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The Legitimacy of Greenwashing of Privately Family-owned Companies vs Publicly Traded Companies

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Abstract

Corporate greenwashing has emerged as a widespread phenomenon that has raised concerns about the legitimacy of companies. While existing studies have recognized the distinct legitimacy that stakeholders assign to private and public companies, less is known about the impact of perceived greenwashing and the aftermath of greenwashing scandals on this differentiation. This study endeavors to fill this knowledge void, delving into how these perceptions and their subsequent scandals can shape stakeholders' views of legitimacy within the context of privately and publicly owned firms.

The study employs a between-subjects design experiment with 'private' and 'publicly owned' companies as between-subjects factors to investigate how ownership structures affect consumers' perception of corporate green brand legitimacy in the context of the perception of greenwashing and a greenwashing scandal. Regarding the perception of greenwashing, the findings reveal that ownership condition predicts green brand legitimacy, but consumers' perceived greenwashing fully mediates this effect. Specifically, publicly owned companies are perceived to be less legitimate due to higher levels of greenwashing. The reaction to a greenwashing scandal act as a suppressor variable, altering the relationship between ownership condition and green brand legitimacy. Stakeholders exhibit heightened sensitivity to a greenwashing scandal in publicly owned companies in which their reaction to a greenwashing scandal predicts green brand legitimacy. The findings suggest that ownership is important but only because customers insinuate that publicly owned companies use greenwashing.

Overall, this research sheds light on the impact of ownership structures, perceived greenwashing, and the reaction to a scandal on stakeholders' perceptions of corporate legitimacy. The findings contribute to understanding how stakeholders interpret and respond to greenwashing in the context of different ownership structures and highlight the complexities of environmental communication and its effects on stakeholders' perceptions.

1. Introduction

Organizational legitimacy, defined as the cultural support for an organization (Meyer & Scott, 1983), has garnered increased attention since the Volkswagen emissions scandal 2015. In this scandal, the Volkswagen company's legitimacy was questioned by the exposure of the intentionally installed faulty emissions software (Dworaczek et al., 2020). In this progression, not only did Volkswagen experience a significant loss in legitimacy, but the scandal also extended to the German automobile manufacturing industry, tarnishing its reputation (Dworaczek et al., 2020). Legitimacy affects businesses by securing stakeholder loyalty and improving investor interest (Pollock & Rindova, 2003; Bansal & Clelland, 2004).

In response to such crises and to gain legitimacy, companies often turn to corporate social responsibility activities (Du & Vieira, 2012). These activities can align a company's reputation with sociocultural norms and are primarily driven by a motivation to improve corporate legitimacy (Baum, 2012) and encourage consumer purchase intentions (Spack et al., 2012). These efforts, coupled with growing concerns for environmental sustainability by consumers, have led firms to invest in green branding. Green brand legitimacy refers to the perceived credibility and trustworthiness of a firm's environmental claims (Guo et al., 2015). By doing so, businesses can gain consumer trust and loyalty and improve investor confidence, which ultimately contributes to the long-term success and sustainability of the company (Guo et al., 2015).

Legitimacy in a company is multifaceted and hinges on its communications and actions and factors like company size, which can significantly sway perceptions (Panwar et al., 2014). The societal and cultural values that evaluators hold also play a part in shaping legitimacy. Even corporate social responsibility programs, when well-executed, may fall short in establishing legitimacy, particularly if the company's size is substantial and there is heightened public scrutiny (Panwar et al., 2014). The public is increasingly aware of corporate scandals, perhaps due to amplified media coverage. Despite honest management in social and environmental areas, corporate scandals like the VW diesel scandal have raised public skepticism about corporate social responsibility activities often viewed as insufficient, misused, and dishonest (Green & Peloza, 2014).

A key factor in this mistrust is 'greenwashing' – deceptive communication strategies that mislead stakeholders about the authenticity of a company's corporate social responsibility activities (Seele & Gatti, 2017). In the case of Volkswagen, the public was led to believe that their diesel cars were more environmentally friendly than they were. This deliberate misleading of stakeholders constitutes greenwashing and is a major concern for consumers, who are increasingly intent on making environmentally informed choices (TerraChoice, 2010). Here, distinguishing between 'greenwashing' and a 'greenwashing scandal' is critical. Greenwashing refers to companies' deceptive tactics to falsely present their corporate social responsibility activities as more beneficial to the environment than they truly are (Seele & Gatti, 2017). For instance, Volkswagen led the public to believe their diesel cars were more eco-friendly than reality, a clear example of greenwashing.

However, a 'greenwashing scandal' occurs when such deceptive practices are publicly exposed, causing a significant blow to the company's reputation and damaging public trust.

Volkswagen's situation escalated from greenwashing to a full-blown greenwashing scandal when their dishonesty was unveiled, creating a public uproar and widespread mistrust (Freitas Netto et al., 2020). Irrespective of company size, greenwashing scandals significantly undermine brand legitimacy. It erodes trust, casting doubt on a company's commitment to sustainability, and consequently impacting the perception of its legitimacy (Seele & Gatti, 2017). The VW diesel scandal demonstrates how this impact can be particularly devastating for larger firms, with repercussions that can span entire industries.

For instance, a previous study by Green et al. (2014) found that the positive attributions stakeholder possesses towards small organizations influence their perception of corporate social responsibility and corporate socially irresponsible behavior. Conversely, large companies suffer from a more significant legitimacy gap, in which stakeholders hold lower trust in organizational behavior and higher expectations in their corporate social responsibility engagement (Green & Peloza, 2014). As a result, more stakeholders in the study excused smaller companies for corporate social irresponsibilities than larger companies. Another study by Panwar et al. (2014) examined the legitimacy of corporate social responsibility actions dependent on the company's ownership structure. It was found that publicly traded companies receive lower legitimacy for corporate social responsibility actions than privately family-owned companies because family-owned businesses are credited with lower corporate social responsibility expectations and higher perceived levels of social and environmental performance than their counterparts (Panwar et al., 2014).

The legitimacy of corporate social responsibility actions is not solely predicated on a firm's previous performance and strategy. It is also influenced by the cultural context of an organization's environment, particularly elements like its size and ownership structure (Panwar et al., 2014; Green & Peloza, 2014; Du, Bhattacharya, & Sen, 2010). The underlying argument is that publicly traded companies possess limited abilities to manage legitimacy actively since decisions on legitimacy are derived from the idealogy and culture of the reviewer.

While existing research has underscored the influence of ownership structure and company size on the legitimacy of corporate social responsibility actions, a comprehensive understanding remains elusive. These studies suggest that family-owned companies generally garner higher legitimacy than publicly traded firms (Panwar et al., 2014). However, the reasons behind this, and the discrepancies in legitimacy among companies that both assert environmental sustainability, have not been understood yet. Interestingly, the examined literature indicates that stakeholder perceptions, shaped by a company's corporate structure, play a pivotal role. These perspectives appear to be mediated by their perception of corporate greenwashing and their reactions to environmental scandals. Even so, existing literature has not fully explored the complex factors at play, like different types of ownership and greenwashing claims. This presents a research gap, illuminating the need for more investigation into green brand legitimacy dynamics. Researching the interplay between ownership structures, company size, greenwashing practices, and stakeholder perceptions can provide a more in-depth understanding.

This study seeks to extend current research by asking how stakeholders' perceptions of the culturally and ideologically derived legitimacy are viewed based on ownership and how it changes when greenwashing is detected. In this context, the study intends to understand why legitimacy judgments might be based on ownership classification in the first part of the study. The second part assesses the influence a greenwashing scandal has on stakeholders' perceptions of legitimacy. It is also assessed whether a company's legitimacy varies based on the ownership structure when instrumentalizing greenwashing. Regarding the above-stated problem, the following research questions can be formulated:

Research Question 1: What is the difference between greenwashing in publicly versus family-owned companies concerning stakeholder's perception of corporate green brand legitimacy, mediated by the perception of corporate greenwashing?

Research Question 2: What is the difference between greenwashing in publicly versus family-owned companies concerning stakeholder's perception of corporate green brand legitimacy after an environmental scandal, mediated by the reaction to that scandal?

The study used a between-subjects design experiment to investigate the effect of different ownership structures (privately and publicly owned companies) on green brand legitimacy and the mediating variables of perceptions of corporate greenwashing and reactions to an environmental scandal. A cross-sectional, vignette-based approach was adopted and presented participants with situations involving fictional organizations with distinct attributes. Each participant recruited from the Netherlands and Germany, aged 18 and above, were randomly assigned to one of two experimental sets, which manipulated the ownership structures of the companies. Participants were presented with a company website that conveyed environmental commitment, followed by a newspaper article reporting a serious environmental scandal involving the company. The study measured variables through 19 items in an online survey, which assessed green brand legitimacy pre and post-scandal, perception of greenwashing, reactions to the environmental scandal, and demographical data.

This study advances our theoretical understanding of how ownership structure, company size, and greenwashing impacts green brand legitimacy. It illustrates how legitimacy perceptions change with different ownership types and how these perceptions shift in the wake of a greenwashing scandal. From a practical standpoint, this study equips businesses with valuable insights into managing their green brand legitimacy. It aids in strategizing their corporate social responsibility efforts, particularly in public companies where legitimacy is often lower.

This article adheres to a structured progression. Chapter 2 begins with legitimacy within environmental sustainability and discusses greenwashing as a corporate strategy to acquire this legitimacy. We then delve into perceived legitimacy differences tied to company size and ownership in Chapter 2.3. Chapter 3 presents the proposed hypotheses, and Chapter 4 describes the methods used to verify these hypotheses. Chapter 5 further explores the study's findings and additional analysis. Chapter 6 dissects the study's outcomes, providing theoretical and practical insights while acknowledging study limitations and proposing future research directions. The concluding chapter encapsulates the study's key messages and discusses preventive measures to avert future greenwashing scandals.

2. Literature Review

2.1 Legitimacy in the context of environmental sustainability

In a fast-changing business world, organizations must secure their legitimacy regularly by responding to increased social and environmental problems. Businesses have historically been considered legitimate when they contribute to the economy by creating jobs, delivering goods and services that the public needs, paying taxes, and adhering to the law (Scherer & Palazzo, 2011). During the era of industrialization specifically, businesses primarily focused on their financial performance to gain legitimacy in the corporate world. However, this focus has shifted significantly with the growing prevalence of social and environmental issues. In today's business landscape, prioritizing financial performance is no longer sufficient for a corporation to be considered legitimate (Donaldson & Preston, 1995). Corporations are now expected to address a wider range of stakeholders and consider their social and environmental responsibilities (Freeman, 1984), which means that the legitimacy of a specific company or even an entire industry depends on the perception of its environmental and social performance (Panwar et al., 2014).

As a result, consumers are showing a favorable attitude toward green companies or products (Chen, 2008; Herbes & Ramme, 2014; Salmela & Varho, 2005), as evidenced by the growing demand for environmentally friendly items. Customers equate "green" brands with environmental preservation and ethical corporate conduct (Wikipedia, 2012). The size of the market for eco-friendly goods and services amounted to roughly 35.5 billion euros in 2021 and was projected to peak at 417.35 billion U.S. dollars by 2030 (Statista, 2022). Therefore, many companies are rushing to build green brands to adhere to social demands and gain corporate green brand legitimacy.

To gain further insight into how companies shape legitimacy in the context of environmental sustainability, it is essential to delve deeper into the concept of legitimacy. The subsequent sections will explore its significance in green brand legitimacy and the phenomenon of the legitimacy gap.

2.1.1 The concept of legitimacy

The groundwork for studying a company's interactions with society was laid by Dowling and Pfeffer's research on legitimacy theory. Their work identified legitimacy as:

> "a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy" (Dowling & Pfeffer, 1975, p.175).

In simpler terms, their research highlights the importance of a company's alignment with the values and expectations of the broader society in which it operates. The "larger social system" could include stakeholders such as customers, employees, investors, regulators, and the community (Dowling & Pfeffer, 1975).

Legitimacy theory depends on the concept of a ‘social contract’ between organizations and the society in which it operates (Dowling & Pfeffer, 1975). This implies that organizations can exist if recognized as fulfilling societal needs (Johnson & Holub, 2003). Therefore, legitimacy research in an organizational context proposes that a firm's survival is based on its socially accepted performance (Suchman, 1995). The notion of a 'social contract,' representing societal expectations around an organization's activities, becomes crucial when considering a company's survival (Deegan, 2000). The perception of a breach in this social contract can endanger a firm's economic viability. When an organization's actions are deemed unsatisfactory, this 'contract' can be revoked, posing a significant threat to its operations. Such a breach could manifest in various ways; consumers might lessen their demand for the organization's products, suppliers might quit their labor supply or governmental intervention could occur to halt actions that fall short of societal expectations (Deegan, 2000).

The content of a social contract is hard to define since it is not formulated as a written contract. Expectations of each party (society, firm, and government) can only be assumed because the terms of a social contract are not defined and are open to personal judgments (Deegan, 2002). Furthermore, societal expectations are not a constant variable but rather subject to change, whereas the requirements under the social contract on which social approval is granted alter. This demands that firms be aware of and adapt to the changing environment in which they operate (Deegan, 2000).

The significance of the social audience in the dynamics of legitimacy is made explicit by Suchman, as he integrates both evaluative and cognitive elements in his definition. Legitimacy, in his view, is "a generalized perception or assumption that the actions of an entity align appropriately within a socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995, p.574). He further proposes three types of legitimacy- pragmatic (based on tangible benefits), cognitive (based on shared cultural or social norms), and normative/moral (based on adherence to ethical principles).

Moreover, as organizations operate within complex regulatory environments, the concept of regulatory legitimacy obtained by laws and regulations become relevant since they impact an organization's reputation and standing within society, affecting its ability to attract and retain stakeholders.

The types of legitimacy help us better understand the different ways organizations gain and maintain legitimacy within their larger social systems, and since legitimacy is a view or assumption reflecting how observers react to an organization, legitimacy is objectively possessed and subjectively formed (Suchman, 1995). This understanding supports Nasi et al. assertion that “legitimacy is not a characteristic of a corporation. It is a measure of the adequacy of societal perceptions of corporate behavior compared to societal expectations for corporate activity” (Nasi et al., 1997, p.300)

2.1.2 Green brand legitimacy

Green brand legitimacy is a specific type that focuses on the perception of an organization's commitment to environmental sustainability and its ability to provide tangible benefits (Guo et al., 2015). This concept shapes stakeholders' perceptions, attitudes, and behaviors toward a company, especially when environmental concerns are increasingly important for customers, investors, and regulators (Palazzo & Scherer, 2006).

Green brand legitimacy can be understood through the three types of legitimacy: pragmatic, cognitive, and normative/moral (Suchman, 1995). In the context of green brands, these legitimacy aspects take on unique dimensions and importance.

Pragmatic legitimacy is centered on the practical outcomes and benefits a company provides regarding environmental sustainability. Green brands can enhance their pragmatic legitimacy by demonstrating a genuine commitment to environmental sustainability and taking actions that positively impact the environment, leading to increased trust, loyalty, and financial performance (Guo et al., 2015).

Cognitive legitimacy refers to the perception that a company's environmental practices are valid, relevant, and worthwhile within a context (Suchman, 1995). Green brands can increase their cognitive legitimacy by obtaining credible international green accreditations, leading to greater consumer acceptance and an enhanced reputation as green brands (Scherer et al., 2013). Cognitive legitimacy is socially constructed and varies across different contexts and stakeholders (Palazzo & Scherer, 2006), making it essential for green brands to adapt their practices to the evolving expectations of their audiences.

Normative/moral legitimacy results from conscious moral assessments of an organization's output or practices (Suchman, 1995). For green brands, it is essential to establish themselves as environmentally responsible and to gain the trust of consumers who prioritize sustainability. This type of legitimacy can be achieved through various means, such as implementing environmentally friendly practices and policies, publicly committing to sustainability goals, and engaging in transparent communication about their actions (Scherer et al., 2013).

2.1.3 Legitimacy Gap

Socially irresponsible behavior impacts stakeholders' attitudes much more greatly than corporate social responsibility activities because consumers are much quicker to boycott companies that are perceived unethical than to reward companies that are perceived ethical (Creyer & Ross, 1997). Companies involved in corporate social irresponsibility are often exposed to negative word of mouth, consumer boycotts, or public protests. Apple's use of sweatshop factories in China and Nestlé's infant formula scandal are notorious examples wherein companies' socially irresponsible behavior caused an extensive public outcry (Carrigan & Attalla, 2001).

Legitimacy issues often surface when there is a gap between what society expects from a corporation and how it perceives its behavior, a discrepancy often termed a "legitimacy gap” (Lindblom, 1994; Sethi, 1975, 1977, 1978, 1979). This gap is a divergence between an organization's perceived behaviors and actual actions by the relevant public. When there is a potential or actual mismatch between these two value systems, it threatens the legitimacy of the business, thus creating a legitimacy gap (Lindblom, 1994). The existence of a legitimacy gap influences organizations to actively manage legitimacy:

> “At any given time, there is likely to be a gap between performance and societal expectations caused by business actions or changing expectations. A continuously widening gap would cause business to lose legitimacy and threaten its survival. Business must therefore strive to narrow this ’legitimacy gap‘ to maintain maximum discretionary control over its internal decision making and external dealings” (Sethi, 1977).

Two primary reasons are proposed for the emergence of legitimacy gaps: Firstly, societal expectations are subject to change, as previously described (Sethi, 1977). This widens the gap between an organization’s image and societal expectations. This process is well illustrated by the image change the tobacco industry underwent in the 1970s, as the industry lost legitimacy due to the increasing awareness of the health risk of smoking (Miles & Cameron, 1982). Without any changes in activities or image on the part of the tobacco industry, its role in the social context was suddenly evaluated differently, resulting in a legitimacy gap (Nasi et al., 1997). Secondly, a legitimacy gap can open if new information about an organization’s activities becomes public and shows a discrepancy from the corporation’s image. This discrepancy refers to the organization's shadow of information once concealed from the public. The looming threat of such information being accidentally exposed or intentionally revealed by investigative journalism or activists creates a legitimacy gap (Bowles, 1991).

