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How do brand credibility and personal involvement influence consumers' green brand trust in the presence of greenwashing?

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Summary:

This study analyses the impact of brand credibility and personal involvement on consumer green brand trust in the presence of greenwashing. Greenwashing, a practice of companies misleading, exaggerating, or falsely stating environmental claims, portrays a significant challenge to managing trust in CSR initiatives. The research surveyed 336 respondents and explored the interaction of brand credibility, trust, and personal involvement factors across low- and high-involvement green products.

The results indicate that brand credibility plays an important mediating function, implying that transparent and authentic communication is essential in both high- and low-involvement product scenarios. Consumers frequently rely on brand credibility, which may mitigate specific adverse impacts of greenwashing on trust. Nonetheless, personal involvement did not moderate the relationship between perceptions of greenwashing and trust, indicating that the perceived credibility of the brand influences more trust than the level of personal involvement consumers has in the product category.

The research concludes that although greenwashing may threaten brand credibility in specific contexts, strong brand credibility may offset the adverse effects of greenwashing on trust. Therefore, the literature analysed, and the findings of this study suggest that organisations should prioritise the development of authentic and transparent green marketing strategies to cultivate trust among environmentally conscious consumers.

Future studies should examine cultural differences and long-term effects to broaden this research's findings. The research highlights the intricacy of consumer perceptions in green marketing and the critical role of brand credibility in mitigating scepticism regarding green promises.

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Resumo:

Este estudo analisa o impacto da credibilidade de marca e do envolvimento pessoal na confiança do consumidor numa marca ecológica na presença de *greenwashing*. O *greenwashing*, uma prática de empresas que enganam, exageram ou declaram falsamente alegações ambientais, representa um desafio significativo para a gestão da confiança nas iniciativas CSR. A investigação inquiriu 336 inquiridos e explorou a relação entre a credibilidade da marca, a confiança e os fatores de envolvimento pessoal em produtos ditos ecológicos de baixo e elevado envolvimento.

Os resultados indicam que a credibilidade da marca desempenha uma função mediadora importante, o que implica que a comunicação transparente e autêntica é essencial tanto em cenários de produtos de elevado como de reduzido envolvimento. Os consumidores confiam frequentemente na credibilidade da marca, o que pode atenuar os impactos adversos específicos do greenwashing na confiança. No entanto, o envolvimento pessoal não moderou a relação entre as perceções de *greenwashing* e a confiança na marca, indicando que a credibilidade percecionada da marca influencia mais a confiança do que o nível de envolvimento pessoal que os consumidores têm na categoria do produto.

A investigação conclui que, embora o *greenwashing* possa ameaçar a credibilidade da marca em contextos específicos, uma forte credibilidade da marca pode compensar os efeitos adversos do *greenwashing* na confiança. Por conseguinte, a literatura analisada e as conclusões deste estudo sugerem que as organizações devem dar prioridade ao desenvolvimento de estratégias de *Green Marketing* autênticas e transparentes para cultivar a confiança entre os consumidores com consciência ambiental.

Estudos futuros devem examinar as diferenças culturais e os efeitos a longo prazo para alargar as conclusões desta investigação. A investigação salienta a complexidade das perceções dos consumidores no *Green Marketing* e o papel fundamental da credibilidade da marca na atenuação do ceticismo em relação às promessas ecológicas.

Palavras-chave: *Greenwashing*; Produtos Ecológicos; Credibilidade de Marca; Envolvimento Pessoal; Confiança na Marca; Sustentabilidade; Ambiente; *Green Marketing*.

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JEL:

M38 – Marketing *and Advertising- Government Policy and Regulation*

M21 – *Business Economics*

K32 – Other *Substantive Areas of Law: Energy, Environmental, Health, and Safety Law*

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Glossary of Abbreviations

BC – Brand Credibility

CAGR – Compound Annual Growth Rate

CSR – Corporate Social Responsibility

GT – Green Trust

GWP – Greenwashing Perceptions

PII – Personal Involvement Inventory

1. Introduction

1.1 Introduction

Although Green Marketing might have been a topic discussed in recent decades, its importance has been increasing in recent years as companies either aim to become greener due to different causes or have been influenced by legislation (Bland et al., 2022). Considering the current energy and resource crisis, green marketing strategies are strengthening as they are perceived as long-term and tend to create a positive perception of the brands that adopt them in customers' minds (Camacho-Otero et al., 2018).

The Green Technology and Sustainability market is estimated to increase at a CAGR of 20.6% from USD 13.76 billion in 2022 to USD 51.09 billion by 2029 (Fortune Business Insights, 2022), and recent studies have proven consumers are willing to pay more for greener options (Zhang et al., 2023).

The production of green products can characterise these strategies. A green product is an item that uses recycling (renewable/toxic-free/biodegradable) resources in its design and/or characteristics (and/or manufacturing and/or strategy) and improves or decreases environmentally hazardous harm throughout its entire life cycle (Durif et al., 2010; Sdrolia & Zarotiadis, 2019).

Organisations have incentives to establish environmental sustainability practices, such as enhancing product value, seeking opportunities in new markets, enhancing corporate image, and acquiring a competitive advantage (Chen, 2010). When a brand claims its products have green attributes, consumers feel good about its sense of responsibility. As a result, consumers perceive that the brand cares about the environment, and a favourable impression is given that extends from the brand's culture to the brand's products and services. Consumers who share the same green idea will be more willing to try its products. (Johnson & Greenwell, 2022).

Several companies have adopted green marketing strategies in order to attract environmentally aware consumers (Dangelico & Vocalelli, 2017). Nevertheless, this phenomenon has also led to the concerning phenomenon of greenwashing, in which companies engage in deceptive or inaccurate statements regarding their environmental impact (Delmas & Burbano, 2011).

Greenwashing presents considerable obstacles for consumers seeking to make well-informed, sustainable purchasing choices, as it degrades confidence in environmentally friendly products and can foster doubt regarding genuine environmental assertions (Chen & Chang, 2013).

According to Kennedy and Guzmán (2020), highly involved consumers value clear and concise brand communications, which can significantly increase their trust in the brand. Moreover, Chen (2010) argues that the concept of green trust, which refers to consumers' confidence in a brand's environmental claims, is an essential result of this situation. Consumer behaviour is positively influenced by trust in environmentally friendly brands, leading to higher purchase intentions and advocacy. Nevertheless, greenwashing has the potential to significantly erode this trust, resulting in scepticism and unfavourable opinions of the brand (Nyilasy et al., 2013).

1.2. Research Purpose

This research aims to understand how customers' trust in green brands, influenced by brand credibility and personal involvement, differs in the presence of greenwashing. Knowing the factors behind customer trust is essential at a time when both consumers and businesses give environmental sustainability a top priority. Through an analysis of these linkages, this study aims to provide insights enabling companies to create more successful green marketing plans that appeal to ecologically sensitive consumers.

Greenwashing runs the danger of undermining customer confidence, weakening this market expansion's possible advantages. Through this study, the research pretends to provide practical insights for brands and marketers to improve the authenticity and efficacy of green marketing tactics, therefore enabling a more sustainable and trustworthy market. By tackling this issue, the study adds to the larger conversation on sustainability, consumer behaviour, and marketing ethics, laying a basis for subsequent studies and practical field applications.

The main research question is: How do brand credibility and personal involvement influence consumers' green brand trust in the presence of greenwashing?

2 Literature Review

2.1 Greenwashing

2.1.1 Concept and Contextualization of Greenwashing

Greenwashing was coined first in 1986 by Jay Westervelt, an activist who identified organisational communication as a misleading trait (Guo et al., 2018). Greenwashing can be understood as propagating misinformation to customers about a company's environmental policies or the environmental benefits of a product or service (Baum, 2012). Tateishi (2017, p. 3) identifies greenwashing as "communication that misleads people regarding environmental performance/benefits by disclosing negative information and disseminating positive information about an organisation, service, or product". Corporations endeavoured to exploit the growing demand for ecologically sustainable products and practices, frequently resorting to misleading marketing strategies (Delmas & Burbano, 2011).

One probable explanation for brands to use this strategy is that the risk of being detected is minimal or that the cost of greenwashing is less than that of reporting truthfully. Another rationale might be that their visibility or closeness facilitates the manipulation of stakeholders' views, making it more straightforward for corporations greenwashing to generate a credible image and a clean impression. Sustainability reports, Global Reporting Initiative guidelines, and external assurance assist in managing stakeholder expectations and delivering on claims for more openness (Ruiz-Blanco et al., 2022).

This phenomenon has become increasingly prevalent as consumers have become more environmentally conscious, and companies seek to appeal to this trend (Sharma et al., 2018). Even if consumers are unaware, they may have stronger inclinations to purchase environmentally friendly items (Coşkun et al., 2017). However, greenwashing can be confusing and misleading for consumers as it often involves companies using vague or misleading language or making false or exaggerated claims about their environmental impacts (de Freitas Netto et al., 2020).

Several arguments exist behind corporations' involvement in greenwashing practices. One possible reason is to cater to consumers willing to incur more costs for ecologically sustainable items (Sharma et al., 2018).

Greenwash has two indirect ways of negatively influencing its consumers' green purchasing behaviour: the organisation's green brand image and its consumers' green brand loyalty (Yu-Shan Chen et al., 2020).

Consumers have the power to protect themselves against the deceptive marketing practice known as greenwashing through a variety of strategies. By critically evaluating a company's environmental claims and practices, and engaging in thorough research, they can arm themselves with knowledge. Seeking information from reputable sources, including government agencies and non-profit organisations, empowers consumers to make informed decisions (Sharma et al., 2018).

2.1.2 Types of Greenwashing

Understanding the various ways to classify greenwashing actions, including a typology of claims and origin, is crucial. The major classifications of Greenwashing, such as firm-level and product/service level, which are led by a claim or an execution act, provide a comprehensive view of the issue (Vieira et al., 2020). This knowledge equips the audience with the necessary tools to identify and combat greenwashing.

Parguel et al. (2015) established three categories of greenwashed advertising: (1) those that employ false claims, (2) those that omit critical information that could help evaluate the claim's sincerity, and (3) those that employ vague or ambiguous terms. The types of greenwashing claims can be related to product orientation, process orientation, image orientation, environmental facts and/or a combination (Carlson, 1993).

