Anatomy of Corporate Pseudo-Social Responsibility Behavior: Identification Mechanism and Preventive Countermeasures of Greenwashing Phenomenon

Liang Chang[1], Min Tang[2], Kuangxuan Xu[3], and Wenrui Zhao[4, *]

[1]St Michael's College, University of Toronto, Toronto, Canada

[2]International Business College, Dongbei University of Finance and Economics, Dalian, China

[3]Dpartment of Economics, Nanjing University of Finance & Economics, Nanjing, China

[4]Department of Mathematics, The Ohio State University, Columbus, The United States

*Corresponding author: zhao.2486@osu.edu

Abstract. "Greenwashing" is a prevalent form of pseudo-corporate social responsibility (CSR), which refers to misrepresenting a company's environmental efforts to mislead consumers and shareholders about the company's actual commitment to sustainable development. Although CSR has been widely recognized, some companies use CSR only for financial gain without implementing real sustainability practices. This paper critically investigates the phenomenon of "greenwashing" by examining its intrinsic motivations, manifestations, and negative impacts on society and the environment. Using Company C as a case study, the paper illustrates how the company employs misleading tactics to create the illusion of environmental responsibility, ultimately undermining consumer trust and jeopardizing broader sustainability efforts. In addition, this study identifies specific mechanisms for detecting "greenwashing," such as discrepancies between public statements and operational practices, and suggests preventive strategies, including the implementation of stricter regulatory standards, increased transparency requirements, and comprehensive policy reforms. By emphasizing the importance of consumer education and strengthening regulatory frameworks, this study concludes that addressing "greenwashing" is critical to fostering genuine corporate responsibility and promoting sustainable development.

Keywords: Greenwashing; Corporate pseudo-social responsibility behavior; Identification mechanism of greenwashing; Preventive countermeasures.

1. Introduction

In recent years, one prevailing consensus has been that corporations need to engage in social responsibilities. It has been indicated that in the current business environment, corporations are expected to act ethically and responsibly toward society to maintain economic profitability [1]. Additionally, psychological studies have shown that consumers are more inclined to support companies that appear to benefit their customers [2]. Undoubtedly, CSR is a key component in portraying a positive corporate image and enhancing its market competitiveness. As a result, nearly all major companies have begun publishing annual Corporate Social Responsibility reports to showcase their efforts in environmental protection, social contributions, and governance transparency.

With the widespread use of the term "CSR" and the growing public interest in the topic, an increasing number of corporations worldwide are participating in corporate social responsibility activities each year. Unfortunately, some corporations recognize that engaging in social responsibility could enhance their brand image, but they also realize such activities do not always lead to maximum economic profit in the short run. Consequently, under the guise of social responsibility, some corporations mislead the public and engage in pseudo-socially responsible behavior to achieve greater economic profit.

This paper introduces the terminology "pseudo-corporate social responsibility (pseudo-CSR)" and focuses specifically on the pseudo-CSR phenomenon known as "greenwashing." The greenwashing phenomenon arises from the increasingly serious global environmental issues and the heightened

public concern regarding corporate environmental responsibility. Companies face pressure from both consumers and governments, pushing them to seek more appealing images in market competition. However, some companies choose to mislead consumers regarding their environmental practices or the environmental benefits of a product or service rather than taking genuine and effective sustainable actions [3].

Ultimately, greenwashing could lead to continuous environmental degradation [4]. By prioritizing marketing deceptive claims over implementing meaningful, sustainable practices, these corporations exacerbate significant environmental issues such as pollution, habitat destruction, and climate change [5]. Greenwashing not only misleads consumers into believing they are making environmentally responsible choices but also allows harmful practices to persist with no punishment. As a result, the potential for genuine progress in sustainability is undermined, leading to lasting impacts on ecosystems and public health.