Information, including media coverage and word-of-mouth communication, can also shape perceptions of a company's corporate social responsibility efforts. Companies perceived as socially responsible are more likely to be seen as legitimate in their corporate social responsibility efforts. In contrast, those with a negative social responsibility reputation may struggle to gain legitimacy even if they implement strong corporate social responsibility initiatives (Doh et al., 2010).

2.2 Greenwashing

For organizations, gaining legitimacy is essential because it increases access to resources, fosters stronger working relationships with partners, and strengthens employee morale (Torelli et al.,2019; Walker & Wan, 2012). Additionally, green claims boost a company’s reputation (Baum, 2012) and increase consumers' inclination to make purchase decisions (Spack et al., 2012). A business's financial performance can be improved by raising its credibility (Deephouse, 1999).

Companies often leverage environmental or social claims to enhance their legitimacy, especially in today's climate, where corporate scandals have undermined public trust (Dworaczek et al., 2020). This heightened skepticism has increased companies' need to establish and maintain legitimacy (Palazzo & Scherer, 2006).

However, there is a line between genuine environmental commitments and greenwashing, a practice where companies portray their products or practices as more eco-friendly than they are. A staggering 95% of products marketed as “green” in Canada dn the USA commit at least one of “seven sins of greenwashing.” This can include, for instance, focusing on a narrow set of green attributes while neglecting the overall environmental impact of using fake certifications to bolster green claims (TerraChoice, 2010).

The term "greenwashing" was first coined by environmentalist Jay Westerveld in a 1986 essay. He criticized the hotel industry's tactic of portraying towel reuse as part of a broad environmental strategy when it was primarily a cost-saving measure (Pearson, 2010). There are two main ways of conceptualizing greenwashing: selective disclosure, where a company chooses to share only certain, often positive, aspects of its environmental behavior, and decoupling, where there is a disconnection between a company's professed commitments and its actual practices (Walker & Wan, 2012). It is essential to understand these nuances to identify and counter greenwashing accurately.

2.2.1 Greenwashing as selective disclosure

In the context of selective disclosure, greenwashing involves a company strategically highlighting certain positive environmental practices or products while deliberately omitting less favorable information (Walker & Wan, 2012). While there is no generally accepted definition of "greenwashing" in the literature, the majority of academics concur that businesses use environmental and social marketing to establish their legitimacy (Berrone & Gomez-Mejia, 2009; Prakash, 2002; Walker & Wan, 2012).

The pressure organizations feel to adhere to and disclose social and environmental practices was found to have a profound impact on whether environmental practices were integrated “substantial” versus “symbolic” (Testa et al., 2018). Pressure from suppliers and shareholders positively contributed to incorporating proactive environmental practices. In contrast, pressure from customers and industrial associations tends to promote the adoption of superficial and misleading implementation of environmental practices, such as greenwashing (Testa et al., 2018).

Corporate greenwashing is connected to distorted and selective disclosures in which businesses reveal only positive environmental policies and initiatives while hiding negative ones. In both cases, the behavior of selected disclosure is to conceal unfavorable information about the company's environmental performance and disclose positive environmental performance information (Freitas Netto et al., 2020). Marquis et al. (2016, p. 483) explain selective disclosure as a “symbolic strategy whereby firms seek to gain or maintain legitimacy by disproportionately revealing beneficial or relatively benign performance indicators to obscure their less impressive overall performance.” With this mentality, businesses attempt to create a favorable but utterly false impression of their environmental performance to gain legitimacy (Lyon & Maxwell, 2011). When firms operate through misleading communication only at the symbolic level to strategically influence stakeholder views, greenwashing occurs in the context of pragmatic legitimacy (Seele & Gatti, 2017). Especially the strategic approach of using greenwashing to gain legitimacy emphasizes organizations' use of ‘symbolic communication’ to tactically influence stakeholders’ perceptions (Palazzo & Scherer, 2006). The strategic approach of greenwashing has grown increasingly common in recent decades.

This trend is attributed to businesses aiming to outperform their competitors, primarily due to heightened stakeholder sensitivity toward environmental issues (Parguel et al., 2011). Consequently, stakeholders are becoming increasingly skeptical of businesses that present their environmental strategies and performances, fostering an environment of mistrust (Chen & Chang, 2013).

2.2.2 Greenwashing as decoupling

Greenwashing is the act of decoupling, or separating, symbolic actions from actual sustainable behaviors to appear environmentally friendly and manage external pressures (Guo et al., 2014). A well-known example of this practice is BP's "Beyond Petroleum" campaign in the early 2000s. BP rebranded itself with a focus on renewable energy while simultaneously being involved in multiple environmental disasters, such as the Deepwater Horizon oil spill in 2010 (Coombs & Holladays, 2012).

A further example is the case of Chiquita Brands International. Chiquita engaged in symbolic actions by participating in the Rainforest Alliance's Better Banana Project to promote sustainable agriculture while simultaneously funding a paramilitary group responsible for human rights violations in Colombia, revealing a disconnect between their positive communications and their actual corporate social responsibility performance (Maurer, 2009). In other words, these companies simultaneously employ positive communications about their corporate social responsibility performance while also having poor corporate social responsibility performance (Delmas & Burbano, 2011).

Decoupling actions taken by greenwashing companies are to maintain corporate legitimacy. When greenwashing scandals are exposed to the public, they can significantly damage a company's legitimacy, undermining public trust and raising doubts about the sincerity of the company's corporate social responsibility efforts.

When a company fails to meet its sustainability goals, it could reduce cognitive, moral, and pragmatic legitimacy due to selective disclosure and decoupling behaviors (Guo et al., 2014). This can significantly affect a company's reputation and stakeholder trust, potentially leading to negative consumer reactions, protests, or boycotts (TerraChoice, 2010). Moreover, such decoupling can undermine the credibility of genuine sustainability efforts in the industry, creating challenges for companies genuinely committed to improving their environmental performance (Laufer, 2003).

2.3 Differences depending on size/ownership structure

Previous studies have indicated that legitimacy crises concerning corporate social responsibility are predominantly associated with large, publicly traded companies rather than small, privately-owned family businesses (Green & Peloza, 2014; Bhattacharya & Sen, 2004; Panwar et al., 2014). The increased visibility and public expectations for corporate social responsibility engagement faced by large companies may explain some of this disparity, but other factors also contribute. Publicly traded companies are subject to stricter regulations and reporting requirements, enhancing their transparency and potentially exposing their corporate social responsibility shortcomings, whereas family-owned businesses often have less transparent governance structures and fewer reporting obligations (Jenkins, 2006; Panwar et al., 2014). Small family businesses with lower transparency and reporting requirements may be less likely to face legitimacy crises related to their corporate social responsibility efforts, even if they engage in greenwashing to a similar extent as large corporations (Green & Peloza, 2014). Privately-owned firms may receive disproportionate credit for corporate social responsibility initiatives, while publicly owned firms face harsher criticism for similar corporate socially irresponsible behaviors (Green & Peloza, 2014).

Furthermore, firm-specific characteristics such as size can impact public perception of a company's ethicality. Small, family-owned companies are often considered more ethical than large, publicly traded corporations, regardless of their corporate social responsibility activities (Brunk, 2010; Green & Peloza, 2014). Consequently, less attention is given to small, family-owned companies regarding legitimacy crises related to corporate social responsibility.

Nevertheless, while several factors have been identified to explain why public companies experience more legitimacy crises related to corporate social responsibility than family-owned businesses, it remains unclear why the latter are perceived more positively. Further research is needed to fully understand this phenomenon.

3. Hypotheses Development

3.1 Differential perception of corporate green brand legitimacy in private and public companies

Hypothesis 1 proposes that stakeholders rate corporate green brand legitimacy higher in private, family-owned companies than in publicly owned ones.

The legitimacy of a company's green brand is significantly influenced by how stakeholders perceive the sincerity of a company's commitment to social and environmental issues (Green & Peloza, 2014; Bhattacharya & Sen, 2004). These perceptions, shaped by attributions stakeholders make about a company's motives for engaging in corporate social responsibility activities, can be more impactful than the activities themselves (Gilbert & Malone, 1995).

Private, family-owned firms, often smaller and resource-limited, are more likely to be attributed with internal motives for their corporate social responsibility activities, suggesting a genuine concern for social and environmental issues. This perception lends these firms a positive legitimacy judgment from stakeholders (Green & Peloza, 2014; Panwar et al., 2014).

Conversely, publicly owned corporations, often larger and profit-driven, face skepticism from stakeholders who tend to attribute their corporate social responsibility activities to external motives. These motives are often considered self-serving, aiming to enhance public image rather than reflect a genuine concern for social or environmental issues (Green & Peloza, 2014).

Thus, Hypothesis 1 postulates that stakeholders will rate corporate green brand legitimacy higher in private, family-owned companies than in publicly owned companies due to perceived motives behind corporate social responsibility activities.

H1. Stakeholders rate corporate green brand legitimacy higher in private family-owned companies than in publicly owned companies.

3.2 The mediating role of greenwashing perception on green brand legitimacy

The second hypothesis tested in this research will explore whether the perception of greenwashing mediates the green brand legitimacy of private and publicly owned companies. The term "perception of greenwashing" refers to how stakeholders interpret a company's environmental claims and actions, assessing their authenticity and credibility (Walker & Wan, 2012).

Firstly, the company's ownership structure can influence the perception of greenwashing. More specifically, larger publicly owned companies, due to their high visibility and regulatory scrutiny, are often more associated with greenwashing than smaller, privately owned companies (Bhattacharya & Sen, 2004). Publicly traded companies, subject to strict regulations and reporting requirements, have their business activities more transparent and scrutinized, potentially exposing any instances of greenwashing (Seele & Gatti, 2017). Conversely, privately owned firms, with lower transparency and fewer reporting requirements, may be less likely to be perceived as engaging in greenwashing (Green & Peloza, 2014).

Secondly, the perception of greenwashing significantly influences green brand legitimacy. When companies engage in greenwashing, they risk undermining the legitimacy of their green branding efforts. A pattern of exaggerated or false environmental claims can lead to skepticism among consumers and stakeholders, ultimately diminishing the perceived authenticity of the firm's green brand (Walker & Wan, 2012). This is underpinned by studies suggesting that consumers are more likely to question the authenticity of environmental claims made by firms with a history of greenwashing (Parguelet al., 2011). Hence, an increase in the perception of greenwashing can correspondingly reduce green brand legitimacy.

To summarize, our mediation hypothesis posits that the relationship between the ownership structure of a firm and its green brand legitimacy is mediated by the perception of greenwashing. Specifically, different ownership structures influence perceptions of greenwashing, affecting green brand legitimacy. Our hypothesis suggests that controlling the perception of greenwashing could cause the direct effect of the ownership structure on green brand legitimacy to disappear (Baron & Kenny, 1986), emphasizing the crucial role of the perception of greenwashing as a key mediator in this relationship.

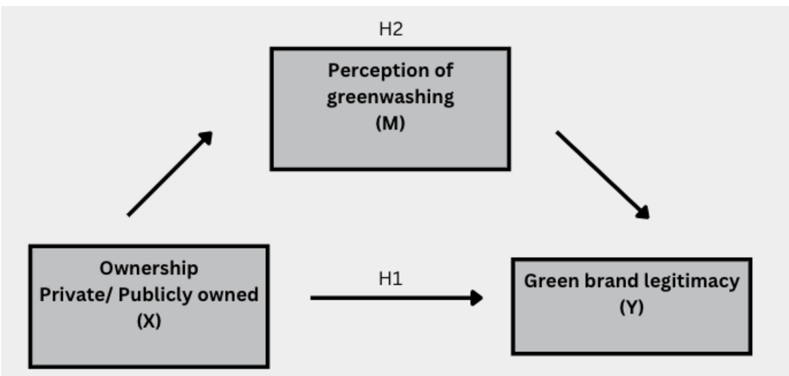

Figure 1 Conceptual Framework 1

3.3 Influence of company ownership on green brand legitimacy post-scandal

Hypothesis 3 posits that stakeholders will rate corporate green brand legitimacy higher in private, family-owned companies than in publicly owned companies following a greenwashing scandal. In a context where a company's green brand legitimacy is at risk, such as during a scandal, the type of company ownership can significantly impact stakeholder perceptions.

Consumers generally perceive private, family-owned companies as having a more pronounced ethical compass and a deeper commitment to sustainability than their publicly owned counterparts (Brunk, 2010; Green & Peloza, 2014). This perception persists regardless of the companies' engagement in corporate social responsibility initiatives. Private entities often receive undue credit for their corporate social responsibility efforts, while publicly owned firms tend to attract harsher criticism for similar misdemeanors (Green & Peloza, 2014).

Moreover, family-owned firms typically have stronger community roots and closer stakeholder relationships (Bhattacharya & Sen, 2004). These relationships cultivate trust and encourage continued stakeholder support even after a greenwashing scandal. Given this context, stakeholders may be more forgiving of greenwashing transgressions committed by private, family-owned businesses, as they are perceived to maintain a steadfast commitment to sustainability and ethical conduct.

In summary, the ownership structure of a company plays a significant role in influencing its green brand legitimacy, especially following a scandal. Private, family-owned companies are more likely to retain stakeholder trust and maintain their green brand legitimacy, further emphasizing the relevance of corporate ownership type in corporate social responsibility strategies.

H3. Stakeholders rate corporate green brand legitimacy post a greenwashing scandal higher in private family-owned companies than in publicly owned companies.

3.4 The mediating role of scandal reaction on green brand legitimacy post- scandal

Hypothesis 4 suggests that the reaction to an environmental scandal mediates the green brand legitimacy post a greenwashing scandal of private and publicly owned companies. 'Reaction to a scandal' refers to the overall public response, which includes consumer outrage, media attention, and subsequent shifts in public perception that occur in the aftermath of a company's environmental scandal (Torelli et al., 2019).

The first part of our hypothesis details that the company's ownership structure can sway the severity of the public reaction to a greenwashing scandal. Particularly, larger publicly-owned firms tend to attract more scrutiny, and their corporate social irresponsibility leads to more negative reactions than smaller, private-owned companies (Green & Peloza, 2014). The high visibility and stringent accountability requirements of publicly-owned companies make their environmental scandals more noticeable and the fallout more pronounced (Panwar et al., 2014).

In the second part of our hypothesis, the proposition is that the reaction to a scandal influences a company's green brand legitimacy post-scandal. Negative reactions to an environmental scandal are expected to significantly damage a company's green brand legitimacy (Torelliet al., 2019). The severity of the backlash largely hinges on the firm's prior reputation and the perceived sincerity of its corporate social responsibility efforts. A greenwashing scandal leads the public to question the sincerity of the company's green commitments, resulting in a sharp drop in perceived legitimacy. Suppose the company has a strong corporate social responsibility reputation. In that case, consumers may be more likely to attribute the scandal to a one-time mistake or a technical glitch, leading to higher green brand legitimacy post-scandal. In contrast, if the company has a weak corporate social responsibility reputation, consumers may be more likely to attribute the scandal to internal factors, leading to lower green brand legitimacy post-scandal.

In summation, the reaction to a greenwashing scandal is a mediator because it captures the public's emotional and judgmental response, directly impacting a company's green brand legitimacy post-scandal. This reaction can vary based on the company's ownership structure, with publicly owned firms typically eliciting stronger negative reactions due to their visibility, perceived responsibility, and, therefore, weaker corporate social responsibility reputation. Essentially, if we control for the reaction to a scandal, the direct impact of the ownership structure on green brand legitimacy is less pronounced.

H4. Reaction to an environmental scandal mediates the green brand legitimacy post a greenwashing scandal of private and publicly owned companies.

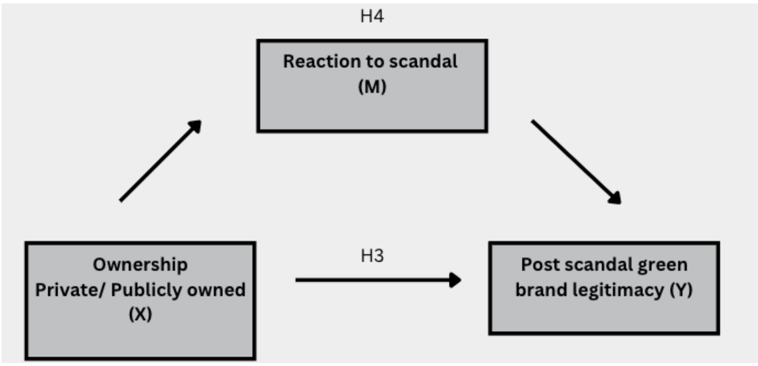

Figure 2 Conceptual Framework 2

4. Methodological framework

This section will describe the research methods used to test the hypotheses. Firstly, the overall research design and measures are introduced. Then the used materials and experimental procedure. Further, the sample of what is being measured and how the data will be analyzed is explained.

4.1 Research Design

This research used an online vignette study to investigate how different ownership structures impact green brand legitimacy. The experiment designed fictional scenarios about privately and publicly held companies and their associated environmental practices. Vignettes are short, carefully crafted stories that describe a person, a situation, or an event (Atzmüller & Steiner, 2010). The study used private and public companies as the independent variables. The dependent variable was green brand legitimacy. The study also considered two mediating variables, perceptions of corporate greenwashing and reactions to an environmental scandal, to understand how they influence the relationship between ownership structure and green brand legitimacy.

