

**Not just what is being said, but also who says it:  
ESG communication and when and why it is effective**

Student: Ted Gerrits (1048362)  
Course: MSc Thesis Marketing and Consumer Behaviour (MCB80436)  
Supervisors: Prof. Dr. Hans van Trijp (MCB) & Prof. Dr. Ir. Joost Pennings (MCB)  
Second reader(s) Dr. Erica van Herpen  
Place: Wageningen University & Research, Wageningen  
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## **Abstract**

As sustainability becomes an increasing priority for consumers, snack food brands increasingly rely on Environmental, Social, and Governance (ESG) communication to shape their brand image. However, incongruities between ESG claims and actual performance evidence, normally referred to as greenwashing and greenhushing, can affect how consumers perceive a brand. This thesis explores how such incongruities influence perceived brand equity and purchase intention, with perceived brand credibility acting as a mediating factor. A 2x2 experimental design was conducted with 268 Dutch participants, manipulating ESG claim strength (strong vs. modest) and ESG performance evidence (high vs. low). Data were analysed using One-Way ANOVA, mediation analysis, and regression analysis. The findings show that greenwashing significantly undermines both brand credibility and brand equity. In contrast, greenhushing, despite its modest tone, significantly enhances brand credibility, which in turn acts as a significant mediator of the positive effect on perceived brand equity. Additionally, brand equity strongly predicts purchase intention, particularly through the dimensions of brand loyalty and perceived quality. These results emphasise the central role of credibility in ESG communication and suggest that understated, authentic messaging may be more effective than bold claims. The study provides theoretical and practical implications for snack food brands trying to build trust and long-term value through credible sustainability communication.

# Table of Contents

<b>1. Introduction</b>	<b>6</b>
1.1 Background	6
1.2 Research Gap	7
1.3 Research Objective and Research Questions	8
1.4 Structure of the Thesis	8
<b>2. Theoretical Background</b>	<b>9</b>
2.1 ESG explained	9
<b>Towards the ESG Claim-Performance Incongruity Model</b>	<b>10</b>
2.2 ESG Claim Strength & Performance Evidence	10
2.2.1 Claim Strength	10
2.2.2 Performance Evidence	10
2.3 ESG Claim Performance – (In)Congruity and Perceived Brand Equity	11
2.4 Perceived Brand Credibility as a Mediator	12
2.4.1 ESG Claim-Performance Incongruity and Perceived Brand Credibility	12
2.4.2 Perceived Brand Credibility and Perceived Brand Equity	13
2.5 Purchase Intention	14
2.5.1 Brand Equity on Purchase Intention	14
<b>2.6 Conceptual Framework</b>	<b>15</b>
List of Hypotheses:	15
<b>3. Methodology</b>	<b>16</b>
3.1 Design & Participants	16
3.1.1 2x2 Experimental Design	16
3.1.2 Convenience Sampling Method	16
3.1.3 Target Population	16
3.1.4 Sample Size Calculation	16
3.2 Stimuli	17
3.2.1 News Articles	17
3.2.2 Pre-Test	18
3.3 Measures	19
3.4 Procedure	21
3.5 Data Analysis Plan	22
3.5.1 Pre-Test and Manipulation Check	22
3.5.2 Descriptive Statistics	23
3.5.3 Hypothesis Testing	23
3.5.4 Measurement Model Validation	23
<b>4. Results</b>	<b>24</b>
4.1 Descriptive statistics	24
4.2 Reliability & Normality Analysis	25
4.3 Manipulation Checks	26
4.4 Means & Standard deviation of variables	27
4.5 Hypothesis Testing	28

4.5.1 The effects of claim strength x performance evidence .....	28
4.5.2 Source credibility as mediator .....	28
4.5.3 Perceived Brand Equity to Purchase Intention .....	29
<b>5. Discussion .....</b>	<b>30</b>
5.1 Research problem.....	30
5.2 Main findings & interpretation .....	30
5.3 Theoretical Implications .....	31
5.4 Practical Implications .....	32
5.5 Limitations & Recommendations.....	33
<b>References .....</b>	<b>34</b>
<b>Appendix .....</b>	<b>41</b>
Appendix A. News Article Stimuli.....	41
Appendix B. Measurement Adaptation Table .....	42
Appendix C – QQ Plots Normality .....	44
Appendix D – Correlation Matrix .....	45
Appendix E. Survey Distribution Messages .....	46
Appendix F - Use of AI.....	48

# 1. Introduction

## 1.1 Background

In recent years, food brands have faced increasing pressure to adapt their practices and communication strategies to meet evolving consumer expectations around sustainability. Consumers are increasingly concerned about the environmental, social, and ethical impact of the products they purchase, and these concerns have raised the importance of Environmental, Social, and Governance (ESG) performance as a key factor in brand evaluation (Grunert, 2011; Henisz et al., 2019; Bae et al., 2023). ESG performance refers to a company's efforts to minimise its environmental impact, promote social well-being, and maintain ethical governance practices (Peloza, 2006; Huang, 2021). Brands that effectively manage these aspects can strengthen stakeholder relationships, improve their market position, and enhance long-term success (Aureli et al., 2020; Zhan, 2023).

In the food industry, particularly in product categories such as snack food, ESG performance and communication are receiving increasing attention because these products are widely available and often seen as unhealthy or non-essential, rather than responsible (Bae et al., 2023; Cai et al., 2024). Although many consumers express growing concern about sustainability, their actual purchase decisions do not always reflect these values (Vermeir & Verbeke, 2006; WWF, 2022), especially in fast-moving consumer goods like snack food, where choices are often driven by habit, convenience, or taste (Vermeir et al., 2020). Snack food represents a significant portion of everyday consumption and is commonly made up of energy-dense products, such as chips, nut mixes, and snack bars. Their contribution to total energy intake, along with their frequent association with poor dietary quality, makes them a product group with significant implications for public health (Hess et al., 2016). As a result, snack food brands are expected to be more open and accountable in how they operate (WWF, 2022). Therefore, snack food brands provide the central context for this study's exploration of ESG communication and consumer response.

One of the primary ways brands communicate their sustainability initiatives is through ESG reports, which provide stakeholders with insights into a company's sustainability performance (Krantz & Jonker, 2024). In Europe, this is becoming increasingly formalised through regulatory frameworks like the Corporate Sustainability Reporting Directive (CSRD), which demands stricter standards for sustainability reporting (European Commission, n.d.). Yet, beyond formal reports, brands often communicate their ESG commitments through marketing and public relations, which makes sustainability a key aspect of their brand image. A key challenge in this ESG communication is aligning a brand's claims and its actual performance evidence (Chen & Chang, 2012; Taufique et al., 2017; Nguyen et al., 2019).

Incongruities between these claims and performance evidence can show in two ways: greenwashing and greenhushing. Greenwashing involves making exaggerated sustainability claims that are not supported by evidence, which could potentially lead to consumer scepticism and reduced trust (Oliver, 1979; Simons, 2017; de Freitas Netto, 2020). Greenhushing, on the other hand, refers to under-communicating genuine sustainability achievements, which can result in missed opportunities to build brand value (Font et al., 2017; Christis & Wang, 2021). However, some argue that this incongruity can also create perceptions of transparency and honesty (Markovic et al., 2018; Bernadino, 2021; Yang & Battocchio, 2021).

Such incongruities between ESG communication and performance can have significant consequences for brand evaluation among consumers, for example, through the lens of perceived brand credibility. Perceived credibility encompasses trustworthiness and expertise, which originate from the source credibility model by Hovland & Weiss (1951). The two dimensions indicate how reliably and competently consumers perceive a brand to be (Erdem & Swait, 2004; Hur et al., 2014). When ESG communication fails to align with actual performance, perceived credibility can be damaged, which could affect perceived brand equity (Chaudhuri & Holbrook, 2001; Qayyum et al., 2023; Thakur et al., 2023).

The concept of brand equity, which contains four dimensions, namely brand awareness, perceived quality, brand associations, and brand loyalty, is critical in the context of the snack food industry, as perceived brand value regularly explains purchase intention (Aaker, 1992; Keller, 1993; Wang, 2010; Roozy et al., 2014; Bougenvile & Ruswanti, 2017). High perceived brand equity could enhance purchase intention (Steenkamp, 2017; Panda et al., 2020). However, when brand credibility is

doubted due to incongruities, it might have negative consequences for perceived brand equity and can undermine consumers' purchase intention (Nguyen et al., 2019; Qayyum et al., 2023).

This thesis focuses on exploring the consequences of incongruities between ESG communication and performance evidence on perceived brand equity and consumers' purchase intention. By including perceived brand credibility as a mediating factor, this research tries to provide a deeper understanding of how credibility perceptions shape consumer responses to the ESG communication of snack food brands.

## 1.2 Research Gap

Despite growing research on ESG communication, important gaps remain in understanding how incongruities between ESG claims and ESG performance evidence affect perceived brand credibility, brand equity, and consumers' purchase intention. Existing studies have studied ESG communication, ESG performance evidence and brand equity (Aaker, 1992; Friede et al., 2015; Fisher et al., 2023; Krantz & Jonker, 2024; Adhikari, 2024), but few address how varying combinations of claim strength (strong vs. modest) and performance evidence (high vs. low-ranked shape brand perceptions. One source that comes close to doing this is Steenis et al. (2023), which focuses on the claim-fact discrepancy in claim strength and the sustainable performance of packaged products but does not, for example, consider the brand credibility theory (Erdem & Swait, 2004). This gap could overlook the importance of building credibility to reach higher brand value (Kemp et al., 2011; Hur et al., 2014; Koh et al., 2022).

Research suggests that credibility perceptions significantly influence consumer evaluations of ESG claims and efforts (Erdem & Swait, 2004; Delmas & Burbano, 2011; Kumar et al., 2021). However, the mediating role of brand credibility in the relationship between ESG incongruity and brand outcomes remains underexplored, especially in consumer-facing industries like snack food (Hur et al., 2014; Koh et al., 2022; Ling et al., 2023). Greenwashing, where brands overstate their ESG efforts without sufficient evidence, can damage trust and brand value (Oliver, 1979; Lee, 2014; Simons et al., 2017; de Freitas Netto. 2020). On the other hand, there is greenhushing, where brands under-communicate strong performance, which limits their ability to leverage ESG achievements (Font et al., 2017; Bhaduri & Copeland, 2021; Thakur et al., 2023). However, some sources argue that this type of communication can increase feelings of honesty and transparency among consumers. However, this is underexplored in the food industry (Foreh & Grier, 2003; Yang & Battocchio, 2021). Both strategies could cause consequences for brand equity but are highly underexplored in the food industry (Simons, 2017; Fisher, 2023), especially for greenhushing, which currently mostly focuses on the tourism industry (Font et al., 2017). Furthermore, the consequences of aligning claim strength with performance evidence on brand equity remain fragmented across existing literature.

Furthermore, while brand equity dimensions such as brand awareness, perceived quality, brand associations, and brand loyalty are well established (Aaker, 1992; Keller, 1993; Chatzipanagiotou et al., 2015), little is known about how ESG-claim performance incongruities affect these dimensions and what the consequences are for purchase intention. Current literature primarily focuses on the effects of either greenwashing or greenhushing on brand equity and purchase intention (Nyilasy et al., 2014; Akturan, 2018; Zhang et al., 2018), rather than offering an overview of how different combinations of claim strength and performance evidence impact perceived brand equity in the food industry.

Therefore, this study addresses these gaps by exploring how claim-performance incongruity influences brand equity through brand credibility as a mediator. This research contributes to a deeper understanding of how snack food brands can build or damage perceived brand value through sustainability communication and its perceived credibility, but also offers practical insights into aligning claims with performance evidence to enhance long-term brand equity.

### **1.3 Research Objective and Research Questions**

To address the research gap, the leading objective of this study will be to explore how incongruities between ESG claim strength and performance evidence of snack food brands impact brand equity and what the consequences are for consumers' purchase intention. The difference or incongruity between claim strength and performance evidence was measured by dividing both concepts into two sub-categories (see Figure 1). Claim strength was divided into 'Strong' and 'Modest', while performance evidence was divided into 'High-ranked' and 'Low-ranked', based on a hypothetical Top 100 ESG brand ranking. Another objective of this study was to explore how the concept of brand credibility mediates the relationship between claim-performance evidence incongruity and perceived brand equity. The research will focus on answering the following main research question:

How do incongruities between ESG claim strength and performance evidence impact perceived snack food brand equity, with brand credibility acting as a mediator, and what are the consequences for consumer purchase intention?

To be able to answer the main research question, the following secondary research questions were formulated:

1. How do different combinations of claim strength and performance evidence impact perceived snack food brand equity?
2. Does perceived brand credibility mediate the relationship between ESG claim-performance (in)congruity and perceived snack food brand equity?
3. How does perceived snack food brand equity influence purchase intention?

