



# Concreteness in Clean Beauty Messaging: How Claim Concreteness Affects Brand Attitude, Authenticity, and Skepticism

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## **Abstract**

### **Title: Concreteness in Clean Beauty Messaging: How Claim Concreteness Affects Brand Attitude, Authenticity, and Skepticism**

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The growing importance of “clean beauty” has intensified scrutiny of brand communication around ethical, safety, and transparency claims, given the absence of a standardized definition. This dissertation examines how the concreteness of clean beauty claims influences consumer brand evaluations and under which conditions these effects occur. Drawing on the Elaboration Likelihood Model, Signaling Theory, and Persuasion Knowledge Model, this study explores the relationship among claim concreteness, brand attitude, and perceived brand authenticity, while considering advertising skepticism as a boundary condition.

A between-subjects online experiment was conducted in the skincare context, using a fictitious brand and three advertising conditions that differed only in claim wording. Perceived brand authenticity, brand attitude, and advertising skepticism were measured using validated multi-item scales.

The findings show that claim concreteness does not directly improve brand attitudes. Instead, perceived brand authenticity operates as the principal mechanism. Concrete, verifiable claims strengthen authenticity perceptions, which then translate into more favorable brand evaluations, whereas abstract wording does not reliably produce the same effect. Skepticism affects how claim information is received, but does not remain a stable moderator once authenticity is considered in the full model. These results add to research on claim framing in credence categories and suggest that clean beauty communication should prioritize verifiable, accountable cues that build authenticity rather than relying on vague “clean” language.

**Keywords:** Clean Beauty, Claim concreteness, Brand Attitude, Perceived Brand Authenticity, Advertising Skepticism

## **Sumário**

**Título:** Concretude nas Mensagens de “Beleza Limpa”: como a concretude das alegações afeta a atitude, a autenticidade e o ceticismo em relação à marca.

**Autor:** Lídia Singh

A importância da “beleza limpa” intensificou o escrutínio sobre alegações éticas, de segurança e transparência de marcas, num contexto sem definição comum. Esta dissertação examina como a concretude destas alegações influencia as avaliações dos consumidores sobre as marcas e sob que condições esses efeitos ocorrem. Com base no Modelo de Probabilidade de Elaboração, na Teoria da Sinalização e no Modelo de Conhecimento de Persuasão, o estudo examina a relação entre a concretude das alegações, a atitude em relação à marca e a autenticidade percebida na marca, considerando o ceticismo publicitário.

Foi realizado um experimento online no contexto dos cuidados com a pele, utilizando uma marca fictícia e três condições publicitárias que diferiam apenas na formulação da alegação. Os resultados indicam que a concretude não melhora diretamente a atitude em relação à marca, mas a autenticidade percebida atua como o mecanismo central. Alegações concretas reforçam a autenticidade e, assim, conduzem a avaliações mais favoráveis, enquanto linguagem abstrata não produz efeitos consistentes. O ceticismo afeta a recepção da informação, mas não se mantém estável quando a autenticidade é integrada no modelo completo. Estes resultados contribuem para a investigação sobre alegações em categorias de credibilidade e sugerem comunicação baseada em pistas verificáveis e responsáveis, contrário a linguagem abstrata.

**Palavras-chave:** Beleza limpa, Concretude da alegação, Atitude em relação à marca, Autenticidade percebida da marca, Ceticismo publicitário.

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### **Disclaimer on the Use of Artificial Intelligence**

Artificial Intelligence tools, including ChatGPT, were used throughout the development of this dissertation as a support instrument for language refinement, text editing, improving clarity, grammar, cohesion, structural design, drafting assistance, and clarification of academic expression. AI tools were also used to support the development and wording of research materials (e.g., interview guides, survey structure) and visual stimuli under the author's direction.

All theoretical reasoning, conceptual decisions, research design, hypothesis formulation, data collection, statistical analysis, interpretation of results, and final academic judgments were independently conducted by the author. Full responsibility for the content, originality, and academic integrity of this dissertation rests solely with the author, in accordance with UCP regulations and guidelines.

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## **Table of Abbreviations**

PBA: Perceived Brand Authenticity

ELM: Elaboration Likelihood Model

CSR: Corporate Social Responsibility

CBBA: Consumer-Based Brand Authenticity

AOP: Appellation d'Origine Protégée

CLT: Central Limit Theorem

## **1. Introduction**

### **1.1. Background**

The beauty and cosmetics industry is rapidly being transformed by shifting consumer values and increasing scrutiny of brand communication. Skepticism toward hype is rising, and consumers demand real value, authenticity, and trustworthy claims (McKinsey&Company, 2025). Recent global beauty industry analysis forecasted continuous growth in retail sales, and points to transparency and evidence-based positioning as durable purchase drivers, with almost 50% of the Gen-Z segment researching beauty products in depth before purchase (McKinsey&Company, 2023, 2025).

“Clean Beauty” is an emerging strategy that is grounded in safety, transparency, natural origin, ethical practices, and environmental responsibility, but it lacks a clear definition (Gonçalves, 2023; Shim et al., 2024). According to the European Union, cosmetic claims must follow standard criteria such as “legal compliance, truthfulness, evidential support, honesty, fairness, informed decision-making” (European Commission, 2017). Brands, therefore, face the challenge of how concretely to communicate “clean” promises about their products, and what it implies for consumer responses.

The wording and messaging of brand claims are central to clean beauty positioning. Concrete language – specific, imageable, and checkable wording – can increase perceived diagnosticity and accountability because it clarifies what is promised and how it can be checked (Packard & Berger, 2021). Consumers evaluate authenticity through validated scales that include dimensions such as credibility, integrity, symbolism, continuity, as well as quality, commitment, sincerity, and heritage (Morhart et al., 2015; Napoli et al., 2014). However, advertising skepticism can decrease responses to messages, especially when attributes are difficult to verify (Obermiller & Spangenberg, 1998).

Brand attitude, defined as the consumers’ overall evaluation of the brand, directly links to the preceding mechanisms (Spears & Singh, 2004) and is likely to be shifted by claim concreteness (Cho & Taylor, 2020; Keller, 1993). Therefore, this dissertation examines how claim concreteness shapes brand attitude through perceived brand authenticity, and how advertising skepticism moderates these effects.

## **1.2. Problem Statement**

As “Clean Beauty” has become a relevant positioning strategy in the beauty industry, its concept still lacks an explicit, shared definition. Brands use different types of clean beauty claims, from vague promises to concrete, verifiable information. This ambiguity can lead to credibility problems, as consumers may struggle to understand what “clean” really means and question the truthfulness of claims, and brands may misuse the concept in their communication. There is still limited empirical evidence on how the concreteness of clean beauty claims shapes brand evaluations, and when advertising skepticism makes these effects stronger or weaker.

This dissertation fills this gap by examining how different levels of clean beauty claim concreteness influence brand attitude. Specifically, it tests whether perceived brand authenticity mediates the effect of claim concreteness on brand attitude, and whether advertising skepticism acts as a boundary condition by moderating the impact of claim concreteness on brand attitude. The goal is to provide evidence-based guidance for beauty brand managers on how to formulate clean beauty claims that improve brand attitude while limiting credibility and trust risks.

The problem explores the following research questions:

RQ1: What is the effect of clean-beauty claim concreteness (no claim vs abstract vs concrete) on brand attitude?

RQ2: Does perceived brand authenticity mediate the effect of claim concreteness on brand attitude?

RQ3: Does advertising skepticism moderate the impact of claim concreteness on brand attitude?

## **1.3. Relevance**

Academically, “clean beauty” is a highly influential concept, but a poorly defined market trend. It has become a mainstream positioning, yet there is still no shared coherent definition of what “clean” means, and brands operationalize it in different manners (Shim et al., 2024). Brands mainly communicate “clean” products through brand claims on packaging, websites, and advertisements (European Commission, 2013, 2017). In credence categories such as skincare, where safety, toxicity, and ethical sourcing cannot be directly verified, claims become key signals that shape trust and brand meaning (Darby & Karni, 1973; Erdem & Swait, 1998), making claim wording a central research object. Despite that, research has focused mostly on definitions, attributes, and consumer profiles. By testing how different levels of claim concreteness affect perceived brand authenticity and brand attitude, and how this depends on

consumers' advertising skepticism, this study helps clarify how detailed, checkable information genuinely increases credibility, in the specific context of clean beauty.

From a managerial perspective, the composition and wording of clean beauty claims matter because they can build or diminish consumer trust, especially among Millennials and Gen Z (Shim et al., 2024). At the same time, regulators require truthful and substantiated claims (European Commission, 2017). In this way, understanding how these claims are framed helps brands communicate responsibly and competitively, strengthening consumer trust.

#### **1.4. Research Methods**

To investigate the research questions, this dissertation employed a mixed-method design centered on an online experiment. A literature review was conducted to define the main constructs, select validated scales, and build the conceptual model. Based on it, semi-structured interviews and a pre-survey were conducted to generate and validate the stimuli.

The final study consisted of a between-subjects online experiment in which participants were randomly exposed to one out of three stimuli corresponding to the level of claim concreteness. Perceived brand authenticity and brand attitude were assessed using established multi-item scales, and advertising skepticism was measured as a stable individual difference. Data was collected in Qualtrics and analyzed in SPSS, using mediation and moderation techniques to test the hypotheses.

#### **1.5. Dissertation Outline**

The next chapter reviews the theoretical background and derives the hypotheses. This is followed by a chapter outlining the research design, including the stimuli and online survey procedures. The subsequent chapter reports the empirical results, and the last one summarizes the main managerial academic implications, reflects the study's limitations, and proposes directions for future research.

## **2. Literature Review**

This chapter reviews the theoretical literature to define the core constructs and relationships. It includes the main variables, claim concreteness, brand attitude, perceived brand authenticity, and advertising skepticism, and integrates them to build hypotheses.

### **2.1 Claim Concreteness**

In the language communication literature, linguistic concreteness is defined as “the tangibility, specificity, or imageability of words” that refer to objects, actions, and outcomes. (Packard & Berger, 2021). Advertising research extends this notion from words to claims. Concreteness is described as the presence of specific, attribute-level information (Bambauer-Sachse & Heinzle, 2018). Besides, concrete messages are defined as more “specific, tangible, contextualized, and less open to interpretation”, while abstract messages are more general and more complex to identify (van Horen et al., 2024).

In the Corporate Social Responsibility (CSR) and green advertising literature, claim specificity is defined by holding the topic constant while exchanging vague quantifiers for explicit and verifiable details (Janssen et al., 2022). Specificity is commonly measured as specific, detailed, and informative (Janssen et al., 2022). Significantly, the effectiveness of specificity depends on brand warmth and competence, and under both low warmth and competence, specific green claims can trigger manipulative intent inferences and backfire (Janssen et al., 2022). Similarly, Joireman et al. (2018) describe concrete claims as precise, checkable descriptions of actions or metrics as opposed to vague CSR assertions and show that visualization can strengthen how much claims are received under skepticism. These streams are relevant since they treat concreteness as a property of the claim itself and distinguish between claims that rely on generalized cues and those that provide explicit details that are verifiable (Janssen et al., 2022; Joireman et al., 2018).

Concreteness can also be placed within theories of persuasion and credibility. The Elaboration Likelihood Model (ELM) predicts that, when there is sufficient motivation and ability to process information, argument quality drives persuasion via the central route (Cacioppo et al., 1989). Conceptually, concrete claims can be treated as argument-quality cues because they provide diagnostic, checkable content and reduce ambiguity (Trope & Liberman, 2010; van Horen et al., 2024). Additionally, signaling theory argues that signals are credible when they are costly to fake, observable, and verifiable (Connelly et al., 2011; Spence, 1976). Therefore,

when concreteness takes the form of falsifiable details (e.g. precise percentages, third-party certifications, protocols), it can raise the expected cost of deception and, therefore, act as a credible quality signal. In parallel, brand credibility research shows that trustworthy communications reduce information costs and perceived risk (Erdem & Swait, 2004).

In the cosmetic context, packaging is a fundamental element in brand communication, and claims on the package are a key marketing strategy that drives consumer decisions (Kozik, 2024). However, packages contain a large amount of information that can be unreliable, and “natural cosmetics” lack an explicit definition and well-defined legal regulations. EU criteria for claims (to be valid, understandable, and reliable) are often not met, with a lack of supporting evidence (European Commission, 2017; Kozik, 2024). Therefore, the value of clean beauty claims depends on whether they rely on verifiable credentials or undefined cues. Across the emerging Clean Beauty literature, authors emphasize ethical transparency, ingredient naturalness, and safety, yet experimental work manipulating claim framing or specificity remains limited.

In this dissertation, claim concreteness refers to the degree to which claims provide specific, tangible, and verifiable details, rather than general or ambiguous wording (Bambauer-Sachse & Heinzle, 2018; Janssen et al., 2022; Joireman et al., 2018; van Horen et al., 2024). Conceptually, concreteness is treated as a message-quality cue, under the ELM (Cacioppo et al., 1986; Trope & Liberman, 2010), and as a credible quality signal, under the signaling theory (Connelly et al., 2011; Spence, 1976).

## **2.2 Brand Attitude**

Marketing and advertising research define brand attitude as “consumers’ overall evaluations of a brand”, adapting the general attitude definition (“a psychological tendency expressed by evaluating an entity with some degree of favor or disfavor”) to the brand object (Mitchell & Olson, 1981; Spears & Singh, 2004). This evaluation includes both stored beliefs about the brand and affective reactions to it (Mitchell & Olson, 1981; Spears & Singh, 2004).

Advertising literature distinguishes brand attitude from *attitude toward the ad* (Aad), which captures evaluations of specific advertising stimulus (e.g. message or ads), but these concepts are linked, upon exposure to persuasive appeals can shape brand beliefs and feelings, which then integrate into a summary evaluation of the brand itself (Mackenzie & Lutz, 1989; Mitchell & Olson, 1981). Mackenzie & Lutz (1989) show that *Aad* can mediate the influence of ad

exposure on brand perceptions and, consequently, on brand attitudes and intentions, through dual-route models.

Keller (1993) defined brand attitude as a “function of the associated attributes and benefits that are salient for the brand”. Consumers form beliefs about these attributes and benefits, and evaluate them, resulting in an overall brand evaluation (Keller, 1993). Brand attitude is conceptually related to brand image and brand equity, but distinct. Brand image refers to the network of associations linked to the brand, whereas brand attitude captures the summarized evaluation within that network, both being important to form brand equity (Keller, 1993)

Brand attitude is typically measured with semantic-differential, or Likert-type scales that express evaluative polarity (e.g. bad-good, unfavorable-favorable, dislike-like) (Spears & Singh, 2004). Spears & Singh (2004) propose a widely adopted 7-point semantic differential scale that provides reliability and comparability, and recommend separating measures of brand attitude (Ab) from attitude toward the ad (Aad) to reduce contamination by using different stems for the brand and the ad.

### 2.2.1 Effect of Claim Concreteness on Brand Attitude

Concrete (vs. vague) wording can increase believability and yield clearer attribute beliefs (Snyder, 1989), which then translate into brand attitude via belief to evaluation transfer (Homer, 2006). Based on ELM, concreteness can raise perceived argument quality and provide diagnostic, checkable content, and when there is motivation and ability, this supports persuasion through the central route (Cacioppo et al., 1986). This logic is consistent with dual-coding theory, since concrete phrasing is more imageable and can engage both verbal and imaginal codes (Clark & Paivio, 1991; Sadoski, 2001), supporting processing and recall in comparison to abstract language. More concrete wording increases perceived understanding/feeling listened to, which in turn improves satisfaction and purchase intentions (Packard & Berger, 2021). While this paper studies service talk, it supports a communication interaction mechanism in which specific wording improves how the message is experienced, relating to brand-authored claims.

Furthermore, signals are more influential when they are observable, verifiable, and costly to fake (Connelly et al., 2011; Spence, 1976), and so when concreteness takes the form of verifiable details, it can function as a credible signal of quality and integrity. Consequently, concreteness can raise the expected cost of deception and reduce information costs and perceived risk, improving consumer responses (Erdem & Swait, 2004). This helps explain why

concreteness strengthens credibility beliefs about the brands' information, and such favorable beliefs contribute to overall brand attitude (Keller, 1993; Mitchell & Olson, 1981).

However, clarity may not be enough, and the effect may depend on how the claim is interpreted. Under uncertainty, concrete wording can be more persuasive (Trope & Liberman, 2010; van Horen et al., 2024). In comparative advertising, concreteness is operationalized as an attribute-level, substantiated information, and analysis show a trade-off where concrete claims reduce reactance, whereas non-concrete overall quality claims may increase it (Bambauer-Sachse & Heinzle, 2018). In CSR/green communication, specificity can backfire when it triggers manipulative intent inferences under unfavorable brand schemas (Janssen et al., 2022). These results indicate that concreteness is most likely to translate into more favorable evaluations when it's perceived as informative rather than strategic. Thus, specificity or concreteness is not universally assumed to be beneficial, but its effect depends on brand schema, and the inferences consumers draw about the brand's motives.

In green product launches, brand attitude improvements vary with how claims are communicated, and making more claims per product can damage the effect depending on the product type and the brand's credibility context (Olsen et al., 2014). Although this study does not measure concreteness, it clearly demonstrates that the way that claims are presented influences improvements in brand attitude (Olsen et al., 2014).

Overall, concreteness can support more favorable brand attitudes by strengthening belief clarity and perceived argument quality, though its effectiveness depends on whether claims are interpreted as credible informative evidence, and whether the details are verifiable and appropriate for the brand context (Cacioppo et al., 1986; Connelly et al., 2011; Erdem & Swait, 2004; Janssen et al., 2022).

Building on these conversational insights, this dissertation predicts that:

*H1: Claim concreteness has a positive effect on brand attitude.*

### **2.3 Perceived Brand Authenticity**

In marketing research, there are two types of authenticity: employee authenticity and brand authenticity, and even though the latter is affected by the former, the concept to be studied is brand authenticity (Kumar & Kaushik, 2022). Perceived brand authenticity (PBA) is defined as consumers' holistic judgment that a brand is true to its claimed essence and values, reached from the combination of several distinct valuation methods (Nunes et al., 2021). Recent

marketing research reconstructed the concept of authenticity, clarifying its context-sensitive components, such as accuracy, connectedness, integrity, legitimacy, originality, and proficiency, whose relative salience varies across categories and situations (Nunes et al., 2021).