4.2 Measurement of variables

This paragraph discusses the conducted measures in this study, which is based on the independent variable of the two distinct ownership groups and two dependent variables of green brand legitimacy (green brand legitimacy, green brand legitimacy post-scandal) as well as the two mediating variables (MV), perceptions of corporate greenwashing, and reactions to an environmental scandal. Please refer to Table 1 for a detailed description of the operationalization of the variables.

The study measured variables through 19 items in an online survey and recruited participants from the Netherlands and Germany aged 18 and above. The participants were divided into two groups with different experimental sets. Each participant examined only one set. The full questionnaire can be found in Appendix A. The green brand legitimacy variables were based on a Likert scale (1–5), and the perception of greenwashing and the reaction to a scandal were based on a Likert scale (1–7).

Table 1 Variables Operationalization

Variable	**Operationalization**	**Scale**
Gender	Control variable	Nominal scaled variable
Age	Control variable	Ratio scale
Ownership Manipulation Check	Control variable	Nominal scaled variable
Importance of corporate social and environmental performance	Control variable	Ordinal metric likert scale 1 (Strongly Disagree) to 7 (Strongly Agree)
Work experience in PR or website consultancy	Control variable	Nominal scaled variable
Private vs. publicly owned company	Grouping variable (IV) dummy variable	Nominal scaled variable
Perception of green brand legitimacy	Dependent variable (Pratima & Clelland 2004)	Ordinal likert scale 1 (Strongly Disagree) to 5 (Strongly Agree)
Perception of corporate greenwashing	Mediator Variable 1 (Vries et al., 2015)	Ordinal likert scale 1 (Strongly Disagree) to 7 (Strongly Agree)
Reaction to environmental scandal	Mediator Variable 2 (Torelli et al., 2019)	Ordinal metric likert scale 1 (Strongly Disagree) to 7 (Strongly Agree)
Perception of green brand legitimacy after scandal	Dependent variable (Pratima & Clelland 2004)	Ordinal likert scale 1 (Strongly Disagree) to 5 (Strongly Agree)

4.2.1 Demographics

This study included four demographical questions. Respondents were asked to indicate their gender, age, and importance of corporate social and environmental performance and work experience in PR or website consultancy.

4.2.2 Green brand legitimacy

The legitimacy of the corporate green brand was assessed by applying a five-point Likert scale. The measurement tool evaluated how the company's history and environmental declaration influenced people's perceptions of its legitimacy (Pratima & Clelland, 2004). Respondents are asked to respond to the following sentence: 'When thinking about EcoTaste Ltd., how strongly would you agree with the following statements?" Green brand legitimacy was calculated by averaging the six green brand legitimacy items (separately for pre- and post-manipulation of the scandal) with *strongly disagree* and *strongly agree* as anchor points:

1. This company's environmental performance is satisfactory.
2. This company's environmental performance is favorable to the public.
3. This company's environmental performance conforms to industry and social norms.
4. This company's environmental performance is appropriate.
5. This company is natural green brand.
6. This company's environmental performance is consistent with your cognition (changed to expectation).

4.2.3 Perception of corporate greenwashing

Perception of corporate greenwashing was evaluated by averaging three items on a 7-point Likert-type scale (Vries et al., 2015). These criteria assess the perceptions of the company's concealed objectives and its desire to look more environmentally friendly to enhance its legitimacy. Participants were asked to indicate how strongly they agreed with the following three statements:

1. The company attempted to enhance its reputation by presenting itself as environmentally aware.
2. The company has hidden intentions and interests.
3. The company wants to appear more environmentally aware than it actually is.

4.2.4 Reaction to an environmental scandal
The evaluation of stakeholders' responses to an environmental scandal was assessed by averaging four items on a 7-point Likert-type scale, with the respondents asked to indicate their level of negative reactions toward greenwashing scandals (Torelli et al., 2019). This question was asked when respondents read the newspaper article about the company's scandal. All items were evaluated on a 7-point Likert-type scale with *strongly disagree* and *strongly agree* as anchor points proposing four statements:

1. You have lost trust in the company after what you have discovered.
2. Even if you had more information about the company about whether you can trust it; you would not change your opinion about it.
3. In the future, you will not re-evaluate the company, even if there are no other scandals or disappointing discoveries.
4. In the future, you will avoid the company.

4.2.5 Green brand legitimacy post the scandal
Green brand legitimacy post the scandal was measured using the same six statements used to measure green brand legitimacy (Pratima & Clelland, 2004) as outlined in section 4.2.2 Green brand legitimacy. This was done to determine the change in the respective statements concerning green brand legitimacy before and after the scandal.

4.3 Pre-test
The questionnaire was pre-tested using in-person interviews with a small, representative sample of respondents (n = 5) before the data collection. By determining whether any statements are too challenging to understand due to uncommon language, syntax, or wording (Colton & Covert, 2015), the construct validity of the questionnaire was established (Shadish et al., 2002). Results from the pre-test show that respondents were irritated about the term cognition regarding whether the “company’s environmental performance is consistent with your cognition.” The term used by Pratima and Clelland (2004) was therefore replaced with the term "expectation." Please refer to Appendix for the full wording of the survey.

4.4 Sample
To test the suggested hypotheses, this study employed an online questionnaire experiment. The respondents were participants from the Netherlands and Germany, aged 18 and above. This study group was chosen because people in these countries are generally well-informed about environmental scandals, greenwashing allegations via the Web (social media, newsletters, podcasts), and environmental issues are of interest. Participants were allocated to one of two experimental conditions (ownership structure: privately family-owned company and publicly traded company). To achieve statistically significant results, a minimum of 66 participants were needed according to the rule of thumb for determining the minimum sample size required for a multiple regression analysis, where 'N' is the total sample size and 'm' is the number of independent variables in the model (Pallant, 2010). Further analysis of the needed sample size can be found in chapter 5.2.1 Assessing the appropriateness of regression.

Participation in the experiment was voluntary, and participants got no rewards or compensation. Most participants were students at the University of Twente and received credits when answering the experiment over the SONA pool website. Other participants to answer the survey were found via social media. The experiment was estimated to be a 10-minute duration. Participants were informed that their involvement in the study was purely voluntary and that all collected data would be kept anonymous.

Eighty-seven participants participated in this experiment, of which four were eliminated because they failed the manipulation check. These students did not perceive the correct ownership classification of the company. Furthermore, 17 people did not finish the questionnaire. The final sample thus consisted of 66 usable surveys. The gender distribution of the participants was balanced. Most participants were female (59%) and between 24-30 years old or younger (48%), as seen in Table 2 and 3. The two different surveys were fairly evenly distributed between the participants. 35 (53%) participants received the family-owned company scenario, and 31 (47%) received the publicly owned company scenario. Participants spend an average of seven minutes answering the survey in the family-owned scenario and five minutes in the publicly owned company scenario.

Table 2 Age of the 66 participants providing usable responses

Age	**Sample (%)**
18-24 years old	27
24-30 years old	48
40-50 years old	14
50-60 years old	11

Table 3 Gender of the 66 participants providing usable responses

Gender	**Sample (%)**
Female	59
Male	39
Non-binary/ third gender	1
Prefer not to say	1

4.5 Experimental task and procedure

The objective of the experimental task was to assess responses to circumstances and any resulting changes in the perception of corporate green brand legitimacy. The hypotheses were tested using fictitious organizations with realistic communication typologies to avoid results skewed by pre-existing corporate or brand impressions (Aggarwal, 2004; Wagner et al., 2009). The participants were informed that the study's genuine goal was to test the effect of different marketing communication strategies on social and environmental issues consumers. The experiment took place in three steps.

Step 1: Participants were informed about the study’s predominant social and environmental issues topic. They were asked to indicate their attitudes towards a company’s social and environmental performance. Participants were presented with general background information on the company (EcoTaste Corp/EcoTaste Ltd), indicating its ownership structure (private or public), along with the information that the company had just invested in new technology to minimize its negative environmental impact by producing fully recyclable bottles. To assess the adequacy of the manipulation, all participants were asked to indicate the ownership of EcoTaste by checking one out of four answers: (1) privately-family owned, (2) publicly owned, or (3) no clear ownership structure.

Step 2: The study presented participants with the company's fictional “sustainability” website (**Error! Reference source not found.**). This website also contained the manipulation of the company's ownership structure and its environmental commitment statement. The website was created because companies often use them as a communication channel for corporate social responsibility communications (Tagesson et al., 2009). Both websites on “sustainability” contained the same picture of the company’s owner.

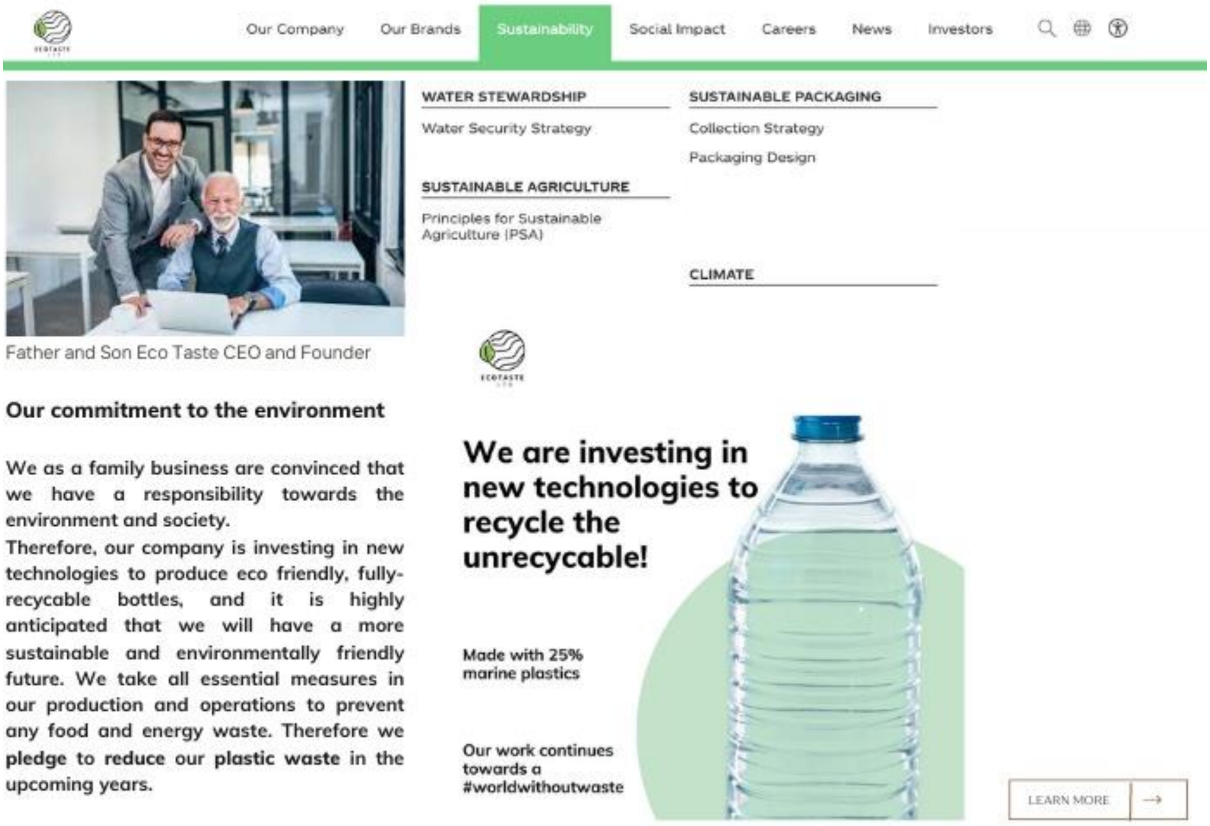

Figure 3 EcoTaste Ltd sustainability mockup (private family-owned business condition)

Using the same picture on the sustainability websites of the two fictitious companies, EcoTaste Corp (publicly owned) and EcoTaste (privately-owned), was to maintain consistency in visual elements across the experiment while only altering the description to match the ownership structure. In the case of EcoTaste Ltd., the individuals in the picture were described as father and son, bearing the same last name as the CEO, reinforcing the concept of a privately-owned family business. This communicates a sense of continuity, personal commitment, and longevity often associated with family-run businesses, which could influence how participants perceive the company's commitment to sustainability. On the other hand, for EcoTaste Corp, the same individuals were introduced as VP Sandersson and CEO Mayer, indicating a more corporate structure common in publicly owned firms. By changing only, the titles and keeping the visual element consistent, minimized confounding factors in the experiment, ensuring that any difference in perception is likely due to the manipulated elements (ownership structure and greenwashing) rather than visual discrepancies (Fraenkel et al., 2011).

In this context, visual imagery was utilized due to its potential to capture attention, provoke richer inferences, and generate more pleasure and conviction than verbal statements, as suggested by previous studies (McQuarrie & Mick, 2003).

After the manipulation, the perceived green brand legitimacy and perceived corporate greenwashing was measured. In the next step, the participants were presented with a newspaper article (Figure 4) in which the company was found to be involved in a serious environmental scandal.

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BUSINESS REVIEW

DESPITE COMMITMENTS TO TACKLE THE ISSUE, THE AMERICAN LOCAL BEVERAGE COMPANY PRODUCED 9% MORE IN PLASTIC WASTE THAN IT HAD THE YEAR BEFORE

ECOTASTE LTD. PLASTIC WASTE PROBLEM CONTINUES TO FESTER

CLAIMS ABOUT PLASTIC PACKAGING BEING ECO-FRIENDLY MADE BY FAMILY-OWNED COMPANY ECOTASTE ARE MISLEADING GREENWASHING, ACCORDING TO A REPORT.

Instead of reducing plastic waste EcoTaste Ltd has been found to produce 9% more plastic than before.

Last year EcoTaste claimed to have invested into an innovation in which bottles are made out of 25% marine plastic making the recycling process of its bottles easier. The company pledged to reduce its plastic waste. But instead of reducing plastic waste the small company has been found to produce 9% more plastic than before.

According to investigations, EcoTaste's 9% increase amounted to 63.000 metric tonnes, meaning that annual plastic waste went from 700.000 metric tonnes in 2021 to 2022's 763.000 metric tonnes.

The private investigation also enumerated that EcoTaste Ltd had failed to meet pledges that would see it increase the use of recycled plastics in packaging while decreasing its use of virgin plastics.

"How can the company use so many additional pounds of plastic in one year and at the same time consider itself to be addressing its plastic problem?" asked the investigative journalist Eric Hanssen. "Bottles with recycled content will still be thrown away, sent to landfills, burned, or littered. Some of these will end up in our oceans."

Figure 4 EcoTaste Ltd Newspaper scandal (private family-owned business condition)

The newspaper article was written so that each participant was left to find their reason for the greenwashing scandal. This was done by only reporting the greenwashing scandal's outcome (the company produced 9% more plastic waste). However, not the reason it engaged in this behavior, allowing participants' attribution process to be the judge of this. The scandals presented to the participants always regarded the violation or non-respect of an environmental commitment made and declared by the company (and presented in the information read in the first step).

Finally, the participants were invited to complete the last section of the questionnaire, in which the reaction to the environmental scandal and the green brand legitimacy post the scandal were assessed as described in 4.2 Measurement of variables. In the last step, the participants completed the demographic data section and information on work experience in PR or the consultancy of companies.

4.6 Data analysis

The research employed multiple linear regression analysis to examine the hypothesized relationships between variables using the SPSS PROCESS macro. This analytical method was selected based on the validity of the results it provided in similar studies, such as (Cho et al., 2009), (Vries et al., 2015), and (Panwar et al., 2014). A regression analysis examines the β-value and p-value to discern whether the hypotheses have been supported. Each hypothesis contains a null hypothesis proposing an effect's absence and an alternative hypothesis positing an effect's presence grounded on theory. To evaluate the individual contribution of variables in the model, the β -value and the p-value should be considered. The null hypothesis can be rejected, and the alternative is supported if the p-value is less than 0.05 ($p<0.05$). The β- value reveals the strength and direction (+/-) of the independent and dependent variables' relationship (Pallant, 2010).

The study furthermore employed a mediation analysis to assess whether stakeholders' reactions to the perception of greenwashing and scandal mediate any relationship between the ownership structure and perception of green brand legitimacy (Hayes, 2022). Mediation analysis tests a hypothesized causal chain where one variable (here, ownership structure) affects a second variable (the different MV's), which in turn impacts a third variable (perception of legitimacy). The intervening variable is the Mediator (M), elucidating the relationship between the predictor (x) and the outcome (y). After the mediators are entered, the relationship between the independent and the dependent variables is expected to either disappear (full mediation), diminish (partial mediation), or the correlation between them is reduced due to the influence of a third variable (suppressor mediation).

Control variables were consciously excluded from the green brand legitimacy analysis to augment the regression analysis's power. The decision to omit control variables from the regression analysis on the independent variable of ownership structure in this study is motivated by enhancing the power of the regression analysis (Mackinnon & Fairchild, 2009). Not including control variables permits a sharper focus on the relationship between ownership structure and green brand legitimacy and the mediating variables of perceptions of corporate greenwashing and reactions to an environmental scandal. This method can improve the statistical power of the analysis by decreasing the number of variables requiring control. It can also bolster the capacity to detect significant effects in small sample sizes (Mackinnon & Fairchild, 2009).

However, it is vital to note the limitations of this approach, and control variables might be necessary to account for potential confounding factors or alternative explanations for the observed relationships. Hence, an additional analysis incorporating control variables was conducted, which can be found in 5.4.1 Regression analysis with control variables.

4.6.1 Prerequisites of Measures

Ensuring the validity and reliability of the analysis required adherence to several prerequisites, all integral to the assumptions of multiple regression (Pallant, 2010). These included considerations related to sample size, multicollinearity, normal distribution, outliers, normality, linearity, homoscedasticity, and the independence of residuals. A minimum sample size is necessary for yielding results that can be generalized. The rule typically adhered to is N > 50 + 8m, where 'm' denotes the number of independent variables (Pallant, 2010).

