

HOW THE SOURCE OF THE ADVERTISEMENT INFLUENCES SUSCEPTIBILITY
TO GREENWASHING: THE ROLES OF THE TYPE OF AD, PERCEIVED AD
AUTHENTICITY, AND ENVIRONMENTAL CONCERN

by

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Dalhousie University is located in Mi'kma'ki,
the ancestral and unceded territory of the Mi'kmaq.

We are all Treaty people.

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ABSTRACT

Companies are increasingly making eco-friendly claims, some of which mislead consumers about their true environmental impact. Therefore, greenwashing has become a growing issue in green marketing. This research examines how consumer susceptibility to greenwashing is influenced by different sources of advertisement, specifically when it is shared by a firm or its employees. Using an experimental approach, participants were randomly assigned to an advertisement containing either a genuine or a greenwashing claim and shared by either the firm or an employee. The findings suggest that while the source of the advertisement, on its own, does not impact consumers' susceptibility to greenwashing, a greenwashing (vs. genuine) advertisement shared by an employee is perceived as more authentic, thereby increasing their susceptibility to greenwashing. Additionally, consumers' evaluations of genuine advertisements remained consistent across sources, while their responses to greenwashing advertisements varied depending on the source. Additionally, environmental concern was not found to moderate susceptibility to greenwashing, suggesting that even consumers with high environmental values may be victimized by misleading advertising. These insights underline the need for stricter green marketing standards to address the influence of the sources of advertisements and reduce deceptive environmental claims.

Keywords: Greenwashing, source of advertisement, authenticity, environmental concern

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CHAPTER ONE INTRODUCTION

The current impact of human actions on our planet's health is not only concerning but also detrimental (IPCC, 2023). The need to address the negative impacts of human actions on the environment has led to a stronger focus on promoting pro-environmental behaviors (PEBs), like recycling, conserving energy, and green purchase behaviour (Truelove & Gillis, 2018). This emphasis is highlighted by United Nations' Sustainable Development Goal 12 (2015) to "ensure sustainable consumption and production patterns", which aims to "urgently reduce our ecological footprint" (Bloodhart & Swim, 2020, p.101). With consumers becoming more concerned about the environment, there has been a significant rise in interest in sustainable products (Jain and Kaur, 2004; Teoh and Gaur, 2019), boosting the adoption of green marketing. Green marketing does not have a single definition and encompasses several activities (Gupta et al., 2007). For the scope of this research, green marketing is considered "all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants such that the satisfaction of these needs and wants occurs with minimal detrimental impact on the natural environment" (Polonsky, 1994, p.45).

Green marketing has become a key strategy for businesses to attract consumers who care about the environment, helping companies demonstrate their commitment to sustainable practices (Saxena & Khandelwal, 2010). As noted by Chen and Wu (2014) and Chang (2011), green marketing enables companies to stand out by creating a green brand image. This trend led to an increase in green claims, like "eco-friendly", "carbon-

neutral”, “green”, and “all-natural” on product packaging, websites, and ads (Baum, 2012).

Nevertheless, the rise of green claims has also led to a major issue: greenwashing. Greenwashing refers to “the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service” (TerraChoice, 2009, p. 1). It involves poor environmental practices and the dissemination of misleading information about them (Guo et al., 2018). In recent years, green claims have emerged as a central topic in debates about corporate social responsibility (CSR) and sustainable marketing practices (Lane, 2013). Many companies have been accused of neglecting to match their environmental promises with real actions, failing to “walk the talk” (Walker Wan, 2012). This gap between what companies promise and what they deliver can damage consumer trust and undermine real efforts to protect the environment (Carlson et al., 1993; Parguel et al., 2015).

Organizations like the Competition Bureau Canada (2021), the U.S. Federal Trade Commission (FTC) (2012), and the European Commission (2021) have acknowledged the problem of misleading green claims. They have recommended that marketers use “clear and prominent qualifying language” to communicate the environmental advantages of their products (Federal Trade Commission, 2012, p. 62122). Moreover, it is posited that environmental claims must be specific, and supported by reliable testing, avoiding exaggeration, misinterpretation, or false endorsements (Competition Bureau Canada, 2021). However, these regulations vary widely across different countries and are not always strictly enforced (Delmas & Burbano, 2011), which makes it difficult to hold

companies accountable for greenwashing and harder to address environmental issues related to production and consumption (Marx et al., 2010).

The issue of greenwashing is especially important since consumer choices now have a more substantial impact on the environment than ever before (White et al., 2019). As consumers become more environmentally aware, the pressure increases on companies to substantiate their green claims. Yet, as Baum (2012) points out, many green ads still provide vague claims that don't clearly explain the real environmental benefits of their products. It's important for companies to move beyond superficial claims and truly adopt sustainable practices. Their marketing should align with real efforts to protect the environment, which can help meet consumer expectations for transparency and support broader goals for sustainability (Uddin & Khan, 2016; United Nations Global Compact, 2024). By doing so, businesses can meet social needs better and reduce the negative effects of production and consumption (Marx et al., 2010).

Furthermore, the emergence of social media and influencer marketing has complicated the landscape of green advertising. Social media's fast-paced and informal nature allows green claims to spread quickly without the ideal level of regulatory scrutiny (Tomassi et al., 2024). Social media influencers are ordinary individuals who have built their online presence from the ground up through their social media platforms, thereby establishing a large following (Bastrygina & Lim, 2023). Unlike traditional celebrities or public figures, whose fame and influence come from established careers, influencers achieve prominence independently through their digital content (Lin et al., 2018). Employees have also emerged as a type of influencer for corporations, often being

integrated into marketing strategies to enhance brand authenticity and credibility (Dawkins & Lewis, 2003; De Kerpel & Kerckhove, 2023).

Despite the extensive research on the impact of advertising sources on consumer perception, several gaps remain. While it is known that the source of an advertisement can influence how consumers perceive the message, it is unclear whether different sources impact consumers' susceptibility to greenwashing ads. Additionally, it is not well understood if this influence is exclusive to misleading green advertisements or if it also extends to genuine environmental claims. Lastly, the role of consumers' environmental concern in reducing their susceptibility to greenwashing has not been thoroughly examined. This research aims to fill these gaps, providing insights into how the source of an advertisement affects the credibility of green claims and exploring the relationship between consumer awareness and their ability to discern genuine from misleading green claims.

The rest of this research is organized into three chapters. Chapter Two provides a review and synthesis of the existing literature on greenwashing and advertising sources, analyzing their influence on consumer behavior. It also outlines the formal hypotheses of the study. Chapter Three presents the research methodology, followed by the results and analysis of an online experiment conducted as part of this research. Finally, Chapter Four discusses the study's broader implications, contributions, limitations, and directions for future research.

CHAPTER TWO LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Greenwashing

Consumer behaviour is responsible for causing more negative consequences for the natural environment than ever (White et al., 2019). However, along with this fact, a rise in consumer environmental awareness has also emerged (IPCC, 2023). The McKinsey & NielsenIQ (2023) study analyzed five years of U.S. sales data for 600,000 products across various categories to assess the impact of sustainability-related claims on consumer purchasing behavior. The study found that products with sustainability claims consistently outperformed those without green claims in sales growth, reflecting strong consumer demand for environmentally and socially responsible goods. The PwC Voice of the Consumer Survey (2024) reveals that sustainability remains a top priority for consumers, with 80% of respondents willing to pay more for sustainably produced or sourced goods and some willing to spend a 9.7% premium on green products, with significant demand for products that are locally sourced, made from recycled materials, or have a lower carbon footprint. Furthermore, the Simon-Kucher Global Sustainability Study (2024) reveals a significant trend in consumer attitudes toward sustainability. Notably, 54% of consumers are willing to pay a premium for sustainable products, up from 35% in 2022. Additionally, the study found that 70% of consumers actively verify sustainability claims before making purchases, with this figure rising to around 80% when they suspect greenwashing. Based on this rising interest of consumers in ecological goods and services, companies started to implement more sustainable actions,

communicating their ecological efforts through green marketing claims, as “consumers want to be green. Ergo, advertisers want to be green as well” (Zinkhan & Carlson, 1995, p.5).

Forbes Research (2023) surveyed 1,000 global C-suite leaders – from companies generating a minimum of \$500 million in annual revenue – about their company’s involvement with sustainability. The percentage of companies that rank sustainability among their top three priorities grew by 65% over three years, climbing from 26% in 2020 to 43% in 2023. At the moment, 81% of these firms have appointed a chief sustainability officer or a similar position.

However, the rise of green marketing has also led to greenwashing. Although many dictionaries and scholars define the concept of greenwashing, there is not a universal definition, and it can be considered an umbrella term for different types of misleading communication (Lyon & Montgomery, 2015). The Oxford English Dictionary (2023) defines the act of greenwashing as “to mislead (the public) or counter (public or media concerns) by falsely representing a person, company, product, etc., as being environmentally responsible; to misrepresent (a company, its operations, etc.) as environmentally responsible”. A greenwashing firm “engages in two behaviors simultaneously: poor environmental performance and positive communication about its environmental performance” (Delmas & Burbano, 2011, p. 67). Therefore, greenwashing stands as “two main behaviors simultaneously: retain the disclosure of negative information related to the company’s environmental performance and expose positive information regarding its environmental performance” (De Freitas Netto et al., 2020, p.6).

Over the past 15 years, numerous studies have examined greenwashing practices. One significant study, conducted by TerraChoice (2010), analyzed thousands of products in Canada and the USA that featured green claims. The study revealed that 95% of these claims were misleading, each committing at least one form of greenwashing. A more recent investigation in 2020 in collaboration between the International Consumer Protection and Enforcement Network, the UK's Competition and Markets Authority (CMA), and The Netherlands Authority for Consumers and Markets (ACM), reviewed 500 websites globally promoting products and services across various sectors. This study found that 40% of those websites made misleading green claims. Some of the deceptive tactics identified included the use of vague or ambiguous language (e.g., "eco" or "natural products"), self-created eco logos and labels, and the omission of critical information that could challenge the eco-friendly claims (e.g., pollution levels associated with the products) (Competition and Market Authority, 2021). The decline in deceptive green claims from 95% in 2010 to 40% in 2020 reflects growing awareness of greenwashing and the implementation of stricter regulations over the years. However, despite these advancements, the persistence of misleading claims on a significant portion of websites highlights the need for stronger regulations and more attention to greenwashing, as it remains a major issue.

There are numerous examples of greenwashing, with three notable cases standing out. First, in 2015, Volkswagen was exposed for manipulating emissions tests on its "clean diesel" vehicles. The company installed a software in 11 million cars which produced false eco-friendly readings, while the actual emissions exceeded legal limits by up to 40 times. Despite Volkswagen's public admission of the deception, the scandal still

damaged its reputation. Second, H&M faced criticism in 2021 when a report revealed that 96% of its sustainability claims, including those from its Conscious Collection, were misleading or unverified. Although marketed as environmentally friendly, the Conscious Collection was found to rely heavily on synthetic, fossil-fuel-based materials, contradicting its green claims. Lastly, in 2021 IKEA faced accusations of illegally sourcing wood from protected Russian forests. Adding to the controversy, IKEA's CEO, Jesper Brodin, downplayed the issue by claiming that greenwashing is less harmful than failing to communicate sustainability efforts at all. This statement generated criticism for trivializing the seriousness of greenwashing and the scandal itself. These examples highlight the ongoing prevalence and impact of deceptive environmental claims (Gupta, 2021).

Indeed, employing green marketing strategies can significantly enhance a company's brand perception and influence consumer behavior, potentially leading to increased competitive advantage (Szabo & Webster, 2021), loyalty (Quicanga, 2023), trust (Tarabieh, 2021), and purchase intention (Majeed et al., 2022). Hence, opting for greenwashing might seem attractive to companies, especially due to its cost-effectiveness, which capitalizes on consumers' environmentally conscious mindset (Quicanga, 2023). Nonetheless, besides the fact that it's unethical, other relevant consequences result from greenwashing practices. For instance, when greenwashing is uncovered, it causes the opposite effect of genuine green marketing, that is, it negatively influences the brand's reputation (De Jong et al., 2020), image, loyalty, (Chen et al., 2018) purchase intention (Nguyen et al., 2019; Zhang et al., 2018), and intention to invest (Getti et al., 2021). Moreover, it causes consumers to become skeptical about the

authenticity of all green claims, affecting consumers' trust in sustainable promises (Teichman et al., 2024). Additionally, competition is affected by unfair competitiveness, as companies that engage in real sustainable practices might end up losing their customers to competitors that are just deceiving consumers (Competition Bureau Canada, 2021). Therefore, the consequences of greenwashing end up affecting not only the consumers but corporations, stakeholders, the environment, and society as a whole (Alizadeh et al., 2024).

