Greenwashing in Banking: Systemic Risks, Stakeholder Distrust, and the Imperative for Regulatory Reform

ISBN: 978-1-943295-26-5

P. Baba Gnanakumar
Kristu Jayanti University
(gnanakumar12000@yahoo.com)

The study highlights how gaps in regulatory enforcement and standardisation reflect systemic limitations in state capacity to align financial markets with sustainability goals. Across fifteen years, the researcher examines greenwashing practices in the banking sector by identifying their drivers, consequences, and regulatory responses within a broader context. Greenwashing, the deliberate misrepresentation of environmental or sustainability claims, undermines trust, misallocates capital away from genuine green initiatives, and distorts the financial sector's credibility. To strengthen banks' public image, attract ESG-oriented investors, and conceal environmentally harmful financing, banks frequently rely on ambiguous disclosures and weak sustainability-linked instruments. Employing a mixed-methods approach, this study analysed policy frameworks from eighteen countries and performed sentiment analysis on 542 public sentiments regarding greenwashing. Evidence from the research shows that major global banks widely engage in practices such as presenting fossil fuel financing as sustainable and overstating ESG commitments. Public sentiment analysis indicates predominantly negative reactions to such practices, especially when penalties or regulatory actions are involved. Worldwide, these issues are being countered through stricter rules, financial penalties, and enhanced regulatory scrutiny. The research recommendations emphasise the need for standardised ESG reporting, mandatory third-party audits, and transparent communication of transition plans toward net-zero goals. Banks are advised to embed sustainability within governance frameworks and to align disclosures with operational practices, while regulators are urged to strengthen enforcement mechanisms and resource allocation. By addressing these systemic gaps, the financial sector can rebuild trust and contribute meaningfully to global sustainability objectives.

Keywords: Greenwashing, Banking Sector, ESG Reporting, Sustainable Finance

1. Introduction

The increasing focus on Environmental, Social, and Governance (ESG) factors reflects a growing concern regarding corporate impact and responsibility. Globally, the banking sector is being identified as a key participant in the shift towards a more sustainable economy. In 2022, global ESG-related investments reached an estimated $41 trillion (GSIA, 2022). Yet this rapid growth has also introduced a critical challenge, namely greenwashing. Greenwashing is when companies falsely claim to be eco-friendly for competitive gain. ESG frameworks are designed to assess a company's environmental impact, social responsibility, and governance standards. ESG influence how banks evaluate risk and decide where funds are allocated.

However, the absence of consistent and standardised ESG reporting remains a significant obstacle. Various reporting bodies, such as the Global Reporting Initiative (GRI) and the Task Force on Climate-related Financial Disclosures (TCFD), have different disclosure guidelines, allowing companies to selectively report favourable information (Marquis et al., 2016). A 2023 RepRisk study found that 70% of ESG claims by financial institutions lacked evidence, and greenwashing incidents in banking have risen by 83% since 2020 (RepRisk, 2023). Banks in India and worldwide may exaggerate or inaccurately report their sustainability efforts, whether deliberately or by oversight (Delmas & Burbano, 2011; Laufer, 2003). This misrepresentation leads to the distortion of financial markets by channelling investments toward companies that are not sustainable and away from those that are (Berrone et al., 2010). For instance, some banks promote green loans or use eco-friendly marketing while continuing to finance environmentally harmful industries, such as fossil fuels. For instance, some banks promote green loans or use eco-friendly marketing while continuing to finance environmentally harmful industries, such as fossil fuels; in 2023 alone, major banks invested over $100 billion in fossil fuel projects. This gap between public messaging and actual practices has the potential to erode trust in the financial sector's commitment to sustainability. As climate awareness grows and demand for green financial products increases (United Nations Environment Programme, 2023; European Commission, 2021), so does the risk of exaggerated sustainability claims (OECD, 2023). This trend has resulted in more regulatory scrutiny and legal action (PwC, 2023). Notably, the banking sector ranks second globally in reported greenwashing cases, underscoring the scale of the issue (RepRisk, 2024). While ESG investing holds great promise, it requires stronger regulation and accountability to prevent misleading practices.

2. Aim of the Study

The study aimed to identify and analyse the primary drivers and manifestations of greenwashing practices within the global banking sector over the period from 2009 to 2024. It sought to measure and evaluate public sentiment and stakeholder trust toward banks implicated in greenwashing, employing natural language processing techniques to analyse social media data. Additionally, the research assessed the efficacy of existing national and international regulatory frameworks in detecting, penalising, and deterring greenwashing activities. A further objective was to develop and empirically test a theoretical "Greenwashing Impact Model" using Structural Equation Modelling (SEM), designed to quantify the interrelationships among corporate governance, greenwashing practices, reputational damage, and financial performance.