Consumer-based brand authenticity (CBBA) is a concept that points to consumer-facing facets – quality, commitment, heritage, sincerity – which consumers infer a brand’s authenticity and is empirically distinguished from brand trust and brand credibility (Napoli et al., 2014). Morhart et al. (2015) introduced an alternative integrative framework which operationalized perceived brand authenticity (PBA) through four correlated dimensions – credibility, integrity, symbolism, continuity – in a 15-item scale validated across brands and cultural contexts. According to this stream, some of the mentioned effects can be moderated by marketing skepticism, and lead to an increase in emotional brand attachment, word-of-mouth and choice likelihood through self-congruence (Morhart et al., 2015). However, some boundary issues are evident, especially since credibility and similar notions (e.g. trust, sincerity) overlap.

Overall, Perceived Brand Authenticity can be summarized as a multi-component judgment that a brand is true to its essence, and can be formed through evidence, symbolic fit and continuity (Morhart et al., 2015; Nunes et al., 2021). This dissertation treats PBA as the central judgment through which consumers evaluate whether the claims reflect brand values.

### 2.3.1 Effect of Claim Concreteness on Perceived Brand Authenticity

In the field of consumer perception, “authenticity” is commonly judged through two kinds of cues: indexical cues that provide evidence of a real link to what is claimed, and iconic cues that “look or feel right” (Grayson & Martinec, 2004). Indexical cues tend to provide a persuasive basis for authenticity judgements, and their predicted benefits are tied to perceived evidence (e.g. proof, verification), even if their influence is not uniformly dominant across contexts (Grayson & Martinec, 2004). In this sense, claim concreteness can be theoretically linked to indexical evidence, which is associated with “evidence/verification”, and in many cases with stronger authenticity assessments (Grayson & Martinec, 2004). Consistent with this logic, advertising research shows that when advertisements use specific, checkable details, consumers treat them as indexical proof, whereas vague or purely stylistic heritage functions as more iconic (M. B. Beverland et al., 2008). Accordingly, the presence of concrete, verifiable information in brand claims provides theoretically grounded authenticity judgments at the communication level (M. B. Beverland et al., 2008; Grayson & Martinec, 2004).

Contemporary branding research conceptualizes, and measures PBA as a multicomponent consumer judgement, where validated frameworks isolate evidence-sensitive components – credibility, integrity, and accuracy – that are theoretically most receptive to indexical and checkable claim content (Morhart et al., 2015; Nunes et al., 2021). For Morhart et al. (2015), credibility and integrity are central aspects through which consumers judge whether brands keep promises and provide truthful information. In Nunes et al. (2021) six core components, accuracy and integrity are components most directly informed by evidential information. These validated frameworks indicate where concrete, verifiable details in brand messages are most likely to affect PBA, namely credibility, integrity, and accuracy (Morhart et al., 2015; Nunes et al., 2021). Additionally, higher specificity – defined as precise, checkable descriptions rather than generality – tends to increase outcomes via perceived trust/credibility, which aligns with the evidence-based authenticity facets (Morhart et al., 2015; Nunes et al., 2021; Robinson & Eilert, 2018).

Altogether, concrete, checkable claim content functions as indexical evidence which strengthens authenticity judgments (M. B. Beverland et al., 2008; Grayson & Martinec, 2004). Because PBA is formed with evidence-sensitive components, respectively credibility, integrity and accuracy, concreteness should elevate these facets and increase overall PBA (Morhart et al., 2015; Nunes et al., 2021).

*H2. Claim concreteness has a positive effect on PBA.*

### 2.3.2 Effect of Perceived Brand Authenticity on Brand Attitude

Brand attitude reflects consumers' overall evaluation of the brand, formed from beliefs of the brand and affective reactions (Keller, 1993; Mitchell & Olson, 1981; Spears & Singh, 2004). So, PBA is relevant since it captures consumers' perceptions of the truthfulness of brands claimed values, which is related to the credibility of brand beliefs and doubts about what the brand stands for (Morhart et al., 2015; Nunes et al., 2021). When authenticity is high, brand communications are more likely to be interpreted as honest and consistent, making favorable beliefs easier to integrate into an overall positive evaluation (Keller, 1993; Mitchell & Olson, 1981; Morhart et al., 2015).

In a brand-voice disclosure experiment, higher authenticity perceptions were associated with more favorable brand attitudes even when message source information was explicitly disclosed as Artificial Intelligence (Kirkby et al., 2023). Evidence from private-label branding similarly shows that authenticity can operate as a channel, where adding a third-party AOP (*Appellation*

*d'Origine Protégée*) as an indexical cue increased the integrity facet of authenticity, which in turn improved brand attitude, indicating an indirect effect through authenticity rather than a simple direct cue effect (Carsana & Jolibert, 2018). Relational authenticity research further shows that brands open, honest, and true in their consumer relationships predict brand attitudes across categories, while also indicating stronger effects when attachment is weak and when trust-commitment configurations are favorable, and so depending on the context (Ilicic & Webster, 2014).

Altogether, these studies suggest that authenticity works as a belief evaluation that translates into more favorable brand attitudes (Ilicic & Webster, 2014; Kirkby et al., 2023; Morhart et al., 2015; Napoli et al., 2014), and can function as the mechanism through which evidence-bearing cues shape brand evaluations (Carsana & Jolibert, 2018). Combined with the earlier chapter that concrete checkable claims are inherently indexical and should primarily elevate credibility, integrity, and accuracy-related authenticity components, this supports a causal relation whereby claim concreteness first increases PBA, which then drives brand attitudes (M. Beverland, 2006; Grayson & Martinec, 2004; Morhart et al., 2015; Nunes et al., 2021). Accordingly, this dissertation predicts that:

*H3. Higher PBA leads to higher brand attitude.*

*H4. PBA mediates the effect of claim concreteness on brand attitude.*

## **2.4 Advertising skepticism**

In consumer research, advertising skepticism is most often defined as “the general tendency toward disbelief of advertising claims”, viewed as a stable, generalizable marketplace belief about the truthfulness of advertising (Obermiller & Spangenberg, 1998). This conceptualization treats skepticism as a relatively stable individual difference that shapes consumers’ interpretation and evaluation of advertisement information. Further research done by the same authors indicates that this disbelief attitude is a consumer characteristic with consequences in attention to ads, reliance on advertising as an information source, and persuasion outcomes (Obermiller et al., 2005). Altogether, these studies establish advertising skepticism as a distinct construct rooted in disbelief toward claims, rather than in general negativity toward brands or media.

However, related research highlights that skeptical responding can also be situationally triggered, even among low-skeptic consumers (Darke & Ritchie, 2007). Deceptive or

exaggerated claims can provoke defensive processing, distrust, and resistance that resemble skeptical responses. The key distinction is that while advertising skepticism as a trait reflects a chronic tendency to doubt ad claims, state skepticism can be activated in situations where features of the message or context signal potential manipulation or insincerity (Darke & Ritchie, 2007; Forehand & Grier, 2003).

The Persuasion Knowledge Model is a theory that provides an explanation for both trait and state views on skepticism (Friestad & Wright, 1994). It argues that as consumers learn how persuasion works, they recognize marketers' tactics and intentions, which in turn can increase resistance to influence (Friestad & Wright, 1994). From this perspective, advertising skepticism can be defined as a belief structure within persuasion knowledge – an a priori expectation that advertisements are biased and hence likely not true – which predisposes consumers to discount claims, particularly when cues make persuasive intent salient (Friestad & Wright, 1994).

Mohr et al. (1998) define skepticism toward environmental claims as a tendency to doubt the veracity of firms' green assertions, while sharing the same definition core of disbelief toward marketer claims. Evidence from sustainability labeling further suggests that claim format and presented clarity matter especially among lower-to-moderate skeptics, whereas high skeptics are comparatively less responsive, reinforcing skepticism as a boundary condition on claim effectiveness (Cho & Taylor, 2020).

Overall, advertising skepticism is a belief-based tendency to doubt the truthfulness of advertising claims, leading to ad information disregard; it can also be situationally increased when cues make persuasive intent salient (Darke & Ritchie, 2007; Friestad & Wright, 1994; Obermiller & Spangenberg, 1998).

#### 2.4.1 Advertising Skepticism Moderating Between Claim Concreteness and Brand Attitude

Consumer skepticism toward advertising, as a tendency to doubt the truthfulness of ad claims, is shown to weaken persuasion across outcomes (Obermiller et al., 2005; Obermiller & Spangenberg, 1998). Because skepticism decreases responsiveness to marketer messages, the impact of claim concreteness (i.e. specific, checkable, detailed content) on downstream evaluations is expected to be conditional on consumers' skepticism levels (Mohr et al., 1998; Obermiller et al., 2005; Obermiller & Spangenberg, 1998). Skepticism toward environmental claims exhibits the same disbelief core (Mohr et al., 1998).

In online-review settings, high-skeptic consumers can ignore message quality and argument count, basing attitudes on prior beliefs, and low-skeptics prove otherwise (Sher & Lee, 2009). In sustainability labeling, clearer numeric disclosures improve brand attitude among low-moderate skeptics, with high skeptics relatively unmoved, indicating a negative pattern for message detail effects (Cho & Taylor, 2020). Classic works show that informational (argument-heavy) appeals are less persuasive for skeptics, whereas emotional appeals perform equally well for high and low skeptics (Obermiller et al., 2005).

However, these “informational” appeals were not required to be checkable or corroborated. In CSR advertising, Joireman et al. (2018) provide the most direct test of this logic. Across studies, concrete claims paired with corroborating images improved skeptical consumers’ ad/firm evaluations and support intentions relative to vague claims, and less-skeptical consumers were relatively less sensitive to this combination (Joireman et al., 2018).

Overall, these findings suggest that skepticism weakens the impact of message detail on attitudes, with high-skeptic consumers often ignoring information that improves clarity or specificity, while low-skeptics adjust their evaluations in line with message detail (Cho & Taylor, 2020; Obermiller et al., 2005; Sher & Lee, 2009). This pattern supports treating skepticism as a boundary condition on the effect of claim concreteness on brand attitudes where the difference between concrete, abstract and no-claim messages is expected to be stronger under low skepticism and attenuated under high-skeptic consumers.

*H5. Skepticism moderates the effect of claim concreteness on brand attitude.*

*H5a: Low skepticism leads to a higher effect of claim concreteness on brand attitude.*

*H5b: High skepticism leads to a lower effect of claim concreteness on brand attitude.*

#### 2.4.2 Advertising Skepticism Moderating Between Claim Concreteness and Perceived Brand Authenticity

Authenticity judgements rely more on indexical (evidence-bearing) cues than iconic (stylish) cues, and therefore specify where concrete, checkable information would matter for PBA (Grayson & Martinec, 2004). In addition, the multidimensional conceptualization of PBA includes truthfulness-oriented facts (e.g. accuracy, integrity) which depend on evidential support (Nunes et al., 2021). Therefore, skepticism should condition whether audiences accept concrete claim content as authentic evidence or discount it (Obermiller et al., 2005; Obermiller & Spangenberg, 1998).

However, after exploring this relationship, there is no prior literature or direct evidence that skepticism moderates the impact of claim concreteness on PBA. This effect was further explored in section 4.4 Further Results.

### 2.5 Conceptual Framework

Figure 1 is the conceptual model that proposes the variables and their relationships for this dissertation.

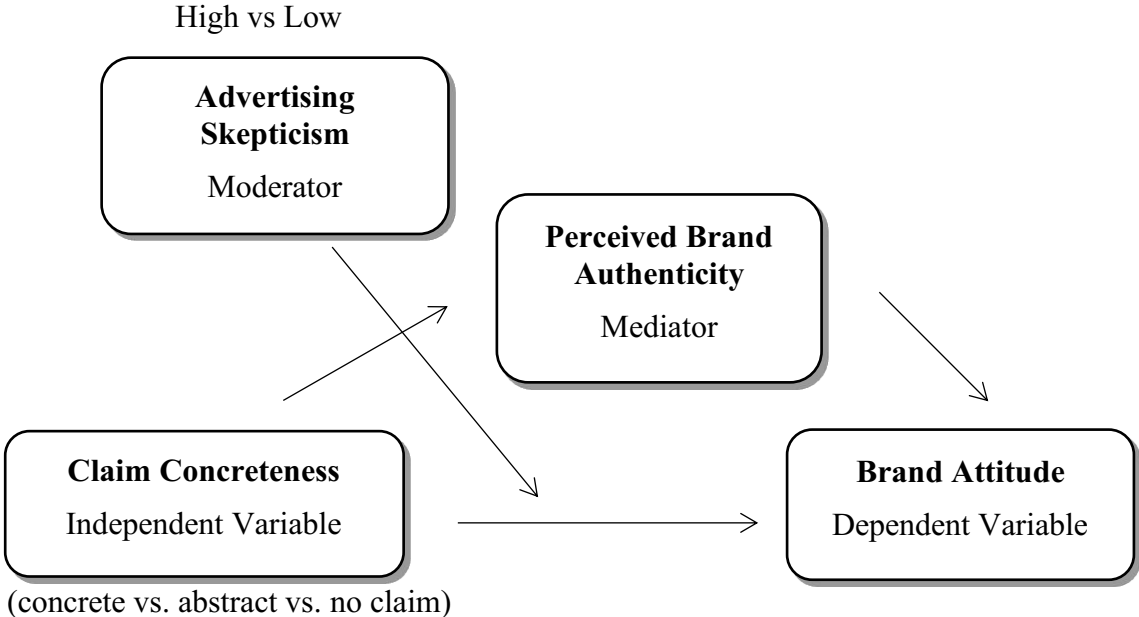


Figure 1: Conceptual Model

### **3. Methodology**

This chapter details the approach, data collection procedures, stimulus design and validation, questionnaire design, and data analysis plan to test the hypotheses developed in the previous chapter.

#### **3.1 Research Approach**

The research conducted in this dissertation used exploratory, descriptive, and hypothesis-testing methods (Kothari, 2004). An exploratory method was used to address the research problem and clarify relationships among the variables, with theory foundations and concept definitions informed by a literature review, and stimuli developed through consumer interviews and a preliminary survey. Then, descriptive research was done to gather quantitative data, followed by its statistical analysis for hypothesis testing (George & Mallery, 2019).

A cross-sectional experimental survey was conducted to determine causal relationships, which aided the isolation of claim concreteness with manipulation (V. Kumar & Kaushik, 2022; Seltman, 2015).

#### **3.2. Data Collection**

##### **3.2.1 Data Type**

This study uses primary data collected through interviews and randomized online surveys. Primary collection is used for causal inference with experimental manipulations (Kothari, 2004).

##### **3.2.2 Collection Method and Sampling**

In alignment with the study's objectives, mixed methods were used for data collection, (Creswell, 2009).

First, qualitative research was conducted to develop stimuli, through 10 semi-structured one-on-one interviews, to understand perceptions about the concept "clean beauty", define the category of the product for the stimuli, and elicit consumer language for abstract and concrete clean beauty claims, improving internal and construct validity of the subsequent causal test (Saunders et al., 2009). For context purposes, the participants were selected through a non-random purposive and convenience sampling method, fitting into the segment of beauty consumers living in Portugal (Saunders et al., 2009). All the interviews were thematically coded to extract phrasing patterns.

Then, quantitative research was conducted using two online surveys on the Qualtrics platform. Firstly, an online pre-survey was conducted for stimulus validity, to reduce bias before the main experiment (Malhotra et al., 2017). Lastly, an experimental structured online survey was conducted for numerical data collection to be analyzed statistically and to test the relationship of the hypothesis (Malhotra et al., 2017). In both cases, participants were selected through a convenience non-random sampling, which included personal contacts and a survey exchange channel named SurveySwap (Saunders et al., 2009). Additionally, the participants were selected based on their consumption of cosmetic products for context and relevance reasons (Malhotra et al., 2017).

The purpose of the study was clarified beforehand, and the confidentiality and anonymity of the data were ensured for privacy protection (Sekaran, 2013). In this way, participants' rights were protected, and data integrity was maximized (Creswell, 2009).

### 3.2.3 Variable Measurement

This section describes the measurement of each variable with validated scales that ensure construct validity and comparability across studies (Seltman, 2015).

#### 3.2.3.1 Claim Concreteness

For the independent variable, Claim Concreteness was manipulated through three parallel advertisement mockups that differed only in the claim block – no claim, abstract, or concrete.

#### 3.2.3.1 Brand Attitude (Dependent Variable)

Brand Attitude as the dependent variable is measured with a validated semantic-differential scale developed by Spears & Singh (2004), a widely used operationalization consistent with relevant practice of measurement (e.g. Mackenzie & Lutz, 1989; Mitchell & Olson, 1981). This construct uses the following five evaluative items:

- Bad – good;
- Unfavorable – favorable;
- Unpleasant – pleasant;
- Unappealing – appealing;
- Dislike – like.

For each item, respondents indicated their evaluation on a 7-point Likert scale, allowing for a quantitative assessment. The scale had a Cronbach's alpha of 0.97 (Spears & Singh, 2004), which is considered excellent for the number of items in accordance with Peterson (1994).

### 3.2.3.2 Perceived Brand Authenticity (Mediator)

Perceived brand authenticity, as the mediator, was assessed using Morhart et al. (2015)'s measurement from the article "Brand Authenticity: An integrative framework and measurement scale", published in the *Journal of Consumer Psychology*. This construct is defined by a 15-item scale with four dimensions – Continuity, Credibility, Integrity, and Symbolism. For this study, the original wording is kept:

- Continuity:
  - "A brand with a history";
  - "A timeless brand";
  - "A brand that survives times";
  - "A brand that survives trends".
- Credibility:
  - "A brand that will not betray you";
  - "A brand that accomplishes its value promise";
  - "An honest brand";
- Integrity:
  - "A brand that gives back to its consumers";
  - "A brand with moral principles";
  - "A brand true to a set of moral values";
  - "A brand that cares about its consumers";
- Symbolism
  - "A brand that adds meaning to people's lives";
  - "A brand that reflects important values that people care about";
  - "A brand that connects people with their real selves";
  - "A brand that connects people with what is really important".

For each item, respondents indicated agreement on a 7-point Likert scale. The Cronbach Alpha of each dimension was for Continuity 0.85, Credibility 0.78, Integrity 0.83, and Symbolism 0.86 (Morhart et al., 2015), which is considered good for the number of items in accordance with Peterson (1994).

### 3.2.3.3 Advertising Skepticism (Moderator)

Advertising skepticism – the moderator – measurement was obtained from Obermiller & Spangenberg's (1998) paper “Development of a Scale to Measure Consumer Skepticism Toward Advertising”, published in the *Journal of Consumer Psychology*. This construct is a 9-item scale, and the original wording is used:

- We can depend on getting the truth in most advertising.
- Advertising’s aim is to inform the consumer.
- I believe that advertising is informative.
- Advertising is generally truthful.
- Advertising is a reliable source of information about the quality and performance of products.
- Advertising is truth well told.
- In general, advertising presents a true picture of the product being advertised.
- I feel I’ve been accurately informed after viewing most advertisements.
- Most advertising provides consumers with essential information.