Carlson et al. (1993) developed two typologies of green claims:

- Claim type is categorised into four typological categories: (1) product orientation—claims centred on an ecological attribute of a product; (2) process orientation—claims centred on the ecological high performance of a production process technique and/or an ecological disposal method; (3) image orientation—claims centred on enhancing an organisation's eco-friendly image, such as claims that associate an organisation with an environmental cause or activity that has widespread public support; (4) environmental fact—claim centred on an environmental fact (Carlson et al., 1993, p. 31).
- Claim deceptiveness.

These claim types discussed above can be classed in a different typology, claim deception, which includes five typological categories as well: (a) vague/ambiguous—claims that are overly vague, ambiguous, too broad, and/or lack a clear definition; (b) omission—claims that lack the necessary information to evaluate their validity; (c) false/outright lie—claims that are inaccurate or a fabrication; (d) combination—claims that fall into two or more of the preceding categories; and (e) acceptable—claims that do not contain a deceptive feature (Carlson et al., 1993, p. 31).

Parguel et al. (2015) described the form of greenwashing called 'Executional Greenwashing' as a method that does not include any of the previously listed claims but rather provides nature-evoking components such as visuals employing colours (e.g., green, blue) or noises (e.g., sea, birds). Executional nature-evoking elements may be observed in the backdrops that portray natural environments such as mountains, forests, and seas. These characteristics may also incorporate depictions of endangered animal species like pandas and dolphins and representations of sustainable energy sources such as wind and waterfalls.

According to Lyon and Maxwell (2011), measuring greenwashing involves Third-party Audits (external agencies verifying corporate green claims) and/or through Comparative Analysis (evaluating the company's environmental claims against industry benchmarks).

Additionally, various methods exist by which corporations might engage in greenwashing. For instance, individuals may employ terminology such as "all-natural," "green," "non-toxic," or "eco-friendly" without substantiating these assertions with empirical backing (de Freitas Netto et al., 2020, p.9). Sharma et al. (2018) observed that individuals might selectively emphasise a particular environmental attribute of a product, such as the use of recycled materials while disregarding other detrimental effects.

2.1.3 How Greenwashing Propagates

Greenwashing can be propagated through multiple channels, including (1) Advertisements - Traditional media outlets such as TV, radio, and print(Laufer, 2003); (2) Product Packaging - Using visuals or claims on product labels (Polonsky et al., 1998); (3) Corporate Reports - Highlighting environmental initiatives in annual reports (Laufer, 2003); (4) Social Media Platforms - Utilising platforms like Twitter, Instagram, and Facebook (Lyon & Montgomery, 2013).

Through these channels, Greenwashing can manifest in various claims (TerraChoice, 2010), including:

- Vague Claims – Broad assertions that are hard to measure, like "all-natural";
- Hidden Trade-Off Claims – Claiming a product is green due to some attribute, like "paper-made", despite the harvesting, the process and production emissions;
- Irrelevant Claims – Advertising a green aspect that is legally required or industry standard;
- Lesser of Two Evils Claims – Advertising a slightly "greener" option in a polluting industry;
- No Proof Claims – Claims that are not supported by any easily accessible data or reliable by a third party, examples of these are post-recycled products;
- Fibbing (False) Claim – Emitting claims that are simply false though false claims or fake labels;
- Worshipping False Labels Claims – Establishing claims that give the idea of a product being endorsed by certain labels.

Furthermore, several entities can be involved in greenwashing practices, such as Corporations: Firms might exaggerate their green initiatives to appeal to environmentally-conscious consumers (Bowen, 2000); Marketing Agencies: Advertising firms might promote green claims, focusing on their persuasive appeal over factual accuracy (Lyon & Maxwell, 2011); and Third-Party Certifiers: Organisations that offer green certifications without rigorous standards or based on irrelevant metrics (Delmas & Burbano, 2011).

2.1.4 Consequences of Greenwashing

As misleading information becomes more prevalent, so does green scepticism. In addition to greenwashing, green brand associations and green brand equity negatively impact green scepticism. Therefore, ground companies should focus on creating positive associations in consumers' minds and investing in increasing brand equity (Akturan & Tezcan, 2019).

Nonetheless, Greenwashing appears to have a detrimental impact on the firm's financial success in the long term (Gatti et al., 2019). Upon the ongoing exposure to greenwashing, consumers may have reservations about businesses that have released green statements in the market because they are unable to assess the legitimacy of these green claims. This

will eventually make environmental protection more difficult to maintain (Johnson & Greenwell, 2022). Greenwash increases green consumer confusion and green perceived risk, thus diminishing green trust (Chen & Chang, 2013).

2.2 Consumer's perception of Brand Credibility and Green Brand Trust

2.2.1 Brand Credibility

Brand credibility can be defined as the "believability of the product information contained in a brand, which requires that consumers perceive that the brand has the ability (i.e., expertise) and willingness (i.e., trustworthiness) to continuously deliver what has been promised (in fact, brands can function as signals since—if and when they do not deliver what is promised—their brand equity will erode)" Erdem, T., & Swait, J. (p.192, 2004).

According to Chen & Chang (2013), brand credibility in green marketing is determined by several factors, such as the degree of transparency, consistency, and authenticity in environmental claims. Thus, consumers are more likely to trust and purchase from brands with a proven track record of authentic environmentally friendly practices, as opposed to brands perceived as engaging in deceptive environmental claims. Consumers tend to have greater trust in and make purchases from brands perceived as credible in their environmental claims (Chen, 2010).

Wang et al. (2019) found that brand credibility has a positive effect on consumer trust and purchase intention in the market for environmentally friendly products. Brands that offer accurate details regarding their environmental practices and actively communicate with consumers are more likely to be regarded as credible (Martínez & Rodríguez del Bosque, 2013).

The rise in environmental marketing indicates that businesses are aware of the public's need for more environmentally friendly products (Johnson & Greenwell, 2022). Sceptical customers, on the other hand, are easily influenced by unfavourable information (Skarmeas & Leonidou, 2013). Customers are more conscious of environmental issues and are more likely to choose brands that exhibit a commitment to sustainability. Effective green marketing techniques raise perceived brand value and positively impact consumer attitudes, claim Kumar et al. (2013). According to Joshi and Rahman (2017), consumers associate green brands with reliability and quality.

Testa et al. (2013) assert that certifications strengthen brand credibility and favourably influence consumer perceptions. Rashid et al. (2009) concluded that eco-labels and green certifications issued by respected third-party organisations substantially enhance brand credibility and foster consumer trust in environmentally friendly products. Even if they cost more, younger consumers—millennials in particular—are more likely to support green brands (Wang et al., 2013). Consumers also tend to favour labels provided by government institutions instead of company-made ones when asked to evaluate abstract traits that cannot be quickly confirmed, such as sincerity and honesty (Atkinson & Rosenthal, 2014).

2.2.2 Green Brand Trust

Green Trust can be defined as "a willingness to depend on a product, service, or brand based on the belief or expectation resulting from its credibility, benevolence, and ability about its environmental performance" (Chen, 2010, p. 312).

Trust in green brands is a significant determinant of consumers' intent to make purchases and holds a central position in the sustainable development of businesses (Zhang et al., 2023). Trust facilitates the establishment of an emotional bond between consumers and brands and is widely regarded as a crucial indicator of brand worth (Wu & Liu, 2022).

Customers who believe in a brand's green claims are more inclined to purchase and endorse it, enhancing its reputation and overall success (Seshadri, 2023). According to Martínez (2015), green brand trust greatly influences consumer purchase intentions and loyalty towards environmentally friendly products.

Consumers who are highly conscious of green products are more confident in the environmental benefits and consequences, which enhances consumer trust in green products and the likelihood of purchase (Wang et al., 2013). The literature identifies various characteristics that set green products apart from conventional ones. These include using recycled, recyclable, or biodegradable materials, energy efficiency, lower emissions and waste, and the lack of harmful chemicals (Dangelico & Pontrandolfo, 2010). Green products should also be resilient, repairable, and built for disassembly to help recycling (Ottman et al., 2006). Prakash (2002) underlines that from raw material extraction to disposal, green products should offer environmental advantages throughout their life cycle.

These criteria consistently stress the need for resource efficiency and decreased waste and pollution (Peattie & Crane, 2005). Some differences in definitions draw attention to specific environmental advantages such as lower carbon footprint, biodegradability, or the utilisation of renewable resources (Rex & Baumann, 2007). Designed and produced to have less environmental impact than traditional goods, green items are made from recycled or recyclable materials, energy-efficient, non-toxic, and biodegradable. Ottman et al. (2006) describe green products as possessing one or more of these qualities.

Green products can be broadly categorised into several types, including consumer goods, industrial products, and services. Consumer products can be considered organic food, energy-efficient appliances, environmentally friendly clothes, and biodegradable packaging (Gleim et al., 2013). Among the main categories for industrial goods are green cement, recovered plastic resins, biobased chemicals, and bioplastics (Dangelico, 2015).

Although, according to Smith and Brower (2012), consumers are more inclined to buy environmentally friendly products if they believe that their choices in consumption can positively influence the environment, price is still a crucial assessment, with higher costs frequently discouraging regular purchases of green products (Gleim et al., 2013).

Younger consumers exhibit a notably positive attitude towards green products compared to older generations, indicating a trend towards more remarkable environmentally aware consumer behaviour among younger populations (Kanchanapibul et al., 2014). Nonetheless, the success of green products depends on good communication of these qualities to consumers (Joshi & Rahman, 2019).

Joshi and Rahman (2015) found that individuals who are more concerned about the environment are more likely to purchase green products frequently. Moreover, the ease of obtaining environmentally friendly products in the market influences how often they are purchased. Consumers are more inclined to purchase environmentally friendly products regularly when readily accessible in their typical shopping destinations. Transparent and reliable eco-labelling has also been proven to boost purchase frequency by addressing the information imbalance and fostering trust (Taufique et al., 2016).