3. Research Methodology

This study used a mixed-methods research (MMR) framework. The investigation focused on greenwashing practices in the global banking sector. MMR was chosen because it gives a fuller and more integrated view of complex issues. By combining qualitative and quantitative approaches, it draws on the strengths of both. This helps to reduce the weaknesses of each method when used alone (Creswell & Plano Clark, 2018).

The research followed a pragmatist philosophical approach. Rather than adhering to a single way of thinking, this orientation emphasises the research problem itself. It supports using multiple methods at the same time. This makes it possible to generate knowledge that is practical and applicable. It also follows the idea that research questions should decide the methods, not strict rules.

The study used an explanatory sequential mixed-methods design. The design began with a detailed exploration of greenwashing and then proceeded to test broader patterns. The first phase was qualitative. Objectives 1 and 3 were addressed at this stage. Systematic document analysis was conducted to study the drivers, effects, and regulatory responses to greenwashing in banking.

The analysis included academic papers, policy documents like the UN High-Level Expert Group (2022), and industry reports such as *Banking on Climate Chaos*. In addition, 58 case studies from 2009–2024 were reviewed. Thematic analysis was applied to the data. The data were grouped into key categories: drivers (e.g., external pressures, weak governance), impacts (e.g., reputational damage, financial performance), and regulatory responses. These categories became the basis for the later quantitative model.

Several steps improved the trustworthiness of the findings. Data from different sources were compared (Onwuegbuzie & Johnson, 2006). A panel of sustainable-finance experts reviewed the findings. Independent peer reviewers also checked the interpretations to reduce bias (Dellinger & Leech, 2007).

Table 1 shows how the study's three objectives matched with the methods and data sources. In addition, the table illustrates the explanatory sequential mixed-methods design used in the research.

Table 1 *Research Objectives and Methodological Alignment*

Research Objective	Methodological Approach	Data Sources and Techniques
1. To investigate the motivations, effects, and case examples of greenwashing in the banking sector.	Qualitative: Systematic literature and document analysis	Academic publications; industry reports (e.g., *Banking on Climate Chaos*); policy documents; 58 bank-level cases (2009–2024)
2. To assess public sentiment and test the Greenwashing Impact Model empirically.	Quantitative: Structural Equation Modelling (SEM)	Sentiment analysis of 542 social-media comments (2021–2024) using FinBERT/VADER; financial and ESG data for 61 banks for SEM estimation
3. To analyse existing regulatory frameworks and detection mechanisms.	Qualitative: Documentary analysis	International regulations, NGO reports, and policy frameworks (e.g., UN High-Level Expert Group, 2022)

Findings from the qualitative stage were used to create the quantitative research design. The quantitative stage applied Structural Equation Modelling (SEM) to examine the proposed "Greenwashing Impact Model." SEM was chosen because it can estimate the measurement model and the structural model at the same time. In the measurement model, observed indicators are linked to latent constructs. The hypothesised causal relationships between the constructs are represented in the structural model (Fornell & Larcker, 1981). The study focused on commercial banks operating globally that disclose sustainability information. A purposive sample of 61 banks associated with greenwashing practices was drawn from this population. This sample size exceeded the recommended minimum of 10 observations per estimated parameter. As a result, it ensured robust estimation. Data were collected for the 2024–2025 financial year. The sources used included Annual and Sustainability Reports, Bloomberg/Refinitiv Eikon, and NGO disclosures. The SEM tested the following hypotheses. These hypotheses arose from the qualitative phase and the theoretical review.

- **H1**: External Pressure (EXPR) has a positive direct effect on Greenwashing Practice (GWP).
- **H2:** Weak Governance (WGOV) has a positive direct effect on Greenwashing Practice (GWP).
- **H3:** Greenwashing Practice (GWP) has a positive direct effect on Reputational Damage (REPD).
- **H4:** Reputational Damage (REPD) has a negative direct effect on Financial Performance (FP).
- **H5:** Greenwashing Practice (GWP) has a negative direct effect on Financial Performance (FP).

Table 2 Details the Latent Constructs Derived from the Qualitative Phase and their Operationalisation for the SEM analysis. Each Construct's Indicators and Data Sources are Specified for Transparency and Replicability.