It was originally a 5-point scale but was adapted to a 7-point Likert scale to ensure consistency across analysis, and each respondent had to provide their agreement on a range of 1 to 7. With a Cronbach's Alpha of 0.86 (Obermiller & Spangenberg, 1998b), the construct confirms its reliability based on Peterson (1994).

Framework	Measure	Items	Scale	Reference	Cronbach $\alpha$
IV	Claim Concreteness	Stimuli	na	na	na
<b>Moderator</b>	Advertising Skepticism	9	7-point Likert Scale (* )	Obermiller & Spangenberg (1998)	0.86
<b>Mediator</b>	Perceived Brand Authenticity	15	7-point Likert Scale	Morhart et al. (2015)	0.78-0.86
DV	Brand Attitude	5	7-point Likert Scale	Spears & Singh (2004)	0.97

Table 1: Operational Model

\* The scale was adapted from the original scale from 1 to 5.

### 3.3. Stimuli Development

The development of the stimuli in this study involved three sub-sections: creating the stimuli, validating the stimuli, and presenting the final stimuli.

#### 3.3.1 Creating the Stimuli

*Clean Beauty* is a market-driven positioning that centers on ingredient avoidance and transparency – often related to sustainability and ethical production – operationalized via retailer and coalition standards and is related to skincare products (Shim et al., 2024). However, the concept of “*clean beauty*” lacks a legally standardized definition. So, 10 one-on-one interviews were conducted, leading to category identification and claim wording elicitation for manipulation (Appendix A. 1). The primary aim of this qualitative phase was to generate consumer-grounded input for choosing a suitable product category and for developing realistic, vague and concrete “Clean Beauty” claims for the experimental advertisements. The product needed to be a credence category (Grayson & Martinec, 2004; Packard & Berger, 2021), linked to the clean beauty concept, highly relevant and familiar to consumers, and to require information in ads to purchase.

A facial moisturizer was selected as it matched all the attributes above. A fictitious brand was used to eliminate confounds from prior familiarity and legacy equity when measuring brand attitude, following the practice from *Journal of Consumer Research* (Campbell & Keller, 2003; Lowrey & Shrum, 2007), which also concludes that “attitude toward the ad had a greater influence on attitude toward the brand for unfamiliar brand compared with familiar brands” (Campbell & Keller, 2003).

Additionally, interview transcripts were thematically analyzed, focusing on “clean” attributes in brand messages, and spontaneous examples of vague versus concrete claims. The results of the interviews can be found in Appendix A. 2. From the answers, “Clean Beauty” was consistently defined as “natural”, “non-toxic” and “non-harmful” products that avoid chemical or aggressive ingredients, “free-from” statements that highlight the absence of certain chemicals, with transparency, and often tied with sustainable and ethical concerns.

Using these insights, the experimental stimuli were designed through three main areas: perceptions and associations with clean beauty; messaging features and types of brand claims; and the perceived impact of such claims on authenticity, skepticism, and purchase intention.

These insights inform the visual design of the stimuli, which is set as a fictitious skincare brand advertisement for a facial moisturizer, with a neutral layout consistent across the three conditions, so that only the wording of the claims varies. The conditions are no claim, that serves as control, abstract clean beauty claim (broad, evocative wording with no evidence), and concrete clean beauty claim (wording that includes checkable detail and evidence).

The stimuli were visually developed in three steps:

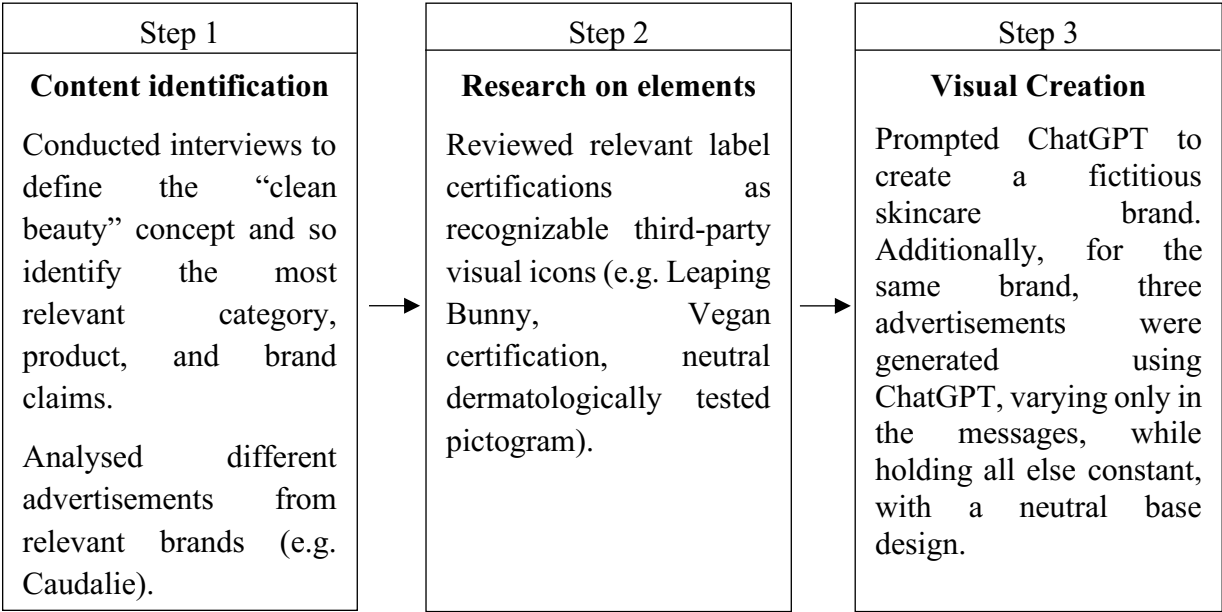


Figure 2: Process of Developing Advertisement Stimuli

### 3.3.2 Validating the Stimuli

The stimuli were tested for validity to ensure that they accurately expressed the intended concept (Malhotra et al., 2017), confirming that each stimulus represented the theoretical construct manipulation (Sekaran, 2013), and for reliability to ensure consistency in responses across the different participants and conditions (R. Kumar et al., 2019). The manipulation checks were written in clear consumer language, using randomized answer order.

The pre-survey was based on manipulation checks to validate the abstract and concrete claim stimuli (*Appendix A. 3*). Firstly, a three-item perceived-specificity index was used to assess whether the ad’s message was experienced as “specific”, “verifiable”, and “general” on 7-point scales, thereby confirming that concreteness was perceived as intended across the different conditions. Secondly, a recognition question about the ad's message was asked to validate participants' attention. Thirdly, a categorical question was included to confirm that the product “moisturizer” was correctly understood. The results showed validity: 76% of participants perceived the abstract claim stimulus as general, and for the concrete claim stimulus, 90%

perceived it as specific and 93% as evidential; 88% of participants correctly identified the product category.

### 3.3.3 Final Stimuli

The final stimuli were mockup advertisements for a facial moisturizer of a fictitious skincare brand that included three conditions: no claim (as a control), abstract claim, and concrete claim:



Figure 3: Final Stimuli

### 3.4. Questionnaire Design

For the questionnaire, a between-subjects design was used, with each participant experiencing only one claim condition (*Appendix B: Main Study Questionnaire*). Respondents were randomly exposed to a single stimulus to avoid carryover or order effect (Malhotra et al., 2017), and to reduce time commitment, which in turn improves completion rates (Seltman, 2015). The trade-off of a larger sample was required, and potential between-group variability was managed through random assignment and quality controls (R. Kumar et al., 2019; Seltman, 2015).

A Block Design combined with a Funnel flow was used to guide respondents smoothly into comprehension and to limit bias (Malhotra et al., 2017). Blocks were organized around the variables, which were randomized, according to the need of the stimuli for each variable, to limit the effects of order. Within the screening questions block, items progressed from general to specific.

The final dataset included only the responses from participants who passed screening questions (skincare users) and correctly identified the manipulation check. The manipulation check was positioned right after the stimulus exposure to ensure its correct perception and reduce recall error, though it may have led to recency bias (Sekaran, 2013). A larger sample size was collected, ensuring at least 35 valid responses per condition. The visual representation of the survey flow logic is provided in *Appendix B. 1*.

### 3.5. Data Analysis

Quantitative data were collected using the Qualtrics platform and analyzed in IBM SPSS Statistics 30.0 to test the proposed hypothesis. The dataset was carefully screened: cases with incomplete questionnaires, failed manipulation checks, and implausible response patterns were excluded. Descriptive statistics were computed to characterize the sample and provide an overview of the main constructs.

To test the hypotheses, several statistical procedures were employed. One-way ANOVAs were used to examine the effect of claim concreteness on brand attitude (H1) and on perceived brand authenticity (H2). A linear regression analysis was conducted to assess the relationship between PBA and brand attitude (H3). Haye’s PROCESS Model 4 was applied to test the mediating role of PBA in the effect of claim concreteness on brand attitude (H4), Model 1 to test the moderating effect of advertising skepticism on the link between claim concreteness and brand attitude (H5), and Model 5 to estimate the overall moderated-mediation model. For all models, the underlying statistical assumptions were checked, and Cronbach’s alpha coefficients were computed to assess the internal consistency of the multi-item scales. All tests were conducted using a 5% significance level.

Hypothesis	Statistical test
<b>H1:</b> Claim concreteness has a positive effect on brand attitude.	One-way ANOVA
<b>H2:</b> Claim concreteness has a positive effect on PBA.	One-way ANOVA
<b>H3:</b> Higher PBA leads to higher brand attitude.	Multi-linear regression
<b>H4:</b> PBA mediates the effect of claim concreteness on brand attitude.	Hayes Process Macro Model 4 (Mediation Analysis)

**H5:** Skepticism moderates the effect of claim concreteness on brand attitude.

**H5a:** Low skepticism leads to a higher effect of claim concreteness on brand attitude.

Hayes Process Model 1 (Moderator Analysis)

**H5b:** High skepticism leads to a lower effect of claim concreteness on brand attitude.

**Full model**

Hayes Process Macro Model 5

Table 2: Statistical Tests

The following figure shows the moderation mediation model used to assess the statistical effects of the full model:

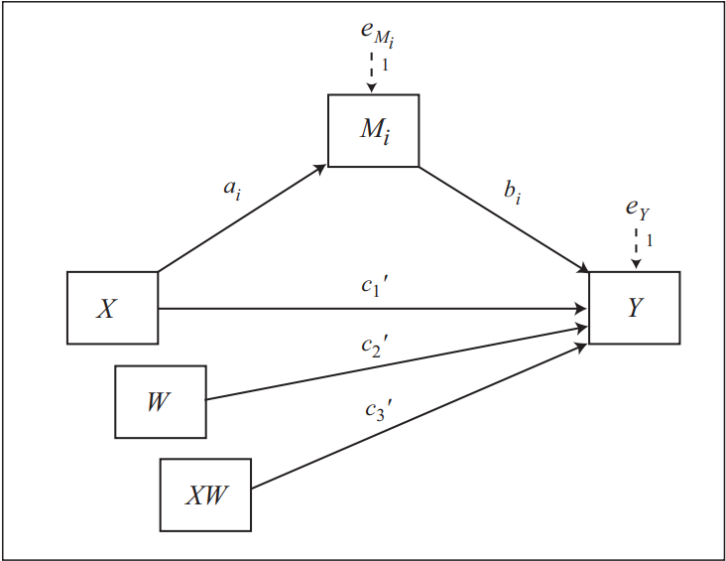


Figure 4: Statistical Model - Hayes' PROCESS Model 5

## 4. Data Analysis

This chapter presents the analysis of the collected data in the quantitative phase. It's organized into four main sections: data preparation, descriptive analysis, hypothesis testing, and further analysis.

### 4.1 Data Preparation

This section presents the processes used to prepare the final dataset for analysis.

#### 4.1.1 Missing Data

The survey initially collected 260 observations. Of these, 9 system-missing values were identified and deleted. Furthermore, based on the screening questions, 30 respondents were excluded for not using skincare products, and 1 respondent was excluded for answering “Never” to the frequency question. Next, 10 duplicate IP responses were detected and deleted. Additionally, 24 responses were incomplete and were, therefore, excluded from the dataset. After these steps, 186 responses were retained for further data preparation.

#### 4.1.2 Manipulation Check

To ensure that participants perceived the independent variable, claim concreteness, as intended, a manipulation check was used. In total, 51 respondents (27.4%) failed the manipulation check and 135 (72.6%) passed. For the no claim stimulus, 18 respondents (29.5%) failed, and 43 (70.5%) passed; for the abstract claim stimulus, 18 (29.0%) failed, and 44 (71.0%) passed; and for the concrete claim stimulus, 15 (23.8%) failed, and 48 (76.2%) passed (*Appendix C. 1: Manipulation Check Per Stimulus*). A chi-square test showed no significant group differences in pass rates ( $\chi^2(2, N=186) = 0.627, p > 0.05$ ) as presented in *Appendix C. 2*.

Only the respondents who answered the manipulation check correctly were retained in the dataset. Thus, 51 responses were removed following the manipulation check, since they were considered invalid for hypothesis testing (Tabachnick & Fidell, 2013). This resulted in a total sample of  $N = 135$ .

After this step, one item of the Perceived Brand Authenticity (PBA) scale – Symbolism: “A brand that connects people with what is really important” – was identified with 29.63% missingness of data (40 out of the 135 responses; *Appendix C. 3*) due to an error while constructing the questionnaire. Because this missingness was caused by the survey design and

would lead to the exclusion of many otherwise complete cases, this item was excluded from the data analysis and is acknowledged as a limitation of this study.

#### 4.1.3 Outliers' Analysis

The last step of data preparation was the multivariate outlier analysis, which included the composite scores for PBA, advertising skepticism, and brand attitude. Using Mahalanobis distance, 1 case exceeded the critical chi-square value of 16.266 for  $df=3$  at  $p<0.001$  and was flagged as a multivariate outlier (Tabachnick & Fidell, 2013). This case was excluded from the dataset.

After all the data preparation procedures – handling missing data, applying screening criteria, removing duplicate IPs and unfinished responses, excluding failed manipulation checks, and deleting multivariate outliers – the dataset resulted in a final sample of  $N = 134$  respondents.

Table 3 summarizes these procedures:

	<b>Total</b>
<b>Initial Observations</b>	260
<b>System missing values</b>	9
<b>Failed screening question</b>	31
<b>Repeated IPs</b>	10
<b>Unfinished survey</b>	24
<b>Failed manipulation</b>	51
<b>Outliers</b>	1
<b>Final Observations</b>	134

*Table 3: Data Set Observations Cleaning*

#### 4.1.4 Measurement Creation & Reliability

After data cleansing and outliers' analysis, variables were created, validated, and presented, with reliability testing performed.

#### *4.1.4.1 Claim Concreteness*

Claim concreteness is the independent variable (named Claim\_Co) and was coded as a categorical variable with three different levels based on the stimuli:

1. No claim
2. Abstract claim
3. Concrete claim

#### *4.1.4.2 Brand Attitude*

The dependent variable, brand attitude, was measured using a 5-item Likert-type scale adapted from Spears & Singh (2004). Respondents rated their agreement on a 7-point scale (1= Strongly Disagree, 7= Strongly Agree) with five statements assessing evaluations of the brand presented in the stimuli. The items included:

- Bad – good;
- Unfavorable – favorable;
- Unpleasant – pleasant;
- Unappealing – appealing;
- Dislike – like.

The items were averaged to obtain an overall brand evaluation score (named BA). The reliability analysis indicated a Cronbach's alpha value of  $\alpha = .851$  (

*Appendix C. 4*), confirming good reliability (George & Mallery, 2019). The corrected item-total correlations were above .657, and all items were retained, as no alpha improvement was observed through item deletion (*Appendix C. 5*).

#### *4.1.4.3 Perceived Brand Authenticity*

The mediator, perceived brand authenticity, was measured using a 15-item Likert-type scale adapted from Morhart et al. (2015) that, due to the high percentage of missing data, became a 14-item. Respondents rated their agreement on a 7-point scale (1= Strongly Disagree, 7= Strongly Agree) with statements assessing the perceived authenticity of the brand presented in the stimuli. Based on four different dimensions, the items included:

- Continuity:
  - “A brand with a history”;
  - “A timeless brand”;
  - “A brand that survives times”;
  - “A brand that survives trends”.
- Credibility:
  - “A brand that will not betray you”;
  - “A brand that accomplishes its value promise”;
  - “An honest brand”;
- Integrity:
  - “A brand that gives back to its consumers”;
  - “A brand with moral principles”;
  - “A brand true to a set of moral values”;
  - “A brand that cares about its consumers”;
- Symbolism
  - “A brand that adds meaning to people's lives”;
  - “A brand that reflects important values that people care about”;
  - “A brand that connects people with their real selves”;

The items were averaged to form a perceived brand authenticity score (named PBA). The reliability analysis indicated a Cronbach’s alpha value of  $\alpha = .936$  (*Appendix C. 10*), confirming very good reliability (George & Mallery, 2019). The corrected item-total correlations were above .635, and since no alpha improvement was observed through item deletion, all items were retained in the final scale (*Appendix C. 8*).

#### 4.1.4.4 Advertising Skepticism

The moderator, advertising skepticism, was measured using a 9-item Likert-type scale adapted by Obermiller & Spangenberg (1998). Respondents rated their agreement on a 7-point scale (1= Strongly Disagree, 7= Strongly Agree) with nine statements assessing their advertising skepticism. The items included:

- We can depend on getting the truth in most advertising.
- Advertising’s aim is to inform the consumer.
- I believe that advertising is informative.
- Advertising is generally truthful.

- Advertising is a reliable source of information about the quality and performance of products.
- Advertising is truth well told.
- In general, advertising presents a true picture of the product being advertised.
- I feel I've been accurately informed after viewing most advertisements.
- Most advertising provides consumers with essential information.

The items were reverted and averaged to form the advertising skepticism score (Rev\_Adskep). The reliability analysis indicated Cronbach's alpha value of  $\alpha = .946$  (*Appendix C. 6*), confirming very good reliability (George & Mallery, 2019). The corrected item-total correlations were above .694, and since no alpha improvement was observed through item deletion, all items were retained in the final scale (*Appendix C. 7*).