### **1.4 Structure of the Thesis**

This thesis will be structured as follows. First, the theoretical background will explore existing studies on the general concept of ESG, ESG performance evidence and communication, brand credibility, perceived brand equity, and purchase intention. A deductive research approach was adopted to integrate relevant theories on these topics and derive testable hypotheses. Research articles were selected based on relevance, with preference given to studies published within the last five years; however, older, highly cited studies were also included to ensure a strong theoretical foundation. The literature was sourced from Google Scholar, Web of Science, Scopus, and Google.

The methodology chapter will outline the research design, including data collection and analysis methods. The results chapter will present the findings of the study conducted in the context of snack food brands, followed by a discussion chapter that summarises the key findings, discusses their implications, outlines limitations, provides recommendations, and offers a final reflection on the contributions of the research.

## 2. Theoretical Background

In the following chapter, the theoretical background explores the existing research on the relationships between ESG claim strength and performance evidence, perceived brand equity, consumer purchase intention, and the mediating role of perceived brand credibility. This chapter will first explain the concept of ESG and then explore the concepts of claim strength and performance evidence, along with their (in)congruities. Next, it will explore the effects of these (in)congruities on brand equity. Following this, the mediating role of perceived brand credibility in the relationship between claim-performance (in)congruity and perceived brand equity will be analysed. Finally, the consequences for consumer purchase intention will be discussed. The conceptual model introduced in this chapter is named the ESG Claim-Performance Incongruity Model.

### 2.1 ESG explained

As consumer expectations around sustainability continue to grow, food brands are facing increasing pressure to show their commitment to Environmental, Social, and Governance (ESG) principles. ESG performance refers to a company's ability to address key environmental issues, contribute to social well-being, and maintain ethical governance practices (Peloza, 2006; Huang, 2021; Chen et al., 2023). By effectively managing ESG aspects, food brands can reduce their environmental impact and foster stronger relationships with stakeholders (Aureli et al., 2020; Signori et al., 2021).

ESG is built on three key pillars: Environmental, Social, and Governance. The Environmental pillar focuses on reducing ecological impacts, including minimising pollution and conserving natural resources. It includes practices like using renewable energy and sourcing ingredients sustainably (Henisz et al., 2019). The Social pillar highlights the fair treatment of employees and community engagement. This pillar addresses issues like fair labour practices and community investment (Henisz et al., 2019). The Governance pillar is all about transparency and ethical decision-making, which ensures corporate integrity and accountability to stakeholders (Henisz et al., 2019; Aureli et al., 2020). Together, these pillars contribute to a brand's long-term success. This is shown to often lead to higher valuations and greater confidence from stakeholders (Aureli et al., 2020).

Investors and consumers are increasingly drawn to brands with strong ESG practices, as these are linked to better long-term (financial) performance. A meta-analysis of over 2,000 studies found that 63% showed a positive relationship between strong ESG performance and company returns, while only 8% showed negative effects (Friede et al., 2015). In the food industry, high ESG performance can lead to growth by building consumer trust, reducing costs, boosting employee morale, and creating added value by linking ESG to brand image (Henisz et al., 2019; Su et al., 2019). Food brands that prioritize sustainability might attract consumers who are passionate about ethical practices (Grunert, 2011), and they tend to be more resilient when market or regulatory conditions change (Wang et al., 2024).

However, despite the clear benefits of strong ESG performance, transparently communicating these efforts can be tricky. While some brands engage in greenwashing by exaggerating their ESG efforts (Oliver, 1979; Simons, 2017), others adopt the opposite approach, greenhushing, by deliberately under-communicating their sustainability achievements to avoid potential scrutiny (Font et al., 2017). The key challenge is finding the right congruity between communicating ESG efforts and brand performance on ESG aspects. How food brands manage this congruity in their messaging could be critical for building credibility and sustaining perceived brand value among consumers. Food brands must carefully align their messaging with their actual practices to create justified value. In the next section, different levels of sustainability communication and performance evidence will be explored. After this, there will be zoomed in on the consequences of (in)congruities between these concepts.

## **Towards the ESG Claim-Performance Incongruity Model**

### **2.2 ESG Claim Strength & Performance Evidence**

#### **2.2.1 Claim Strength**

Claim strength is crucial in how consumers perceive a brand and its products. Strong claims, which emphasise superior attributes and benefits, create higher expectations among consumers. These bold statements can influence consumer perception by highlighting key features of the brand that resonate with their values or needs (Antonides & Hovestadt, 2021). For instance, strong claims like “locally sourced” or “100% organic” can appeal to consumers looking for sustainable and ethical options, helping the brand position itself as a leader in these areas (Chen & Chang, 2012; Jung et al., 2020). By creating a clear and convincing message, strong claims can set the brand apart in a crowded market. When the claims align with what consumers consider important, such as environmental impact or quality, consumers are more likely to view the brand as trustworthy and committed to delivering on those promises (Anderson, 1973; Erdem & Swait, 2001). Bold claims often signal that the brand is confident in its values, which can enhance consumer trust and loyalty (Antonides & Hovestadt, 2021).

In contrast, modest claims may fail to communicate a strong brand identity, which might cause consumers to overlook the brand in favour of competitors with more assertive messaging. While modest claims, such as “30% organic” or “contains recycled materials,” might be seen as less exciting, they can resonate with consumers who value transparency and honesty (Foreh & Grier, 2003; Rim et al., 2019; Yang & Battocchio, 2021). These consumers may appreciate that the brand is not overstating its efforts, recognising the brand's attempt to be realistic and genuine about its current sustainability status. In an era where greenwashing is a concern, modest claims can build trust by signalling that the brand is not making exaggerated or misleading promises (Foreh & Grier, 2003; de Jong et al., 2020; Antonides & Hovestadt, 2021; Lee et al., 2022). For food brands, where effective communication of values is critical, claim strength is a key factor in how consumers perceive the brand's commitment to sustainability and quality, making it an important aspect of brand strategy and value creation.

#### **2.2.2 Performance Evidence**

The proven performance of a company in Environmental, Social, and Governance (ESG) aspects significantly influences stakeholder perceptions (Aureli et al., 2020). When backed by verifiable evidence, such as rankings, high ESG performance signals congruity with sustainability values and ethical business practices (Aureli et al., 2020; Koh et al., 2022). This is particularly relevant in industries where environmental and social responsibility are key concerns. Brands with strong ESG performance are perceived as more reliable and capable of delivering high-quality products (Pong & Man, 2024). High ESG ratings may contribute to perceptions of ethical labour practices, advanced production methods, and efficient resource management, which in turn can enhance consumer confidence in the brand's ability to meet or exceed expectations (Di Simone et al., 2022; Zou et al., 2024). Moreover, strong ESG performance enhances a brand's reputation and attracts greater consumer and stakeholder interest, which can ultimately increase its perceived value (Aureli et al., 2020; Zou et al., 2024).

On the contrary, low ESG performance evidence can harm a brand's perception, particularly by diminishing consumer confidence. Weak ESG metrics may signal a lack of commitment to corporate responsibility and innovation, which can lead to consumers losing trust in the brand's ability to meet expectations related to sustainability and ethical practices (Aureli et al., 2020; Koh et al., 2022). As confidence decreases, the brand may be perceived as less reliable, which could potentially harm its reputation (Tripopsakul & Puriwat, 2022; Koh et al., 2022). In consumer-driven industries like the food industry, where purchasing decisions are increasingly influenced by ESG factors, low ESG performance can further weaken a brand's competitive position and lead to negative outcomes such as a diminished competitive advantage (Nyilasy et al., 2014; Koh et al., 2022).

### **2.3 ESG Claim Performance – (In)Congruity and Perceived Brand Equity**

The distinctive roles of ESG claim strength and ESG performance evidence have now been explained, but challenges arise when brands try to align the two. Combinations like greenwashing (strong claims with weak evidence) and greenhushing (underplaying strong performance evidence) highlight the difficulties in achieving this congruity. Incongruities can affect various aspects of brand equity. Which is why the following section explores how incongruities between claim strength and performance evidence impact perceived brand equity, showing the complexities of aligning ESG claims with actual performance evidence.

Greenwashing can weaken the brand's valuation among consumers (Simons, 2017). Consumers may view such brands as dishonest when finding out that strong claims are not substantiated with actual performance evidence (Delmas & Burbano, 2011; de Freitas Netto, 2020). This could damage perceived quality, as consumers might start having doubts about the taste or production process (Pimonenko et al., 2020; Qayyum et al., 2023). In the food sector, exaggerated claims about sustainability might risk pushing away consumers due to sensitivity in areas like sourcing, potentially harming brand associations and diminishing loyalty (Chen et al., 2020; Adhikari, 2024). Unrealistic claims that are not supported by the right evidence lead to perceived deception, which can lower the brand's perceived value (Darke & Ritchie, 2007). Unsubstantiated claims may cause consumer criticism, and brands should be aware that making strong sustainability claims without proper evidence can result in accusations of greenwashing, which can ultimately damage perceived brand value (Polonsky et al., 2025). While study results also suggest that meaningless or unsupported claims can convince consumers of a brand's sustainability, the long-term risk of greenwashing accusations remains too high (Polonsky et al., 2025). In green marketing, consumers judged strong, subjective claims, not backed by evidence, as less credible, which negatively influenced their perception of the brand and the intention to purchase products from a brand (Musgrove et al., 2018; Tarabieh, 2021).

On the contrary, greenhushing occurs when brands choose not to fully communicate their strong ESG achievements. While this cautious strategy may protect brands from accusations of greenwashing, it also limits their ability to leverage these achievements (Font et al., 2017). Some argue that greenhushing reduces brand value by making ESG efforts less visible (Font et al., 2017; Christis & Wang, 2021; Tao, 2024). However, others suggest that greenhushing can improve brand equity by avoiding exaggerated claims. Because consumers highly value transparency and authenticity, brands that downplay their sustainability efforts may be perceived as more honest and trustworthy. This approach can be especially effective for engaging sceptical consumers who appreciate a modest and realistic strategy on ESG communication (Hussain et al., 2020; Bhaduri & Copeland, 2021). Consumers tend to respond negatively when they sense that a brand is being deceptive, even if the deception is minor or unintentional (Darke & Ritchie, 2007). Therefore, being honest and avoiding exaggerated claims can help mitigate scepticism and improve consumer brand perceptions (Forehand & Grier, 2003). While greenhushing involves a more reserved communication style, it still can improve consumer trust and perceived brand equity. Ultimately, both greenwashing

and greenhushing influence how effectively ESG initiatives contribute to brand equity, which leads to the following hypothesis:

**H1a:** The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand equity.

**H1b:** The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand equity.

## **2.4 Perceived Brand Credibility as a Mediator**

This research suggests that the effect of incongruity between ESG claims and performance evidence on perceived brand equity cannot be fully explained by a direct relationship alone. Instead, the role of brand credibility as a mediator provides a more complete explanation. According to the brand credibility theory by Erdem & Swait (2004), the perceived trustworthiness and expertise of a brand significantly impact consumers' perceptions of the brand and the information it presents. For a brand to be credible, it must not only possess the perceived expertise to fulfil its promises but also the integrity to do so. When a brand fails to deliver on its promises, it risks damaging its brand equity (Erdem & Swait, 2004; Hur et al., 2014). With that in mind, the following section will explain how brand credibility can act as a mediator in the relationship between ESG-claim performance incongruity and perceived brand equity.

### **2.4.1 ESG Claim-Performance Incongruity and Perceived Brand Credibility**

The degree to which a brand's ESG claims align with its actual performance can play a crucial role in shaping its credibility. When there is an incongruity, consumers may question its truthfulness. For instance, if a brand presents itself as environmentally friendly but does not fully meet these claims (greenwashing), its credibility may be negatively affected (Keilmann & Koch, 2024). Research suggests that such incongruities can lead consumers to view the brand and its ESG claims as incredible (Delmas & Burbano, 2011; Keilmann & Koch, 2024). In green marketing, consumers tend to perceive unsupported claims as less credible, which may negatively influence their perceived expertise and trustworthiness of the brand (Musgrove et al., 2018). This reduced credibility may extend across various brand attributes, potentially shaping perceptions of brand equity (Akturan, 2018; Qayyum et al., 2023; Keilmann & Koch, 2024). The consequences of lowered credibility to a brand's overall equity are further discussed in section 2.4.2.

