

Effectiveness of Certification Marks and Eco-labels in Reducing Greenwashing: A Comparative Study

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The problem of greenwashing, in which the sustainability credentials of financial products are overstated or misrepresented, has been highlighted by the growing popularity of eco-conscious investing. With an emphasis on intellectual property rights (IPR), this study investigates how well certification marks and eco-labels work to curb greenwashing. In order to guarantee authenticity and integrity in sustainability claims, several marks and labels are used. The study looks at cases of false labelling, false claims, and a lack of transparency, emphasising the negative effects of greenwashing, which include diminished confidence in the financial sector, capital misallocation, and a lag in the achievement of global sustainability objectives. The study highlights the need for regulatory oversight, the establishment of precise guidelines and standards for sustainable labelling, independent confirmation of sustainability claims, and open reporting on ESG practices as ways to combat greenwashing. Campaigns for investor education and awareness as well as cooperation amongst many stakeholders—including government organisations, financial institutions, and non-profits—are seen essential. To preserve the integrity of sustainable finance and make sure that investments actually benefit the environment and society while safeguarding investors' interests, it is crucial to combat greenwashing in eco-conscious investing. The report emphasises how crucial it is to promote accountability, ethics, and openness in sustainable financing.

Keywords: Eco-conscious, Investment Integrity, ESG, Greenwashing, Regulatory Monitoring, Eco-labels, Sustainable Labelling

The increasing focus on ESG (Environmental, Social, and Governance) considerations, especially within the realm of Sustainable Finance, has garnered significant interest in recent years. However, this trend has brought to light a concerning issue known as greenwashing. Greenwashing refers to the misleading practice where companies or investment products make inaccurate claims about their adherence to sustainability and ESG principles. Such deceptive assertions appeal to socially responsible investors but can lead to distortions in how a company's true sustainability efforts are perceived.¹ Greenwashing can seriously damage the reputation and impact of sustainable finance by deceiving investors who wish to fund sustainable projects. Furthermore, it may provide immoral enterprises a competitive advantage, allowing them to profit from the growing demand for socially and environmentally concerned investments.

Sustainable finance is seen as a vital area of inquiry within the context of the 2030 Agenda for achieving the SDGs (Sustainable Development Goals). It is planned to incorporate an investment decision-making

mechanism that directs resources toward sustainable initiatives and monitors climate change as part of its fundamental aims.² Sustainable finance is a key focus issue for IOSCO, as highlighted in its work plan for 2023-2024.³ In 2021, the sustainable finance market experienced sustained growth, witnessing an increase in both the number and value of sustainable products.

According to a report by⁴ the cumulative value of sustainable financial products reached USD 5.2 trillion, a significant 63 percent rise from 2020. This statistic includes sustainable funds, whose assets increased by 53% to USD 2.7 trillion, as well as sustainable bonds (including green, social, and mixed-sustainability bonds), which increased by 72% to USD 2.5 trillion. However, UNCTAD's analysis shows that not all of this investment is truly sustainable, and there is still minimal connection with the Sustainable Development Goals (SDGs). The increasing importance of sustainable finance goes beyond mere market expansion and increased interest in related investment opportunities. It is strengthened by investors' and capital owners' rising attempts to encourage sustainable investments and handle sustainability-related concerns. In February 2020, the

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IOSCO Board agreed to establish a Sustainability Taskforce (STF) at the Board level. This program aims to establish IOSCO as a key stakeholder in worldwide efforts to address sustainability issues.⁵

Sustainable finance has emerged as a dominating trend across Europe and the world. It received USD 37 billion in net new investments in the fourth quarter of 2022 alone, totaling USD 2.5 trillion in global sustainable fund assets by the end of the year.⁶ These numbers, along with other studies, notably by⁷ demonstrate that ESG investing improves financial performance. On the other hand, the financial sector has also come under growing fire for promoting Sustainable Finance investment products, which have recently been extensively covered by the media.⁸ The financial sector is often accused of greenwashing by non-governmental organizations (NGOs) and civil society movements.⁹ In addition, the industry has come under severe criticism from academics for using different definitions and inconsistent labeling of sustainable investment products, which has left financial market participants confused and suspicious of one another.¹⁰ The issue of greenwashing is becoming a top priority for regulators worldwide, partly due to well-publicized reactive cases such as the DWS probe and proactive initiatives like the creation of the Sustainable Finance taxonomy.¹¹