The growing market for green products resulting from growing worldwide environmental consciousness calls for intense labelling and certification systems to guarantee authenticity and consumer trust. Globally accepted criteria include the ISO 14000 series (Delmas and Pekovic, 2013). The Global Ecolabelling Network (GEN) is also vital, as it

supports and advances eco-labelling globally following strict environmental requirements (Rex & Baumann, 2007). Certifications and regional standards help to improve the structure of environmentally friendly items even more. The EU Eco-label is given to goods satisfying rigorous environmental standards throughout their lifetime in the European Union, therefore enabling customers to find sustainable goods (Horne, 2009).

2.2.3   Effects of Greenwashing on Brand Credibility and Green Brand Trust

According to Lyon and Montgomery (2015), consumers are growing more skilled at spotting greenwashing strategies, which may lead to negative publicity for companies using them. Boycotts, bad press, and dwindling brand loyalty are ways this backlash may appear. Additionally, Siano et al. (2017) point out that since consumers increasingly depend on social media and online reviews to shape their opinions, the long-term effects of greenwashing can include diminished brand equity and reputational damage.

Customers who are deeply engaged with a product may observe a rise in Green Trust (Akturan, 2018), suggesting that highly invested consumers can withstand greenwashing strategies. Delmas and Burbano (2011) emphasised that greenwashing damages the affected brand and taints the market as a whole, making consumers suspicious of environmental claims made by other brands.

The consumer perception of greenwashing has a detrimental impact on brand credibility since consumers' ideas of greenwashing negatively affect brand credibility (Usman Javed, 2022). Brand credibility is crucial in overcoming consumer scepticism (Ng et al., 2014), often by helping to assess the veracity and reliability of environmental statements (Adnan et al., 2019). Furthermore, it has the capability to address the negative impacts on Green Brand Equity in cases when there is a perception of greenwash (Qayyum et al., 2022). Additionally, it is important to emphasise that Green Brand Trust is a component of Green Brand Equity (Majeed et al., 2022).

As environmental concerns grow, consumers increasingly seek products and services from brands they perceive to be environmentally responsible. As a result, green trust has emerged as a critical factor in consumer behaviour and sustainable marketing strategies (Chen & Chang, 2013). Furthermore, Greenwashing increases green consumer confusion and green perceived risk, thus diminishing green trust (Chen & Chang, 2013).

Excessive product packaging, greenwashing, and green confusion are all manifestations of green practices that harm the image of the green company. Moreover, sellers with green marketing brand credibility tend to have more consumer trust and brand equity (Qayyum et al., 2022).

2.3 Personal Involvement

2.3.1 Personal Involvement

According to Atkinson and Rosenthal (2014), in high-involvement contexts, consumers respond positively to corporate and government-sourced labels. However, it is noteworthy that the liking and trust ratings are more pronounced in the government-sourced condition; thus, in high-involvement contexts, customers face challenges in discerning the relative quality of a product based on the label's source or the perceived superiority of the source. The role of source labelling is significant in low-involvement situations, such as when consumers purchase everyday commodities like dairy products. Nonetheless, the perceived importance of a label's source varies depending on the specific characteristics the signal intends to convey.

Green Brand Equity has been proven to have a somewhat greater influence on purchase intention for high-involved items than low-involved products. Therefore, even for low-involved green product categories, it is a crucial indication of purchase intent (Akturan, 2018).

Nagar (2015) claims that in high-involvement products, such as electronics like mobile phones, a stronger correlation exists between brand image and attitude towards green advertisements. Green advertisements significantly affect consumers' perceptions of brands because they compel them to interact with the information presented. Customers with a high level of involvement actively seek out specific information and are more receptive to messages in green advertising. However, the impact of green advertising on brand image is less for low-involvement products (like stationery items like notebooks). Singh et al. (2008) showed that when consumers are highly involved with a product, they exhibit a stronger preference for sustainable brands, leading to increased brand trust.

According to Wang et al. (2019), there is a positive correlation between consumers' knowledge of green products and their belief in the potential environmental benefits associated with using such items. Furthermore, individuals with a robust conviction in positive outcomes are more likely to believe that their personal environmentally friendly

buying behaviours may contribute to environmental preservation and pollution mitigation.

Kennedy & Guzmán (2020) found that highly involved consumers appreciate clear and concise brand communications, which can significantly enhance their trust in the brand.

According to Sahin et al. (2019), consumers with a high level of environmental involvement responded more favourably to logical appeals in green advertising. Grimmer and Woolley (2014) found that highly involved consumers were more susceptible to messages highlighting environmental advantages, whereas less involved consumers were more receptive to messages emphasising personal benefits.

2.3.2 Relationship between Personal Involvement and Greenwashing

Consumers thoroughly examine environmental assertions, conduct comparisons of the life cycle effects of products, and actively pursue validation through third-party certifications to mitigate the potential for being deceived (Horne, 2009). Consumers can assess environmental claims, discuss experiences, and uncover potential greenwashing techniques through online tools, consumer forums, and social media platforms (Lyon & Montgomery, 2013).

According to Wei et al. (2017), increasingly engaged consumers in their purchases of green products are more likely to seek and depend on additional information from green advertising prior to making a purchase. Moreover, because these diligent consumers are more cautious in choosing information and evaluating the claims made by the product, they are more inclined to have trust in green products. Furthermore, there is a positive information utility and green trust associated with these statements.

2.4 Literature Gap

The current research on greenwashing, brand credibility, and personal involvement offers a solid basis for comprehending consumer behaviour's intricacies in environmentally sustainable marketing. Research has extensively recorded the detrimental consequences of greenwashing, demonstrating that it results in consumer perplexity and a decline in confidence towards environmentally conscious brands (Chen & Chang, 2013). Simultaneously, establishing brand credibility, achieved through transparency, consistency, and authenticity, has been proven to significantly increase consumer trust and their likelihood to make a purchase (Erdem & Swait, 2004; Chen, 2010). Akturan

(2018) emphasises that personal involvement is crucial in how consumers perceive and respond to environmental claims.

However, there is still a significant lack of knowledge regarding the relationship between personal involvement and brand credibility in influencing consumer trust regarding greenwashing. The literature typically examines the impacts of greenwashing, the significance of brand credibility, and the level of personal engagement as separate factors influencing consumer trust. There is a lack of extensive investigation into the interaction of these factors, especially in situations where consumers are exposed to misleading environmental assertions.

The intricate relationship between a brand's credibility and personal involvement, particularly in mitigating the impact of greenwashing, has not been thoroughly investigated. Addressing this gap is essential to developing more comprehensive marketing strategies that can effectively promote and sustain consumer trust in green brands, even in the face of the widespread risk of greenwashing.

Considering this situation, it is crucial to thoroughly examine how the combination of brand credibility and personal involvement affects trust in brands promoting green products, especially when greenwashing is present. This research would improve current theoretical frameworks and strengthen the strategic recommendations for practitioners who want to maintain and capitalise on consumer trust in a marketplace that may be becoming more sceptical. The research question arises: How do brand credibility and personal involvement impact consumers' trust in green advertisements/campaigns when faced with greenwashing? It is crucial to answer this question to make progress in green marketing and help brands navigate the complicated world of consumer trust in the face of widespread deception regarding environmental claims.

3. Research Hypotheses and Conceptual Model

Chen and Chang (2013) establish that greenwashing increases consumer confusion and perceived risk, decreasing green trust. Disseminating deceptive environmental information fosters scepticism and distrust among consumers, undermining their confidence in environmentally conscious brands.

Hypothesis 1a: Greenwashing Perceptions negatively influence Green Trust.

According to Usman Javed (2022), perceived greenwashing greatly diminishes a brand's credibility. When consumers perceive a brand's environmental claims as deceitful or overstated, a negative perception is formed, resulting in a decline in trust and credibility. The adverse perception can undermine the brand's credibility and long-term viability.

Hypothesis 1b: Greenwashing Perceptions negatively influence Brand Credibility.

Considering Green Brand Trust is part of the dimensions of Green Brand Equity (Majeed et al., 2022) and Brand Credibility influences Green Brand Equity by tackling the adverse effects when there is a perception of greenwash (Qayyum et al., 2022), it may be argued that Brand Credibility might also mediate the relationship between Greenwashing Perceptions and Green Brand Trust.

Hypothesis 2: Brand Credibility mediates the relationship between Greenwashing Perceptions and Consumers' Trust in green brands.

Chen and Chang (2013) argue that brand credibility in green marketing is established through transparency, consistency, and authenticity in making environmental claims. Consumers are more inclined to have confidence in and buy from brands with a documented history of authentic, environmentally sustainable practices. The positive perception of brand credibility strengthens consumer trust in green brands.

Hypothesis 3: Consumers' trust in green brands is positively influenced by Brand Credibility.

Akturan (2018) argues that personal involvement is crucial in shaping consumer perceptions and actions in response to greenwashing. Consumers with a high level of product involvement possess a greater ability to recognise misleading environmental claims and are more inclined to scrutinise such practices.

Hypothesis 4a: Personal Involvement moderates the relationship between Greenwashing Perceptions and Brand Trust.

Highly involved consumers are more prudent regarding the selection of information and the claims evoked by the product, thus, they value clear and concise brand communications, which can significantly enhance their trust in the brand (Wei et al., 2017; Kennedy & Guzmán, 2020). Moreover, highly involved consumers are more cautious to the credibility of brand communications and are more likely to scrutinise environmental claims, making brand credibility a crucial factor in their trust and purchase decisions (Nagar, 2015; Akturan, 2018).

Hypothesis 4b: Personal Involvement moderates the relationship between Brand Credibility and Brand Trust.

According to Wei et al., (2017), higher involved consumers in the purchase of green products will retrieve and rely more deeply on further information from green advertisements, before the purchase of such products. Furthermore, due to the fact these highly involved consumers are more prudent regarding the selection of information and the claims evoked by the product, these consumers tend to trust more the green products.

Hypothesis 4c: Personal Involvement explains Green Trust.

Younger customers exhibit a greater preference for green products compared to older generations, indicating a trend towards more environmentally aware consumer behaviour (Kanchanapibul et al., 2014).

Hypothesis 5: Age is a control variable.