While greenwashing may weaken brand credibility, greenhushing, understating sustainability efforts, could have the opposite effect. By adopting a more reserved communication style, brands might enhance credibility by appealing to consumers who value honesty and transparency. Research suggests that brands that demonstrate genuine environmental efforts while avoiding overstatement tend to be perceived as more trustworthy and transparent (Forehand & Grier, 2003; Bhaduri & Copeland, 2021; Bhagat, 2024). This approach may be particularly effective in the food industry, where consumers often appreciate realistic and honest messaging (Loebnitz & Grunert, 2022). Additionally, transparent communication about production processes has been associated with stronger consumer trust and reinforced brand credibility (Yang & Battocchio, 2021).

**H2a:** The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand credibility.

**H2b:** The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand credibility.

### 2.4.2 Perceived Brand Credibility and Perceived Brand Equity

Having explored the pathway from claim performance incongruity to credibility, the focus will now shift to exploring the role of credibility in influencing brand equity. In this context, low perceived credibility can undermine brand equity by weakening the brand's competitive position and weakening its perceived market value (Chaudhuri & Holbrook, 2001; Erdem & Swait, 2004). For example, when a brand is seen as insincere or deceptive, it can undermine consumer loyalty and associations with the brand (Erdem & Swait, 2001). When a brand is considered incredible, its equity may suffer as a result (Erdem & Swait, 2004; Qayyum et al., 2023). The trustworthiness of the brand, especially in its claims, plays a crucial role in shaping its value (Chaudhuri & Holbrook, 2001). Research in the context of greenwashing further suggests that lowered trustworthiness can negatively affect brand equity (Ha et al., 2022). Overall, if consumers lose confidence in a brand's credibility, its perceived equity can decline (Erdem & Swait, 2001; 2004; Ha et al., 2022).

On the other hand, when consumers perceive a brand as credible, it can foster, for example, brand loyalty, an important dimension of brand equity (Lassoued & Hobbs, 2015). Additionally, consumer perceptions of corporate social responsibility (CSR) can influence brand equity, with brand credibility potentially serving as a key mediator (Wang et al., 2021). Previous studies by Lafferty & Goldsmith (1999) and Goldsmith et al. (2000) suggest that credibility can play a key role in communicating CSR and shaping consumer perceptions of a brand. As a result, credibility is often seen as essential to improve perceived brand equity. Research also indicates that credibility acts as a mediator in different contexts, for example, by influencing how consumers interpret green information about a brand and how they perceive and evaluate the brand itself (Kumar et al., 2021). In the food industry, it has been found to significantly predict brand loyalty (Malik & Ahmad, 2014). In the context of organic food, the trustworthiness dimension appears particularly influential, as it plays an important role in shaping both perceived brand equity and purchase intention (Sekhar et al., 2022).

Building on these insights into perceived brand credibility's mediating effect, the following hypotheses are proposed:

**H3a:** The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand equity through perceived brand credibility.

**H3b:** The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand equity through perceived brand credibility.

## 2.5 Purchase Intention

In the food industry, with its fast-moving consumer goods (FMCG), one of the fundamental outcomes of brand communication is consumers' purchase intention (Vakratsas & Ambler, 1999; ElHaffar et al., 2020). Essentially, purchase intention is a person's plan to buy a product. It shows how likely consumers are to purchase a product. This decision is shaped by their brand perceptions (Fishbein & Ajzen, 1975). In section 2.5.1, the reasoning behind this will be explained through the relationship with brand equity.

The following section will explore the relationship between brand equity and purchase intention. By examining how the different dimensions of brand equity influence purchase intention, brands can gain insights into strengthening market positioning in an increasingly dynamic food industry.

### 2.5.1 Brand Equity on Purchase Intention

Brand equity is the value a brand holds based on consumer perceptions. It reflects how consumers feel about a brand and influences their buying decisions, which could lead to increased sales and loyalty to a brand (Aaker, 1992). Based on Aaker's model (1992), this paper argues that brand equity consists of four key dimensions: 1) Brand Awareness, 2) Perceived Quality, 3) Brand Association and 4) Brand Loyalty. The upcoming section will explain these key dimensions and how they lead to purchase intention.

Brand awareness is an important element in food purchasing decisions. In a busy shopping environment, consumers often make quick choices based on brands they recognize from previous engagements. High brand awareness not only boosts familiarity but also signals reliability, suggesting to consumers that the brand has proven its worth over time (Hoyer & Brown, 1990; Macdonald & Sharp, 2000). When consumers are familiar with a brand, they're more likely to feel confident about it. This confidence influences their decision to purchase. Research by Esch et al. (2006) shows that consumers tend to choose well-known brands over lesser-known competitors. This indicates that high brand awareness results in returning purchase intention.

Perceived quality is also particularly crucial in the food industry, where taste, freshness, and nutritional value, drive purchase decisions (Konuk, 2018; Wang et al., 2020). When consumers view a food brand as high-quality, they feel more assured in choosing it. This perceived quality can be linked to consistent taste, fresh ingredients, and premium standards, qualities that consumers seem to value (Zeithaml, 1988). Consumers who perceive a brand as green and high-quality are more likely to purchase it (Fandos & Flavián, 2006; Chen & Chang, 2012). In the food sector, where quality is closely linked to safety, consumers often buy brands that meet these higher standards (Grunert, 2005).

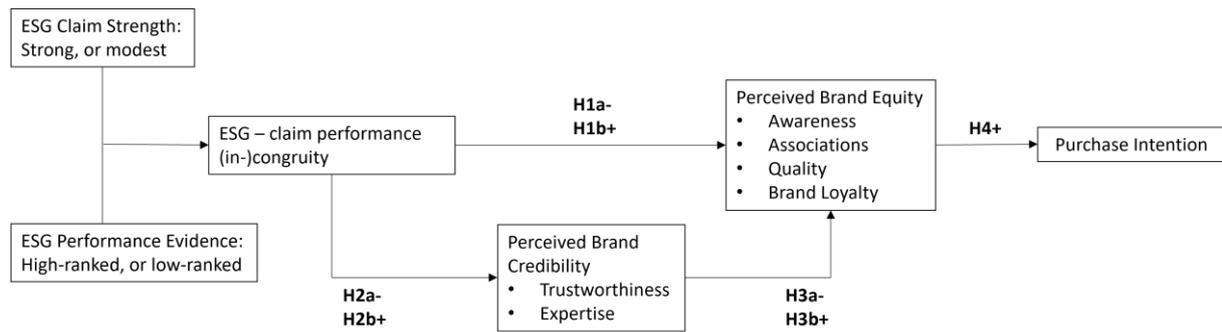
The associations consumers have with a brand are another key dimension (Aaker, 1992; Keller, 1993). Positive associations around a brand are especially appealing to today's consumers, who prioritise products that align with growing personal values around health, sustainability, and ethical sourcing (Woo & Kim, 2019). These brand associations help consumers form a mental image of the brand that aligns with their values. By highlighting certain words in brand communication, brands can link certain words to their brand image, like "eco-friendly" (Kim & Oh, 2020; p. 13). When consumers feel this connection, it could lead to greater intention to purchase (Roozy et al., 2014; Kim & Oh, 2020; Susilowati & Sari, 2020).

Finally, brand loyalty involves the emotional connection consumers develop with a brand, influenced by positive experiences that align with their values. When consumers have enjoyable interactions with the brand, such as outstanding cultural values, appealing products, or exceptional customer service, it strengthens their attachment to the brand (Dick & Basu, 1994; Panda et al., 2020). This emotional bond leads to increased purchase intention (Chaudhuri & Holbrook, 2001; Roozy et al., 2014). With this information, we draw the following hypothesis:

**H4:** Perceived snack food brand equity positively influences purchase intention.

In the upcoming section, all hypotheses are combined into a single framework that illustrates how the discussed elements interact. This framework provides a big-picture view of how snack food brands' ESG claim-performance evidence (in)congruity impacts brand equity. It shows how this relationship is mediated by perceived brand credibility and ultimately leads to purchase intention.

## 2.6 Conceptual Framework



**Figure 1.** The ESG Claim-Performance Incongruity Model

### List of Hypotheses:

- H1a:** The incongruity between a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand equity.
- H1b:** The incongruity between a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand equity.
- H2a:** The incongruity between a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand credibility.
- H2b:** The incongruity between a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand credibility.
- H3a:** The incongruity between a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand equity through perceived brand credibility.
- H3b:** The incongruity between a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand equity through perceived brand credibility.
- H4:** Perceived snack food brand equity positively influences purchase intention.

### 3. Methodology

This research has explored the consequences of incongruities between ESG communication and actual ESG performance evidence in the context of snack food brands, by focusing on how such incongruities affect perceived brand equity and by looking into the mediating role of perceived brand credibility in this relationship. The following chapter explains the research design, stimuli, measurements, procedure, and data analysis plan.

#### 3.1 Design & Participants

##### 3.1.1 2x2 Experimental Design

This study used an experimental design with four conditions based on a 2 (ESG claim strength: strong vs. modest) × 2 (ESG performance evidence: high-ranked vs. low-ranked) conceptual framework. These combinations reflect different levels of congruity or incongruity between ESG communication and ESG performance evidence. The four experimental groups were:

1. **Congruity High High:** a strong ESG claim combined with a high ranking on the Top 100 ESG company list (congruity)
2. **Congruity Low Low:** a modest ESG claim combined with a low ranking on the Top 100 ESG Company List (congruity)
3. **Greenwashing:** a strong ESG claim combined with a low ranking on the Top 100 ESG Company List (incongruity)
4. **Greenhushing:** a modest ESG claim combined with a high ranking on the Top 100 ESG Company List (incongruity)

Participants were randomly assigned to one of these four conditions. Although the design was based on a 2x2 conceptual framework, the analysis primarily used One-Way ANOVA to compare the four groups on perceived brand credibility and perceived brand equity. Further details on the analytical approach are provided in the Data Analysis Plan (section 3.5).

##### 3.1.2 Convenience Sampling Method

This study used a combination of convenience and snowball sampling to recruit participants. Surveys were created using Qualtrics and distributed through social media platforms including LinkedIn, Instagram, WhatsApp, and Facebook. To increase the relevance and reach of the study, leading snack food brands in the Netherlands were contacted to explore their willingness to share the survey with their consumer panels. However, this approach did not yield any results. To further diversify the sample, flyers containing QR codes linked to the survey were placed in public locations. Additionally, a mailing list from Wageningen University & Research (WUR) was used to reach potential participants. In every data collection method, respondents were encouraged to share the survey with family, friends, and colleagues to expand participation through personal networks. While convenience and snowball sampling do not yield a fully representative sample, they were chosen for their practicality and efficiency given the time constraints of this research.

##### 3.1.3 Target Population

The survey targeted Dutch snack food consumers aged 18 and older, covering a range of demographics including age, gender, and education level. At the end of the survey, respondents were asked about their ESG knowledge and their involvement with the snack food category as part of the background information collected.

The Dutch market was selected not only for accessibility but also because of its relevance to current developments in sustainable and health-oriented food behaviour. The Netherlands ranks highly in sustainable food system development (Economist Impact, 2022), and recent years have shown increased consumer interest in plant-based diets and reduced sugar and salt intake (RIVM, 2023). Yet despite these shifts, snack food consumption remains significant. Dutch adults frequently consume snacks high in fat, sugar, or salt, with supermarkets being the most common purchase location. Age and socioeconomic background seemed to influence both consumption patterns and point of purchase (Mackenbach et al., 2022).

This contrast between rising sustainability awareness and continued high snack food consumption makes Dutch snack food consumers a particularly relevant population for this study. While many consumers express a willingness to make more sustainable choices (Vermeir et al., 2020; Van den Berg et al., 2022), structural limitations such as market organisation and policy barriers continue to slow progress (Verburg et al., 2022). By focusing on this group, this research explores how ESG communication can influence brand perception in a product category often associated with conflicting perceptions of health and sustainability.

### 3.1.4 Sample Size Calculation

The study's sample size was calculated using G\*Power to ensure sufficient statistical power for the planned analyses. The experimental design included four groups, based on a 2x2 combination of ESG claim strength and ESG performance evidence. The primary analyses consisted of group comparisons (One-Way ANOVA) and mediation analysis. For the comparison of the four groups on perceived brand credibility and perceived brand equity (using One-Way ANOVA), G\*Power indicated that a minimum sample size of 180 participants was required to detect a medium effect size ( $f = 0.25$ ), with an alpha level of 0.05 and statistical power of 0.80.

In addition, a mediation analysis was planned to explore whether perceived brand credibility mediated the effect of ESG claim-performance evidence on perceived brand equity. To ensure sufficient power to detect this indirect effect (Brand Credibility → Brand Equity), a sample size of 159 participants was calculated using G\*Power (Linear multiple regression: Fixed model,  $R^2$  increase), assuming a small-to-medium effect size ( $f^2 = 0.05$ ), an alpha level of 0.05, and power of 0.80.