Greenwashing poses a significant risk to financial companies, products, and services, affecting investor trust and the allocation of private capital to sustainable operations.¹² As a result, European regulatory authorities are actively working to reduce greenwashing, protect investors, and market integrity, and build trust in sustainable investments. Greenwashing is a major concern in the investment management sector. According to the Schroders Institutional Investor Study,¹³ 59% of institutional investors see greenwashing as a barrier in the ESG investment process, in the year 2021. Furthermore, a global 2020 study done by the CFA Institute among its members revealed that 78% of investing professionals believed that tighter criteria for ESG products were necessary to counteract greenwashing.¹⁴

The regulatory enforcement actions have led to a rise in public awareness regarding greenwashing¹⁵ and doubt regarding the climate pledges made by corporations.⁴ Greenwashing has the potential to erode trust and credibility in the investing sector, resulting in ESG fund outflows and undermining investment

firms' overall sustainability reputation and objectives. Furthermore, it may cause investors to allocate funds wrongly to products or methods that may not align with their investment goals. The investment industry must address greenwashing issues to maintain fair and functioning capital markets, protect investors, and hold investment firms accountable for their claims.

Literature Review

The research begins with an extensive review of academic articles, regulatory documents, and industry reports related to certification marks, eco-labels, and greenwashing. This literature review aims to provide a theoretical foundation for understanding how certification marks and eco-labels can mitigate greenwashing practices. It also identifies key challenges and gaps in the current regulatory frameworks.

According to by focusing on stakeholders, environmental initiatives can assist corporations in correcting information imbalances about their environmental standards and goals,¹⁶ allowing firms to gain societal approval or stakeholder support. However, their findings indicate that not all environmental efforts contribute positively to this goal, and some may even have negative consequences. This is especially important for companies that do not match their activities to their environmental promises and engage in greenwashing.

In the study of Ioannou¹⁷ and Lee and Raschke¹⁸ they focus on customer and ESG performance, respectively. Both studies highlight the negative repercussions of greenwashing, with the first emphasizing the importance of a company's capability reputation as a mitigating factor, and the latter delving into the relationship between ESG performance, stakeholder legitimacy, and financial results.

In a study titled "Defining Greenwashing,"¹⁹ an examined portfolio-company voting and ESG ratings for ESG funds. They determined that 34% of self-labeled ESG funds in the United States are considered "greenwashers". These funds are more likely to underperform, and while institutional investors can tell the difference between greenwashers and true ESG funds, regular investors cannot. These findings highlight the risks that retail investors face as a result of misinformation and poor investment outcomes caused by greenwashing. However, it should be noted that this study does not consider the wide range of pecuniary and non-pecuniary investing objectives seen in ESG funds.

Another study emphasizes the current uncertainty around the definition of an ESG fund and the means for effectively generating a sustainability impact - an ambiguity that exposes funds to charges of greenwashing.²⁰ The authors concluded that greenwashing could occur on purpose to gain market share, but it could also be unintentional due to the lack of a standardized ESG definition and inconsistent use of ESG terminology. They also stated that ESG funds can only be termed green if they have a positive environmental impact through channels such as shareholder engagement and capital allocation. However, they discovered that very few ESG funds commit to a voting approach that aligns with sustainable goals. Furthermore, the analysis found that most ESG funds differ only marginally from their non-ESG counterparts in terms of capital allocation. These findings illustrate the risks associated with perceptions of greenwashing.

In May and June 2023, The European Supervisory Authorities (the European Banking Authority, the European Insurance and Occupational Pensions Authority, and the European Securities and Markets Authority) published progress reports on greenwashing in the financial industry. These publications gave a complete conceptual framework for comprehending greenwashing within the scope of each authority, as well as quantitative data on its prevalence across several industries.²¹ Notably, the reports identified several critical areas vulnerable to greenwashing, including the dissemination of misleading impact claims, false information about engagement with investee companies on environmental, social, and governance (ESG) issues, inconsistencies in fund names, and insufficient governance structures for ESG implementation.

