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ESG Disclosures

A Critical Analysis of Accuracy and Potential Greenwashing for Investors

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ABSTRACT:
This thesis critically analyses the current ESG landscape, by examining the prevalence and persistence of greenwashing in ESG Disclosures, from an investor perspective. The thesis first focuses on establishing greenwashing as a common issue by examining relevant and recent literature, high profile cases and the contextual variations. After we shift focus on the implications on investors and whether their motivations, expectations and beliefs match the realities of ESG as it currently is.

KEYWORDS: ESG, Greenwashing, Investor Perspective, Sustainable Finance Signalling Theory, Agency Theory, CSR.

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TIIVISTELMÄ:
Tämä tutkielma analysoi kriittisesti nykyistä ESG-toimialaa tarkastelemalla viherpesun yleisyyttä ESG-raportoinnissa ja tämän vaikutuksia sijoittajille. Tutkielman tavoitteena on osoittaa viherpesu yleiseksi ongelmaksi hyödyntämällä ajankohtaista akateemista kirjallisuutta, paljon uutisoituja esimerkkitapauksia sekä tutkimalla taustatekijöiden vaikutuksia. Lisäksi tutkimuksessa käsitellään viherpesun vaikutuksia sijoittajiin sekä sitä, vastaavatko heidän motivaationsa ja odotuksensa nykyisen ESG-järjestelmän todellisuutta.

AVAINSANAT: ESG, Viherpesu, Sijoitustoiminta, Kestävä Rahoitus, Agenttiteoria, Signalointiteoria , Yrityksen yhteiskuntavastuu

Table of Contents

Figures

1 Introduction

Sustainable finance can be understood as the practice of evaluating environmental, social, and governance (ESG) factors when making investment decisions (Foley et al., 2024). Investors are increasingly using ESG ratings to assess a company's sustainability and ethical practises (Kathan et al,. 2025). According to Foley et al. (2024) this increased interest in ESG has developed into a situation where most companies in the S&P 500 release ESG reports on regular basis (Perez et al., 2022).

This rapid growth in ESG investments can be explained by two main factors. According to Foley et al. (2024), investors are demanding that ESG factors are incorporated throughout their entire supply chain. Investors are looking for companies that offer quality products combined with strong environmental, social and governance performance. Secondly, investors favour investments that offer positive social and environmental impact alongside economic returns (Boffo & Patalano, 2020). This shift in preferences indicates a broader trend towards prioritising companies that contribute to social and environmental well-being and sustainable development (Foley et al., 2024). This growing focus on ESG holds significant potential for investors and if implemented correctly, could serve as a powerful tool for aligning capital with personal values and goals.

At the same time ESG disclosures face increasing criticism (Lukas, 2024). The global ESG framework lacks regulation and transparency (Yu et al., 2020), which creates a clear conflict of interest, enabling companies to increase their attractiveness to investors without actual change. This dynamic, where companies strategically use ESG disclosures to attract investors, highlights challenges related to Agency theory's (Jensen & Meckling, 1976) information asymmetry and Signalling theory's (Spence, 1971) potential for misleading signals. As an example, we can consider the case of Walmart as discussed by Foley et al. (2024). The world's largest retailer completely ignored its Scope 3 supply chain emissions in its ESG rating, which make up about 95% of the company's total

emissions (Barry E, 2021). Cases like this undermine genuine progress that has been made in the field, and investor concerns are growing.

These well-documented issues render the practical implementation of ESG considerations problematic. In addition to the presence of greenwashing (Foley et al., 2024; RepRisk, 2023), investor expectations can differ significantly, and it is questionable whether a single score can accurately provide insight to satisfy all needs (Assaf et al., 2024). This highlights the importance of investor knowledge when acting independently in the market. If investors understand the landscape in which they are active, they gain the agency to better allocate capital aligned with their needs regarding sustainability and risk tolerance.

1.1 Purpose of The Study

The purpose of this study to critically examine whether greenwashing is a persistent and prevalent issue in ESG disclosures. We also aim to uncover the implications that this has for investors. By critically examining this relationship, we hope to contribute and to provide valuable insight into the current ESG discussion by adapting a unique perspective.

Relevant research into the topic suggests that greenwashing in ESG disclosures is a persistent and prevalent issue (Foley et al., 2024; RepRisk, 2023). Its persistence is often explained through financial theories such as Signalling theory (Spence, 1971) and Agency theory (Jensen & Meckling, 1976), suggesting that the incentives for companies to greenwash are strong. This in turn is enabled by the lack of universal ESG frameworks and the absence of external oversight to check the accuracy of reported ESG information (Yu et al., 2020). Contextual variations including country and industry factors (Peng and Kong, 2024) also influence the amount and severity of greenwashing significantly. All this manifests as unreliable and inconsistent ESG ratings (Kahan et al., 2025; Benuzzi et al.,

2023; Berg et al., 2022) contributing to potential greenwashing. Consequently, our first hypothesis will be:

H1: Greenwashing is prevalent in ESG

Our second hypothesis is related to whether ESG, with its faults, is still a significant and useful tool for investors. Despite the well documented flaws (Chiu & Schammo, 2023; Li et al., 2024), literature also presents a nuanced debate on the matter. Literature suggests that ESG disclosures can still offer valuable insight for investors, including risk management in uncertain times (Broadstock et al., 2021, value aligned capital allocation, and hedging against carbon tail risk (Illan et al., 2019), if not taken at face value and used as a “black box” (Dimson et al., 2020). Hence, our second hypothesis will be:

H2: Despite its limitations, ESG is still a significant and useful factor for investors

1.2 Structure of The Study

This thesis is structured into five distinct chapters. Chapter one presents the motivation, purpose, and hypotheses of the paper, alongside a brief explanation of the contributions made by both authors. Chapter two sheds light on the theoretical framework that is relevant for our thesis. Chapter three focuses on establishing the presence of greenwashing in ESG. Chapter four will build on this by focusing on the implications for investors. Finally, in Chapter five we will draw conclusions and summarise the findings.

We also wish to declare that generative AI (Gemini 2.5 Flash) was used for polishing the language, correcting grammar, making minor sentence structure enhancements, and improving the overall flow and readability of our thesis.

1.3 Author Contributions

Both authors, Elmeri Pilkama and Pauli Vierimaa, in a joint effort, contributed equally to the planning, topic refinement, structural development, and the writing of this paper.

