

DOI: 10.5281/zenodo.12426359

UNDERSTANDING THE IMPACT OF PERCEIVED EFFECTIVENESS AND SENSORY EXPECTATIONS ON NATURAL CLAIMS AND SUSTAINABILITY

Satyamkumar Ajaykumar Tiwari^{1*}, Ritika singh¹

¹ Sri Balaji University Pune.

Received: 27/09/2025
Accepted: 01/03/2026

Corresponding Author: Satyamkumar Ajaykumar Tiwari
(satyamtiwari2200@gmail.com)

ABSTRACT

To meet the rising concerns about sustainable and healthy consumption, marketers across all product categories have begun using natural claims more and more. This research intends to contribute to the existing body of knowledge by studying how customers' perceptions and decisions about personal care products are affected by claims made about their natural composition. Due to the natural-is-better bias and the health halos produced by such statements, two studies found that natural claims are often employed in personal care product packaging to influence customers' purchase intentions. By delving into the mechanics of perceived effectiveness, safety, sensory expectations, and greenwashing perceptions, this study adds to the existing body of knowledge in the field. Additionally, consumers' perceptions of natural claims' effectiveness are moderated by environmental concern. Insights into the impact of perceived safety and sensory expectations on intentions to buy natural-claimed items are provided by the results, which also improve our knowledge of the natural-is-better bias. Also covered are the important policy and brand issues around sustainable consumption.

KEYWORDS: Natural claims, Personal care, Natural is better bias, Halo effects, Purchase intentions, Consumer judgement.

1. INTRODUCTION

Consumers are altering their purchasing behaviours as they increasingly prioritise natural and environmentally beneficial goods (Thürmer et al., 2022). According to Euromonitor International, "naturalness" was the most frequently cited claim among cosmetics and personal care products across 1,500 retailers. The increasing demand for naturally derived products in personal care has also been evident in sales figures: for example, in Europe alone, the market for natural products has experienced an approximate annual growth rate of 7.2% in recent years. Consequently, manufacturers and governments have promoted the adoption of sustainable and natural claims across a wide range of products to encourage environmentally friendly production and consumption practices (Kolling et al., 2022); (Musicus et al., 2022); (Mungkung et al., 2021).

Recent studies suggest that attributes of natural and sustainable products impact sensory expectations, brand reputation, alongside buyer behaviour (Fracarolli Nunes & Lee Park, 2017);(Marcon et al., 2022). However, existing research offers conflicting perspectives on natural claims: some studies suggest that shoppers may perceive natural products when less effective (Scott et al., 2020), while others indicate that natural claims frequently enhance perceived quality through halo effects. Therefore, our objective is to deepen our understanding of how the natural claims presented on packaging affect perceived efficacy, safety perceptions, sensory expectations, alongside the intent of purchasing natural personal care products.

Although consumers' bias towards organic items is recognised as significant (Meier & Lappas, 2016), the existing literature does not offer a definitive understanding of the effects of natural claims, instead yielding somewhat inconsistent findings. On one hand, previous research indicates that environmentally conscious consumers are more likely to exhibit bias concerning natural claims, which affects their perceptions and purchasing behaviour (Kim & Seock, 2009). However, research has indicated that environmentally conscientious consumers are more likely to engage in extensive information-seeking behaviours when purchasing products and are therefore less influenced by advertisement claims (Lin & Chang, 2012). Therefore, additional research is required to examine the impact of natural claims from consumers' perceptions and purchase intentions regarding personal care products. Consequently, a series of research queries emerge: Firstly, in what ways can natural claims affect consumers' perceptions and their sustainable

purchasing behaviours? Secondly, in what ways do individual differences influence the halos and biases generated by natural claims?

This study seeks to address this lacuna in the literature by enhancing the understanding about how individual differences—such as health and environmental consciousness—may influence the natural-is-better bias and the health halos associated with natural claims. This bias favouring naturalness occurs when claims regarding naturalness influence consumers' assessments of product attributes (Berry et al., 2017), leading them to adopt more sustainable consumption behaviours. In other words, consumers generally favour natural products due to their perceived health benefits and their greater environmental sustainability(Thürmer et al., 2022). We therefore suggest that natural claims may influence consumers' attribute inferences and, ultimately, their purchase intentions (Berry et al., 2017);(Ghazali et al., 2017). However, to the best of the author's knowledge, the existing literature does not provide definitive guidelines regarding the effects of natural claims within the personal care industry. Therefore, this study seeks to offer a more comprehensive understanding of the influence of natural claims on consumers' judgements and purchasing behaviour.

By undertaking this approach, the present study offers a minimum of three contributions through the existing body of literature. Firstly, this study enhances the existing body of knowledge by deepening our comprehension of the natural-is-better bias in product packaging and natural claims within the food and beverage sector (Berry et al., 2017);). Secondly, it enables us to determine how individual differences may influence consumers' responses to cosmetic products alongside natural claims (Kim & Seock, 2009). Thirdly, it contributes to recent research on the consumption of natural personal care products, which has primarily focused on barriers towards consumption (Sadiq et al., 2021), risk perceptions, alongside brand trust (Kumar et al., 2021), as well as claims related to credibility, health, along with environmental concerns (Grappe et al., 2022), by investigating additional explanatory mechanisms of purchase intentions which include perceived effectiveness, safety, sensory expectations, and perceptions of greenwashing.