Since advertising skepticism is treated as a moderator in the model about each person's trait, the continuous scale was dichotomized using the mean split method, based on established procedures in moderation analysis (Iacobucci et al., 2015). The sample mean was 4.7604 ( ). Respondents with scores below 4.7604 were classified as Low Skeptics, and those with scores above 4.7604 were classified as High Skeptics. The resulting dummy variable D\_ADrev was coded as 1 = Low Skepticism (< 4.7604); 0 = High Skepticism (> 4.7604).

#### 4.1.4.5 Measurement Summary

The following summary table presents the model's key variables:

Variable	Description	Values	Measure
<b>Claim_Co</b>	Categorical predictor variable representing the claim concreteness condition	1= no claim 2= abstract claim 3= concrete claim	Nominal
<b>BA</b>	Dependent variable representing brand attitude	1 to 7	Scale
<b>PBA</b>	Predictor variable representing perceived brand authenticity	1 to 7	Scale
<b>Ad_Skep</b>	Predictor variable representing advertising skepticism	1 to 7	Scale

<b>D_ADrev</b>	Predictor dummy variable representing advertising skepticism	0 = High 1 = Low	Nominal
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Table 4: Model Variables

## 4.2 Descriptive Analysis

### 4.2.1 Sample Characteristics

The final sample consisted of N= 134 participants. Respondents were randomly assigned to one of three experimental conditions, resulting in 48 participants in the no claim condition, 43 in the abstract claim condition, and 43 in the concrete claim condition (*Appendix D. 12*).

Overall, 58.2% of respondents identified as female, 40.3% as male and 1.5% as binary/third gender (*Appendix D. 1*). The age distribution is skewed towards younger adults: 26.1% of participants were between 18 and 24 years old, 35.1% between 25 and 34, and 18.7% between 35 and 44 (*Appendix D. 2*).

The sample is predominantly Portuguese (64.9%), complemented by smaller portions from the United Kingdom, the Netherlands, Germany, the United States, and other countries (*Appendix D. 3*). Monthly income levels are relatively dispersed: 11.2% reported earning less than €1,000, 15.7% between €1,000 and €1,999, 13.4% between €2,000 and €2,000, and 10.4% between €3,000 and €3,999 (*Appendix D. 4*). Higher income levels are progressively less represented, and 9% preferred not to disclose their income.

In terms of education, the sample is highly educated. More than half of respondents (51.5%) reported holding a bachelor's degree, and 24.6% a master's degree. A smaller proportion reported high school (15.7%), whereas only 3% reported less than high school. A minority indicated holding a doctoral degree (3.7%) or selected "Other" (1.5%; *Appendix D. 5*). Overall, the distributions were comparable across conditions, suggesting successful random assignment and unlikeliness to systematical bias for analysis. Table 5 sums up the characteristics of participants per stimulus (*Appendix D: Descriptive Analysis*):

		No Claim	Abstract Claim	Concrete Claim	Total
<b>Respondents</b>	<b>Total #</b>	48	43	43	134

<b>Gender</b>	Female	48.8%	30.2%	39.6%	58.2%
	Male	51.2%	67.4%	58.3%	40.3%
	Binary/Third gender	0%	2.3%	2.1%	1.5%
<b>Age</b>	18-24	23.3%	23.3%	31.3%	26.1%
	25-34	37.2%	30.2%	37.5%	35.1%
	35-44	11.6%	20.9%	22.9%	18.7%
	45-54	11.6%	11.6%	2.1%	8.2%
	55-64	14%	11.6%	4.2%	9.7%
	65-74	2.3%	2.3%	2.1%	2.2%
<b>Nationality</b>	Portuguese	58.1%	72.1%	64.6%	64.9%
	United Kingdom	4.7%	2.3%	6.3%	4.5%
	Netherlands	7%	4.7%	2.1%	4.5%
	Germany	2.3%	7%	2.1%	3.7%
	United States	4.7%	0%	4.2%	3%
	Denmark	2.3%	4.7%	2.1%	3%
	Others	-	-	-	16.4%
<b>Income</b>	Less than €1,000	7%	9.3%	16.7%	11.2%
	€1,000 – €1,999	16.3%	11.6%	18.8%	15.7%
	€2,000-€2,999	14%	14%	12.5%	13.4%
	€3,000 - €3,999	7%	11.6%	12.5%	10.4%
	€4,000 - €4,999	9.3%	9.3%	8.3%	9%
	€5,000 - €5,999	7%	4.7%	6.3%	6%
	€6,000 - €6,999	2.3%	9.3%	10.4%	7.5%
	€7,000 – €7,999	4.7%	4.7%	2.1%	3.7%
	€8,000 - €8,999	4.7%	2.3%	4.2%	3.7%

	€9,000 - €9,999	4.7%	4.7%	0%	3%
	€10,000 - €14,999	2.3%	0%	2.1%	1.5%
	More than €15,000	9.3%	4.7%	4.2%	6%
	Preferred not to mention	11.6%	14%	2.1%	9%
<b>Education</b>	Less than High School	2.3%	7%	0%	3%
	High School	23.3%	9.3%	14.6%	15.7%
	Bachelor's Degree	53.5%	51.2%	50%	51.5%
	Master's Degree	18.6%	30.2%	25%	24.6%
	Doctorate	2.3%	2.3%	6.3%	3.7%
	Other	0%	0%	1.5%	1.5%

Table 5: Characteristics of Respondents

#### 4.2.2 Distribution of Key Variables

The following Table 6 presents the descriptive statistics for the main constructs used in the analysis (*Appendix D. 11*):

Variable	Type	Min	Max	Mean	Std. Deviation	$\alpha$
<b>Claim Concreteness</b>	IV	1	3	2.04	.826	na
<b>Brand Attitude</b>	DV	1.80	7.00	5.3731	1.04825	.851
<b>Perceived Brand Authenticity</b>	Mediator	2.21	7.00	4.9526	1.02291	.936
<b>Advertising Skepticism Dummy</b>	Moderator	0	1	.8507	.35768	na

Table 6: Descriptive Statistics for Main Variables

#### 4.3 Hypothesis Testing Results

Once variables were constructed and validated through descriptive and reliability analyses, inferential statistical procedures were conducted to test the established hypotheses. This section

involves assessing multicollinearity, conducting analysis, and evaluating the performance of the full model.

#### 4.3.1 Multicollinearity Assessment

Before hypothesis testing, multicollinearity diagnostics were conducted to assess interdependence among variables and ensure the stability of regression estimates. The analysis relied on three key indicators: Variance Inflation Factors (VIF) below 2.50 (Hair et al., 2014), eigenvalues above 0.010 (Belsley et al., 1980), and the condition index below 30.00 (Tabachnick & Fidell, 2013). The VIF values ranged from 1.074 to 1.797 (*Appendix E. 1*), the smallest eigenvalue was 0.014, and the largest condition index was 16.205 (*Appendix E. 2*), all within acceptable limits. The results show that multicollinearity is not a concern in the present models, and the regression coefficients can be interpreted reliably.

#### 4.3.2 Hypothesis Testing

For hypothesis testing  $\alpha=.05$  was used. The following Table 7 presents the tested hypothesis, their statistical tests and the null hypothesis (H0) of each one:

Hypothesis	Typical Test	Null Hypothesis (H0)
H1 & H2: Group Difference	ANOVA	$\mu_1 = \mu_2 = \mu_3$
H3: Direct Effect	Linear Regression	$\beta_1 = 0$
H4: Mediation	PROCESS Model 4	$a \times b = 0$
H5: Moderation	PROCESS Model 1	Interaction effect = 0

*Table 7: Null Hypothesis*

##### 4.3.2.1 Claim Concreteness and Brand Attitude

**H1:** *Claim concreteness has a positive effect on brand attitude.*

A one-way ANOVA examined the effect of claim concreteness on brand attitude. But first, underlying assumptions were analyzed. Shapiro-Wilk tests indicated rejection of normality in no claim ( $p = .003$ ), and abstract conditions ( $p = .023$ ), while the concrete condition indicated normality ( $p = .150$ ; *Appendix E. 3*). Given the relatively large sample size ( $n > 30$  per condition), the Central Limit Theorem (CLT) justifies this assumption, and the sampling distribution can be treated as normal. Levene's test confirms the assumption of equal variances ( $p = .060$ ; *Appendix E. 4*).

The overall effect of the levels of claim concreteness on brand attitude was not statistically significant ( $p = .081$ ; *Appendix E. 5*), meaning that brand attitude does not vary across the levels of claim concreteness. So, **H0 was not rejected, and H1 was not supported.**

#### 4.3.2.2 Claim Concreteness and Perceived Brand Authenticity (PBA)

**H2.** *Claim concreteness has a positive effect on PBA.*

A one-way ANOVA tested the effect of claim concreteness on PBA. Shapiro-Wilk tests indicated rejection of normality in no claim ( $p = .002$ ), while the abstract condition ( $p = .096$ ) and concrete condition indicated normality ( $p = .346$ ; *Appendix E. 6*). The Central Limit Theorem is applied in this case because of the sample's large size. Levene's test shows a violation of the homoscedasticity of variance assumption ( $p = .003$ ; *Appendix E. 7*). Consequently, this effect was evaluated using the Brown-Forsythe robust test instead.

The effect of claim concreteness on PBA showed a statistically significant effect with  $F(2; 117.926) = 6.302$ ,  $p = .003$  in Brown-Forsythe robust test, and with  $F(2; 83.337) = 7.520$ ,  $p < .001$  in the Welch Test (*Appendix E. 9*). As presented in *Appendix E. 10*, PBA was the highest in the concrete claim condition (Mean = 5.36, SD = .81), and lower in no claim condition (Mean = 4.73, SD = 1.14) and in abstract condition (Mean = 4.72, SD = .99). Games-Howell post-hoc comparisons indicated that PBA in the concrete condition was significantly higher than both the no claim and abstract conditions (both  $p = .003$ ), whereas there was no significant difference between the no claim and abstract conditions ( $p = .999$ ; *Appendix E. 11*), proving inconsistency across claim concreteness levels. So, the results show that **H2 was partially supported.**

#### 4.3.2.3 Perceived Brand Authenticity and Brand Attitude

**H3.** *Higher PBA leads to higher brand attitude.*

A linear regression was performed to test the effect of PBA on brand attitude:

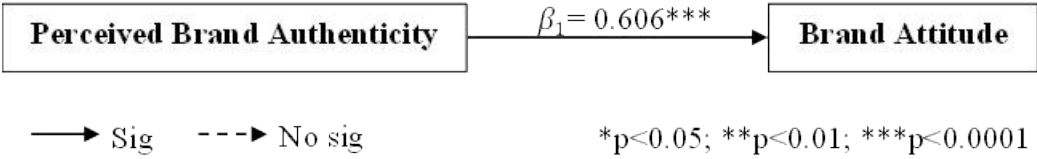
$$Brand\_Attitude_i = \beta_0 + \beta_1 PBA_i + \varepsilon_i$$

$$i = 1, \dots, N$$

The assumptions of linear regression were examined previously. The Durbin-Watson indicated independence of residuals with the value of 1.981, which lies within the recommended range (1.5 - 2.5), as presented in *Appendix E. 12*. The Shapiro-Wilk test for the standardized residuals indicated normality ( $p = .096$ ; *Appendix E. 13*). The scatterplot of residual and predicted value did not reveal any systematic patterns or funnel shape, supporting the assumption of linearity and homoscedasticity (*Appendix E. 14*).

The model was statistically significant ( $F(1, 132) = 74.85, p < .001$ ), explaining a strong relationship between PBA and brand attitude ( $R = .602$ ). PBA explained 36.2% of the variance in brand attitude ( $R^2 = .362$ ). The estimated slope for PBA was positive and significant, indicating that a one-point increase in PBA is associated with a 0.616-point increase in brand attitude. As the standardized coefficient was  $\beta = .606$ , a positive relationship between brand attitude and PBA in standard deviation units is presented (*Appendix E. 15*).

Therefore, **H0 is rejected, and H3 is supported.**



*Figure 5: Results from Linear Regression of the Effect of PBA on Brand Attitude*

*4.3.2.4 The Mediating Role of Perceived Brand Authenticity*

**H4:** *PBA mediates the effect of claim concreteness on brand attitude.*

To assess whether PBA mediated the effect of claim concreteness and brand attitude, a mediation analysis using Hayes PROCESS Model 4 was conducted. The assumptions were confirmed: Shapiro-Wilk test indicated the normality of the residuals ( $p = .213$ ; *Appendix E. 16*); Durbin-Watson statistic suggested independence of observations (*Appendix E. 17*); and the scatterplot of standardized residuals against standardized predicted values supports the assumptions of homoscedasticity and linearity (*Appendix E. 18*).

The results show that in the mediator model, claim concreteness explained 8.9% of the variance in PBA ( $F(2, 131) = 6.4220, p = .0022$ ). The total effect model showed that claim concreteness alone did not significantly predict brand attitude ( $F(2, 131) = 2.5650, p = .0808$ ), with non-significant total effects for both abstract and concrete ( $c_1 = -0.2233, p = .3196$ ;  $c_2 = .2678, p = .2205$ ) relative to no claim. However, claim concreteness significantly predicted PBA ( $F(2, 131) = 6.4220, p = .0022$ ), with a non-significant path from abstract condition ( $a_1 = -0.0116, p = .9564$ ), and a positive, significant path from concrete condition ( $a_2 = .6292, p = .0028$ ). In the outcome model including PBA, the regression was significant ( $F(3, 130) = 25.3143, p < .001$ ), and PBA strongly predicted brand attitude ( $b = .6179, p < .001$ ), whereas the direct effects of abstract and concrete claims remained non-significant ( $c_1' = -0.2161, p = .2365$ ;  $c_2' = -0.1210, p = .5099$ ).

Bootstrap results showed that the indirect effect of the concrete compared to no claim conditions on brand attitude through PBA was significant ( $b = .3888$ , 95% BCa CI [0.1408, 0.6932]), whereas the indirect effect for the abstract compared to no claim condition was not ( $b = -0.0072$ , 95% BCa CI [-0.2948, 0.2697]; *Appendix E. 19*). This means that only the concrete claim improves brand attitude by first increasing PBA. So, **H4 is partially supported**.

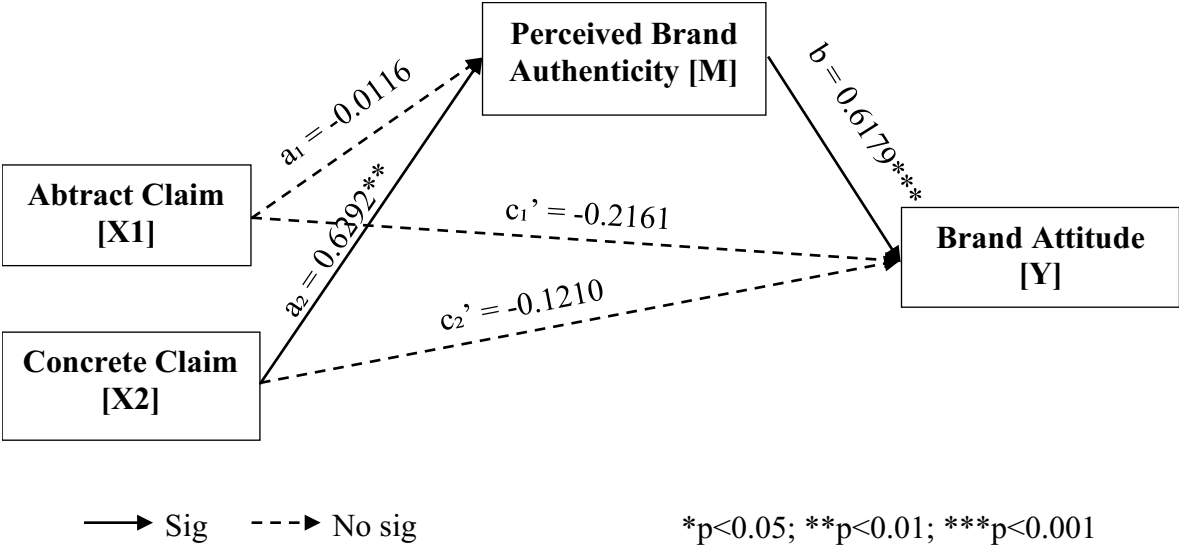


Figure 6: Results from Mediation effect of Perceived Brand Authenticity on the relationship between Claim Concreteness and Brand Attitude.

4.3.2.5 The Moderating Role of Advertising Skepticism

**H5:** *Skepticism moderates the effect of claim concreteness on brand attitude.*

To assess the moderation role of advertising skepticism in the relationship between claim concreteness and brand attitude, Hayes’ PROCESS Model 1 was conducted. The assumptions were confirmed: Shapiro-Wilk test rejected normality ( $p = .032$ ; *Appendix E. 21*), however CLT confirms this assumption; Durbin-Watson value of 2.061 indicates no problematic autocorrelation of residuals (*Appendix E. 20*); the shape of the scatterplot of residuals against predicted values indicates that homoscedasticity and linearity assumptions are met (*Appendix E. 22*).