2 Theoretical Background

2.1 CSR Framework

One of the most recognised theoretical models in CSR literature is Carroll's CSR Pyramid (1991), which outlines four key dimensions of Corporate Social Responsibility as economic, legal, ethical, and philanthropic. According to Carroll 1991 economic responsibilities are the foundation upon which all others rest, because without it, the others become irrelevant considerations. At the same time, companies are expected to obey the law, since the law represents society's formalised standards of acceptable conduct. Companies also have ethical responsibilities, which include constantly choosing right and just actions to avoid harm to shareholders, consumers, and the environment. Lastly, businesses are expected to be good corporate citisens. Philanthropic responsibilities involve undertaking voluntary initiatives that promote social well-being and encompass business contributions of financial resources or executive time, often towards communities, education or the arts.

Moreover, according to Swainson (2019) Corporate Social Responsibility (CSR) can be understood as a broad term, which encompasses ethical practise, social responsibility, and environmental consciousness. CSR as a concept is older than ESG, as companies have long acknowledged the value in demonstrating ethical conduct and avoiding associations with irresponsible practises. An increasingly important theme is the set of distinct factors encompassed by the term. New CSR expectations constantly develop due to increased consumer expectations. Commonly accepted aspects include sustainability, labour rights, ethical trade, health and safety, and environmental protection.

Keeley et al. (2022) point out that since the emergence of CSR reporting, various corporate sustainability reporting tools such as frameworks and guidelines have been implemented to evaluate a company's sustainability efforts (Siew, 2015). For example, a common practise among ESG rating agencies is to assess a company's sustainability

efforts by reviewing the data disclosed in its CSR reports. Moreover, according to Ferrat (2023), CSR has led to various other concepts, including Socially Responsible Investments (SRI) comprising all financial approaches recognising the importance of ESG factors. CSR frameworks have therefore been vital for the emergence and development of ESG metrics.

2.2 ESG Ratings and Disclosures: Concepts and Complexities

First introduced in 2004 by the United Nations, ESG ratings are one of the most frequently used set of metrics to assess a company's ethical performance. a Report by McKinsey Quarterly (Henisz et al., 2019) provides definitions for the elements of ESG. According to the report, the E in ESG considers environmental factors including the energy a company uses, the waste it creates as a by-product, and the consequences on its operations have on life. It also encompasses company's carbon footprints and their effects on climate change. The S factor, standing for social criteria, includes employee relations, diversity of the workforce, and inclusivity. It encompasses company relationships within communities and with the people and organisations it engages with. Lastly, the G factor, standing for governance, encompasses the internal framework of policies, oversight, and protocols a company uses to manage its operations, make sound choices, meet legal requirements, and satisfy stakeholder demands. While the specific definitions of ESG can vary, the core factors generally align. For instance, Table 1 presents the OECD's definition of ESG, which largely mirrors the criteria discussed above.

Environmental factors	Social factors	Governance factors
Natural resource use	Workforce	Board independence
Carbon emissions	Human rights	Board diversity
Energy efficiency	Diversity	Shareholder rights
Pollution/waste	Supply chain	Management compensation
Environmental opportunities		Corporate ethics

Figure 1. ESG criteria definition by the OECD (Boffo & Patalano, 2020)

To fully comprehend the issues discussed in this paper, a clear distinction between ESG disclosures and ESG ratings is also required. ESG disclosures refer to the reporting of information related to environmental, social, and governance factors by issuers (companies) (Boffo and Patalano, 2020). These disclosures are made within frameworks, such as those assessed by bodies like GRI, SASB, and TCFD, aiming to provide data and narrative on company sustainability aspects for stakeholders, including investors (Boffo and Patalano, 2020). ESG Ratings in contrast are assessments or scores provided by third-party organisations that are known as rating providers (Boffo and Patalano, 2020). These ratings are calculated by collecting information that includes ESG disclosures. Agencies apply provider specific methods, including analysing data, metrics, materiality, and incorporating subjective judgment with the goal of translating raw information into a more sophisticated overall score (Boffo and Patalano, 2020).

Literature indicates that ESG factors in disclosures still suffer from considerable shortcomings that undermine their usefulness to investors (Boffo and Patalano, 2020). According to Boffo and Patalano (2020), such shortcomings in quality and consistency of issuer disclosures combined with the distinct and sometimes opaque methodologies of providers, often lead to ESG ratings that can differ massively from one provider to another. This low correlation among ratings undermines comparability and reduces the reliability of investment portfolios based on them (Boffo and Patalano, 2020). These methodological differences are evident among major providers such as Bloomberg, Thomson Reuters, and MSCI (see Table 2).

Pillar	Thomson Reuters	MSCI	Bloomberg
Environmental	Resource Use	Climate Change	Carbon Emissions
	Emissions	Natural resources	Climate change effects
	Innovation	Pollution & waste	Pollution
		Environmental opportunities	Waste disposal
			Renewable energy
			Resource depletion
Social	Workforce	Human capital	Supply chain
	Human Rights	Product liability	Discrimination
	Community	Stakeholder opposition	Political contributions
	Product Responsibility	Social opportunities	Diversity
			Human rights
			Community relations
Governance	Management	Corporate governance	Cumulative voting
	Shareholders	Corporate behaviour	Executive compensation
	CSR strategy		Shareholders' rights
			Takeover defence
			Staggered boards
			Independent directors
Key metrics and submetrics	186	34	>120

Figure 2. Major ESG providers; OECD assessment (Boffo & Patalano, 2020)

This uncovers key problems regarding the nature and reliability of ESG ratings themselves. The divergence of the ratings introduces a challenge for empirical research, because using one rating provider over another may alter the results and conclusions. It also introduces uncertainty into any decisions taken based on ESG ratings, leading to a challenge for decision-makers (Berg et al., 2022). A fundamental issue, noted by Lacker et al. (2022), is the ambiguity surrounding what ESG ratings are even intended to measure. While often described as capturing "ESG quality," this term itself lacks a single universal definition (Lacker et al., 2022).

2.3 Greenwashing

In their study Delmas and Burbano (2011) refer to greenwashing to as misleading consumers regarding company-level or product-level greenwashing (TerraChoice Group). The term is also used more broadly in the context of ESG disclosures, highlighting concerns about transparency, credibility, and accountability. Consequently, reporting false or misleading ESG information is considered a form of greenwashing (Sneideriene & Legenzova, 2025).