By undertaking this approach, the present study offers a minimum of three contributions to the existing body of literature. Firstly, this study enhances the existing body of knowledge by deepening our comprehension of the natural-is-better bias in product packaging and natural claims

within the food and beverage sector (Berry et al., 2017). Secondly, it enables us to determine how individual differences may influence consumers' responses to cosmetic products about natural claims (Kim & Seock, 2009). Thirdly, it contributes to recent research on the consumption of natural personal care products, which has primarily concentrated on limitations to consumption (Sadiq et al., 2021), risk perceptions, alongside brand trust (Kumar et al., 2021), or on claims related to credibility, health, while environmental concerns (Grappe et al., 2022), by examining additional explanatory mechanisms of purchase intentions, including perceived efficacy, safety, sensorial expectations, and perceptions of greenwashing.

From a practical standpoint, this research provides brands and marketers with valuable insights. It shows how to use natural claims effectively, which can increase the perceived value of their products and support the development of a more sustainable strategy. The conversation around consumer mistrust and views of greenwashing is further illuminated by it. In the end, it helps individuals alongside lawmakers understand how health and environmental consciousness impact the health halos created by these claims. This understanding can then be used to create better laws and encourage fair competition among brands.

2. LITERATURE REVIEW ALONG WITH HYPOTHESIS DEVELOPMENT

2.1. *Natural Claims for Product Packaging*

Consumers utilise packaging, an extrinsic cue, to draw conclusions the intrinsic attributes of a product (Underwood & Klein, 2002). In addition to conveying product qualities, it may also shape customer expectations (Sundar et al., 2020). Generally speaking, there are two main types of packaging elements: visual and informative. Layout, colour, typography, and images are all examples of visual components. Proportions and forms are all part of this category. Details such as product specs, branding, packaging design, and associated product information are details that apply to informational components in packaging. Graphics, copy, and other design elements are vital for drawing in customers and giving them the information they need to learn more about the items and make an informed decision (Sundar et al., 2020). Although the process of visual cues may be associated with subliminal mechanisms, whereas verbal cues demand greater cognitive effort, it is essential to recognise that various sources of information systematically influence human perception (Underwood & Klein, 2002). Furthermore,

the visual elements of the packaging stimuli – such as colour, text, and graphic design – exert varying influences on consumers' perceptions of a product's health, environmental impact, and sensory qualities (Schifferstein et al., 2022).

Consumers encounter numerous products during each purchasing trip, and consequently, they depend on product claims as signals to streamline their decision-making processes and to discern certain attributes of the products (Rybak et al., 2021); (Schifferstein et al., 2022). Product claims, which serve as an informational component of product packaging, are therefore crucial attributes that significantly enhance its credibility and reduce opinions concerning manipulative intent (Fajardo & Townsend, 2016).

Claims refer to any representations or statements that are not legally mandated by legislation. A study conducted by (Cousté et al., 2012) identified four categories of packaging claims: (1) environmental claims (e.g., "reusable," "safe for the environment"), (2) positive nutritional attributes (e.g., "high in antioxidants," "high in vitamins"), (3) negative nutritional attributes (e.g., "no alcohol," "low fat"), and (4) production claims (e.g., "natural," "no chemicals"). These assertions may be substantiated by third parties, particularly regarding environmental claims, or by the brands themselves through self-declared assertions (Nunes and Park, 2017). Claims of sustainability and natural ingredients have emerged as some of the most prominent assertions on new products launched globally within the personal care industry. One of the factors contributing to this phenomenon is an ideational cause. Individuals are affected by the "natural-is-better bias," whereby consumers perceive natural entities as more sustainable and inherently superior to non-natural entities (Meier & Lappas, 2016).

The second rationale for this innate preference pertains to the particular benefits that consumers link with natural assertions. These perceptions may be affected by halo effects induced by natural claimed materials (Berry et al., 2017) and the vernacular theories held by consumers (Luchs et al., 2010). Halo effects refer to consumers' reliance on limited information about a product characteristic to infer additional attributes, thereby influencing their assumptions and perceptions (Ikonen et al., 2020). Conversely, lay theories are beliefs that individuals hold to facilitate their understanding of the world. The second kind of effects are distinct, as halo effects are cognitive biases resulting from inferences and misconceptions, whereas lay theories primarily consist of prevalent beliefs within specific cultures. Nonetheless, both serve as heuristics that individuals

employ to streamline decision-making and the formulation of judgements (Hoek et al., 2017).

Although the beneficial impact of healthy and natural claims on consumers' perceptions and purchasing behaviour is well recognised (Berry et al., 2017), limited definitive research has been undertaken in this domain, as the majority of studies have concentrated solely on the food and pharmaceutical sectors. Table 1 summarises prior research regarding natural claims used in packaging and their influence on consumer perceptions and behaviour (excluding literature related to medicinal aspects or vice products).

Table 1 demonstrates that consumers perceive products with natural ingredient claims as safer (Amos et al., 2014), healthier (Rybak et al., 2021), and more environmentally sustainable (Hoek et al., 2017). The converse is also valid when examining the adverse collateral effects linked to "unnatural claims" (Sundar et al., 2020). Although these terms differ in semantic meaning, there is a cognitive congruence when consumers employ the words "sustainable," "natural," "healthy," and "ethical" in their food selections (Schiano et al., 2020). Therefore, consumers

may interpret a "natural" claim as indicating a more ethical, sustainable, or healthful purchase, even when such is not necessarily true. In addition to this overlap, certain variables may be affected by individual perceptions regarding a product marketed as natural, including perceived efficacy, perceived safety, along with sensorial expectations, which will be addressed subsequently.

2.2. Perceived Efficacy

Perceived efficacy refers to the capacity of the product to effectively deliver what is intended (Vanbergen et al., 2020). The perception of effectiveness is typically founded on consumers' expectations concerning the product and its components (Sundar et al., 2020). However, beauty products occasionally promise to accomplish something virtually unattainable for individuals, such as a miraculous hair moisturising treatment. Therefore, consumers may depend on signals to develop efficacy beliefs (Sundar et al., 2020), employing such heuristics to facilitate and streamline the decision-making procedure (Hoek et al., 2017).