In total, 268 complete responses were collected, which exceeds the required sample sizes for both the group comparisons and the mediation analysis. This ensured that the study had adequate statistical power to detect the key effects of interest.

## 3.2 Stimuli

### 3.2.1 News Articles

In this study, four hypothetical news articles (Appendix A) were used as stimuli to assess how variations in ESG claim strength and ESG performance evidence influenced participants' perceptions of brand credibility, brand equity, and purchase intention. News articles were chosen as stimuli because they are a common and relatable way for consumers to encounter brand information and sustainability-related messaging in real-world contexts. To provide participants with a concrete and relatable product context, the brands in the news articles were positioned within the snack food category. This choice was inspired by a real-world example of greenwashing involving a snack food brand, which made the category especially relevant for this study on ESG communication. The news article format also enabled the communication of brand information without relying on logos or other visual brand cues, which allowed participants to focus solely on the ESG claims and performance evidence.

The four news articles were designed to represent different combinations of two key variables: claim strength and ESG performance evidence. These combinations were intended to test how varying the assertiveness of the sustainability claim and the level of ESG performance evidence (in the form of a brand's ranking on the hypothetical Top 100 ESG Companies list) would influence participants' evaluations of the brand. Participants were randomly assigned to one of the four combinations, which are described in Appendix A. The following paragraphs explain the rationale behind the two key variables:

**Claim Strength:** The first variable manipulated was the strength of the sustainability claim. In one set of articles, the brand made strong claims about its sustainability efforts, presenting itself as a leader in the industry with concrete actions to protect the environment. In the other set, the brand made modest claims, acknowledging that while sustainability was important, there was still progress to be made. This approach was intended to generate perceptions of honesty and transparency.

**ESG Performance Evidence:** The second variable was the ESG performance evidence, represented by the brand's ranking on the hypothetical Top 100 ESG Companies list. In two of the articles, the brand (Norvion) was presented with a high ranking (9th place), signalling strong ESG performance. In the other two articles, the brand (Zyren) was presented with a low ranking (91st place), indicating weaker ESG performance. The rankings of 9th and 91st were deliberately chosen as clear outliers to ensure participants could easily distinguish between high and low performance.

Each article was designed to reflect a realistic brand communication message, with claims and rankings presented in a plausible and relatable way. A neutral article design was used to ensure that participants' attention was focused on the claim and ranking information. Hypothetical brand names (Norvion and Zyren) were selected to avoid associations with existing brands or sustainability-related meanings. Participants also received a very brief introduction to the brand to assist them in evaluating the communication.

The articles were presented via an online Qualtrics survey. After reading the article, participants completed a series of questions assessing their perceptions of the claim strength, performance evidence, brand credibility, brand equity, and purchase intention. After the survey, participants were informed about the hypothetical nature of the research design.

### **3.2.2 Pre-Test**

A pre-test was conducted to ensure that the stimuli, including claim strength and ESG performance ranking, were perceived as intended. It tested whether strong claims were seen as stronger than modest ones, and whether high ESG rankings were recognised as better than low rankings. The pre-test also assessed the clarity of instructions and questions, the survey's flow, completion time, and overall functionality of the survey.

A convenience sample of 30 participants was used, in line with standard guidelines for pre-testing. All participants completed the survey under the supervision of the researcher and were informed beforehand that they could provide feedback and ask questions during the process. After completing the survey, they were asked to comment on the clarity of the stimuli, the questions, and the overall experience. Minor adjustments were made to some survey questions based on this feedback. These changes did not significantly alter the survey content, which is why the pre-test data were kept in the final sample. In this pre-test, sample sizes per condition ranged from 6 to 10 participants, which can be seen as a balanced distribution given the exploratory nature of the pre-test.

As shown in Table 1, the 'Congruity High High' condition scored high on all three checks. This indicates that participants perceived strong claims, a high ESG ranking, and consistency between the two. The 'Congruity Low Low' condition showed low scores on both claim strength and ESG ranking, but a high alignment score, which suggests that participants recognised the modest claims as fitting the company's weak ESG performance. In the 'Greenhushing' condition, claim strength was rated low to neutral and the ESG ranking high, resulting in a moderate alignment score ( $M = 3.75$ ), suggesting participants perceived some inconsistency. The 'Greenwashing' condition, featuring strong claims and a low ESG ranking, produced a low alignment score. This, again, confirmed that the mismatch was detected by the participants.

	Greenwashing	Greenhushing	Congruity Low Low	Congruity High High
Stimuli Checks	(N=6) Mean (SD)	(N=8) Mean (SD)	(N=10) Mean (SD)	(N=6) Mean (SD)
StimuliCheck_1 (Claim strength)	5.33 (.82)	3.38 (1.06)	2.60 (.97)	6.00 (.63)
StimuliCheck_2 (ESG rating)	2.17 (1.17)	6.50 (0.53)	3.20 (1.75)	6.33 (.82)
StimuliCheck_3 (Congruency)	1.83 (1.17)	3.75 (.71)	5.10 (.99)	6.17 (.41)

**Table 1.** Mean Scores on Manipulation Check Items by Condition (Pre-test Sample)

### 3.3 Measures

Table 2 below presents the constructs, items, and their associated measurement scales, along with the sources used. It outlines both latent and observed variables, with each construct representing a key concept: Perceived Brand Equity, Brand Credibility and Purchase Intention. The observed variables (items) are specific statements designed to measure these constructs. Additionally, the table includes the measurement scale (e.g., Likert scale) for each item and the sources from which these items were adapted. The order of the constructs and items in the table reflects the sequence in which the survey questions (observed variables) were presented to participants.

To ensure that the constructs and items were well aligned with the research topic, several items were slightly adapted. An overview of these adaptations is presented in Appendix B. The constructs 'Stimuli Test' and 'ESG Familiarity' were developed specifically for this study and were based on the content of the cited sources. The existing items for 'Perceived Brand Credibility', 'Perceived Brand Equity', 'Purchase Intention', and 'Product Involvement' were adapted to better fit the context and aims of this research.

Constructs	Items	Scale	References
<b>Stimuli test</b>	Please rate to what extent you agree/disagree with the following statement about the brand you were shown: <ul style="list-style-type: none"> <li>○ The brand's sustainability claim was strong and convincing.</li> <li>○ The brand had a high position on the ESG ranking.</li> <li>○ What the brand claimed matched its actual performance.</li> </ul>	7-point Likert Scale	(Adapted from Olsen et al., 2014; Lee et al., 2022; Choubey et al., 2025)
<b>Perceived Brand Credibility</b>	Please rate to what extent you agree/disagree with the following statement about the brand you were shown. Based on the news article I just read, I believe: <p>Trustworthiness:</p> <ul style="list-style-type: none"> <li>○ This brand's claims are believable</li> <li>○ This brand has a name you can trust</li> <li>○ This brand doesn't pretend to be something it isn't</li> </ul> <p>Expertise:</p> <ul style="list-style-type: none"> <li>○ This brand reminds me of someone who's competent and knows what they are doing</li> </ul>	7-point Likert Scale	(Adapted from Erdem and Swait, 2004; Sekhar et al., 2022)

	<ul style="list-style-type: none"> <li>○ This brand has the ability to deliver what it promises</li> </ul>		
<b>Perceived Brand Equity</b>	<p>Please rate to what extent you agree/disagree with the following statement about the brand you were shown. Based on the news article I just read, I believe:</p> <p>Brand Loyalty</p> <ul style="list-style-type: none"> <li>○ I could see myself being loyal to this brand</li> <li>○ This brand would be my first choice</li> <li>○ I would not buy other brands if this brand is available at store</li> </ul> <p>Brand Quality</p> <ul style="list-style-type: none"> <li>○ The likely quality of this brand is extremely high</li> <li>○ The products of this brand would probably meet my expectations of such a food product.</li> </ul> <p>Brand Awareness</p> <ul style="list-style-type: none"> <li>○ I would be able to recognise this brand among other brands</li> <li>○ I would be able to recognise this brand when I encounter it somewhere</li> </ul> <p>Brand Associations</p> <ul style="list-style-type: none"> <li>○ The sustainability information about this brand comes to my mind quickly</li> <li>○ I can quickly recall the name of this brand</li> <li>○ I can easily imagine this brand in my mind</li> </ul>	7-point Likert Scale	(Adapted from Yoo & Donthu, 2001)
<b>Purchase Intention</b>	<p>Please rate the probability that you would purchase products from the brand in the news article:</p> <ul style="list-style-type: none"> <li>○ From 1 Very unlikely to 7 Very likely</li> </ul>	7-point semantic differential scale	(Adapted from Spears & Singh, 2004).
<b>Product Involvement</b>	<p>We would also like to ask you a few questions about your habits and preferences regarding snack consumption. Please indicate below to what extent you agree or disagree with the following statements:</p> <ul style="list-style-type: none"> <li>○ I enjoy eating snacks such as chips, nut mixes, and bars.</li> <li>○ I believe that it does not have to be a special occasion to eat snacks.</li> <li>○ Snacks are important to me.</li> <li>○ I pay attention to the brand when buying snacks.</li> <li>○ I enjoy sharing the pleasure of eating snacks with friends or family.</li> <li>○ The price of snacks plays an important role in my choice.</li> <li>○ I choose snacks carefully and take my time to make a selection.</li> </ul>	7-point Likert Scale	(Adapted from Laurent & Kapferer, 1985; Mittal, 1995; Lockshin et al., 1997; Espejel et al., 2009)
<b>Attention Check</b>	<p>To check whether the questionnaire is being completed carefully: Please select the word 'Elephant'?</p> <ul style="list-style-type: none"> <li>○ Lawnmower</li> <li>○ Aeroplane</li> <li>○ Elephant</li> <li>○ Broccoli</li> </ul>	Nominal (Single Choice)	/



After viewing their assigned stimulus, participants completed a structured survey measuring the following constructs (see also Table 2):

- Manipulation checks (perceptions of ESG claim strength and performance evidence)
- Perceived brand credibility
- Perceived brand equity dimensions
- Purchase Intention
- Product Involvement
- Demographics

Validated measurement scales were used where possible, with items rated on a 7-point Likert scale or semantic differential scale. Product category involvement was measured using a 7-item involvement scale (7-point Likert scale), which assessed the personal relevance of the snack food category to participants. This measure was included to account for potential individual differences in brand evaluations. After this, an attention check was included to ensure response attention and quality ("Please select the word 'Elephant'"). Participants who failed this check or submitted incomplete responses were excluded from the analysis.

Finally, participants completed demographic questions (age, gender, education level, employment status) and rated their familiarity with ESG on a 7-point Likert scale (Not familiar at all to Very familiar). These items were placed at the end of the survey to avoid influencing participants' evaluations of the stimuli or the key outcome measures. After completing the survey, participants were debriefed, with reassurance about data anonymity, the hypothetical nature of the stimuli, and the academic purpose of the study. Contact details were provided for any follow-up questions. For a complete overview of the survey content and measurement scales, see Table 2.

### **3.5 Data Analysis Plan**

To analyse the effects of ESG claim strength and performance evidence incongruities on perceived snack food brand equity, brand credibility, and purchase intention, this study used a combination of One-Way ANOVA, mediation analysis, and regression analysis. These methods were selected to explore direct group differences and mediation pathways among the key constructs.

#### **3.5.1 Pre-Test and Manipulation Check**

Before the main data collection, a pre-test was conducted with 30 participants to evaluate the clarity and effectiveness of the experimental stimuli. Respondents were exposed to different combinations of ESG claim strength and performance evidence, after which they rated the perceived claim strength and perceived ESG performance. One-way ANOVAs confirmed that strong ESG claims were seen as significantly stronger than modest claims, and that high-performance evidence was rated as more convincing than low-performance evidence. These findings validated the manipulation design and supported the internal validity of the experiment.

Following the main experiment, One-Way ANOVAs were again conducted as manipulation checks on the full sample to verify that the four experimental conditions were perceived as intended. Significant differences between groups confirmed that the manipulations of ESG claim strength and ESG performance evidence were successful.

### 3.5.2 Descriptive Statistics

Before hypothesis testing, descriptive statistics were calculated to summarise participant demographics and assess the distribution of key variables. Metrics such as means, standard deviations, skewness, kurtosis, and frequency distributions were used to evaluate normality and identify any outliers. These analyses were conducted using the psych and dplyr packages in R.

### 3.5.3 Hypothesis Testing

In all regression-based analyses and the interpretation of pairwise group differences (ANOVA post-hoc comparisons), the 'Congruity High-High' condition was used as the reference category. This condition reflects the theoretically ideal alignment between ESG claim strength and performance evidence. The remaining experimental conditions were dummy-coded to make direct comparisons against this baseline possible. This setup allowed the analysis to assess how deviations from the ideal congruity condition influenced brand credibility, brand equity, and purchase intention.