Considering that all the results are presented in *Appendix E. 23*, the overall moderation model was significant ( $F(5, 128) = 3.1980, p = .0094$ ), explaining 11.1% the variance in brand attitude ( $R^2 = .111$ ). The highest order interaction between claim concreteness and skepticism was significant ( $\Delta R^2 = .0465, F(2, 128) = 3.3497, p = .0382$ ), indicating that the effect of claim

type on brand attitude depends on the level of advertising skepticism. Therefore, the results show that **H0 is rejected and H5 is supported.**

**H5a:** *Low skepticism leads to a higher effect of claim concreteness on brand attitude.*

Conditional effects were examined to compare the impact of claim concreteness at different levels of skepticism. For low skepticism ( $W = 1$ ), neither abstract nor concrete claims significantly differed from no claim ( $b = -0.4581, p = .0577$ ;  $b = .0705, p = .7571$ ). So, **H0 is not rejected, and H5a is not supported.**

**H5b.** *High skepticism leads to a lower effect of claim concreteness on brand attitude.*

For high skepticism ( $W = 0$ ), the concrete condition significantly increased brand attitude ( $b = 1.2114, p = .0420$ ), and the abstract condition showed a non-significant effect ( $b = .9714, p = .0647$ ). Consequently, **H0 is not rejected, and H5b is not supported.**

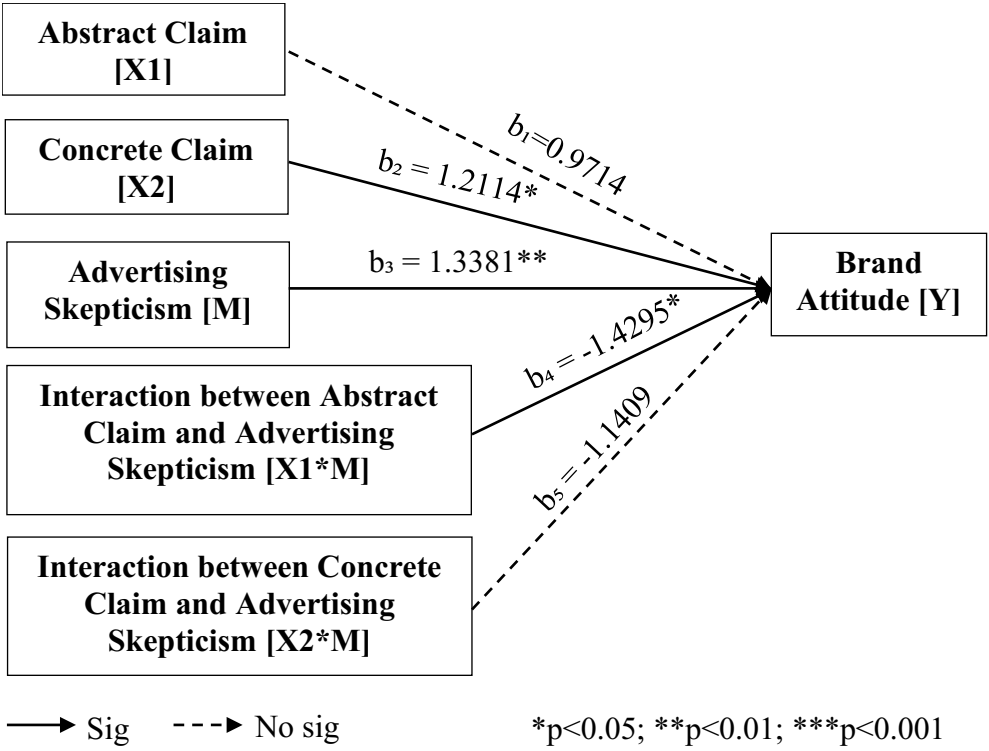


Figure 7: Results from Moderation effect of Advertising Skepticism on the Relationship between Claim Concreteness and Brand Attitude.

4.3.3 Full Model Test

To estimate the full model, a moderate mediation analysis was conducted using Hayes’ Process Model 5. All the relevant predictors were combined into a single regression model: claim

concreteness as the independent variable, brand attitude as the dependent variable, PBA as the mediator, and advertising skepticism as the moderator.

Results in *Appendix E. 24*, show that the direct effects of claim concreteness on brand attitude were not significant ( $p > .05$ ). The path from claim concreteness to PBA was significant overall ( $p = 0.002$ ), with only the concrete condition showing a significant positive effect ( $b = .6292$ ,  $p = .0028$ ), but not for the abstract condition ( $p = .9564$ ). PBA remained a strong positive predictor of brand attitude in the full model ( $b = .6153$ ,  $p < .001$ ). The indirect effect of claim concreteness on brand attitude through PBA was statistically significant (95% CI [0.1289, 0.6730]), but the interaction between claim concreteness and skepticism on brand attitude was not significant ( $p = .0672$ ).

Table 8 resumes the results of the hypotheses:

<b>H</b>	<b>Test Used</b>	<b>H Result</b>	<b>Full Model Result</b>
1	One-way ANOVA	<b>Rejected</b>	Rejected
2	One-way ANOVA	<b>Partially supported</b>	Partially Supported
3	Linear Regression	<b>Supported</b>	Supported
4	Process Model 4	<b>Supported</b>	Supported
5	Process Model 1	<b>Supported</b>	Rejected
5a&b	Process Model 1	<b>Rejected</b>	Rejected

*Table 8: Summary of Data Analysis Results*

#### **4.4 Further Results**

Although not directly proven in the literature review, the moderating role of advertising skepticism in the effect of claim concreteness on PBA was further analyzed, using Hayes PROCESS Model 4. The assumptions were verified: Durbin-Watson statistic of 1.862 suggests independence of observations (*Appendix F. 1*); Shapiro-Wilk test rejected the normality of the residuals ( $p < .001$ ; *Appendix F. 2*), but CLT confirms this assumption; and the scatterplot of standardized residuals against standardized predicted values supports the assumptions of homoscedasticity and linearity (*Appendix F. 3*).

The overall model (*Appendix F. 4*) was significant, explaining 21.2% of the variance in PBA, and the highest order interaction between claim concreteness and advertising skepticism was significant as well. Among high skeptics, the abstract condition significantly increased PBA ( $b = 1.0638, p = .0281$ ), whereas the concrete condition did not show a significant effect ( $b = .4388, p = .4196$ ). In contrast, among low skeptics, the concrete condition significantly increased PBA ( $b = .5711, p = .0072$ ), while the abstract condition was non-significant ( $b = -0.2224, p = .3133$ ). Overall, these findings indicate that skepticism moderates the impact of claim concreteness on PBA, where abstract claims raise PBA among high skeptics, and concrete claims enhance PBA primarily among low skeptics.

## 5. Conclusions and Limitations

This final chapter summarizes and interprets the main findings by answering the research questions and linking the observed patterns to the theoretical framework. Next, the study's academic and managerial implications, as well as its main limitations, are presented.

### 5.1 Main Findings

*RQ1. What is the effect of clean beauty claim concreteness on brand attitude?*

The results show that making more concrete claims does not automatically lead to better brand attitudes. Changing from no claim, abstract, or concrete wording alone was not enough to change brand evaluation directly. This challenges what previous literature often suggests, while simultaneously explaining it through theory.

Concreteness can still raise perceived diagnosticity and make the claim easier to process, which would normally support persuasion through message-quality logic (Cacioppo et al., 1986; Packard & Berger, 2021; Trope & Liberman, 2010; van Horen et al., 2024). However, the outcome shows that increasing clarity is not equivalent to increasing credible meaning.

Brand attitude as a global summary evaluation (Spears & Singh, 2004), integrates high-order judgments about credibility and intent, being shaped by the belief implications consumers draw about the brand (Friestad & Wright, 1994; Keller, 1993). In credence categories, where consumers can't easily verify the claimed attributes, message properties may improve comprehensibility while still failing to shift evaluation if consumers' confidence that the claim is trustworthy and substantively meaningful is not raised (Darby & Karni, 1973; Erdem & Swait, 1998). This distinction is relevant in the "clean" positioning, given the context in which cosmetic claims must be truthful, supported, and non-misleading (European Commission, 2017), and where consumers face uneven substantiation across brand communications (Kozik, 2024).

In other words, claim concreteness can improve the structure of the message without improving the evaluation of the brand, because consumers may treat it as "better wording" than as a credible input. This aligns with the Persuasion Knowledge Model logic, which emphasizes that consumers interpret marketing communication through inferred intent and that persuasion cues can be evaluated strategically rather than accepted as evidence (Friestad & Wright, 1994). Likewise, the signaling theory suggests that claim content influences evaluation primarily when

it is interpreted as a credible signal, carrying perceived accountability and verifiability (Connelly et al., 2011; Spence, 1976).

Overall, the research problem in clean beauty is therefore not simply whether consumers prefer more or less concrete wording, but whether concreteness translates into trustworthy brand inferences that support a more favorable global evaluation. This pattern suggests that claim concreteness matters essentially when it triggers a stronger authenticity judgment, which is examined in RQ2.

*RQ2. Does perceived brand authenticity mediate the effect of claim concreteness on brand attitude?*

The findings indicate that PBA is the key mechanism through which clean beauty claim concreteness shapes brand attitude. This conclusion is supported by a connected sequence across the model. First, claim concreteness affects PBA, with a concrete claim condition eliciting stronger authenticity perceptions than the abstract and no claim conditions. Second, PBA is positively related to brand attitude, indicating that consumers' overall brand evaluation depends strongly on the extent to which the brand is perceived as authentic. Lastly, PBA mediates the effect of claim concreteness on brand attitude. Claim concreteness appears to shape consumers' inferences of authenticity, which in turn support more favorable overall brand evaluations. This is theoretically significant because it implies that claim concreteness becomes influential mainly when it strengthens authenticity perceptions, rather than acting as a direct driver of brand attitude

This mediation pattern is consistent with the theoretical framework that conceptualizes authenticity as a high-order inference about whether a brand's communication and implied conduct are perceived as truthful, consistent, and trustworthy, and not just persuasive (Morhart et al., 2015; Nunes et al., 2021). As a result, authenticity provides an evaluative basis that is closely related to brand attitude (Spears & Singh, 2004), particularly in the context where consumers rely on meaning-based inferences to form judgments (Keller, 1993).

Furthermore, claim concreteness is theoretically relevant to this process because it constrains interpretation and increases perceived diagnosticity, enabling consumers to form clearer judgments about the brand's meaning commitments and whether it appears credible (Packard & Berger, 2021). Grayson & Martinec's (2004) distinction between indexical and iconic cues further clarifies this aspect since concrete claims are more likely to be interpreted as cues that reveal an accountable underlying reality (indexical), whereas abstract claims are more related

to image projection (iconic) with weaker grounding for authenticity inference. In turn, signaling theory explains how authenticity perceptions carry into brand attitude, as communication affects evaluations most strongly when it is interpreted as a credible signal rather than just a “costless assertion”(Connelly et al., 2011; Spence, 1976).

Overall, this suggests that the persuasive value of the clean beauty claim concreteness is best understood as indirect. It matters to the extent that it strengthens PBA, which then provides the meaning-based foundation for more favorable brand attitudes.

*RQ3: Does advertising skepticism moderate the impact of claim concreteness on brand attitude?*

The findings indicate that advertising skepticism moderates the effect of claim concreteness on brand attitude, but not in the anticipated way. Contrary to expectations, the pattern suggests that claim concreteness mattered most among the more skeptical consumers, while among the less skeptical audience, brand attitude remained relatively similar across claim conditions. In the full model, advertising skepticism no longer played a moderating role once PBA was included as the main explanatory pathway. This suggests that skepticism operates as an interpretive filter of claim content, whereas authenticity is the mechanism that translates claim interpretations into brand attitude.

While skepticism reflects a tendency to doubt claims (Obermiller et al., 2005; Obermiller & Spangenberg, 1998b), persuasion knowledge points that skeptical consumers may instead re-evaluate claims based on perceived accountability and truthfulness (Friestad & Wright, 1994).

The literature review already explains that skeptical audiences can respond more favorably when claims are made concrete and supported by corroborating evidence, precisely because this makes the claim feel more accountable (Joireman et al., 2018). In contrast, when consumers are already inclined to accept advertising as informative and have lower skepticism, concrete messages may not be effective in increasing brand evaluations.

Overall, this indicates that concreteness becomes relevant when consumers require accountability cues, and skepticism shapes whether claim content is processed as accountable information rather than as persuasion. However, since mediation dominates moderation in this context, the key persuasion dynamic in this model is the authenticity pathway, and not the boundary condition of skepticism in the full model. Further analysis indicates an asymmetric pattern that claim concreteness affects brand attitude among high skeptics, whereas its effects

on PBA are more evident among low skeptics. Skepticism appears to constrain changes in PBA, while still allowing concrete claims to affect brand attitude.

## **5.2 Academic Implications**

The evidence presents academic implications by clarifying how claim concreteness, brand attitude, PBA, and advertising skepticism operate together in clean beauty advertising, rebuilding these theoretically relevant constructs.

First, the results refine claim concreteness research by separating message clarity from evaluative meaning. Prior literature suggests that concrete wording can increase diagnosticity and support persuasion by improving argument quality (Cacioppo et al., 1986; Packard & Berger, 2021; van Horen et al., 2024). However, this study shows that such improvements do not directly translate into higher brand attitude. It indicates an important boundary in credence categories that concreteness may enhance comprehension without shifting evaluation unless consumers treat the claim as credible evidence about the brand. In that sense, regarding the credence goods/claims literature, additional detail does not operate as “evidence” that consumers can reward directly. Instead, concreteness becomes persuasive when it supports inferences about the brand behind the claim, such as whether the brand appears accountable and truthful for what it implies (Darby & Karni, 1973; Erdem & Swait, 1998). This is consistent with signaling logic that claims content matters when it is interpreted as a credible signal (Connelly et al., 2011; Spence, 1976).

Second, the study contributes to authenticity research by positioning PBA as a central belief mechanism that links claim design to brand attitude. While prior research conceptualizes authenticity as a key driver of consumer responses (Morhart et al., 2015; Nunes et al., 2021), this dissertation extends that work by showing how authenticity perceptions are shaped by the concreteness of clean beauty claims. In doing so, the findings clarify that authenticity is not just an outcome of brand communication, but a psychological channel through which specific message features become relevant in evaluations. Consumers evaluate credence claims not only by their content, but by what the claims imply about truthfulness, integrity, and alignment with value, captured by PBA. This helps explain why claim concreteness becomes influential mainly when it strengthens authenticity perceptions, instead of impacting directly on brand attitude. This interpretation is consistent with the distinction of indexical cues and iconic cues, which helps explain why abstract claims do not reliably produce the same outcomes (Grayson & Martinec, 2004).

Third, the results add to research on advertising skepticism by showing that its moderating role becomes less stable once authenticity is included in the full model. This suggests that skepticism may not operate uniformly at the final brand attitude stage but rather shapes different stages of the persuasion process. Skepticism shapes how claim information is interpreted by influencing inferred intent and whether claim content is treated as a belief-relevant input for authenticity or discounted as persuasion. So, the study refines the Persuasion Knowledge Model by addressing how skepticism and authenticity may interact sequentially. Conceptually, this explains why mediation dominates moderation in this context. Because consumers cannot verify core clean beauty attributes through direct experience, brand evaluation depends less on individual differences in skepticism and more on whether claim information can be translated into a coherent authenticity judgment. PBA represents this inference, while advertising skepticism influences how consumers initially approach and interpret claims, as the further analysis section points to. But once consumers form an overall judgment about the brand's authenticity, it becomes the main driver of brand attitude in the full model. The asymmetric pattern further indicates that concreteness can shape brand attitude among high skeptics through evaluation of accountability, while shaping PBA more among low skeptics through belief updating.

Beyond its theoretical contributions, this dissertation also advances research by examining clean beauty as a branding and communication strategy. While prior research has explored sustainability, green marketing, and ethical claims, clean beauty remains poorly defined and loosely used. By testing how different levels of claim concreteness shape perceptions of authenticity and brand evaluations, this study helps clarify how consumers process clean beauty claims, where meanings are not always precise and are difficult to verify. Overall, it supports that clean beauty should be further studied in its own strategic context.

Overall, this dissertation advances a deeper understanding of clean beauty persuasion by revealing that concreteness helps consumers form a stronger sense that the brand is genuinely authentic, which then leads to favorable brand attitudes. This contributes to further academic debates about the limits of message design effects in sustainability and credence categories.

### **5.3 Managerial Implications**

From a managerial perspective, the findings offer practical insights into brands operating in the clean beauty domain and in the personal care industry.

First, the results warn against assuming that concrete claims directly improve brand evaluations. Adding detailed and concrete clean beauty related wording is unlikely to enhance brand attitude

unless consumers perceive those claims as meaningful and trustworthy. Therefore, managers should avoid relying solely on enhancing wording and instead consider how claims fit into a broader credibility narrative.

Second, the central role of PBA suggests that clean beauty communication should be structured to support authenticity perceptions, instead of focusing on claim presence or specificity. Managers should ensure that these claims are consistent with the brand's overall positioning and communicated in a way that signals coherence and sincerity over time. Authenticity should be treated as a valuable strategy for the whole brand identity. This emphasis requires prioritizing claim elements that increase perceived accountability and verifiability, so that concreteness has a meaningful impact.

Third, the findings about advertising skepticism highlight the importance of different skepticism levels in the audience. Highly skeptical consumers seem more responsive to accountable, credibility cues, but the full model suggests that managerial impact ultimately depends on whether claims build PBA. This implies that brands should tailor their communication strategies, in which skeptical segments need accountable and verifiable information to support brand evaluations, and less skeptical audiences may be more likely to translate concreteness into stronger authenticity perceptions. Therefore, concreteness should be designed as an accountability cue that protects evaluations among skeptical consumers, while simultaneously supporting authenticity formation among receptive consumers.

Lastly, in a regulatory and market environment where clean beauty claims are increasingly scrutinized, the results reinforce the importance of a credible signaling strategy. Managers should view claim concreteness as a tool that adds value when it contributes to the perception that the brand's clean beauty positioning is authentic and trustworthy.

#### **5.4 Limitations**

Despite the various contributions of this dissertation, several limitations should be acknowledged, and directions for future research should be provided.

First, the study is bound by its context and stimulus design, since it examines a single clean beauty product category and ad setting and uses a fictitious brand to avoid confounds from prior brand knowledge. While these choices are appropriate for isolating causal effects in a credence context, they limit generalizability and reduce insight into how brand reputation and trust shape authenticity inferences. Future research could replicate the model across other relevant

categories related to clean beauty (e.g. hair care, other skincare products) and test the same manipulations using existing brands with varying credibility to assess how brand history conditions the effects. This would also help clarify whether the dominance of authenticity as a mechanism persists when consumers can rely on prior brand knowledge as an additional credibility cue.

Second, limitations related to measurement and model specification should be considered. PBA was treated as a global construct, which is consistent with the dissertation's objectives, but does not reveal whether the different components of authenticity respond differently to claim concreteness. Future research could examine these dimensions, offering a more refined and deepened understanding of how authenticity judgments are formed. Additionally, due to questionnaire issues, one PBA item from the original scale was omitted, which is a clear limitation for measurement accuracy. Even though the remaining items showed acceptable reliability, these choices may have reduced measurement precision and sensitivity. Also, advertising skepticism was treated as a dichotomous moderator, which may have reduced variance and statistical sensitivity, particularly in a full model. This choice may also have contributed to the asymmetric pattern across brand attitude and PBA by limiting sensitivity to differences in how skepticism affects belief updating compared to evaluative responses. Future research could apply the full scale of PBA and treat skepticism as continuous, as well as test alternative structures. In addition, the model focuses on a bounded set of variables. Other factors, such as category involvement, environmental or health consciousness, perceived regulatory trust, and familiarity with these claims, may also shape how much messages are interpreted. Extending the model to include these variables could provide a deeper understanding of the topic.

Lastly, responses were captured at a single point in time, reflecting immediate reactions to ad exposure. Long-term field research could examine effects with repeated exposure and additional information over time. This is particularly relevant in clean beauty, where trust and authenticity inferences may strengthen or erode with repeated exposure, accumulated evidence, and after purchase experience.