Table 1: Literature regarding natural claims on products' packaging and its impact on consumer perceptions and behaviours.

Source	Product category	Type of claims	Key findings
Lunardo and Saintives (2013)	Food	Natural land (independent claim) 100 % Natural (brand claim)	Natural claims influence consumers to regard products deemed more natural, subject to the point of purchase, the prominence of the claims, and the authority endorsing the naturalness.
Hoek et al. (2013)	Household cleaning products	Eco-friendly Natural ingredients No animal testing	Generalised assertions elicit a more favourable response from consumers than particular ones. Even though they have a lot of influence over customers' purchasing decisions, they could be wary of promises made about ethics and sustainability.
Apaolaza et al. (2014)	Fragrances	Perfumes made of 100 % natural ingredients	Perception, acceptability, and desire to buy are all affected by natural claims' effects on hedonic sensory experiences.
Amos et al. (2014)	Food and supplements	All natural	Positive instrumental beliefs, such product safety and health benefits, are influenced by natural claims because they elicit pleasant sensations and a pastoral image of nature.
Berry et al. (2017)	Food	All natural	Consumers' judgements of products are impacted by natural claims because they affect their attribute inferences.
Skubisz (2017)	Food and beverage	100 % Natural All natural	Consumers tend to see natural branded goods as having less calories and a healthier option compared to non-natural things.
André et al. (2019)	Food	Natural and science-based claim	Judgement of flavour, wholesomeness, and dietary restrictions is impacted by the kind of claim. People tend to see goods that claim to be natural as less palatable and healthier than those that make scientifically-based claims.
Rybak et al. (2021)	Food	Processing and nutrient claim	By acting as a mediator, processing claims and ingredient lists impact consumers' intents to buy via clean labels. Perceptions of what is "healthy" are favourably impacted by products with clean labelling.
Sundar et al. (2020)	Food	Unnatural claim	There are unintended consequences for health, such as an increase in calorie estimate, due to unnatural nutritional claims made on product labels.
Musicus et al. (2022)	Food	Nutrients and natural claims	Nutrient claims on the packaging of the vast majority of fruit drinks and all juices sold to children in the United States are potentially misleading.

Past studies have shown that information about prices (Shiv et al., 2005), statements made on product packaging (Ikonen et al., 2020), and general beliefs

about potential adverse effects (Kramer et al., 2012) may all influence how effective a product is considered to be. (Lin & Chang, 2012) all found that

consumers have generalised beliefs about natural goods, such as the idea that they are less likely to produce adverse effects or that they are ineffective. There is some evidence that consumers may be wary of purchasing items with natural claims since they raise questions about the product's practicality (Kushwah et al., 2019). Thus, following this line of thinking, we propose the following hypothesis:

H1a. Natural claims will negatively influence consumers' perceived efficacy judgments.

2.3. Perceived Safety

while people think a product doesn't include any harmful chemicals or synthetic materials, they have a higher degree of perceived safety while using it (Bauer et al., 2013). Many people may mistakenly believe that natural goods are safer than non-natural items because they do not include any dangerous ingredients or man-made compounds (Amos et al., 2014).

As a result, consumers place more value on instrumental attributes like safety (e.g., food and supplements) and lower value on perceived dangers (e.g., tobacco) when natural claims are made (Amos et al., 2014). Understanding how natural claims impact the formulation of safety judgements by consumers is, hence, of utmost importance. So, our suggestion is that:

H1b. Natural claims will positively influence consumers' perceived safety judgments

2.4. Sensory Expectations

According to (Apaolaza et al., 2014), sensory expectations occur when buyers anticipate that a product will have several sensory qualities. Customers may have higher expectations for organic veggies, for example, believing that they would taste better or have more vibrant colours than conventionally grown vegetables. Additionally, it is reasonable to assume that between shampoo products marketing themselves as natural (by using ingredients like coconut oil, for example) would leave behind a lovely, earthy scent. Customers' expectations of the sensory experience have a significant role in their choice of personal care products. Consequently, customers construct these expectations throughout the decision-making process (Togawa et al., 2019).

The impact of claims on customers' sensory expectations has been the subject of prior research. Hedonic sensory impressions were greater among customers who had been exposed to claims of natural or organic ingredients in food and wine marketplaces prior to tasting compared to those who had not been exposed to such claims (Apaolaza et al., 2014). It seems to be an instance of the halo effect, which occurs when people's perceptions of and reactions to

natural things are more positive than those of non-natural items (Rozin, 2005). Nevertheless, there is little information available about how claims impact consumers' sensory expectations in non-food categories, with the exception of a study by (Apaolaza et al., 2014). Consequently, we propose that in order to fill this gap in the literature:

H1c. Natural claims will positively influence consumers' sensory expectations.

2.5. Purchase Intentions

According to previous studies on consumer intentions to buy (Berry et al., 2017), promises made on packaging have an effect on consumers' propensity to buy (Apaolaza et al., 2014); (Cousté et al., 2012). Claims pertaining to health and nutrition have been the primary focus of the study on this topic, with most studies taking place in the food and medicine sectors (Ikonen et al., 2020). According to (Zollo et al., 2021), the majority of the existing research on personal care products is focused on organic goods. We anticipate that the personal care category will follow the general trend in the natural claims sector, where the majority of articles indicate that consumers like items that are marketed as natural (Scott et al., 2020).

