performance in their paper “*Greenwashing and Financial Performance of Firms: The Moderating Role of Internal Audit Quality and Digital Technologies*” published in *Cogent Business & Management* (Vol. 11, Issue 1, Informa UK Limited, Taylor & Francis Group). This study empirically investigated the impact of greenwashing (GW) on financial performance (FP), with internal audit quality (IAQ) and digital technologies (DTs) as moderating variables. The sample consisted of non-financial firms in Indonesia between 2018 and 2022. Agency theory provided the theoretical foundation. Firm data were obtained from the Indonesia Stock Exchange (IDX), and environmental data were drawn from corporate sustainability reports. Greenwashing was measured through content analysis using the Greenwashing Performance Index (GPI) and the Greenwashing Communication Index (GCI). Data were analysed using the Generalized Method of Moments (GMM). The findings show that greenwashing positively influences financial performance (ROA) in Indonesia (Purnamasari & Umiyati, 2024). Internal audit quality strengthens the relationship between greenwashing and financial performance. However,

because the study period (2018–2022) overlaps with the COVID-19 pandemic, financial performance may have been affected by external shocks. This limitation provides opportunities for future research to disentangle the effects of the pandemic from the relationship between greenwashing and financial performance.

Conclusion

Greenwashing research remains a wide-open field with many opportunities for further exploration. Themes that are still rarely studied include ESG, reporting assurance, SDG washing, CSR decoupling, the circular economy, and bank financing. Other themes that have emerged earlier but remain worth investigating include stock price crash risk, sustainable investment, social media, green bonds, transparency, institutional investors, corporate reputation, and environmental disclosure.

Several research gaps can be identified for future studies on greenwashing. First, many studies still rely on manual coding to measure greenwashing, such as Costa et al. (2025), Li et al. (2023), and Purnamasari & Umiyati (2024). Manual coding introduces subjectivity and inefficiency. Future research could address this limitation by employing machine learning, text mining, natural language processing (NLP), or big data algorithms.

Second, much of the existing research has been conducted in developed countries (e.g., Attig et al., 2025) or uses narrow samples from specific industries (e.g., Srisathan & Naruetharadhol, 2025; García et al., 2023; Li et al., 2023; Datt et al., 2024; Liu et al., 2024). Future research could expand to developing countries, conduct comparative analyses across industries, and include small and medium-sized enterprises (SMEs). Third, studies examining consumer perspectives on greenwashing often focus on consumer intentions, such as Baek & Lee (2025). Future research could test consumers' actual behavior toward greenwashing practices, thereby addressing the intention–behavior gap in the greenwashing context. Fourth, most recent studies have concentrated primarily on environmental aspects (e.g., Li et al., 2023; Datt et al., 2024; Attig et al., 2025; Srisathan & Naruetharadhol, 2025; Baek & Lee, 2025). However, corporate sustainability responsibilities extend beyond the environment to include social and governance dimensions. These two aspects have not been widely addressed in prior studies, offering opportunities for future research to investigate exaggerations of corporate performance in social and governance domains.

Limitations

This study relies on a single database for article searches, which poses the risk that several important articles may not have been included within its scope. In addition, the screening process restricted the sample to English-language articles, raising the possibility that relevant local studies were excluded from the discussion.

Implications of Subsequent Research

The practice of greenwashing is closely linked to corporate reputation. Future research could examine the reputational backlash resulting from greenwashing practices. Longitudinal evidence on the long-term erosion of stakeholder trust following the revelation of greenwashing remains limited and requires further empirical investigation, making this an important avenue for future research. In addition, stricter ESG verification is needed to prevent greenwashing. This issue could be explored by examining the effectiveness of assurance in reducing the potential for greenwashing, stakeholders' perceptions of ESG report assurance, the role of regulatory enforcement in strengthening ESG assurance, the impact of ESG assurance on long-term corporate reputation, and the effect of ESG verification on financial performance.

Future systematic review studies may also address some of the limitations of this research. First, future research should utilize multiple article databases to minimize the risk of excluding important

publications. Second, article screening should not be limited to English-language studies so that relevant local research can also be incorporated into the discussion.

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