Greenwashing occurs when a company projects an environmentally friendly image, despite engaging in environmentally harmful activities (Delmas and Burbano, 2011). Yu et al. (2020) suggest that greenwashing can also be calculated as the difference between normalised ESG disclosures and normalised ESG performance score. As suggested by Delmas and Burbano (2011), greenwashing in the context of ESG disclosures often happens through false positive communication (deceptive reporting practises) with the aim to create a positive perception of sustainability performance. Two key tactics employed by companies to achieve this are selective disclosure and misleading reporting.

According to Lyon and Maxwell (2011), selective disclosures involve strategic information management that is often influenced by regulatory pressures or the desire to improve ESG scores. Companies deliberately emphasise positive ESG outcomes while simultaneously downplaying or covering negative performance or risk. The core aim is to curate an unbalanced and favourable perception by manipulating disclosures, particularly those publicly available for ratings inflating the company's perceived sustainability profile without making real corresponding improvements.

According to Parguel et al. (2011), credited with foundational work on the topic, the category of misleading reporting includes deceptive practises that create a disconnect between a company's sustainability marketing and its actual performance. It ranges all the way from false statements and unproven environmental claims to exaggerated projections and vague commitments that end up forgotten. It can also involve leveraging a history of responsible behaviour or past achievements to legitimise current less ethical practises, thereby maintaining a positive image despite the underlying issues.

These reporting tactics are particularly concerning when applied to critical environmental metrics, such as scope 3 emissions. According to the United States Environmental Protection Agency (2024), scope 3 emissions are the value chain

emissions that often represent a major part of an organisation’s overall emissions. Due to their complexity and potentially large magnitude, companies may decide to strategically report on scope 3 emissions. This significantly weakens commitment and misleads people about the true level of positive actions taken (Foley et al., 2023), serving as a clear example of how selective disclosure or misleading reporting can obscure a company's actual environmental impact.

2.4 Signalling Theory

Signalling theory is a widely known theory in economics and finance. Connelly et al. (2011) state that Signalling theory by Spence (1973) describes behaviour in situations where two parties have access to different information. Typically, the informed party (the sender), decides how to convey that information, while the less-informed party (the receiver) must interpret these signals.

To counteract the effects of asymmetric information, signalling theory suggests that businesses strategically give further insights. This communication is intended to demonstrate to external observers the company's favourable performance. The information gap between a business's management and shareholders allows managers to pursue their own self-interest by choosing accounting methods and estimates that withhold the company’s true economic value from stakeholders (Seker & Sengur, 2021). By using ESG, the company wants to emphasise the quality of the management (Seker and Sengur, 2021). Companies with high ESG performance are also motivated to signal their superior sustainability to the market through ESG disclosure (Melloni et al., 2017). According to Mahoney et al. (2013), motivations behind issuing standalone CSR reports are not always clear. The first explanation, signalling, suggests that companies use CSR reports as a signal of their superior commitment to CSR. The second explanation, greenwashing, posits that companies issue these reports to pose as “good” despite their environmental and social practises falling short.

2.5 Agency Theory

The complexities of ESG ratings and disclosures, like their inconsistencies and the potential for greenwashing underscore a fundamental information asymmetry between companies and stakeholders. Signalling alone doesn't fully explain instances where managerial self-interest leads to distortion or to withholding of information. This is where agency theory offers a crucial framework for understanding managerial behaviour in the context of ESG.

According to Seker and Sengur (2021) Agency theory, developed by Jensen and Meckling (1976), describes the relationship between company owners (principals) and managers (agents). The theory points to a conflict of interest that arises because both principals and agents are assumed to act in their own self-interest when making decisions. Agency costs increase when agents deviate from acting in the principals' best interests.

According to Zhu et al. (2024), this framework highlights a significant agency dilemma for managers and owners concerning ESG investments. They further note that managers might pursue ESG initiatives for private gains at the shareholders’ expense. (Chen & Xie, 2022). Such investments could also lead to the sidelining of more lucrative projects, against the owners' interests (Chen & Xie, 2022). The "management pragmatism argument" additionally suggests managers might use ESG investments to deflect blame for poor financial decisions (Zhu et al., 2024). These examples illustrate how managerial discretion in ESG, fuelled by information asymmetry, has the potential to lead to agency problems and costs.

3 Presence of Greenwashing in ESG

While some companies genuinely align their practises with their ESG claims, many manipulate ESG data to sell a narrative to investors (Lukas, 2024). This discrepancy between communication and reality has led to increased scrutiny of ESG investing in recent years and investor confidence has eroded (Lukas, 2024). Understanding the potential for misleading claims is therefore critical for investors, especially as the ESG market is projected to grow substantially in the upcoming years, potentially reaching $40 trillion globally by 2040 (Bloomberg, 2024). Given these documented discrepancies and their potential to mislead investors, this chapter aims to build a case for H1, greenwashing is not only present but widespread within ESG frameworks.

Recent analyses confirm that greenwashing risks and associated controversies are significant issues within the ESG landscape. For instance, research by RepRisk (2023), a provider specialising in ESG risk data, suggests that greenwashing is a widespread challenge that is frequently intertwined with "social washing". This prevalence of reported issues contributes significantly to growing investor scepticism and demands for greater transparency and verifiable performance data. The widespread issues reported by RepRisk give early support to H1 and indicate that documented greenwashing events are far from isolated incidents.

Broader evidence from research cited by Foley et al. (2024) highlights the widespread nature of misleading environmental claims. Studies suggest that 42% of sustainability claims are misleading or false, a finding that suggests industry wide greenwashing (The International Consumer Protection and Enforcement Network, 2021). This is compounded by persistent gaps in corporate action. As an example, Foley et al. (2024) point to the fact that 80% of Fortune 500 companies have not committed to setting science-based climate targets and fewer than 20% include Scope 3 emissions in their climate goals (Cervantes L, et al., 2021). This underscores a pervasive gap between corporate communication and meaningful action.