Nearly all studies on this topic indicate that greenwashing negatively impacts both the company itself and society. On the one hand, it undermines the willingness of companies to fulfill genuine social responsibilities, making it difficult to distinguish between those truly practicing CSR and those engaging in false advertising [6]. On the other hand, greenwashing erodes consumer trust, causing confusion among consumers and leading to a decline in public confidence in corporations' commitment to social responsibility [7]. Thus, addressing greenwashing is essential for encouraging corporations to take meaningful sustainability actions and rebuilding trust between corporations and consumers.

While many studies have been conducted on CSR, fewer have focused on its opposite, pseudo-CSR. Therefore, an in-depth analysis of pseudo-social responsibility behaviors, especially the identification mechanisms and prevention strategies related to greenwashing, is of significant practical importance. This paper aims to educate consumers on the concept of pseudo-CSR (with a focus on greenwashing) and empower them with the knowledge and tools necessary to identify genuine corporate social responsibility from misleading claims. It also discusses and proposes strategies for preventing such behavior in the future. By fostering a more informed public, the paper seeks to drive meaningful change in corporate practices and promote true sustainability.

This paper will examine greenwashing through a review of existing research. First, it will introduce the underlying causes, further analyzing the different forms of greenwashing and their manifestations across various industries. Next, this paper will focus on how to identify corporate greenwashing behaviors, presenting existing identification criteria and methods, along with specific case analyses. Finally, this paper will discuss current measures to prevent greenwashing and propose relevant policy recommendations, aiming to provide insights into the sustainable development of society and businesses.

2. Greenwashing

2.1. Different Forms of Greenwashing

Greenwashing, derived from the term whitewashing, was first used by journalists David Beers and Catherine Capellaro in 1991 for corporations that try to falsely claim they are environmentally friendly. In 2009, when a U.S. environmental marketing company, TerraChoice, published The Seven Deadly Sins with classifications on greenwasher practices. These include hidden trade-offs, no proof, vagueness, and irrelevance combined with the lesser of two evils, fibbing or the lie, as well as false labeling.

When it talks about the environmental advantages of products and services that do not consider their negative impacts on the environment, this is known as the “Sin of Hidden Trade-Offs” [8]. The “Sin of No Proof” occurs when companies claim environmental benefits for their products, but they do not include trustworthy or verifiable information about how the product makes an impact. For instance, companies could market their products as “carbon neutral” or “organic,” although without their own independent third-party certifications or life cycle assessments [9]. The “Sin of Vagueness”

uses ambiguous terms like “natural,” “organic,” or “environmentally friendly” to promote products, but actually, these terms lack clear definitions— how does this type of information help the consumer who is trying to understand a product as easily as possible? The Sin of Irrelevance means that companies give weight to environmental attributes that are not necessarily related or impactful on the overall product in terms of its environmental impacts and/or it is nothing more than compliance with today's regulations. The "Sin of the Lesser of Two Evils" refers to attacking a product for not doing what other products in its category don't do and if they are environmentally harmful as well. An obvious example is marketing a fuel-efficient SUV that admittedly releases fewer emissions than other options in its class or fuels sustainability yet, to an extent, has more consequential environmental implications compared with lower-impact alternatives such as public transportation and electric vehicles [9]. The most basic in greenwashing tactics is called the “Sin of Fibbing,” which refers to companies making false or grossly exaggerated statements about their environmental practices. The "Sin of Worshiping False Labels" happens when a company gives consumers false confidence in their product's environmental benefits by fraudulently using or lying about the presence of untraceable, unregulated third-party labels/certifications.

According to the surprising floods of greenwashing today, they extend quite a bit more than fundamentally slapping an eco-friendly-sounding name on your product. Sun et al. observe that policy uncertainty might also make greenwashing a more likely outcome, where firms take advantage of gaps or ambiguities in regulations to create misleading impressions [10]. Additionally, Zhao and Lee examined the influence of vertical environmental regulatory mechanisms on greenwashing and found that under weak or uncertain regulations, firms are more prone to make false claims [11]. Li and Ding also showed the unclarity in environmental claims made by the makers of construction materials [12]. Our findings highlight that greenwashing is not limited to outright false advertising but includes a range of other manipulative rather than technical hyperbole, selective disclosure as well as the use of vague terms.