2.2 Susceptibility to Deceptive Advertising

Building on the discussion of greenwashing as a form of misleading consumers, it's important to delve into consumer susceptibility to deceptive advertising in general, considering greenwashing is a type of deceptive advertising (Schmuck et al., 2018). Deceptive advertising, as defined by Gardner (1975, p.42), occurs when “an advertisement (or advertising campaign) leaves the consumer with an impression(s) and/or belief(s) different from what would normally be expected if the consumer had reasonable knowledge, and that impression(s) and/or belief(s) is factually untrue or potentially misleading”. The Federal Trade Commission (1983, p.2) further describes deceptive advertising as any “representation, omission or practice that is likely to mislead the consumer acting reasonably in the circumstances, to the consumer's detriment”. Another strong definition of deceptive advertising is that “deception occurs when a marketer tries to deceive a consumer by setting or maintaining a wrong expectation (i.e. an expectation that the product or service cannot objectively fulfill) through marketing communication” (Held & Germelmann, 2014, p.313). Therefore, an advertisement in

order to not be deceptive “must be truthful, not misleading, and, when appropriate, backed by scientific evidence” (Federal Trade Commission, 2023).

Deceptive advertising surpasses legal and ethical boundaries, posing significant challenges for advertisers (Fueroghne, 2017). The literature suggests that deceptive advertising leads to a carryover effect, making consumers skeptical and creating distrust not only toward the source of the ad but also toward unrelated products and ads. Thus, deceptive advertising can significantly reduce the persuasive impact of advertising, activate negative stereotyping, and lead to ineffective marketing communication (Aghakhani & Main, 2019; Darke & Ritchie, 2007; Riquelme & Román, 2014; Welch & Galvan, 2024), as people generally perceive deceitful claims as both unethical and undesirable (Dunbar et al., 2016). This occurs through a process called defensive processing (Darke and Ritchie, 2007), where people who feel deceived become defensive and develop a general skepticism towards other advertisements as a protective measure against further deception.

Susceptibility, according to Armstrong et al. (1979), refers to the circumstances that affect consumers' ability to identify deceptive claims, as well as the psychological processes by which they are misled (Darke & Ritchie, 2007). Consumer susceptibility to advertising refers to how consumers attend to and value commercial messages to guide their purchasing behaviors (Barr & Kellaris, 2000). Xie and Boush (2011) note that consumers are particularly vulnerable to deceptive claims, which can result in misperceptions and detrimental consumption patterns.

The Spinozan processor model proposed by Gilbert (1991) suggests that consumers tend to encode new information as true unless they employ cognitive effort to

refute it. Additionally, when distracted, consumers are less able to discern deception, increasing susceptibility to dishonest claims (Skurnik et al., 2005; Xie & Boush, 2011). When consumers become aware of the risk of being deceived, a defensive motivation often activates, resulting in distrustful reactions not only toward the deceptive advertiser but also toward other, even honest, advertisers (Darke & Ritchie, 2007; Darke et al., 2010). This defensive reaction serves as a protective mechanism, minimizing the likelihood of future deception. Research also demonstrates that factors such as product expertise, awareness of deceptive tactics, and prior product experience can mitigate susceptibility (Andrews et al., 2000; Barone et. al, 2004). In addition, Schumaker (1991) found that context factors primarily influence susceptibility, over individual characteristics such as gender and intelligence.

At last, it's important to highlight that the main difference between deceptive advertising in general and greenwashing lies in the focus and depth of the deception. Deceptive advertising typically involves misleading claims about pricing, discounts, or product performance (Competition Bureau Canada, 2024), aiming to manipulate financial decisions. In contrast, greenwashing targets consumers' environmental values by falsely portraying a product or company as eco-friendly or sustainable (Delmas & Burbano, 2011; De Freitas Netto et al., 2020; Lyon & Montgomery, 2015; Terrachoice, 2009). Hence, unlike general deceptive advertising, which primarily targets financial decisions, greenwashing breaches ethical trust and has broader implications for societal efforts toward sustainability.

2.3 Source of the Advertisement

Building on the discussion of how deceptive advertising exploits consumer vulnerability, it becomes essential to examine the role of the source of the advertisement, as the credibility of the source can significantly shape consumer perceptions, trust, and their susceptibility to misleading claims (Hovland & Weiss, 1951; MacKenzie & Lutz, 1989; Shin et al., 2017). Research shows that ads from reliable sources are viewed as more trustworthy, with a strong potential to influence consumers' attitudes toward the ad and the product (Shin et al., 2017), leading to stronger brand perception and purchase intent (Hovland & Weiss, 1951; MacKenzie & Lutz, 1989).

The Source Credibility Model posits that a credible source exhibits expertise and trustworthiness. As per Hovland et al. (1953, p.21), expertise is “the extent to which a communicator is perceived to be a source of valid assertions”, and trustworthiness is “the degree of confidence in the communicator's intent to communicate the assertions he considers most valid”. In addition to the model, McGuire (1995) developed the Source Attractiveness Model, which included attractiveness as another key component, arguing that a credible source entails attractiveness through not only physical appearance but also familiarity, likability, and similarity (Ohanian, 1990). Therefore, Ohanian (1990) argues that understanding the influence of the source of an advertisement on consumer perception is crucial for advertisers aiming to create successful ads, as they should select their source based on the credibility attributes of expertise, trustworthiness, and attractiveness, considering that the right mix of these features can significantly improve the effectiveness of their marketing efforts by fostering deeper connections with their target audience.

Similarly, the credibility attributes of expertise, trustworthiness, and attractiveness apply not only to traditional advertisements promoted by the companies themselves but also to other types of sources, such as employees, for instance. Employees serving as influencers have a major impact on building a company's reputation, image, and brand (Ruck et al., 2017). Seen as a distinct group of social media influencers, they have recently gained recognition from marketers as valuable internal assets to their organizations (Jacobson et al., 2023). Considering today's digital landscape, the representation of the brand by employees is capable of not only provoking word-of-mouth in their immediate circle (Wentzel et al., 2014) but also spreading to a wider external audience (Müller, 2018). According to the Edelman Trust Barometer (2020), regular employees are trusted more than CEOs. Moreover, 76% of people trust content shared by other individuals, such as employees, over the ones posted by brand accounts (Bazilian, 2017).

In a time when media and political leaders are experiencing a decline in trust (Edelman, 2022), employees are seen as a more reliable and transparent source of information, capable of influencing the opinions of consumers and the general public (Venciute et al., 2023). Employees have the ability to not only shape a positive corporate reputation (Thelen, 2020) but also affect the company's brand equity through how they feel and what they say about the organization (Gelb & Rangarajan, 2014), an influence which is especially valuable during times of challenges or crises (Thelen, 2020). Employees are also capable of enabling smaller businesses to compete with larger ones, through their increased visibility and reach (Tulbure & Popescu, 2023). In addition,

employees as social media influencers can grow organizational revenues and sales by boosting consumers' purchase intentions and behaviour (De Kerpel & Kerckhove, 2023).

In line with Schivinski and Dabrowski (2016), information promoted by employees is seen by the public as more genuine and credible compared to information disseminated by the firm itself, demonstrating that information is received differently by the consumer depending on its source. Employees have the effect of humanizing the brand, which creates a feeling of empathy for the consumers (Fleck et al., 2014). Instead of admiration, employees as brand spokespeople enhance consumers' sense of connection to the brand, which makes this kind of representation highly effective.

Furthermore, high-credibility claims reduce the significance of an advertisement's source as consumers prioritize the message's authenticity over its origin, as supported by Bell et al. (2021). The authors examined how people process and remember advertisements, finding that when an ad's content appears credible, consumers are less likely to dismiss it as mere advertising, aligning with the findings of Hovland and Weiss (1951) on the sleeper effect, which show that the persuasive impact of credible messages can persist even after the source is forgotten. Additionally, the source of an ad is often forgotten quickly, diminishing its impact over time (Johnson, 1997; Nadarevic & Erdfelder, 2013, 2019). In these situations, consumers rely on schematic guessing, drawing on prior knowledge and expectations about credibility to determine the source of a message (Bayen et al., 1996). As a result, when the claims in an ad are highly believable, the content itself becomes the focal point, making the source less influential in shaping consumer perceptions. This pattern supports the context-dependent model of

source tagging proposed by Nadarevic and Erdfelder (2019), which highlights the importance of credibility in source memory processes.

Accordingly, this research expects that when green claims are perceived as genuine, consumers will focus on the content's trustworthiness over its source. However, in the case of greenwashing claims, where the credibility of the content is lower, consumers will rely more on the source's credibility to assess the message's trustworthiness. Based on what was previously posited on greenwashing, susceptibility to deceptive claims, and the influence of the source of the advertisement, the first hypothesis is:

H1. The source of the advertisement (firm vs. employee) positively influences consumers' susceptibility to greenwashing, with consumers being more likely to believe greenwashing claims when the ad is shared by an employee (vs firm). However, this effect is only observed in the context of greenwashing claims, with no significant effect of the source when the claims are perceived as genuine.

2.4 Perceived Ad Authenticity

Authenticity can be defined as the evaluation of the degree to which something is genuine or true (Beckman et al., 2009; Grayson & Martinec, 2004). Employees endorsing their company's brand are perceived as authentic due to their representation of real life (Zeitoun et al., 2020). Using regular employees as spokespeople humanizes a brand, eliciting empathy and conveying a powerful, positive image of the brand and company, thereby fostering high trustworthiness (Zeitoun et al., 2020). Customers view employees as ordinary people, they embody a typical, relatable life that resonates with consumers'

experiences, creating a sense of acquaintance. Employee endorsements communicate an authentic message focused on simplicity and everyday experiences, creating a sense of proximity, and enhancing authenticity (Zeitoun et al., 2020). Non-celebrity endorsers further reinforce the genuineness and authenticity of the brand leading to a higher trust in the advertisement's message (Zeitoun et al., 2020).

Based on the Source Credibility Model (Hovland et al., 1953) and the Source Attractiveness Model (McGuire, 1995), endorsers viewed as credible significantly influence consumers' perceptions toward the advertisement, the brand, and the product (Kamins, 1989; Ohanion, 1990; Priester & Petty, 2003). The theories posit that the endorsers' credibility is composed of their level of expertise, trustworthiness, and attractiveness (Hovland et al., 1953; McGuire, 1995). Ohanion (1990) asserts that when the source is seen as reliable, the endorsement becomes more impactful, affecting the message's persuasiveness, as it increases its believability. Djafarova and Trofimenko (2019) defend that social media influencers and digital content creators are considered more trustworthy than traditional celebrities. The sense of genuineness that influencers project contributes to a perception of them as more accessible and relatable (Bhatnagar & Verma, 2019).

Research has indicated that consumers tend to lean toward endorsers who appear more genuine, and this sense of perceived authenticity can lead to stronger consumer intentions toward the product or brand being promoted (Kowalczyk & Pounders, 2016; Pöyry et al., 2019). For instance, Ilicic et al. (2018) found that a celebrity's perceived authenticity had a notable impact on consumers' attitudes toward a brand and their purchase intention. Similarly, Shoenberger et al. (2020) demonstrated that consumers

responded more favorably to Instagram advertisements that featured more authentic representations, which in turn influenced the effectiveness of the ads. Additionally, Bhatnagar and Verma's (2019) study supports the contention that a credible influencer plays a significant role in leading and deceiving consumers about the environmental attributes of a product. Hence, employee endorsers are expected to convey higher authenticity of their shared content compared to the content shared by the company itself.

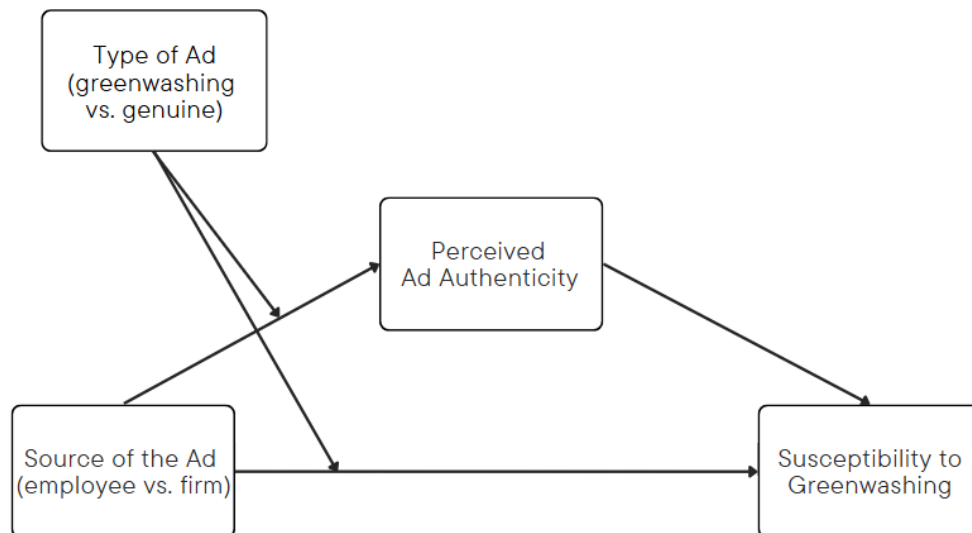
Furthermore, perceived authenticity can also be analyzed through the meaning transfer model (McCracken, 1989), which explains through a three-phase process how the endorser's characteristics can be transferred to the endorsed product or brand. In the first phase, McCracken (1989) argues that endorsers create meaning based on their roles, campaigns, characteristics, and achievements in both their professional and personal lives. In the second phase, the act of endorsement transfers this meaning to the brands and products being endorsed. Finally, in the third phase, this meaning is transferred to consumers through the act of consumption. Thus, a source perceived as authentic effectively transfers this perception of authenticity to the brand it endorses.