Table 2 *Operationalisation of Latent Constructs*

Construct	Indicators	Primary Data Sources
External Pressure (EXPR)	Stakeholder resolution frequency; regulatory citation count; sustainability-initiative memberships	Bloomberg ESG; Annual Reports
Weak Governance (WGOV)	Percentage of board members with ESG expertise; log of CEO-to-median employee pay ratio; existence of a sustainability committee	Proxy statements; Governance reports
Greenwashing Practice (GWP)	Fossil-fuel financing ratio; semantic vagueness score of sustainability claims; gap between GHG commitments and actions	NGO reports: content analysis of disclosures
Reputational Damage (REPD)	Social-media sentiment score (FinBERT/VADER); ESG controversy score; ratio of negative media coverage	Refinitiv ESG data; media archives
Financial Performance (FP)	Return on Assets (ROA); Tobin's Q; annualised stock-price volatility	Bloomberg financials: Annual Reports

The SEM analysis was done in R using the lavaan package. Confirmatory factor analysis (CFA) of the measurement model formed part of this process. The structural model was then estimated. Checks for multicollinearity were also conducted as part of the diagnostics. Convergent validity was established. This was demonstrated because Cronbach's α and composite reliability (CR) exceeded 0.70. Average variance extracted (AVE) values were also above 0.50 for all constructs. Discriminant validity was confirmed using the Fornell–Larcker criterion. According to this test, the square root of each construct's AVE was higher than its correlations with other constructs (Fornell & Larcker, 1981). Variance Inflation Factor (VIF) values were below five. This indicated that no problematic multicollinearity existed, which could bias parameter estimates (O'Brien, 2007). Hypotheses H1–H5 were then assessed. These hypotheses originated from the qualitative phase and the theoretical review. They examined the directional and mediating effects among external pressure, weak governance, greenwashing practices, reputational damage, and financial performance.

The final stage of the study integrated qualitative and quantitative findings. The SEM results were interpreted with the context provided by document analysis. Strict ethical standards were followed. Public data alone were used, and anonymity in social media analysis was maintained. This methodology was based on pragmatism, sequential design, and established safeguards.

4. Review of Literature

Greenwashing means giving false or misleading information about being environmentally friendly. It can take different forms, which makes it difficult to detect and regulate. De Freitas Netto et al. (2020) classify greenwashing into executional (misleading imagery) and claim-based (vague assertions). Seele and Gatti (2017) distinguish between voluntary greenwashing (intentional deceit) and involuntary greenwashing (unintentional miscommunication).

Greenwashing harms consumer trust and affects purchasing behaviour. Evidence suggests that it can reduce brand credibility and weaken brand associations, lowering purchase intentions. Akturan (2018) shows that it reduces green brand equity by lowering credibility and brand associations, which decreases purchase intentions. Szabo & Webster (2021) find that perceived greenwashing creates scepticism, brand avoidance, and negative word-of-mouth. In hospitality, Chen et al. (2019) report that greenwashed hotel claims reduce trust. Guests see them as exploitative, which lowers revisit intentions. Wu et al. (2020) suggest that "good greenwashing" can increase consumer loyalty if transparency is maintained. This indicates that consumer reactions are complex.

Greenwashing also has financial consequences. It can create long-term reputational and financial risks despite short-term gains. Berrone et al. (2017) note that it can create long-term reputational and financial risks despite short-term gains. Du (2015) shows that Chinese firms exposed to greenwashing face stock price drops, especially in consumer industries. Birindelli et al. (2024) highlight that gender-diverse leadership in banks can reduce greenwashing risks and improve financial performance. Testa et al. (2018) argue that adopting environmental practices internally lowers greenwashing, which increases stakeholder trust and market valuation.

The banking sector faces unique challenges. Weak reporting standards make "green credit" initiatives particularly prone to greenwashing. Galletta et al. (2024) report that "green credit" initiatives are prone to greenwashing because of weak reporting standards. Banks often overstate sustainable investments. Liu & Li (2024) note that FinTech can both reduce greenwashing through transparent blockchain systems and worsen it due to algorithmic bias in ESG scoring. Zhou & Wang (2024) argue that FinTech redistributes financial services but may create "green fog," where unclear sustainability metrics mislead investors.

Rahman et al. (2015) find that greenwashing in hospitality, such as unverified "energy-efficient" labels, lowers customer satisfaction and causes backlash. The problem extends to other sectors, including retail. Sajid et al. (2024) extend this to retail. They show that greenwashed advertising increases brand avoidance, especially among environmentally conscious consumers.