Many companies also use ESG (Environmental, Social and Governance) & CSR as a tool for green-washing. ESG reports, which are meant to determine the environmental, social, and governance performance of a company, include vague or overly verbose disclosure designed to obfuscate real-world impacts. Some companies are known to boost their ratings by cluttering ESG disclosures with complex language or extensive text that reduces the transparency of what they publish [13]. When executives face performance challenges, they may use ESG reports for window dressing to meet short-term market requirements or shareholder expectations rather than discharging environmental responsibility. Meanwhile, firms may conduct symbolic green activities to appear environmentally responsible when such efforts do not correlate with their true environmental performance [13]. This gap between what is reported and reality becomes one of the main tools for greenwashing by means of ESG or CSR reporting.

2.2. Greenwashing Motives

Greenwashing behavior often reflects the pressures faced by enterprises in balancing economic, social, and environmental responsibilities. Nowadays, firms face demands from investors, consumers, and governments to be environmentally friendly. Meanwhile, it requires a lot of capital investment to protect the environment and develop sustainably, concurrent with that can cause short-term profit pressures. In response, some companies rely on greenwashing so as to manage this contradiction. Kudłak et al. suggest that opportunities for greenwashing will be greatest where firms' environmental commitments are by far the furthest from their outcomes [14]. Firms will greenwash and promise the world in terms of environmental performance for a range of reasons, including market position, investor allure, or policy pressures. The study also reveals how greenwashing behavior in ESG reporting is shaped by executive power imbalances, where executives leverage opportunities of information asymmetry and their centralized authority to engage in financial deception [15]. This behavior is bad because it not only impacts the decision of an investor but may also lead to misinformation in the stock price and increase by inflating [16]. These short-term strategies, however,

inevitably sacrifice long-term sustainable development for the business profit. Insufficient regulatory policies, lack of public awareness, and media have also contributed to the prevalence of greenwashing. Célia et al. point out the importance of a company´s environmental performance and that any perception of environmental risks will devastatingly affect its reputation as well as brand loyalty, especially with biased or wrong information given through media [17].

Greenwashing can take many forms and be driven by different motives ranging from political uncertainty to power imbalances amongst executives, lack of public knowledge, and media impact. This study implies that further research should also concentrate on how to identify and prevent greenwashing accurately so as to enable truly productive corporate sustainability development.

3. Mechanisms for Recognizing the Greenwashing Phenomenon

3.1. Development of Standards and Criteria for Greenwashing Identification

The development of standards, methods, and tools is particularly important in the identification mechanism of greenwashing. First of all, the first step in identifying the existence of greenwashing in a company is to establish clear criteria. In practice, international organizations and governments have established various environmental standards and guidelines to identify and combat greenwashing. For instance, the International Organization for Standardization (ISO) has published ISO 14020 and ISO 14021, which provide specific requirements for environmental labels and declarations, aiming to ensure that claims such as “recyclable” or “environmentally friendly” are truthful and not misleading [18]. Furthermore, the European Union’s Unfair Commercial Practices Directive (2005/29/EC) offers a legal framework for dealing with misleading environmental claims in advertising, helping to establish clear guidelines against greenwashing.

3.2. Characteristics and Frameworks for Recognizing Greenwashing

According to the existing research literature, the main characteristics of greenwashing include exaggerating the actual impacts of environmental measures, hiding unfavorable information, and using vague or misleading language and images to portray an environmental image [19,20]. Many researchers have proposed the “seven sins of greenwashing” as a framework for identification, including hidden tradeoffs, lack of evidence, and irrelevant environmental declarations [20]. For example, a product may be advertised in a way that highlights some of its environmental credentials (e.g., low energy consumption) but neglects to acknowledge other environmental negative impacts during production, such as higher carbon emissions or water consumption [19]. This identification framework offers a structured approach to examine how companies may exploit specific aspects of their environmental performance to obscure more harmful actions.