#### One-Way ANOVA

Hypotheses **H1a**, **H1b**, **H2a**, and **H2b** were tested using One-Way ANOVA, comparing the four experimental conditions (Greenwashing, Greenhushing, Congruity High-High, and Congruity Low-Low) on perceived brand equity and perceived brand credibility. This analysis assessed group differences related to ESG claim-performance congruity High-High.

- H1a/H2a: It was expected that Greenwashing (strong ESG claim with low performance) would negatively impact brand equity and brand credibility.
- H1b/H2b: On the contrary, Greenhushing (modest ESG claim with high performance) was expected to positively influence these outcomes.

#### Mediation Analysis

Hypotheses **H3a** and **H3b** tested whether perceived brand credibility mediated the effect of ESG message condition on brand equity. Using the lavaan package in R, a mediation model was estimated with dummy-coded condition variables predicting brand credibility, which in turn predicted perceived brand equity. Bootstrapping (5,000 resamples) was used to assess indirect effects.

- A significant mediation effect for **H3a** would indicate that Greenwashing harms brand equity via reduced credibility.
- A significant mediation effect for **H3b** would suggest that Greenhushing boosts brand equity through increased credibility.

#### Regression Analysis

Hypothesis H4 explored the downstream effect of brand equity on purchase intention. A linear regression analysis was conducted using the lm() function in R. A significant positive coefficient would support the hypothesis that perceived brand equity predicts higher purchase intention.

### 3.5.4 Measurement Model Validation

To ensure reliable measurement of latent constructs, Confirmatory Factor Analysis (CFA) was conducted using the lavaan package. Model fit was assessed via standard indices:  $\chi^2/df$ , RMSEA, CFI, and TLI. Internal consistency was evaluated with Cronbach's Alpha. Given the relatively simple structure of the brand credibility and brand equity measures, convergent and discriminant validity were also assessed to confirm construct integrity.

## 4. Results

### 4.1 Descriptive statistics

A total of 335 participants began the survey. Of these, 268 participants (80%) completed all primary measures and demographic items and were included in the final analysis. The remaining 67 participants either exited the survey early ( $n = 9$ ) or only partially completed it ( $n = 58$ ). The final sample ( $N = 268$ ) consisted of 60% female ( $n = 161$ ), 38% male ( $n = 103$ ), and 2% identifying as other or preferring not to say ( $n = 4$ ). The mean age was 39 years ( $SD = 19.38$ ), indicating a wide age range across participants.

Regarding educational background, most participants had a relatively high level of education: 44% held a university degree (Bachelor's or Master's), 32% had completed higher vocational education (HBO), 13% had secondary education, 8% had vocational (MBO) training, and a small number had no formal education (1%) or held a PhD (1%). In terms of employment status, 35% were full-time students ( $n = 92$ ), 28% were employed full-time ( $n = 76$ ), 18% part-time employed ( $n = 49$ ), and 15% selected "other or prefer not to say" ( $n = 39$ ), with the majority of this group indicating they were retired. Only a few participants were part-time students (1%), both studying and employed (2%), or actively seeking a job (1%).

Product involvement was moderately high with a mean score of 4.99 (out of 7), and ESG familiarity averaged 3.90, suggesting a slight tendency toward unfamiliarity on a 7-point scale. Finally, the experimental conditions were evenly distributed, with 26% assigned to the Greenwashing condition ( $n = 70$ ), 23% to Greenhushing ( $n = 63$ ), 25% to Congruity High High ( $n = 68$ ), and 26% to Congruity Low Low ( $n = 69$ ). This balanced allocation supports the internal validity of the analyses that followed. An overview of the sample characteristics is provided in Table 3.

Sample characteristics	Numbers	
	<i>N</i>	%
Initial Respondents		
Total sample size	335	/
Usable sample size	268	80
Final Sample		
Usable responses	268	80
Gender		
Female	161	60
Male	103	38
Other / Prefer not to say	4	2
Age		
Mean (SD)	39.03 (19.38)	/
Level of Education		
No Education / Primary School	1	1
Secondary School	36	13
Secondary vocational education (MBO)	21	8
Higher vocational education (HBO)	87	32
University (Bachelor's, Master's)	119	44
PhD / Doctorate	3	1
Other / Prefer not to say	1	1
Employment		
Full-time student	92	35
Part-time student	3	1
Full-time employed	76	28
Part-time employed	49	18
Student and employed	6	2
Searching for a job	3	1
Other / Prefer not to say	39	15

Product involvement		/
Mean	4,99	/
ESG familiarity		/
Mean	3,90	/

**Table 3.** Sample characteristics count and percentage

To assess whether participant characteristics were evenly distributed across the four conditions, a one-way ANOVA (for age) and chi-square tests (for gender, education, and employment status) were conducted. Age did not significantly differ across groups,  $F(3, 266) = 0.58, p = .63$ . Gender distribution was also comparable,  $\chi^2(9, N = 270) = 7.77, p = .56$ , with the percentage of female participants ranging from 56% to 67%. No significant differences were found for education,  $\chi^2(18, N = 270) = 19.18, p = .38$ . Employment status approached significance,  $\chi^2(18, N = 270) = 27.01, p = .08$ , but remained above the threshold. These results indicate successful randomisation (see Table 4).

	Test statistics	Greenwashing	Greenhushing	Congruity Low	Congruity High
	Test (df1, df2) F, P	(N=70) Mean (SD)/ %	(N=62) Mean (SD)/ %	(N=69) Mean (SD)/ %	(N=67) Mean (SD)/ %
Age	$F(3, 264) = 0.49, p = .69$	39.8 (19.8)	40.5 (19.9)	39.2 (19.7)	36.7 (18.3)
Gender Percentage female	$\chi^2(9, N=268)=7.77, p=.56$	56%	58%	67%	60%
Education (1-7)	$\chi^2(18, N = 268) = 19.18, p = .38$	4.23 (1.14)	4.21 (0.96)	4.06 (1.06)	3.99 (1.13)
Employment (1-7)	$\chi^2(18, N = 268) = 27.01, p = .08$	3.1 (2.12)	3.34 (2.08)	3.33 (1.93)	2.82 (1.95)

**Table 4.** Randomisation check and overview of all control variables, including test statistics for all four conditions

## 4.2 Reliability & Normality Analysis

Before the reliability and normality analysis, it was determined that purchase intention would be treated as a single-item measure and thus excluded from internal consistency testing. The reliability analysis assessed the internal consistency of the multi-item constructs. Cronbach's Alpha values for brand credibility ( $\alpha = .94$ ), perceived brand equity ( $\alpha = .90$ ), and product involvement ( $\alpha = .71$ ) exceeded the commonly accepted threshold of .70, which indicates satisfactory reliability (see Table 5). To assess normality, skewness and kurtosis were examined. All values fell within the acceptable range of  $\pm 1.5$ , which suggests no substantial deviations from normality. In addition, Q-Q plots of all key constructs (see Appendix C) provided further visual confirmation that the normality assumption was sufficiently met. These findings indicate that the assumptions for parametric testing were sufficiently met.

An exploratory correlation matrix of all key constructs is provided in Appendix D, to illustrate the relationships between the main study variables and to check for potential multicollinearity. The strong correlations observed between certain variables (e.g., trustworthiness, expertise, and brand credibility) reflect their conceptual relatedness as components of the same underlying construct.

Variables	Cronbach's Alpha	Skewness	Kurtosis
Brand credibility	.94	-.30	-1.20
Trustworthiness	.91	-.25	-1.19
Expertise	.89	-.34	-1.09
Perceived brand equity	.90	0.07	-0.74
Loyalty	.92	-.33	-1.00
Quality	.91	-.11	-.94
Awareness	.86	-.20	-.81
Associations	.64	-.50	-.50
Product involvement	.71	-.89	1.38

**Table 5.** Reliability (Cronbach's  $\alpha$ ) and distribution characteristics (skewness and kurtosis) of key constructs used in the analysis

### 4.3 Manipulation Checks

To assess whether the manipulations were perceived as intended, three one-way ANOVAs were conducted on the manipulation check items. Results revealed significant effects of condition on perceived claim strength,  $F(3, 264) = 17.26, p < .001$ ; ESG rating,  $F(3, 264) = 131.80, p < .001$ ; and perceived congruency between claim and performance,  $F(3, 264) = 31.14, p < .001$ .

The pattern of means confirmed that the manipulation worked as expected. For example, in the Greenwashing condition, participants perceived the claim strength as high ( $M = 4.33, SD = 1.63$ ), but rated the ESG performance low ( $M = 2.34, SD = 1.37$ ), resulting in a low congruency score ( $M = 2.53, SD = 1.45$ ). In contrast, in the Congruity High High condition, both claim strength ( $M = 5.12, SD = 1.33$ ) and ESG rating ( $M = 5.67, SD = 1.20$ ) were perceived as high, resulting in the highest congruency rating ( $M = 4.90, SD = 1.45$ ). This consistent pattern across conditions supports the effectiveness of the experimental manipulations (see Table 6).

Variables	Test statistics	Greenwashing	Greenhushing	Congruity Low	Congruity High
	Test (df, df2) F, P	(N=70) Mean (SD)	(N=63) Mean (SD)	Low (N=68) Mean (SD)	High (N=69) Mean (SD)
StimuliCheck_1 (Claim strength)	$F(3, 264) = 17.26,$ $p < .001^{***}$	4.33 (1.63)	4.16 (1.30)	3.38 (1.37)	5.12 (1.33)
StimuliCheck_2 (ESG rating)	$F(3, 264) = 131.80,$ $p < .001^{***}$	2.34 (1.37)	5.77 (1.23)	2.57 (1.54)	5.67 (1.20)
StimuliCheck_3 (Congruency)	$F(3, 264) = 31.14,$ $p < .001^{***}$	2.53 (1.45)	4.32 (1.40)	3.99 (1.67)	4.90 (1.45)

**Table 6.** Mean scores (M) and standard deviations (SD) of perceived claim strength, ESG rating, and congruency per experimental condition. Significance levels are reported on the following levels: \* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

#### 4.4 Means & Standard deviation of variables

The descriptive statistics of the variables were analysed before hypothesis testing to gain insight into the differences across the experimental conditions (Table 7). The variables were assessed across four groups: Greenwashing, Greenhushing, Low Congruity, and High Congruity. The results showed significant variation between the groups for Brand Credibility, Brand Equity, and Purchase Intent, as indicated by the ANOVA results. In contrast, variables such as Product Involvement, ESG Familiarity, Age, Gender, Education Level, and Employment Status did not show statistically significant differences between the groups, suggesting a comparable baseline on these characteristics.

Variables	Test statistics	Greenwashing	Greenhushing	Congruity	Congruity
	Test (df, df2) F, P	(N=70) Mean (SD) / %	(N=63) Mean (SD) / %	Low Low (N=68) Mean (SD) / %	High High (N=69) Mean (SD) / %
Brand Credibility	F(3, 264) = 30.99, p < .001***	2.99 (1.36)	5.12 (1.29)	4.02 (1.49)	4.63 (1.24)
Trustworthiness	F(3, 264) = 28.48, p < .001***	2.97 (1.31)	5.11 (1.35)	4.02 (1.64)	4.58 (1.28)
Expertise	F(3, 264) = 28.65, p < .001***	3.01 (1.52)	5.14 (1.34)	4.01 (1.42)	4.70 (1.37)
Brand Equity	F(3, 264) = 21.05, p < .001***	3.15 (.90)	4.44 (1.05)	3.53 (.98)	4.12 (1.18)
Loyalty	F(3, 264) = 22.42, p < .001***	2.29 (1.08)	4.06 (1.47)	2.99 (1.34)	3.69 (1.50)
Quality	F(3, 264) = 26.21, p < .001***	3.15 (1.45)	4.88 (1.35)	3.45 (1.36)	4.64 (1.31)
Awareness	F(3, 264) = 4.78, p = 0.003**	3.49 (1.53)	4.35 (1.29)	3.8 (1.34)	4.16 (1.48)
Associations	F(3, 264) = 6.14, p < .001***	3.79 (1.04)	4.6 (1.11)	3.96 (1.09)	4.18 (1.33)
Purchase Intent	F(3, 264) = 22.06, p < .001***	2.81 (1.65)	4.79 (1.62)	3.48 (1.57)	4.52 (1.56)
Product Involvement	F(3, 264) = 0.37, p = .776	4.97 (.81)	5.03 (.90)	4.92 (.91)	5.06 (.82)
ESG Familiarity	F(3, 264) = 0.37, p = .774	4.06 (1.82)	3.76 (1.91)	3.80 (1.91)	3.96 (1.85)
Age	F(3, 264) = 0.48, p = .693	39.79 (19.79)	40.53 (19.91)	39.19 (19.71)	36.69 (18.32)
Gender (Chi-square) (% women)	$\chi^2(9, N=268)=7.77, p=.56$	55.71%	57.1%	67.65%	57.97%
LvlEducation	F(3, 264) = 0.8, p = .492	4.23 (1.14)	4.21 (.96)	4.06 (1.06)	3.99 (1.13)
Employment Status	F(3, 264) = 0.98, p = 0.404	3.10 (2.12)	3.34 (2.08)	3.33 (1.93)	2.82 (1.95)

**Table 7.** Descriptive statistics and ANOVA results for brand-related and demographic variables across greenwashing, greenhushing, and congruity groups. Significance levels are reported on the following levels: \*p < .05, \*\* p < .01, \*\*\* p < .001

## 4.5 Hypothesis Testing

### 4.5.1 The effects of claim strength x performance evidence

To test the effects of ESG message congruity on brand equity and brand credibility (H1a, H1b, H2a, H2b), a one-way ANOVA and a structural equation model were used. The four experimental conditions (greenwashing, greenhushing, congruity low-low, and congruity high-high) differed significantly in their impact on both brand credibility and brand equity.