From these relationships, the conceptual model is viewed in the next figure.

Model *i*
i = product A, product B

Brand Credibility
H_2

H_3

H_{1b}

Greenwashing Perceptions

H_{1a}

H_{4b}

H_{4a}

H_{4c}

Consumers' Green Brand Trust

Personal involvement Inventory
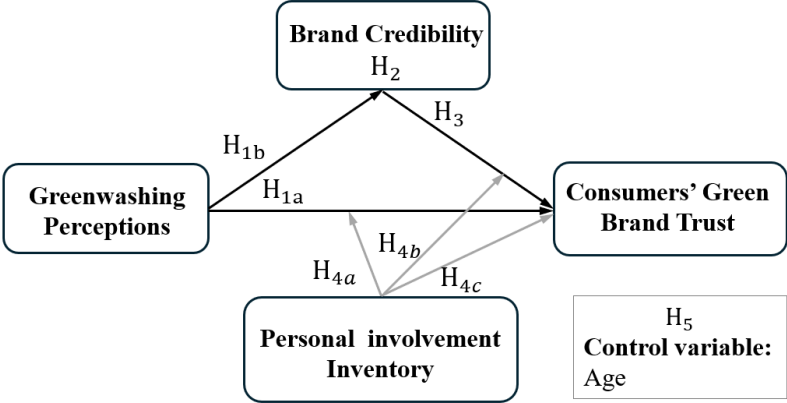
H_5
Control variable:
Age

Figure 1 - The conceptual model

4. Methodology

4.1 Research Approach

This study employed a quantitative research design using a cross-sectional survey methodology. The primary aim is to explore how brand credibility and personal involvement influence consumers' green brand trust in the presence of greenwashing.

The sample was drawn using convenience sampling, a non-probabilistic method. The survey was distributed online to a diverse group of respondents globally, using translation and retroversion to cover English and Portuguese speakers. A pre-test was conducted on 11 people before gathering the primary data to ensure the survey questions were clear, precise, and reliable.

The questionnaire also collected a few purchase frequency behaviour questions and demographic information, including age, gender, education level, nationality and geographical location.

The survey was drafted using Qualtrics Survey Software. To ensure a broad reach, the link to the survey was shared on social media channels, email lists, and relevant online communities, and it was launched online from the 22nd of July 2024 until the 4th of August 2024.

Respondents were presented with two different advertisements of advertisements of products accused of Greenwashing (China Water Risk, 2021 & US EPA, 2023). One advertisement involves a high-involvement product, and another for a low-involvement. Based on these, questions focused on Greenwashing Perceptions, Brand Credibility, Personal Involvement Inventory, and Green Trust were asked about each scenario. The brand's names and logos were omitted from the original ads for legal reasons and to intend impartiality.

The analysis was done using SPSS, which included Descriptive Statistics to profile the respondents to summarise their demographic characteristics, and Smart PLS SmartPlS, version 4, to estimate a causal model to better understand the influence of Brand Credibility from Greenwashing Perceptions and Personal Involvement on Green Brand Trust, considering the moderating role of Personal Involvement).

4.2 Measuring the relevant variables of constructs

Greenwashing:

Consumer Greenwashing perceptions were measured using five items of a 7-point Likert scale, ranging from 1 (indicating strong disagreement) to 7 (indicating strong agreement). This construct's scale was adapted from Chen, Y.S., and Chang, C.-H. (2013). This measurement scale is intricately crafted to capture the subtle details of greenwashing by utilising a set of five criteria that assess both the deceptive language and visuals used and the ambiguity or overstatement of environmental claims.

Brand Credibility:

Brand Credibility was measured using five items of a modified 7-point Likert scale, developed initially as a 9-point scale by Erdem and Swait (2004). This scale assesses a brand's proficiency and reliability using a comprehensive set of five criteria, including evaluations of its competence, ability to fulfil promises, and credibility of its product claims. The transition from a 9-point to a 7-point scale aims to uphold coherence throughout the study, thereby minimising potential ambiguity for participants and guaranteeing a standardised measurement for analysis.

Personal involvement:

Personal involvement was assessed by including four items of a modified 7-point Likert scale to determine its significance level, based on the influential research conducted by Zaichkowsky, J.L. (1985) measuring Personal Involvement Inventory. This scale measures the extent to which a consumer is actively involved and interested in a specific product category. It includes the consumer's curiosity about product details, their evaluation of different brands, and their personal preferences. The scale's continuum, ranging from 1 (strongly disagree) to 7 (strongly agree), encompasses the entire spectrum of consumer involvement, ranging from passive to highly active.

Consumers' Green Brand Trust:

The level of Green Brand Trust was evaluated using four items of a 7-point Likert agreement scale, modified from the scale Green Trust developed by Chen and Yu-Shan in 2010. This construct is crucial as it demonstrates the credibility of a brand's environmental assertions, encompassing its trustworthiness, consistency, and the congruence of its

environmental initiatives with consumer anticipations. The scale measures the overall trust in a brand's environmental commitments, assessing its perceived reliability and consistent fulfilment of its environmental promises.

Table 1: Summary of the construct's items

Constructs	Items
Greenwashing Perceptions (GWP) Adapted from Chen, Y.-S., & Chang, C.-H. (2013).	(1) This product misleads with words in its environmental features. (2) This product misleads with visuals or graphics in its environmental features. (3) This product possesses a green claim that is vague or seemingly un-provable. (4) This product overstates or exaggerates how its green functionality actually is. (5) This product leaves out or masks important information, making the green claim sound better than it is.
Brand Credibility (BC) Adapted from Erdem & Joffre Swait, (2004).	(1) This brand reminds me of someone who's competent and knows what he/she is doing (2) This brand has the ability to deliver what it promises (3) This brand delivers what it promises (4) This brand's product claims are believable (5) This brand doesn't pretend to be something it isn't
Personal Involvement Inventory (PII) Adapted from Zaichkowsky, J. L. (1985).	(1) I would be interested in reading information about how the product is made. (2) I have compared product characteristics among brands of this product. (3) I think there are a great deal of differences among brands of this product. (4) I have a most preferred brand of this product.
Green Trust (GT) Adapted from Chen, Yu-Shan. (2010).	(1) You feel that this brand's environmental commitments are generally reliable. (2) You feel that this brand's environmental performance is generally dependable. (3) You feel that this brand's environmental argument is generally trustworthy. (4) This brand's environmental concern meets your expectations.

5. Results and Discussion

5.1 Demographic Analysis

There were collected 336 responses (Annex 1). The age group with the most presence was the 24—to 30-year-olds (30.4%). The mode was 25 years old, the median was 31, and the average age (mean) was 36.37. The standard deviation was 14.061, portraying a noticeable spread around the mean. Thus, the skewness of 0.776 indicates a positive skew, resulting in more ages below the mean than above.

Table 2: Demographic Profile of the respondents

Category	Subcategory	Percentage
Gender	Male	33.6%
	Female	64.3%
	Prefer not to say	2.1%
Age levels	18-23	18.5%
	24-30	30.4%
	31-45	23.2%
	46-54	16.1%
	55-65	9.2%
	66-86	2.7%
Education level	Less than High School	1.5%
	High School Diploma	18.2%
	Bachelor´s degree	51.5%
	Master's degree	27.1%
	PhD	1.8%
Professional status	Employed full-time	54.3%
	Employed part-time	4.8%
	Self-employed	10.4%
	Unemployed	3.9%
	Student	3.3%
	Retired	23.3%
Nationality	Portuguese	67.3%
	UK	4.5%
	USA	3.0%
	Others	25.2%
Residence	Portugal	69.3%
	UK	10.1%
	Other	20.6%
Duration	< 6 months	3.3%
	6-2 years	5.7%
	>2 years	91.1%

The analysis of the other demographics also revealed a very diverse profile of respondents (Table 2). Notably, the majority identify as female (64.3 %). In terms of education, more than half achieved, as the highest education level completed, a bachelor's degree (51.5%). The great majority of the people were employed full-time (54.3%). The most common nationality present in the sample was Portuguese (67.3%), although the sample accounted for various respondents from the continents Africa, America, Asia, Australia as well as

many other European countries. Noticeably, the place of current residence described a similar pattern, with Portugal being the most representative (69.3%). It is also worth mentioning that the majority of the sampled (91.1%) have lived in their current residence for over two years.

5.2 Estimations

The software SmartPlS, version 4, was used to estimate a causal model. Data treatment was made in two stages: first, by evaluating the individual measures' reliability, convergent validity, and the constructs' discriminant validity; and second, by analysing the structural model.

5.2.1   Model 1

Model 1 is defined by the choice of a low-involvement product, the product A.

5.2.1.1 *Measurement model results: reflective model*

The evaluation of reflective measurement models is conducted using the following coefficients: indicator reliability, internal consistency reliability, convergent validity, and discriminant validity.

It was detected one problem due to the low value of average variance extracted (AVE) of the construct Personal Involvement Inventory (PII) and, because of that, the item PIIA was eliminated from the estimations. The next tables show that the remaining items and constructs support the quality criteria of the reflective model.

Table 3. Outer loadings, construct reliability and validity

Constructs	Items	Outer loadings	Composite reliability (rho_c)	AVE
Brand Credibility (BC)	BC1	0.696	0.900	0.643
	BC2	0.831		
	BC3	0.826		
	BC4	0.850		
	BC5	0.797		
Greenwashing perceptions (GWP)*	GWP1	0.779	0.911	0.673
	GWP2	0.856		
	GWP3	0.820		
	GWP4	0.876		
	GWP5	0.765		
Personal Involvement Inventory (PII)	PII2	0.654	0.779	0.543
	PII3	0.848		
	PII4	0.695		
Green Trust (GT)	GT1	0.843	0.913	0.724
	GT2	0.882		
	GT3	0.902		
	GT4	0.770		

Note: (*) – Reversed.

Indicator loadings, or correlations between the indicators and their respective constructs, above 0.708 are recommended. However, indicators with loadings between 0.4 and 0.708 "should be considered for removal only when deleting the indicator leads to an increase in the internal consistency reliability or convergent validity" (Hair et al., 2017). Thus, Table 3 shows that the outer loadings are equal to or above 0.654 with convergent validity of each construct to explain the variance of its indicators, the average variance extracted (AVE) above 0.5.