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## Appendix

### Appendix A: Stimuli Development

#### *Appendix A. 1 One-on-one Interviews: “Clean Beauty” Definition, Category Identification And Brand Claim Messages Insights*

Thank you for taking the time to participate in this interview. I’m a master’s student in Management specialized in Strategic Marketing from Católica University Lisbon, doing research about how the message of brand claims affects consumers’ evaluations. This interview aims to understand consumers’ perceptions about “Clean Beauty” and about brand messages. There are no wrong or right answers, and you are free to ask questions or not answer them if you feel uncomfortable. I ensure that all the information is held confidential and will be used only for research purposes. Before starting, do I have your permission to record this interview? Thank you!

#### **1. Perception**

When you hear “Clean Beauty”, what does it mean to you?

Can you recall a specific Clean Beauty brand or ad that shaped that perception?

Which product type do you associate with Clean Beauty?

From that own list, which products matter the most to you when choosing? Why?

#### **2. Message Features**

In your own words, what are clean beauty claims? What kinds of message claims did you notice the most recently?

How do you interpret these claims?

How do these claims make you feel about a product or brand?

What can make clean beauty claims more or less believable? Clearer or less clear?

When a brand says “it’s clean” what evidence do you personally need to see to believe it?

#### **3. Impact (authenticity, purchase intention)**

What makes a brand feel authentic to you in the context of Clean Beauty?

How do clean beauty claims influence your overall opinion of a brand?

To what extent do such claims affect your likelihood of buying?

If you had to pick just one product category where clean beauty claims matter most in your decision, which would it be? Why?

Thank you for your time and honesty.

#### *Appendix A. 2 Interview Results*

10 semi-structured interviews were conducted for concept definition, category and brand messages identification purposes. The results were the following:

The participants consistently associated clean beauty with safety for the skin and absence of “harsh” or “toxic” ingredients. Clean products were described as “not harmful”, “non-toxic”, “less irritating”, and “soft and “pleasant” on the skin, often in contrast to “strong chemicals” that could “hurt” or “damage” the skin. Clean Beauty is also closely tied to naturalness (100% natural ingredients) which could also be a controversial point of view for some. Beyond personal safety, most participants connected clean beauty with ethical and environmental responsibility. Common associations included eco-friendly or sustainable packaging, cruelty-free and vegan positioning, and a sense that brands should care about both consumers and the planet, not only profits.

Clean Beauty was primarily located within skincare, specifically products that are applied frequently and remain in contact with the skin. When asked which categories participants associate with Clean Beauty, they most often mentioned facial skincare (moisturizers, cleansers, serums), followed by body products (body creams/lotion) and, to a lesser extent, haircare (shampoos and conditioners). Makeup appeared occasionally but was generally seen as less central to clean concerns. When asked which products personally matter most in terms of clean claims, in a forced-choice task, facial moisturizer and facial cleanser were the dominated categories. Facial moisturizer was most mentioned in the interviews, leading to being the focal product category in the experimental stimuli.

Participants described “clean beauty claims” as set of promises typically revolving around being free-from harmful ingredients, being dermatologically tested or “skin safe”, being cruelty-free and/or vegan, having fewer, simpler and more understandable ingredients. However, how these claims are worded matters. Vague, umbrella statements such as “this is a clean product”

or “100% natural” were often seen as unconvincing or even suspicious, especially if not backed up by any detail. Specific and evidential claims were considered more credible and informative, especially when tied to recognizable standards. In other words, participants implicitly distinguish between abstract clean beauty slogans and concrete, evidence-oriented claims. The latter are much more likely to be interpreted as genuinely “clean” and trustworthy.

In this sense, the core condition for believing clean beauty claims was form of evidence or transparency: ingredient transparency is an important component for a clear, simple and direct communication; logos from recognized certification bodies were cited as strong cues that a product is genuinely clean rather than simply marketed as such; references to “dermatologically tested”, “clinical tests”, or visible before-and-after demonstrations were mentioned as increasing credibility; and several interviewees expressed a desire for short accessible explanations (e.g. the real benefits or harms of certain ingredients, how to use the product), mentioning the importance of the brands educating consumers. However, credibility is reduced when brands use generic “clean” wording without explanation, overpromise results (e.g. “perfect clear skin”) without acknowledging individual differences or mechanisms, and present many separate micro-claims instead of a coherent explanation.

Among participants, there was noticeable variation in baseline advertising skepticism. Some participants described themselves as cautious and skeptical, stating that they rarely believed brand claims at face values, especially from unfamiliar brands, and need time and additional information (e.g. reviews, personal experience, other people’s opinions) to trust them. Others reported that they tend to believe claims more readily, particularly when supported by visible results on other people (e.g. content creators, “real people” reviews) or when the brand is already well-known and consistent). External sources were often seen as more decisive than the advertisement alone in confirming whether clean beauty promises are actually delivered.

Finally, participants linked clean beauty claims to brand authenticity and purchase likelihood but with nuances. A brand felt authentic in the clean beauty space when its claims matched its actions and product performance, it was consistent across products in a long-term vision, it communicated clearly and transparently with detailed yet understandable explanations about formulas, sourcing and standards, and it demonstrated a genuine philosophy or purpose, visible in its history and ongoing choices. Most participants reported that well-specified, trustworthy clean beauty claims positively influence their willingness to pay.

In summary, the interviews suggest that clean beauty claims contribute to brand authenticity and positive brand attitudes primarily when they are concrete, transparent and consistently delivered, and that their effect on purchase intention is moderated by individual levels of advertising skepticism and reliance on personal research.

### *Appendix A. 3 Pre-survey For Stimuli Validation*

#### **Introduction**

Thank you for taking the time to participate in this survey. I am a master's student in Management Specialized in Strategic Marketing at Católica Lisbon School of Business & Economics. This study is part of my dissertation about cosmetic brand claims and will be a short pre-test survey. The survey will take around 3 minutes. Your answers are anonymous and will be used only for research purposes. There are no right or wrong answers. Click in the arrow below to start.

#### **Stimuli & Manipulation Checks**

Participants saw both concrete and abstract stimulus, and for each stimulus:

Q1. Thinking about what you just saw in the ad, indicate how much do you agree with the following statements: (Likert 7-point scale: Strongly Disagree → Strongly Agree)

- "The message gives specific information."
- "The message includes numbers, standards, or facts I could verify."
- "The message feels general."

Q2. Which type of product do you think this advertisement is promoting? (Facial moisturizer/ Facial cleanser/ Facial sérum/ Facial sunscreen/ Body lotion/ Conditioner/ Other (specify))

Q3. Which message about the product did you see in the ad? ("97% naturally derived hydration (ISO index)"/ "Clean, gentle hydration."/ None of these/ Don't remember)

#### **Demographics**

Q4. Gender (Male/ Female/ Non-binary / third gender/ Prefer not to say)

Q5. Age (Under 18 → More than 85)

Q6. Occupation (Student/ Employed/ Student-worker/ Unemployed/ Retired/ Other (specify))

Q7. Yearly Income (Under €10,000 → More than €150,000/ Prefer not to mention)

Q8. Country of Residence (Drop down: all countries in alphabetical order)

## Appendix B: Main Study Questionnaire

### Appendix B. 1: Questionnaire Design Logic Flow

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Introduction (1 Question)	
Screening Questions (4 Questions)	
Q1 Skincare usage	
	<i>If "No" -&gt; End of Survey.</i>
Q2 Skincare usage frequency	
	<i>If "Never" -&gt; End of Survey.</i>

*Set Embedded Data: StimulusType*

**Randomizer: Evenly present 2 elements only**

<b>Advertising Skepticism Questions (1 Question)</b>	
<b>Group: Stimuli Presentation</b>	
<i>Randomizer: Evenly present 1 element only</i>	
	Group: No-Claim Path
	<i>Set Embedded Data: no-claim = 1</i>
	Show Block: No Claim Stimulus (3 Questions)
	Advertisement Introduction
	Advertisement Presentation
	Manipulation Check
	Group: Abstract Claim Path
	<i>Set Embedded Data: abstract = 2 (3 Questions)</i>
	Advertisement Introduction
	Advertisement Presentation
	Manipulation Check

	Group: Concrete Claim Path
	<i>Set Embedded Data: concrete = 3</i>
	Advertisement Introduction
	Advertisement Presentation
	Manipulation Check
	<b><i>Randomizer: Evenly present 2 elements</i></b>
	Brand Attitude Questions (1 Question)
	Perceived Brand Authenticity (4 Questions)
<b>Demographics (5 Questions)</b>	
<b>End of Survey</b>	

Table: Logical Survey Flow

## *Appendix B. 2: Online Survey Questionnaire*

### **Block 1: Introduction**

Dear Participant,

Thank you for taking the time to participate in this survey. This research is part of a Master's Thesis in Management Specialized in Strategic Marketing at Católica Lisbon School of Business and Economics. This study is about brand messages and its impact on consumers' evaluations.

All data collected will be treated anonymously and used exclusively for research purposes. The survey will take approximately 7 minutes to complete. Please answer all questions as honestly and carefully as possible. If you are unsure about a question, select the option that best reflects your initial assessment. There are no right or wrong answers. You may withdraw if needed.

If you have any questions or would like to receive the results of this study, please contact: s-lisingh@ucp.pt Thank you for your time and contribution. By proceeding, you agree to participate under the above-mentioned conditions. P.S: This survey contains Karma to get free survey responses at SurveySwap.io

To start the survey, click on the arrow button below:

### **Block 2: Screening Questions**

*Q1. Do you use facial skincare product(s)?*

- Yes
- No

*Q2. How often do you use facial skincare products?*

- Everyday
- 4-6 times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month
- Never

*Q3. Did you purchase skincare products(s) in the last 6 months?*

- Yes
- No
- I don't remember

*Q4. Are you planning to purchase skincare product(s) in the next 6 months?*

- Yes
- No

### **Block 3: Advertising Skepticism**

*Q5. Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree*

- We can depend on getting the truth in most advertising;
- Advertising's aim is to inform the consumer;
- I believe that advertising is informative;
- Advertising is generally truthful;
- Advertising is a reliable source of information about the quality and performance of products;
- Advertising is truth well told;
- In general, advertising presents a true picture of the product being advertised;
- I feel I've been accurately informed after viewing most advertisements;
- Most advertising provides consumers with essential information.

### **Block 4-7: Stimuli Presentation**

Instruction: Next, you will see a mockup advertisement for a facial moisturizer from a skincare brand. Look at it very carefully, as you take a moment to read the text and look at the image. Imagine you are seeing an ad to buy a moisturizer. Then, you will be asked questions about the advertisement content and the brand.

Q6. No Claim Stimulus Presentation

Q8. Abstract Claim Stimulus Presentation

Q10. Concrete Claim Stimulus Presentation

(after each stimulus) Q7/9/11. Manipulation Check - *Thinking about what was written/message in the advertisement, which description fits it best?*

- No message/claim, only the brand and the product were shown.
- General message, no numbers/details.
- Concrete, detailed information (percentages, tests, certifications).
- I don't remember.

**Block 8: Brand Attitude**

Q12. *Based on the advertisement you just saw, how would you evaluate this brand? Please indicate your evaluation on each scale.*

Bad ○ ○ ○ ○ ○ ○ ○ Good

Unfavorable ○ ○ ○ ○ ○ ○ ○ Favorable

Unpleasant ○ ○ ○ ○ ○ ○ ○ Pleasant

Unappealing ○ ○ ○ ○ ○ ○ ○ Appealing

Dislike ○ ○ ○ ○ ○ ○ ○ Like

**Block 9: Perceived Brand Authenticity**

*Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is....*

Q13. *Continuity:*

- “A brand with a history”;
- “A timeless brand”;
- “A brand that survives times”;
- “A brand that survives trends”.

Q14. *Credibility:*

- “A brand that will not betray you”;

- “A brand that accomplishes its value promise”;
- “An honest brand”;

*Q15. Integrity:*

- “A brand that gives back to its consumers”;
- “A brand with moral principles”;
- “A brand true to a set of moral values”;
- “A brand that cares about its consumers”;

*Q16. Symbolism*

- “A brand that adds meaning to people's lives”;
- “A brand that reflects important values that people care about”;
- “A brand that connects people with their real selves”;
- “A brand that connect people with what is really important”;

**Block 10: Demographics**

*Q17. What is your gender?*

- Male
- Female
- Non-binary/ third gender
- Prefer not to say

*Q18. How old are you?*

- Under 18
- 18 – 24
- 25 -34
- 35-44
- 45 – 54
- 55 – 64
- 65 – 74
- 75 – 84
- 85 or older

*Q19. What is your country of residence?*

Dropdown with country list

*Q20. What is your highest accomplished level education?*

- Less than high school
- High school
- Bachelor’s degree
- Master’s degree
- Doctorate
- Other

*Q21. What is your monthly gross salary?*

- Less than €1,000
- €1,000 - €1,999
- €2,000 - €2,999
- €3,000 - €3,999
- €4,000 - €4,999
- €5,000 - €5,999
- €6,000 - €6,999
- €7,000 - €7,999
- €8,000 - €8,999
- €9,000 - €9,999
- €10,000 - €14,999

- More than €15,000
- Prefer not to mention

**End of Survey:**

Thank you for participating! Your response was recorded.

The following code gives you Karma that can be used to get free research participants at SurveySwap.io.

Go to: [surveyswap.io/sr/C2IF-7HWL-4DEX](https://surveyswap.io/sr/C2IF-7HWL-4DEX) or, alternatively, enter the code manually: C2IF-7HWL-4DEX

## Appendix C: Data Preparation

### Appendix C. 1: Manipulation Check Per Stimulus

**StimulusType \* PassManip Crosstabulation**

StimulusType	Count	PassManip		Total
		.00	1.00	
1	Count	18	43	61
	% within StimulusType	29.5%	70.5%	100.0%
2	Count	18	44	62
	% within StimulusType	29.0%	71.0%	100.0%
3	Count	15	48	63
	% within StimulusType	23.8%	76.2%	100.0%
Total	Count	51	135	186
	% within StimulusType	27.4%	72.6%	100.0%

### Appendix C. 2: Chi-Square Tests for Association Between Stimulus Type and Manipulation Check Pass

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.627 <sup>a</sup>	2	.731
Likelihood Ratio	.637	2	.727
Linear-by-Linear Association	.508	1	.476
N of Valid Cases	186		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.73.

### Appendix C. 3: Missingness in PBA item

N	Valid	Missing	Disagree to 7 = Strongly Agree.	Strongly Agree.	Strongly Agree.	Strongly Agree.	Strongly Agree.	Based on the advertisement I saw, this brand is... - "A brand that accomplishes its value...	Disagree to 7 = Strongly Agree.	Based on the advertisement I saw, this brand is... - "A brand that gives back to its..."	Strongly Agree.	Strongly Agree.	Based on the advertisement I saw, this brand is... - "A brand that cares about its..."	Based on the advertisement I saw, this brand is... - "A brand that adds meaning to..."	advertisement I saw, this brand is... - "A brand that reflects important values that people care..."	Based on the advertisement I saw, this brand is... - "A brand that connects people with what is really..."	Based on the advertisement I saw, this brand is... - "A brand that connects people with their real..."	
135	135	0	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	95
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40

### Appendix C. 4: Reliability Statistics Brand Attitude Items

**Reliability Statistics**

Cronbach's Alpha	N of Items
.851	5

### Appendix C. 5: Item-Total Statistics of Brand Attitude

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Based on the advertisement you just saw, how would you evaluate this brand? Please indicate your evaluation on each scale. - Bad/Good	21.49	17.620	.677	.817
Based on the advertisement you just saw, how would you evaluate this brand? Please indicate your evaluation on each scale. - Unfavorable/Favorable	21.49	18.237	.657	.822
Based on the advertisement you just saw, how would you evaluate this brand? Please indicate your evaluation on each scale. - Unpleasant/Pleasant	21.37	19.301	.658	.823
Based on the advertisement you just saw, how would you evaluate this brand? Please indicate your evaluation on each scale. - Unappealing/Appealing	21.56	17.481	.660	.822
Based on the advertisement you just saw, how would you evaluate this brand? Please indicate your evaluation on each scale. - Dislike/Like	21.56	18.534	.670	.819

### Appendix C. 6: Reliability Statistics Advertising Skepticism

**Reliability Statistics**

Cronbach's Alpha	N of Items
.946	9

### Appendix C. 7: Item-Total Statistics of Advertising Skepticism

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Rev_Q5_1	25.7239	118.893	.824	.938
Rev_Q5_2	26.0000	123.429	.694	.945
Rev_Q5_3	26.1866	122.890	.794	.939
Rev_Q5_4	25.8806	118.557	.832	.937
Rev_Q5_5	25.7090	117.005	.821	.938
Rev_Q5_6	25.8358	118.138	.787	.940
Rev_Q5_7	26.0224	124.203	.767	.941
Rev_Q5_8	25.8284	118.264	.837	.937
Rev_Q5_9	26.0672	123.898	.754	.941

*Appendix C. 9: Reverted Advertising Skepticism Descriptives*

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Ad_Skep	134	1.00	7.00	4.7604	1.36803
Valid N (listwise)	134				

*Appendix C. 10: Reliability Statistics PBA items*

Reliability Statistics	
Cronbach's Alpha	N of Items
.936	14

*Appendix C. 8: Item-Total Statistics PBA Items*

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand with a history."	64.69	170.605	.704	.932
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand true to a set of moral principles."	64.12	181.098	.658	.933
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A timeless brand."	64.46	177.829	.598	.935
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand that survives times."	64.06	179.034	.726	.931
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand that cares about its consumers."	64.59	175.477	.675	.932
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand that will not betray you."	64.38	178.538	.721	.931
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand that accomplishes its value promise."	64.40	177.551	.766	.930
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand that reflects important values that people care about."	64.28	182.442	.635	.933
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand that connects people with what is really important."	64.33	170.959	.739	.931
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "An honest brand."	64.30	180.677	.726	.931
Please indicate your level of agreement with the following statements. Use the scale provided: 1 = Strongly Disagree to 7 = Strongly Agree. Based on the advertisement I saw, this brand is.... - "A brand that gives back to its consumers."	64.51	178.207	.724	.931

## Appendix D: Descriptive Analysis

Appendix D. 1: Gender Frequencies

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	54	40.3	40.3	40.3
	Female	78	58.2	58.2	98.5
	Non-binary / third gender	2	1.5	1.5	100.0
	Total	134	100.0	100.0	

Appendix D. 2: Age Frequencies

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 24	35	26.1	26.1	26.1
	25 - 34	47	35.1	35.1	61.2
	35 - 44	25	18.7	18.7	79.9
	45 - 54	11	8.2	8.2	88.1
	55 - 64	13	9.7	9.7	97.8
	65 - 74	3	2.2	2.2	100.0
	Total	134	100.0	100.0	