Many customers rationalise their choice by claiming that these goods make them feel better (Hoek et al., 2017) and that they are healthier (Amos et al., 2014). Natural claims may have an indirect effect on customers' intentions to buy pharmaceuticals via their views of the products' safety and effectiveness. To rephrase, it seems that these claims are linked to the product's performance and possible hazards. According to another study, customers have greater sensory expectations for items that are said to be naturally occurring, which in turn increases their intents to buy (Apaolaza et al., 2014). With this justification in mind, and keeping in mind that many research and studies have shown that the personal care industry's success criteria include safety, effectiveness, and sensory experiences we suggest the following:

H2. The positive effects of natural claims on consumers' purchase intentions are mediated by perceived efficacy (a), perceived safety (b), and sensory expectations (c).

2.6. Health Consciousness

An individual's level of health awareness is a reflection of how seriously they take their health. People who are concerned about their health often track their vitals and make changes to their habits, including buying organic food (Mai & Hoffmann, 2015), in an effort to improve their health (Kim & Seock, 2009).

People who are more health conscious tend to think that natural beauty products are better for them in many ways than synthetic ones. They think that they are safer, more technologically advanced, more fashionable, and that they work better than conventional products (Kim & Seock, 2009). Moreover, natural goods tend to be more popular among health-conscious consumers for obvious safety reasons (Meier & Lappas, 2016). Because of this, this is what we bring up:

H3. Health consciousness moderates the effect of natural claims on perceived efficacy (a), perceived safety (b), and on sensorial expectations (c).

2.7. Environmental Consciousness

(Barber et al., 2012) and (Sreen et al., 2021) found that people who are environmentally concerned are more likely to buy green items and engage in pro-environmental behaviour. Previous research has shown that eco-conscious customers are more prone to the natural-is-better bias and are more inclined to seek out extra information in order to make well-informed choices (Testa et al., 2020). Environmental consciousness and a stronger sense of one's place in the natural world both enhance the "natural is better" attitude and the use of natural products (Sreen et al., 2021). The reason for this might be attributed to the belief that these items are both superior in quality and environmentally friendly.

Our goal in doing this study is to determine how eco-awareness affects the halo effects that natural claims may generate. No substantial effects of pro-environmentalism on the correlation between natural claims and how customers perceive fragrances were discovered by (Apaolaza et al., 2014). Natural products are more effective and safer than conventional alternatives, according to (Kim & Seock, 2009). People who are very concerned about the environment are more likely to assume that there is a significant quality difference between natural and synthetic products. To delve further into the impact of eco-awareness on cosmetics purchasing, we propose that:

H4. Environmental consciousness moderates the effect of natural claims on perceived efficacy (a), perceived safety (b), and sensorial expectations.

Fig. 1 illustrates the conceptual model of this paper, summarizing the hypotheses to be addressed in this research.

3. RESEARCH METHODS

Here we show you the outcomes of our pilot and experimental research with Portuguese clients, which validated our suggested framework. For this market, we settled on Portugal because, the country's retail sales

volume increased by 16% from February 2021 to February 2022, making it the third fastest-growing market in the European Union. The personal care industry, which is the subject of this study, will bring in €1.58 billion in 2022, and Statista predicts a 2.62 percent yearly growth rate for the business going forward. This bodes well for the market; therefore, it would be worthwhile to learn more about the factors that shape the opinions and actions of these consumers.

We used an exploratory approach in the pilot research to learn about the most common claims in the Portuguese health care industry and how they are presented to customers; this information was utilised to generate variation in research 1. Utilising an experimental approach, Study 1 sought to comprehend the effects of fitness and environmental consciousness on product attributes (perceived efficacy, safety perceptions, alongside sensorial expectations) as well as the relationships between these attributes and purchase intentions. The control group did not contain any claims about the product's naturalness. The University's ethics board gave its stamp of approval to the research after they adhered to all applicable institutional and international regulations.

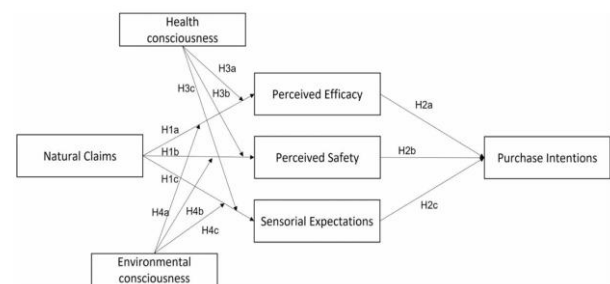


Figure 1: Conceptual model

3.1. Pilot Study

3.1.1. Procedures

To investigate natural claims as well as their variants, exploratory empirical research was conducted utilising content analysis. Previously used in the examination of claims and packaging, this sort of research is helpful in the setting of discovery to build new hypotheses (Chrysochou & Festila, 2019). Improving the study's objectivity, sampling procedures, systematisation, and dependability was a top priority in order to ensure the perfection of this research (Chrysochou & Festila, 2019). By adhering to a data collecting approach that examined objectively measurable elements of personal care products—kind of natural claim, the degree of naturalness, as well as type of visual presentation—system activations were tried.

Five major Portuguese retailers—Continente, Pingo Doce, SuperCor, Auchan, and E.Leclerc—had their websites analysed for two months to find out what their customers wanted. Time and resources were limited, so this study narrowed its focus to personal care products with natural claims on the front of the package. The goal was to examine a reasonable number of packages without going overboard and to ensure that the sampling method was accurate. Similarly, we selected this data source because it has a sizable personal care product market share and because we wanted to make sure that our findings were accurate by just looking at claims that are important to mass-market stores (specialist shops were purposefully left out).

Personal care products on each website were reviewed. Only those with front-of-package natural claims were added to the database, along with the product type, brand, type of natural claims, presentation style, and claimed level of naturalness. The database was cleansed of any instances of identical products found on other websites or in various sizes.