Outliers, the extreme values that could skew results and violate the normality assumption, were carefully checked and managed.

Further consideration was given to multicollinearity, which arises when independent variables are highly correlated (r ≥ .9). This was assessed by inspecting the relationship between variables. To confirm that multicollinearity was not violating the assumptions of the model, the Tolerance and Variance Inflation Factor (VIF) values were also examined. Tolerance should be above .10, and VIF values should not exceed 10 (Pallant, 2010).

The study also evaluated normality, which assumes that the variables' distribution should be normal, and linearity, which posits a linear relationship between the independent and dependent variables (Hair et al., 2006). Furthermore, the model's residuals should exhibit homoscedasticity, indicating they have a constant variance, and independence, meaning they are not correlated with each other (Hair et al., 2006).

To attain robust results in the analysis described above, some prerequisites had to be met beforehand. These tests' prerequisites emphasize abiding by multiple regression assumptions to prevent invalidating the analysis (Pallant, 2010). These included considerations related to sample size, multicollinearity, and normal distribution.

A small sample size could lead to not generalizable results, thus rendering them insignificant. The general rule is N > 50 + 8m, where m is the number of independent variables (Pallant, 2010). Hence, with two independent variables, the study would require a sample size of at least 50 + (8*2) = 66 participants. This ensures that the study has enough statistical power to detect a significant effect if it exists.

It is also recommended to examine relationships between independent and dependent variables to prevent multicollinearity, which occurs when independent variables are highly correlated (r ≥ .9). The Tolerance and Variance Inflation Factor (VIF) values were also checked, as per Pallant (2010) guidelines. Tolerance should be above .10, and VIF values should not exceed 10.

Finally, control variables were intentionally excluded from the regression analysis on green brand legitimacy to enhance the power of the regression analysis. This simplifies the model and focuses exclusively on the relationship between the independent and dependent variables, potentially increasing the precision and accuracy of the estimates in small sample sizes (Mackinnon & Fairchild, 2009). For more details, see 4.6 Data analysis.

5. Results

5.1 Descriptive Statistics

Most survey participants (79%) reported no experience working in corporate PR, media appearances of companies, or consulting on company websites. The participants' attitudes towards social and environmental performance were specifically evaluated in the survey using a 7-point Likert scale (M = 5.4, SD = 1.35). Scores for the pre- and post-manipulation legitimacy variables for the private-family company condition (M = 3.52, SD = 0.69) and (M = 2.23, SD = 0.83), respectively. The publicly owned company condition pre- manipulation (M = 3.24, SD = 0.86), and post-manipulation (M = 2.08, SD = 0.7).

For the descriptive statistics of the items, see Table 4. For the descriptive statistic for each response, please refer to Appendix B.

Table 4 Descriptive data for the 66 participants providing usable responses

Descriptive Statistics						
Condition		N	Minimum	Maximum	Mean	Std. Deviation
Privately Owned	GreenBrandLeg	36	1.83	5.00	3.5213	.69953
	GreenWashing	36	1.00	6.33	4.7222	1.36510
	ReactionsToScandal	36	1.00	6.50	4.0139	1.22028
	GreendBrandLegPostScandal	36	1.00	4.33	2.2315	.83026
	Valid N (listwise)	36				
Publicly Owned	GreenBrandLeg	30	1.00	4.33	3.2444	.85739
	GreenWashing	30	4.00	7.00	5.6556	.88184
	ReactionsToScandal	30	2.00	7.00	5.0333	1.44993
	GreendBrandLegPostScandal	30	1.00	4.00	2.0778	.75141
	Valid N (listwise)	30				

*Significant at *p < 0.05*

5.2 Checking prerequisites of statistical analyses

Before the analyses were performed, the prerequisites needed to be tested.

5.2.1 Assessing the appropriateness of regression

In this study, 66 respondents were collected, not fulfilling the sample size criterion of including at least 74 respondents. Table A22 in the Appendix shows raw correlations between the independent variable (ownership condition), control variables (age, gender, work experience, and the importance of a company's social and environmental performance), dependent variables (green brand legitimacy, green brand legitimacy post-scandal), and the mediators (perception of greenwashing and the reaction to scandal). The independent and control variables were not highly correlated, indicating no multicollinearity. All variables in Table A23 Collinearity Tolerance and Statistics VIF had a tolerance value above .10 and VIF values lower than 10, indicating no multicollinearity concern.

5.2.2 Outliers, normality, linearity, homoscedasticity, independence of residuals

The assumptions about outliers, normality, linearity, homoscedasticity, and independence of residuals were not violated after analyzing the normal quantile-quantile plot and the skewness and kurtosis of the data set. The normal quantile-quantile plot revealed a relatively straight line of points running from the bottom left to the top right for the green brand legitimacy, the perception of greenwashing, and the reaction to a scandal, indicating that the data followed a normal distribution. The green brand legitimacy post the scandal revealed a slight left-skew indicating negative exponential distribution.

Meanwhile, the skewness and kurtosis measuring the lack of symmetry and whether the data was heavy or light-tailed relative to a normal distribution displayed a relatively normal skewness and kurtosis for all the variables except for the perception of greenwashing. This variable seems moderately skewed to the left. The histogram also appears to experience tall peaks relative to a standard bell curve for the greenwashing variable, with most scores clustering between the Likert scale assessment of 5 and 6.

Since most variables, except for the perception of greenwashing, were normally distributed, the analysis assumptions were upheld in most cases. Please see Appendix D for the graphical representation of these outcomes.

5.3. Main Analysis

We performed two path analyses to test the hypotheses. Path Model 1 contained the first dependent variable (green brand legitimacy), the mediating variables (perception of greenwashing), and the independent variable (ownership condition). Path Model 2 contained the second dependent variable (green brand legitimacy post-scandal), the mediating variable (reaction to scandal), and the independent variable (ownership condition).

5.3.1 Results for Hypothesis 1

We began by testing Path c of Model 1. A regression analysis was conducted in which ownership manipulation was entered (privately owned = 0, publicly owned = 1) as the independent variable and green brand legitimacy as the dependent variable.

H1 proposed that the green brand legitimacy of family-owned companies would be rated higher than that accorded to publicly traded companies. We found that ownership condition had no significant contribution to predicting green brand legitimacy (β = -0.277, p = 0.153) rejecting *H1*. The effect of ownership on green brand legitimacy is, therefore, non-significant. The full regression analysis results can be found in Table 5.

Table 5 The effect of ownership (privately-owned vs family owned) on green brand legitimacy was non-significant

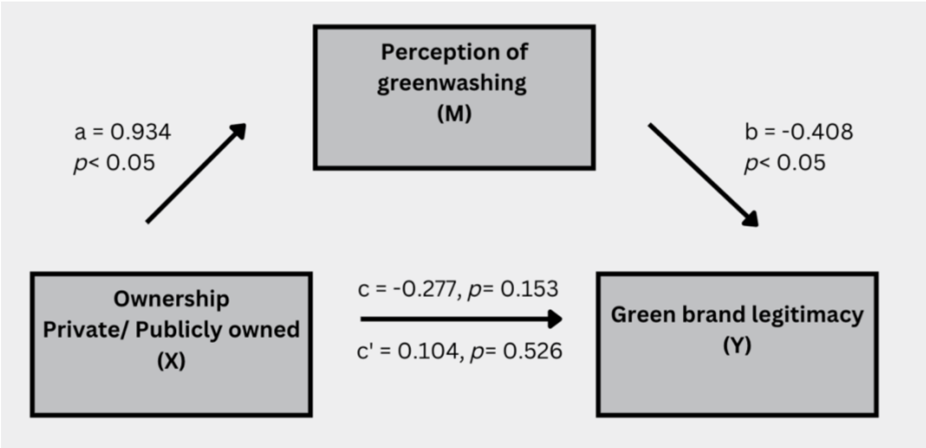
Effect	β = - 0.277, SE= 0.191, $t(63)$= -1.45, p= 0.153, 95% CI: [-0.66,0.11]

β = unstandardized estimate. SE = Standard Error. CI = Confidence Interval.

5.3.2 Path Analysis

This research used a path analysis - a subset of structural equation modeling - to examine the mediation model via regression analysis. As Figure 5 Figure 1indicates, path a of the mediation model asking whether the ownership condition predicts the perception of greenwashing is positive and significant (β = 0.934, p< 0.05) suggesting that publicly owned companies are perceived as engaging in greater greenwashing than privately owned ones. The results for path b suggest that the perception of greenwashing negatively predicts green brand legitimacy. The higher the perception of greenwashing, the lower the green brand legitimacy

(β = -0.408, p< 0.05). Path c calculating the relationship between the ownership condition and green brand legitimacy (without counting in the mediator) is non-significant (β = -0.277, p = 0.153), meaning that ownership does not predict green brand legitimacy. However, importantly the coefficient flipped from -0.277 (slightly negative) to 0.104 (slightly positive, non-significant) from the total to the direct effect, indicating that there may be an indirect link in that publicly (vs. privately) owned companies are perceived as greenwashing more and this, in turn, predicts lower green brand legitimacy.



a = Path a. b = Path b. c = total effect. c'= direct effect; Private= 0, Public= 1

Figure 5 Mediation effect of perception of greenwashing

5.3.3 Results for Hypotheses 2

Hypothesis 2 posits that the perception of corporate greenwashing mediates the green brand legitimacy of private and publicly owned companies. To directly examine the indirect effect of the perception of greenwashing on the relationship between company ownership (private or public) and green brand legitimacy, we applied the SPSS PROCESS macro (Hayes, 2012). Using PROCESS model 4.3, five thousand bootstrap samples were created to calculate 95% bias-corrected and accelerated (BCa) confidence intervals to test the significance of the mediation. As predicted, the influence of company ownership (privately and publicly) on green brand legitimacy was mediated by the perception of greenwashing, supporting H2 (β = -0.381, SE = 0.128, 95% CI [-0.65, -0.15]. Interestingly, when the mediator was included, the association between public company ownership and green brand legitimacy shifted from slightly negative to slightly positive (not significant), suggesting a suppressor mediation. In other words, while private companies were overall perceived as more legitimate compared to public companies (albeit non-significantly effect, β = -0.277, p = 0.153), this effect flipped when including the mediator—greenwashing—in the model (β = 0.104, p = 0.526). Essentially, public companies were perceived as greenwashing more, and after accounting for this, the estimated coefficient changed towards public companies being perceived as more legitimate than private companies. Please find the full mediation effect in Table 6 Mediation effect for Mediator 1 (perception of greenwashing). The effect of ownership (privately-owned vs family owned) on green brand legitimacy was significantly mediated by the perception of greenwashing.

Table 6 Mediation effect for Mediator 1 (perception of greenwashing). The effect of ownership (privately-owned vs family owned) on green brand legitimacy was significantly mediated by the perception of greenwashing.

Total effect	*β* = -0.277, *SE*= 0.191, *t*(64)= -1.45, *p*= 0.153, 95% *CI*: [-0.66,0.10]
Direct effect	*β* = 0.104, *SE*= 0.163, *t*(63)= 0.64, *p*= 0.526, 95% *CI*: [-0.22,0.13]
Indirect effect	*β* = -0.381, *SE*= 0.128, 95% *CI*: [-0.65,-0.15]

β = unstandardized estimate. SE = Standard Error. CI = Confidence Interval.

5.3.4 Results for Hypothesis 3

We began by testing Path c of Model 2. A regression analysis was conducted in which ownership manipulation was entered (privately owned = 0, publicly owned = 1) as the independent variable and green brand legitimacy post the scandal as the dependent variable.

H3 proposed that green brand legitimacy, after a greenwashing scandal of privately-owned companies, would be higher than that of publicly traded companies. Regression analysis observed that ownership does not predict post-scandal green brand legitimacy, therefore rejecting H3 (p = 0.437). The effect of ownership condition on green brand legitimacy is therefore non-significant (β = -0.154, p = 0.437.) The full regression analysis results can be found in Table *7*.

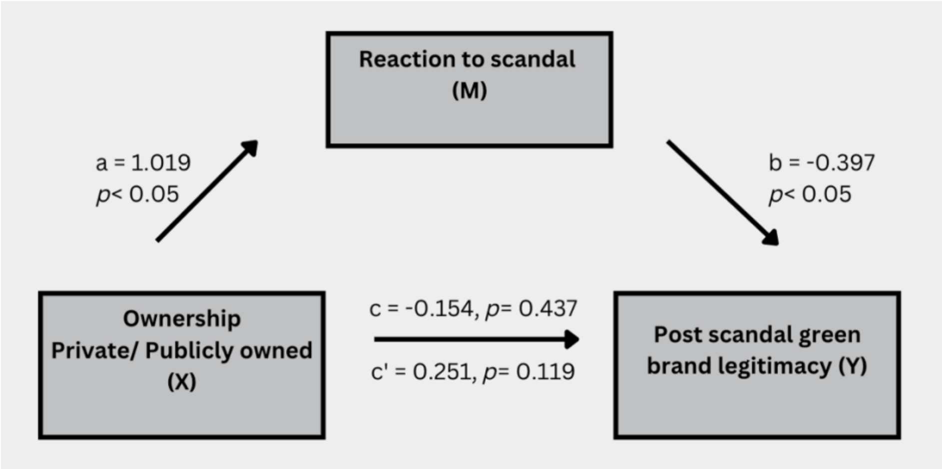
Table 7 The effect of ownership (privately-owned vs family owned) on green brand legitimacy post scandal was non-significant.

Effect	*β* = -0.154, *SE*= 0.19, *t*(63)= -0.78, *p*= 0.437, 95% *CI*: [-0.55,0.24]

β = unstandardized estimate. SE = Standard Error. CI = Confidence Interval.

5.3.5 Path Analysis

A further path analysis was conducted testing the proposed mediation effect. As *Figure 6* indicates, path a of the mediation model asks whether the ownership condition predicts the reaction to a scandal is positive and significant ($p< 0.05$), suggesting that publicly owned companies receive higher negative reactions. Therefore, ownership condition seems to predict the reactions to a greenwashing scandal. The results for path b suggest that the reaction to a scandal predicts green brand legitimacy post the scandal. The higher the reaction to a scandal (the more negative the reaction), the lower the green brand legitimacy post a scandal (β = -0.397, p< 0.05). Path c calculating the relationship between the ownership condition and green brand legitimacy (without counting in the mediator) is non-significant (β = -0.154, p = 0.437), meaning that ownership does not predict green brand legitimacy post-scandal. Nevertheless, importantly, the coefficient flipped from -0.154 (slightly negative) to 0.251 (slightly positive, non-significant) from the total to the direct effect, indicating that there may be an indirect link in that publicly (vs. privately) owned companies receive a more negative reaction to a greenwashing scandal and this, in turn, predicts lower green brand legitimacy.



a = Path a. b = Path b. c = total effect. c'= direct effect, Private= 0, Public= 1

Figure 6 Mediation effect of reaction to scandal

5.3.6 Results for Hypothesis 4

Hypothesis 4 proposes that the reaction to an environmental scandal mediates the green brand legitimacy post a greenwashing scandal of private and publicly owned companies. To directly examine the indirect effect of the reaction to the scandal on the relationship between company ownership (private or public) and green brand legitimacy post-scandal, we applied the SPSS PROCESS macro (Hayes, 2012). As predicted, the influence of company ownership (privately and publicly) on green brand legitimacy post-scandal was mediated by the reaction to the scandal, supporting H4 (β = -0.405, *SE* = 0.154, 95% *CI* [-0.74, -0.13]. Interestingly, when the mediator was included, the association between public company ownership and green brand legitimacy post-scandal shifted from slightly negative to slightly positive (not significant), suggesting a suppressor mediation. In other words, while private companies were overall perceived as more legitimate compared to public companies (albeit non-significantly effect, (β = -0.154, *p* = 0.437), this effect flipped when including the mediator – reaction to scandal- in the model (β = 0.251, *p* = 0.119). Essentially, public companies received more negative reactions to the scandal, and after accounting for this, the estimated coefficient changed towards public companies being perceived as more legitimate than private companies. Please find the full mediation effect in Table 8.

Table 8 Mediation effect for Mediator 2 (reaction to scandal). The effect of ownership (privately-owned vs family owned) on green brand legitimacy post scandal was significantly mediated by the reaction to a scandal.

Total effect	*β = -0.154, SE= 0.197, t(64)= -.0782, p= 0.437, 95% CI: [0.55,0.24]*
Direct effect	*β = 0.251, SE= 0.16, t(63)= 1.58, p= 0.119, 95% CI: [-0.67,0.57]*
Indirect effect	*β = -0.405, SE= 0.154, 95% CI: [-0.74,-0.13]*

β = unstandardized estimate. SE = Standard Error. CI = Confidence Interval.

Table 9 Overview of supported and not supported hypotheses

Hypotheses	Test Results
H1 Stakeholders rate corporate green brand legitimacy higher in private family-owned companies than in publicly owned companies.	Not supported
H2 The perception of corporate greenwashing mediates the green brand legitimacy of private and publicly owned companies.	Supported
H3 Stakeholders rate corporate green brand legitimacy post a greenwashing scandal higher in private family-owned companies than in publicly owned companies.	Not supported
H4 Reaction to an environmental scandal mediates the green brand legitimacy post a greenwashing scandal of private and publicly owned companies.	Supported

5.4 Additional Analysis

5.4.1 Regression analysis with control variables

In addition to the performed hypotheses tests, some tests are conducted with the respondent's demographic data (age, gender, work experience, and the importance of a company's social and environmental performance). These tests are conducted to check if this information affected the previous results of this study. The internal validity of the previously found results is strengthened if the tests, including control variables, produce identical outcomes to our main specification.