3.3. Third-Party Certifications and Their Limitations

In addition, the presence of clear third-party certification of environmental protection measures that companies claim, their compliance with industry standards, and the presence of fake advertising components become core indications for the identification of the greenwashing phenomenon. However, not all certification systems are reliable. Studies have shown that certain systems, such as those of the Forest Stewardship Council (FSC) and the Marine Stewardship Council (MSC), sometimes fail to effectively monitor environmental behavior, allowing companies to greenwash their actions [20]. Therefore, scrutinizing both certifications and the companies’ actual environmental practices remains essential.

3.4. Qualitative Analysis: Examining Corporate Communication

Furthermore, the methodology and instrumentation for identifying the phenomenon of greenwash mainly rely on qualitative and quantitative means of analysis. Qualitative methods focus on scrutinizing corporate communication materials such as advertisements, public reports, and product

packaging. Content analysis, for example, is used to assess whether the language and images used by a company are misleading, including eco-labels, vague terms like "sustainable," or idealized nature imagery [19].

3.5. Quantitative Analysis: Data Verification of Environmental Claims

Quantitative analysis relies on data verification, especially by comparing the environmental commitments of companies with their actual behavior. Key metrics for quantitative analysis include carbon emissions, water usage, and waste management data. For example, carbon footprint tracking is a representative tool that quantifies the total greenhouse gas emissions produced by a company across its supply chain. Through carbon footprint data, researchers and regulators can assess whether a company's environmental claims align with its actual environmental impact [21]. Advanced data analytics and surveillance technologies now allow organizations to closely monitor and verify such data, providing robust evidence against greenwashing [22]. In recent years, the development of data analysis and surveillance tools has provided significant support for the quantification of greenwash. For example, consumer rights organizations and supervisory agencies could evaluate whether companies are actually reducing their environmental burden by tracking their carbon emissions data [20].

3.6. Alternative Data Sources for Greenwashing Detection

Certain external data sources, commonly referred to as "alternative data," play a crucial role in identifying greenwashing. For instance, apart from carbon footprint analysis, satellite monitoring of deforestation or water extraction, real-time pollution level tracking, and third-party verification from environmental watchdogs provide key insights into whether a company’s actions match their promises [23].

Meanwhile, certain industry certification systems are also used to verify the veracity of companies' environmental declarations. However, in some cases, studies have indicated that these certification systems may also be flawed. For example, the Forest Stewardship Council (FSC) and the Marine Stewardship Council (MSC) have failed to effectively monitor companies' environmental behavior under certain circumstances, which has allowed these certifications to be used as a tool for companies to greenwash their business [20].

3.7. Case Study: C Company

In applying the aforementioned identification mechanisms, C Company offers a relevant case study in greenwashing. C Company, a globally well-known beverage brand, has been facing environmental protection-related criticisms for a long time. Its greenwashing behavior has been particularly pronounced concerning its plastic packaging. Applying the "seven sins of greenwashing" framework, C Company's actions demonstrate multiple issues, including hidden tradeoffs and a lack of evidence. C Company's advertising often refers to its efforts toward plastic recycling and eco-friendly packaging, which declares the company's commitment to minimizing its negative impacts on the environment [20]. However, the fact reveals that C Company is still one of the world's largest plastic polluters, with a huge number of plastic bottles produced each year and a much poorer rate of recycling those bottles than expected.

In terms of the "hidden tradeoffs" sin, C Company emphasizes the word "recyclable" in its environmental pledges but seldom acknowledges the negative externalities of its supply chain, such as the high carbon footprint of bottle production and transportation. Furthermore, the lack of reliable third-party verification concerning its recycling practices reflects the "lack of evidence" sin, where C Company fails to provide transparent proof of its environmental claims [19].