The International Organisation of Securities Commissions (IOSCO) published a report titled "Sustainable Finance and the Role of Securities Regulators and IOSCO," which found that greenwashing was a major concern among market players.²¹ Among the challenges cited by IOSCO was the lack of standardised norms and unambiguous directives on disclosures, taxonomies, and the many regulatory regimes governing sustainable finance. IOSCO also issued recommendations to help regulators improve sustainability-related practices, policies, processes, and disclosures in the asset management sector.

Methodology

The present study conducts a comprehensive literature analysis to explore the effectiveness of certification marks and eco-labels in reducing greenwashing. It examines existing legislation and regulatory methods in various regions, including Europe, North America, Singapore, and India, to assess their impact on preventing greenwashing and identify emerging trends.

Regulatory Actions against Greenwashing: Review of Existing Regulations and Guidelines

Greenwashing Regulations in Europe

Greenwashing is being countered by a number of important legislative initiatives in Europe that promote transparency and accountability in sustainable corporate operations and finance. Financial market participants are obligated by the Sustainable Finance Disclosure Regulation (SFDR) to report the environmental and social implications of their investment decisions in order to assist investors in making well-informed decisions that are consistent with sustainability goals. In order to promote green investment, the EU Taxonomy, a classification system that describes sustainability performance standards for economic activities, is a helpful supplement to the SFDR.²² Author clarifies what constitutes an environmentally sustainable activity. The Corporate Sustainability Directive (CSRD) strengthens disclosure standards and guarantees comprehensive and consistent sustainability reporting across the European Union by expanding reporting obligations for large firms.

The European Securities and Market Authority (ESMA) collaborating more closely with relevant national agencies is crucial for achieving greater success in combating greenwashing. Further crucial initiatives include stepping up efforts to bring member states' regulations closer together and defining green and/or sustainable financial products using more precise, possibly stricter standards.²³

In addition, the Sustainability Disclosure Requirements (SDR) provide a comprehensive framework that enables businesses to disclose non-financial information, including social and environmental issues.²⁴ This promotes comparison and increases transparency. When taken as a whole, these laws create a cohesive regulatory framework that supports real sustainability initiatives and

discourages dishonest greenwashing techniques. Consequently, these fosters trust in the corporate and financial spheres and validates their commitment to social and environmental responsibility.

UK Green Finance Strategy and Regulations

The Bank of England (BoE), the Prudential Regulation Authority (PRA), the Financial Conduct Authority (FCA), and the Monetary Policy Committee (MPC) are some of the leading banking and financial regulatory bodies in the United Kingdom. There are also other important organizations including the FPC, the Payment Systems Regulator, and the Pension Regulator.²⁵

The UK Green Finance Strategy and Regulations are a set of robust regulations designed to accelerate the transition to a low-carbon and sustainable economy. The cornerstone of it is the government's commitment to synchronizing financial flows with goals related to the environment and climate change. This is facilitated in part by legislative initiatives like as the Green Finance Strategy, which outlines the government's strategy for raising funds for sustainable projects and initiatives.²⁶ This strategy is supported by the Climate Change Act, which sets legally-binding targets for reducing greenhouse gas emissions and gives investors and companies alike a clear regulatory signal.

Moreover, the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA), two of the UK's financial regulators, are essential to the implementation and enforcement of green finance laws.²⁷ For example, in order to improve transparency about environmental, social, and governance (ESG) considerations in investment decision-making, the Financial Conduct Authority (FCA) has implemented disclosure obligations under the Sustainable Finance Disclosure Regulation (SFDR). In a similar vein, the PRA incorporates climate-related risks into its regulatory framework to guarantee that financial institutions are appropriately evaluating and managing risks associated with climate change.²⁸

There is a growing call for the banking industry to disclose how it manages risks associated with climate change. The Task Force on Climate-related Financial Disclosures (TCFD) has held lengthy discussions over the disclosures that investors and insurers must provide to demonstrate that they have given careful thought to the risks associated with climate change.²⁹

Furthermore, incentives including tax exemptions and subsidies have also been implemented by the UK government to promote green investments and sustainable financial innovation. By means of this complex regulatory framework, the UK hopes to foster green finance and accelerate the shift towards a more robust and ecologically sustainable financial sector.

Greenwashing Regulations in North America

In North America, the US Securities and Exchange Commission (SEC) has amended the Investment Company Act's "Names Rule" as part of corrective measures against greenwashing. With regard to environmental, social, and governance (ESG) considerations in particular, these modifications aim to improve the accuracy and transparency of investment fund names. Investment fund names must match their investing methods and objectives in order to prevent the SEC from enforcing misleading branding that could mislead an investment fund's sustainability credentials.