Several studies examine the potential scale of ESG greenwashing. Reserach by Yu et al. (2020) on 1925 large-cap firms across 47 countries, reveal systemic weaknesses in ESG reporting that create an environment susceptible to greenwashing. By examining the disconnect between disclosure and actual performance across a large sample, they provide strong support for the claim that ESG greenwashing is indeed a prevalent issue affecting a notable portion of the global market. As Yu et al. (2020) point out, the potential for such widespread greenwashing is further amplified by inherent challenges within the ESG data disclosure landscape. These include the prevalence of unaudited data, the absence of a common global framework for reporting standards, various company level behavioural biases, and insufficient regulatory oversight to ensure accuracy (PRI, 2015; Khan et al., 2016; PRI, 2017; State Street Global Advisors, 2017; Schroders, 2017; Fride, 2019). These systemic barriers create an environment where companies have considerable opportunity to shape their narratives, leading to the prevalent greenwashing as identified in studies such as by Yu et al. (2020). Their findings thus provide direct empirical evidence for H1, demonstrating how structural reporting flaws enable widespread greenwashing.

Recent studies further complicate the picture for investors and provide support for H1 by challenging the assumption that high ESG scores equate to lower greenwashing risk. Research by Kathan et al. (2025) specifically investigated this relationship within the European market (represented by the STOXX 600 index), chosen due to Europe's leading role in ESG investing (Bloomberg, 2024). Their methodology involved identifying greenwashing instances by hand-collecting reported cases and indications from public sources and then assessing the severity of these cases. Their findings, therefore, primarily link ESG scores to the likelihood of a company facing public greenwashing accusations or being associated with reported greenwashing incidents. Rather worryingly, their analysis uncovered a positive correlation, revealing that companies with better ESG scores tended to have higher numbers of reported greenwashing cases. This paradoxical finding strongly suggests that ESG scores provided by major agencies like Bloomberg may often reflect a company's ability to effectively communicate a sustainable image, rather than their genuine environmental and social impact. This falls

in line with findings in relevant literature, such as a study by Delmas and Burbano (2011) where they showed that greenwashing is driven by a combination of external, organisational, and individual factors. The evidence by Kathan et al. (2025) further underscores the prevalent nature of greenwashing and suggests that even seemingly positive ESG signals may not be reliable indicators of actual sustainability. These paradoxical results support H1 by showing that higher ESG ratings can correlate with heightened greenwashing activity.

Both studies by Yu et al. (2020) and Kathan et al. (2025) reveal significant challenges to the reliability of ESG information supporting H1. The systemic weaknesses in ESG reporting identified by Yu et al. (2020) are compounded by the unreliability and inconsistency of ESG scores themselves (Benuzzi et al., 2023; Berg et al., 2022; Chatterji et al., 2016; Dorfleitner et al., 2015), a key finding highlighted by Kathan et al. (2025) in their analysis. This environment prone to manipulability is further magnified by managerial incentives to inflate ESG performance (Cohen et al., 2023; Amiraslani et al., 2023; Galletta et al., 2023; Goyal et al., 2023). The increasing practise of linking executive compensation to ESG metrics, as documented by Cohen et al. (2023) and analysed through the lens of Agency theory, creates incentives for managers. While this is often done with the intention to align objectives with stakeholder preferences and signal genuine commitment (Cohen et al., 2023), it also risks encouraging prioritisation of marketable ESG outcomes to maximise pay. These dynamics driven by underlying issues like information asymmetry and managerial incentives, are often explained by theories such as Signalling theory (Kathan et al., 2025) and Agency theory. These factors collectively create an environment in which greenwashing can thrive, being supported by both structural reporting flaws and the motivations of key corporate actors. This not only acts further support for H1 but explains some of the driving forces behind it.

3.1 Cases of ESG Greenwashing

To move beyond general observations, this section examines concrete high-profile examples of ESG greenwashing. The aim is to demonstrate how the phenomenon unfolds in practise and to reinforce the earlier analysis to act as further proof for H1. Two primary categories characterise most instances of ESG greenwashing, selective disclosures and misleading reporting. This simplified categorisation is supported by various studies. For instance, Yu et al. (2020) recognised three similar greenwashing categories, and Kathan et al. (2025) mentioned classifications closely resembling the two categories. These concepts are further discussed within relevant literature, including foundational work by Lyon and Maxwell (2011) and Parguel et al. (2011).

Understanding how companies use these methods is vital. This section will draw upon examples highlighted by Foley et al. (2023). In their paper exploring how to restore trust in ESG investing, they identified several prominent corporate cases fitting well within our framework.

First, let's consider cases of selective disclosures. Foley et al. (2023) provide cases where companies carefully chose what information to share. For example, they point to Coca-Cola, which gained positive ESG attention for reaching its "water neutral" goal ahead of time. However, this claim ignored over 90% of the company's total water usage that comes from its agricultural supply chain. As highlighted by Foley et al. (2023), this example demonstrates the importance of using accurate metrics for sustainability performance (Pucker and King, 2022). Foley et al. (2023) note that major companies have also made announcements of net-zero goals while leaving out crucial and often massive scope 3 emissions (Barry E, 2021). For instance, Saudi Aramco, responsible for 4 % of global emissions in the last 60 years, ignored its supply chain emissions. Walmart, the world’s largest retailer, also excluded scope 3 emissions that make up 95 % of its total emissions from its net zero plans. Shell Oil Company did include scope 3 emissions in its strategy but failed to include those from its non-energy products like bitumen and chemicals (Barry E, 2021). These instances of leaving out major emission sources from

ESG disclosures serve as clear examples of selective disclosure. It significantly weakens commitments and misleads investors about positive actions taken.

Cases that fall well into the category of misleading reporting were also discussed by Foley et al. (2023). They point to large food and drink companies such as Danone, Nestle and Arla Foods for using misleading marketing to address environmental issues without any real change in company action (Burrows, 2023). Another case involves the huge 130 trillion USD climate commitment made by 450 financial companies at COP26, including global actors like Goldman Sachs, Santander, and J.P. Morgan Chase. Foley et al. (2023) refer to criticisms by NetZero Tracker that this commitment lacked clear frameworks to lower emissions and to increase accountability (Barry E, 2021). Perhaps one of the clearest examples involves large investment houses like BlackRock, Legal & General, and State Street, labelling funds as "ESG" or "green" while still investing significantly in fossil fuel companies. Foley et al. (2023) even highlight that in early 2023 these companies ESG-labelled funds contained a collective one billion USD in fossil fuel bonds (Common Wealth, 2023). This mismatch between sustainable marketing and the actual investments deceives investors who are seeking genuinely green options and underscores a significant discrepancy between branding and practise, as discussed earlier.