3.1.2. Results

From hair care goods like shampoos and conditioners to personal care items like deodorants and toothpaste, the exploratory investigation uncovered 425 items from 41 different brands that made natural claims. There are two groups into which the assertions fall. The first one pertains to claims that centre on ingredients (such as "natural extracts" or "natural origin ingredients") and accounts for 42% of the goods that were evaluated. The second one addresses claims that centre on products (such as "natural formula") and accounts for 58% of the products that were evaluated. In all, this analysis revealed ten distinct claims across these two groups; nevertheless, only three claims constitute eighty percent of the total. The findings are summarised in Table 2. Only 328 out of the whole universe of items examined (or 77.18 percent) actually boast about the product's naturalness percentage on the package. Additionally, the degree of the product's naturalness was also included in 93.45% of the "natural origin" claims and 86.61% of the "natural origin ingredients" claims, which were the top claims that were identified. The degree to which packaging seems natural

While the study's claims ranged from 77% to 100%, only 0.07% of the goods tested really had a naturalness level below 90%. The majority of personal care products really state that they are 90% natural or higher; in fact, 93.29 percent of the items included in the survey said this. Moreover, 63.72% of

the items that have a naturalness percentage also claim to have a level of 95% or above of naturalness. In terms of the visual representation of these claims on product packaging, a spherical label with text on it was used by 54.35% of the claims examined. At 29.65%, text-only claims were the second most common kind of claim display. Actually, 84% of the cases were presented visually in one of these two ways; the remaining cases were presented visually in one of three other ways: text on a rectangular label (9.41%), text and an icon (5.88%), or text on a round label with an icon (0.71%).

Table 2: Type of natural claims found in personal care products packaging.

Types of natural claims	Frequency	Relative frequency
Natural origin	168	39.53%
Natural origin ingredients	127	29.88%
Natural	45	10.59%
Natural extracts	43	10.12%
Natural origin extracts	17	4.00%
Natural formula	10	2.35%
Natural ingredients	7	1.65%
Vegetal origin	4	0.94%
Natural derived ingredients	3	0.71%
With natural vegetable extracts	1	0.24%
Total	425	100%

3.1.3. Discussion

Based on these findings, it's evident that marketers mostly employ statements like "natural origin" and "natural origin ingredients" to convey the all-naturalness of their goods. In fact, the personal care section is just #3 for claims, whereas the most utilised claim in earlier publications, "natural," ranks #6. Product or ingredient claims are often accompanied with the percentage of naturalness, with "90%," "98%," or "100%" being the most common naturalness levels.

In order to elicit customer impressions and influence their purchasing intentions, it is essential to comprehend the benefits and drawbacks of these natural claims. Therefore, in order to provide the optimal picture to explain the study's natural situation to enquiries, the experimental design of Study 1 used the previously determined top claim type and visual presentation.

3.2. Study 1

Research questions developed during the formulation of the literature review led to the conduct of a second study after the exploratory analysis of personal care market claims for natural products. To learn how customers' perceptions and intentions to purchase are affected by natural claims

(100 % natural origin vs. no-claim) in personal care goods, Study 1 used an online single-factor between-subjects experimental design. The impact of health awareness and environmental consciousness on customers' views is another objective of this experimental investigation.

3.2.1. Procedures

A controlled manipulation of circumstances was performed to guarantee the study's internal validity. We used a picture of a shampoo bottle that boasted about its all-natural ingredients. The Pilot Study's emphasis on this particular personal care product was a primary factor in its selection. More than that, this substance has been the basis for earlier experimental investigations (Luchs et al., 2010). You may find the altered photos and situations in the Appendix. An online survey built on Qualtrics was used to gather quantitative data, which was then processed and analysed using the program SPSS (version 27).

3.2.2. Measures

The first set of questions focused on people's level of health awareness (Mai & Hoffmann, 2015) and their level of environmental awareness. After being subjected to a situational text that prompted participants to imagine themselves grocery shopping, they were then divided into two conditions: one in which they would see a shampoo bottle boasting its natural ingredients, and the other that would not. Following the manipulation, participants were asked to rate their perceptions of practicality (Vanbergen et al., 2020; $\alpha = 0.93$), security (Bauer et al., 2013), 2013; $\alpha = 0.95$), sensory anticipations (Brakus et al., 2009), and desire to buy (Barber et al., 2012). (Rozin, 2005) found that customers scored the product's perceived naturalness for the manipulation checks. We employed attributes' importance (Luchs et al., 2010), consumers' subjective knowledge of natural products (Ghazali et al., 2017), and their perceptions of greenwashing (Chen and Chang, 2013) as control variables to measure the extent to which consumers view natural claims as deceptive marketing tactics used by companies to enhance the environmental features of their products. Also, we included two scales to measure how respondents felt about the strength and gentleness of the product because, as (Luchs et al., 2010) pointed out, customers tend to subconsciously link qualities related to gentleness with greater naturalness or ethics and qualities related to strength with lower naturalness or ethics. A 7-point Likert scale was employed to assess all components, and the specific items used in the experiment may be found in the appendix.

Two people who work in the personal care and beauty industry were among the ten participants in a pilot study that reviewed and changed the survey to make sure it was easy to understand and use in the main research. Some changes were made before the survey was made available online based on their input and observations.

3.2.3. Sample

The purpose of this online survey was to collect data on how people think about and use personal care products as well as their buying habits. They were enlisted via author-posted social media postings and cosmetics and general natural products-related organisations. We also encouraged people to tell their friends and family about the survey. As a result, a hybrid approach combining convenience and snowball sampling was used. We got 305 full replies, but we had to cut 49 since either they didn't recall the manipulation (3) or they didn't answer the attention check properly (46). Consequently, 256 replies were included in the final sample; 73% of the respondents were female, and 36% were in the 18–25 age bracket (the complete sample description may be seen in the Appendix). Since this was the category being evaluated, we assume that the reason there are more women than males in the sample is because having experience buying haircare products was a requirement to participate in the survey.