These changes coincide with a rise in interest in ESG investing as more people look to match their financial holdings to their moral principles and environmental concerns. But the rising popularity of ESG investing has also raised questions about "greenwashing," the practice of funds inflating or falsifying their sustainability claims in order to draw in capital.

The SEC's amendment to the Names Rule are part of larger regulatory initiatives to combat greenwashing in the financial industry. These regulations aim to improve transparency and trust in the ESG investment industry by ensuring that fund names appropriately reflect their investment strategies and objectives. This safeguards investors and fosters the expansion of true sustainable investing practices in North America.

Singapore: Legislative Framework on Greenwashing

During its initial stages of growth, Singapore employed compulsory insurance regulations to promote the green insurance sector. Stock exchanges are now seeking to establish directives mandating the disclosure of environmental information, acknowledging its significance in corporate disclosures, and enforcing its disclosure through compulsory regulations. Singapore has been a regional leader in environmental taxonomy, pioneering measures such as the Green Labeling

Scheme (GLS) since 1992.³⁰ This program is designed to help consumers select environmentally friendly items and promote sustainable purchasing practices. Recent advancements show Singapore's dedication to global sustainability norms. The Monetary Authority of Singapore (MAS) has advocated following the International Sustainability Standards Board's (ISSB) recently announced standards. Beginning in 2025, these proposed laws will require climate reporting for all listed issuers, business trusts, and real estate investment trusts.³¹ Singapore's proactive approach to sustainability is exemplified by its ambitious Singapore Green Plan 2030. This national effort aspires to make Singapore a major worldwide hub for sustainable business practices. As a result, Singapore's efforts to adopt and enforce tough sustainability standards not only strengthen its environmental credentials, but also indicate its commitment to fostering a green and resilient economy.

India: Regulatory Framework on Corporate Framework and Greenwashing

India has implemented a series of regulations and guidelines across various legal frameworks to enhance transparency and accountability in corporate sustainability practices. These encompass:

India's regulatory structure demonstrates a determined effort to integrate sustainability ideas into business processes. The Corporations Act of 2013 requires certain corporations to declare their Corporate Social Responsibility (CSR) initiatives in their annual reports, thereby encouraging openness. Furthermore, SEBI Regulations focus on listed businesses' Environmental, Social, and Governance (ESG) disclosures, directing mutual funds and portfolio managers in their responsible investment practices. In addition, RBI Guidelines encourage banks to consider ESG concerns when making lending and investment choices, thereby aligning financial flows with sustainable aims.³²

In keeping with international norms, the Securities and Exchange Board of India (SEBI) of India has taken the lead in regulating sustainable investing. The term "Business Responsibility and Sustainability Report" (BRSR) replaced the previous one, "Business Responsibility Report" (BRR), and now listed firms are required to report on the financial effects of ESG risks as well as their initiatives for mitigating them. Furthermore, it guarantees legitimacy and openness in

green finance by providing criteria for the issuing of green bonds via the SEBI Green Bond Framework,³² The National Voluntary Guidelines on the Social, Environmental, and Economic Responsibilities of corporate demonstrate India's dedication to moral corporate conduct.

Key regulatory authorities including as SEBI, the RBI, and others play critical roles in enforcing and creating these policies. While India's legislative structure takes a proactive approach to sustainability, there is need for improvement. Strengthening cooperation across regulatory agencies, improving enforcement procedures, and raising corporate awareness and compliance could all help to improve the effectiveness of current regulations.

Challenges and Limitations in Combating Green washing

The difficulty of assessing environmental damage appears to be a major hurdle in the regulatory structure designed to combat greenwashing. Evaluating environmental effect necessitates comprehensive assessments that consider factors such as resource consumption, emissions, and lifecycle analysis. This complex process frequently generates uncertainty and conflicting interpretations, limiting the creation of unambiguous criteria for evaluating and exposing environmental damage. Furthermore, a lack of consistency in reporting and transparency exacerbates the problem. In the lack of universally accepted rules for reporting environmental performance, companies may use loopholes or inconsistencies to misrepresent their sustainability claims, weakening trust and responsibility.³³

Enforcement and compliance issues within the legal framework exacerbate the fight against greenwashing. Regulatory bodies frequently face resource limits, competing objectives, and jurisdictional difficulties that limit their ability to appropriately monitor and prosecute fraudulent activity. This can lead to uneven enforcement and insufficient deterrence, allowing greenwashing to persist without effective intervention.