In addition, C Company has also promoted its “green” reputation by sponsoring environmental programs. However, these programs are often short-term public relations actions with limited substantial impact. For example, some of the environmental programs that it sponsored have contributed negligibly to solving the global problem of plastic pollution and could not counterbalance

the environmental devastation caused by the company itself [20]. This constitutes the "irrelevant environmental declarations" sin, as the company uses unrelated or insignificant programs to deflect attention from its actual environmental damage.

C Company's greenwashing behaviors not only involve plastic pollution but also water consumption. Though the company claims that it has taken steps to reduce water use and increase water efficiency, in developing countries, C Company's factories have been accused of over-pumping underground water, which results in local water shortages. This reflects the hidden tradeoff of focusing on water efficiency in some areas while exacerbating environmental and social problems in more vulnerable regions.

Through the lens of this case study, it becomes clear that C Company systematically exploits gaps between its environmental promises and actual practices. By applying identification frameworks such as the seven sins of greenwashing and leveraging tools like carbon footprint data, companies can be held accountable for these discrepancies.

Identifying corporate greenwash requires identifying criteria, methods, and tools and analyzing the gaps between a company's actual actions and its environmental promises through specific case studies. The case of C Company demonstrates that corporations often use vague environmental promises in their campaigns to hide their actual environmental impacts. By clarifying identification criteria and using effective identification tools, consumers and regulators could better expose and respond to greenwashing.

4. Preventive Measures and Recommendations for Greenwashing

Based on the cases above, the combination of internal governance and external governance may be able to effectively prevent the occurrence of corporate greenwashing.

4.1. Internal Pressure Management

Firstly, promote the active fulfillment of social responsibilities within the enterprise. The main thing is to improve the moral quality of all employees, especially the operator, as a leader, to set a good example, integrity as the internal culture of the enterprise, and strengthen the moral education of employees [24].

Secondly, enterprises should not regard financial indicators as the only criterion for performance appraisal but should establish a comprehensive performance appraisal index system such as economic value, social responsibility value, and social and environmental value so as to change the phenomenon of choosing greenwashing behavior in pursuit of profits [25].

Thirdly, as far as the current trend is concerned, green and low-carbon is the first step to protecting the environment, and enterprises should not be greedy for immediate benefits but should realize in advance that the value of low-carbon to enterprises is immeasurable and will also have a far-reaching impact on the high-quality development of enterprises. Therefore, it is necessary to strengthen the awareness and understanding of green development by enterprises, fully understand the economic and social benefits brought by green development, and make green culture deeply rooted in enterprises.

4.2. External Pressure Management

Firstly, promote the government and society to have a reasonable expectation of enterprises to fulfill their social responsibilities [26]. If all sectors of society have too high expectations for enterprises, it will lead to many enterprises choosing greenwashing because they cannot meet the expectations of all sectors of society, so reasonable expectations for enterprises are the top priority to solve the pressure from external sources.

Secondly, increase the frequency of detection. This requires the government and relevant departments to inspect enterprises that may have greenwashing behaviors and establish a cross-

departmental collaborative supervision mechanism to ensure that the environmental protection, green management, and other projects of enterprises are effectively evaluated, supervised, and managed.

Thirdly, improve the punishment mechanism. When punishing relevant enterprises, it is not only a simple low fine when greenwashing is discovered but also a multi-faceted punishment according to the different means, different degrees, and degrees of environmental pollution of greenwashing [27]. At the same time, we will increase penalties and review corporate environmental protection statements, investigate and deal with false propaganda and misleading information, increase the cost of violations, and prevent the continuous fermentation of the broken window effect.