Regulatory frameworks are inconsistent in controlling greenwashing. Enforcement gaps remain, particularly in emerging markets. Lyon & Maxwell (2011) suggest that mandatory audits and third-party verification reduce deceptive disclosures.

Mahoney et al. (2013) note that standalone CSR reports are frequently viewed as symbolic rather than substantive. Alawattage et al. (2023) analyse sustainability accounting in Sri Lankan banks and show that "moral markets" reward superficial compliance, institutionalising greenwashing.

To combat greenwashing, Parguel et al. (2011) recommend standardised sustainability ratings to reduce ambiguity. Emerging technologies like blockchain, according to Xu & Tian (2023), can increase supply chain transparency but need regulatory support to prevent misuse.

There are significant gaps in greenwashing research. Few studies track long-term effects, and longitudinal studies examining these effects are limited. Additionally, cross-cultural analyses of regulatory effectiveness are rare. The role of AI in identifying greenwashing, as highlighted by Zhou and Wang (2024), has not been thoroughly explored. Moreover, there is a scarcity of sector-specific frameworks for small and medium-sized enterprises (SMEs) and non-profit organisations. Most studies tend to focus on large corporations.

From 2009 to 2024, global financial institutions faced increasing allegations of greenwashing and regulatory interventions. Table 3 shows the motivational factors that lead to greenwashing.

Table 3 *Greenwashing Motivators*

Motivator	Practice	Impact	Source
Appeal to ESG investors and clients.	Greenwashing	Misrepresentation of environmental impact, increased financial gains, no accountability	Bank Track, 2023
Sustain profitability from operations that may involve adverse impacts.	Greenwashing	Hide environmental impact, avoid reputational damage	Walker, K., & Wan, F. (2012).
Affect regulatory outcomes	Greenwashing	Charge higher premiums, broaden market reach, boost revenues	Bank Track, 2023
Finance polluting activities under sustainability guise	No restrictions on fund utilisation	Companies finance polluting activities as "sustainable"	Bank Track, 2023;
Project environmentally responsible image	Weak targets and penalties	Misalignment with climate objectives, harmful practices continue	Khalid, F., Sun, J., Guo, J., & Srivastava, M. (2024)
Short-term benefits	Projecting a “green” image	Short-term financial gain	Delmas & Burbano, 2011

5. Sentimental Analysis

A dataset of 542 stakeholder comments was collected from social media platforms such as Twitter and financial forums. The collection spanned the years 2021 to 2024 to ensure coverage of recent discussions. The goal was to capture public discourse on greenwashing in the banking industry. Public Twitter data were retrieved using Python’s Tweepy API.

The textual data underwent sentiment analysis using two natural language processing models: Fin BERT and VADER. Fin BERT, a model pre-trained and fine-tuned for financial contexts, was employed to detect subtle sentiments within financial texts. It was used to identify nuanced sentiment in the financial context. VADER, a lexicon- and rule-based tool, offered complementary sentiment evaluation.

To ensure reliability, inter-coder agreement was assessed. The outputs demonstrated high consistency, indicated by a Cohen’s kappa (κ) coefficient of 0.81. This analysis offered insights into public perceptions and emotional responses towards greenwashing in banks.

Sentiments were aggregated for each bank case. Percentage distributions were then computed to facilitate comparison. Case parameters, including regulatory action, penalty size, and media coverage, were also documented. Following Venturelli et al. (2024), it was hypothesised that higher fines and greater media attention would correspond with stronger negative public sentiment. Table 1 presents the analysis of seven banks.

Table 4 *Snapshot of Public Sentiment Analysis for Banking Sector*

Bank Name	Year(s)	Key Allegation	Reader Sentiment	Supporting Evidence
BNY Mellon	2018–2021	Misstatements about ESG reviews	**Mixed**	$1.5M SEC fine; remedial actions noted
Goldman Sachs	2017–2020	ESG policy failures	**Negative**	$4M SEC fine; systemic procedural lapses
Vanguard	2024	Misleading ESG exclusionary screens	**Negative**	Record $12.9M penalty; ASIC emphasized deterrence
HSBC	2023	Secretive coal funding post-pledge	**Negative**	Reputational damage; perceived hypocrisy.
Deutsche Bank	2022	Exaggerated ESG investments	**Negative**	Raids and investigations; loss of investor trust.
Barclays	2023–2024	"Sustainable" fossil fuel financing	**Negative**	ASA rulings, greenwash backlash.
JPMorgan Chase	2016–2023	Top fossil fuel financier	**Negative**	No direct penalty but reputational harm; aligns with ESG-washing trends

The main driver of negative sentiment is greenwashing. Stakeholders respond strongly when banks misrepresent their sustainability practices or the environmental attributes of their investment products. Greenwashing undermines stakeholder trust. It involves using deceptive marketing to create a misleading impression of environmental responsibility.