We did, however, examine whether gender played a role in the dependent variables and found no difference between male and female respondents in terms of perceived efficacy ($t(254) = 0.885, p = 0.378$), perceived safety ($t(254) = 0.941, p = 0.348$), sensorial expectations ($t(254) = -0.870, p = 0.385$), or purchase intentions ($t(254) = -0.490, p = 0.312$).

3.2.4. Results

In order to determine whether the data was valid and reliable, we used the following tests: primary component analysis with a Promax rotation (PCA) with 39 items, Bartlett's Test of Sphericity ($\chi^2(256) = 5552.910, p < 0.001$), and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy for the whole data set ($KMO = 0.83$). The findings of the principal component analysis led us to exclude several items from the final data set, which consisted of 36 items. The KMO and Bartlett's test results were both satisfactory, with $KMO = 0.831$ and $\chi^2(256) = 5148.935, p < 0.001$, respectively. In the principal component analysis (PCA), nine components accounted a total of 70.34 percent of the variance, with eigenvalues above Kaiser's criteria of 1. Everything that relies on the components was retained since none of them had cross-loadings more than 0.3, or, if they did, their higher

loading was greater than 0.6. The items that tend to cluster on the same components indicate the following: (1) greenwashing perceptions; (2) environmental consciousness; (3) perceived security; (4) product knowledge; (5) health consciousness; (6) purchase intentions; (7) perceived efficacy; (8) gentleness importance; and (9) sensorial expectations. After that, we checked the reliability of the constructs using two major criteria: Cronbach's Alpha and Composite Reliability (CR). The results showed that all of the constructs had values more than 0.7. With the possible exception of environmental awareness, all constructs had an average variance extracted (AVE) greater than 0.5, which might be attributed to the fact that the scale measured self-reported behaviour (Appendix). We will provide t-test findings and Mann-Whitney U tests as the latter is a non-parametric alternative to an independent samples t-test, and the tests reveal that the distributions are somewhat different from normal, particularly for purchase intentions.

Respondents placed a higher value on attributes pertaining to the product's gentleness (e.g., safe, gentle, and healthy) when making a purchase decision for personal care items (e.g., shampoos) than they did on attributes pertaining to the product's strength (e.g., powerful, strong, effective) ($M = 4.27$; $SE = 1.33$). This shows that while looking for personal care goods, consumers may choose a product that they perceive as being more natural compared to its rivals. With a mean score of 4.08 and a standard error of 1.29, the sample's subjective product knowledge is average, although the questions vary widely. Health awareness ($M = 5.39$; $SE = 0.99$), environmental consciousness ($M = 5.12$; $SE = 0.95$), and views of greenwashing ($M = 5.69$; $SE = 0.86$) were all high in this study's population. Such high numbers may not be indicative of the typical person. Neither these factors nor their effects on other variables varied between situations. For tests using the dependent variable purchase intention, we included this variable as a control since the influence on purchase intentions varied across levels of greenwashing perceptions ($F(18, 237) = 1.68$, $p = 0.044$).

Predictions about the naturalness of the shampoo were higher in the natural claim group ($M = 74.99$; $SE = 22.08$) compared to the control group ($M = 45.88$; $SE = 21.09$; $F(1, 254) = 116.080$, $p < 0.001$), and manipulation checks performed as predicted. A similar pattern emerged: in the natural claims condition, respondents were more likely to link features with a product that is gentle and safe for their body and health ($M = 5.93$; $SE = 0.83$) compared to the control condition ($M = 5.69$; $SE = 0.86$; $t(254) = 2.23$, $p = 0.027$). The natural claimed shampoo had a greater perceived effectiveness among

participants in the direct effects group ($M = 4.80$, $SE = 0.98$) compared to the control group ($M = 4.32$, $SE = 0.92$), $t(254) = 3.99$, $p < 0.001$. Contrary to what was predicted by H1a, which held that perceived effectiveness would be adversely affected by natural claims, these data show the contrary. Participants in the control group reported lower levels of felt security ($M = 3.74$, $SE = 1.08$), $t(254) = 6.70$, $p < 0.001$, compared to persons in the natural claim condition who reported greater levels ($M = 4.70$, $SE = 1.21$). So, we may say that hypothesis H1b is correct. In terms of participants' sensory expectations, the group using the natural-claim shampoo was projected to have a more favourable experience ($M = 4.48$, $SE = 1.02$) compared to the control group ($M = 3.80$, $SE = 1.12$), $t(254) = 5.06$, $p < 0.001$. This proves that H1c. We used an ANCOVA to adjust for the covariate views of greenwashing in order to examine the influence on intentions to buy. The impact was statistically significant ($F(2, 253) = 44.33$, $p < 0.001$), and compared to the control group, the natural-claim group showed greater levels of intention to buy ($M = 4.39$, $SE = 1.24$). The direct impacts are summarised in Fig. 2.

With greenwashing beliefs as the covariate, we used model 4 in PROCESS SPSS macro (Hayes, 2018) to analyse the parallel mediation model associated with H2. Regression assumptions were previously evaluated and shown to be true. First, the findings demonstrate that natural claims had a significant and beneficial impact on perceived effectiveness ($b = 0.467$, $SE = 0.120$; $p < 0.001$), perceived safety ($b = 0.993$, $SE = 0.144$; $p < 0.001$), and sensory expectations ($b = 0.680$, $SE = 0.135$; $p < 0.001$). Further, both sensory expectations ($b = 0.422$, $SE = 0.073$; $p < 0.001$) and perceived efficacy ($b = 0.399$, $SE = 0.083$; $p < 0.001$) significantly influenced purchase intentions. Results showed that consumers' perceptions of safety did not significantly influence their propensity to buy.