Appendix D. 3: Country of Residence Frequencies

		Country of Residence			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Australia	1	.7	.7	.7
	Austria	1	.7	.7	1.5
	Belgium	3	2.2	2.2	3.7
	Denmark	4	3.0	3.0	6.7
	Finland	1	.7	.7	7.5
	France	2	1.5	1.5	9.0
	Germany	5	3.7	3.7	12.7
	Greece	1	.7	.7	13.4
	Korea (South)	1	.7	.7	14.2
	Netherlands	6	4.5	4.5	18.7
	Norway	2	1.5	1.5	20.1
	Poland	2	1.5	1.5	21.6
	Portugal	87	64.9	64.9	86.6
	Russia	1	.7	.7	87.3
	Spain	3	2.2	2.2	89.6
	Sweden	2	1.5	1.5	91.0
	Turkey	2	1.5	1.5	92.5
	United Kingdom	6	4.5	4.5	97.0
	United States	4	3.0	3.0	100.0
	Total	134	100.0	100.0	

Appendix D. 4: Income Frequencies

		Montly Gross Salary			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than €1,000	15	11.2	11.2	11.2
	€1,000 - €1,999	21	15.7	15.7	26.9
	€2,000 - €2,999	18	13.4	13.4	40.3
	€3,000 - €3,999	14	10.4	10.4	50.7
	€4,000 - €4,999	12	9.0	9.0	59.7
	€5,000 - €5,999	8	6.0	6.0	65.7
	€6,000 - €6,999	10	7.5	7.5	73.1
	€7,000 - €7,999	5	3.7	3.7	76.9
	€8,000 - €8,999	5	3.7	3.7	80.6
	€9,000 - €9,999	4	3.0	3.0	83.6
	€10,000 - €14,999	2	1.5	1.5	85.1
	More than €15,000	8	6.0	6.0	91.0
	Prefer not to mention	12	9.0	9.0	100.0
Total	134	100.0	100.0		

Appendix D. 5: Education Frequencies

		Education			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School	21	15.7	15.7	15.7
	Bachelor's Degree	69	51.5	51.5	67.2
	Master's Degree	33	24.6	24.6	91.8
	Doctorate	5	3.7	3.7	95.5
	Other	2	1.5	1.5	97.0
	Less than high school	4	3.0	3.0	100.0
	Total	134	100.0	100.0	

Appendix D. 6: Crosstabulation of IV and Gender

		Gender * Claim_Co Crosstabulation				
		Claim_Co			Total	
		1	2	3	Total	
Gender	Male	Count	22	13	19	54
		% within Claim_Co	51.2%	30.2%	39.6%	40.3%
		% of Total	16.4%	9.7%	14.2%	40.3%
	Female	Count	21	29	28	78
		% within Claim_Co	48.8%	67.4%	58.3%	58.2%
		% of Total	15.7%	21.6%	20.9%	58.2%
Non-binary / third gender	Count	0	1	1	2	
	% within Claim_Co	0.0%	2.3%	2.1%	1.5%	
	% of Total	0.0%	0.7%	0.7%	1.5%	
Total	Count	43	43	48	134	
	% within Claim_Co	100.0%	100.0%	100.0%	100.0%	
	% of Total	32.1%	32.1%	35.8%	100.0%	

Appendix D. 7: Crosstabulation of IV and Age

		Age * Claim_Co Crosstabulation				
		Claim_Co			Total	
		1	2	3	Total	
Age	18 - 24	Count	10	10	15	35
		% within Claim_Co	23.3%	23.3%	31.3%	26.1%
		% of Total	7.5%	7.5%	11.2%	26.1%
	25 - 34	Count	16	13	18	47
		% within Claim_Co	37.2%	30.2%	37.5%	35.1%
		% of Total	11.9%	9.7%	13.4%	35.1%
	35 - 44	Count	5	9	11	25
		% within Claim_Co	11.6%	20.9%	22.9%	18.7%
		% of Total	3.7%	6.7%	8.2%	18.7%
	45 - 54	Count	5	5	1	11
		% within Claim_Co	11.6%	11.6%	2.1%	8.2%
		% of Total	3.7%	3.7%	0.7%	8.2%
55 - 64	Count	6	5	2	13	
	% within Claim_Co	14.0%	11.6%	4.2%	9.7%	
	% of Total	4.5%	3.7%	1.5%	9.7%	
65 - 74	Count	1	1	1	3	
	% within Claim_Co	2.3%	2.3%	2.1%	2.2%	
	% of Total	0.7%	0.7%	0.7%	2.2%	
Total	Count	43	43	48	134	
	% within Claim_Co	100.0%	100.0%	100.0%	100.0%	
	% of Total	32.1%	32.1%	35.8%	100.0%	

Appendix D. 8: Crosstabulation of IV and Education

		Education * Claim_Co Crosstabulation				
		Claim_Co			Total	
		1	2	3	Total	
Education	High School	Count	10	4	7	21
		% within Claim_Co	23.3%	9.3%	14.6%	15.7%
		% of Total	7.5%	3.0%	5.2%	15.7%
	Bachelor's Degree	Count	23	22	24	69
		% within Claim_Co	53.5%	51.2%	50.0%	51.5%
		% of Total	17.2%	16.4%	17.9%	51.5%
	Master's Degree	Count	8	13	12	33
		% within Claim_Co	18.6%	30.2%	25.0%	24.6%
		% of Total	6.0%	9.7%	9.0%	24.6%
	Doctorate	Count	1	1	3	5
		% within Claim_Co	2.3%	2.3%	6.3%	3.7%
		% of Total	0.7%	0.7%	2.2%	3.7%
Other	Count	0	0	2	2	
	% within Claim_Co	0.0%	0.0%	4.2%	1.5%	
	% of Total	0.0%	0.0%	1.5%	1.5%	
Less than high school	Count	1	3	0	4	
	% within Claim_Co	2.3%	7.0%	0.0%	3.0%	
	% of Total	0.7%	2.2%	0.0%	3.0%	
Total	Count	43	43	48	134	
	% within Claim_Co	100.0%	100.0%	100.0%	100.0%	
	% of Total	32.1%	32.1%	35.8%	100.0%	

**Appendix D. 9: Crosstabulation of IV and Country of Residence**

**Country of Residence \* Claim\_Co Crosstabulation**

Country of Residence		Claim_Co			Total
		1	2	3	
Australia	Count	0	0	1	1
	% within Claim_Co	0.0%	0.0%	2.1%	0.7%
	% of Total	0.0%	0.0%	0.7%	0.7%
Austria	Count	0	0	1	1
	% within Claim_Co	0.0%	0.0%	2.1%	0.7%
	% of Total	0.0%	0.0%	0.7%	0.7%
Belgium	Count	2	0	1	3
	% within Claim_Co	4.7%	0.0%	2.1%	2.2%
	% of Total	1.5%	0.0%	0.7%	2.2%
Denmark	Count	1	2	1	4
	% within Claim_Co	2.3%	4.7%	2.1%	3.0%
	% of Total	0.7%	1.5%	0.7%	3.0%
Finland	Count	1	0	0	1
	% within Claim_Co	2.3%	0.0%	0.0%	0.7%
	% of Total	0.7%	0.0%	0.0%	0.7%
France	Count	0	0	2	2
	% within Claim_Co	0.0%	0.0%	4.2%	1.5%
	% of Total	0.0%	0.0%	1.5%	1.5%
Germany	Count	1	3	1	5
	% within Claim_Co	2.3%	7.0%	2.1%	3.7%
	% of Total	0.7%	2.2%	0.7%	3.7%
Greece	Count	0	0	1	1
	% within Claim_Co	0.0%	0.0%	2.1%	0.7%
	% of Total	0.0%	0.0%	0.7%	0.7%
Korea (South)	Count	0	1	0	1
	% within Claim_Co	0.0%	2.3%	0.0%	0.7%
	% of Total	0.0%	0.7%	0.0%	0.7%
Netherlands	Count	3	2	1	6
	% within Claim_Co	7.0%	4.7%	2.1%	4.5%
	% of Total	2.2%	1.5%	0.7%	4.5%
Norway	Count	1	0	1	2
	% within Claim_Co	2.3%	0.0%	2.1%	1.5%
	% of Total	0.7%	0.0%	0.7%	1.5%
Poland	Count	1	0	1	2
	% within Claim_Co	2.3%	0.0%	2.1%	1.5%
	% of Total	0.7%	0.0%	0.7%	1.5%
Portugal	Count	25	31	31	87
	% within Claim_Co	58.1%	72.1%	64.6%	64.9%
	% of Total	18.7%	23.1%	23.1%	64.9%
Russia	Count	0	1	0	1
	% within Claim_Co	0.0%	2.3%	0.0%	0.7%
	% of Total	0.0%	0.7%	0.0%	0.7%
Spain	Count	2	0	1	3
	% within Claim_Co	4.7%	0.0%	2.1%	2.2%
	% of Total	1.5%	0.0%	0.7%	2.2%
Sweden	Count	0	2	0	2
	% within Claim_Co	0.0%	4.7%	0.0%	1.5%
	% of Total	0.0%	1.5%	0.0%	1.5%
Turkey	Count	2	0	0	2
	% within Claim_Co	4.7%	0.0%	0.0%	1.5%
	% of Total	1.5%	0.0%	0.0%	1.5%
United Kingdom	Count	2	1	3	6
	% within Claim_Co	4.7%	2.3%	6.3%	4.5%
	% of Total	1.5%	0.7%	2.2%	4.5%
United States	Count	2	0	2	4
	% within Claim_Co	4.7%	0.0%	4.2%	3.0%
	% of Total	1.5%	0.0%	1.5%	3.0%
Total	Count	43	43	48	134
	% within Claim_Co	100.0%	100.0%	100.0%	100.0%
	% of Total	32.1%	32.1%	35.8%	100.0%

**Appendix D. 10: Crosstabulation of IV and Income**

**Monthly Gross Salary \* Claim\_Co Crosstabulation**

Monthly Gross Salary		Claim_Co			Total
		1	2	3	
Less than €1,000	Count	3	4	8	15
	% within Claim_Co	7.0%	9.3%	16.7%	11.2%
	% of Total	2.2%	3.0%	6.0%	11.2%
€1,000 - €1,999	Count	7	5	9	21
	% within Claim_Co	16.3%	11.6%	18.8%	15.7%
	% of Total	5.2%	3.7%	6.7%	15.7%
€2,000 - €2,999	Count	6	6	6	18
	% within Claim_Co	14.0%	14.0%	12.5%	13.4%
	% of Total	4.5%	4.5%	4.5%	13.4%
€3,000 - €3,999	Count	3	5	6	14
	% within Claim_Co	7.0%	11.6%	12.5%	10.4%
	% of Total	2.2%	3.7%	4.5%	10.4%
€4,000 - €4,999	Count	4	4	4	12
	% within Claim_Co	9.3%	9.3%	8.3%	9.0%
	% of Total	3.0%	3.0%	3.0%	9.0%
€5,000 - €5,999	Count	3	2	3	8
	% within Claim_Co	7.0%	4.7%	6.3%	6.0%
	% of Total	2.2%	1.5%	2.2%	6.0%
€6,000 - €6,999	Count	1	4	5	10
	% within Claim_Co	2.3%	9.3%	10.4%	7.5%
	% of Total	0.7%	3.0%	3.7%	7.5%
€7,000 - €7,999	Count	2	2	1	5
	% within Claim_Co	4.7%	4.7%	2.1%	3.7%
	% of Total	1.5%	1.5%	0.7%	3.7%
€8,000 - €8,999	Count	2	1	2	5
	% within Claim_Co	4.7%	2.3%	4.2%	3.7%
	% of Total	1.5%	0.7%	1.5%	3.7%
€9,000 - €9,999	Count	2	2	0	4
	% within Claim_Co	4.7%	4.7%	0.0%	3.0%
	% of Total	1.5%	1.5%	0.0%	3.0%
€10,000 - €14,999	Count	1	0	1	2
	% within Claim_Co	2.3%	0.0%	2.1%	1.5%
	% of Total	0.7%	0.0%	0.7%	1.5%
More than €15,000	Count	4	2	2	8
	% within Claim_Co	9.3%	4.7%	4.2%	6.0%
	% of Total	3.0%	1.5%	1.5%	6.0%
Prefer not to mention	Count	5	6	1	12
	% within Claim_Co	11.6%	14.0%	2.1%	9.0%
	% of Total	3.7%	4.5%	0.7%	9.0%
Total	Count	43	43	48	134
	% within Claim_Co	100.0%	100.0%	100.0%	100.0%
	% of Total	32.1%	32.1%	35.8%	100.0%

**Appendix D. 11: Descriptive Statistics of Main Variables**

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Claim_Co	134	1	3	2.04	.826
BA	134	1.80	7.00	5.3731	1.04825
PBA	134	2.21	7.00	4.9526	1.02291
D_ADrev	134	.00	1.00	.8507	.35768
Valid N (listwise)	134				

**Appendix D. 12: Claim Concreteness Frequencies**

**Claim\_Co**

		Claim_Co			Cumulative Percent
		Frequency	Percent	Valid Percent	
Valid	1	43	32.1	32.1	32.1
	2	43	32.1	32.1	64.2
	3	48	35.8	35.8	100.0
Total		134	100.0	100.0	

## Appendix E: Hypothesis Testing

### Appendix E. 1: Coefficient Table with Variance Inflation Factor (VIF) Values

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.219	.416		5.340	<.001		
	PBA	.683	.096	.667	7.129	<.001	.556	1.797
	AdSkep_Dum	-.170	.192	-.080	-.883	.379	.586	1.706
	Claim Concreteness	-.065	.092	-.051	-.711	.478	.931	1.074

a. Dependent Variable: Brand\_Attitude

### Appendix E. 2: Collinearity Diagnostics – Eigenvalues and Condition Index

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	PBA	AdSkep_Dum	Claim Concreteness
1	1	3.578	1.000	.00	.00	.01	.01
	2	.322	3.332	.01	.00	.60	.05
	3	.086	6.455	.09	.04	.03	.93
	4	.014	16.205	.90	.96	.35	.00

a. Dependent Variable: Brand\_Attitude

### Appendix E. 3: H1 – Tests of Normality for Claim Concreteness and Brand Attitude for H1

	Claim Concreteness	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Brand_Attitude	1	.157	43	.009	.913	43	.003
	2	.151	43	.015	.939	43	.023
	3	.130	48	.040	.964	48	.150

a. Lilliefors Significance Correction

### Appendix E. 4: H1 – Tests of Homogeneity of Variance between Claim Concreteness and Brand Attitude for H1

		Levene Statistic	df1	df2	Sig.
Brand_Attitude	Based on Mean	2.877	2	131	.060
	Based on Median	2.228	2	131	.112
	Based on Median and with adjusted df	2.228	2	121.096	.112
	Based on trimmed mean	2.492	2	131	.087

Appendix E. 5: H1 – ANOVA test between Claim Concreteness and Brand Attitude

**ANOVA**

Brand\_Attitude

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.507	2	2.754	2.565	.081
Within Groups	140.636	131	1.074		
Total	146.143	133			

Appendix E. 6: H2 – Tests of Normality for Claim Concreteness and PBA

**Tests of Normality**

	Claim Concreteness	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PBA	1	.192	43	<.001	.905	43	.002
	2	.112	43	.200*	.956	43	.096
	3	.116	48	.120	.974	48	.346

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Appendix E. 7: H2- Tests of Homogeneity of Variance between Claim Concreteness and PBA

**Tests of Homogeneity of Variances**

		Levene	df1	df2	Sig.
		Statistic			
PBA	Based on Mean	6.095	2	131	.003
	Based on Median	5.570	2	131	.005
	Based on Median and with adjusted df	5.570	2	127.597	.005
	Based on trimmed mean	6.019	2	131	.003

Appendix E. 8: H2 – ANOVA test between Claim Concreteness and PBA

**ANOVA**

PBA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.426	2	6.213	6.422	.002
Within Groups	126.737	131	.967		
Total	139.163	133			

Appendix E. 9: H2 – Robust Tests of Equality of Means between Claim Concreteness and PBA (Brown-Forsythe)

**Robust Tests of Equality of Means**

PBA

	Statistic <sup>a</sup>	df1	df2	Sig.
Welch	7.520	2	83.337	<.001
Brown-Forsythe	6.302	2	117.926	.003

a. Asymptotically F distributed.

Appendix E. 10: H2 – Descriptives of PBA

**Descriptives**

PBA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	43	4.7309	1.14103	.17401	4.3797	5.0821	2.71	6.29
2	43	4.7193	.99102	.15113	4.4143	5.0243	2.21	6.21
3	48	5.3601	.80959	.11685	5.1250	5.5952	3.57	7.00
Total	134	4.9526	1.02291	.08837	4.7778	5.1273	2.21	7.00

Appendix E. 11: H2 – Multiple Comparisons of Claim Concreteness and PBA

**Multiple Comparisons**

Dependent Variable: PBA

	(I) Claim Concreteness	(J) Claim Concreteness	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	1	2	.01163	.21213	.998	-.4913	.5145
		3	-.62922*	.20653	.008	-1.1188	-.1396
	2	1	-.01163	.21213	.998	-.5145	.4913
		3	-.64085*	.20653	.007	-1.1305	-.1512
	3	1	.62922*	.20653	.008	.1396	1.1188
		2	.64085*	.20653	.007	.1512	1.1305
Games-Howell	1	2	.01163	.23047	.999	-.5385	.5617
		3	-.62922*	.20960	.010	-1.1304	-.1280
	2	1	-.01163	.23047	.999	-.5617	.5385
		3	-.64085*	.19104	.003	-1.0969	-.1848
	3	1	.62922*	.20960	.010	.1280	1.1304
		2	.64085*	.19104	.003	.1848	1.0969

\*. The mean difference is significant at the 0.05 level.