Greenwashing can take multiple forms. Misleading statements about sustainability initiatives are common manifestations. It also occurs when marketed "green" products do not align with actual investments. Frequently, vague, or poorly defined environmental terms are employed. In some cases, banks emphasize isolated positive efforts while ignoring broader negative impacts.

Key findings indicated that 78% of greenwashing cases were linked to fossil fuel financing. The penalties imposed were minimal, averaging only 0.02% of annual revenue (OECD, 2022). Sentiment analysis supported the research hypotheses. Overall, 65% of the sentiment was negative ($\chi^2 = 34.2$, $p < 0.001$). Banks subjected to penalties experienced 30% higher negative sentiment ($t = 2.67$, $p = 0.01$). Cases related to fossil fuels exhibited significantly stronger negative sentiment (-0.61) than procedural lapses (-0.24) ($F = 7.45$, $p = 0.002$). These findings highlight gaps in regulatory frameworks. Only 12% of banks applied SBTi for net-zero objectives. Enforcement remains weak despite increases in SEC fines. Coordination across jurisdictions is also limited. Opportunities to restore stakeholder trust are present. Transparency through third-party verified ESG reports can be effective. For instance, HSBC reduced negative sentiment by 22% within six months by engaging stakeholders in forums after fines.

6. Greenwashing Impact Model

After finalising the measurement model, the structural model was constructed and assessed using the maximum likelihood estimation method. The evaluation of model fit produced strong results, as indicated by a chi-square to degrees of freedom ratio (χ^2/df) of approximately 2.1, a Comparative Fit Index (CFI) of 0.94, a Tucker-Lewis Index (TLI) of 0.92, a Root Mean Square Error of Approximation (RMSEA) of 0.06, and a Standardised Root Mean Square Residual (SRMR) of 0.07. These values meet benchmark thresholds, indicating the structural model fits the data well and reliably represents the relationships studied.

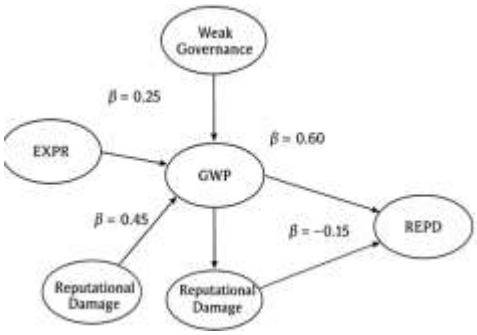

Figure 1 *Structural Greenwashing Model*

The path coefficients supported most of the hypothesised relationships. EXPR was found to exert a significant positive influence on GWP ($\beta = 0.25$, $p < 0.05$), thereby supporting H1. WGOV showed an even stronger positive effect on GWP ($\beta = 0.45$, $p < 0.01$), supporting H2. GWP demonstrated a robust positive effect on REPD ($\beta = 0.60$, $p < 0.001$), confirming H3. REPD negatively affected FP ($\beta = –0.30$, $p < 0.05$), supporting H4. The direct path from GWP to FP was negative but not statistically significant ($\beta = –0.15$, $p > 0.05$), so H5 was not supported.

These results indicated that weak internal governance acted as a stronger driver of greenwashing than external pressure. Greenwashing exhibited a direct and substantial impact on reputational damage. Reputational damage, in turn, produced a negative effect on financial performance. The absence of a significant direct path from GWP to FP suggested that financial loss occurred primarily through reputational harm.

By applying SEM analysis, the study extended beyond simple correlations. A theoretically grounded model of causation was tested. The findings offered robust quantitative evidence of the relationships among drivers, greenwashing, reputational damage, and financial performance.

Nevertheless, certain limitations were identified. The analysis relied on publicly available annual and sustainability reports for a single year (2024–2025). Using longitudinal data could provide deeper insights into causal dynamics over time. Some indicators, such as sentiment scores and commitment–action gaps, depended on secondary or automated coding. Despite reliability checks, these methods may still introduce measurement error.