The cases discussed above are not isolated or random. Instead, they directly reflect the enabling factors identified in Chapter 3. Coca-Cola's and Aramco's selective emissions disclosures were possible due to the lack of standardised ESG reporting frameworks and absence of penalties. The misleading marketing strategies employed by major food companies thrive under weak regulatory oversight and limited third-party verification. These examples show how structural and institutional enablers like information asymmetry, voluntary reporting, and ESG rating discrepancies create fertile ground for greenwashing. Thus, these enablers do not merely correlate with greenwashing practises, but they actively facilitate and sustain them. The greenwashing in these high-profile cases, directly enabled by the underlying factors, provides concrete empirical

evidence for ESG greenwashing constituting a significant and widespread challenge across the globe.

While dividing greenwashing into different categories can be helpful, there is often overlap and companies frequently use several tactics simultaneously (Foley et al., 2023). This complexity, coupled with the documented prevalence (The International Consumer Protection and Enforcement Network, 2021; Cervantes L, et al., 2021; RepRisk, 2023), demonstrates that ESG greenwashing is a multifaceted and widespread issue (Sneideriene & Legenzova, 2025). The fact that major international companies engage in such blatant ESG manipulation, as exemplified by the cases discussed, and even blatant dishonest practises such as Volkswagen's violation of the US Clean Air Act in 2015 (Gwyn Topham et al., 2015), act as further proof for our hypothesis H1.

3.2 Contextual Variations in ESG Greenwashing

The preceding sections have established ESG greenwashing as a prevalent issue and provided general support for H1 by examining beyond broad definitions to detail categories and examples of such practises. While H1 implies a general prevalence of greenwashing, research suggests that its intensity is not monolithic. Instead, a range of contextual factors affect its prevalence. This section critically examines these variations as described in relevant literature to highlight important caveats to the universal assertion of H1 by examining how conditional factors such as industry sector, company size, and country of operations affect the intensity of greenwashing. This offers a more nuanced understanding of H1.

Research highlights that industry sector plays a critical role in shaping both the prevalence and nature of greenwashing. Differences in environmental impact, regulatory oversight, and consumer scrutiny across sectors seem to significantly influence how and why businesses engage in such practises. For instance, Kathan et al. (2025) found that, emissions-intensive industries like utilities and energy are not only overrepresented in

greenwashing cases but also tend to receive higher severity scores compared to other sectors. Consumer-facing sectors such as consumer discretionary and consumer staples also show elevated greenwashing severity. These differences between industries can be, at least partially, explained by the environmental pressure they face and the visibility of their sustainability claims. As Peng and Kong (2024) elaborate, external factors like environmental regulations do not affect every sector in the same way. Regulations may strongly shape the behaviour of energy companies but have less impact on companies in low-emission industries. This further illustrates that a company's industry context fundamentally shapes its response to sustainability pressures.

Building on this, Peng and Kong (2024) in their study specifically show that companies in industries with significant environmental pressure, like the energy sector, engage in more greenwashing. These companies, which deal with strict rules and a lot of public attention, might use greenwashing to appear compliant, even when sustainability demands are hard to meet. Their findings suggest that greenwashing can ease both regulatory and reputational pressure.

Building on the sector-specific factors, it becomes clear that company characteristics also shape greenwashing behaviour. While emissions-intensive industries like utilities and energy are consistently found at the top for both greenwashing frequency and severity rankings (Bloomberg, 2024), this pattern is further influenced by how large or small a company is within its sector. According to Erol and Çankaya (2023), their analysis of the STOXX 600 index reveals larger companies exhibiting significantly lower environmental and governance greenwashing severity. Larger company size therefore seems to act as a protective factor against unsupported claims and good governance practises. Yet, when greenwashing is measured on an aggregate, peerrelative basis across 1 925 global largecaps, company size has no systematic effect (Yu et al., 2020). This apparent contradiction underscores that the influence of size depends on both the chosen measurement approach and the greenwashing dimension. This suggests that our

understanding of H1 must not only integrate sectoral pressures but also the nuanced role of scale.

Country and region context are also powerful factors of greenwashing prevalence. Cross-country regressions of peer-relative greenwashing scores show that companies headquartered in less-corrupt environments engage in significantly less greenwashing. In their study Erol and Çankaya (2023) found a 1 % reduction in corruption correlates with roughly 0.6 % less greenwashing. Paradoxically, stronger political rights are also associated with higher greenwashing, suggesting that in politically open societies, companies may use green claims as a symbol to win legitimacy (Yu et al., 2020). Heterogeneity analyses reveal that the effect of environmental regulation itself varies by country-level intervention (Peng and Kong, 2024). They suggest that in places where the government is highly involved, rules have less of an effect on encouraging real green innovation. In some cases, it might even accidentally lead to an increase in greenwashing. Oppositely, in countries where the government is less involved, rules tend to work better by pushing companies to make real efforts towards sustainability (Peng and Kong, 2024). These findings together point to a close connection between institutional quality, regulatory design, and greenwashing behaviour, which underscores that any discussion on H1 must also account for how national governance and regulatory frameworks shape corporate ESG signalling.

Further illustration for these contextual nuances is offered by Peng and Kong (2024). In their study focusing on China's economic transition towards sustainability, they found compelling evidence on how national context interacts with industry and business characteristics. By analysing listed Chinese companies from 2007 to 2019, the researchers found that environmental regulations positively supported green innovation. Corporate greenwashing was identified as a key mediating factor in this relationship. Companies appeared to use greenwashing strategically to mitigate regulatory pressures and potential reputational damage. This, alongside fulfilling ESG responsibilities, paradoxically facilitated their path towards substantive green innovation. This dynamic,

however, was highly conditional and the positive link between regulation and innovation was noticeably stronger under specific circumstances. Their findings suggest that in places where the government does not get overly involved in private companies, the effect is stronger, especially in privately owned businesses compared to state-run or foreign ones. This is even more noticeable in the energy and new energy sectors than in companies in other sectors. These findings from the Chinese market underscore that greenwashing behaviour is deeply embedded within specific institutional and economic structures. They highlight how factors like ownership type and the nature of state intervention significantly shape corporate responses to sustainability regulation. This further reinforces the conditional nature of H1 and the need to look beyond broad claims of prevalence.

In summary, while the literature reviewed provides ample evidence to support the assertion of H1 regarding the general prevalence of ESG greenwashing, the detailed examination in Section 3.2 demonstrates that this prevalence is far from uniform. The numerous caveats discussed concerning the significant variations observed across industry sectors, company-specific characteristics, and country or regional contexts reveal that greenwashing's intensity, nature, and drivers are highly conditional. Thus, H1 holds true as a broad statement of prevalence. In practise however, the reality is deeply nuanced and affected by contextual factors.