First, an ANOVA confirmed significant differences in brand equity between conditions,  $F(3, 264) = 21.05, p < .001$ . Post-hoc comparisons showed that the greenwashing condition (strong ESG claim with low ESG performance) led to the lowest levels of brand equity ( $M = 3.15, SD = 0.90$ ), whereas the greenhushing condition (modest ESG claim with high performance) yielded the highest levels ( $M = 4.44, SD = 1.05$ ). However, post-hoc tests did not show a statistically significant difference for greenhushing compared to the high-congruity condition, which means that the direct effect of greenhushing on brand equity was not confirmed. These results support **H1a**, which states: 'The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand equity.' However, they do not support **H1b**: 'The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand equity.'

Similarly, significant differences in brand credibility were observed across conditions,  $F(3, 264) = 30.99, p < .001$ . In line with expectations, the greenwashing condition significantly reduced credibility perceptions ( $M = 2.99, SD = 1.36$ ), while greenhushing increased them ( $M = 5.12, SD = 1.29$ ). Regression paths from the mediation model confirm this pattern: greenwashing had a strong negative effect on brand credibility ( $\beta = -0.46, p < .001$ ), whereas greenhushing had a significant positive effect ( $\beta = 0.13, p = .030$ ). These findings support **H2a**: 'The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand credibility.' The findings also support **H2b**: 'The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand credibility.' Although greenhushing did not demonstrate a significant direct effect on brand equity, it did have a significant indirect positive effect through increased brand credibility, as confirmed in the mediation analysis (see section 4.5.2).

### 4.5.2 Source credibility as mediator

To test hypotheses **H3a** and **H3b**, which predicted that incongruencies between ESG claim strength and ESG performance affect brand equity indirectly through brand credibility, a mediation model was tested using structural equation modelling with bootstrapped standard errors (5,000 draws, *lavaan* package). The results showed that the greenwashing condition (strong claim, low performance) produced a significant negative indirect effect on brand equity via brand credibility ( $\beta = -0.35, p < .001$ ), supporting **H3a**: 'The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand equity through perceived brand credibility.' This indicates that perceived brand equity was lowered not directly, but because greenwashing reduced brand credibility, which in turn decreased brand equity.

On the contrary, the greenhushing condition (modest claim, high performance) led to a significant positive indirect effect ( $\beta = 0.10, p = .034$ ), which supports **H3b**: 'The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand equity through perceived brand credibility.'

The overall model fit was acceptable, with  $\chi^2(3) = 6.92, p = .075$ ; RMSEA = 0.070; CFI = 0.987; SRMR = 0.029, indicating that the hypothesised mediation structure adequately described the data. Taken together, these findings confirm that brand credibility mediates the effect of ESG communication strategy on brand equity, as proposed in **H3a** and **H3b**. In other words, the effect of ESG message congruity on perceived brand value operates through how credible the brand is perceived to be.

### 4.5.3 Perceived Brand Equity to Purchase Intention

To test the effect of perceived snack food brand equity on purchase intention (H4), a linear regression analysis was conducted with brand equity as the independent variable and purchase intention as the dependent variable. The results indicate that perceived snack food brand equity is a strong and significant predictor of purchase intention, with a coefficient of  $b = 1.27$ , standard error (SE) = 0.06,  $t(266) = 22.99$ ,  $p < .001$ . The model explained a large portion of the variance in purchase intent, with  $R^2 = .665$ , which indicates that roughly 67% of the variability in purchase intention can be explained by perceived snack food brand equity alone.

To further specify these results, an exploratory regression was conducted by using the four subdimensions of brand equity, brand loyalty, perceived quality, brand awareness, and brand associations as simultaneous predictors of purchase intention. The model was significant,  $F(4, 263) = 164.2$ ,  $p < .001$ , and explained 71.4% of the variance ( $Adjusted R^2 = .710$ ). Loyalty ( $\beta = .43$ ,  $p < .001$ ) and quality ( $\beta = .38$ ,  $p < .001$ ) emerged as the strongest predictors. Awareness also had a smaller but significant effect ( $\beta = .09$ ,  $p = .018$ ), while associations showed a positive but non-significant effect ( $\beta = .07$ ,  $p = .095$ ).

These findings support **H4**: 'Perceived snack food brand equity positively influences purchase intention.' Moreover, the disaggregated analysis suggests that brand loyalty and perceived quality are particularly influential drivers of purchase intention.

	Hypothesis	Test Statistic	Supported (P < 0.05)
<b>H1a</b>	The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand equity.	ANOVA $F(3, 264) = 21.05$ , $p < .001$ ; Tukey $p < .001^{***}$	Yes
<b>H1b</b>	The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand equity.	ANOVA $F(3, 264) = 21.05$ , $p < .001$ ; Tukey $p < .758$	No
<b>H2a</b>	The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand credibility.	$\beta = -0.46$ , $p < .001^{***}$	Yes
<b>H2b</b>	The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand credibility.	$\beta = 0.13$ , $p = .028^*$	Yes
<b>H3a</b>	The combination of a strong ESG claim and low-performance evidence (greenwashing) results in a negative impact on perceived snack food brand equity through perceived brand credibility.	Indirect effect $\beta = -0.35$ , $p < .001^{***}$	Yes
<b>H3b</b>	The combination of a modest ESG claim and high-performance evidence (greenhushing) results in a positive impact on perceived snack food brand equity through perceived brand credibility.	Indirect effect $\beta = 0.10$ , $p = .032^*$	Yes
<b>H4</b>	Perceived snack food brand equity positively influences purchase intention.	$\beta = 0.82$ , $p < .001^{***}$ , $R^2 = 0.665$	Yes

**Table 8.** Overview of all hypotheses, test statistics and whether they are supported. Significance levels are reported on the following levels:

\* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

## 5. Discussion

This chapter reflects on the findings of the study and presents their broader relevance for both theory and practice. It begins by repeating the research problem and summarising the main results. The following sections interpret these findings in relation to existing literature, outline their theoretical and practical implications for brand management and ESG communication. The chapter concludes by addressing the study's limitations and offering recommendations for future research.

### 5.1 Research problem

This study explored how different combinations of ESG claim strength and ESG performance affect consumer perceptions of snack food brands. The research problem focused on the question of how consumers respond when there is an incongruity between what a brand says about its ESG efforts and how it really performs. Previous research has pointed to the reputational risks of greenwashing, where strong ESG claims are not backed by real action, as well as to the growing phenomenon of greenhushing, where brands deliberately understate their sustainability efforts. While both strategies are increasingly relevant, little is known about how they compare in terms of their effects on perceived brand equity and credibility. In addition, the study tested whether perceived brand credibility mediates the relationship between ESG claim–strength (in)congruity and brand equity. By combining these elements in an experiment, the research provides insight into which ESG communication strategies are most effective and how credibility plays a role in shaping consumer responses.

### 5.2 Main findings & interpretation

The results of this study indicate that ESG communication strategies have a significant impact on how consumers evaluate a brand. The most outstanding finding is that greenhushing, the strategy in which strong ESG performance is matched with a modest claim, resulted in the highest levels of perceived brand credibility, and through this, a positive indirect effect on brand equity. This outcome supports earlier research pointing to the importance of sincerity and modesty in sustainability communication (Forehand & Grier, 2003; Bhaduri & Copeland, 2021) and aligns with arguments by Loebnitz & Grunert (2022), who suggest that perceived authenticity may be more effective than assertiveness in ethical branding contexts. It also reinforces the idea that consumers not only evaluate the content of sustainability messages but are sensitive to how believable and balanced those messages feel (Erdem & Swait, 2004; Hur et al., 2014). Although the direct effect of greenhushing on brand equity was not significant, the mediation analysis confirmed that the observed increase in brand equity was driven by enhanced brand credibility.

At the same time, these findings contradict some earlier concerns about greenhushing. Research by Font et al. (2017) and Christis & Wang (2021) has argued that greenhushing may reduce or fail to create perceived brand equity by making ESG efforts less visible to consumers. The current results suggest the opposite: understated but authentic communication may enhance consumer evaluations, primarily by increasing perceived brand credibility, which in turn fosters brand equity. It should be noted, however, that much of the earlier research on greenhushing was conducted in the tourism sector, which may limit the comparability of findings and could explain the observed difference in the present study in the snack food context.

On the contrary, greenwashing, where strong ESG claims are not matched by performance, significantly undermines both perceived brand credibility and perceived snack food brand equity. This supports earlier findings (Delmas & Burbano, 2011; Nyilasy et al., 2014; Simons, 2017), which highlight the reputational risks of greenwashing in brand communication, as can happen in ESG messaging. The mechanism appears to be driven by perceived brand credibility, which was confirmed as a significant mediator in this study. The mediation model showed good fit (CFI = 0.987, RMSEA = 0.070, SRMR = 0.029), and the standardised indirect effects of greenwashing ( $\beta = -0.35$ ,  $p < .001$ ) and greenhushing ( $\beta = 0.10$ ,  $p = .032$ ) on perceived snack food brand equity via credibility were both significant. This confirms that credibility plays a central psychological role in how ESG messaging influences brand evaluations. These results are consistent with theoretical work by Erdem

& Swait (2004) and empirical findings by Hur et al. (2014), which describe credibility as a key bridge between marketing communication and brand value.

Although the main hypotheses focused on greenwashing and greenhushing, the results also offer insights into the role of claim-performance congruity more broadly. The high congruity condition (strong claim + strong performance) yielded relatively high levels of brand credibility ( $M = 4.63$ ,  $SD = 1.24$ ) and brand equity ( $M = 4.12$ ,  $SD = 1.18$ ), while the low congruity condition (modest claim + weak performance) performed considerably worse (credibility:  $M = 4.02$ ,  $SD = 1.49$ ; equity:  $M = 3.53$ ,  $SD = 0.98$ ). The standardised indirect effect of low congruity on brand equity via credibility was significantly negative ( $\beta = -0.13$ ,  $p = .009$ ), indicating that aligned messaging alone is insufficient to foster high credibility when underlying ESG performance is weak. An interesting observation is that Greenhushing (modest claim + strong performance) yielded numerically higher scores for both credibility ( $M = 5.12$ ,  $SD = 1.29$ ) and brand equity ( $M = 4.44$ ,  $SD = 1.05$ ) compared to the high congruity condition. Although not all of these differences reached statistical significance, this pattern may suggest that modest ESG communication can offer persuasive advantages over strongly framed messages. One possible explanation could be an overkill effect, whereby assertively framed claims, even when accurate, are perceived as overly strategic or promotional, reducing perceived sincerity (Forehand & Grier, 2003; Yang & Battocchio, 2021).

Lastly, the relationship between perceived snack food brand equity and purchase intention was found to be strongly significant and positive ( $\beta = 0.82$ ,  $p < .001$ ), confirming earlier work by Aaker (1992), Chaudhuri & Holbrook (2001), and more recently Koh et al. (2022). Further analysis showed that brand loyalty (Roozy et al., 2014; Panda et al., 2020) and perceived quality (Chen & Chang, 2012; Wang et al., 2020) were the strongest equity subdimensions predicting purchase intention, followed by awareness. Brand associations appeared non-significant. While the study did not test the direct effect of ESG messaging on behavioural intent, the strong link between brand equity and purchase intention suggests that consumer perceptions shaped by ESG communication can influence behaviour indirectly. This study contributes to that understanding by showing how both brand credibility and the combination of ESG claims and performance help shape the brand perceptions that drive intent.