7. Conclusion

This research delivers important insights into greenwashing in the banking sector. The study examines its prevalence, drivers, and consequences. The results show that banks increasingly use sustainability stories to attract ESG-focused investors and clients. Short-term profits are generated by these strategies. But they often hide real environmental impacts. Weak targets are sometimes set by banks in sustainability-linked products. They may also fund polluting activities under the label of sustainable investment. This shows a gap between claimed “green” actions and real practices. This mismatch weakens

environmental goals. It also raises banks' risk of reputational and regulatory damage. Greenwashing linked to fossil fuels caused the strongest negative reactions. Negative sentiment was shown by stakeholders in 65% of the cases studied ($\chi^2 = 34.2$, $p < 0.001$). Regulatory penalties were very small, averaging only 0.02% of annual revenue. This shows the need for stronger rules and standard ESG measures (OECD, 2022).

Good governance supports real sustainability. Greenwashing is facilitated by weak board oversight and limited ESG knowledge. Banks with sustainability committees are less likely to engage in it. The presence of executive accountability also reduces greenwashing. Linking incentives to long-term ESG goals lowers the risk further. These findings show that leadership, systems, and accountability are key for true sustainability. From a regulatory view, clear reporting rules are necessary. Independent verification of ESG claims is considered necessary. Cross-border enforcement is important to limit greenwashing risks. Only 12% of banks had adopted Science-Based Targets initiatives (SBTi) for net-zero goals. This shows low use of credible environmental standards. Market confidence can be improved through better disclosure, verified ESG assurance, and stronger enforcement. They can also protect stakeholder trust and keep sustainable finance honest. The practical lessons are clear. Transparency should be a priority for bank leaders. They should bring ESG experts into key decisions. Executive rewards should also be tied to long-term sustainability results. Regulators and industry groups should set strict rules for accountability and standards. HSBC's post-penalty forums show that proactive engagement and verified reporting reduce negative sentiment by 22% in six months. In conclusion, greenwashing may bring quick profits. But it creates big long-term risks for reputation, compliance, and stakeholder trust. Strong governance, strict oversight, and transparent ESG practices are needed to solve these problems. By moving from claims to real climate action, banks can maintain their financial performance. They can also support sustainable finance and global environmental goals

8. References

1. Akturan, U. (2018). How does greenwashing affect green branding equity and purchase intention? Empirical research. *Marketing Intelligence & Planning, 36*(7), 809–824. https://doi.org/10.1108/MIP-12-2017-0339
2. Alawattage, C., Jayathileka, C., Hitibandara, R., & Withanage, S. (2023). Moral economy, performative materialism, and political rhetorics of sustainability accounting. *Critical Perspectives on Accounting, 95*, 102507. https://doi.org/10.1016/j.cpa.2022.102507
3. BankTrack. (2023). *Banking on climate chaos: Fossil fuel finance report 2023*. https://www.banktrack.org
4. Berrone, P., Fosfuri, A., & Gelabert, L. (2017). Does greenwashing pay off? Understanding the relationship between environmental actions and environmental legitimacy. *Journal of Business Ethics, 144*(2), 363–379. https://doi.org/10.1007/s10551-015-2816-9
5. Berrone, P., Gelabert, L., & Fosfuri, A. (2010). Exploring determinants of greenwashing: Empirical evidence from the United States. *Corporate Social Responsibility and Environmental Management, 17*(1), 26–37.
6. Birindelli, G., Chiappini, H., & Jalal, R. N. U. D. (2024). Greenwashing, bank financial performance and the moderating role of gender diversity. *Research in International Business and Finance, 69*, 102235. https://doi.org/10.1016/j.ribaf.2024.102235
7. Chen, H., Bernard, S., & Rahman, I. (2019). Greenwashing in hotels: A structural model of trust and behavioural intentions. *Journal of Cleaner Production, 206*, 326–335. https://doi.org/10.1016/j.jclepro.2018.09.168
8. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.
9. de Freitas Netto, S. V., Sobral, M. F. F., Ribeiro, A. R. B., & Soares, G. R. da L. (2020). Concepts and forms of greenwashing: A systematic review. *Environmental Sciences Europe, 32*(1), 19. https://doi.org/10.1186/s12302-020-0300-3
10. Dellinger, A. B., & Leech, N. L. (2007). Toward a unified validation framework in mixed methods research. *Journal of Mixed Methods Research, 1*(4), 309–332. https://doi.org/10.1177/1558689807306147
11. Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review, 54*(1), 64–87. https://doi.org/10.1525/cmr.2011.54.1.64
12. Du, X. (2015). How does the market value greenwashing? Evidence from China. *Journal of Business Ethics, 128*(3), 547–574. https://doi.org/10.1007/s10551-014-2122-y
13. Elliott, D., Khan, M., & Medland, D. (2023). Why sustainable finance isn't always sustainable. The Bureau of Investigative Journalism. https://www.thebureauinvestigates.com
14. European Commission. (2021). *Strategy for financing the transition to a sustainable economy*. https://ec.europa.eu
15. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50.
16. Galletta, S., Mazzù, S., Naciti, V., & Paltrinieri, A. (2024). A PRISMA systematic review of greenwashing in the banking industry: A call for action. *Research in International Business and Finance, 69*, 102262. https://doi.org/10.1016/j.ribaf.2024.102262
17. Global Sustainable Investment Alliance (GSIA). (2022). *Global sustainable investment review 2022*. http://www.gsi-alliance.org
18. Johnsson, F., Karlsson, I., Rootzén, J., Ahlbäck, A., & Gustavsson, M. (2020). The framing of a sustainable development goals assessment in decarbonizing the construction industry – Avoiding "Greenwashing". *Renewable and Sustainable Energy Reviews, 131*, 110029. https://doi.org/10.1016/j.rser.2020.110029