As indicated in Table 10, ownership condition still significantly influences ($p < 0.05$) the perception of greenwashing (Path a of Model 1).

Table 10 Influence of control variables on ownership predicting greenwashing

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.601	1.049		5.338	<.001
	Condition	.773	.284	.331	2.721	.009
	GenderR	.234	.293	.097	.800	.427
	Age	-.203	.128	-.195	-1.578	.120
	WorkExperience	-.263	.360	-.089	-.731	.468
	PersonalImpSustain	-.033	.106	-.038	-.315	.754

a. Dependent Variable: GreenWashing

Similarly, the regression analysis for the perception of greenwashing predicting green brand legitimacy did not change under the influence of the control variables (Path b of Model 1). Table 11 further indicates that greenwashing predicts green brand legitimacy (*p*< 0.05), but it is not predicted by gender, age, work experience, and the importance of a company's social and environmental performance (*p* = 0.426; *p* = 0.083; *p* = 0.668; *p* = 0.235).

Table 11 Influence of control variables on greenwashing predicting green brand legitimacy

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.747	.705		8.147	<.001
	GreenWashing	-.458	.069	-.674	-6.667	<.001
	GenderR	-.129	.161	-.079	-.802	.426
	Age	-.127	.072	-.180	-1.764	.083
	WorkExperience	.085	.198	.042	.431	.668
	PersonalImpSustain	.069	.058	.117	1.200	.235

a. Dependent Variable: GreenBrandLeg

Also, the regression analysis of ownership condition predicting green brand legitimacy (Path c of Model 1) stayed non-significant under the influence of the control variables. As stated in Table 12,Table *11* the control variables made the effect (*p* = 0.320) between ownership condition and green brand legitimacy even more insignificant than without them (p = 0.526).

Table 12 Influence of control variables predicting ownership condition on green brand legitimacy

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.031	.762		3.976	<.001
	Condition	-.207	.206	-.131	-1.004	.320
	GenderR	-.231	.213	-.141	-1.086	.282
	Age	-.027	.093	-.039	-.294	.770
	WorkExperience	.223	.261	.111	.854	.397
	PersonalImpSustain	.090	.077	.152	1.168	.248

a. Dependent Variable: GreenBrandLeg

Lastly, the mediation model stays significant when taking in the control variables (β = -0.374, *SE* = 0.133, 95% *CI* [-.653, -.129]. The results from our further regression analyses, which included control variables for Model 2, matched those of our earlier analysis without control variables. Only the control variable of a company's social and environmental performance showed an effect, meaning the higher a person rates the importance of a company's social and environmental performance, the lower this person rates the green brand legitimacy post-scandal in Model 2.

The data is consistent whether the control variable is included, indicating good robustness. Please see Table 25 Influence of control variables on regression analysis for Model 2 or further information on the regression analysis, including control variables.

6. Discussion

This chapter will delve into the study's findings, including a detailed analysis of the acceptance or rejection of the hypotheses. This is crucial for providing a clear response to the main research question. Moreover, the study's constraints and recommendations for future research will be identified.

6.1 Discussion of results

The present study examined ownership conditions' influence on green brand legitimacy. Additionally, the perception of greenwashing and the reaction to a scandal were tested as possible mediators between the hypothesized ownership relationship and pre- and post-green brand legitimacy. Models were created and tested through empirical methods, utilizing a suitable framework.

6.1.1 Discussion of Hypothesis 1

Consumers tend to perceive family-owned businesses as having higher legitimacy in their corporate social responsibility activities, as these firms are believed to have more autonomy to make decisions that align with personal values (Panwar et al., 2014). It is furthermore suggested that organization size influences how consumers interpret corporate social responsibility initiatives, with larger companies often facing more skepticism (Green & Peloza, 2014).

Building upon these insights, Hypothesis 1 proposed that privately-owned companies enjoy higher green brand legitimacy than their publicly-owned counterparts. This was based on the presumption that privately-owned firms would be viewed as more genuine and less profit-driven, and thus their corporate social responsibility activities would be attributed to internal motivations, thereby enhancing their perceived legitimacy. Conversely, we assumed that publicly-owned firms, often viewed with greater skepticism, would have their corporate social responsibility activities attributed to external motivations, which may appear less genuine and potentially negatively impact their green brand legitimacy.

Contrary to these expectations, our study found no significant evidence to support the influence of company ownership on green brand legitimacy (H1). This lack of support for H1 could be attributed to various factors, including potential methodological errors and possibly insufficient sample size. The specific industry contexts of the studied companies may also have impacted the results, as perceptions of corporate social responsibility activities can greatly differ between sectors (Du, Bhattacharya, & Sen, 2010). For instance, consumers might have different expectations for green initiatives in the manufacturing sector than in the tech industry.

Furthermore, the increasing complexity and sophistication of consumers' perceptions of corporate social responsibility activities could also account for the lack of support for H1. Today's consumers are more knowledgeable about these strategies and may no longer perceive a direct, simple link between company ownership and green brand legitimacy. Instead, their evaluations of legitimacy may incorporate a variety of factors, such as the alignment between the company's corporate social responsibility initiatives and its core business, its track record in the implementation, the consistency and transparency of its corporate social responsibility communication (Akremi et al., 2015).

Another possible explanation could be that privately-owned versus publicly owned companies may have become less significant for consumers. The dichotomy between these two types of firms might have blurred due to the rise of hybrid business models, such as social enterprises, which combine profit-making with a social mission, thereby challenging traditional assumptions about the motivations behind firms' corporate social responsibility activities (Haigh & Hoffman, 2014).

Despite our findings not directly supporting H1, they provide valuable insights for further research. While company ownership may not directly impact green brand legitimacy, our study suggests that the perception of corporate social responsibility activities plays a role in shaping legitimacy judgments, which will be discussed in the following.

6.1.2 Discussion of Hypothesis 2

The size of an organization can influence consumer perceptions, with larger companies often subjected to greater scrutiny for greenwashing (Green & Peloza, 2014). Furthermore, greenwashing can have a negative impact on stakeholder perceptions of a company’s legitimacy (Torelli et al., 2019).

The results of this study underscore the role of greenwashing perceptions in mediating the relationship between company ownership and perceived green brand legitimacy, supporting Hypothesis 2. The study revealed that while the company's ownership status did not directly influence green brand legitimacy, the perception of greenwashing could shift the dynamics. When considering greenwashing, there was an observable but not statistically significant trend toward viewing private companies as somewhat more legitimate. This suggests that consumers do not simply consider who owns a company when evaluating its green initiatives but also how sincere they perceive these efforts to be.

Even though not statistically significant, privately owned companies were initially considered more legitimate than public ones. This link was partially attributed to the higher perceived greenwashing in publicly owned companies, negatively affecting their legitimacy. This illuminates the power of the perception of greenwashing to reverse attributions of legitimacy. The legitimacy initially attributed to public companies could be suppressed and shift in favor of private companies when perceptions of greenwashing are accounted for, underscoring the influence greenwashing has on shaping legitimacy in the corporate realm.

Consumers have been found to utilize their pre-existing beliefs about a company's environmental track record to evaluate the authenticity of its corporate social responsibility activities, a pattern reflected in our study. Participants exposed to the publicly owned company condition perceived more greenwashing than those encountering privately owned companies, leading to more negative attributions towards the public company (Klein & Dawar, 2004).

The perceived legitimacy gap might explain this shift wherein consumers anticipate more corporate social responsibility initiatives from publicly owned companies, given their greater resources and visibility (Green & Peloza, 2014). However, if these companies are perceived not to meet societal expectations of pro-environmental behavior, they lose their initial legitimacy advantage.

Interestingly, the perception of greenwashing served as a suppressor variable in this scenario, hinting at a tendency towards increased legitimacy for private companies. Greenwashing could damage a company's reputation and erode consumer trust and loyalty. However, the current study suggests that this adverse effect can be mitigated in private companies, possibly due to their perceived stronger commitment to sustainability Torelli et al. (2019).

Thus, through these contributions, we have broadened our understanding of the complex dynamics of corporate social responsibility, greenwashing perceptions, and the mediating roles these perceptions play in consumers' legitimacy attributions based on ownership conditions. This paves the way for more comprehensive and nuanced approaches to future research in this field.

6.1.3 Discussion of Hypothesis 3

The size of an organization impacts consumers' interpretations of corporate social responsibility (Green & Peloza, 2014). This indicated that larger organizations are often viewed more critically, particularly in the event of greenwashing scandals. The corresponding adverse effect on company legitimacy was hypothesized in our study, with the expectation that publicly traded companies would suffer a more significant legitimacy loss than privately-owned companies following such scandals. This was underpinned by the assumption that the public may hold larger, publicly traded companies more accountable for their missteps (Folkes, 1988). However, contrary to expectations, our empirical data failed to prove this hypothesis.

Several methodological issues may have influenced our results. Potential flaws in the research design and inadequate sample size could have obscured the subtle effects between ownership conditions and post-scandal legitimacy. Furthermore, our sample may have inherently leaned towards a negative judgment of the scandal, regardless of ownership.

Beyond methodological concerns, our findings also suggest other reasons why ownership conditions may not directly relate to green brand legitimacy post-scandal. The severity of the greenwashing scandal and the nature of the malpractice might supersede the impact of ownership condition. A severe scandal involving blatant lies about environmental practices might tarnish the brand's reputation, irrespective of whether the company is publicly or privately owned (Afzali & Kim, 2021).

A company's past environmental record and overall reputation might influence its post-scandal legitimacy. If a company has a track record of responsible environmental behavior, a single scandal might not severely impact its perceived legitimacy, regardless of ownership structure (Du, Bhattacharya, & Sen, 2010).

Lastly, public awareness and understanding of greenwashing have increased significantly recently. This heightened awareness could have influenced the results, making consumers more skeptical about companies' environmental claims, irrespective of their ownership structure (Walker & Wan, 2012).

In conclusion, the lack of a significant relationship between ownership conditions and green brand legitimacy post-scandal could be due to a combination of these factors. It suggests that future research needs to consider a broader range of factors to understand the impacts of greenwashing scandals on corporate legitimacy fully.

6.1.4 Discussion of Hypothesis 4

The consequences of greenwashing were found to impact stakeholders' perceptions (Torelli et al., 2019). Particularly environmental greenwashing scandals significantly impair a firm's reputation. Concurrently, the impact of such scandals is more detrimental for large, publicly owned firms. These findings laid the groundwork for Hypothesis 4, positing that the reaction to a greenwashing scandal mediates the relationship between ownership condition and green brand legitimacy post-scandal.

The results of our analysis substantiated Hypothesis 4. A significant suppressior mediation was found in which the correlation between ownership condition and green brand legitimacy post-scandal was reduced when the reaction to the scandal was accounted for. This indicates that participants perceived the scandal as worse for the public than private companies and therefore judged public brand legitimacy as poorer after the scandal.

This shift can be attributed to the general public's greater scrutiny of publicly traded firms following a scandal (Green & Peloza, 2014). Such firms, due to their larger size and resource base, are often held to higher environmental and social responsibilities. When they fail to meet these expectations, the resulting backlash is more severe.

On the contrary, private family-owned companies benefit from the corporate social responsibility halo effect, where consumers' judgments of legitimacy are influenced by their perceptions of a company's prior corporate social responsibility activities. When these firms are involved in greenwashing scandals, they may receive more forgiveness due to their former stronger corporate social responsibility reputations (Panwar et al., 2014).

Our findings suggest that consumers, post-greenwashing scandal, might attribute negative motives, like profit-over-environment, more to publicly traded firms. Such firms, due to their transparency requirements, face heightened scrutiny, unlike privately-owned firms that often receive leniency, thus impacting their perceived legitimacy differently (Panwar et al., 2014).

Additionally, the importance of a company's social and environmental performance significantly impacts the intensity of the reaction to a scandal, which in turn predicts green brand legitimacy post-scandal. Individuals who value a company's social and environmental performance highly are more likely to rate the green brand legitimacy lower post-scandal.

These insights reinforce corporate social responsibility's role in shaping stakeholder perceptions and reactions to greenwashing scandals and illuminate the complexities underlying these reactions. This nuanced understanding can guide future research and corporate strategic environmental and social responsibility decision-making.

In addition to the hypotheses tests performed, additional tests were conducted regarding the respondents' demographic data. In order to test whether this information affected the previous results. The additional analyses did not show any changes to the previously found results. The importance of a company's social and environmental performance influenced green brand legitimacy post-scandal. The higher a person rates the importance of a company's social and environmental performance, the lower this person rates the green brand legitimacy post-scandal.

6.2 Limitations and future research

Several limitations and future research opportunities emerge from this study. Firstly, the small sample size could limit the robustness of the findings. Future studies should strive for larger, more balanced samples, which could reveal more statistically significant relationships.

Secondly, this study only considered the perception of greenwashing and scandal response as mediators. Future research could examine these as moderators and also consider other potential mediators like environmental awareness, green brand image, green trust, and satisfaction. They all can affect consumers' perception of a company's green brand legitimacy (Antunes et al., 2015; Ha et al., 2022). The perception of greenwashing, for instance, could possibly moderate the impact of company ownership on green brand legitimacy - the effect of ownership might be stronger for companies perceived as high in greenwashing compared to those low in greenwashing.

Thirdly, the research design carries some inherent limitations. The use of vignettes might lack realism, limiting the generalizability of findings. Similarly, the online survey methodology could introduce self-selection bias, with individuals interested in the topic more likely to participate. This might limit the representativeness of the sample. Furthermore, the sample's demographic distribution, with the majority being young and female, could also bias the results.

The reliance on the Likert scale for measurement could introduce response bias. Moreover, the study manipulated only the description of ownership structure while keeping the visual element constant, which might have affected the perceived authenticity of the manipulation. The study also assumed a simple causal relationship without considering potential confounding variables.

Additionally, the study assumed that respondents viewed publicly traded companies as large and family-owned firms as small, which might not always be true. Moreover, there was no control group, making it difficult to pinpoint whether the results were solely due to company ownership or influenced by other factors. Future research should consider this aspect.

While this study provides insights, it should be considered a stepping stone rather than a definitive solution to understanding the nuances of greenwashing and corporate ownership structures.

6.3 Theoretical and practical contribution

Prior studies have made significant strides in exploring corporate legitimacy and greenwashing. Scholars such as Torelli et al. (2019) and Palazzo and Scherer (2006) have provided valuable insights into legitimacy and greenwashing theories. They have identified the legitimacy gap, a discrepancy between societal expectations and corporate actions, as a key challenge for organizations. Earlier works have also discussed the role of deceptive environmental and social marketing in establishing corporate legitimacy (Berrone & Gomez-Mejia, 2009; Prakash, 2002; Walker & Wan, 2012). In addition, the work of Zimmerman and Zeitz (2002) has emphasized that legitimacy is subjective and often lies in the eye of the beholder.

While there is plenty of research on legitimacy and greenwashing, there needs to be more research on how greenwashing crises impact both stakeholders and the company's perceived legitimacy. Past work has mostly centered on the reasons and methods behind company engagement in greenwashing rather than the implications of such misleading communication on their perceived legitimacy.

This study contributes to the literature by focusing on how greenwashing affects stakeholders' perception of a company's legitimacy and how this perception varies based on company ownership. It also explores the concept of legitimacy as something deeply rooted in societal values and perceptions.

Building on previous research, the study further explores the attribution theory, highlighting how it influences consumer attitudes and behavior. We found that consumers perceive privately-owned companies as slightly more genuine in their corporate social responsibility activities. At the same time, they might view public companies as being more profit-driven in their corporate social responsibility initiatives.

Importantly, our findings reveal a mediating relationship between company ownership, perceived green brand legitimacy, greenwashing perception and reaction to a scandal. The results offer valuable insights into how people form opinions about a company based on their information and pre-existing beliefs, emphasizing the importance of transparency and honesty in corporate communication.

The study also extends the existing understanding of the legitimacy gap theory. We showed that greenwashing, which companies often resort to in an attempt to close this gap, is recognized by stakeholders and can lead to decreased brand legitimacy regardless of the company's ownership structure.

We also delved deeper into the role of collective social image in forming perceptions about a company's legitimacy. This study suggests that these perceptions are not solely based on a company's actions but also depend heavily on individual stakeholder perspectives.

By blending current research on legitimacy and greenwashing, this study broadens our understanding of the socio-cognitive aspects of institutional procedures in defining corporate legitimacy. We assert that legitimacy is not just an objective measure but also subjective, influenced by cultural values.

The practical implications of this study are wide-ranging. Family-owned businesses, which enjoy higher legitimacy when involved in greenwashing, could leverage this advantage. However, regardless of ownership structure, all companies should prioritize transparency and corporate social responsibility in their operations and communications to avoid negative attributions and reputational damage. The study offers insights that could assist organizations in developing effective communication strategies and managing their perceived legitimacy in the wake of a greenwashing scandal.

7. Conclusion

The Volkswagen emissions scandal has highlighted the consequences of deceptive practices, such as greenwashing, on organizational legitimacy. Understanding the Volkswagen scandal through the lens of our research findings sheds light on the complex dynamics of organizational legitimacy, greenwashing, and corporate social responsibility. Our study has suggested that corporate size and ownership structure play a crucial role in how greenwashing impacts legitimacy perceptions. As a public company, Volkswagen's greenwashing practices came under intense scrutiny, severely damaging its legitimacy in line with our findings. Furthermore, stakeholders' societal and cultural values deeply influenced their response to this corporate wrongdoing.

In light of our research findings, Volkswagen could have approached its green brand legitimacy more effectively and responsibly. First, they should have been more transparent and genuine in their green initiatives, avoiding deceptive practices like greenwashing that can severely damage organizational legitimacy. Being a publicly-owned company, our research suggests that they are under heightened scrutiny and face greater legitimacy impacts in cases of environmental scandals. As such, Volkswagen should have held itself to higher environmental responsibility and honesty standards.