Considering that employees as brand influencers are often seen as more authentic than firms, it is expected that this effect is significant only in the context of greenwashing advertisements, as the authenticity of genuine green ads (non-greenwashing) is derived from the content of the ad itself, such as verifiable environmental claims or certifications. In contrast, for greenwashing ads, where the claims lack substantiation, the perceived authenticity of the message relies heavily on the source. This suggests that an employee's role as an influencer may enhance the believability of greenwashing claims because of the perception of authenticity conveyed. Hence, the second hypothesis is:

H2. Perceived authenticity mediates the interaction between the source of the advertisement (employee vs. firm) and the type of advertisement (greenwashing vs. genuine) on consumer susceptibility to greenwashing, with this effect occurring only for greenwashing (vs genuine) ads.

The research model for H1 and H2 is presented in Figure 1.

Figure 1: Research Model for H1 and H2



2.5 Environmental Concern

Environmental concern can be defined as “the degree to which people are aware of environmental problems and support efforts to solve them and/or indicate a willingness to contribute personally to their solution” (Dunlap & Jones, 2002, p. 484). Environmental concern was selected as the moderating variable because it extends beyond mere knowledge of environmental facts to capture consumers' attitudes and genuine care about

the environment. Unlike environmental knowledge, which focuses on a factual understanding of environmental issues and their solutions (Zsóka et al., 2013), or environmental awareness, which reflects recognition and acknowledgment of environmental issues (Afsar et al., 2016), environmental concern encompasses both knowledge and attitude, providing a more comprehensive measure of how much individuals care about environmental protection. By focusing on concern, the study aims to measure not just what consumers know but how deeply they value and prioritize environmental issues in their decisions and actions.

As mentioned by the Value-Belief-Norm (VBN) Theory, people's concerns about environmental problems are shaped by their overall set of personal values. Hence, an individual's perception of environmental issues is determined by the importance they give to themselves, others, and nature itself (Stern & Dietz, 1994; Stern et al., 1993). Schwartz (1992, p.21) characterizes value as "a desirable trans-situational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity". The VBN Theory posits that an individual will fall under one of the following three key value orientations: self-interest (egoistic), social-altruistic, and biospheric. In the self-interest orientation, individuals are concerned with the environmental issues that directly affect their well-being and their immediate surroundings. The social-altruistic orientation emphasizes the welfare of other human beings, even if it involves personal costs. Individuals are motivated to protect the environment to benefit other people, especially vulnerable populations. At last, in the biospheric value orientation, the concern extends to nonhuman species and ecosystems. Individuals with this orientation value the

health of the planet and all living organisms, driven by a belief in the intrinsic value of nature (Stern et al., 1993, Stern & Dietz, 1994).

Thus, based on the differences between the value orientations, two individuals might show the same level of concern for an environmental issue (e.g. air pollution), but for entirely distinct reasons (e.g., air pollution threatens my health vs my children's health vs forests) (Schultz, 2000). Stern et al. (1993) also argue that these value orientations are interrelated and often coexist within individuals, influencing their environmental attitudes and behaviors, which are a reflection of their environmental concerns.

Furthermore, environmental concern can be treated as the inclination to take action with pro-environmental intentions (Stern, 2000). Research has shown that environmental concern is a solid predictor of pro-environmental behaviours (Kim & Choi, 2005, Ishaswini and Datta, 2011, Lee et al., 2014, Xiao & McCright, 2015, Kim et al., 2016), such as green purchase behaviour, in which those with a higher level of environmental concern are more prone to engage in pro-environmental behaviours. Pro-environmental behaviours are defined as “behaviours that proactively attempted to conserve and/or protect the natural environment” (Kothe et al., 2019, p. 414).

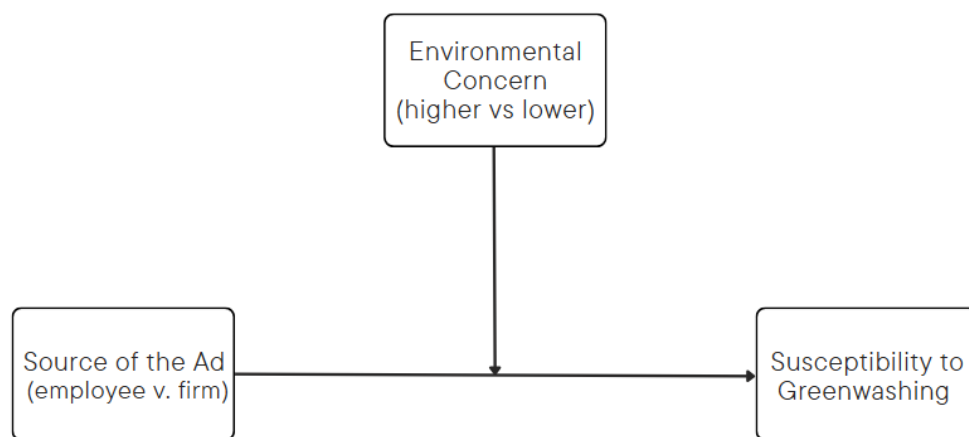
Additionally, an increase in environmental knowledge has been found to enhance environmental concern, which, in turn, positively influences the willingness to adopt environmentally friendly behaviors (Suárez-Perales et al., 2021). Environmental concern not only predicts pro-environmental behaviors but is also expected to influence how consumers process greenwashing claims. Consumer responses to greenwashing reflect their level of involvement and motivation to process deceptive claims, as described by Celsi and Olson (1988). Thus, it is expected that individuals with lower environmental

concern exhibit lower involvement and motivation to critically assess green claims. Consequently, they are more likely to rely on external cues, such as the credibility of the source of the ad, rather than deeply analyzing the claim's validity. Their lack of motivation reduces the cognitive effort applied to detecting deception, making them more susceptible to superficial indicators of authenticity. Conversely, consumers with higher environmental concern are more involved and motivated to scrutinize green claims. Their heightened commitment to sustainability makes them focus on the content of the ad, evaluating whether the green claims are substantiated by evidence. These individuals engage in greater cognitive effort, making them less influenced by the perceived credibility of the source of the ad and more likely to detect greenwashing claims. Accordingly, the final hypothesis is:

H3. The source of the ad will have a significant impact on the susceptibility to greenwashing only for consumers with lower (vs. higher) environmental concern.

The research model for H3 can be observed in Figure 2.

Figure 2: Research Model for H3



CHAPTER THREE RESEARCH METHODOLOGY AND RESULTS

This section outlines the experiment conducted to test whether green advertising presented by an employee of a firm (vs. the firm itself) increases consumers' susceptibility to believing in greenwashing claims while investigating whether the source of the ad significantly affects susceptibility to both genuine and greenwashing advertisements or specifically greenwashing cases. Moreover, it delves into whether the impact of the type of the ad on the relationship between the source of the ad and susceptibility to greenwashing is mediated by the perceived authenticity of the ad, which is expected to be increased when a greenwashed ad comes from an employee (vs. the firm) (H2). Lastly, consumers' environmental concern is also investigated as another moderator, expecting that the source of the ad only has a significant impact on susceptibility to greenwashing for consumers with lower (vs. higher) environmental concern (H3).

The first section of this chapter covers the methodology. Next, the procedure used in the experiment is described. Finally, the results are presented and discussed. It is essential to highlight that all statistical analyses were conducted with a confidence interval of 95% and a p-value below .05.

3.1 Method

Using an experimental design, participants were randomly assigned to one of four conditions in a 2 (source of advertisement: employee vs. firm) x 2 (type of green advertisement: greenwashing vs. genuine) between-subjects design. All participants were given a short excerpt to read about greenwashing. They were then asked to write a few

words explaining the passage's main point. This task was included to provide participants with the concept of greenwashing from a reliable source. Participants were then randomly assigned to a greenwashing or genuine advertisement that was posted on either the firm's social media account or an employee of the firm's social media account. The social media posts contained an indication that it was either greenwashed or genuine. Participants were asked to review the ad by responding to a series of items designed to measure their evaluation of the brand, ad, and product, perceived authenticity of the ad, perceived greenwashing of the ad, willingness to purchase from the brand, and recommend it to family and friends, environmental concern, and green purchase behavior. The manipulation check questions were presented next, and the study was concluded with a couple of demographic questions.

3.2 Procedure

The survey was posted on the Prolific platform. Participants were of legal age, residents of the United States, and fluent in English. Individuals who met the qualifications and showed interest in the study joined by clicking on its title. They were presented with a brief description of the research, which included its scope, who was conducting it, the average time to complete it, and the compensation amount, which was set at USD 2.54. The questionnaire was created using Qualtrics, and the link was distributed via Prolific.

Initially, participants were required to review a consent form approved by the Dalhousie Research Ethics Board and agree to participate in the study, allowing their anonymous responses to be stored. Those who consented continued in the study, and those who did not consent to participate or to have their anonymous answers stored were

directed to the end of the survey. See Appendix A for REB approval and Appendix B for detailed information about the consent form and the rest of the experiment.

Participants were informed that this research contained two tasks. For Task I, all participants were given a short excerpt to read about greenwashing from the Government of Canada's official website. To make sure there is no bias involved, participants were told to participate in a comprehensive reading task and the main purpose of it was not fully provided to them. The goal was to familiarize participants with the concept of greenwashing from a reliable source without revealing the study's focus. Subsequently, participants were thanked and notified that they would be entering the experiment's Task II, which was the main part of this study. For Task II, participants were randomly assigned to one of the four manipulated conditions, in a 2 (source of advertisement: employee vs. firm) x 2 (type of green advertisement: greenwashing vs. genuine) between-subjects design. They were asked to review a post on a social media account – the one they were randomly assigned to – and to evaluate it by answering a series of items.

The post was an advertisement for a fictitious water bottle company called “Aquaflow”, which was advertising their new “eco-friendly water bottle”. The post came from either the firm's Instagram account “@aquaflow” or the firm employee's Instagram account “@alexdoe” and the ad was manipulated as either greenwashing or genuine. Alex was selected as the name of the employee as Alex is a gender-neutral name, so there was no need to control the gender of the employee.