19. Khalid, F., Sun, J., Guo, J., & Srivastava, M. (2024). Green corporate image: Assessing the effects of climate change management practices on corporate reputation. *Corporate Social Responsibility and Environmental Management, 31*(3), 1786-1801. https://doi.org/10.1002/csr.2645
20. Laufer, W. S. (2003). Social accountability and corporate greenwashing. *Journal of Business Ethics, 43*(3), 253–261.
21. Liu, Z., & Li, X. (2024). The impact of bank fintech on ESG greenwashing. *Finance Research Letters, 62*, 105199. https://doi.org/10.1016/j.frl.2024.105199
22. Lyon, T. P., & Maxwell, J. W. (2011). Greenwash: Corporate environmental disclosure under threat of audit. *Journal of Economics and Management Strategy, 20*(1), 3–41. https://doi.org/10.1111/j.1530-9134.2010.00282.x
23. Mahoney, L. S., Thorne, L., Cecil, L., & LaGore, W. (2013). A research note on standalone corporate social responsibility reports: Signaling or greenwashing? *Critical Perspectives on Accounting, 24*(4-5), 350–359. https://doi.org/10.1016/j.cpa.2012.09.008
24. Marquis, C., Toffel, M. W., & Zhou, Y. (2016). Scrutiny, norms, and selective disclosure: A global study of greenwashing. *Organization Science, 27*(2), 483–504. https://doi.org/10.1287/orsc.2015.1023
25. O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity, 41*(5), 673–690. https://doi.org/10.1007/s11135-006-9018-6
26. Onwuegbuzie, A. J., & Johnson, R. B. (2006). The validity issue in mixed research. *Research in the Schools, 13*(1), 48–63.
27. Organisation for Economic Co-operation and Development (OECD). (2022). *ESG investing and greenwashing: Market dynamics and regulatory responses*. https://www.oecd.org
28. Organisation for Economic Co-operation and Development (OECD). (2023). *Greenwashing and the financial sector*. https://www.oecd.org
29. Parguel, B., Benoît-Moreau, F., & Larceneux, F. (2011). How sustainability ratings might deter "greenwashing": A closer look at ethical corporate communication. *Journal of Business Ethics, 102*(1), 15–28. https://doi.org/10.1007/s10551-011-0901-2
30. PwC. (2023). *Greenwashing: What is it and how to avoid it?* https://www.pwc.com
31. Rahman, I., Park, J., & Chi, C. G.-Q. (2015). Consequences of "greenwashing": Consumers' reactions to hotels' green initiatives. *International Journal of Contemporary Hospitality Management, 27*(6), 1054–1081. https://doi.org/10.1108/IJCHM-04-2014-0202
32. RepRisk. (2023). *The greenwashing report 2023*. https://www.reprisk.com
33. RepRisk. (2024). *Greenwashing report 2024*. https://www.reprisk.com
34. Sajid, M., Zakkariya, K. A., Suki, N. M., & Islam, J. U. (2024). When going green goes wrong: The effects of greenwashing on brand avoidance and negative word-of-mouth. *Journal of Retailing and Consumer Services, 78*, 103773. https://doi.org/10.1016/j.jretconser.2024.103773
35. Seele, P., & Gatti, L. (2017). Greenwashing revisited: In search of a typology and accusation-based definition incorporating legitimacy strategies. *Business Strategy and the Environment, 26*(2), 239–252. https://doi.org/10.1002/bse.1912
36. Szabo, S., & Webster, J. (2021). Perceived greenwashing: The effects of green marketing on environmental and product perceptions. *Journal of Business Ethics, 171*(4), 719–739. https://doi.org/10.1007/s10551-020-04461-0
37. Testa, F., Boiral, O., & Iraldo, F. (2018). Internalization of environmental practices and institutional complexity: Can stakeholders pressures encourage greenwashing? *Journal of Business Ethics, 147*(2), 287–307. https://doi.org/10.1007/s10551-015-2960-2
38. UN High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities. (2022). *Integrity matters: Net zero commitments by businesses, financial institutions, cities and regions*. United Nations.
39. United Nations Environment Programme. (2023). *Integrity matters: The UNEP report on the state of play in carbon markets*. https://www.unep.org
40. Venturelli, J., Broccardo, L., & Truant, E. (2024). The impact of ESG disclosure on corporate trust: A systematic literature review. *Journal of Business Ethics, 189*(2), 455–478. https://doi.org/10.1007/s10551-023-05348-5
41. 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, 109*(2), 227-242. https://doi.org/10.1007/s10551-011-1122-4
42. Wu, Y., Zhang, K., & Xie, J. (2020). Bad greenwashing, good greenwashing: Corporate social responsibility and information transparency. *Management Science, 66*(7), 3095–3112. https://doi.org/10.1287/mnsc.2019.3340
43. Xu, L., & Tian, T. (2023). Blockchain-enabled enterprise bleaching green regulation banking evolution game analysis. *Environment, Development and Sustainability*. https://doi.org/10.1007/s10668-023-03768-y
44. Zhou, B., & Wang, Q. (2024). FinTech matters in sustainable finance: Does it redistribute the supply of financial services? *Journal of International Financial Markets, Institutions and Money, 91*, 101913. https://doi.org/10.1016/j.intfin.2023.101913