Second, understanding that societal and cultural values significantly influence stakeholders' reactions to corporate misconduct, Volkswagen should have proactively engaged with stakeholders, aligning their environmental policies with stakeholder expectations and societal values. They could have also initiated more robust stakeholder dialogue mechanisms to ensure transparency and better understand stakeholders' perceptions and concerns.

Finally, our study emphasizes the importance of authentic environmental commitment rather than symbolic gestures. Volkswagen could have invested more heavily in genuine green technologies and sustainable practices, going beyond mere compliance to create a real, positive environmental impact. By doing so, they could have fostered greater trust and legitimacy among their stakeholders, avoiding the damage caused by the scandal.

Our research provides nuanced insights into the relationship between corporate behavior, stakeholder perceptions, and organizational legitimacy. These findings guide businesses to better navigate corporate social responsibility, environmental sustainability, and stakeholder management. The Volkswagen scandal is a stark reminder of the catastrophic consequences of greenwashing and underscores the need for genuine commitment to environmental sustainability.

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Appendix A

The Online Survey

Effective marketing communication strategies about social and environmental issues

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Start of Block: Informed Consent

Hello and thank you for your interest in this study!
I am Hannah Fricke, business administration master student at the University of Twente. I am trying to understand the effect different marketing communication strategies about social and environmental issues have on consumer.

This survey experiment will ask questions about your attitude towards sustainability. It includes questions about how you perceive environmental marketing strategies in a company. It further asks you to respond how your previous perception might have changed after a specific event. It will take you approximately 10-15 min to fill out this survey. Only I will have access to de-identified (no names, birthdate, address, etc.) This is so we can analyze the data and conduct the study. I may share our findings in presentations. If I do, the results will be de-identified (no names, birthdate, address, etc.).

Your participation is completely voluntary, and you can withdraw at any time. To take this survey, you must be at least 18 years old. In case of questions/complaints, contact me at hannah.fricke@gmx.net.

If you meet these criteria and would like to take the survey, click the button below to start.

○ I consent, begin the study (1)

○ I do not consent, I do not wish to participate (2)

Start of Block: Block 1 Privately- owned company condition

Question 1 This study is about social & environmental issues, please indicate how important the social and environmental performance of a company is for you.

	Very unimportant (1)	Unimportant (2)	Slightly unimportant (3)	Neutral (4)	Slightly important (5)	Important (6)	Very Important (7)
Social and environmental performance of a company (1)	○	○	○	○	○	○	○

EcoTaste Ltd.

The following information is about a local beverage company passed down from generation to generation for many decades. For this study, we will call the company EcoTaste Ltd. EcoTaste Ltd has around 25 employees based in Florida, USA and makes a revenue of $450,000 per year. The ownership of the company lies within the family. Father and son Patrick and Michael Sanderson share ownership of the company. Out of concern for the environment and the business's future, EcoTaste Ltd. started investing in a new sustainable bottle production line. Along with offering a fully recyclable product line, the family company strives to minimize negative environmental impacts while conserving energy and natural resources. The business has voluntarily reported its environmental obligations and impacts in a sustainability report for the past five years.

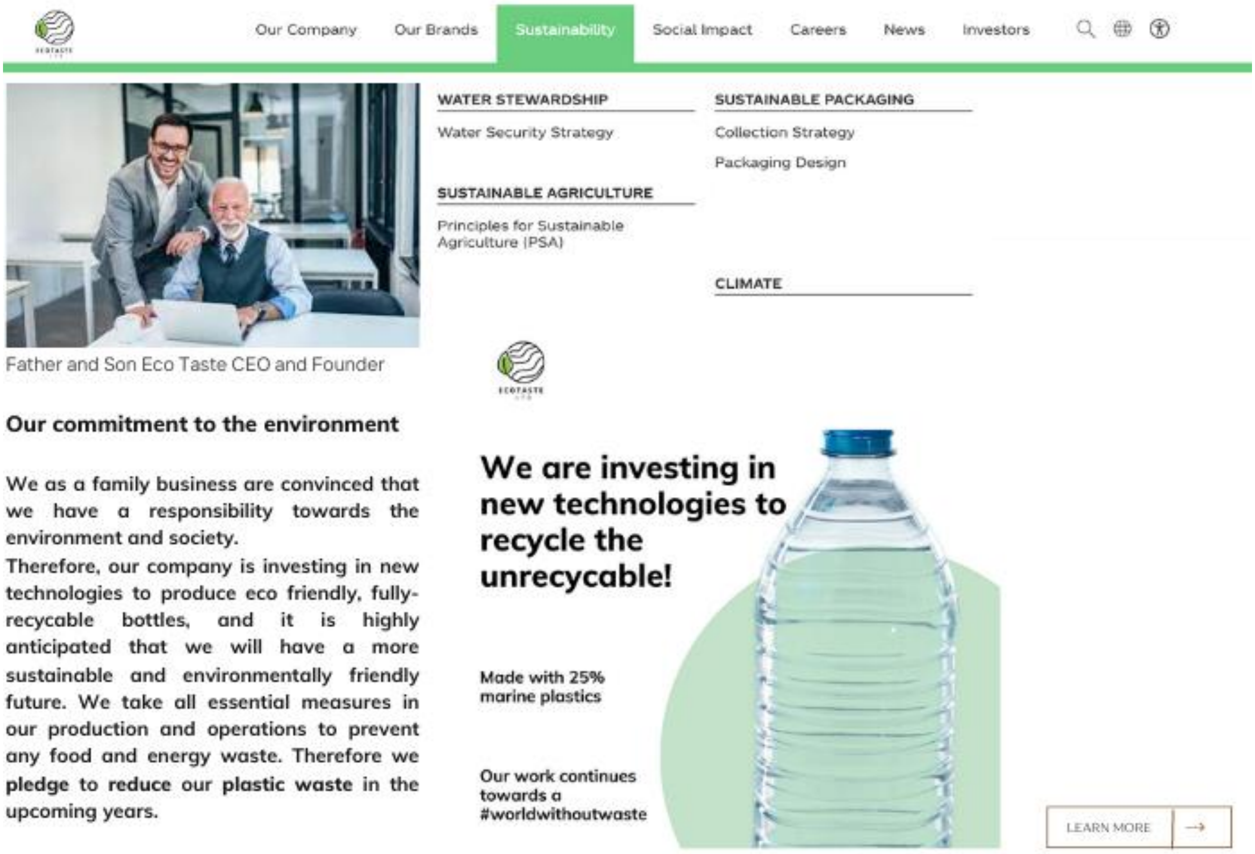
Question 2 How would you describe the ownership structure of the company?

○ Privately family-owned company (1)

○ Publicly traded company (2)

○ No clear ownership structure (3)

In the following, please read the social and environmental commitments of the company on its website.



Question 3 When thinking about EcoTaste Ltd., how strongly would you agree with the following statements?

	Strongly disagree (1)	Disagree (2)	Neither agree or disagree (3)	Agree (4)	Strongly agree (5)
This company's environmental performance is satisfactory. (1)	○	○	○	○	○
This company's environmental performance is favorable to the public. (2)	○	○	○	○	○
This company's environmental performance conforms to industry and social norms. (3)	○	○	○	○	○
This company's environmental performance is appropriate. (4)	○	○	○	○	○
This company is natural green brand. (5)	○	○	○	○	○
This company's environmental performance is consistent with your expectation. (6)	○	○	○	○	○

Question 4 When thinking about EcoTaste Ltd., how strongly would you agree with the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree or disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
The company attempted to enhance its reputation by presenting itself as environmentally aware. (1)	○	○	○	○	○	○	○
The company has hidden intentions and interests. (2)	○	○	○	○	○	○	○
The company wants to appear more environmentally aware than it actually is. (3)	○	○	○	○	○	○	○

In the following, please read the newspaper article.

36, Broadway St., Florida

USA TODAY

www.USAToday.com

BUSINESS REVIEW

DESPITE COMMITMENTS TO TACKLE THE ISSUE, THE AMERICAN LOCAL BEVERAGE COMPANY PRODUCED 9% MORE IN PLASTIC WASTE THAN IT HAD THE YEAR BEFORE

Instead of reducing plastic waste EcoTaste Ltd has been found to produce 9% more plastic than before.

ECOTASTE LTD. PLASTIC WASTE PROBLEM CONTINUES TO FESTER

CLAIMS ABOUT PLASTIC PACKAGING BEING ECO-FRIENDLY MADE BY FAMILY-OWNED COMPANY ECOTASTE ARE MISLEADING GREENWASHING, ACCORDING TO A REPORT.

Last year EcoTaste claimed to have invested into an innovation in which bottles are made out of 25% marine plastic making the recycling process of its bottles easier. The company pledged to reduce its plastic waste. But instead of reducing plastic waste the small company has been found to produce 9% more plastic than before.

According to investigations, EcoTaste's 9% increase amounted to 63.000 metric tonnes, meaning that annual plastic waste went from 700.000 metric tonnes in 2021 to 2022's 763.000 metric tonnes.

The private investigation also enumerated that EcoTaste Ltd had failed to meet pledges that would see it increase the use of recycled plastics in packaging while decreasing its use of virgin plastics.

“How can the company use so many additional pounds of plastic in one year and at the same time consider itself to be addressing its plastic problem?” asked the investigative journalist Eric Hanssen. “Bottles with recycled content will still be thrown away, sent to landfills, burned, or littered. Some of these will end up in our oceans.”

Question 5 After reading the newspaper article, please indicate your agreement to the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree or disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
You have lost trust in the company after what you have discovered. (1)	○	○	○	○	○	○	○
Even if you had more information about the company about whether you can trust it, you would not change your opinion about it. (2)	○	○	○	○	○	○	○
In the future, you will not re-evaluate the company, even if there are no other scandals or disappointing discoveries. (3)	○	○	○	○	○	○	○
In the future, you will avoid the company. (4)	○	○	○	○	○	○	○

Question 6 When thinking about EcoTaste Ltd., how strongly would you agree with the following statements?

	Strongly Disagree (1)	Disagree (2)	Neither agree or disagree (3)	Agree (4)	Strongly agree (5)
This company's environmental performance is satisfactory. (1)	○	○	○	○	○
This company's environmental performance is favorable to the public. (2)	○	○	○	○	○
This company's environmental performance conforms to industry and social norms. (3)	○	○	○	○	○
This company's environmental performance is appropriate. (4)	○	○	○	○	○
This company is natural green brand. (5)	○	○	○	○	○
This company's environmental performance is consistent with your expectation. (6)	○	○	○	○	○

Question 7 • Please indicate what gender do you identify as?

- ◯ Male (1)
- ◯ Female (2)
- ◯ Prefer not to say (4)

Question 8 • Please indicate your age?

- ◯ 18-24 years old (1)
- ◯ 24 - 30 years old (2)
- ◯ 31 - 40 years old (3)
- ◯ 40-50 years old (4)
- ◯ 50-60 years old (5)

Question 9 Please indicate whether you have work experience in the field of corporate PR, media appearances of companies or consulting of company websites?

- ◯ Yes (1)
- ◯ No (2)
- ◯ Prefer not to say (3)

End of Block: Block 1

Start of Block: Block 2 Publicly owned company condition

Question 1 This study is about social & environmental issues, please indicate how important the social and environmental performance of a company is for you.

	Very unimportant (1)	Unimportant (2)	Slightly unimportant (3)	Neutral (4)	Slightly important (5)	Important (6)	Very Important (7)
Social and environmental performance of a company (1)	○	○	○	○	○	○	○

Question 1

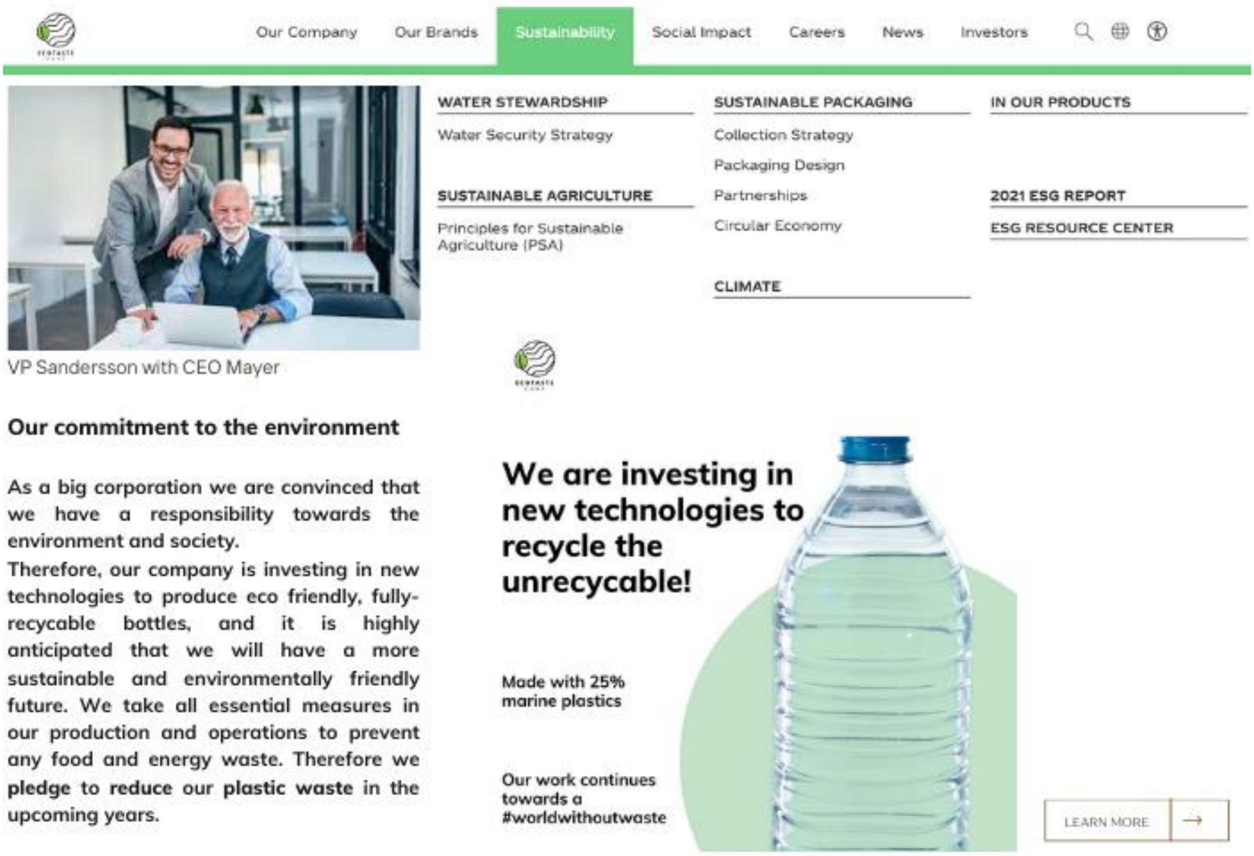
ECOTASTE
CORP

The following information is about an international beverage company that has been in business for many decades. For this study, we will call the company EcoTaste Corporation. EcoTaste Corp has around 70.000 employees with its headquarters in Florida, USA and makes about 20 Billion dollars in revenue annually. It has a market cap of 90.73 B and is listed on the stock exchange, meaning the company's ownership is distributed among general public shareholders through the free trade of shares of stock. Out of concern for the environment and their business's future, EcoTaste Corp. recently invested 25 million dollars in a new line of sustainable bottle production. Along with offering a fully recyclable product line, the company strives to minimize negative environmental impacts while conserving energy and natural resources. The business has reported its environmental obligations and impacts in a sustainability report for the past five years.

Question 2 How would you describe the ownership structure of the company?

- ◯ Privately family-owned company (1)
- ◯ Publicly traded company (2)
- ◯ No clear ownership structure (3)

In the following, please read the social and environmental commitments of the company on its website.



Question 3 When thinking about EcoTaste Corp., how strongly would you agree with the following statements?

	Strongly disagree (1)	Disagree (2)	Neither agree or disagree (3)	Agree (4)	Strongly agree (5)
This company's environmental performance is satisfactory. (1)	○	○	○	○	○
This company's environmental performance is favorable to the public. (2)	○	○	○	○	○
This company's environmental performance conforms to industry and social norms. (3)	○	○	○	○	○
This company's environmental performance is appropriate. (4)	○	○	○	○	○
This company is natural green brand. (5)	○	○	○	○	○
This company's environmental performance is consistent with your expectation. (6)	○	○	○	○	○

Question 4 When thinking about EcoTaste Corp., how strongly would you agree with the following statements?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree or disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
The company attempted to enhance its reputation by presenting itself as environmentally aware. (1)	○	○	○	○	○	○	○
The company has hidden intentions and interests. (2)	○	○	○	○	○	○	○
The company wants to appear more environmentally aware than it actually is. (3)	○	○	○	○	○	○	○

In the following, please read the newspaper article.

36, Broadwack St., Florida | **USA TODAY** | www.USAToday.com

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CLAIMS ABOUT PLASTIC PACKAGING BEING ECO-FRIENDLY MADE BY BIG CORPORATIONS, INCLUDING ECO TASTE CORP ARE MISLEADING GREENWASHING, ACCORDING TO A REPORT.

EcoTaste Corp has spent millions promoting an innovation which says that its bottles are 25% marine plastic claiming to make the recycling process of its bottles easier. The company pledged to reduce its plastic waste at the beginning of the year.

Despite these pledges to reduce its waste, last year saw the EcoTaste Corporation increase its use of plastic packaging by 9%. With the news of this growth, the Florida-based beverage company comfortably retains its place as the top plastic polluter on the planet.
According to a report by ocean conservation group Oceana, EcoTaste's 9% increase amounted to 263 thousand metric tonnes, meaning that annual plastic waste went from 2.96 million metric tonnes in 2021 to 2022's 3.22 million metric tonnes.