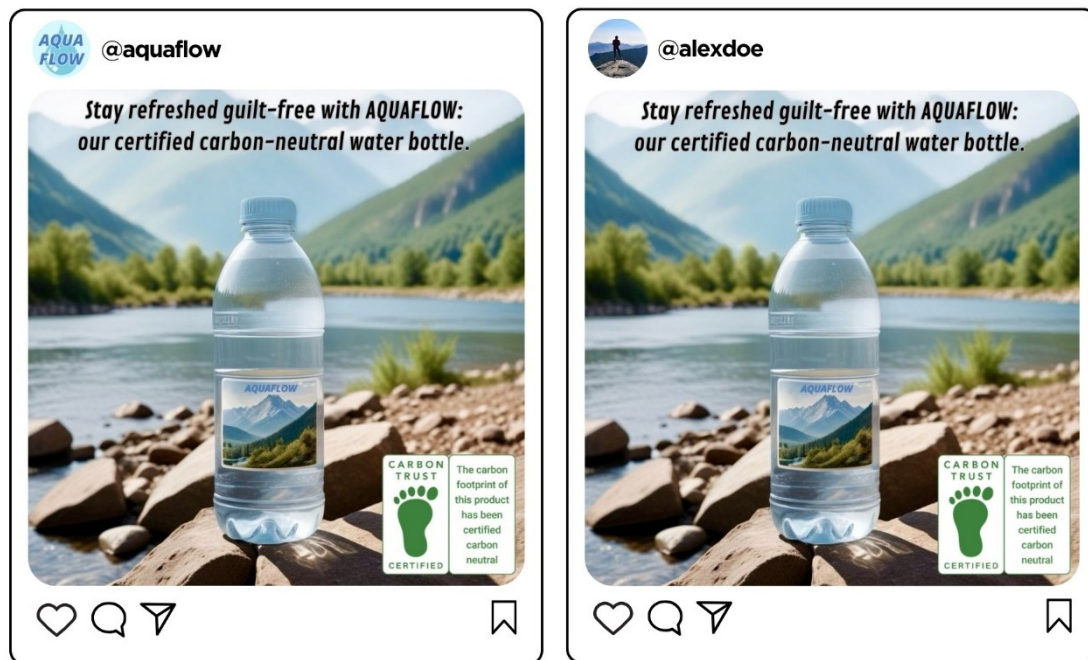
The ads were similar and only a few words and symbols were changed to manipulate the independent variables. The genuine (non-greenwashing) ad was specific and straightforward, displaying a genuine environmental claim and adding an authentic

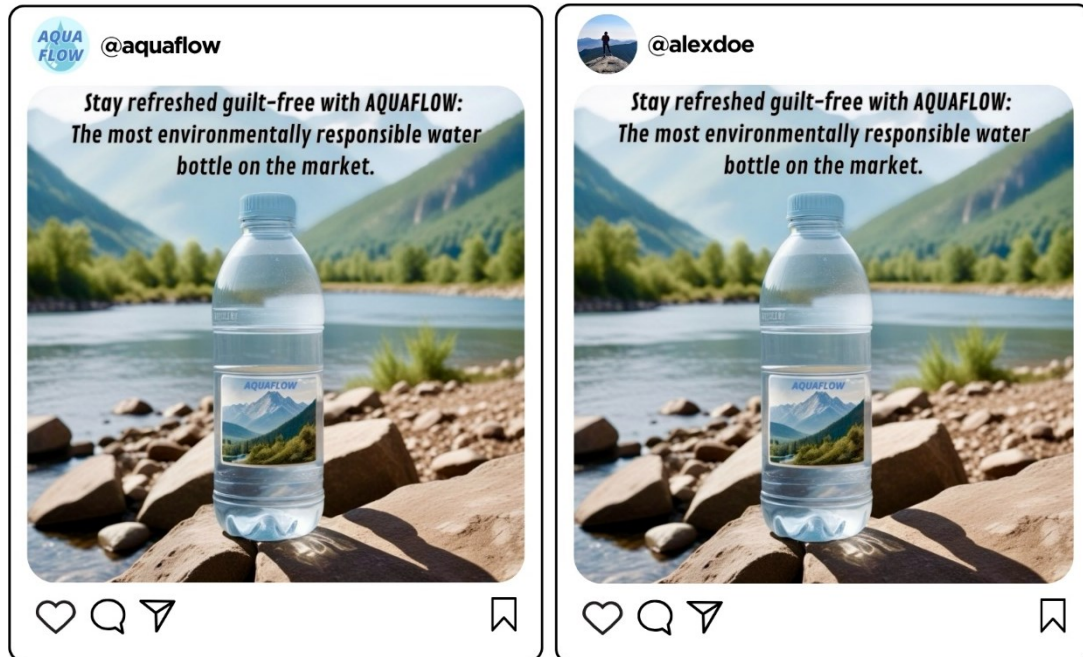
green seal to endorse the environmentally friendly claim. The message indicated in the ad was: “Stay refreshed guilt-free with Aquaflow: our certified carbon-neutral water bottle”.

In the greenwashing ad, the environmental claim was exaggerated, and there was no external certification to support the green claim. The ad read “Stay refreshed guilt-free with Aquaflow: the most environmentally responsible water bottle on the market”.

The stimuli utilized for the manipulation of the source and the type of the ad is illustrated in Figure 3.

Figure 3: Stimuli used for the manipulation of the source and type of ad





In the genuine conditions, the ad was accompanied by a small paragraph stating that the firm/employee was committed to the environmental cause, aiming to indicate that the ad was genuine. In the greenwashing condition, there was a similar passage, however, it described the firm's/employee's commitment to innovation instead of the environment.

After reviewing the ad, participants were asked to express their evaluation of the brand, ad, and product on a 7-point semantic differential scale of bad-good, unfavorable-favorable, and unlikeable-likable. This aimed to assess how the interaction between the manipulated variables affected those perceptions.

Participants were also asked to indicate their perceptions regarding the authenticity of the ad they had just seen in order to measure perceived ad authenticity. The perceived greenwashing scale was used to measure the dependent variable of susceptibility to greenwashing given the contention that the less perception of greenwashing participants had, the more susceptible to it they would be. Participants

were also required to express their willingness to purchase from the brand and willingness to recommend it to friends and family. To measure the moderator of environmental concern, participants had to answer an environmental concern scale and a green purchase behavior scale, the latter as a behavioural indicator of environmental concern.

Additionally, two manipulation check questions were included to ensure that the manipulation was effective as intended. The first one asked if the ad was generated by the employee (1= *strongly disagree*, 7= *strongly agree*). The other manipulation check question was included to uncover whether participants recognized the claim certification by answering whether the ad claim indicated in the post was certified by an institution (Yes, no, I don't recall). To finalize the questionnaire, there were two demographic questions about participants' gender and age.

After the questionnaire was completed, participants were presented with a detailed debriefing section, outlining the research's actual purpose, and asked once again if their anonymous data could be included in the analysis. Finally, they were thanked, provided with contacts in case of any questions or concerns, and redirected to the Prolific platform to receive their compensation.

3.3 Participants

Two hundred and ninety-nine participants from the United States were recruited through Prolific, based on the U.S. demographic population, in exchange for a compensation of USD 2.54. They were informed that they would be participating in an advertising study, which explored reading skills and social media advertisements. In the middle of the

questionnaire, more specifically the fifth item in the perceived greenwashing scale, there was an attention check question, which asked participants to select the “somewhat disagree” option. Those participants who did not select the correct item were excluded from further analysis, as they demonstrated that they were not paying enough attention to the survey, therefore their answers could not be included ($n=15$). Excluding those fifteen participants led to a final sample of two hundred and eighty-four participants ($N = 284$, 49.3% Female; $M_{\text{age}} = 45.75$ years, $SD = 15.635$).

3.4 Measures

3.4.1 Perceived Ad Authenticity: The perceived ad authenticity was measured using a seven-item 7-point Likert scale, adapted from Becker et al., (2018). The original scale had two parts. The first part was a 7-point bipolar rating scale, with five items, and the second part was a 7-point Likert scale, with fourteen items. As some items were unsuitable for this experiment, only seven items from the second part of the scale were utilized. The items with opposite directions were reverse-coded (R), so higher scores correspond to higher perceived authenticity ($\alpha = 0.91$). Items were: “The story of the ad was realistic”; “The story of the ad was authentic”; “The story of the ad showed an everyday life activity”; “The story of the ad was true to life”; “The message of the ad was inaccurate” (R); “The message of the ad was exaggerated” (R); “The message of the ad was overstated” (R). (1 = *strongly disagree*, 7 = *strongly agree*).

3.4.2 Perceived Greenwashing: Susceptibility to greenwashing was measured by how much participants perceived the ad’s greenwashing nature ($\alpha = 0.95$), with a greater perception of greenwashing indicating lower susceptibility to it. Perceived greenwashing

was measured through a seven-item 7-point Likert scale, adapted from Schmuck et al. (2018). The wording was slightly modified to fit the experiment better. The items were: “The text shown on the Instagram post is misleading in regard to its environmental features”; “The visuals or graphics pictured on the Instagram post are misleading in regard to its environmental features”; “This product possesses a green claim that is vague or seemingly unprovable”; “This product exaggerates how green it actually is”; “This product leaves out or masks important information, making the green claim sound better than it is”; “This product includes claims about its environmental features that are false”; “This Instagram post does not tell the truth about the product's green functionality”. (1 = *strongly disagree*, 7 = *strongly agree*).

3.4.3 Environmental Concern: Participants’ environmental concern was measured by two different scales. The first scale was a thirteen-item 5-point Likert scale, adapted from Stern et al., (1993). The items were the same as the ones from the original scale. However, the original scale was a 4-point Likert scale, which did not have a neutral point. Thus, it was adapted to a 5-point Likert scale, adding a neutral option of *neither agree nor disagree*, as it expresses a participant's valid sentiment, improving the scale’s accuracy (Mariano et al., 2019). The items with opposite directions were reverse-coded, so higher scores correspond to a higher level of environmental concern ($\alpha = 0.87$). The items were “Protecting the environment will threaten jobs for people like me” (R); “Laws to protect the environment limit my choices and personal freedom” (R); “A clean environment provides me with better opportunities for recreation”; “We don't need to worry much about the environment because future generations will be better able to deal with these problems than we are” (R); “The effects of pollution on public health are

worse than we realize”; “Pollution generated here harms people all over the earth”; “Claims that current levels of pollution are changing the earth's climate are exaggerated” (R); “Over the next several decades, thousands of species will become extinct”; “The balance of nature is delicate and easily upset”; “I would participate in a demonstration against companies that are harming the environment”; “I would contribute money to environmental organizations”; “I would sign a petition in support of tougher environmental laws”; “I would take a job with a company I knew was harming the environment” (R). (1 = *strongly disagree*, 5 = *strongly agree*). The second scale was added aiming to measure environmental concern as actual behaviour, thereby including green purchase behaviour as a behavioral indicator for environmental concern. Green Purchase Behaviour was measured through a five-item 5-point Likert scale from Choi and Kim (2005). The used scale for green purchase behaviour ($\alpha = 0,917$) was identical to the original one. The items were: “I make a special effort to buy paper and plastic products that are made from recycled materials”; “I make a special effort to buy household chemicals such as detergents and cleansing solutions that are environmentally friendly”; “I have switched products for ecological reasons”; “When I have a choice between two equal products, I purchase the one less harmful to other people and the environment”; “I have avoided buying a product because it had potentially harmful environmental effects”. (1 = *strongly disagree*, 5 = *strongly agree*).

3.4.4 Manipulation Check for Source of the Green Ad: Participants were requested to respond to a question concerning the source of the ad. In particular, participants were asked to indicate if the Instagram post was shared by an employee using a 7-point Likert question (1 = *strongly disagree*, 7 = *strongly agree*).

3.4.5 Manipulation Check for Type of Green Ad: To assess the success of the type of ad (greenwashing vs. genuine) manipulation, a multiple-choice manipulation check question was also included: “Was the claim indicated in the post certified by an institution?”, with the choices of “Yes, it had Carbon Trust seal certification”; “Not sure, I don’t recall”; and “No, the claim was not certified by any agency”.

3.4.6 Downstream Measures: Attitudes towards the brand/ad/product: Attitudes towards the brand, ad, and product were measured by three 7-point semantic differential items adapted from Pollay and Mittal (1993). In this case, a higher mean value indicates a positive attitude towards the brand, ad, and product. Items were “What is your evaluation of the brand Aquaflow”; “What is your evaluation of the Instagram post you just viewed”; and “What is your evaluation of the product included in the Instagram post?” (1 = *bad*; 7 = *good*; 1 = *unfavorable*, 7 = *favorable*; 1 = *unlikable*, 7 = *likable*). The reliability test for each scale demonstrated acceptable levels ($\alpha_{\text{brand}} = 0.98$, $\alpha_{\text{ad}} = 0.99$, and $\alpha_{\text{product}} = 0.99$). Additionally, two separate questions on a 5-point Likert scale (1 = *strongly agree*, 5 = *strongly disagree*) were asked to gauge participants’ willingness to purchase from the Aquaflow brand and recommend it to friends and family.

3.4.7 Demographic Questions: Lastly, participants responded to two demographic questions regarding their age and gender. For the age question, they were asked to enter their age in years as a whole number, and for their gender, a multiple-choice question with four items (male, female, non-binary, and prefer not to answer).

3.5 Results

3.5.1 Source of the Ad Manipulation Check: To check the success of the manipulation for the source of the ad, an ANOVA test with the source of the ad (employee vs. firm) and type of ad (genuine vs. greenwashed) as independent variables and manipulation check question as the dependent variable was conducted. Results show the main effects of the source of the ad ($M_{\text{firm}} = 3.86$ vs $M_{\text{employee}} = 4.66$, $F(1, 280) = 19.50$, $p < .001$). Neither a main effect of the type of ad ($p = .65$) nor the interaction effects ($p = .63$) was found. This indicates that participants in the employee condition have a higher perception that the ad was generated by the employee which indicated that the manipulation for the source of the ad worked properly.