Fourthly, improve information transparency. Governments should establish strict environmental disclosure standards and regulations to ensure that companies provide truthful and accurate information when communicating the environmental attributes of their products or services. Enterprises should be required to make the relevant data obtained, recorded, and analyzed open and transparent in the environmental responsibility report disclosed to the public and could accept third-party verification, including but not limited to emission sources, emissions, sewage treatment results values, accounting methods, results, etc., and disclose to the public the key data of enterprise emissions, the total amount of allowances and the allocation of such information [28]. Only by improving information transparency could we ensure the authenticity of pollutant treatment and, at the same time, facilitate public supervision of enterprises and prevent information asymmetry. For example, the Federal Trade Commission (FTC) of the United States has clear guidelines for green advertising.

Finally, promote green tax and financial policies. The government could actively promote green role model enterprises, especially those that have made greater contributions to green environmental protection. Through green taxation and green finance policies, certain tax incentives, financial incentives, or green subsidies will be given to enterprises with good environmental performance and real green transformation so as to realize the green development benefits of enterprises and encourage enterprises to reduce greenwashing.

5. Conclusion

Greenwashing poses a significant challenge to CSR, as companies often misrepresent their environmental practices to cultivate a positive public image while failing to implement meaningful changes. This deceptive behavior takes various forms, including vague claims, exaggeration of benefits, and false labeling. These tactics are often driven by market pressures, regulatory ambiguities, and the pursuit of short-term profits.

To identify greenwashing practices, it is essential to establish clear criteria, utilizing both qualitative and quantitative analyses, including third-party certifications and data verification. Realistic public expectations, enhancing regulatory oversight, imposing stricter penalties for misleading claims, and improving information transparency are needed to combat greenwashing.

This paper introduced "The Seven Deadly Sins" and explored the various forms and motivations behind greenwashing, highlighting the urgent need for effective identification mechanisms and preventive measures. The study of pseudo-social responsibility, especially on greenwashing, is still in its infancy. While progress has been made in understanding the concepts and motivation behind it, effective identification and prevention mechanisms remain unexplored. Future research should aim to develop comprehensive frameworks for detecting greenwashing practices, focusing on both qualitative and quantitative methodologies. Additionally, investigations should assess the effectiveness of existing regulatory measures and explore innovative strategies for promoting corporate accountability.

By improving public understanding of greenwashing, future research could empower consumers to make informed choices and foster greater transparency in corporate practices. Furthermore, collaboration between researchers, policymakers, and industry leaders could facilitate the

development of more stringent regulations and best practices to mitigate greenwashing. Ultimately, these efforts will contribute to a more ethical and sustainable environment.

Authors Contribution

All the authors contributed equally, and their names were listed in alphabetical order.

References

[1] Blok V. Levinasian Ethics in Business. Encyclopedia of Business and Professional Ethics, 2017, 1–5.

[2] Johnson Z S, Mao H, Lefebvre S, et al. Good guys can finish first: How brand reputation affects extension evaluations. Journal of Consumer Psychology, 2019, 29(4): 565-583.

[3] TerraChoice Environmental Marketing, Inc. The "Six Sins of GreenwashingTM": A Study of Environmental Claims in North American Consumer Markets. TerraChoice Environmental Marketing, Incorporated, 2007.

[4] Das N, Gangopadhyay P, Alam M M, et al. Does greenwashing obstruct sustainable environmental technologies and green financing from promoting environmental sustainability? Analytical evidence from the Indian economy. Sustainable Development, 2024, 32(1): 1069-1080.

[5] Aggarwal P, Kadyan A. Greenwashing: The darker side of CSR. Indian Journal of Applied Research, 2014, 4(3): 61-66.

[6] Lyon T P, Montgomery A W. The means and end of greenwash. Organization & Environment, 2015, 28(2): 223-249.

[7] Delmas M A, Burbano V C. The drivers of greenwashing. California Management Review, 2011, 54(1): 64-87.