To analyse a construct's internal consistency and reliability, the composite reliability (rho c) was used once it is not assumed that all indicators are equally weighted and have identical weights. The lowest value of the construct reliability is the construct PII (0.779) which is close enough to the minimum threshold of 0.8 (Hair et al., 2017).

To assess the discriminant validity of each construct whether it is distinct from other constructs, it was used the Heterotrait-monotrait (HTMT) ratio criterion in the next table. This ratio shows that all values are below 0.90 for constructs that are conceptually very similar or below 0.85 for more distinct constructs (Henseler et al., 2015).

Table 4. Discriminant validity: Heterotrait-monotrait ratio (HTMT) matrix

	BC	GWP	GT
Greenwashing perceptions*	0.250		
Green Trust	0.828	0.256	
Personal Involvement Inventory	0.533	0.156	0.541

Note: (*) – Reversed scale.

5.2.1.2 Measurement model results: formative model

The formative measurement models are assessed based on the indicator collinearity and the significance and relevance of indicator weights which measure the contribution of each item for the variance of its construct.

Starting by the outer weights, all of them are significant meaning that the items are retained in the analysis. The p-values rely on the bootstrapping procedure. The indicator collinearity is assessed by the variance inflation factor, VIF (Fornell and Bookstein, 1982).

Table 5. The outer weights

Constructs	Items	Outer weights	P values
Brand Credibility (BC)	BC1	0.251	0.000
	BC2	0.253	0.000
	BC3	0.225	0.000
	BC4	0.273	0.000
	BC5	0.247	0.000
Greenwashing perceptions (GWP)*	GWP1	0.197	0.000
	GWP2	0.257	0.000
	GWP3	0.199	0.000
	GWP4	0.362	0.000
	GWP5	0.191	0.000
Personal Involvement Inventory (PII)	PII2	0.299	0.000
	PII3	0.584	0.000
	PII4	0.444	0.000
Green Trust (GT)	GT1	0.292	0.000
	GT2	0.302	0.000
	GT3	0.304	0.000
	GT4	0.276	0.000

Note: (*) – Reversed scale.

Table 6. Collinearity diagnostics

	VIF
BC1	1.452
BC2	2.243
BC3	2.482
BC4	2.252
BC5	1.940
GT1	2.269
GT2	2.582
GT3	3.079
GT4	1.647
GWP1*	1.999
GWP2*	2.394
GWP3*	2.261
GWP4*	2.171
GWP5*	1.834
PII2	1.241
PII3	1.292
PII4	1.122

Table 6 supports the requisite that all the values for the VIFs are below the threshold value of 3.3 (Fornell, C. and Bookstein, F. L., 1982), meaning that there is no collinearity problem.

5.2.1.3 Structural model measurement

The evaluation of the structural model is done by the collinearity among predictor constructs, significance and relevance of path coefficients, explanatory power in-sample, and out-of-sample predictive power.

The collinearity among predictor constructs

The collinearity among the constructs, viewed in the next table, shows that there isn't a collinearity problem.

Table 7. Inner VIF results

	BC	Green Trust
Age		1.015
BC		1.315
GWP	1.000	1.166
PII		1.377
PII x BC		1,433
PII x GWP		1.039

The explanatory power in-sample

The explanatory power in-sample is analysed through the coefficient of determination (R^2) which is a measure of the model's explanatory power (Shmueli & Koppius, 2011), also referred to as in-sample predictive power (Rigdon, 2012). The R^2 varies from 0 to 1, with higher values indicating a greater explanatory power. As a general guideline, values of 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak, respectively, in many social science disciplines (Hair, Ringle, & Sarstedt, 2011).

Table 8. R-square and R-square adjusted

	R-square	P values	R-square adjusted	P values
Brand Credibility	0.055	0.012	0.053	0.017
Green Trust	0.545	0.000	0.538	0.000

Table 8 shows that, after correcting the value of R^2 by the number of independent variables and the sample size, 53.8% of the variations in the dependent variable Green Trust are explained by the estimated model with intensity considered to be moderate (Hair, Ringle, and Sarstedt, 2011). Only 5,3% of the variations in Brand Credibility are explained by Greenwashing Perceptions, which is considered to be weak, despite being significant. Hair, Ringle, and Sarstedt, (2011) argue, as a general guideline, that R^2 values of 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak, respectively, in many social science disciplines.

The predictive power of the model

The out-of-sample predictive power of this model is assessed by the measure Q^2 predict power.

Table 9. The model's predict power

Manifest Variables:			Latent Variables	
	Q² predict			Q² predict
BC1A	0.033		Brand Credibility	0.048
BC2A	0.029		Green Trust	0.140
BC3A	0.008			
BC4A	0.043			
BC5A	0.036			
GT1A	0.124			
GT2A	0.060			
GT3A	0.120			
GT4A	0.100			

The Q^2 predict power is used to determine whether a model has predictive relevance or not, with values above zero indicating that the model has predictive relevance if its values are greater than 0 in terms of manifest variables or indicators and latent variables. The holdout sample is separated from the total sample before executing the initial analysis on the training sample data, so it includes data that were not used in the model estimation.

5.2.1.4 The estimated coefficients and their significance

A non-parametric approach, a bootstrapping procedure with 5000 re-sampling is used to analyse the identified hypotheses (Fornell and Larcker, 1981; Chin, 1998).

Table 10. The estimated coefficients and their significance

Dependent variables		Direct effects	P values	Total effects	P values
Brand Credibility	GWP	0.235	0.000	0.235	0.000
Green Trust	Age	0.062	0.088	0.062	0.088
	BC	0.647	0.000	0.647	0.000
	GWP	0.086	0.042	0.238	0.000
	PII	0.145	0.001	0.145	0.001
	PII x GWP	0.029	0.538	0.029	0.538
	PII x BC	-0.033	0.379	-0.033	0.379

It is concluded that there is a mediating effect, if the signs of the estimates of Greenwashing effects are not considered since (1) Greenwashing perceptions significantly explain Brand Credibility ($\hat{\beta} = 0.235; Pvalue = 0.000$), (2) Greenwashing perceptions significantly explain Green Trust ($\hat{\beta}_{\text{Total Effect}} = 0.238; Pvalue = 0.000$), and (3) Brand Credibility significantly explains Green Trust ($\hat{\beta} = 0.647; Pvalue = 0.000$). Thus, hypothesis 2 is partially validated.

Moreover, Greenwashing Perception has a positive effect on Green Trust; therefore, hypothesis 1a is not validated. It is noticed that there is an indirect effect of GW on GBT (0.152). Likewise, Greenwashing Perception has a positive effect on Brand Credibility; thus, hypothesis 1b is not validated.

Additionally, Consumers' Trust in green brands is significantly and positively explained by Brand Credibility ($\hat{\beta} = 0.647; Pvalue = 0.000$), thus validating Hypothesis 3.

It is also inferred that Personal Involvement Inventory cannot be a moderator in any of the cases since the interaction effects are not significant ($\text{Pvalue}_{\text{PII}\times\text{GWP}} = 0.538$; $\text{Pvalue}_{\text{PII}\times\text{BC}} = 0.379$). Therefore, hypotheses 4a and 4b are not validated. However, Personal Involvement Inventory is a control variable ($\hat{\beta} = 0.145; Pvalue = 0.001$), validating hypothesis 4c.

Finally, hypothesis 5 is not validated since Age is not a significant control variable ($\hat{\beta} = 0.062; Pvalue = 0.088$).

In summary, the validations of the research hypotheses are reported in the next table.

Table 11. The validation of the hypotheses

Hypotheses	Validation
Hypothesis 1a: Greenwashing Perceptions negatively influence Green Trust.	**Not validated** $\begin{bmatrix} \hat{\beta}_{\text{Total Effect}} = 0.238 \\ (0.000) \end{bmatrix}$
Hypothesis 1b: Greenwashing Perceptions negatively influence Brand Credibility	**Not validated** $\begin{bmatrix} \hat{\beta}_{\text{Total Effect}} = 0.235 \\ (0.000) \end{bmatrix}$
Hypothesis 2: Brand Credibility mediates the relationship between Greenwashing Perceptions and Consumers' Trust in green brands	**Partially validated**
Hypothesis 3: Consumers' Trust in green brands is positively influenced by brand credibility.	**Validated**
Hypothesis 4a: Personal Involvement moderates the relationship between Greenwashing perceptions and Brand Credibility.	**Not validated**
Hypothesis 4b: Personal Involvement moderates the relationship between Greenwashing perceptions and Brand Credibility.	**Not validated**
Hypothesis 4c: Personal Involvement explains Green Trust	**Validated**
Hypothesis 5: Age is a control variable	**Not Validated**

The final estimated model 1 is
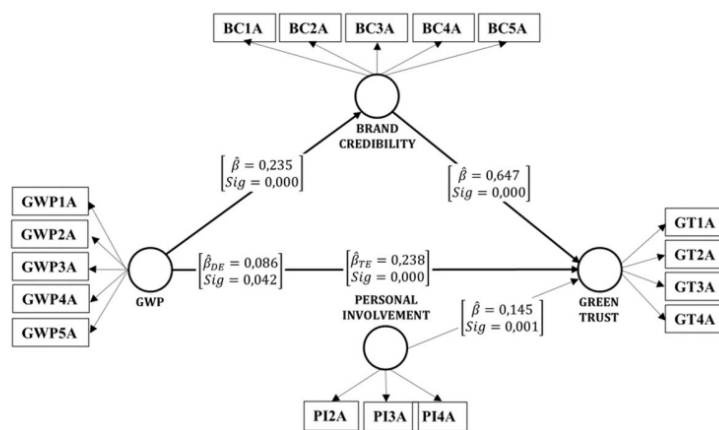
Note: (*) – Reversed scale

Figure 1 – The estimated final model 1

5.2.2 Model 2

Model 2 is defined by the choice of a high-involvement product, the product B.