Oceana's report also enumerated that EcoTaste Corp had failed to meet pledges that would see it increase the use of recycled plastics in packaging while decreasing its use of virgin plastics.
"How can the company use an additional 500 million pounds of plastic in one year and at the same time consider itself to be addressing its plastic problem?" asked Oceana Director of Strategic Initiatives Eric Hanssen. "Bottles with recycled content will still be thrown away, sent to landfills, burned, or littered. Some of these will end up in our oceans."

Question 5 After reading the newspaper article, please indicate your agreement to the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree or disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
You have lost trust in the company after what you have discovered. (1)	○	○	○	○	○	○	○
Even if you had more information about the company about whether you can trust it, you would not change your opinion about it. (2)	○	○	○	○	○	○	○
In the future, you will not re-evaluate the company, even if there are no other scandals or disappointing discoveries. (3)	○	○	○	○	○	○	○
In the future, you will avoid the company. (4)	○	○	○	○	○	○	○

Question 6 When thinking about EcoTaste Corp., how strongly would you agree with the following statements?

	Strongly Disagree (1)	Disagree (2)	Neither agree or disagree (3)	Agree (4)	Strongly agree (5)
This company's environmental performance is satisfactory. (1)	◯	◯	◯	◯	◯
This company's environmental performance is favorable to the public. (2)	◯	◯	◯	◯	◯
This company's environmental performance conforms to industry and social norms. (3)	◯	◯	◯	◯	◯
This company's environmental performance is appropriate. (4)	◯	◯	◯	◯	◯
This company is natural green brand. (5)	◯	◯	◯	◯	◯
This company's environmental performance is consistent with your expectation. (6)	◯	◯	◯	◯	◯

Question 7 • Please indicate what gender do you identify as?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer not to say (4)

Question 8 • Please indicate your age?

- ○ 18-24 years old (1)
- ○ 24 - 31 years old (2)
- ○ 31 - 40 years old (3)
- ○ 40-50 years old (4)
- ○ 50-60 years old (5)

Question 9 Please indicate whether you have work experience in the field of corporate PR, media appearances of companies or consulting of company websites?

- ○ Yes (1)
- ○ No (2)
- ○ Prefer not to say (3)

End of Block: Block 2

Appendix B

Descriptive Statistics for each item

The following tables shows the descriptive characteristics of each variable for the privately family-owned company structure. Table A13 depicts the descriptive characteristics of the green brand legitimacy variable for the publicly owned company structure.

Table A13 Descriptive characteristics of green brand legitimacy privately-owned company

Variables	**1 Strongly disagree**	**2 Disagree**	**3 Neither agree or disagree**	**4 Agree**	**5 Strongly Agree**	**Mean**	***SD***
This company's environmental performance is satisfactory.	2.8% (1)	11,1% (4)	25.0% (9)	50% (18)	11.1% (4)	3.56	.939
This company's environmental performance is favorable to the public.	0%	8.3% (3)	19.4% (7)	52.8% (19)	19.4% (7)	3.84	.845
This company's environmental performance conforms to industry and social norms.	0%	5.6% (2)	22.2% (8)	52.8% (19)	19.4% (7)	3.86	.798
This company's environmental performance is appropriate.	0%	11.4% (4)	22.9% (8)	48.6% (17)	17.1% (6)	3.71	.893
This company is natural green brand.	5.6% (2)	38.9% (14)	33.3% (12)	16.7 (6)	5.6% (2)	2.78	.989
This company's environmental performance is consistent with your cognition.	0%	22.2% (8)	27.8% (10)	36.1% (13)	13.9% (5)	3.42	.996

Table A14 Descriptive characteristics of green brand legitimacy publicly owned company

Variables	1 Strongly disagree	2 Disagree	3 Neither agree or disagree	4 Agree	5 Strongly Agree	Mean	*SD*
This company's environmental performance is satisfactory.	6.7% (2)	16.7% (5)	13.3% (4)	60% (18)	3.3% (1)	3.37	1.03
This company's environmental performance is favorable to the public.	6.7% (2)	10% (3)	16.7% (5)	53.3% (16)	13.3% (4)	3.57	1.07
This company's environmental performance conforms to industry and social norms.	6.7% (2)	13.3% (4)	23.3% (7)	50% (15)	6.7% (2)	3.37	1.03
This company's environmental performance is appropriate.	3.3% (1)	23.3% (7)	13.3% (4)	50% (15)	10% (3)	3.40	1.07
This company is natural green brand.	13.3% (4)	36.7% (11)	30% (9)	13.3% (4)	6.7% (2)	2.63	1.09
This company's environmental performance is consistent with your expectation.	6.7% (2)	20% (6)	30% (9)	40% (12)	3.3	3.13	1.00

Table A14 and A15 show the descriptive characteristics regarding the “perception of corporate greenwashing” of the family and publicly owned company.

Table A15 Descriptive characteristics of perception of greenwashing privately- owned company

Variables	1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neither Agree or disagree	5 Somewhat agree	6 Agree	7 Strongly Agree	Mean	SD
The company attempted to enhance its reputation by presenting itself as environmentally aware.	5.6% (2)	2.8% (1)	0%	2.8% (1)	13.9% (5)	41.7% (15)	33.3% (12)	5.75	1.56
The company has hidden intentions and interests.	11.1% (4)	11.1% (4)	5.6% (2)	38.9% (14)	22.2% (8)	11.1% (4)	0%	3.83	1.48
The company wants to appear more environmentally aware than it	11.1% (4)	5.6% (2)	2.8% (1)	13.9% (5)	33.3% (12)	27.8% (10)	5.6% (2)	4.58	1.71

Table A16 Descriptive characteristics of perception of greenwashing publicly owned company

Variables	1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neither Agree or disagree	5 Somewhat agree	6 Agree	7 Strongly Agree	Mean	SD
The company attempted to enhance its reputation by presenting itself as environmentally aware.	0%	0%	0%	3.3% (1)	13.3% (4)	43.3% (13)	40% (12)	6.20	.805
The company has hidden intentions and interests.	0%	3.3% (1)	6.7% (2)	16.7% (5)	40% (12)	10% (3)	23.3% (7)	5.17	1.34
The company wants to appear more environmentally aware than it			3.3% (1)	20% (6)	16.7% (5)	33.3% (10)	26.7% (8)	5.6	1.19

Table A16 and A17 show the descriptive characteristics regarding the "reaction to an environmental scandal" of the family and publicly owned company.

Table A17 Descriptive characteristics of reaction to a scandal of privately- owned company

Variables	**1 Strongly disagree**	**2 Disagree**	**3 Somewhat disagree**	**4 Neither Agree or disagree**	**5 Somewhat agree**	**6 Agree**	**7 Strongly Agree**	**Mean**	***SD***
You have lost trust in the company after what you have discovered.	5.6% (2)	0%	11.1% (4)	8.3% (3)	22.2% (8)	22.2% (8)	30.6 (11)	5.31	1.68
Even if you had more information about the company about whether you can trust it; you would not change your opinion about it.	8.3% (3)	30.6% (11)	16.7% (6)	16.7% (6)	16.7% (6)	8.3% (3)	2.8% (1)	3.39	1.60
In the future, you will not re-evaluate the company, even if there are no other scandals or disappointing discoveries.	13.9% (5)	33.3% (12)	27.8% (10)	11.1% (4)	2.8% (1)	11.1% (4)	0%	2.89	1.47
In the future, you will avoid the company.	8.3% (3)	2.8% (1)	5.6% (2)	22.2% (8)	44.4% (16)	11.1% (4)	5.6% (2)	4.47	1.46

Table A18 Descriptive characteristics of reaction to a scandal of publicly owned company

Variables	**1 Strongly disagree**	**2 Disagree**	**3 Somewhat disagree**	**4 Neither Agree or disagree**	**5 Somewhat agree**	**6 Agree**	**7 Strongly Agree**	**Mean**	***SD***
You have lost trust in the company after what you have discovered.	0%	3.3% (1)	6.7% (2)	0%	26.7% (8)	23.3% (7)	40% (12)	5.8	1.35
Even if you had more information about the company about whether you can trust it; you would not change your opinion about it.	0%	16.7% (5)	26.7% (8)	3.3% (1)	10% (3)	20% (6)	23.3% (7)	4.6	1.92
In the future, you will not re-evaluate the company, even if there are no other scandals or disappointing discoveries.	0%	20% (6)	20% (6)	10% (3)	13.3% (4)	13.3% (4)	23.3% (7)	4.5	1.90
In the future, you will avoid the company.	0%	6.7% (2)	6.7% (2)	16.7% (5)	26.7% (8)	13.3% (4)	30% (9)	5.2	1.54

Table A18 and A19 show the descriptive characteristics regarding the "green brand legitimacy" of the family and publicly owned company after the greenwashing scandal.

Table A19 Descriptive characteristics green brand legitimacy post scandal of privately- owned company

Variables	1 Strongly disagree	2 Disagree	3 Neither agree or disagree	4 Agree	5 Strongly Agree	Mean	*SD*
This company's environmental performance is satisfactory.	25% (9)	52.8% (19)	5.6% (2)	16.7% (6)	0%	2.14	.990
This company's environmental performance is favorable to the public.	16.7% (6)	55.6% (20)	13.9% (5)	13.9% (5)	0%	2.25	.906
This company's environmental performance conforms to industry and social norms.	11.1% (4)	36.1% (12)	30.6% (11)	19.4% (7)	2.8% (1)	2.67	1.01
This company's environmental performance is appropriate.	30.6% (11)	47.2% (17)	8.3% (3)	11.1% (4)	2.8% (1)	2.08	1.05
This company is natural green brand.	41.7% (15)	44.4% (16)	5.6% (2)	8.3% (3)	0%	1.81	.889
This company's environmental performance is consistent with your cognition.	22.2% (8)	38.9% (14)	13.9% (5)	22.2% (8)	2.8% (1)	2.44	1.57

Table A20 Descriptive characteristics green brand legtitimacy post scandal of publicly owned company

Variables	**1 Strongly disagree**	**2 Disagree**	**3 Neither agree or disagree**	**4 Agree**	**5 Strongly Agree**	**Mean**	***SD***
This company's environmental performance is satisfactory.	36.7% (11)	46.7% (14)	10% (3)	6.7% (2)	0%	1.87	.860
This company's environmental performance is favorable to the public.	36.7% (11)	36.7% (11)	13.3% (4)	13.3% (4)	0%	2.03	1.03
This company's environmental performance conforms to industry and social norms.	33.3% (10)	26.7% (8)	16.7% (5)	16.7% (5)	6.7% (2)	2.37	1.29
This company's environmental performance is appropriate.	40% (12)	46.7% (14)	6.7% (2)	6.7% (2)	0%	1.8	.847
This company is natural green brand.	56.7% (17)	26.7% (8)	6.7% (2)	10% (3)	0%	1.7	.988
This company's environmental performance is consistent with your expectation.	30% (9)	13.3% (4)	16.7% (5)	36.7% (11)	3.3% (1)	2.7	1.34

Table A21 Descriptive statistics of mean values of all variables

Variables	**Family-owned N**	**Mean**	**SD**	**Publicly owned N**	**Mean**	**SD**
Green brand legitimacy	36	3.52	.699	30	3.24	.857
Perception corporate greenwashing	36	4.72	1.36	30	5.65	.881
Reaction environmental scandal	36	4.01	1.22	30	5.03	1.45
Green brand legitimacy after scandal	36	2.23	.830	30	2.08	.751

Appendix C

Assessing the appropriateness of regression

Table A21 and A22 show relationships regarding multicollinearity between the independent variable (ownership condition), dependent variable (green brand legitimacy, green brand legitimacy post-scandal, and change in green brand legitimacy), and the mediators (perception of greenwashing and the reaction to scandal).

Table A22 Correlations

Correlations

		ChangeLegitimacy	Condition	GreenBrandLeg	GreendBrandLegPostScandal	GreenWashing	ReactionsToScandal	GenderR	Age	WorkExperience	PersonalImpSustain
Pearson Correlation	ChangeLegitimacy	1.000	-.089	.611	-.436	-.246	.076	-.042	-.063	.015	.375
	Condition	-.089	1.000	-.151	-.071	.361	.332	-.016	-.094	-.113	-.092
	GreenBrandLeg	.611	-.151	1.000	.446	-.653	-.517	-.134	-.007	.141	.176
	GreendBrandLegPostScandal	-.436	-.071	.446	1.000	-.463	-.673	-.105	.063	.143	-.224
	GreenWashing	-.246	.361	-.653	-.463	1.000	.683	.126	-.249	-.158	-.054
	ReactionsToScandal	.076	.332	-.517	-.673	.683	1.000	.172	-.091	-.176	.027
	GenderR	-.042	-.016	-.134	-.105	.126	.172	1.000	-.161	-.038	.020
	Age	-.063	-.094	-.007	.063	-.249	-.091	-.161	1.000	.122	-.111
	WorkExperience	.015	-.113	.141	.143	-.158	-.176	-.038	.122	1.000	.093
	PersonalImpSustain	.375	-.092	.176	-.224	-.054	.027	.020	-.111	.093	1.000
Sig. (1-tailed)	ChangeLegitimacy	.	.246	<.001	<.001	.027	.280	.372	.314	.453	.001
	Condition	.246	.	.120	.291	.002	.004	.450	.233	.190	.239
	GreenBrandLeg	.000	.120	.	.000	.000	.000	.150	.478	.137	.086
	GreendBrandLegPostScandal	.000	.291	.000	.	.000	.000	.209	.314	.134	.040
	GreenWashing	.027	.002	.000	.000	.	.000	.165	.026	.110	.340
	ReactionsToScandal	.280	.004	.000	.000	.000	.	.091	.242	.085	.417
	GenderR	.372	.450	.150	.209	.165	.091	.	.106	.384	.440
	Age	.314	.233	.478	.314	.026	.242	.106	.	.173	.195
	WorkExperience	.453	.190	.137	.134	.110	.085	.384	.173	.	.236
	PersonalImpSustain	.001	.239	.086	.040	.340	.417	.440	.195	.236	.

Correlation is significant at the 0.001 level (1-tailed)

Table A23 Collinearity Tolerance and Statistics VIF

Coefficients[a]

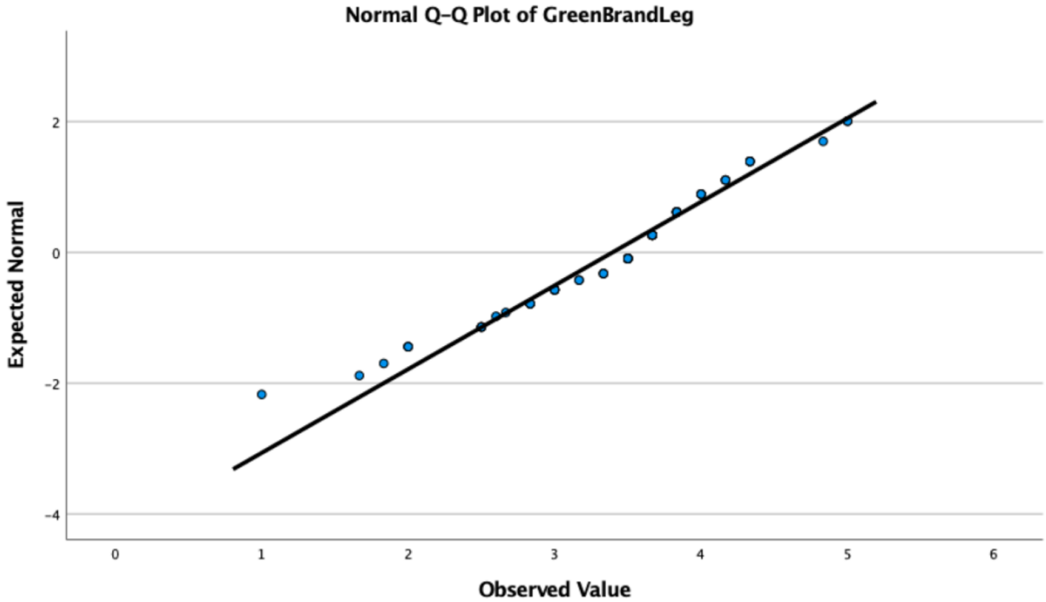
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.700	.707		8.063	<.001		
	Cond	.189	.167	.119	1.131	.263	.840	1.190
	GW	-.425	.095	-.626	-4.469	<.001	.476	2.102
	RScan	-.075	.078	-.131	-.957	.343	.495	2.021
	Age	-.114	.073	-.162	-1.571	.122	.875	1.142
	GenderR	-.095	.163	-.058	-.583	.562	.941	1.062
	WorkExperience	.075	.199	.037	.376	.708	.944	1.059
	PersonalImpSustain	.081	.058	.137	1.380	.173	.951	1.052

a. Dependent Variable: GBL

Appendix D

Normal Q-Q Plot and Histogram

The following figures indicate normal quantile-quantile plot and the skewness and kurtosis of the data set.