Additionally, one could conclude more broadly that, while the literature establishes the significant presence of ESG greenwashing and systemic enablers (Chapter 3), backed up by high-profile cases (Chapter 3.1), and contextual variations (3.2), a clear definitive scale of the issue remains unclear. The lack of standardised and verifiable data, the intentional use of misleading tactics and the highly conditional nature of greenwashing behaviour jointly make it exceptionally difficult to measure its true extent with clear numbers.

4 Investor Perspective

4.1 Investor Motivations and Key Challenges

This chapter delves into the investor perspective on ESG, with a focus on the utility and challenges associated with ESG ratings and how greenwashing within ESG disclosures complicates investment decisions. While Chapter 3 established greenwashing as a prevalent and widespread issue, interest in sustainable investing hasn't ceased, as exemplified by the continued growth of ESG investing, with the market reaching 30 trillion in 2022 (Bloomberg, 2024). This substantial growth, in an industry plagued by numerous issues, calls for a deeper understanding of the phenomenon, especially from an investor perspective. Therefore, Chapter 4 aims to provide evidence to support our H2, that despite its limitations, ESG remains a significant and useful factor for investment decision-making. To achieve this comprehensive understanding, we must first examine the underlying motivations driving investor engagement with ESG to establish its significance. Subsequently, we aim to detail the significant challenges and complexities investors encounter that point to the limitations aspect of H2.

According to a survey conducted by Serafeim and Amel-Zadeh (2022), 82% of respondents use ESG information because they believe it enhances financial performance. There are also non-pecuniary motivations for ESG investing, which refer to feelings of personal satisfaction, emotional reward and a sense of acting morally that investors get when investing in companies that align with their values, over chasing pure monetary gains. Their study concluded that use of ESG information is primarily financially motivated. Still, existing evidence indicates that both financial and non-pecuniary reasons play a part in the recent popularity of ESG investing (Döttling & Kim, 2021). It is critical to point out that in their study Serafeim and Amel-Zadeh surveyed mainly institutional investors. They point out that compared to individual investors, institutions use ESG information due to client demand or as a key part of their product development. This partly explains the high importance given to performance in their

findings over ethical considerations. This indirectly implies that these preferences could differ when it comes to smaller investors.

Building on the understanding of investor motivations, a study by Assaf et al. (2024) provides insights into how different attitudes translate into investment intentions and behaviours. As a part of their research, they examined the willingness to pay for investing in companies with good ESG scores. They uncovered that specific investor attitudes significantly influence this willingness. Investors with “Anti-discrimination” attitudes demonstrate a significant willingness to pay, particularly endorsing governance and social criteria more than environmental criteria. Similarly, those with strong “Green for the planet” attitudes were willing to pay, prioritising environmental criteria. Investors with “Anti-fraud" attitudes showed a lesser willingness, being mainly focused on social performance. Finally, “Economic Development” investors displayed a notable willingness focused equally on environmental and social scores.

Furthermore, Assaf et al. (2024) found that these attitudes correlate with actual investment choices like the percentage invested in ESG funds or the tendency to favour companies with higher scores when stock picking. This empirical evidence underscores how non-pecuniary motives play a tangible role in investor decisions that extend beyond purely financial considerations. The substantial market growth, general engagement and the diverse financial and non-pecuniary motivations discussed in this section collectively strongly indicate that ESG has become a significant factor in investment decision-making. This provides foundational evidence for the significance component of H2 and also highlights why the issue is worthy of closer examination. The nature of its limitations, as stated in H2, calls for further examination of the current challenges and complexities to get a full understanding of the issue.

For example, investing according to ESG criteria currently involves risk as there is uncertainty about whether assets are truly green according to their ESG scores (Kräussl et al., 2024). Investors may believe that they are “doing good” by investing according to

ESG criteria when in reality, their investments at best might only have a limited or indirect impact on sustainability. The current labelling of ESG products fails to inform investors of how ESG considerations are used in the product, leading to investors not being able to invest according to their objectives and risk tolerance (Boffo & Patalano, 2020). Furthermore, distinguishing between the Environmental (E), Social (S), and Governance (G) pillars presents another layer of complexity. These represent the different dimensions of a company's performance, and their nuances are a fundamental aspect of understanding the ESG landscape. Investors might have different opinions about how well a company is doing, as performance measured by one metric can differ greatly compared to another (Kräussl et al., 2024). These issues directly contribute to the limitations aspect of our stated H2 and underscore why a nuanced approach is essential.

Some investors might believe that investing in ESG constantly leads to better financial returns. As we mentioned earlier, a survey conducted by Serafeim and Amel-Zadeh (2022) indicates that the majority of investors invest in ESG because it is financially material to performance. This perspective, however, is not universally held and the actual evidence on financial performance is mixed, which represents another key limitation. In fact, some recent studies suggest that investors are showing concerns over the financial performance of their ESG investments.In their paper Meunier and Ohani (2022) shows that 40 % of investors from the United States and the United Kingdom believe that conventional investments lead to better financial performance than ESG investments. This difference in expectations is a key complexity for investors.

A significant challenge that magnifies these issues is greenwashing. This pervasive problem, established in Chapter 3, directly influences investor decision-making by distorting information and creating false impressions. Kathan et al. (2025) suggests there is a relationship between engaging in greenwashing and Signalling theory. Companies send ESG-related signals to investors who attempt to interpret their credibility (Mahoney et al., 2013). This relationship was examined in a study by Li et al. (2024) focusing on the

influence that corporate greenwashing has on investors' decision making. Their findings suggest that initially greenwashing leads to optimistic investment strategies. These effects, however, are not sustainable in the long run and over a prolonged period investors seem to adopt more pessimistic strategies. In this study greenwashing behaviour is categorised in two, selective disclosure and expressive manipulation, as described by Lyon and Maxwell (2011) and Parguel et al. (2011). At first, investors are more susceptible to manipulation but over a sustained period, both greenwashing types effect investor's willingness to invest. This study highlights the reality that investors still lack the necessary tools and information to combat greenwashing behaviour. Critics note that regulations like the EU's CSRD and related disclosure rules still leave key reporting gaps. This means that investors still lack reliable ESG data to detect greenwashing (Chiu & Schammo, 2023). This regulatory shortfall means that even attentive investors may be unable to distinguish authentic sustainability efforts from superficial claims. This clearly indicates that ESG, as it currently is, has significant limitations in its usability as implied in H2.