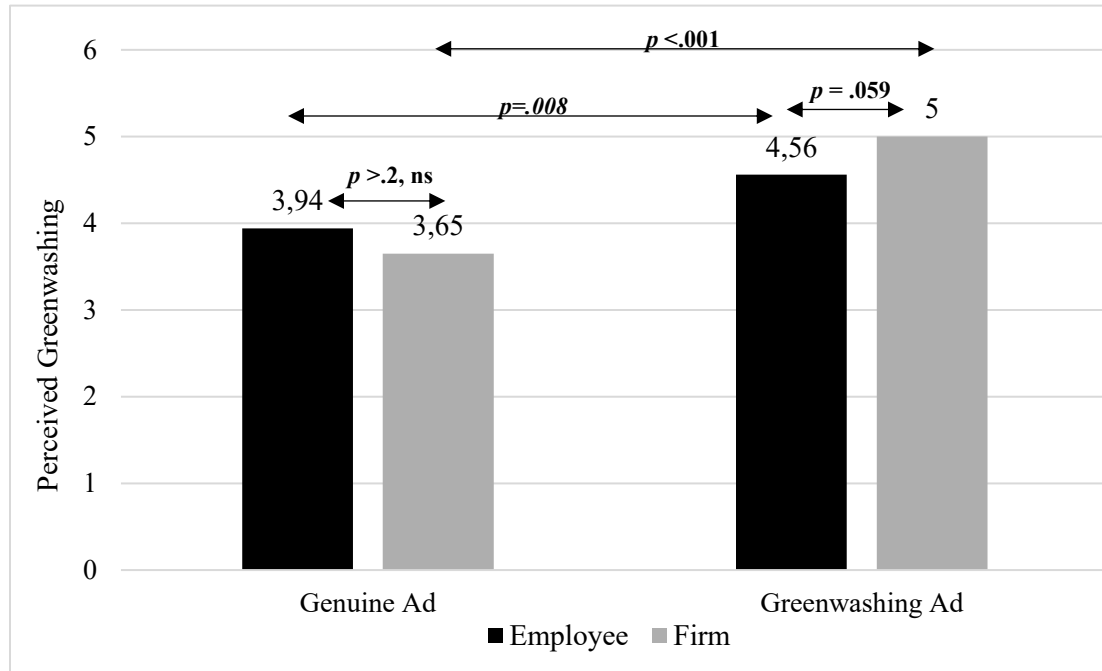
3.5.2: Type of the Ad Manipulation Check: To evaluate whether the manipulation of the type of ad was successful (whether participants noticed the certification included in the ad or not), a Pearson chi-square test was conducted and the results indicate that there is a significant difference between the two groups depending on the condition there were randomly assigned $\chi^2(N=284) = 193.1$, $p < .01$. This indicates that participants could discern whether the claim made in the ad was backed by a certification or not.

3.5.3 Test of Hypotheses 1: To assess the main relationship and the moderating effect, a Univariate ANOVA with the source of the ad (firm vs. employee) and the type of ad (genuine vs. greenwashing) as independent variables, and susceptibility to greenwashing as the dependent variable was conducted. Results indicated a significant main effect of the type of the ad (genuine vs greenwashing) ($F(1,280) = 36.42$, $p < .01$, $\eta_p^2 = .12$). Participants in the greenwashing condition reported higher susceptibility to greenwashing, as expected. The results of this test, however, did not show a significant

main effect of the source of the ad ($M_{\text{employee}} = 4.24$ vs $M_{\text{firm}} = 4.34$, $F(1,280) = .237$, $p = .63$, $\eta_p^2 = .001$) on susceptibility to greenwashing. More importantly, the interaction between the source and type of ad was significant ($F(1,280) = 4.87$, $p = .03$, $\eta_p^2 = .02$), supporting H1. In this interaction, for the genuine ads, there was not a significant effect between the different sources ($M_{\text{employee}} = 3.94$, $SD = .162$, $M_{\text{firm}} = 3.65$, $SD = .163$, $p = .223$, $\eta_p^2 = .005$). However, for the greenwashing ads, there was a marginally significant difference between the sources ($M_{\text{employee}} = 4.56$, $SD = .167$, $M_{\text{firm}} = 5.00$, $SD = .161$, $p = .059$, $\eta_p^2 = .013$). These results indicate that consumers have a similar perception of genuine ads regardless of whether an employee or the firm promotes them. On the other hand, when the ad is greenwashing, consumers have a different perception of the ad, detecting less greenwashing when an employee (vs. firm) promotes the ad.

It can also be observed that there is a significant mean difference between consumers' perception of the genuine and greenwashing ads promoted by the employee ($M_{\text{genuine}} = 3.94$, $SD = .162$, $M_{\text{greenwashing}} = 4.56$, $SD = .167$, $p = .008$, $\eta_p^2 = .025$) and by the firm ($M_{\text{genuine}} = 3.65$, $SD = .163$, $M_{\text{greenwashing}} = 5.00$, $SD = .161$, $p < .001$, $\eta_p^2 = .110$). Thus, in both employee and firm-shared ads participants detected more greenwashing in the greenwashing ad. However, they significantly perceived the ad more as greenwashing when it was shared by the firm (vs. employee). The interaction effects of the source and type of ad on perceived greenwashing are demonstrated in Figure 4.

Figure 4: Interaction effects of the source and the type of the ad on perceived greenwashing.



Furthermore, to check whether the age of participants impacted the results, the same ANOVA with age as a covariate was conducted and it did not impact the results ($p > .537$). For the same reason, the gender of participants was added to the study as a random effect variable and the results neither show the main effect of gender ($p > .9$) nor its interactions with the source of ad ($p > .9$), type of ad ($p > .1$) or three ways interactions ($p > .5$). Considering neither gender nor age were impacting in the results, these two variables will not be discussed in the rest of analysis.

3.5.4 *Test of Hypothesis 2*: To test if perceived ad authenticity mediated the moderating relationship of the source of the ad, the type of the ad, and susceptibility to greenwashing, a moderated mediation analysis was conducted. The analysis included a

moderated mediation model with the source of the ad as the independent variable, susceptibility to greenwashing as the dependent variable, the type of the ad as the moderating variable, and perceived ad authenticity as the mediator variable. To test this moderated mediation, the PROCESS model proposed by Hayes (2022) was implemented, bootstrapping using 10,000 samples (PROCESS model 8; Hayes, 2022) and seed 12345.

The moderated mediation analysis was significant, with an index of moderated mediation of .5733 (CI: .047, 1.086). The results show that the interaction between the source and type of ad significantly affects perceived authenticity ($B = -.6582$, $t = -2.1643$, $p = .031$) which significantly affects susceptibility to greenwashing ($B = -.871$, $t = -23.2496$, $p < .01$). Further, results indicate a conditional significant indirect effect of the source and type of ad on perceived greenwashing through authenticity as the mediator. In particular, when the ad is genuine, authenticity does not mediate the effect of the source of the ad on perceived greenwashing (effect = $-.21$, 95%CI ($-.5880$, $.1756$)). However, H2 which proposed that perceived authenticity would mediate the effect of the source of the ad on susceptibility to greenwashing only for greenwashed ads, was supported. When people viewed a greenwashed ad shared by an employee (vs. the firm), the mediating effects of perceived authenticity became significant and viewers reported a higher susceptibility to greenwashing (effect = $.3618$, 95%CI ($.0138$, $.7150$)).

The results indicate that consumers have a similar perception of genuine ads regardless of whether an employee or the firm shares the ad. Conversely, when the ad is greenwashed, consumers perceive it differently when an employee or the firm promotes the ad. When an employee promotes the ad, consumers perceive it as more authentic and

are more susceptible to believing the claims in the greenwashing ad, which supports H2. All the effects between the variables in H2 can be observed in Table 1.

Table 1: Source and type of ad impact on greenwashing susceptibility via authenticity

<i>Antecedent</i>	<i>M (Perceived Authenticity)</i>				<i>Y (Susceptibility to Greenwashing)</i>			
	<i>Coeff.</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>Coeff.</i>	<i>SE</i>	<i>t</i>	<i>p</i>
<i>X (Source of Ad)</i>	.2428	.2142	1.1334	.2580	-.0691	.1346	-.5136	.6079
<i>M (Perceived Authenticity)</i>	---	---	---	---	-.8710	.0375	-23.2496	.0000
<i>W (Type of Ad)</i>	-.3158	.2166	-1.4582	.1459	.3492	.1363	2.5624	.0109
<i>Source of the Ad*Type of Ad</i>	-.6582	.3041	-2.1643	.0313	.1465	.1922	.7622	.4466
<i>Model Summary</i>	$R^2 = .0770$				$R^2 = .7040$			

3.5.6 Test of Hypothesis 3 - Environmental concern: To test hypothesis 3, a moderation analysis (Hayes, 2022; PROCESS model 1, bootstrapping 10,000 samples, seed 12345) was employed using the source of the ad as the independent variable, susceptibility to greenwashing as the dependent variable and environmental concern as the moderating variable. In this case, considering environmental concern is a continuous measure, the Hayes (2022) PROCESS analysis was a better fit than the Univariate ANOVA. The analysis conducted did not find a significant interaction between the source of the ad and environmental concern ($B = -.2992$, $t = 1.181$, $p = .239$). Based on that, the

interaction does have zero in its confidence interval [95% CI (-.1997, .7981)], which rejects the alternative hypothesis. Thus, H3 was not supported.

Green Purchase Behaviour: Aiming to measure participants' green purchase behaviour as a behavioural indicator of their environmental concern, the same moderation analysis was conducted (Hayes, 2022; PROCESS model 1, bootstrapping with 10,000 samples, seed 12345), but with green purchase behaviour as the moderator, instead of environmental concern. The overall results replicate the previous analysis, where there was not a significant interaction between the source of the ad and green purchase behaviour ($B = .0797$, $t = .4791$, $p = .632$). Consequently, the interaction also has zero in its confidence interval [95% CI (-.2477, .4070)], rejecting H3 as well.

This hypothesis might not be supported for a few reasons. For instance, when reporting their level of environmental concern and green purchase behaviour, participants may not have been completely honest due to social desirability bias, affecting the results. Alternatively, the scales utilized to measure environmental concern and green purchase behaviour might not have been able to capture the variables properly.

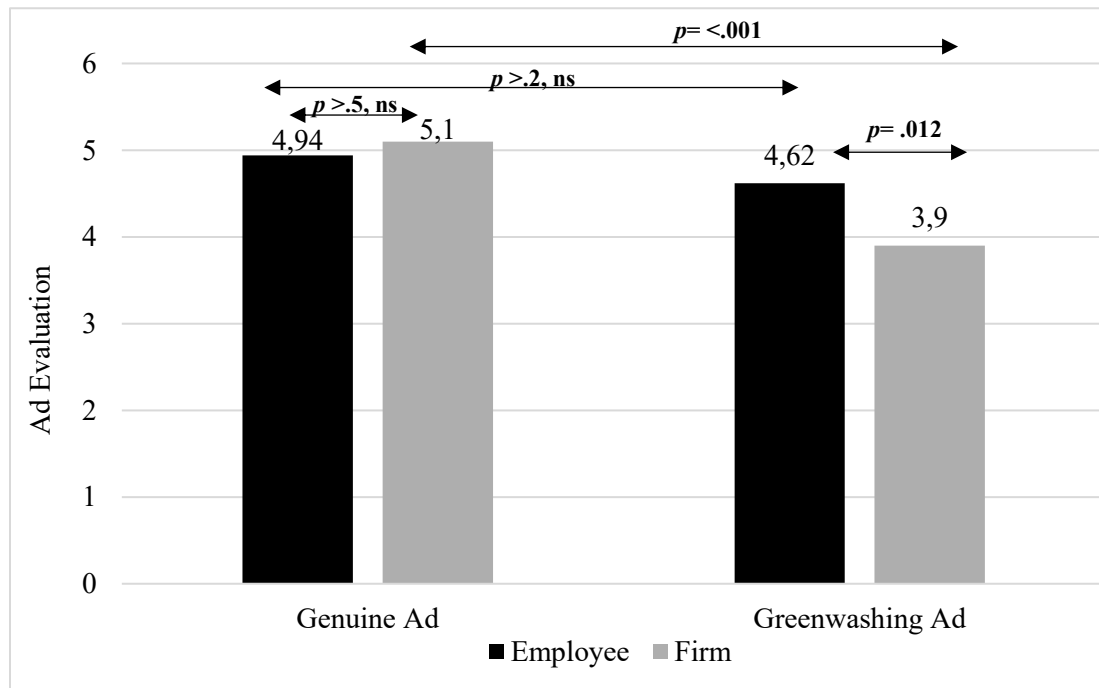
3.5.7 Downstream effects: Downstream effects were measured in the experiment as ad evaluation, brand evaluation, product evaluation, willingness to purchase from the brand, and willingness to recommend the brand to family and friends. A series of Univariate ANOVAs were conducted with the source of the ad as the independent variable, the type of the ad as the moderator, and ad evaluation, brand evaluation, product evaluation, willingness to purchase, and willingness to recommend as the dependent variables, each analyzed separately.