### **5.3 Theoretical Implications**

The findings of this study contribute to recent research on sustainability communication and consumer perception in multiple ways. First, the results underscore the importance of claim-performance congruence as a key theoretical construct in understanding how sustainability messaging affects brand evaluations. While prior research has focused extensively on the negative consequences of greenwashing (e.g., Delmas & Burbano, 2011; Nyilasy et al., 2014; Pimonenko et al., 2020), this study builds on that research by comparing greenwashing not only to aligned conditions but also to greenhushing. In doing so, it provides a more detailed insight into how (in)congruities between claim and performance evidence influence consumer responses.

Second, the results add empirical support to theoretical frameworks that identify brand credibility as a central mechanism in marketing communication (Erdem & Swait, 2004; Musgrove et al., 2018; Sekhar et al., 2022; Keilmann & Koch, 2024). By confirming that perceived brand credibility mediates the effect of ESG strategy on perceived snack food brand equity, this study strengthens the argument that consumers evaluate sustainability messages not only on content but also on perceived expertise and trustworthiness. The findings of this research help to operationalise credibility within the context of ESG communication in the snack food industry and show how perceived brand credibility functions as a bridge between brands' messaging and brand outcomes.

Third, the findings offer a theoretical counterpoint to prior work that has framed greenhushing as a reputational risk due to the limited visibility of ESG efforts (Font et al., 2017; Christis & Wang, 2021). Instead, this study shows that in the context of snack food brands, understated but genuine ESG communication may be perceived more positively than exaggerated claims, even when these claims are backed by facts. This suggests that modesty can improve how people view a brand, possibly because consumers expect ethical behaviour and are critical of too much self-promotion in sustainability messages (Forehand & Grier, 2003; de Jong et al., 2020).

It is worth noting, however, that the term 'greenhushing' itself may carry a somewhat negative implication, as it suggests avoidance or disguise of ESG efforts. This framing could be misleading in contexts where modest ESG communication actually enhances brand credibility and perceived brand equity. As the current findings show, understatement may be perceived not as avoidance but as a deliberate and credible communication strategy. While greenhushing might indeed reduce brand value in certain contexts (Font et al., 2017; Christis & Wang, 2021), the present study suggests the opposite. This raises the question of whether greenhushing should be reconceptualised or expanded as a more overarching term. Future research could, for example, explore different degrees or types of greenhushing, similar to how de Freitas Netto et al. (2020) proposed typologies within the broader concept of greenwashing.

Finally, this study shows how different types of ESG messages can be tested in an experimental setting, and it offers a starting point to think about new ways of structuring ESG communication strategies. While it is often assumed that the most important factor is a perfect congruence between what a brand claims and what it actually does, the results of this study suggest a more complex reality. Specifically, greenhushing, despite not showing a direct effect, was associated with the highest levels of brand equity via brand credibility. These findings imply that ESG communication should not be reduced to simple binaries such as greenwashing versus greenhushing. Instead, it might be better to understand it as a dynamic equilibrium, where snack food brands must navigate on a spectrum between assertiveness and modesty in their messaging, with credibility serving as the anchor point for the equilibrium. In this view, credibility is not just a mediating mechanism but a strategic element that shapes how consumers interpret ESG communication across this spectrum.

#### **5.4 Practical Implications**

This study offers relevant insights for brand managers, marketers, policy makers, and sustainability professionals who aim to communicate ESG performance in a credible, transparent and effective way. The negative effects of greenwashing on brand credibility and brand equity highlight the importance of avoiding exaggerated ESG claims. Exaggerated communication can erode trust and brand equity, even when supported by genuine sustainability efforts. More broadly, the results suggest that investing in strong ESG performance is a key driver of positive consumer evaluations. Conditions featuring high ESG performance, whether paired with a modest claim (greenhushing) or an assertive one (high congruity), yielded more favourable outcomes in terms of brand credibility and, in turn, brand equity.

However, the way ESG performance is communicated also matters: modest and authentic communication appeared to foster higher perceived brand credibility, which subsequently enhanced brand equity. This pattern suggests that in product categories such as snack food, where consumers may be particularly sensitive to health, environmental, and ethical considerations, understated ESG communication can generate more trust and indirectly strengthen brand equity more effectively than strongly assertive claims. Furthermore, the pattern indicates that the performance evidence of ESG efforts is valued by snack food consumers.

These findings further suggest that ESG communication is not about saying as much as possible, but about finding the right balance between modesty and assertiveness. In practical terms, this means that brands must navigate a communication spectrum, where credibility serves as the key reference point. Messages that are either overly cautious or overly promotional may be less effective than those that are perceived as sincere and balanced to the brand's actual performance.

Thus, while consistency between message and performance remains relevant, the results indicate that ESG performance itself is the most critical foundation for building positive consumer responses. Communicating such performance in a well-considered and credible way may further improve brand outcomes. The strong connection between brand equity and purchase intention illustrates the potential for ESG communication to influence purchasing decisions. Moreover, the finding that brand loyalty and perceived quality were the strongest brand equity components predicting purchase intention suggests that ESG communication may be especially impactful when it reinforces these dimensions of perceived brand equity, for example, by transparently highlighting improvements in ingredients, production processes, or packaging, and by fostering long-term trust through consistent, credible communication.

## 5.5 Limitations & Recommendations

Although this study provides valuable insights into how ESG communication strategies influence consumer brand perception, several limitations should be acknowledged. For example, the sample size limited the statistical power required to perform more advanced analyses, such as two-way ANOVA to explore interaction effects, moderated mediation, or multi-group comparisons. Furthermore, the lack of an incentive or compensation for survey participation may have contributed to a relatively high dropout rate. This may have resulted in attracting participants who were more intrinsically motivated or interested in the topic. A larger sample size would have made a deeper exploration of the research topic possible. Furthermore, the current sample focuses on Dutch snack food consumers, which limits the generalizability of the findings to other countries and cultures.

Also, the manipulation of ESG claim strength was intentionally convincing to ensure experimental clarity. However, this may also help explain the relatively lower evaluations in the high congruity condition, as the strong wording may have caused scepticism among respondents, even though it was backed by aligning ESG performance. Furthermore, the use of hypothetical brands might have limited the ecological validity of the findings. Participants were asked to evaluate made-up brands in a constructed setting, which may have relied heavily on their imaginative capacity and does not fully reflect the complexity of real consumer decision-making. This may also have contributed to the non-significant result of brand associations, which relied heavily on imagination. To reduce this reliance on imaginative capacity, the survey presented participants with a snack food industry context. However, this provided context may have limited the generalizability of the findings to other product categories or sectors.

Future research should address these limitations. Creating a bigger sample size would not only make more advanced statistical modelling possible but would also improve the generalizability of findings across demographic groups and market segments. Moreover, future studies could experiment with a broader range of ESG claim styles, such as vague, hidden, humorous or overly technical claims, to gain better insights into real corporate communication. It may also be valuable to vary the framing of claims (e.g., emotional vs. factual tone) or test claims across different media formats, such as social media ads or product packaging. Future research could also adopt a full-factorial design to statistically test the interaction between ESG claim strength and performance evidence. This can provide a more detailed analysis of how these elements jointly influence perceived brand equity and to test whether their effects add up, amplify each other, or depend on one another. Finally, adding real brands into the research design would improve ecological validity and allow researchers to explore how pre-existing brand knowledge, trust, or loyalty interact with perceptions of ESG communication. It would also enable further exploration of whether a direct effect of greenwashing on perceived brand equity can be observed beyond the indirect pathway through brand credibility that was identified in this study. Field or long-term studies could help reveal how consumer responses to ESG messages change over time and whether they affect what consumers buy. If future research continues to use hypothetical brands, it may be more appropriate to measure brand attitude rather than brand equity, as attitude may better reflect consumer responses in the absence of existing brand knowledge.

In conclusion, this study provides new insights into how the fit, or lack thereof, between ESG claims and actual performance shapes consumer responses. The findings suggest that strong ESG performance is a necessary foundation, but how this performance is communicated critically influences its impact. In particular, modest messaging may serve as a cue for trustworthiness and expertise in an environment where consumers are increasingly sceptical of sustainability claims. The success of greenwashing via enhanced brand credibility in this context highlights that understatement can act as a powerful signal of expertise and trustworthiness. Brand credibility emerged as a key mechanism in this process. The paradox is clear: in sustainability communication, less truly is more, and credibility ultimately outweighs the strength of the claims themselves.

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# Appendix

## Appendix A. News Article Stimuli

*LAATSTE NIEUWS*

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**Norvion (snackfabrikant)  
gerangschikt als 9<sup>e</sup> op de ESG  
Top 100-lijst**

Norvion, een merk dat zich focust op de productie en verkoop van verpakte snacks zoals chips, notenmixen, koekjes en repen, is recent gerangschikt als 9e op de ESG Top 100-bedrijvenlijst, wat de huidige positie van het merk weerspiegelt op het gebied van duurzaamheid in de voedselindustrie.

Eerder claimde dit merk het volgende: "Wij van Norvion lopen voorop als het gaat om duurzaamheid. Onze producten zijn 100% biologisch, eerlijk geproduceerd en met zo min mogelijk impact op het milieu gemaakt. We zorgen goed voor onze medewerkers en partners, en werken open en verantwoord als bedrijf. Door deze inzet zien wij onszelf als de leider in duurzame voedselproductie."

**1. Congruity: Strong Claim + High Ranking**

*LAATSTE NIEUWS*

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**Zyren (snackfabrikant)  
gerangschikt als 91<sup>ste</sup> op de ESG  
Top 100-lijst**

Zyren, een merk dat zich focust op de productie en verkoop van verpakte snacks zoals chips, notenmixen, koekjes en repen, is recent gerangschikt als 91ste op de ESG Top 100-bedrijvenlijst, wat de huidige positie van het merk weerspiegelt op het gebied van duurzaamheid in de voedselindustrie.

Eerder claimde dit merk het volgende: "Wij van Zyren proberen stap voor stap duurzamer te worden. Een deel van onze ingrediënten is biologisch en we streven naar eerlijke productie. We doen ons best om goed te zorgen voor onze medewerkers en partners, en zoeken naar manieren om transparanter te opereren. We weten dat er nog werk aan de winkel is, maar blijven ons inzetten voor verantwoorde keuzes."

**2. Congruity: Modest claim + Low Ranking**

*LAATSTE NIEUWS*

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**Norvion (snackfabrikant)  
gerangschikt als 9<sup>e</sup> op de ESG  
Top 100-lijst**

Norvion, een merk dat zich focust op de productie en verkoop van verpakte snacks zoals chips, notenmixen, koekjes en repen, is recent gerangschikt als 9e op de ESG Top 100-bedrijvenlijst, wat de huidige positie van het merk weerspiegelt op het gebied van duurzaamheid in de voedselindustrie.

Eerder claimde dit merk het volgende: "Wij van Norvion proberen stap voor stap duurzamer te worden. Een deel van onze ingrediënten is biologisch en we streven naar eerlijke productie. We doen ons best om goed te zorgen voor onze medewerkers en partners, en zoeken naar manieren om transparanter te opereren. We weten dat er nog werk aan de winkel is, maar blijven ons inzetten voor verantwoorde keuzes."

**3. Incongruity (Greenhushing): Modest claim + High Ranking**

*LAATSTE NIEUWS*

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**Zyren (snackfabrikant)  
gerangschikt als 91<sup>ste</sup> op de ESG  
Top 100-lijst**

Zyren, een merk dat zich focust op de productie en verkoop van verpakte snacks zoals chips, notenmixen, koekjes en repen, is recent gerangschikt als 91ste op de ESG Top 100-bedrijvenlijst, wat de huidige positie van het merk weerspiegelt op het gebied van duurzaamheid in de voedselindustrie.

Eerder claimde dit merk het volgende: "Wij van Zyren lopen voorop als het gaat om duurzaamheid. Onze producten zijn 100% biologisch, eerlijk geproduceerd en met zo min mogelijk impact op het milieu gemaakt. We zorgen goed voor onze medewerkers en partners, en werken open en verantwoord als bedrijf. Door deze inzet zien wij onszelf als de leider in duurzame voedselproductie."