5.2.2.1 Measurement model results: reflective model

Many problems were found with several items, and after 'cleaning' all the items to meet the quality requirements, we came up with one single construct, the Greenwashing Perceptions due to the problems with discriminant validity with Green Trust; also, several items were eliminated from the analysis due to problems encountered with multicollinearity between items. Table 12 shows the remaining items.

Table 12. Outer loadings, construct reliability and validity

Constructs	Items	Outer loadings	Composite reliability (rho_c)	AVE
Brand Credibility (BC)	BC1	0.771	0.908	0.7713
	BC3	0.886		
	BC4	0.892		
	BC5	0.822		
Greenwashing perceptions (GWP)	GWP1*	1.000	—	—
Personal Involvement Inventory (PII)	PII1	0.746	0.887	0.906
	PII2	0.797		
	PII3	0.789		
	PII4	0.606		
Green Trust (GT)	GT1	0.908	0.951	0.546
	GT2	0.924		

Note: (*) – Reversed scale.

Table 12 shows that the outer loadings are equal to or above 0.606 with convergent validity of the average variance extracted (AVE) above 0.5.

To analyze the internal consistency and reliability of a construct, the composite reliability values (rho c) is used. The lowest value of the construct reliability is the construct PII (0.887) which surpasses the minimum threshold of 0.8 (Hair et al., 2017).

To assess discriminant validity, it was used the Heterotrait-monotrait (HTMT) ratio criterion, visible in the next table. This ratio shows that all values are below 0.90.

Table 13. Discriminant validity: Heterotrait-monotrait ratio (HTMT) matrix

	Brand Credibility	Green Trust
Green Trust	0.867	
Personal Involvement Inventory	0.605	0.591

5.2.2.2 Measurement model results: formative model

The formative measurement models are assessed based on the indicator collinearity and the significance and relevance of indicator weights.

Starting with the outer weights, all the items related to their constructs are significant, meaning that the items significantly contribute to the variance of their constructs. The p-values rely on the bootstrapping procedure. The indicator collinearity is assessed by the variance inflation factor, VIF (Fornell and Bookstein, 1982).

Table 14. The outer weights

Constructs	Items	Outer weights	P values
Brand Credibility (BC)	BC1	0.771	0.000
	BC3	0.886	0.000
	BC4	0.892	0.000
	BC5	0.822	0.000
Greenwashing Perceptions (GWP)	GWP1*	1.000	n/a
Personal Involvement Inventory (PII)	PII1	0.746	0.000
	PII2	0.797	0.000
	PII3	0.789	0.000
	PII4	0.606	0.000
Green Trust (GT)	GT1	0.952	0.000
	GT2	0.952	0.000

Note: (*) - Reversed scale.

Table 15. Collinearity diagnostics

	VIF
BC1	1.649
BC3	2.751
BC4	2.726
BC5	1.903
GT1	1.662
GT2	1.307
GT4	1.535
GWP1*	1.000
PII1	1,690
PII2	1,799
PII3	1,441
PII4	1,179

Table 15 supports the requisite that all the values for the VIFs are below the threshold value of 3.3 (Fornell, C. and Bookstein, F. L., 1982), meaning there is no collinearity problem between items and their constructs.

5.2.2.3 Structural model measurement

The evaluation of the structural model is verified by the collinearity among predictor constructs, significance and relevance of path coefficients, explanatory power in-sample, and out-of-sample predictive power.

The collinearity among predictor constructs

The collinearity among the constructs, viewed in the next table, shows that there isn't a collinearity problem between constructs and variables.

Table 16. Inner VIF results

	Brand Credibility	Green Trust
Age		1.019
Brand Credibility		1.471
Greenwashing Perceptions (GWP)*	1.000	1.033
Personal Involvement Perceptions (PII)		1.369
PIP x BC		1.136
PIP x GWP		1.196

Note: (*) - Reversed scale.

The explanatory power in-sample

The explanatory power in-sample is analysed through the coefficient of determination (R^2) and is a measure of the model's explanatory power (Shmueli & Koppius, 2011), also referred to as in-sample predictive power (Rigdon, 2012). The R^2 varies from 0 to 1, with higher values indicating a greater explanatory power. As a general guideline, values of 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak, respectively, in many social science disciplines (Hair, Ringle, & Sarstedt, 2011). About 60% of the variations of green trust is explained by the estimated model, after adjusting for the sample size and the number of independent variables.

Table 17. R-square and R-square adjusted

	R-square	P values	R-square adjusted	P values
Brand Credibility	0.016	0.202	0.013	0.297
Green Trust	0.610	0.000	0.603	0.000

The predictive power of the model

The out-of-sample predictive power of this model assessed by the measure Q^2 predict power, in terms of manifest and latent variables are shown in the next table. All the values should be above 0, meaning that the model has predictive relevance.

Table 18. The model's predict power

Manifest Variables:

	Q^2 predict
BC1B	0.004
BC3B	0.009
BC4B	0.003
BC5B	0.015
GT1B	0.116
GT2B	0.120

Latent Variables:

	Q^2 predict
BC1B	0.011
BC3B	0.131

5.2.2.4 The estimated coefficients and their significance

A non-parametric approach, a bootstrapping procedure with 5000 re-sampling is used to analyse the identified hypotheses (Chin, 1998; Fornell and Larcker, 1981).

Table 19. The estimated coefficients and their significance

Dependent variables		Direct effects	P values	Total effects	P values
Brand Credibility	GWP*	0.128	0.009	0.128	0.009
Green Trust	Age	0.087	0.029	0.087	0.029
	BC	0.691	0.000	0.691	0.000
	GWP*	0.015	0.684	0.103	0.017
	PII	0.131	0.002	0.131	0.002
	PII x GWP	0.039	0,160	0.039	0,160
	PII x BC	-0.002	0.930	-0.002	0.930

Note: (*) – Reversed scale.

It is concluded that Greenwashing Perception does not negatively influence Green Trust as hypothesised. The total effect of Greenwashing Perception on Green Trust is positive ($\hat{\beta} = 0.103$; Pvalue $= 0.017$) and there is also an indirect effect (0.088) towards the GT, leading to the non-validation of Hypothesis 1a. Additionally, Hypothesis 1b is also not validated because Greenwashing Perception positively affects Brand Credibility ($\hat{\beta} = 0.128$; Pvalue $= 0.009$).

Moreover, there is a total (complete) mediating effect, if the signs of the estimates of Greenwashing effects are not considered, since (1) Greenwashing perceptions significantly explain Brand Credibility ($\hat{\beta} = 0.128$; Pvalue $= 0.009$), (2) Greenwashing perceptions significantly explain Green Trust in terms of total effect ($\hat{\beta}_{Total\ Effect} = 0.103$; $Pvalue = 0.017$) with a significant indirect effect ($\hat{\beta} = 0.088$; Pvalue $= 0.011$), and (3) Brand Credibility significantly explains Green Trust ($\hat{\beta} = 0.691$; $Pvalue = 0.000$). Thus, hypothesis 2 is validated.

Furthermore, Consumers' Trust in green brands is positively influenced by Brand Credibility ($\hat{\beta} = 0.691$; Pvalue $= 0.000$), thus validating Hypothesis 3.

It is also concluded that Personal Involvement Inventory cannot be a moderator since the interaction effects are not significant (Pvalue$_{PII \times BC} = 0,160$; Pvalue$_{PII \times GWP} = 0,930$). Therefore, Hypothesis 4a and 4b are not validated. However, Personal Involvement Inventory is a control variable ($\hat{\beta} = 0.131$; $Pvalue = 0.002$), therefore hypothesis 4c is validated.

Finally, Age explains Green Trust ($\hat{\beta} = 0.087$; $Pvalue = 0.029$), validating hypothesis 5 as control variable.

In summary, the validations of the research hypotheses are viewed in the next table.

Table 20. The validation of the hypotheses

Hypotheses	*Validation*
Hypothesis 1a: Greenwashing Perceptions negatively influence Green Trust.	**Not validated** $(\hat{\beta}_{\text{Total effect}} = 0.103)$
Hypothesis 1b: Greenwashing Perceptions negatively influence Brand Credibility	**Not validated** $\hat{\beta} = 0.128$
Hypothesis 2: Brand Credibility mediates the relationship between Greenwashing perceptions and Consumers' Trust in green brands.	**Partially validated**
Hypothesis 3: Consumers' trust in green brands is positively influenced by Brand Credibility.	**Validated**
Hypothesis 4a: Personal Involvement moderate the relationship between Greenwashing Perceptions and Brand Trust.	**Not validated**
Hypothesis 4b: Personal Involvement moderate the relationship between Brand Credibility and Brand Trust.	**Not validated**
Hypothesis 4c: Personal Involvement explains Green Trust	**Validated**
Hypothesis 5: Age is a control variable	**Validated**

The final estimated model 2 is:
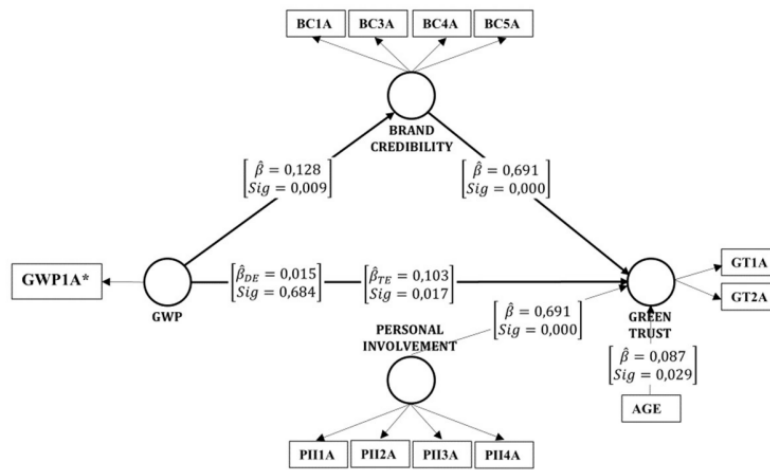
Note: (*) – Reversed scale

Figure 2 – The estimated final model 2

5.3 Discussion of Results and Theoretical Implications

The findings of this study contribute to the existing literature on greenwashing, brand credibility, green trust, and personal involvement by providing various insights into how these different variables interact in the context of greenwashing ads for low-involvement (Product A) and high-involvement (Product B) products.