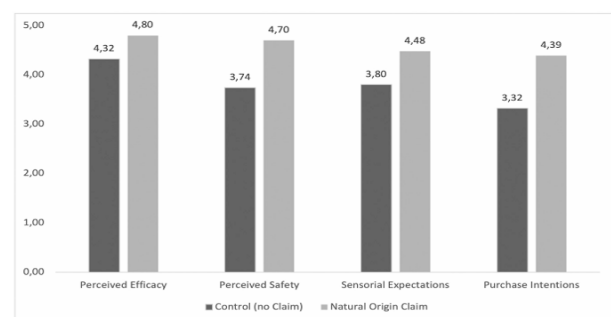


Figure 2: Mean values of perceived efficacy (PE), perceived safety (PS), sensorial expectations (SE), and purchase intentions (PI) per experimental group.

p -value = 0.169. Once the mediators were accounted for, natural claims continued to have a

substantial impact on purchase intentions ($b = 0.517$, $SE = 0.143$; $p < 0.001$). A bootstrap test with 5,000 bootstrap samples was used to examine the indirect effects, using a 95% confidence interval (CI). This study's findings suggest that sensory expectations ($b = 0.205$, $SE = 0.055$, 95% CI = 0.104, 0.321) and perceived efficacy ($b = 0.134$, $SE = 0.044$, 95% CI = 0.056, 0.233) both play a role in mediating the association between natural claims along with purchase intentions. Perceived safety's function as a mediator did not demonstrate statistical significance ($b = 0.066$, $SE = 0.054$, 95% CI = -0.033, 0.178).

Both Hypotheses H3 and H4 postulated that consumers' concerns about their health and the environment would mitigate the mediation effects of the product's perceived characteristics. We used PROCESS Model 9 (Hayes, 2018) to investigate these conditional interaction effects on purchasing intentions. Based on the results, it seems that only hypothesis H4a was correct. Natural claims had a moderating influence on perceived effectiveness when consumers were environmentally sensitive ($b = 0.250$, $SE = 0.130$, $t = 1.917$, $p = 0.05$). The purchase intention was greater in relation to the perceived effectiveness ($b = 0.685$, $SE = 0.073$, $t = 9.315$, $p < 0.001$). The partial moderated mediation index = 0.171 ($SE = 0.084$, 95% CI = 0.003, 0.335) lends credence to this mediating effect. Supporting H4a, the conditional indirect impact was more pronounced in people with high levels of environmental awareness ($b = 0.531$, $SE = 0.139$, 95% CI = 0.272, 0.811), whereas it was non-significant in those with low levels of concern for the environment ($b = 0.092$, $SE = 0.126$, 95% CI = -0.151, 0.346). The test of basic slopes is shown in Fig. 3. The moderating impact of health awareness was also insignificant, as were the other partly moderated effects.

3.2.5. Discussion

Study 1's findings imply that consumers' views of a product's sustainable features are impacted by natural claims, and that these perceptions in turn affect their intentions to buy. In particular, (Bauer et al., 2013) all provide evidence that natural claims have a beneficial effect on consumers' perceived security ratings, lending credence to our theory. (Apaolaza et al., 2014) and (Berry et al., 2017) found that natural claims had a beneficial effect on sensory expectations as well as purchase intentions (Berry et al., 2017); Davis and Burton, 2019). We discovered that natural claims had a positive effect on perceived efficacy ratings, which goes against the hypothesised association between natural claims and fewer effectiveness ratings (H1a) and previous findings that natural products are perceived as less effective (Meier & Lappas, 2016). Hence, H1a cannot

be accepted. Naturalness may have a favourable effect on product qualities as the majority of the sample is very environmentally sensitive and places a high value on softness features when purchasing shampoos (Luchs et al., 2010).

Furthermore, the mediation impact of natural claims on product purchase intentions was shown to be supported by sensory expectations and perceived effectiveness (H2a and H2c, respectively), although perceived safety did not play a significant role. Thus, there was no evidence to support H2b. This suggests that the natural-is-better bias in the personal care business may outweigh views about safety, which is in keeping with the results of Meier and Lappas (2016), who found that participants still choose natural medications even when they are portrayed as less safe. Consumers may not even think about safety when purchasing shampoos since it is heavily controlled by EU regulations and directives, despite the fact that it is a major problem. Furthermore, despite accounting for the mediators, we still discovered that natural claims affected purchasing intentions. Earlier findings are consistent with this, indicating that the demand for natural goods is not only driven by.

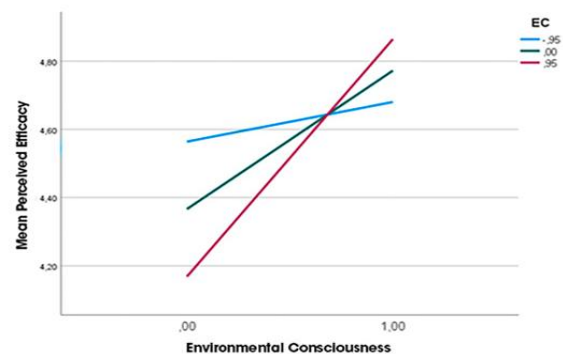


Figure 3: Graphical representation of the test of simple's slopes (conditional effects of the moderator- environmental consciousness- on the path of natural claims to perceived efficacy).