Appendix E. 12: H3 – Independence of Observations (Durbin-Watson)

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Durbin-Watson	
						F Change	df1	df2		
1	.602 <sup>a</sup>	.362	.357	.84055	.362	74.850	1	132	<.001	1.981

a. Predictors: (Constant), PBA

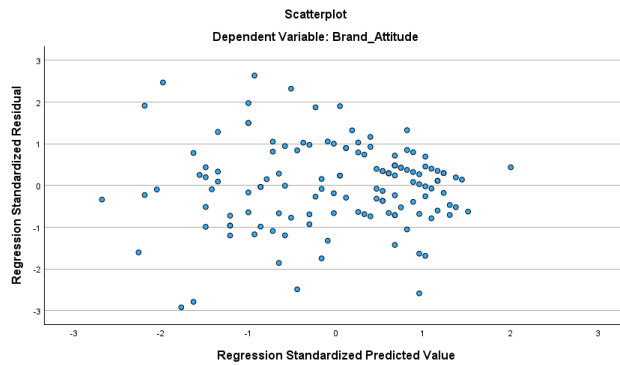
b. Dependent Variable: Brand\_Attitude

Appendix E. 13: H3 – Tests of Normality (Shapiro-Wilk)

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	.077	134	.049	.983	134	.096

a. Lilliefors Significance Correction

Appendix E. 14: H3 – Scatterplot of standardized residuals against standardized predicted values



Appendix E. 15: H3 – Linear Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	2.320	.360	6.440	<.001
	PBA	.616	.071	8.652	<.001

a. Dependent Variable: Brand\_Attitude

Appendix E. 16: H4 – Tests of Normality (Shapiro-Wilk)

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	.055	134	.200*	.987	134	.213

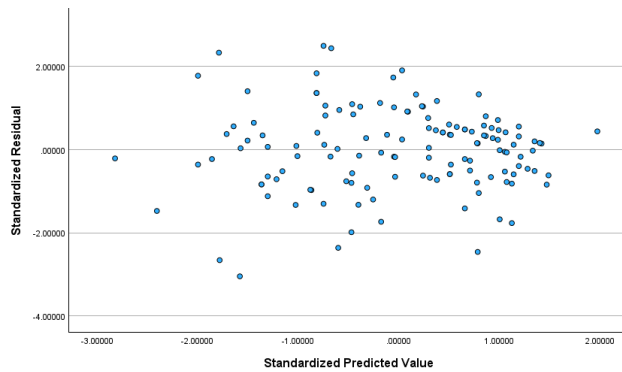
\*. This is a lower bound of the true significance.  
a. Lilliefors Significance Correction

Appendix E. 17: H4 – Independence of Observation (Durbin-Watson)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.607 <sup>a</sup>	.369	.354	.84240	2.226

a. Predictors: (Constant), PBA, abstract\_claim, Concrete\_claim  
b. Dependent Variable: BA

Appendix E. 18: H4 – Scatterplot of standardized residuals against standardized predicted values



Appendix E. 19: H4 – Mediation Hayes Process Model 4

```

Run MATRIX procedure:

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This version of PROCESS requires SPSS version 26 or later
Workshop schedule available at haskayne.ucalgary.ca/CCRAM
In SPSS 29 and later, change default output font to Courier New for
tidier
output. More information about PROCESS at processmacro.org/faq.html.
This beta release has not been completely tested. Use at your own risk.

***** PROCESS Procedure for SPSS Version 5.0
*****

                Written by Andrew F. Hayes, Ph.D.          www.afhayes.com
                Documentation available in Hayes (2022). www.guilford.com/p/hayes3

*****
*
  Model: 4
        Y: BA
        X: Claim_Co
        M: PBA

Sample
Size: 134

Coding of categorical X variable for analysis:
Claim_Co      X1      X2
  1.000      .000      .000
  2.000      1.000      .000
  3.000      .000      1.000

*****
*

OUTCOME VARIABLE:
  PBA

Model Summary
    
```

	R	R-sq	MSE	F	df1	df2
p	.2988	.0893	.9675	6.4220	2.0000	131.0000
.0022						
Model						
	coeff	se	t	p	LLCI	
ULCI						
constant	4.7309	.1500	31.5400	.0000	4.4342	
5.0276						
X1	-.0116	.2121	-.0548	.9564	-.4313	
.4080						
X2	.6292	.2065	3.0467	.0028	.2207	
1.0378						
*****						
*						
OUTCOME VARIABLE:						
BA						
Model Summary						
	R	R-sq	MSE	F	df1	df2
p	.6073	.3688	.7096	25.3143	3.0000	130.0000
.0000						
Model						
	coeff	se	t	p	LLCI	
ULCI						
constant	2.4257	.3766	6.4413	.0000	1.6807	
3.1708						
X1	-.2161	.1817	-1.1893	.2365	-.5755	
.1434						
X2	-.1210	.1830	-.6608	.5099	-.4831	
.2412						
PBA	.6179	.0748	8.2572	.0000	.4698	
.7659						
***** TOTAL EFFECT MODEL						
*****						
OUTCOME VARIABLE:						
BA						
Model Summary						
	R	R-sq	MSE	F	df1	df2
p	.1941	.0377	1.0736	2.5650	2.0000	131.0000
.0808						
Model						
	coeff	se	t	p	LLCI	
ULCI						
constant	5.3488	.1580	33.8517	.0000	5.0363	
5.6614						
X1	-.2233	.2235	-.9991	.3196	-.6653	
.2188						
X2	.2678	.2176	1.2311	.2205	-.1626	
.6982						

```

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y
*****

Relative total effects of X on Y
      Effect      se      t      p      LLCI      ULCI
X1      -.2233      .2235      -.9991      .3196      -.6653      .2188
X2       .2678      .2176      1.2311      .2205      -.1626      .6982

Omnibus test of total effect of X on Y
      R2-chng      F      df1      df2      p
      .0377      2.5650      2.0000      131.0000      .0808
-----

Relative direct effects of X on Y
      Effect      se      t      p      LLCI      ULCI
X1      -.2161      .1817      -1.1893      .2365      -.5755      .1434
X2      -.1210      .1830      -.6608      .5099      -.4831      .2412

Omnibus test of direct effect of X on Y:
      R2-chng      F      df1      df2      p
      .0069      .7107      2.0000      130.0000      .4932
-----

Relative indirect effects of X on Y

Claim_Co  ->  PBA      ->  BA

      Effect      BootSE      BootLLCI      BootULCI
X1      -.0072      .1425      -.2948      .2697
X2       .3888      .1403      .1408      .6932

***** ANALYSIS NOTES AND ERRORS
*****

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for bias-corrected bootstrap confidence
intervals:
  5000

----- END MATRIX -----

```

Appendix E. 20: H5 – Independence of Observation (Durbin-Watson)

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.333 <sup>a</sup>	.111	.076	1.00745	2.061

a. Predictors: (Constant), D\_ADrev, abstract\_claim, Concrete\_claim, abstract\_skep, concrete\_skep

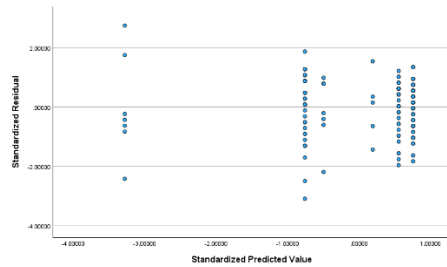
b. Dependent Variable: BA

Appendix E. 21: H5 – Tests of Normality (Shapiro-Wilk)

Tests of Normality						
Standardized Residual	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	.082	134	.026	.979	134	.032

a. Lilliefors Significance Correction

Appendix E. 22: H5 – Scatterplot of standardized residuals against standardized predicted values



Appendix E. 23: H5 – Mediation Hayes Process Model 1

```

Run MATRIX procedure:

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This version of PROCESS requires SPSS version 26 or later
Workshop schedule available at haskayne.ucalgary.ca/CCRAM
In SPSS 29 and later, change default output font to Courier New for
tidier
output. More information about PROCESS at processmacro.org/faq.html.
This beta release has not been completely tested. Use at your own risk.

***** PROCESS Procedure for SPSS Version 5.0
*****

                Written by Andrew F. Hayes, Ph.D.          www.afhayes.com
                Documentation available in Hayes (2022). www.guilford.com/p/hayes3

*****
*
Model: 1
  Y: BA
  X: Claim_Co
  W: D_ADrev

Sample
Size: 134

Coding of categorical X variable for analysis:
Claim_Co      X1      X2
  1.000      .000      .000
  2.000      1.000      .000
  3.000      .000      1.000

*****
*

```

OUTCOME VARIABLE:

BA

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.3332	.1110	1.0150	3.1980	5.0000	128.0000
	.0094					

Model

	coeff	se	t	p	LLCI	ULCI
ULCI						
constant	4.2286	.3808	11.1050	.0000	3.4751	4.9820
X1	.9714	.5214	1.8631	.0647	-.0603	2.0031
X2	1.2114	.5899	2.0536	.0420	.0442	2.3787
D_ADrev	1.3381	.4162	3.2154	.0016	.5147	2.1615
Int_1	-1.4295	.5736	-2.4921	.0140	-2.5646	-.2945
Int_2	-1.1409	.6323	-1.8044	.0735	-2.3920	.1102

Product terms key:

Int\_1 : X1 x D\_ADrev  
 Int\_2 : X2 x D\_ADrev

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0465	3.3497	2.0000	128.0000	.0382

-----  
 Focal predict: Claim\_Co (X)  
 Mod var: D\_ADrev (W)

Conditional effects of the focal predictor at values of the moderator(s):

Moderator value(s):

D\_ADrev .0000

	Effect	se	t	p	LLCI	ULCI
X1	.9714	.5214	1.8631	.0647	-.0603	2.0031
X2	1.2114	.5899	2.0536	.0420	.0442	2.3787

Test of equality of conditional means

	F	df1	df2	p
	2.6236	2.0000	128.0000	.0764

Estimated conditional means being compared:

Claim_Co	BA
1.0000	4.2286
2.0000	5.2000
3.0000	5.4400

-----  
 Moderator value(s):

D\_ADrev 1.0000

	Effect	se	t	p	LLCI	ULCI
X1	-.4581	.2391	-1.9155	.0577	-.9313	.0151
X2	.0705	.2276	.3100	.7571	-.3798	.5209

```

Test of equality of conditional means
      F          df1          df2          p
2.9934          2.0000      128.0000      .0536

```

Estimated conditional means being compared:

Claim_Co	BA
1.0000	5.5667
2.0000	5.1086
3.0000	5.6372

```

***** ANALYSIS NOTES AND ERRORS
*****

```

```

Level of confidence for all confidence intervals in output:
95.0000

```

```

----- END MATRIX -----

```

*Appendix E. 24: Full Model Test Hayes Process Model 5*

Run MATRIX procedure:

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This version of PROCESS requires SPSS version 26 or later  
Workshop schedule available at [haskayne.ucalgary.ca/CCRAM](http://haskayne.ucalgary.ca/CCRAM)  
In SPSS 29 and later, change default output font to Courier New for  
tidier  
output. More information about PROCESS at [processmacro.org/faq.html](http://processmacro.org/faq.html).  
This beta release has not been completely tested. Use at your own risk.

```

***** PROCESS Procedure for SPSS Version 5.0
*****

```

Written by Andrew F. Hayes, Ph.D. [www.afhayes.com](http://www.afhayes.com)  
Documentation available in Hayes (2022). [www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

```

*****
*

```

```

Model: 5
Y: BA
X: Claim_Co
M: PBA
W: D_ADrev

```

```

Sample
Size: 134

```

Coding of categorical X variable for analysis:

Claim_Co	X1	X2
1.000	.000	.000
2.000	1.000	.000
3.000	.000	1.000

```

*****
*

```

OUTCOME VARIABLE:

PBA

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.2988	.0893	.9675	6.4220	2.0000	131.0000
	.0022					

Model

	coeff	se	t	p	LLCI
ULCI					
constant	4.7309	.1500	31.5400	.0000	4.4342
	5.0276				
X1	-.0116	.2121	-.0548	.9564	-.4313
	.4080				
X2	.6292	.2065	3.0467	.0028	.2207
	1.0378				

\*\*\*\*\*  
\*

OUTCOME VARIABLE:

BA

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.6285	.3950	.6961	13.8221	6.0000	127.0000
	.0000					

Model

	coeff	se	t	p	LLCI
ULCI					
constant	1.9495	.4319	4.5133	.0000	1.0947
	2.8042				
X1	.3169	.4401	.7201	.4728	-.5539
	1.1877				
X2	.9415	.4898	1.9221	.0568	-.0278
	1.9107				
PBA	.6153	.0797	7.7214	.0000	.4576
	.7730				
D_ADrev	.5835	.3582	1.6286	.1059	-.1254
	1.2923				
Int_1	-.6381	.4860	-1.3131	.1915	-1.5999
	.3236				
Int_2	-1.2223	.5238	-2.3338	.0212	-2.2587
					-.1859

Product terms key:

Int\_1 : X1 x D\_ADrev  
 Int\_2 : X2 x D\_ADrev

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0263	2.7580	2.0000	127.0000	.0672

-----

Focal predict: Claim\_Co (X)  
 Mod var: D\_ADrev (W)

Conditional effects of the focal predictor at values of the moderator(s):

(These are also the relative conditional direct effects of X on Y)

Moderator value(s):

D\_ADrev .0000

	Effect	se	t	p	LLCI	ULCI
X1	.3169	.4401	.7201	.4728	-.5539	1.1877
X2	.9415	.4898	1.9221	.0568	-.0278	1.9107

Test of equality of conditional means

F	df1	df2	p
1.8714	2.0000	127.0000	.1581

Estimated conditional means being compared:

Claim_Co	BA
1.0000	4.9968
2.0000	5.3136
3.0000	5.9382

Moderator value(s):

D\_ADrev 1.0000

	Effect	se	t	p	LLCI	ULCI
X1	-.3213	.1988	-1.6156	.1087	-.7147	.0722
X2	-.2809	.1939	-1.4484	.1500	-.6646	.1028

Test of equality of conditional means

F	df1	df2	p
1.5987	2.0000	127.0000	.2062

Estimated conditional means being compared:

Claim_Co	BA
1.0000	5.5802
2.0000	5.2589
3.0000	5.2993

\*\*\*\*\* DIRECT AND INDIRECT EFFECTS OF X ON Y \*\*\*\*\*

Relative conditional direct effects of X on Y

	D_ADrev	Effect	se	t	p	LLCI
ULCI						
X1	.0000	.3169	.4401	.7201	.4728	-.5539
1.1877						
X1	1.0000	-.3213	.1988	-1.6156	.1087	-.7147
.0722						
X2	.0000	.9415	.4898	1.9221	.0568	-.0278
1.9107						
X2	1.0000	-.2809	.1939	-1.4484	.1500	-.6646
.1028						

Relative indirect effects of X on Y

Claim_Co	->	PBA	->	BA
	Effect	BootSE	BootLLCI	BootULCI
X1	-.0072	.1417	-.2958	.2650
X2	.3872	.1373	.1289	.6730

\*\*\*\*\* ANALYSIS NOTES AND ERRORS \*\*\*\*\*

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

NOTE: Due to estimation problems, some bootstrap samples had to be replaced.

The number of times this happened was:  
34

----- END MATRIX -----

## Appendix F: Further Results

### Appendix F. 1: Independence of Observation (Durbin-Watson)

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.426 <sup>a</sup>	.181	.163	.93609	1.862

a. Predictors: (Constant), concrete\_skep, D\_ADrev, abstract\_skep

b. Dependent Variable: PBA

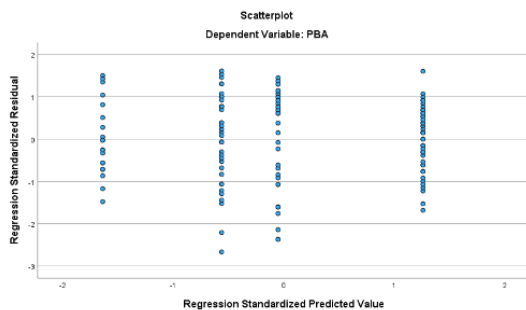
### Appendix F. 2: Tests of Normality (Shapiro-Wilk)

**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PBA	.122	134	<.001	.955	134	<.001

a. Lilliefors Significance Correction

### Appendix F. 3: Scatterplot of standardized residuals against standardized predicted values



Appendix F. 4: Hayes Model 4

```

Run MATRIX procedure:

Copyright 2013-2025 by Andrew F. Hayes. ALL RIGHTS RESERVED.
This version of PROCESS requires SPSS version 26 or later
Workshop schedule available at haskayne.ucalgary.ca/CCRAM
In SPSS 29 and later, change default output font to Courier New for
tidier
output. More information about PROCESS at processmacro.org/faq.html.
This beta release has not been completely tested. Use at your own risk.

***** PROCESS Procedure for SPSS Version 5.0
*****

                Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
                Documentation available in Hayes (2022). www.guilford.com/p/hayes3

*****
*
  Model: 1
    Y: PBA
    X: Claim_Co
    W: D_ADrev

Sample
Size: 134

Coding of categorical X variable for analysis:
  Claim_Co      X1      X2
    1.000      .000      .000
    2.000      1.000      .000
    3.000      .000      1.000

*****
*

OUTCOME VARIABLE:
  PBA

Model Summary

                R          R-sq          MSE          F          df1          df2
p
.0000      .4607      .2122      .8565      6.8969      5.0000      128.0000

Model

                coeff          se          t          p          LLCI
ULCI
constant      3.7041      .3498      10.5895      .0000      3.0120
4.3962
X1      1.0638      .4790      2.2210      .0281      .1161
2.0115
X2      .4388      .5419      .8097      .4196      -.6334
1.5110
D_ADrev      1.2265      .3823      3.2083      .0017      .4701
1.9829
Int_1      -1.2862      .5269      -2.4408      .0160      -2.3288      -
.2435

```

Int\_2 .1323 .5808 .2278 .8201 -1.0169  
 1.2816

Product terms key:

Int\_1 : X1 x D\_ADrev  
 Int\_2 : X2 x D\_ADrev

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0521	4.2361	2.0000	128.0000	.0165

-----

Focal predict: Claim\_Co (X)  
 Mod var: D\_ADrev (W)

Conditional effects of the focal predictor at values of the moderator(s):

Moderator value(s):

D\_ADrev .0000

	Effect	se	t	p	LLCI	ULCI
X1	1.0638	.4790	2.2210	.0281	.1161	2.0115
X2	.4388	.5419	.8097	.4196	-.6334	1.5110

Test of equality of conditional means

	F	df1	df2	p
	2.5025	2.0000	128.0000	.0859

Estimated conditional means being compared:

Claim_Co	PBA
1.0000	3.7041
2.0000	4.7679
3.0000	4.1429

-----

Moderator value(s):

D\_ADrev 1.0000

	Effect	se	t	p	LLCI	ULCI
X1	-.2224	.2197	-1.0123	.3133	-.6571	.2123
X2	.5711	.2091	2.7317	.0072	.1574	.9848

Test of equality of conditional means

	F	df1	df2	p
	7.7574	2.0000	128.0000	.0007

Estimated conditional means being compared:

Claim_Co	PBA
1.0000	4.9306
2.0000	4.7082
3.0000	5.5017

\*\*\*\*\* ANALYSIS NOTES AND ERRORS \*\*\*\*\*

Level of confidence for all confidence intervals in output:  
 95.0000

----- END MATRIX -----