Contrary to previous insights from the literature, in this study, greenwashing perceptions positively influenced brand credibility and green trust, especially in high-involvement products, leading to the decision of partially validated Hypotheses 1a and 1b. This finding diverges from the prevalent view of the literature that greenwashing negatively impacts brand credibility and consumer trust (Delmas & Burbano, 2011; Chen & Chang, 2013). Delmas and Burbano (2011) argued that greenwashing negatively impacts the brand in question and erodes trust. The positive effect observed may suggest that consumers might not perceive or comprehend certain green claims as greenwashing or deceiving claims, likely due to a lack of awareness and information or simply because they interpret these claims as a sign of the brand's commitment to environmental concerns.

Secondly, the mediating role of brand credibility between greenwashing perceptions and green trust was validated in both product contexts (Hypothesis 2). This aligns with Chen and Chang (2013), who emphasised that brand credibility is vital in determining consumers' trust in brands that make use of green claims. The significant positive influence of brand credibility on green trust is in accordance with previous research suggesting that credible brands are more likely to support consumer trust even amidst greenwashing concerns (Martínez & Rodríguez del Bosque, 2013; Wang et al., 2019).

The non-significant moderating role of personal involvement (Hypothesis 4a) also contrasts with the ideas of the importance of product involvement in assessing environmental claims (Singh et al., 2008; Nagar, 2015). Previous studies posited that highly involved consumers are more discerning and sceptical of greenwashing tactics (Wei et al., 2017). Nonetheless, the findings of this study suggest that personal involvement does not significantly shift the relationship between greenwashing perceptions, brand credibility, and green trust. This could imply that, regardless of involvement level, consumers may not be adequately equipped to detect greenwashing or that other factors, namely brand loyalty or perceived benefits, play a more crucial role.

Finally, age as a control variable was significant in the high-involvement product context, yet not in the low-involvement context (Hypothesis 5). This partially supports the literature indicating that younger consumers are more environmentally conscious and supportive of green brands (Wang et al., 2013; Kanchanapibul et al., 2014). The significance of age in high-involvement products may be due to the higher perceived risk, higher purchasing power, more deliberation and the greater information processing associated with green product purchases in the decision-making phase, leading younger consumers to place more trust in credible green claims.

These findings have several theoretical implications. Considering the study's results, the re-evaluation of Greenwashing effects shows that greenwashing perceptions positively influence brand credibility and trust, suggesting a need to re-examine the assumed negative effects of greenwashing. It may indicate that consumers either do not recognise greenwashing or perceive green claims positively. Secondly, brand credibility is important since the strong mediating role of brand credibility underscores its critical importance in green marketing, as it supports the idea that brand credibility can tackle potential negative perceptions and boost consumer trust. The lack of a moderating effect role from personal involvement suggests that involvement levels may not significantly influence consumer perceptions of greenwashing and brand credibility. This finding also contrasts with theories that advocate for segmentation based on involvement levels and suggests more research into other moderating factors. Lastly, the differential effect of age across product involvement levels portrays the complexity of demographic factors in green marketing. Thereby, it suggests that age-related attitudes towards green products might vary depending on the product category and its involvement level.

5.4 Discussion of Results and Managerial Implications

The study provides actionable insights for managers and organisations aiming to enhance consumer brand trust, especially in their positioning regarding the complexities of greenwashing perceptions when proclaiming or taking some advantage from green claims.

Given the pivotal role of brand credibility in influencing green trust, companies should invest in developing and maintaining a credible brand image. The literature highlights transparent communication of environmental practices, consistent messaging, and authentic engagement in sustainability initiatives (Chen & Chang, 2013; Martínez &

Rodríguez del Bosque, 2013). Managers should ensure that all green claims are trustworthy and verifiable to ensure a boost towards a positive CSR image.

The unprecedented positive impact of greenwashing perceptions may suggest that consumers may respond favourably to green messaging, even if the statements are not entirely accurate. However, managers should approach this prudently. While superficial green claims might hold short-term benefits, they risk long-term brand reputation damage if consumers eventually perceive them as deceptive (Delmas & Burbano, 2011). Therefore, it is crucial to balance green messaging with honest environmental claims.

Considering personal involvement did not moderate the relationships observed, organisations might consider adopting homogenous green marketing strategies across different product involvement levels. This implies that both low- and high-involvement products can benefit from strong brand credibility and trustworthy green claims.

Managers should also be aware that while consumers may respond positively to green claims, increasing awareness of greenwashing could shape this perception. This can be tackled by implementing third-party certifications and engaging in transparent reporting, further enhancing trust.

The findings indicate an opportunity for brands to leverage positive consumer perceptions of green initiatives. Companies can strengthen their brand credibility and foster deeper consumer trust through emphasising environmental efforts and demonstrating a consistent commitment towards sustainability.

Managers should recognise that displaying and maintaining green trust is a long-term effort. Short-term gains from dubious green claims are overshadowed by the potential loss of trust and brand equity over time (Siano et al., 2017). An honest commitment to sustainability practices is essential for enduring brand success in the long-term.

6. Conclusions, Limitations and Future Research

6.1 Conclusions

This study explored the complex relationships between greenwashing perceptions, brand credibility, green trust, and personal involvement in the context of low-involvement (Product A) and high-involvement (Product B) scenarios of ads towards green products. The findings offer nuanced insights that align with and challenge existing literature, providing a richer understanding of consumer behaviour in green marketing.

Firstly, the mediating role of brand credibility between greenwashing perceptions and green trust was validated for both low- and high-involvement products, highlighting the importance of brand credibility in fostering consumer trust in green products. Brands that maintain a credible image can undermine possible negative perceptions arising from greenwashing concerns. This conclusion aligns with Chen and Chang (2013), who emphasised that brand credibility is crucial in developing consumers' trust in green brands.

However, contrary to widespread expectations and existing literature, greenwashing perceptions positively influenced brand credibility and green trust. Although this conclusion may shift from the prevalent view that greenwashing erodes brand credibility and consumer trust (Delmas & Burbano, 2011; Chen & Chang, 2013), one possible explanation for this finding could be a reflection of poorly informed consumers. Another possibility is that consumers may not be fully aware of greenwashing practices or may interpret green claims, regardless of their authenticity, as characteristic of a brand's commitment to environmental issues. This suggests a gap in consumer awareness and underscores the need for better education on environmental claims.

The study also found that personal involvement did not moderate the relationships between greenwashing perceptions, brand credibility, and green trust, which challenges predominant theories that suggest highly involved consumers are more discerning and sceptical of greenwashing tactics (Nagar, 2015; Wei et al., 2017). The lack of a significant moderating effect implies that consumers may not effectively detect greenwashing practices regardless of their involvement level. This could be due to a general lack of understanding of greenwashing or perhaps a trust in brands that overshadows scepticism.

Additionally, age emerged as a significant control variable in the context of high-involvement products, yet not in low-involvement ones. This finding partially supports prior research in the context of high-involvement products, indicating that younger consumers are more environmentally conscious and supportive of green brands (Wang et al., 2013; Kanchanapibul et al., 2014).

These findings contribute to the theoretical understanding of green marketing by highlighting the complex correlations between consumer perceptions and behaviours. Furthermore, they suggest that while brand credibility remains pivotal for boosting green trust, portraying a negative impact of greenwashing on consumer trust may not be as straightforward as previously thought. The positive influence of greenwashing perceptions indicates a need to reevaluate how consumers interpret and respond to environmental claims.

6.2   Limitations of the Study

This study, while delivering valuable insights, presents certain limitations that must be recognised:

The sample was predominantly Portuguese (67.3%), female (64.3%), and age (73.6% of respondents is aged up to 45 years old) which may bias the generalisability of the findings to other cultural contexts or a more gender-balanced population. Cultural factors, access to information and availability of options can significantly influence consumer perceptions of green marketing and trust in brands.

The study may also rely on self-reported responses subject to social desirability bias. Participants may have provided responses they believed were socially acceptable rather than their true considerations and practices, especially regarding environmentally friendly behaviours and attitudes.

The research utilised a cross-sectional design, capturing consumer perceptions at a single point in time. This method fails to consider perception adjustments over time, reactions to volatile market circumstances, and greater awareness of greenwashing methods.

The study focused on one low-involvement and one high-involvement product. This narrow focus may not capture the full spectrum of consumer behaviours across different product categories or brand loyalty for certain products, which may have a more influential role than perceived risks of greenwashing or green awareness. Moreover, the

presence of only two categories of products could affect the perceptions as they could be not as familiar, recognisable or of recurrent usage from the respondents.

The study also did not include much qualitative data that could provide other valuable insights into why consumers perceive greenwashing positively or the factors behind their trust in green brands.

6.3   Future Research Directions

Broadening the study to introduce a more diverse and globally representative sample would enhance the generalizability of the findings. Cross-cultural comparisons could reveal how cultural values and norms influence perceptions of greenwashing, brand credibility, and trust.

Integrate the age in the estimations as an ordinal variable. Future research designs could include, for example, two groups: up to 45 years old and more than 45 years old, instead of considering the variable as a quantitative variable

Longitudinal research would allow for examining how consumer perceptions evolve significantly as awareness of environmental issues and greenwashing practices increases. This could provide insights into the long-term effects of green marketing strategies on brand credibility and trust.

Incorporating validated scales or combining quantitative and qualitative assessments might capture consumer perceptions more accurately.

Including a broader range of product categories across different industries would help determine whether the observed relationships hold different insights in other contexts.

A deeper investigation of the role of consumer education and awareness campaigns on the ability to detect greenwashing could provide valuable findings. Experimental studies that manipulate the level of information provided to consumers could assess how knowledge affects trust and purchasing behaviours.

Understanding psychological factors, such as cognitive dissonance, optimism bias, or the halo effect, might explain why consumers respond positively to greenwashing. Acknowledging these factors could help design interventions to tackle the influence of deceptive green claims.

Taking into consideration the growing influence of social media on consumer perceptions, studies could explore how online platforms contribute to the dissemination of greenwashing claims and the development of brand trust.