In summary, while the surge in ESG investing is undeniably driven by strong investor motivations that range from financial performance expectations to deeply held ethical values, the current landscape is filled with significant challenges. These profound complexities and uncertainties, particularly surrounding data reliability and greenwashing in disclosures, collectively act as major limitations, as implied in H2. They highlight that investors frequently operate with imperfect data and face real difficulties in aligning their investments with the desired impacts. Nevertheless, despite these significant hurdles, the central argument of H2 is that ESG disclosures can still serve as a valuable tool. The subsequent Subchapter 4.2 will explore how this utility can be achieved and under what conditions, with the aim of addressing how investors can navigate these limitations.

4.2 ESG as a Tool for Investors

The preceding Subchapter 4.1 first established the significance of ESG investing followed by the challenges inherent in ESG investing that form the limitations component of our H2. This section in turn will focus on the other component of our H2, that it still acts as a useful tool for investors. Navigating the complexities outlined above requires investors to adopt a critical stance towards ESG information, particularly ESG ratings and disclosures. This section explores whether they can still be leveraged as tools in the investment process, despite the limitations, with the aim of further strengthening the case for our H2.

It is crucial to understand the framework underlying many ESG ratings. As Benjamin R. Lukas (2024) highlights in his research, many ESG funds and the ratings they rely upon are based on a 'single materiality' standard. This means these ratings primarily assess how environmental and social factors might materially impact a company financially, rather than how its operations impact the environment or society (Lukas, 2024). He further notes that this single materiality approach may often be the prevailing option for managers of institutional investors who act under strict guidelines to prioritise financial returns (Schanzenbach & Sitkoff, 2020). This understanding is a key to using ESG as an effective tool. It allows investors to align expectations and to use ratings for their intended purpose, rather than misinterpreting them as a comprehensive impact assessment. This underscores why investors cannot take ESG evaluations at face value and must critically examine the actual impacts of their investment.

It is important to look beyond just surveys and hints regarding the performance of ESG investments. Wallis and Klein (2015) conducted a meta-analysis to determine the performance of socially responsible products compared to their traditional counterparts and found similar performance to that of conventional alternatives. More recently, Hartzmark and Sussman (2019) failed to find any evidence of high-sustainability funds outperforming their less sustainable competitors. This aligns with broader findings noted by Lukas (2024), who points to research by Plagge and Grim (2020) suggesting that the

long-term performance of ESG funds is often quite similar to comparable non-ESG funds. Their research found that most ESG fund categories they examined did not significantly outperform or underperform regular funds statistically. Lukas (2024) also highlights that when performance and risk differences are noticeable, they tend to be due to specific fund characteristics. This suggests that while ESG might not consistently offer excessive returns, its usefulness for investors may lie in other areas like value alignment.

The evidence on ESG's impact on returns is not consistent across all time periods and market conditions. According to Dimson et al. (2020) the correlation between G- and E-indexes and abnormal returns disappeared during the 2000s. After outperforming the market during the 1990s, the governance factor has not since been able to outperform the market. This conclusion by Dimson et al. (2020) is based on a paper by Bebchuk et al. (2013), which found no evidence of abnormal returns associated with the E and G factors during the 2000s. Bebchuk et al. (2013) attribute this disappearance to investors learning to distinguish between good- and poor-governance companies. This dynamic nature of ESG impact over time highlights a key limitation relevant to H2, as ESG factors do not offer a consistent and unconditional performance advantage. It indicates that ESG, here particularly governance and environmental factors, did not materially impact abnormal returns. The findings imply that ESG, at least in the form of G- and E-indexes, failed to offer investors a performance advantage once the market learned to price these factors correctly.

Despite mixed evidence of consistent returns, a key area where ESG can be useful, as stated in H2, is with managing downside risk (Assaf et al., 2024). For example, the Covid-19 pandemic and the economic impact it had on businesses acts as a good example (Assaf et al., 2024). A study by Broadstock et al. (2021) found empirical evidence from the Chinese market during the pandemic, strongly supporting the idea that ESG disclosures can be a powerful tool for investors, especially when their context dependence and factor-specific relevance are taken into account. Their findings show that overall ESG scores were positively linked to short-term stock returns around the

time of the Wuhan lockdown in 2020. This suggests that ESG information provided useful signals during the crisis. ESG's usefulness is further supported by the fact that companies with higher ratings showed lower price volatility. The study also highlights that the importance of ESG performance was significantly higher during the crisis than in normal times. Thus, for investors who understood that ESG's impact increases during uncertainty, they could make better use of it by giving it more weight in turbulent periods. This demonstrates a practical application of ESG's usefulness under specific conditions.

Moreover, Broadstock et al. (2021) found that only the Environmental (E) and Governance (G) pillars were positively related to returns, while the Social (S) pillar was not significant. This implies that investors must understand how the importance and market impact of different ESG components can vary. According to these findings, focus should be on the aspects that offer clearer signs of resilience. The observed relative stability and lower trading intensity in high-ESG stocks further suggest that investors used this information to guide their holding strategies during the downturn. These patterns from the Chinese market during the pandemic strongly support the idea of H2, that ESG disclosures can be a useful tool for investment decisions when their limits are understood by considering the context and the relevant components. This also highlights the importance of understanding the contextual variations of ESG, such as those related to country factors (Peng and Kong, 2024; Erol and Çankaya, 2023), discussed in Subchapter 3.2.

Another potential benefit of ESG was presented in a study by Illan et al. (2019), where they show that firms with weak ESG performance, particularly with high carbon emissions, have higher carbon tail risk. This suggests that ESG could be used to hedge against such risk. Yet, greenwashing, as highlighted by research like that of Kathan et al. (2025) discussed in Chapter 3, complicates this significantly by questioning if high ESG scores truly represent the lower carbon exposure or genuine sustainability needed to mitigate such tail risk in practise. This connection between potential ESG signals like

carbon risk and the persistence of greenwashing is a central challenge for investors seeking to use ESG data effectively.