The analysis with ad evaluation as the dependent variable did not find a significant main effect ($F(1, 280) = 1.91, p = .168, \eta_p^2 = .007, power = 28\%$). Thus, it can be stated that by considering exclusively the source of the ad ($M_{employee} = 4.78, SD = .144, M_{firm} = 4.50, SD = .142$) and not its content, there is no significant difference in the ad's evaluation whether the ad is promoted by the firm or by an employee. However, the interaction of the source of the ad and the type of the ad with ad evaluation as the dependent variable was significant ($F(1, 280) = 4.896, p = .028, \eta_p^2 = .017, power = 60\%$). There was no significant effect for the genuine ads between the different sources ($M_{employee} = 4.94, SD = .201, M_{firm} = 5.10, SD = .202, p = .556, \eta_p^2 = .001, power = 9\%$). Nonetheless, for the greenwashing ads, there was a significant difference between the sources ($M_{employee} = 4.62, SD = .207, M_{firm} = 3.90, SD = .200, p = .012, \eta_p^2 = .022, power = 71\%$). Moreover, there is not a significant mean difference between consumers' perception of the genuine and greenwashing ad when it's shared by an employee ($M_{genuine} = 4.94, SD = .201, M_{greenwashing} = 4.62, SD = .207, p = .279, \eta_p^2 = .004, power = 19\%$). However, when it's promoted by the firm itself, there is a significant mean difference between the types of the ad ($M_{genuine} = 5.10, SD = .202, M_{greenwashing} = 3.90, SD = .200, p < .001, \eta_p^2 = .061, power = 99\%$).

These results show that for genuine ads consumers have a similar perception, not making a difference if it was shared by the firm or by an employee. For greenwashing ads, however, consumers do perceive them differently, having a more favourable evaluation of a greenwashing ad when it's promoted by an employee (vs. firm), as they have a weaker perception of it being a greenwashing ad. Furthermore, when the ad comes from an employee, consumers have a similar evaluation of it, independently if it's a

genuine or greenwashing ad. Nevertheless, when the ad is promoted by the firm, consumers have a different evaluation of the ad depending on its type, with a significantly higher evaluation when the ad is genuine (vs. greenwashing). The interaction between the source and type of the ad on ad evaluation can be observed in Figure 5.

Figure 5: Interaction between the source and the type of the ad on ad evaluation

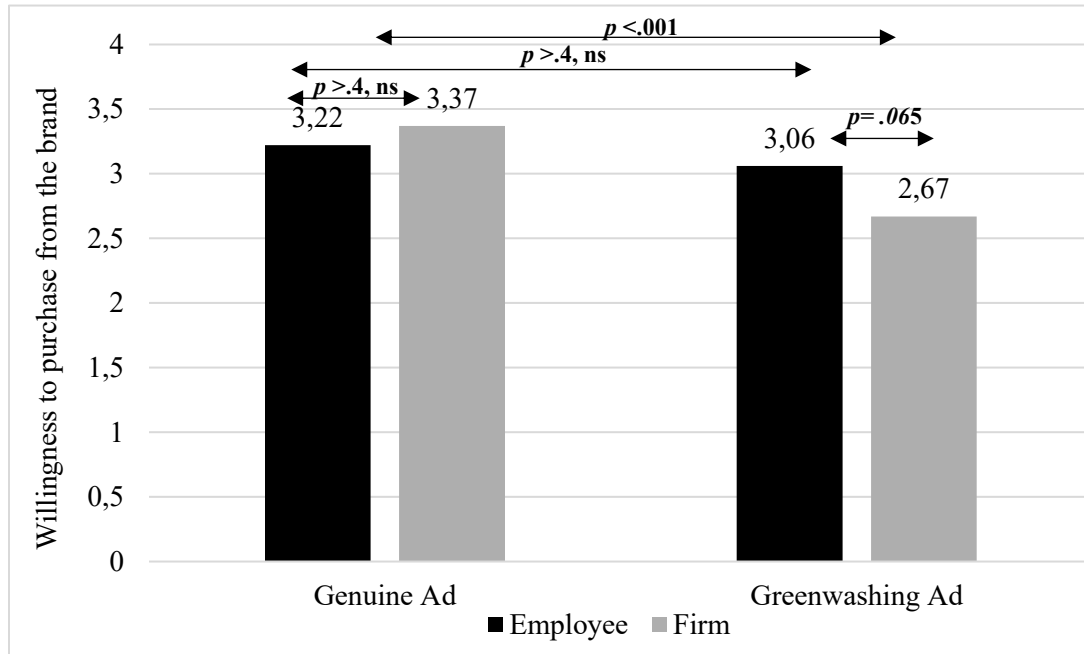


The analysis with the willingness to purchase from the brand as the dependent variable also had no significant main effect ($F(1, 280) = .684, p = .409, \eta_p^2 = .002, power = 13\%$). It can be affirmed that the source of the ad alone ($M_{employee} = 3.14, SD = .105, M_{firm} = 3.02, SD = .103$) has no significant impact on consumers' willingness to purchase from the brand. Nonetheless, the interaction of the source of the ad and the type of the ad with willingness to purchase from the brand as the dependent variable was significant, even though only marginally ($F(1, 280) = 3.258, p = .072, \eta_p^2 = .012, power =$

44%). Again, for the genuine ads, the difference in the sources did not show a significant effect ($M_{\text{employee}} = 3.22$, $SD = .146$, $M_{\text{firm}} = 3.37$, $SD = .147$, $p = .488$, $\eta_p^2 = .002$, $power = 11\%$). For the greenwashing ads, the difference in the sources did have a marginally significant effect ($M_{\text{employee}} = 3.06$, $SD = .150$, $M_{\text{firm}} = 2.67$, $SD = .145$, $p = .065$, $\eta_p^2 = .012$, $power = 46\%$). In addition, no significant mean difference between the genuine and greenwashing ads occurred when it was promoted by an employee ($M_{\text{genuine}} = 3.22$, $SD = .146$, $M_{\text{greenwashing}} = 3.06$, $SD = .150$, $p = .437$, $\eta_p^2 = .002$, $power = 12\%$). Nonetheless, when the ad was shared by the firm, a significant mean difference was found between the genuine and greenwashing ads ($M_{\text{genuine}} = 3.37$, $SD = .147$, $M_{\text{greenwashing}} = 2.67$, $SD = .145$, $p < .001$, $\eta_p^2 = .039$, $power = 92\%$).

For genuine ads, consumers have a similar willingness to purchase from the brand, regardless of whether the ad was promoted by an employee or by the company itself. When it comes to greenwashing ads, consumers are more willing to purchase the product when the ad is shared by an employee (vs. firm), as their perception of it being a greenwashing ad is lower. Moreover, when the ad is promoted by an employee, consumers have a similar willingness to purchase from the brand, regardless of whether it's a genuine or greenwashing ad. Nonetheless, when the ad comes from the firm itself, consumers have a different willingness to purchase depending on its type, with a significantly higher level of willingness to purchase from the brand when the ad is genuine (vs. greenwashing). The interaction between the source and type of the ad on willingness to purchase from the brand is displayed in Figure 6.

Figure 6: Interaction between the source of the ad and the type of the ad on willingness to purchase from the brand.



The interactions of brand evaluation, product evaluation, and willingness to recommend the brand as dependent variables were not significant (all $p > .10$). The lack of significance could be attributed to several factors. Firstly, brand evaluation may have been difficult for participants because they were asked to assess a fictitious brand, which lacked the tangible presence and reputation that typically informs brand perception. Similarly, product evaluation posed challenges, as participants were unable to test the product, which would normally influence their judgment. Finally, the willingness to recommend the brand may have been affected by the fact that participants did not have direct experience with the product, making it difficult for them to form a genuine recommendation. Nevertheless, even though the interactions were not significant, all of them were in the expected direction, which can be observed in Table 2.

Table 2: Downstream effects of the source and type of ad on consumers.

<i>Dependent Variable</i>	<i>Mean Genuine Ad</i>	<i>Mean Greenwashing Ad</i>	<i>Interaction p-value</i>
<i>Ad evaluation</i>	M_{employee} : 4.94 (1.87) M_{firm} : 5.10 (1.62)	M_{employee} : 4.62 (1.56) M_{firm} : 3.90 (1.74)	.028*
<i>Brand evaluation</i>	M_{employee} : 5.11 (1.71) M_{firm} : 5.11 (1.65)	M_{employee} : 4.71 (1.30) M_{firm} : 4.18 (1.60)	.155
<i>Product evaluation</i>	M_{employee} : 4.97 (1.89) M_{firm} : 5.09 (1.69)	M_{employee} : 4.54 (1.49) M_{firm} : 4.06 (1.73)	.143
<i>Willingness to purchase</i>	M_{employee} : 3.22 (1.31) M_{firm} : 3.37 (1.22)	M_{employee} : 3.06 (1.13) M_{firm} : 2.67 (1.28)	.072**
<i>Willingness to recommend</i>	M_{employee} : 3.12 (1.31) M_{firm} : 3.11 (1.34)	M_{employee} : 2.69 (1.19) M_{firm} : 2.37 (1.20)	.303

Note. * p-value < 0.05, **p-value < 0.10.

To summarize this research's hypotheses testing, Table 3 outlines the main results.

Table 3: Main results of Hypothesis Testing

<i>Hypothesis</i>	<i>IV</i>	<i>MOD</i>	<i>MED</i>	<i>DV</i>	<i>P-value</i>	<i>Conclusion</i>
<i>H1</i>	Source of the Ad	Type of Ad	-	Susceptibility Greenwashing	.028*	Supported
<i>H2</i>	Source of the Ad	Type of Ad	Perceived Ad Authenticity	Susceptibility Greenwashing	---	Supported
<i>H3</i>	Source of the Ad	Environmental Concern	-	Susceptibility Greenwashing	.239 ^a .632 ^b	Not supported

Note. *p-value < 0.05, a: Environmental concern, b: Green purchase behaviour.

CHAPTER FOUR GENERAL DISCUSSION

The goal of this research was to shed light on research relevant to greenwashing and how consumers perceive greenwashing claims in advertisements. Employing an online experiment, this study first investigated whether the source of an advertisement (firm vs. employee) significantly impacted consumers' susceptibility to believing the claims presented in the ad. After analyzing the data, a non-significant effect was found. The source of the ad, whether it's promoted by an employee or the firm itself, did not significantly affect consumers' susceptibility to a greenwashing ad. However, this study hypothesized about the moderating role of the type of ad (genuine vs. greenwashing) on the effects of the source of the ad on susceptibility to greenwashing, which yielded a significant interaction, supporting H1. These findings suggest that consumers exhibit a similar view of genuine ads, regardless of whether the firm itself or its employee promotes them. In other words, if either a company or an employee of the company sends a genuine message to consumers, they will believe the message. In the case of greenwashing ads, however, consumers perceive the ad differently depending on its source. In addition, if the firm shares the ad, consumers are more likely to detect greenwashing claims in the ad, while consumers are less likely to detect greenwashing when the ad is shared by an employee. This result may encourage unethical brands to send their messages to their consumers using indirect sources such as their employees. Such practices may result in harm to consumers and the environment. Advertising policymakers may need to consider putting regulations in place that control the source of advertisements and how companies promote their products on social media using indirect

sources, such as employees or influencers. Currently, Advertising Standards Canada investigates ads for lack of truth in claims only if a complaint is filed. Nevertheless, because greenwashing often goes unnoticed by consumers, complaints are unlikely, making this type of ad particularly tricky and difficult to regulate. Thus, stricter guidelines around ad transparency and authenticity are essential to protect consumers from misleading environmental claims.

Furthermore, this research also investigated if perceived ad authenticity mediated the moderating relationship between the source and type of the ad on susceptibility to greenwashing. Through a moderated mediation analysis, the results supported the interaction between the source of the ad and the type of the ad with perceived ad authenticity as the outcome variable. The findings indicated a significant index of moderated mediation, supporting H2. The results reveal that consumers perceive genuine ads similarly regardless of whether an employee or the firm promotes them. Nonetheless, consumers have a different perception of the ad when it's greenwashed. In this case, when the ad is promoted by an employee (vs. firm), consumers perceive the ad as more authentic, which makes them more likely to believe in the greenwashing claims.