To address these problems, coordinated efforts will be required to establish uniform measuring methodology, improve reporting transparency, and reinforce enforcement mechanisms within the legal framework. The legal system can help combat greenwashing and promote true sustainability

standards by encouraging greater consistency, responsibility, and monitoring.³⁴

Emerging trends and regulatory breakthroughs are transforming the landscape of sustainable finance and corporate accountability. Key improvements in green finance taxonomy and standards help to provide clarity and coherence when selecting ecologically friendly investments. These frameworks not only enable investors to make well-informed judgments, but they also help businesses better align their operations with global sustainability goals.

Furthermore, the integration of technology such as blockchain and artificial intelligence (AI) is changing verification methods. Blockchain's decentralized and immutable nature improves transparency and traceability in supply chains, allowing for more exact monitoring of environmental effect. AI-powered algorithms examine large databases, discovering trends and anomalies to improve compliance monitoring and enforcement methods.

In addition to it, there is increasing momentum in international collaboration and harmonization efforts. Recognizing the universal character of environmental concerns, governments and regulatory authorities are increasingly working together to develop uniform standards and processes. This encourages cross-border investment flows and assures regulatory consistency, resulting in a more coordinated and effective global response to greenwashing.

In summary, these growing trends and regulatory developments point to a shift toward more comprehensive and technologically advanced measures for promoting sustainability and combatting greenwashing in financial markets and business sectors.

Case Studies: Successful Strategies and Failures

Exploring significant incidents of greenwashing that were successfully addressed provides useful insights into viable tactics for fighting deceptive environmental marketing techniques. One such case is the Federal Trade Commission's (FTC) action against a large maker of household cleaning products. The corporation had made baseless claims regarding the environmental benefits of its products, claiming that they were eco-friendly. The FTC intervened, ordering the corporation to stop misleading advertising and create strict monitoring and substantiation procedures for future claims. This legal action delivered a clear message to

businesses about the dangers of greenwashing, emphasizing the necessity of truth in environmental marketing.

Another example is the Australian Competition and Consumer Commission's (ACCC) examination of a major fashion retailer. The retailer had marketed its apparel as "organic" and "sustainable" without providing sufficient data to back up these claims. Following the ACCC's investigation, the retailer committed to stop using misleading advertising and develop rigorous compliance systems to ensure the veracity of its sustainability claims. This case emphasized the significance of regulatory oversight in holding firms accountable for greenwashing techniques and safeguarding customers from deceptive marketing strategies.

The measures taken against Volkswagen (VW) following the exposure of the "dieselgate" crisis in 2015 is a notable example of effective greenwashing prevention. VW has marketed its diesel vehicles as environmentally benign and clean, claiming they met emissions criteria. However, it was discovered that VW had put defeat devices in their vehicles to cheat emissions tests, allowing them to spew pollutants that exceeded regulation limits during real-world driving situations.

The affair sparked major regulatory action and public outcry around the world. Regulatory organizations, including the Environmental Protection Agency (EPA) in the United States and the European Commission in Europe, started investigations and imposed significant fines on Volkswagen. The corporation faced legal consequences, including lawsuits from customers and investors. As a result, Volkswagen was forced to recall millions of vehicles, pay billions of dollars in settlements and fines, and promise to switching to electric vehicles.

The Volkswagen "dieselgate" incident exemplifies how strict regulatory enforcement, transparent investigations, and significant penalties for misleading behavior may effectively combat greenwashing. It emphasized the necessity of holding firms accountable for making deceptive environmental claims, as well as the need for strong regulatory monitoring to ensure environmental compliance. Furthermore, the scandal triggered increased scrutiny of emissions testing techniques and accelerated developments in emissions testing equipment to avoid such mishaps in the future.