Although personal involvement did not moderate relationships in this study, future research could further investigate segmentation strategies. Understanding if and how different consumer segments respond to green marketing communication can help construct more effective communication strategies.

7. References

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Annexes

Annex 1: Questionnaire in English

 Dear Respondent,

Thank you for considering contributing to my research on Green Advertising and its influence on brand credibility and consumer engagement. I am Francisco Santos, a master's student in Marketing at ISCTE-Business School, University Institute of Lisbon.

Your participation in this brief 8-10 minute survey will provide valuable insights for my thesis. Please rest assured that your responses will remain anonymous and be used solely for academic purposes.

Should you have any questions or require further information, do not hesitate to contact me at francisco_teixeira_santos@iscte-iul.pt.

I am deeply appreciative of your willingness to assist in the success of this study.

Warm regards, Francisco Teixeira Santos, Marketing Student, ISCTE Business School, University Institute of Lisbon.

0- Considering Green products as products designed and produced to have less of an impact on the environment than traditional goods, including items made from recycled or recyclable materials, energy-efficient, non-toxic or biodegradable, organic food, energy-efficient appliances, or environmentally friendly clothes, (Gleim et al., 2013 & Ottman et al., 2006). Examples of such products may be reusable shopping bags, LED light bulbs, organic food, biodegradable cleaning products, recycled paper products, eco-friendly clothing, solar-powered devices, non-toxic personal care items, compostable utensils, electric and hybrid vehicles, reusable water bottles, environmentally friendly furniture. Based on these premises, how often do you buy these types of products:

Repeatedly/Often	☐
Every other month	☐
Two times every six months	☐
Once a year	☐
Never	☐

How do brand credibility and personal involvement influence consumers' green brand trust in the presence of greenwashing?

Context Image A:

Below is an example of green advertising. The image showcases a cleaning product where the bottle claims it is made from 100% ocean plastic. This initiative is highlighted to emphasize the brand's commitment to sustainability and environmental responsibility. The advertisement aims to appeal to consumers' awareness of the launch of the first ever ocean plastic bottle of a major home cleaning brand.

1.1 How often would you consider buying this type of product …?

Product A (Image A)

Every month	☐
Every other month	☐
Two times every six months	☐
Once a year	☐
Never	☐

1.2 Do you have a preferred brand of this category? If yes which one:
- Yes ☐
  - Which one: _____
- No ☐

2. How do you answer the following questions?
Please use the following ordinal scale from 1 to 7 (being 1= strongly disagree to 7= strongly agree)

Greenwashing perceptions:	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Neither agree nor disagree	5 Slightly agree	6 Agree	7 Strongly agree	9 Not sure	10 Not applicable
This product misleads with words in its environmental features.	☐	☐	☐	☐	☐	☐	☐	☐	☐
This product possesses a green claim	☐	☐	☐	☐	☐	☐	☐	☐	☐

that is vague or seemingly un-provable.									
This product misleads with visuals or graphics in its environmental features.	☐	☐	☐	☐	☐	☐	☐	☐	☐
This product overstates or exaggerates how its green functionality actually is.	☐	☐	☐	☐	☐	☐	☐	☐	☐
This product leaves out or masks important information, making the green claim sound better than it is.	☐	☐	☐	☐	☐	☐	☐	☐	☐

3. How do you answer the following questions?

Please use the following ordinal scale from 1 to 7 (being 1= strongly disagree to 7= strongly agree)

Brand Credibility:	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Neither agree nor disagree	5 Slightly agree	6 Agree	7 Strongly agree	9 Not sure	10 Not applicable
This brand reminds me of someone who's competent and knows what he/she is doing	☐	☐	☐	☐	☐	☐	☐	☐	☐
This brand has the ability to deliver what it promises	☐	☐	☐	☐	☐	☐	☐	☐	☐
This brand delivers what it promises	☐	☐	☐	☐	☐	☐	☐	☐	☐
This brand's product claims are believable	☐	☐	☐	☐	☐	☐	☐	☐	☐
This brand doesn't pretend to be something it isn't	☐	☐	☐	☐	☐	☐	☐	☐	☐

4. How do you answer the following questions?

Please use the following ordinal scale from 1 to 7 (being 1= strongly disagree to 7= strongly agree)

Personal involvement:	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Neither agree nor disagree	5 Slightly agree	6 Agree	7 Strongly agree	9 Not sure	10 Not applicable
I would be interested in reading information	☐	☐	☐	☐	☐	☐	☐	☐	☐

about how the product is made	☐	☐	☐	☐	☐	☐	☐	☐	☐
I would compare product characteristics among brands of this product.	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think there are a great deal of differences among brands of this product.	☐	☐	☐	☐	☐	☐	☐	☐	☐
I have a most preferred brand of this product.	☐	☐	☐	☐	☐	☐	☐	☐	☐

5. How do you answer the following questions?

Please use the following ordinal scale from 1 to 7 (being 1= strongly disagree to 7= strongly agree)

Green Trust:	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Neither agree nor disagree	5 Slightly agree	6 Agree	7 Strongly agree	9 Not sure	10 Not applicable
I believe that this brand's environmental image is generally reliable.	☐	☐	☐	☐	☐	☐	☐	☐	☐
I think that this brand's environmental functionality is generally dependable.	☐	☐	☐	☐	☐	☐	☐	☐	☐
I believe that this brands' environmental arguments is generally trustworthy.	☐	☐	☐	☐	☐	☐	☐	☐	☐
This product's environmental performance meets my expectations.	☐	☐	☐	☐	☐	☐	☐	☐	☐

Context Image B

Below is an example of green advertising. The image showcases a car being promoted with the tagline "Clean Diesel. Like really clean diesel." This initiative emphasises the brand's commitment to producing environmentally friendly diesel vehicles. The advertisement aims to appeal to eco-conscious consumers by suggesting that the vehicle has a significantly reduced environmental impact.

1.1   How often would you consider buying this type of product …?
Product B (Image B)

Every 5 years   ☐
Every 10 years   ☐
Every 15 years   ☐
Rarely   ☐
Never   ☐

1.2 Do you have a preferred brand of this category? If yes which one:
- Yes ☐

   o   Which one: _____

- No ☐

2.   How do you answer the following questions?
Please use the following ordinal scale from 1 to 7 (being 1= strongly disagree to 7= strongly agree)

Greenwashing perceptions:	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Neither agree nor disagree	5 Slightly agree	6 Agree	7 Strongly agree	9 Not sure	10 Not applicable
This product misleads with words in its environmental features.	☐	☐	☐	☐	☐	☐	☐	☐	☐
This product possesses a green claim that is vague or seemingly un-provable.	☐	☐	☐	☐	☐	☐	☐	☐	☐
This product misleads with visuals or graphics in its environmental features.	☐	☐	☐	☐	☐	☐	☐	☐	☐

This product overstates or exaggerates how its green functionality actually is.	☐	☐	☐	☐	☐	☐	☐	☐	☐
This product leaves out or masks important information, making the green claim sound better than it is.	☐	☐	☐	☐	☐	☐	☐	☐	☐

3. How do you answer the following questions?
Please use the following ordinal scale from 1 to 7 (being 1= strongly disagree to 7= strongly agree)

Brand Credibility:	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Neither agree nor disagree	5 Slightly agree	6 Agree	7 Strongly agree	9 Not sure	10 Not applicable
This brand reminds me of someone who's competent and knows what he/she is doing	☐	☐	☐	☐	☐	☐	☐	☐	☐
This brand has the ability to deliver what it promises	☐	☐	☐	☐	☐	☐	☐	☐	☐
This brand delivers what it promises	☐	☐	☐	☐	☐	☐	☐	☐	☐
This brand's product claims are believable	☐	☐	☐	☐	☐	☐	☐	☐	☐
This brand doesn't pretend to be something it isn't	☐	☐	☐	☐	☐	☐	☐	☐	☐

4. How do you answer the following questions?
Please use the following ordinal scale from 1 to 7 (being 1= strongly disagree to 7= strongly agree)

Personal involvement:	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Neither agree nor disagree	5 Slightly agree	6 Agree	7 Strongly agree	9 Not sure	10 Not applicable
I would be interested in reading information about how the product is made	☐	☐	☐	☐	☐	☐	☐	☐	☐
I would compare product characteristics among brands	☐	☐	☐	☐	☐	☐	☐	☐	☐

of this product.									
I think there are a great deal of differences among brands of this product.	☐	☐	☐	☐	☐	☐	☐	☐	☐
I have a most preferred brand of this product.	☐	☐	☐	☐	☐	☐	☐	☐	☐

5. How do you answer the following questions?

Please use the following ordinal scale from 1 to 7 (being 1= strongly disagree to 7= strongly agree)

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I think that this brand's environmental functionality is generally dependable.	☐	☐	☐	☐	☐	☐	☐	☐	☐
I believe that this brands' environmental arguments is generally trustworthy.	☐	☐	☐	☐	☐	☐	☐	☐	☐
This product's environmental performance meets my expectations.	☐	☐	☐	☐	☐	☐	☐	☐	☐

(Another page)

6. Demographics

6.1 What is your age? _____

6.2 What is your gender?

Male ☐
Female ☐
Other ☐
Prefer not to say ☐

6.3 What is the highest level of education you have completed?

Less than High school ☐

High school diploma or equivalent ☐

Bachelor's degree ☐

Master's degree ☐

PhD/Doctoral degree ☐

6.4 What is your current employment status?

Employed full-time ☐

Employed part-time ☐

Self-employed ☐

Unemployment ☐

Student ☐

Retired ☐

6.5 What is your nationality? _____

6.6 Location:

6.6.1 Where do you currently reside? _____

6.6.2 For how long have you lived there?

Up to 6 months ☐

6 months to 2 years ☐

More than 2 years ☐

THANKS!

Annex 2 – Age statistics

Age

N	Valid	336
	Missing	0
Mean		36.37
Median		31.00
Mode		25
Std. Deviation		14.061
Skewness		.776
Std. Error of Skewness		.133
Kurtosis		-.175
Std. Error of Kurtosis		.265
Minimum		18
Maximum		85
Percentiles	25	24.00
	50	31.00
	75	48.00