The moderating variable of environmental concern was also tested for significance. The analysis did not find a significant effect between environmental concern and the independent variable, rejecting H3. On top of that, in an attempt to assess consumers' green purchase behaviour as a behavioural indicator of their environmental concern, another moderation analysis was performed with green purchase behaviour as the moderator, representing environmental concern. However, the results replicate the previous analysis, not finding a significant interaction between the source of the ad and

green purchase behaviour, rejecting H3 as well. There are a few reasons that might justify why this hypothesis was not supported. When reporting their level of environmental concern and green purchase behaviour, participants might not have been entirely truthful due to social desirability bias, which could significantly influence the results. Alternatively, the scales used to assess environmental concern and green purchase behaviour might not have accurately captured the variables.

Moreover, downstream effects such as ad evaluation, brand evaluation, product evaluation, willingness to purchase from the brand, and willingness to recommend the brand were measured. A series of analyses with each effect as the dependent variable, the source of the ad as the independent variable, and the type of the ad as the moderator, were conducted. The analysis with ad evaluation as the dependent variable did not find a significant main effect. Conversely, the interaction of ad evaluation with the source of the ad and the type of the ad was significant. The findings show that consumers have a similar evaluation of genuine ads, regardless of the source. Their evaluation of greenwashing ads, however, is more favourable when it's shared by an employee (vs. firm), considering their weaker perception of it being a greenwashing ad. Plus, when the ad is promoted by an employee, there is not a significant difference between consumers' perceptions of the types of the ad. Yet, when the ad is promoted by the firm, consumers give a higher evaluation for the genuine (vs. greenwashing) advertisement.

The analysis with willingness to purchase from the brand advertised as the dependent variable did not yield a significant main effect, indicating that the source of the ad exclusively does not impact significantly consumers' willingness to purchase from the brand. However, the interaction between willingness to purchase, the source of the ad,

and the type of the ad was marginally significant. There was no significant difference between consumers' willingness to purchase in genuine ads. On the other hand, for greenwashing ads, consumers are more willing to purchase the product when the ad was promoted by an employee (vs. firm), as their perception of it being a greenwashing ad is lower. Also, when the ad is shared by an employee, there is no significant difference in consumers' willingness to purchase from the brand, regardless of whether it's a genuine or greenwashing ad. When the ad is shared by the firm, there is a significant difference in consumer's willingness to purchase from the brand, with a significantly higher level of willingness to purchase when the ad is genuine (vs. greenwashing).

Finally, there were no significant interactions of the other downstream effects of brand evaluation, product evaluation, and willingness to recommend the brand as dependent variables, even though they were all in the expected direction. The lack of significance may be due to the hypothetical nature of the study. Participants probably found it difficult to evaluate a non-existent brand, assess a product they had not tested, or recommend a product they had no direct experience with. These factors likely contributed to the absence of significant interactions in these variables. There were also no significant effects of gender or age on consumers' susceptibility to greenwashing.

4.1 Theoretical Contributions

This research makes a series of contributions at the theoretical level. By exploring how the source of an advertisement (employee vs. firm) impacts consumers' susceptibility to believing in greenwashing claims, the study fills a gap in both the source of advertisement and greenwashing literature, as said relationship has not been examined

yet. This study also advances knowledge on how the content of the ad interacts with its source, and how that impacts consumers' greenwashing susceptibility for greenwashing ads, but not for genuine ads, which adds to the green marketing and greenwashing literature. The study further adds to the literature by unraveling the mediating role of perceived ad authenticity. It studied how the source of an ad impacts consumers' perception of an ad's green claims, which also contributes to the literature on the Source Credibility Model, by challenging the assumption that ads promoted by employees (vs. firm) are automatically more trustworthy. The fact that a non-significant distinction between both sources was found, helps refine theories about how sources impact consumer perceptions. Additionally, the significantly mediated moderation of perceived ad authenticity and the type of ad indicates that even though perceived authenticity might not be significant to the direct relationship, it plays an important role when the source of the ad interacts with the type of the ad, reinforcing the complexity of how consumers process green claims. Furthermore, by finding that environmental concern did not moderate how consumers are susceptible to greenwashing ads, the research questions how much environmental values influence consumers' response to green marketing and how much those values translate to actual environmental behaviours, adding to the environmental concern literature. At last, the study examines how social media dynamics influence consumer susceptibility to greenwashing, focusing on online advertising instead of traditional advertising, contributing to online advertising literature.

4.2 Managerial Contributions

The study also has managerial contributions. The findings indicate that consumers are more discerning about how authentic a greenwashing ad is, compared to genuine green advertising, especially when the ad is promoted by the firm itself. Therefore, based on said discernment, managers should try to align the firm's sustainable practices to the content of its ads, ensuring that the company's green claims are clear and substantiated, in order to avoid misleading consumers and the potential of backlash related to it. Moreover, instead of using employees to communicate vague green claims, managers should train their employees to strongly advocate their sustainable practices, reflecting the company's actual commitment to sustainability, which is noticed by consumers, as indicated by this research. Furthermore, this study demonstrates that when consumers perceive an advertisement as greenwashing, it affects their perception of the ad and willingness to purchase from the brand, potentially harming the brand's reputation. Hence, managers should invest in authentic and consistent green initiatives, so that their green claims are genuine, and therefore, beneficial not only to the consumer and the environment but to the firm itself.

4.3 Limitations and Directions for Future Research

Even though the study found significant results, some limitations can be addressed by future research. Firstly, in order to make sure that participants knew about the concept of greenwashing, they were prompted with a small passage about it before being subjected to the manipulation. If the prompt had been removed, some participants might not have been able to detect greenwashing, which could've altered the results. While this may have

an impact on the results, it shows that even with instruction participants were more susceptible to the greenwashing claim when the claim came from an employee. Moreover, the greenwashing prompt might have given participants an inclination to not trust anyone, neither the firm nor the employee, which might have led to the lack of significance of the direct effect. Future research can test the manipulation again without the prompt and compare how much the results changed with this alteration. Secondly, another possible explanation for the lack of significance of the direct effect is that the employee's connection with the firm may have led participants to see both sources as closely associated, reducing their perceived differences. Future research could address this by creating a manipulation where the difference between the sources is more prominent (e.g., when a friend promotes the ad x employee/firm). Another limitation is that the study also did not find a significant moderating role of environmental concern and green purchase behaviour, which could be due to inconsistencies in the self-reported scales utilized to measure those variables. Future research could use other types of measures for environmental concern, providing more precise results, such as behavioral studies for tracking green purchasing habits and qualitative methods such as interviews.

The lack of generalization for other types of advertisements is another limitation. The research analyzed greenwashing and genuine (non-greenwashing) ads, limiting the findings to deceptive green advertising. Future studies could test the impact of the source of the ad on other types of advertisements, such as corporate social responsibility initiatives, health-focused ads, and product quality claims. The non-significance of downstream effects such as brand evaluation, product evaluation, and willingness to recommend the brand limit the understanding of the impact of the source of the ad on

different consumer attitudes and behaviors. Future research could focus on other possible effects, such as brand loyalty and advocacy behaviour. In addition, the study was conducted with participants from a specific geographic area (USA), which also limits the generalizability of the study to other cultures, especially non-Western cultures. Future studies can explore this matter in other cultures and include cross-cultural comparisons on the potential differences in the results, unraveling how much cultural norms influence the obtained results. Finally, future research can extend the study to other forms of deceptive advertising to see if the results are similar for other types of deceptive ads.

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APPENDIX A REB APPROVAL



Social Sciences and Humanities Research Ethics Board
Letter of Approval

July 18, 2024

Nicole Goulart Natali
Management\General - Management

Dear Nicole,

REB #: 2024-7302
Project Title: The Impact of Source of Advertisement on Susceptibility to Greenwashing through Perceived Authenticity: Type of Green Ad and Environmental Concern as Moderators.

Review Type: Delegated Review
Effective Date: July 18, 2024
Expiry Date: July 18, 2025

The Social Sciences and Humanities Research Ethics Board has reviewed your application for research involving humans and found the proposed research to be ethically acceptable in accordance with the *Tri-Council Policy Statement Ethical Conduct for Research Involving Humans*. This approval will be in effect for 12 months as indicated above. This approval is subject to the conditions listed below which constitute your on-going responsibilities with respect to the ethical conduct of this research.

Sincerely,

Dr. John Cameron
Chair, Social Sciences and Humanities Research Ethics Board
Dalhousie University

ethics@dal.ca

APPENDIX B RESEARCH INSTRUMENTS

This paragraph was posted on Prolific. Prolific accepts a very short brief description of the study. When participants clicked on the study, they were directed to the consent form with more information.

(Prolific Recruitment Information): Study Announcement

We are inviting you to participate in an online advertising research study that explores social media advertisement. The study is being conducted by Nicole Natali, MScB student at Dalhousie University, Dr. Hamed Aghakhani, Associate Professor, and Peggy Cunningham, Professor, at Dalhousie University. Your participation in this study is voluntary and you may withdraw from the study at any time without penalty. At no point in this study will you be asked to provide any information that could potentially identify you. For academic publication purposes, results are analyzed in aggregate, and individual results are not disclosed. To participate in this study, you must be of legal age, a resident of the USA or Canada, and fluent in English. To sign up, please click below. If you have any questions, please do not hesitate to contact us at: nc256728@dal.ca.

This study is approved by Dalhousie University, REB #: 2024-7302

Compensation amount: \$2.54 USD

Consent Form

This consent form is divided into two sections. Section A will ask you to consent to participate in this specific study. Section B of this form will ask you to consent to have your de-identified (anonymous) data stored in a repository that might be used in future research.

Project title: Social Media Advertising on Instagram

Lead researchers: Nicole Natali, MScB student at Dalhousie University, nc256728@dal.ca; Hamed Aghakhani, Associate Professor, Faculty of Management, Aghakhani@dal.ca; and Peggy Cunningham, Professor, Faculty of Management, PeggyC@dal.ca.

SECTION A - Consent to Participate in this study.

Introduction: You are invited to take part in a research study being conducted by Nicole Natali (MScB student at Dalhousie University), Dr. Hamed Aghakhani (Associate Professor of the Faculty of Management at Dalhousie University), and Peggy Cunningham (Professor at Faculty of Management at Dalhousie University). Your participation in this study is voluntary and you may withdraw from the study at any time without penalty. The study is described below, along with information about the risks, inconvenience, or discomfort that might be experienced. Participating in the study might not benefit you directly, but we might gain knowledge that can benefit others.

Purpose and Outline of the Research study: The purpose of this study is to understand more about people's attitudes towards advertisements posted on Instagram. This study is designed to evaluate new products advertised on Instagram, and we would like to ask your opinion about this new product and its advertisement.

Who can take part in the research study: Any Prolific member with a minimum age of 18 living in the United States or Canada and owning an active Instagram account can participate in this study.

Who will be conducting the research: All aspects of this research will be conducted by the research team listed above.

What you will be asked to do: If you choose to participate in this study, you will be asked to review an advertisement about a new product and answer some questions about your perception of the ad. This survey is expected to take approximately 10 minutes to complete.

Withdrawal from the Study: Your participation in this research is entirely your choice. You can stop participating in the study at any time, for any reason, if you decide. Your decision to stop participating, or to refuse to answer questions, will not affect your relationship with the researchers, Dalhousie University, or any other group associated with this project. We will not include any incomplete surveys in our analyses. Additionally, withdrawing from the study will not affect your compensation, however, in order to receive your compensation, you will have to proceed to the end of the questionnaire by clicking next until you reach the end. You will also be given the opportunity to withdraw your data at the end of the study during debriefing, by choosing the options of your choice if you wish to withdraw your data.

Confidentiality & Anonymity: Your responses are de-identified, and thus results will be reported with no reference to you specifically. This means that there are no questions in the survey that ask for identifying details such as your name or email address.

Possible benefits, risks and discomforts: There are no direct benefits anticipated, but you may gain insights into your own preference. There are no medical risks to you from participating in this study, but taking part in this study may make you feel uncomfortable, or fatigued, or an eye strain may occur. However, any discomfort experienced is expected to be minimal. You may refuse to answer questions at any time if you experience any discomfort.

Compensation: To thank you for your time, you will receive \$2.54 USD as compensation agreed on with Prolific when you signed up for this study. You may contact Research Ethics, Dalhousie University at (902) 494-3423, or email ethics@dal.ca.

Questions or Concerns: If you have any questions regarding the study, please contact Nicole Natali at nc256728@dal.ca, Hamed Aghakhani at aghakhani@dal.ca, or Peggy Cunningham at PeggyC@dal.ca. If you have any specific ethical concerns about this study, you may contact Research Ethics, Dalhousie University at (902) 494-3423, or email ethics@dal.ca.

Consent

Please click below to confirm that you have had your questions answered to your satisfaction, that you are aware that all records are entirely de-identified, and that you may discontinue participation at any point in the study.