One significant example of greenwashing being efficiently tackled in India is the fast-moving consumer goods (FMCG) market. In 2016, the Advertising Standards Council of India (ASCI) investigated a major detergent brand's commercial claim of being "100% natural" and "environmentally friendly." afterwards a thorough assessment, ASCI determined that the brand's claims were unfounded and misled customers. As a result, ASCI instructed the company to revise its advertising claims to more appropriately represent the product's composition and environmental impact. This case proved the usefulness of regulatory authorities such as ASCI in investigating greenwashing claims and holding businesses accountable for misleading marketing tactics.

A well-known garment brand, on the other hand, is a prime example of a failure to handle greenwashing in India. Notwithstanding professing to employ sustainable and eco-friendly manufacturing procedures, investigations revealed that the business engaged in unsustainable practices, such as excessive water and chemical consumption in production and insufficient waste management. Due to a lack of rigorous regulatory enforcement and customer awareness, the firm was able to continue greenwashing its products without suffering substantial penalties. This case demonstrates the gaps in regulatory monitoring and the necessity for tougher regulations in order to effectively combat greenwashing in India's garment industry.

These case studies emphasize the importance of attentive regulatory monitoring, consumer education, and effective enforcement mechanisms in fighting greenwashing tactics in India. Bodies can effectively combat greenwashing by implementing measures such as stringent enforcement of advertising regulations, joint efforts between regulatory bodies and consumer advocacy groups, and explicit communication of regulatory expectations to enterprises. This method not only ensures corporate accountability, but it also promotes fair competition and actual sustainability efforts in the marketplace, thereby sustaining customer trust and increasing environmental stewardship.

Enhancing Consumer Awareness: The Role of Certification Marks and Eco-Labels

In an age where environmental claims are common but often ambiguous, credible certification

marks and eco-labels offer a potential solution for bridging the trust gap between companies and consumers. Labels such as Energy Star (U.S initiative program that finds goods (A label that proves wood and paper items come from forests that are managed in a good way) which uses less energy), Fair Trade (a certification that makes sure goods are made and sold in an honest way, with fair pay), and the Forest Stewardship Council (FSC) serve as indicators of independently verified environmental and ethical standards. However, their impact is limited by public awareness and comprehension. Research suggests that many consumers struggle to distinguish between third-party certified labels and unregulated, self-declared green claims, which can dilute the effectiveness of legitimate certifications.³⁵

This confusion underscores the importance of transparency and public education. Consumers who understand the meaning and rigor behind certified labels are more likely to support genuinely sustainable products, thereby creating market incentives for ethical business practices. Strengthening awareness through media campaigns, school curricula, and clearer labeling regulations could empower consumers to make more informed choices.³⁶

Encouraging Voluntary Corporate Responsibility

Moving beyond mere compliance with environmental regulations, voluntary corporate sustainability efforts reflect a deeper integration of ecological values into business strategy. Companies are increasingly recognizing that genuine environmental practices can also yield tangible business benefits—such as operational efficiency, innovation, investor confidence, and enhanced brand reputation.³⁷

Moreover, stakeholder influence plays a critical role in shaping corporate behavior. Pressure from investors, supply chains, and environmentally conscious consumers can encourage companies to adopt frameworks like ESG (Environmental, Social, and Governance) reporting, B-Corp certification, and science-based emissions targets. These tools provide structure and accountability for organizations committed to long-term environmental stewardship.

Government agencies and non-governmental organizations can support this shift by recognizing leadership in sustainability through awards,

procurement preferences, or tax incentives. Such recognition not only reinforces responsible behavior but also encourages industry-wide transformation through competitive emulation.³⁸

Proposed Strategies for Strengthening Regulation

A number of strategies can be suggested for strengthening laws prohibiting greenwashing:

- (i) **Strengthening Enforcement and Penalties** - For regulation to be successful, enforcement and penalties must be strengthened. Introducing more severe financial penalties for businesses discovered to have engaged in greenwashing may have a greater deterrent effect. Regular compliance checks should be conducted in addition to this, especially in sectors like fashion and automotive where there has been a history of greenwashing. Enforcing sustainability requirements more strictly by having regulatory agencies like the FTC, EPA, and SEBI conduct sporadic spot checks can assist guarantee compliance.
- (ii) **Technological Integration in Monitoring** - Promising developments can be achieved in monitoring through technological integration. By examining lengthy corporate sustainability reports, AI algorithms can be used to find patterns of greenwashing and uncover dishonest business practices. Furthermore, supply chains' environmental impact may be monitored and verified by blockchain technology, improving traceability and transparency.
- (iii) **Clearly Define Standards and Requirements:** Establish consistent and stringent guidelines for globally recognized certification marks and eco-labels. This ensures that all eco-labels adhere to strict sustainability standards, reducing consumer confusion and enhancing trust. It is essential to have uniform standards for environmental reporting and claims. Inconsistencies between industries and geographical areas can be addressed by establishing internationally recognized standards for environmental claims and reporting. This would reduce gaps and stop businesses from making false claims about sustainability. Furthermore, requiring independent third-party audits to confirm these assertions would guarantee, like to financial audits, that businesses support their green activities with reliable, verifiable data.
- (iv) **Strengthen Regulatory Monitoring:** Enhance the role of regulatory agencies in monitoring and enforcing compliance with established standards. This includes conducting regular inspections and audits to ensure that companies are not engaging in greenwashing practices.
- (v) **Mandate Independent Verification:** Require that sustainability claims undergo independent third-party verification before products can be awarded certification marks or eco-labels. This adds a layer of accountability and ensures that claims are backed by credible evidence.
- (vi) **Promote Open Disclosure and Reporting:** Mandate transparent reporting of environmental, social, and governance (ESG) practices. Companies should provide clear, accessible information about their sustainability initiatives and the impact of their products. It's also essential to have enhanced disclosure and transparency requirements. Increasing accountability can be achieved by requiring businesses in all sectors to disclose sustainability metrics like carbon emissions and resource consumption.³⁴ This will be further supported by extending laws such as the Corporate Sustainability Reporting Directive (CSRD) of the EU and the Business Responsibility and Sustainability Report (BRSR) of India to a worldwide level. Incorporating real-time data disclosure via cutting-edge technologies like blockchain and artificial intelligence can also increase transparency and give stakeholders better tools to track and validate company claims.
- (vii) **Develop a Unified Labeling System:** Promote the creation of a unified labeling system that consolidates various certification marks and eco-labels. This would make the labeling landscape easier for consumers to navigate and reduce the risk of label fatigue.
- (viii) **Increase Consumer Education and Awareness:** Launch educational campaigns to inform consumers about the importance of certification marks and eco-labels. Provide clear information on what these labels represent and how to identify genuine certifications, enabling consumers to make informed decisions.

By putting these strategies into practice, regulatory frameworks can strengthen, encouraging real

sustainability initiatives and successfully battling greenwashing.

Conclusion

The pervasive issue of greenwashing within sustainable finance significantly undermines the credibility of investment markets and erodes investor confidence. This study has elucidated the multifaceted nature of greenwashing, encompassing deceptive labelling, false claims, and inadequate transparency, which collectively compromise investor interests and obstruct progress towards achieving global sustainability objectives.

The analysis of existing regulatory frameworks across regions including Europe, North America, Singapore, and India highlights a spectrum of strategies designed to enhance transparency, accountability, and ethical conduct within the financial sector. These strategies encompass rigorous reporting requirements, independent verification of sustainability claims, and collaborative efforts among stakeholders to establish precise standards for identifying truly sustainable financial products. The examination of case studies further sheds light on the efficacy of various regulatory measures, revealing both successful interventions and persistent challenges in enforcement.

To address the pervasive issue of greenwashing effectively, this study underscores the imperative of fortifying regulatory frameworks to ensure that financial investments genuinely align with environmental and social sustainability goals. It advocates for the adoption of standardized methodologies for assessing and reporting environmental impacts, as well as the implementation of robust enforcement mechanisms to deter and penalize deceptive practices. Enhanced coordination among regulatory bodies, increased transparency in sustainability reporting, and the integration of advanced technologies such as blockchain and artificial intelligence for verification purposes are essential to mitigating greenwashing.

Therefore, certification marks and eco-labels play a crucial role in combating greenwashing by providing consumers with trustworthy indicators of genuine sustainability. They help bridge the gap between consumer expectations and corporate accountability, fostering an environment that

recognizes and rewards true sustainable practices. However, for these labels to be truly effective, stringent standards, reliable verification processes, and clearly defined regulatory frameworks are essential. Despite significant progress, challenges such as the proliferation of labels, inconsistent standards, and the misuse of eco-labels persist. Addressing these issues is critical to maintaining consumer trust, ensuring accurate representation of sustainability claims, and promoting environmental stewardship.

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