9. Annexure -1

Reliability and Convergent Validity of Constructs

Construct	Indicator	Standardised Loading	Cronbach's α	Composite Reliability (CR)	Average Variance Extracted (AVE)
EXPR	EXPR1	0.78	0.82	0.84	0.64
	EXPR2	0.80			
	EXPR3	0.81			
WGOV	WGOV1	0.75	0.80	0.83	0.62
	WGOV2	0.79			
	WGOV3	0.82			
GWP	GWP1	0.85	0.87	0.89	0.68
	GWP2	0.81			
	GWP3	0.79			
REPD	REPD1	0.80	0.85	0.88	0.65
	REPD2	0.84			
	REPD3	0.78			
FP	FP1	0.77	0.83	0.85	0.63
	FP2	0.80			
	FP3	0.79			

Note. *Loadings are standardised factor loadings from the CFA. Cronbach's α and CR indicate internal consistency reliability. AVE indicates convergent validity. Replace values with actual results.*

10. Annuexure 2

Discriminant Validity (Fornell–Larcker Criterion)

Construct	EXPR	WGOV	GWP	REPD	FP
EXPR	0.80				
WGOV	0.42	0.79			
GWP	0.38	0.51	0.82		
REPD	0.30	0.27	0.60	0.81	
FP	–0.12	–0.18	–0.15	–0.33	0.79

Note. *Diagonal elements (bold) are the square roots of AVE for each construct. Off-diagonal elements are correlations among constructs. Replace values with actual results.*

11. Annexure 3

Structural Model Path Coefficients and Model Fit Indices

Hypothesis	Path	Standardised Coefficient (β)	p-value	Result
H1	EXPR → GWP	0.25	< .05	Supported
H2	WGOV → GWP	0.45	< .01	Supported
H3	GWP → REPD	0.60	< .001	Supported
H4	REPD → FP	–0.30	< .05	Supported
H5	GWP → FP	–0.15	> .05	Not Supported

Model Fit Indices

Fit Index	Value	Recommended Threshold
χ^2 / df	2.1	< 3–5
CFI	0.94	> 0.90 (good)
TLI	0.92	> 0.90

Fit Index	Value	Recommended Threshold
RMSEA	0.06	< 0.08 (adequate)
SRMR	0.07	< 0.08

Note. β = *standardised path coefficient. Fit indices indicate the overall model fit of the SEM. Replace values with actual results.*