Please click on the appropriate box to indicate your consent to participate:

- a. Yes, I agree to participate – click to continue to study.
- b. No, I do not wish to participate – close browser and end session.

SECTION B - Consent to have your de-identified responses stored in a repository that might be used in future unspecified research

Once the study has been completed, all data files will be stored on a secure Dalhousie server with access restricted only to those personnel on the research team and will be available for future unspecified research. The research team may also post the data to the Open Science Framework (OSF) for public access if it is requested by the publisher(s).

The purpose is to enable researchers to conduct further investigations, develop new insights, and contribute to scientific knowledge, and to increase the transparency and replicability of our research. This is a publicly available database but is primarily used by other researchers in the field. Your prolific ID linked to your response will not be used, or stored anywhere, thus will be deleted from the dataset. Your data will be stored in accordance with applicable data protection and privacy laws.

Dalhousie University and therefore this research team uses Dataverse @Borealis as its repository OSF. Borealis is a publicly accessible data repository platform, open to affiliated researchers to deposit and share research data openly with anyone in the world. It is free and built with open-source software. It is hosted on Canadian servers, provides data visualization tools for tabular data files, provides DOIs through DataCite Canada, and more. During this research we will not ask for any identifiable questions as well as no biological materials, therefore no human biological data will be collected, nor shared with anyone, including the researchers on this project.

Consent

Please click on the appropriate box to indicate your consent to have your anonymous (de-identified) responses stored in a repository:

- a. I consent to have my anonymous (de-identified) data stored in a repository and available for future unspecified research.
- b. I do not consent to have my anonymous (de-identified) data stored in a repository and available for future unspecified research.

What is your Prolific ID? (Please note that this response should auto-fill itself with the correct ID, just click on the “next” button)

Important Note Before Beginning

This activity will take approximately 13 minutes. Please do it in one sitting, on your own, in a quiet and private setting with your full attention and engagement.

Complete this session on a computer or tablet (no cell phone). If you do not think you can complete this without interruption for the next 10 minutes or so, close the page now and do it at another time when you can complete it in a single session.

On some pages, the "Next -->" button may appear after a short delay. This is to make sure you have time to read the page carefully before moving on. If you are reading each page in its entirety, this should not slow you down. When you are finished reading this screen and ready to move on, click the button. Also, note that you cannot go back to a page after moving to next page.

(Screening question)

Please, indicate which of the following social media platforms you currently have an account on (select all that apply):

- a. Facebook
- b. TikTok
- c. Instagram
- d. Twitter / X
- f. Snapchat
- g. Other (Please indicate which one)
- h. I don't have a social media account

TASK I:

In this task, we would like to measure your comprehensive reading skills and therefore we would like to ask you to read the following short excerpt. It is important to make sure you fully read the content of this excerpt and be able to answer few questions about it.

Please move to the next page to start reading the excerpt.

(Greenwashing passage)

Environmental Claims about Products and Services

Countless consumers are concerned about the environment and climate change. Therefore, many are looking for products and services that are less harmful to the

environment. This has led to an increased demand for “green” products or services. In tandem with this growing demand for "green" products, there has also been an increase of false or misleading environmental ads or claims, also known as "greenwashing". This practice harms competition and innovation because consumers are being misled and are therefore unable to make an informed purchasing decision.

While many businesses offer products that have a lower environmental impact, other businesses may mislead potential consumers about the sustainability of their products. If false or misleading claims are made, consumers may be misled into purchasing less sustainable products and services. The term “greenwashing” has been used to identify the practice of falsely portraying products and services as having more environmental benefits than they truly have. In some cases, this practice is illegal. Businesses should avoid vague claims such as “eco-friendly” or “safe for the environment”, which can lead to multiple interpretations, misunderstanding and deception.

Remaining vigilant as a consumer: Many consumers wish to purchase items that have a lower impact on the environment. When you’re shopping for products or services, be on the lookout for greenwashing. Be vigilant against environmental claims that seem vague, exaggerated, or are not accompanied by supporting statements or certification seals. Don’t be afraid to reach out to the manufacturer to ask them questions. Also remember that all consumer goods have an impact on the environment, including those that claim to be "green".

In up to ten words, what was the main point of the excerpt you just read:

TASK II:

Task I is finished. Thank you for your answers. We are now moving to task II in this research. In this task we would like to ask you to read a post on an Instagram account and evaluate the post. Please make sure you review the post thoroughly as you will be asked questions about what you were presented in the Instagram post.

(Manipulation)

(Greenwashing firm condition)

This is a recent post on Aquaflo's official Instagram page. Aquaflo is dedicated to providing high-quality hydration solutions while prioritizing innovative performance. Aquaflo ensures every bottle is a refreshing and reliable choice.



(Genuine firm condition)

This is a recent post on Aquaflow's official Instagram page. Aquaflow is dedicated to providing high-quality hydration solutions while prioritizing environmental sustainability. With a focus on eco-friendly practices (certified by Carbon Trust), Aquaflow ensures every bottle is a responsible choice for the user and the planet.



(Greenwashing employee condition)

This is a recent post on Alex Doe's Instagram account. Alex Doe is a dedicated employee of Aquaflow and is passionately committed to innovation. Alex has posted this on Instagram. With a strong focus on excellence, Alex helps ensure every bottle is a refreshing and reliable choice.



(Genuine employee condition)

This is a recent post on Alex Doe’s Instagram account. Alex Doe is a dedicated employee of AquafLOW and is passionately committed to environmental sustainability. Alex has posted this on Instagram. With a focus on eco-friendly products (certified by Carbon Trust), Alex helps ensure every bottle is a responsible choice for the user and the planet.



(Brand evaluation)

Q1. What is your evaluation of the brand Aquaflow?

Bad 1 2 3 4 5 6 7 Good

Unfavorable 1 2 3 4 5 6 7 Favorable

Unlikeable 1 2 3 4 5 6 7 Likeable

(Ad evaluation)

Q2. What is your evaluation of the Instagram post you just viewed?

Bad 1 2 3 4 5 6 7 Good

Unfavorable 1 2 3 4 5 6 7 Favorable

Unlikeable 1 2 3 4 5 6 7 Likeable

(Product evaluation)

Q3. What is your evaluation of the product included in the Instagram post?

Bad 1 2 3 4 5 6 7 Good

Unfavorable 1 2 3 4 5 6 7 Favorable

Unlikeable 1 2 3 4 5 6 7 Likeable

(Mediator- Perceived ad authenticity)

Q4. Please indicate to what extent you agree with the following statements:

I. The story of the post was realistic.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

II. The story of the post was authentic.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

III. The story of the post showed an everyday life activity.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

IV. The story of the post was true to life.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

V. The message of the post was inaccurate

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

VI. The message of the post was exaggerated

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

VII. The message of the post was overstated

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

(Willingness to purchase from the brand)

Q5. The Aquaflow product will be available in most stores in the near future. Please indicate your willingness to purchase from the brand.

I. I am willing to purchase from this brand.

Strongly disagree 1 2 3 4 5 Strongly agree

(Willingness to recommend the brand)

Q6. Please indicate your willingness to recommend the Aquaflow brand to friends and family.

I. I am willing to recommend this brand to friends and family.

Strongly disagree 1 2 3 4 5 Strongly agree

(Dependent variable- Perceived Greenwashing)

Q7. Please indicate to what extent you agree with the following statements:

I. The text shown on the Instagram post is misleading in regard to its environmental features

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

II. The visuals or graphics pictures on the Instagram post are misleading in regard to its environmental features.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

III. This product possesses a green claim that is vague or seemingly unprovable.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

IV. This product exaggerates how green it actually is.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

V. Please select “somewhat disagree”.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

VI. This product leaves out or masks important information, making the green claim sound better than it is.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

VII. This product includes claims about its environmental features that are false.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

VIII. This Instagram post does not tell the truth about the product’s green functionality.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

(Moderator- Environmental Concern)

Q8. Please indicate to what extent you agree with the following statements:

I. Protecting the environment will threaten jobs for people like me.

Strongly disagree 1 2 3 4 5 Strongly agree

II. Laws to protect the environment limit my choices and personal freedom.

Strongly disagree 1 2 3 4 5 Strongly agree

III. A clean environment provides me with better opportunities for recreation.

Strongly disagree 1 2 3 4 5 Strongly agree

IV. We don't need to worry much about the environment because future generations will be better able to deal with these problems than we are.

Strongly disagree 1 2 3 4 5 Strongly agree

V. The effects of pollution on public health are worse than we realize.

Strongly disagree 1 2 3 4 5 Strongly agree

VI. Pollution generated here harms people all over the earth.

Strongly disagree 1 2 3 4 5 Strongly agree

VII. Claims that current levels of pollution are changing the earth's climate are exaggerated.

Strongly disagree 1 2 3 4 5 Strongly agree

VIII. Over the next several decades, thousands of species will become extinct.

Strongly disagree 1 2 3 4 5 Strongly agree

IX. The balance of nature is delicate and easily upset.

Strongly disagree 1 2 3 4 5 Strongly agree

X. I would participate in a demonstration against companies that are harming the environment.

Strongly disagree 1 2 3 4 5 Strongly agree

XI. I would contribute money to environmental organizations.

Strongly disagree 1 2 3 4 5 Strongly agree

XII. I would sign a petition in support of tougher environmental laws.

Strongly disagree 1 2 3 4 5 Strongly agree

XIII. I would take a job with a company I knew was harming the environment.

Strongly disagree 1 2 3 4 5 Strongly agree

(Green Purchase Behaviour)

Q9. Please indicate to what extent you agree with the following statements:

I. I make a special effort to buy paper and plastic products that are made from recycled materials.

Strongly disagree 1 2 3 4 5 Strongly agree

II. I make a special effort to buy household chemicals such as detergents and cleansing solutions that are environmentally friendly.

Strongly disagree 1 2 3 4 5 Strongly agree

III. I have switched products for ecological reasons.

Strongly disagree 1 2 3 4 5 Strongly agree

IV. When I have a choice between two equal products, I purchase the one less harmful to other people and the environment.

Strongly disagree 1 2 3 4 5 Strongly agree

V. I have avoided buying a product because it has potentially harmful environmental effects.

Strongly disagree 1 2 3 4 5 Strongly agree

(Ad perceptions)

Q10. Please indicate your perceptions of the Instagram post:

I. To what extent do you perceive this Instagram post was generated by the brand?

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

II. To what extent do you perceive this Instagram post was generated by the employee?

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

III. To what extent do you perceive this Instagram post was a greenwashing ad?

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

(Manipulation check Source of the Ad)

Q11. Where was the Aquaflow post posted?

- a) Aquaflow Instagram page
- b) Aquaflow employee's Instagram page

(Manipulation check Type of the Ad)

Q12. Was the claim indicated in the post certified by an institution?

- a) Yes, it had Carbon Trust seal certification
 - b) Not sure, I don't recall
 - c) No, the claim was not certified by any agency
-

(Gender)

Q13. What gender do you identify with?

- a) Male
- b) Female
- c) Non-binary
- d) Prefer not to say

(Age)

Q14. How old are you?

Debriefing

Thank you very much for participating in this study! Your cooperation, work, and enthusiasm are all greatly appreciated.

You were informed that the main purpose of this study was to evaluate an Instagram ad. Specifically, we aimed to examine whether (1) consumers evaluate brands more favorably when the source of the ad is the firm or its employee; and (2) whether this difference is significant when the ad includes some signs of greenwashing.

All participants read a fictitious ad featuring bottled water, with half of the participants informed that the ad was posted on the firm's Instagram account, while the other half were told that the ad was posted on an employee's Instagram account. Additionally, half of the participants saw an ad with some vague and unverified claims, while the other half were given specific verified claims about the advertised product.

While we regret using deception in this study, it was deemed essential to withhold this information as it would likely bias the results if known beforehand. Because this study did not reveal the true nature of the research, fully informed consent could not be given at the start of the study. Thus, we would like to ensure that we have your full informed consent and that you are still willing to allow us to use the data from your participation in the study. Please indicate below that you consent or do not consent to let us use the completed questionnaire now that you are fully aware of the study's purpose and hypotheses. You will still receive your full compensation even if you do not consent and request that your data be destroyed. Once again, thank you for your participation.

Please indicate if you agree to have your anonymous data included in the analysis.

- a) Agree (use my data)
 - b) Disagree (destroy my data)
-

Questions or Concerns? If you have any questions regarding the study, please contact Nicole Natali at nc256728@dal.ca. If you have any specific ethical concerns about this study, you may contact the director of Research Ethics, Catherine Connors at ethics@dal.ca.

Thank you for taking part in this study. Please click on the "Next" button to be redirected back to Prolific and register your submission.