[8] Verma M, Bharti U. Combating Greenwashing Tactics and Embracing the Economic Success of Sustainability. VEETHIKA-An International Interdisciplinary Research Journal, 2023, 9(3): 6-12.

[9] Faber G, Sick V. Identifying and Mitigating Greenwashing of Carbon Utilization Products. Global CO2 Initiative, 2022.

[10] Sun H, Bai T, Liu Z. Perceived policy uncertainty and enterprise greenwashing risk. Finance Research Letters, 2024, 69: 106148.

[11] Zhao Y N, Lee C C. The impact of vertical environmental regulation mechanism on greenwashing. Journal of Cleaner Production, 2024, 475: 143637.

[12] Li D, Zhang Z, Gao X. Does artificial intelligence deter greenwashing? Finance Research Letters, 2024, 67: 105954.

[13] Moodaley W, Telukdarie A. Greenwashing, sustainability reporting, and artificial intelligence: A systematic literature review. Sustainability, 2023, 15(2): 1481.

[14] Kudłak R. Greenwashing or Striving to Persist: An Alternative Explanation of a Loose Coupling Between Corporate Environmental Commitments and Outcomes. Journal of Business Ethics, 2024: 1-16.

[15] Zhao X, Huang X, Liu F, et al. Executive power discrepancy and corporate ESG greenwashing. International Review of Financial Analysis, 2024, 96: 103533.

[16] Li T, Shu X, Liao G. Does corporate greenwashing affect investors' decisions? Finance Research Letters, 2024, 67: 105877.

[17] Santos C, Coelho A, Marques A. The greenwashing effects on corporate reputation and brand hate through environmental performance and green perceived risk. Asia-Pacific Journal of Business Administration, 2024, 16(3): 655-676.

[18] International Organization for Standardization. Environmental Labels and Declarations--Self-Declared Environmental Claims (type II Environmental Labelling). International Organization for Standardization, 1999.

[19] Nemes N, Scanlan S J, Smith P, et al. An integrated framework to assess greenwashing. Sustainability, 2022, 14(8): 4431.

[20] Debevoise J. Greenwashing in modern corporate practices: A critical analysis. Environmental Ethics, 2021, 35(2), 345-367.

[21] Carbon Trust. Carbon footprinting: The journey to zero. Retrieved from: https://www.carbontrust.com/resources/carbon-footprinting-guide, 2021. Accessed October 31, 2024.

[22] Chen A, & Bouvain P. The evolving role of data analytics in environmental sustainability. Journal of Cleaner Production, 2020, 253, 120849.

[23] Auld G, Gulbrandsen L H, & McDermott C L. Certification schemes and the governance of land use. Annual Review of Environment and Resources, 2018, 43(1), 187-210.

[24] de Freitas Netto S V, Sobral M F F, Ribeiro A R B, et al. Concepts and forms of greenwashing: A systematic review. Environmental Sciences Europe, 2020, 32: 1-12.

[25] Yang, Z., Nguyen, T. T. H., Nguyen, H. N., Nguyen, T. T. N., & Cao, T. T. (2020). Greenwashing behaviors: Causes, taxonomy, and consequences based on a systematic literature review. Journal of business economics and management, 21(5), 1486-1507.

[26] Pizzetti M, Gatti L, Seele P. Firms talk, suppliers walk: Analyzing the locus of greenwashing in the blame game and introducing 'vicarious greenwashing.' Journal of Business Ethics, 2021, 170(1): 21-38.

[27] Stewart B D. Business as Usual: The Limited Influence of Climate Change Disclosure and Fiduciary Duties on the Low Carbon Investment Practices of Canada's Big 10 Public Pension Funds. Journal of Environmental Law and Practice, 2020, 33, 93-132.

[28] Szabo S, Webster J. Perceived greenwashing: the effects of green marketing on environmental and product perceptions. Journal of Business Ethics, 2021, 171: 719-739.