Instrumental grounds (particular features of the object at hand), but also by ideational reasons – broad opinions about the superiority of the specified goods or relation to an idea of well-being.

While H4a was supported, H4b, H4c, H3a, H3b, and H3c were not, the sole significant result was discovered for the moderating impact of environmental awareness on the effects of natural claims on perceived effectiveness. Our research shows that eco-conscious people have a more positive impression of these all-natural products than those who are less concerned about the environment, and that those with a lower level of environmental consciousness think that regular shampoo doesn't work as well.

Perceptions of greenwashing were also higher among respondents, which is an intriguing finding. An activist may accuse a brand of misleading its consumers with unfounded claims or acting inconsistently with its stated principles if they feel that the company's rhetoric is not genuine. These impressions may really put one's actions towards a company or product at risk, according to Study 1. Consumers lose faith in a product's natural claims and their accompanying greenwashing when they hear such claims portrayed as unfounded.

At last, the results contribute to previous research (Li & Cao, 2020) by delving deeper into how nature connectedness—a potential indicator of environmental concern—affects consumers' preference for and use of natural goods. Additional research on the favourable impact of natural claims on healthiness, safety, and purchase intent has been conducted by (Apaolaza et al., 2014), (Berry et al., 2017). Even though cosmetics are often thought of as less dangerous to one's health than food or drink, Study 1 showed that this impact is nevertheless present in this category. In light of research on all-natural cosmetics (Kim & Seock, 2009), we add to the existing literature intriguing new variables like consumers' expectations of the product's sensorial qualities, their perceptions of its efficacy, and their worries about environmental impact and greenwashing as they consider products with all-natural claims.

4. CONCLUSION

The increasing use of natural claims by brands reflects a strategic effort to shape consumer perceptions and influence purchase behaviour in the personal care sector. Building on prior research on the natural-is-better bias (Amos et al., 2014); (Apaolaza et al., 2014) (Sadiq et al., 2021), The study demonstrates that product claims in the research create positive effects on consumer perception of product effectiveness and safety and sensory expectations which lead to increased purchase intent. The research establishes that personal care products exhibit a naturalness "halo effect" which researchers have previously studied in food and medical products but not in this category.

The study identifies sensory expectations and perceived effectiveness as essential pathways through which natural claims affect buying behavior according to its theoretical framework. The research discovered that natural product claims boost perceived product effectiveness despite previous studies which stated that

natural products decrease their effectiveness (Luchs et al., 2010). The link between environmental consciousness and environmental preferences shows that eco-friendly consumers exhibit a stronger tendency to prefer natural products because they believe nature-based options are better than all other choices. The research findings demonstrate that psychological biases together with personal differences should be used to assess sustainable consumption for natural product evaluation through existing assessment frameworks. The personal care industry which is currently experiencing rapid growth will benefit from brands because the research results provide essential guidance for their operations. The company can use natural product claims to boost product effectiveness and sensory attractiveness which will lead to increased customer purchasing. Companies must provide clear product performance information and usage benefits which should be delivered through transparent messaging and customer endorsements and scientific evidence. The marketing campaign will achieve better results when it targets environmentally aware consumers while showcasing sustainability advantages. The research demonstrates that greenwashing perceptions shape consumer behavior which creates a need for brands to establish consumer trust through authentic and checkable statements.

The outcomes of this study provide essential information which decision-makers need to know. Consumers develop positive product assessments through natural claims yet these claims create misleading product advantage perceptions. The different natural claim regulations which exist for cosmetics products create confusion for consumers while companies use these claims for improper purposes. The implementation of precise standards together with transparent processes and the assessment of self-reported statements will safeguard consumers and create an environment which supports equal business competition and authentic sustainable development. The present study contains valuable findings about its scope yet it depends on self-reported data from participants. The upcoming research should investigate how different cultures behave over extended periods while studying how natural claims affect consumer behavior with eco-labels and certifications. Companies can research different product types to determine how consumers perceive natural products through their natural-is-better bias.

REFERENCES

- Singh, R. (2024). Influencer-product convergence and popularity on consumer purchasing behaviour. *Economic Sciences Journal*.

- Chernev, A., & Blair, S. (2015). Doing well by doing good: The benevolent halo of corporate social responsibility. *Journal of Consumer Research*, 41(6), 1412-1425.
- Magnier, L., Schoormans, J., & Mugge, R. (2016). Judging a product by its cover: Packaging sustainability and perceptions of quality and purchase intention. *Journal of Business Research*, 69(10), 3893-3899.
- Testa, F., Iraldo, F., Vaccari, A., & Ferrari, E. (2015). Why eco-labels can be effective marketing tools: Evidence from a study on Italian consumers. *Journal of Retailing and Consumer Services*, 27, 252-259.
- Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *Journal of Cleaner Production*, 54, 64-87.
- Singh, R. (2020). Evaluation of sensory marketing on consumer behavior: With special reference to hotels in Gurugram, Haryana. *International Journal of Advanced Science and Technology (IJAST)*.
- Singh, R. (2022). Impact of sensory marketing on tourism industry: An empirical analysis. *Journal of Positive School Psychology*.
- White, K., Habib, R., & Hardisty, D. (2019). How to SHIFT consumer behaviors to be more sustainable. *Journal of Marketing*, 83(3), 22-49.
- Asioli, D., Aschemann-Witzel, J., Caputo, V., Vecchio, R., Annunziata, A., Naes, T., & Varela, P. (2017). Making sense of the "clean label" trends: A review of consumer food choice behavior. *Food Quality and Preference*, 58, 21-30.
- Singh, R. (2014). Purchasing behavior of rural consumers for FMCG products in reference to their advertisement. *International Journal of Research and Development in Technology & Management (IJRDTM)*.