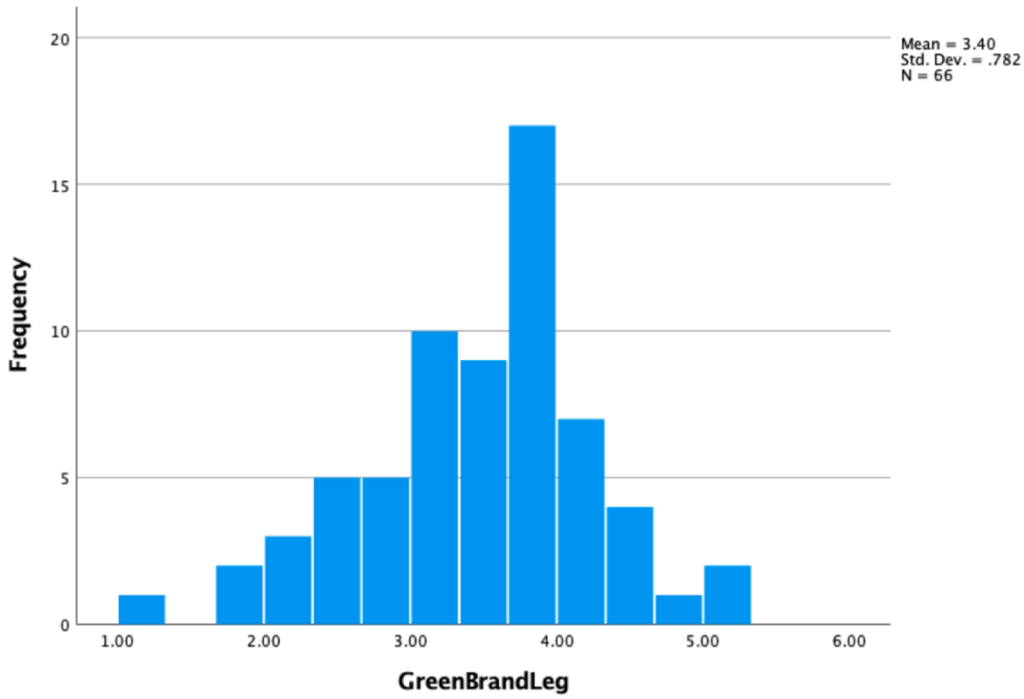


Figure 7 Normal Q-Q Plot and Skewness of Green Brand Legitimacy

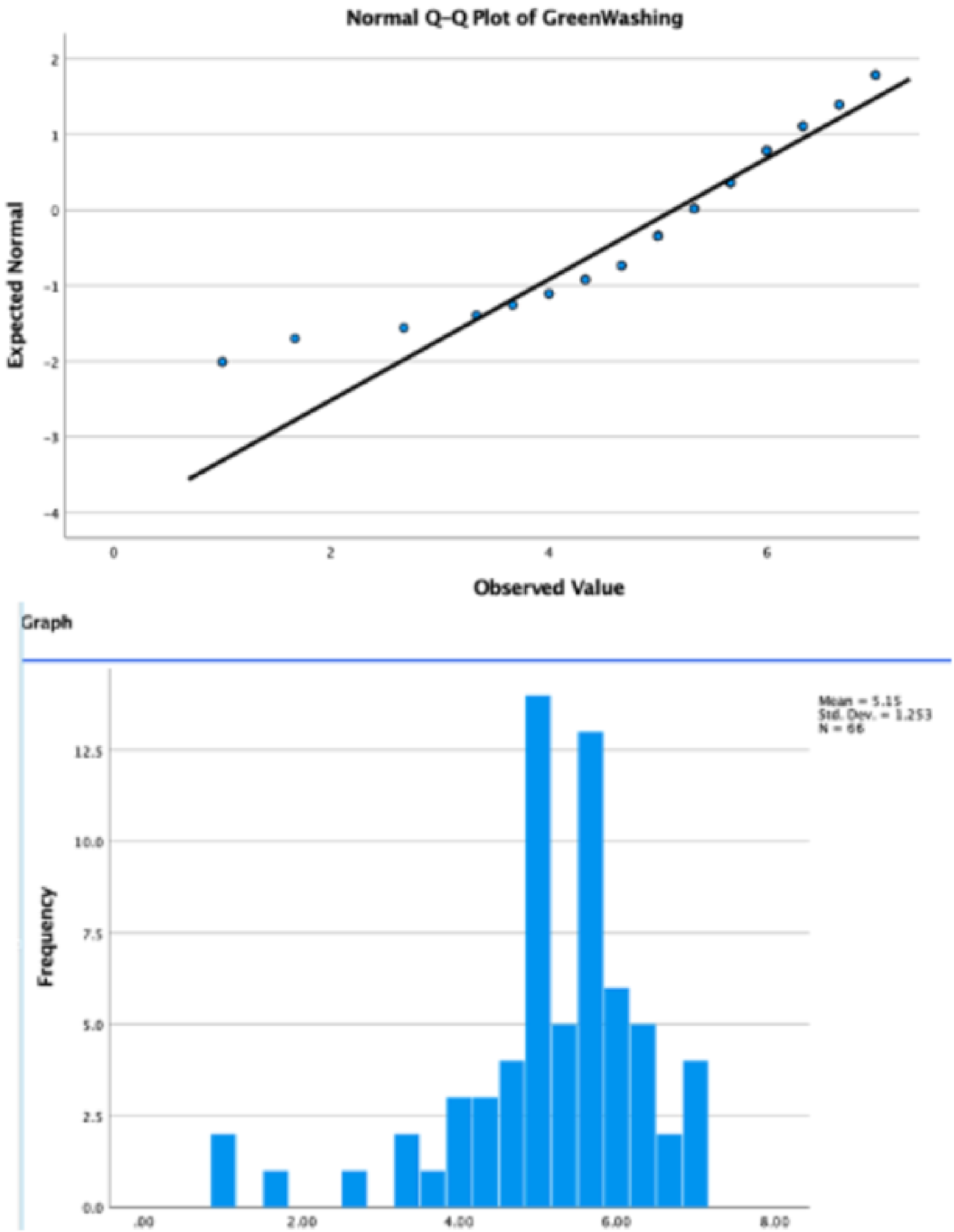


Figure 8 Normal Q-Q Plot and Skewness of Greenwashing

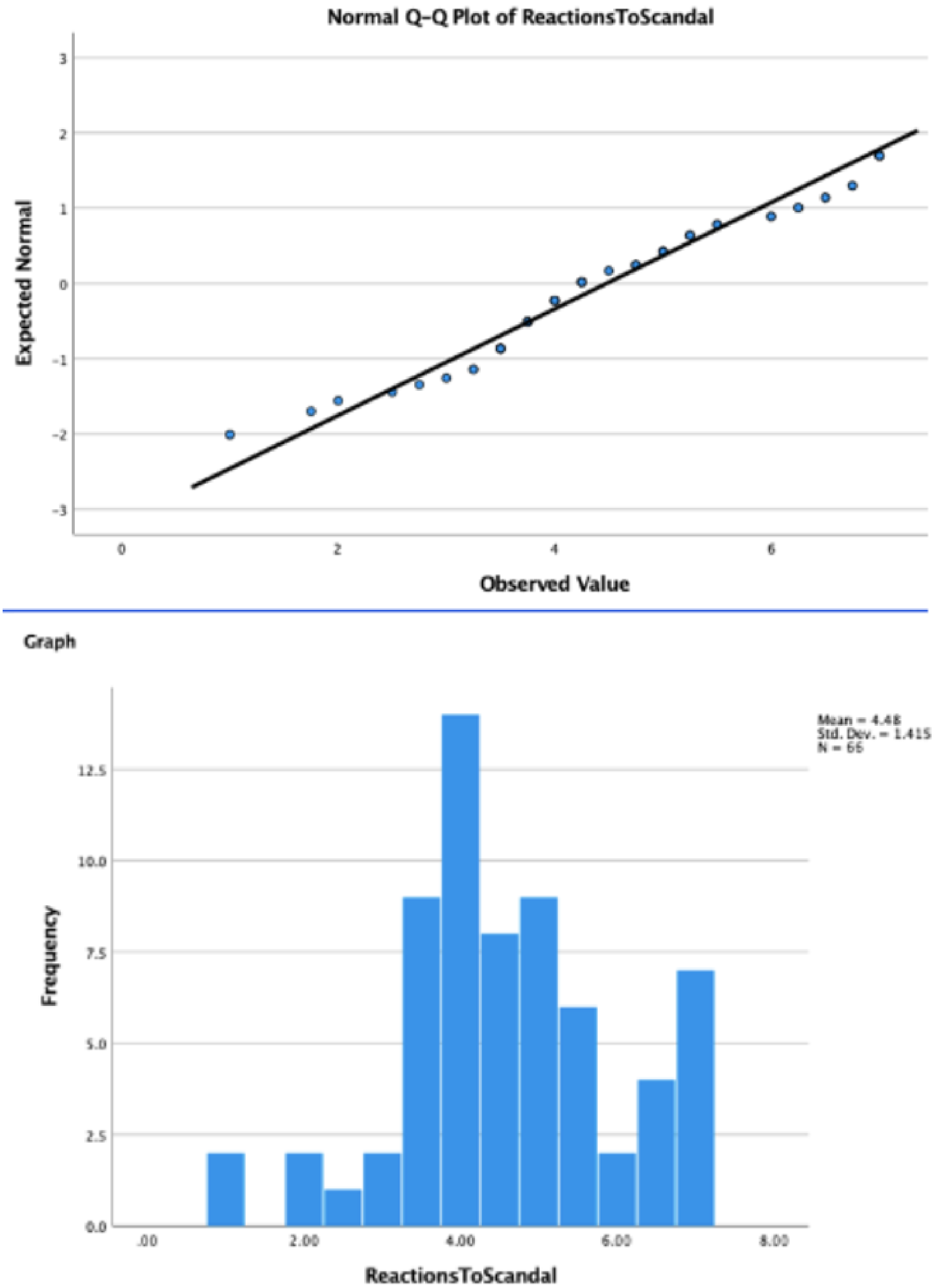
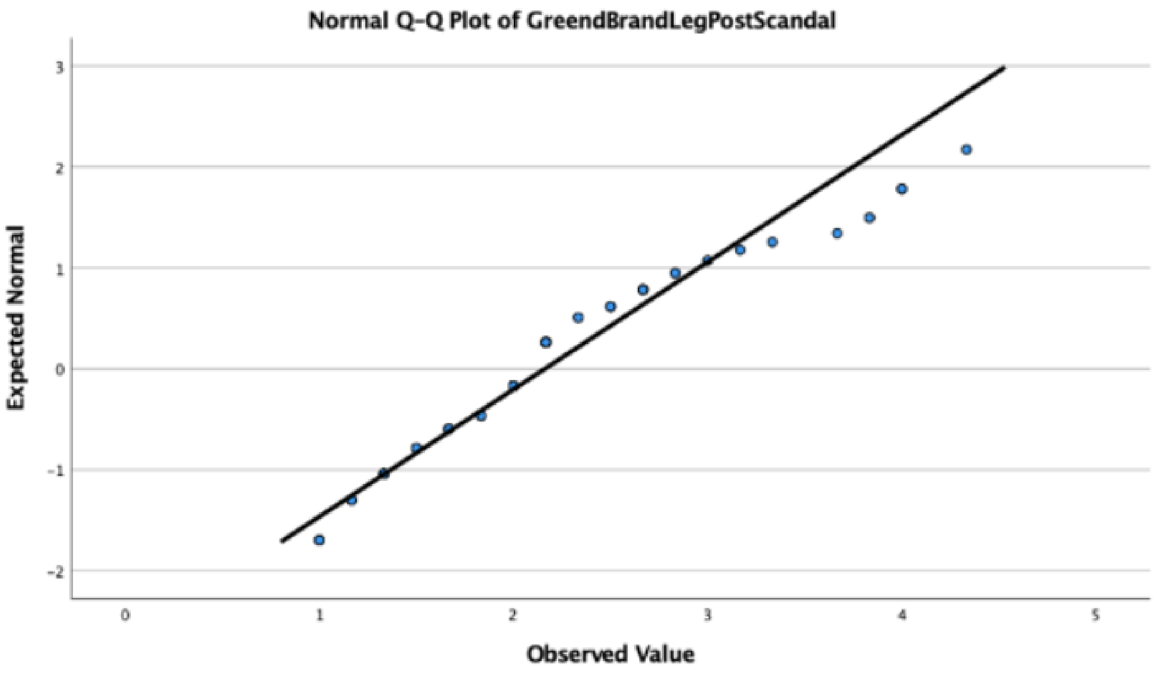


Figure 9 Normal Q-Q Plot and Skewness of Reaction to Scandal



Graph

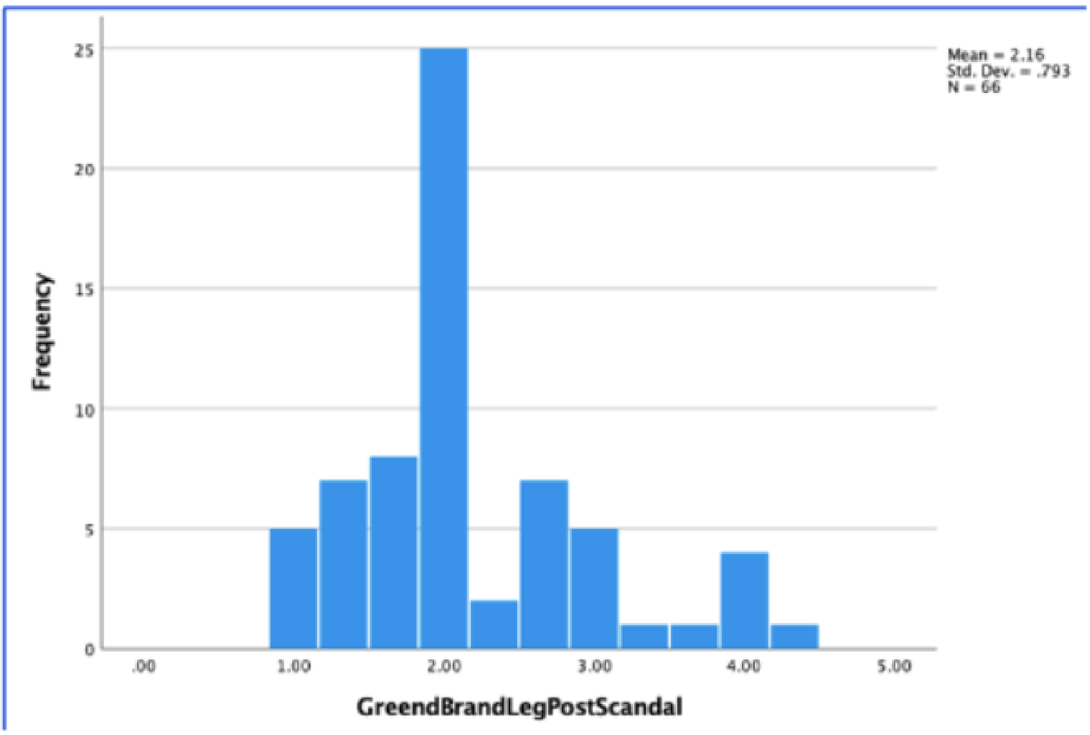


Figure 10 Normal Q-Q Plot and Skewness of Green Brand Leg post Scandal

Appendix E

Table 24 Regression analysis green brand legitimacy, ownership condition

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.521	.129		27.260	<.001
	Condition	-.277	.192	-.178	-1.445	.153

a. Dependent Variable: GreenBrandLeg

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.178[a]	.032	.016	.77506

a. Predictors: (Constant), Condition

Appendix F

Regression Analysis with control variables for model 2

Table F25 further indicates that ownership condition predicts reaction to scandal (p> 0.05), but it is not predicted by gender, age, work experience and the importance of a company's social and environmental performance.

Table 25 Influence of control variables on regression analysis for Model 2

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.859	1.279		3.016	.004
	Condition	.907	.346	.325	2.619	.011
	GenderR	.488	.357	.169	1.366	.177
	Age	-.011	.157	-.009	-.068	.946
	WorkExperience	-.487	.439	-.138	-1.109	.272
	PersonalImpSustain	.068	.129	.066	.528	.599

a. Dependent Variable: ReactionsToScandal

The below table indicates that reaction to a scandal predicts green brand legitimacy post scandal (p> 0.05). It further indicates a predictive effect of the importance of a company's social and environmental performance on green brand legitimacy post scandal, where the higher a person rates the importance of a company's social and environmental performance the lower this person rates the green brand legitimacy post scandal.

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.010	.531		7.554	<.001
	ReactionsToScandal	-.332	.049	-.663	-6.783	<.001
	GenderR	.017	.140	.011	.118	.906
	Age	-.016	.060	-.025	-.258	.798
	WorkExperience	.087	.172	.050	.509	.613
	PersonalImpSustain	-.111	.050	-.214	-2.231	.030

a. Dependent Variable: GreendBrandLegPostScandal

The below table still does not indicate a significant effect ($p > 0.05$) for ownership condition predicting green brand legitimacy post scandal when including control variables.

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.537	.667		3.803	<.001
	Condition	-.110	.181	-.078	-.607	.546
	GenderR	-.139	.186	-.096	-.744	.460
	Age	-.004	.082	-.006	-.045	.964
	WorkExperience	.272	.229	.154	1.187	.240
	PersonalImpSustain	-.127	.067	-.245	-1.890	.064

a. Dependent Variable: GreendBrandLegPostScandal

Lastly, the mediation model for Model 2 remains significant when taking in the control variables.

```
Indirect effect(s) of X on Y:
          Effect     BootSE   BootLLCI   BootULCI
RScan     -.3241      .1494    -.6560     -.0729
```

The below table further indicates that ownership condition predicts reaction to scandal ($p > 0.05$), but it is not predicted by gender, age, work experience and the importance of a company's social and environmental performance.

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.859	1.279		3.016	.004
	Condition	.907	.346	.325	2.619	.011
	GenderR	.488	.357	.169	1.366	.177
	Age	-.011	.157	-.009	-.068	.946
	WorkExperience	-.487	.439	-.138	-1.109	.272
	PersonalImpSustain	.068	.129	.066	.528	.599

a. Dependent Variable: ReactionsToScandal

Lastly, the mediation model for Model 2 remains non-significant when taking in the control variables.

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
RScan	.0543	.0818	-.1267	.2130