Emerging literature shows conflicting results on whether ESG integration strategies offer advantages like risk reduction. For example, Dimson et al. (2020) found no evidence of ESG screening reducing risk in the long run. On the contrary, Schanzenbach et al. (2020) did find evidence in support of higher risk-return for ESG. However, they emphasise that these findings are far from uniform and are highly dependent on context. Therefore, it is difficult to say whether ESG investing strategies can consistently deliver the expected advantages. This uncertainty suggests that usability for investors is not guaranteed but could be found in certain situations, lending support for our H2.

Investors can integrate ESG considerations into their investment strategies in multiple ways. Firstly, it is important to clarify the difference between ESG investing and impact investing as the difference might not be clear for everyone. According to De Jong and Rocco (2022) in today's market there are multiple investment vehicles available for investors to go green or become socially responsible. One important question to ask is whether investors are actually in the position to tell the difference between various investment approaches. For example, in the same way that an investor should not confuse a passive investment for an absolute return fund, a normal ESG fund is not explicitly engaged in impact investing. Lukas (2024) elaborates on this by describing impact investing as a strategy for those seeking more purposeful outcomes. He notes a common definition which includes three key elements which include seeking a return on capital, the intentional pursuit of specific social or environmental change, and an attempt to measure that achieved change. While there is some overlap, ESG and impact investors differ in terms of the partaking actors, the suppliers and targets of their investment capital, as well as the role of non-financial actors (Golka, 2024). Understanding these distinctions is crucial for investors to align their ESG approach with their specific objectives. This is the key component to using ESG effectively and the usefulness component of our H2.

To conclude, this discussion of the investor perspective is a nuanced one but ultimately supports ESG as a significant factor in modern finance, when its limitations are acknowledged. Relevant research, such as that by Dimson et al. (2020) on the divergence of ESG ratings and Liu et al. (2025) on ESG ratings and company performance might initially appear to undermine H2 if taken at face value but instead highlight the need for nuanced interpretation. Both studies conclude that ESG ratings should not be treated as a “black box”. According to Dimson et al. (2020) investors need to consider ESG ratings purely as a tool among many others for measuring the sustainability of investments. Even in the best-case scenario, they are a starting point. For practical usability, and to realise the usefulness posited in H2, investors should consider ratings from different providers and combine this information with other considerations like prior ESG controversies, risk distribution and the contextual variations discussed in Chapter 3.2. As previously discussed, recent findings suggest that in specific circumstances ESG information can signal which companies are resilient to economic shifts (Broadstock et al., 2021). At the same time, longer-term studies remind that these advantages are not guaranteed (Dimson et al., 2020; Plagge & Grim, 2020), reinforcing the limitations of H2. Potentially, ESG disclosures can also help hedge against downside risk (Assaf et al., 2024), but greenwashing remains a serious concern that can undermine this utility. In practise, investors that treat ESG data as one part of a broader decision-making toolkit and exercise critical judgment will find the greatest value. As a result, H2 holds partially true, but with major caveats and cautions. Therefore, we conclude that ESG can be a significant and useful tool for investors when its limitations are understood and managed.

5 Conclusion

This study critically examines the findings from previous literature on the prevalence of greenwashing in ESG disclosures and the implications it has for investors. In Chapter 3 we examined whether greenwashing is a prevalent characteristic, commonly found in today's ESG landscape. Meanwhile, Chapter 4 examined whether ESG factors offer any real utility to investors. Our two hypotheses were chosen to act as a critical lens for examining the issues through financial theories and frameworks and through relevant literature.

The literature review findings in Chapter 3 strongly support H1, concluding that ESG disclosures do seem to suffer from prevalent greenwashing that is largely enabled by a clear lack of standardisation, the effect of managerial incentives, and the general inconsistencies in ESG rating methodologies. Further, Chapter 3 identifies high-profile cases of ESG greenwashing, ranging from selective disclosures to misleading reporting, which are often exacerbated by the absence of regulation, external oversight, and minimal repercussions. The true prevalence of greenwashing in ESG, however, is highly conditional and dependent on contextual variations. These include the significant impact that factors such as industry, country of operations, and even size play. Overall Chapter 3 concludes that our stated H1 has significant support, but with major caveats that are mainly related to the contextual variations discussed in depth in Subchapter 3.2.

Compared to Chapter 3, the findings in Chapter 4 suggest a more nuanced conclusion. While the prevalence of greenwashing is undeniable, ESG factors can still offer utility for investors, if used with a highly critical approach. The usability is entirely contingent on the capability of investors to critically analyse disclosures and literature suggests that the true value of ESG is found by focusing beyond headline ratings. This approach is supported by relevant research and industry professionals. Therefore, Chapter 4 concludes that H2 is supported, but conditionally.

These findings from our study collectively reveal other crucial dynamics that go beyond our hypotheses. The contextual variations identified in Chapter 3.2 paradoxically also point to the potential of ESG for investors, as explored in Chapter 4. The fact that greenwashing is so contextually varied, demonstrates how ESG as a tool, when used with consideration, clearly has the potential to offer benefits for investors. Still, even with a critical viewpoint, navigating the complexities of ESG disclosures and ratings to extract real value can prove difficult. The benefits and how to take advantage of them are not yet fully understood, a fact that is amplified by the varied findings in relevant research.

Our thesis also clearly demonstrates that the issues inherent in ESG are not random but are instead deeply rooted in and explained by established financial theories. Agency theory (Jensen & Meckling, 1976) offers clear reasoning for managerial incentives and information asymmetry, while Signalling theory (Spence, 1973) helps explain the strategic choices of communication related to ESG disclosures. These theories provide a solid explanation for why the issue is so persistent, but crucially also offer key insight into company practises that investors should consider when acting in the market.

Another overarching finding is that ESG as a field is in a state of constant scrutiny due to systemic flaws like the lack of external oversight (scrutiny) and minimal repercussions. Here, it is important to acknowledge the immaturity of the ESG landscape. Clearly the rapid growth and increasing interest have not been matched by an equivalent growth in the quality and reliability of the data. Several issues heavily discussed in the literature review substantiate this claim. There is clear transformative potential if the gap between the expectations and the realities is narrowed.

Relatively simple implementations could lead to drastic improvements, hence future research should focus on the development and implementation of a standardised global reporting framework. Additionally, research could also focus on enhancing transparency and accountability as external oversight is the key to meaningful development.

The nuanced findings of our literature review are a clear limitation of this paper. This however, is not surprising, as measuring greenwashing with any meaningful numbers is challenging to say the least. Instead, it should be treated as a general look into the current ESG landscape, not as definitive proof.

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