**4. Incongruity (Greenwashing): Strong claim + Low Ranking**

## Appendix B. Measurement Adaptation Table

Constructs	Original Items	Adapted Items
<b>Perceived Brand Credibility</b>	(Erdem & Swait, 2004)	
	Trustworthiness: <ul style="list-style-type: none"> <li>○ This brand delivers what it promises</li> <li>○ This brand's product claims are believable</li> <li>○ Over time, my experiences with this brand have led me to expect it to keep its promises, no more and no less</li> <li>○ This brand has a name you can trust</li> <li>○ This brand doesn't pretend to be something it isn't</li> </ul> Expertise: <ul style="list-style-type: none"> <li>○ This brand reminds me of someone who's competent and knows what he/she is doing</li> <li>○ This brand has the ability to deliver what it promises</li> </ul>	Trustworthiness: <ul style="list-style-type: none"> <li>○ This brand's claims are believable</li> <li>○ This brand has a name you can trust</li> <li>○ This brand doesn't pretend to be something it isn't</li> </ul> Expertise: <ul style="list-style-type: none"> <li>○ This brand reminds me of someone who's competent and knows what they are doing</li> <li>○ This brand has the ability to deliver what it promises</li> </ul>
<b>Perceived Brand Equity</b>	(Yoo & Donthu, 2001)	
	Brand Loyalty <ul style="list-style-type: none"> <li>○ I consider myself to be loyal to X</li> <li>○ X would be my first choice</li> <li>○ I will not buy other brands if X is available at store</li> </ul> Brand Quality <ul style="list-style-type: none"> <li>○ The likely quality of X is extremely high</li> <li>○ The likelihood that X would be functional is very high</li> </ul> Brand Awareness <ul style="list-style-type: none"> <li>○ I can recognise X among other competing brands</li> <li>○ I am aware of X</li> </ul> Brand Associations <ul style="list-style-type: none"> <li>○ Some characteristics of X come to my mind quickly</li> <li>○ I can quickly recall the symbol and logo of X</li> <li>○ I have difficulty imagining X in my mind (r)</li> </ul>	Brand Loyalty <ul style="list-style-type: none"> <li>○ I could see myself being loyal to this brand</li> <li>○ This brand would be my first choice</li> <li>○ I would not buy other brands if this brand is available at store</li> </ul> Brand Quality <ul style="list-style-type: none"> <li>○ The likely quality of this brand is extremely high</li> <li>○ The products of this brand would probably meet my expectations of such a food product.</li> </ul> Brand Awareness <ul style="list-style-type: none"> <li>○ I would be able to recognise this brand among other brands</li> <li>○ I would be able to recognise this brand when I encounter it somewhere</li> </ul> Brand Associations <ul style="list-style-type: none"> <li>○ The sustainability information about this brand comes to my mind quickly</li> <li>○ I can quickly recall the name of this brand</li> <li>○ I can easily imagine this brand in my mind</li> </ul>
<b>Purchase Intention</b>	(Spears & Singh, 2004)	
	<ol style="list-style-type: none"> <li>1. Never/definitely</li> <li>2. Definitely do not intend to buy/definitely intend .</li> <li>3. Very low / high purchase interest</li> <li>4. Definitely not buy it/definitely buy it</li> <li>5. Probably not/probably buy it</li> </ol>	Purchase Intention <ul style="list-style-type: none"> <li>○ From 1 Very unlikely to 7 Very likely</li> </ul>

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**Product Involvement**

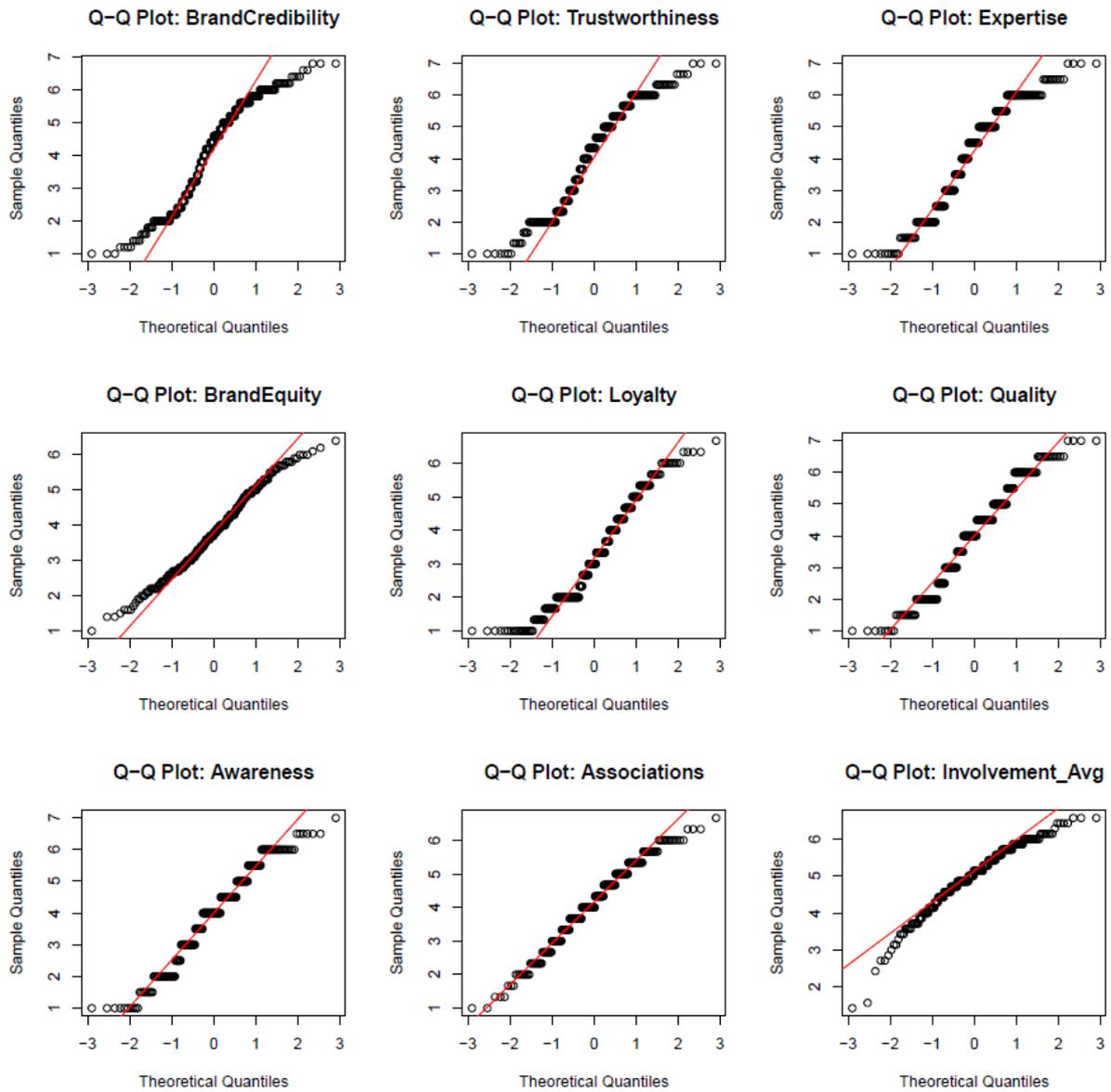
Please indicate below to what extent you agree or disagree with the following statements (Espejel et al., 2009):

- I like to eat PDO Jamo´n de Teruel
- I believe that it does not have to be a special occasion to eat PDO Jamo´n de Teruel
- PDO Jamo´n de Teruel is very important for me
- The pleasure in eating PDO Jamo´n de Teruel is a thing that share with my best friends
- Buying PDO Jamo´n de Teruel is an important decision for me
- I choose PDO Jamo´n de Teruel very carefully– I take my time to choose it
- I take pleasure in choosing PDO Jamo´n de Teruel on every occasion

**Product Involvement**

- I enjoy eating snacks such as chips, nut mixes, and bars.
  - I believe that it does not have to be a special occasion to eat snacks.
  - Snacks are important to me.
  - I pay attention to the brand when buying snacks.
  - I enjoy sharing the pleasure of eating snacks with friends or family.
  - The price of snacks plays an important role in my choice.
  - I choose snacks carefully and take my time to make a selection.
-

## Appendix C – QQ Plots Normality



## Appendix D – Correlation Matrix

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Brand Credibility	—										
2. Brand Equity	.75	—									
3. Purchase Intent	.78	.82	—								
4. Involvement	.21	.23	.16	—							
5. ESG Familiarity	.05	.05	.04	.26	—						
6. Trustworthiness	.98	.71	.74	.23	.07	—					
7. Expertise	.95	.76	.78	.18	.02	.87	—				
8. Loyalty	.75	.88	.79	.22	.03	.71	.75	—			
9. Quality	.74	.83	.77	.19	.06	.69	.75	.73	—		
10. Awareness	.42	.70	.49	.02	.00	.37	.46	.45	.46	—	
11. Associations	.47	.79	.55	.26	.06	.46	.45	.57	.49	.48	—

## Appendix E. Survey Distribution Messages

### LinkedIn message:

Beste netwerk,

Voor mijn MSc-thesis aan Wageningen University doe ik onderzoek naar hoe consumenten reageren op duurzaamheidscommunicatie van voedselmerken. 🌱

Ik zoek mensen die de tijd hebben om een korte vragenlijst in te vullen (ongeveer 5 tot 7 minuten). U hoeft geen specifieke kennis te hebben: uw spontane mening als consument is juist heel waardevol.

🔍 De enquête is volledig anoniem en helpt om beter te begrijpen hoe duurzaamheidsboodschappen in de voedingsindustrie worden ervaren.

✅ Wilt u mij helpen? Klik hier om deel te nemen: [https://wur.az1.qualtrics.com/jfe/form/SV\\_dgnTBLXecDrYrd4](https://wur.az1.qualtrics.com/jfe/form/SV_dgnTBLXecDrYrd4)

Met elke ingevulde vragenlijst helpt u niet alleen mij mijn thesis af te ronden, maar draagt u ook bij aan beter inzicht in hoe duurzaamheidscommunicatie binnen de voedingsindustrie verbeterd kan worden.

Voel u vrij om de link ook te delen met collega's, vrienden of familie — dat wordt zeer gewaardeerd!

Met vriendelijke groet,  
Ted Gerrits

### WhatsApp message:

Hoi! 😊

Voor mijn masterthesis aan Wageningen University doe ik onderzoek naar hoe consumenten reageren op duurzaamheidscommunicatie van voedselmerken.

Zou u me willen helpen door een korte vragenlijst in te vullen? Het duurt maar 5–7 minuten en is volledig anoniem.

U hoeft geen kennis van duurzaamheid te hebben — uw mening als consument is juist heel waardevol!

Hier is de link: [https://wur.az1.qualtrics.com/jfe/form/SV\\_dgnTBLXecDrYrd4](https://wur.az1.qualtrics.com/jfe/form/SV_dgnTBLXecDrYrd4)

**En als u de link wilt doorsturen naar vrienden, familie of collega's: heel graag! 🙏**

Super bedankt alvast!  
– Ted

## Instagram:

 Help jij mij met mijn onderzoek?

Voor mijn masterthesis aan Wageningen University onderzoek ik hoe consumenten reageren op duurzaamheidsboodschappen van voedselmerken.

 Het invullen van de vragenlijst duurt maar 5-7 minuten en is helemaal anoniem.

 Je hoeft geen expert te zijn — jouw mening als consument telt!

Klik op de link in bio / scan de QR-code en vul 'm in.

 Dank je wel!

#onderzoek #duurzaamheid #thesis #voedsel #consument #vragenlijst

## E-Mail:

### Onderwerpregel:

Help jij mij met mijn onderzoek naar duurzaamheidscommunicatie van snackmerken (tussendoortjes)?

### Bericht:

Mijn naam is Ted Gerrits, master's student aan de Wageningen Universiteit. In mijn scriptie onderzoek ik hoe consumenten duurzaamheidscommunicatie van snackmerken ervaren.

Ik zoek deelnemers die een korte, anonieme vragenlijst willen invullen. Het invullen duurt ongeveer 5 tot 7 minuten. Je hoeft geen specifieke kennis over duurzaamheid te hebben, jouw spontane mening als consument is juist heel waardevol.

Elke ingevulde vragenlijst brengt mij een stap dichterbij het afronden van mijn thesis én helpt te begrijpen hoe duurzaamheidscommunicatie in de voedselindustrie verbeterd kan worden.

Je kunt de vragenlijst hier invullen: [https://wur.az1.qualtrics.com/jfe/form/SV\\_dgnTBLXecDrYrd4](https://wur.az1.qualtrics.com/jfe/form/SV_dgnTBLXecDrYrd4)

Alvast heel veel dank voor je hulp!

Met vriendelijke groet,  
Ted Gerrits

## Flyer:

### Doe mee aan onderzoek!

Help jij ons duurzaamheidscommunicatie van voedselmerken te verbeteren?

 Invullen kost maar 5-7 minuten

 Volledig anoniem

 Jouw mening als consument is belangrijk!

**Scan de QR-code** en vul direct de vragenlijst in.

Alvast bedankt! 

## **Appendix F - Use of AI**

During the writing of this thesis, the author used Chat GPT v2 and Claude v3.7 to control the scripts and syntaxes for the data analysis. After using this tool, the author reviewed and edited the content as needed and takes full responsibility for the thesis's content.