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Consumer Preferences for Affordable Luxury Handbags: A Discrete Choice Experiment with Gen Z Consumers

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Abstract

Purpose – This dissertation studies how environmental concern among Portuguese female Generation Z consumers translates into actual willingness to pay for sustainable product attributes in the affordable luxury sector, examining whether stated environmental orientations are reflected in real economic trade-offs at the point of choice.

Methodology – A best–worst scaling attitudinal instrument first assessed respondents' environmental orientation across five dimensions, with an exploratory factor analysis identifying underlying attitudinal profiles. A discrete choice experiment then assessed trade-offs between affordable luxury handbag alternatives across 12 choice sets, varying seven attributes: material, logo prominence, sustainable manufacturing process, limited availability, colour, hardware, and price. Choice data were analysed using a multinomial logit model to estimate attribute coefficients and willingness to pay.

Findings – The attitudinal analysis reveals only moderate environmental concern and a comparatively weak stated willingness to pay on average for sustainable products, alongside meaningful heterogeneity in attitudinal profiles. The discrete choice experiment reveals a more nuanced picture: consumers assign significant positive value to the eco-friendly manufacturing process, with an estimated premium of €113, while sustainable vegan leather does not generate a significant premium at the aggregate level. Stated willingness to pay was not consistently associated with revealed preferences across attitudinal segments.

Originality/Value – This dissertation contributes to the scarce literature on sustainable luxury consumption among Generation Z in emerging European markets, offering a product-level, preference-based perspective and actionable insights for affordable luxury brands.

Limitations – Although the sample of 201 respondents was adequate for estimating reliable main effects, a larger sample would have allowed for greater statistical power, particularly in the subgroup analyses.

Keywords: *Luxury, Sustainability, Generation Z, Discrete Choice Experiment, Willingness to Pay*

Resumo

Objetivo – Esta dissertação estuda de que forma a preocupação ambiental das consumidoras portuguesas da Geração Z se traduz numa disposição efetiva para pagar por atributos sustentáveis no setor do luxo acessível, analisando se as orientações declaradas se refletem em trade-offs económicos reais no momento da escolha.

Metodologia – Recorreu-se a um instrumento atitudinal de best–worst scaling para avaliar a orientação ambiental das respondentes em cinco dimensões, complementado por uma análise fatorial exploratória. Foi depois conduzida uma experiência de escolha discreta, com 12 conjuntos de escolha entre malas de luxo acessível, fazendo variar sete atributos (material, visibilidade do logótipo, processo de fabrico sustentável, disponibilidade limitada, cor, hardware e preço), analisados através de um modelo logit multinomial.

Resultados – A análise atitudinal revela, em média, apenas uma preocupação ambiental moderada e uma disposição a pagar declarada fraca por produtos sustentáveis, com heterogeneidade significativa entre perfis. A experiência de escolha discreta revela um quadro mais complexo: as consumidoras atribuem um valor positivo e significativo ao processo de fabrico ecológico, com um premium estimado de €113, enquanto a pele vegan não gera um premium significativo, sem que a disposição a pagar declarada se revele consistentemente associada às preferências reveladas entre segmentos.

Originalidade/Valor – Esta dissertação contribui para a escassa literatura sobre consumo de luxo sustentável na Geração Z em mercados europeus emergentes, com uma perspetiva centrada nos atributos do produto e recomendações práticas para marcas.

Limitações – Embora a amostra de 201 respondentes fosse adequada para estimar efeitos principais fiáveis, uma amostra maior teria permitido maior poder estatístico, em particular nas análises por subgrupo.

Palavras-chave: *Luxo, Sustentabilidade, Geração Z, Experiência de Escolha Discreta, Disponibilidade a Pagar*

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List of Acronyms

ASCs	Alternative-Specific Constants
BWS	Best-Worst Scaling
CBC	Choice-Based Conjoint
DCE	Discrete Choice Experiment
IBD	Incomplete Block Design
MLE	Maximum Likelihood Estimation
MNL	Multinomial Logit
MRS	Marginal Rate of Substitution
RP	Revealed Preferences
RUT	Random Utility Theory
SP	Stated Preference
TPB	Theory of Planned Behavior
WTP	Willingness to Pay

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1. Introduction

Sustainability has become one of the defining expectations of contemporary luxury consumers. What was once a peripheral concern has progressively moved to the center of how luxury brands are evaluated and experienced: 80% of global consumers now report a willingness to pay more for sustainably sourced products (PwC, 2024), and leading conglomerates have responded with ambitious commitments, from LVMH's LIFE 360 programme to Kering's Materials Innovation Lab. Yet, despite this growing rhetoric, the integration of sustainability into the core product offering of luxury brands remains tentative and often met with consumer skepticism (Zhang et al., 2026). Pressure from consumers, advocacy organizations such as PETA, and an increasingly stringent regulatory environment is forcing luxury brands to think seriously about how to embed sustainability into their operations in a way that creates rather than destroys value.

This challenge is particularly acute in the leather goods segment. Conventional leather production is resource-intensive, associated with significant greenhouse gas emissions, land use, and animal welfare concerns, and increasingly scrutinized by a generation of consumers for whom ethical consumption is an expectation rather than an aspiration (Sultana et al., 2026; Kapferer & Michaut-Denizeau, 2014). Two types of product-level innovation emerge from the literature as the most viable pathways forward: the adoption of more environmentally responsible manufacturing processes, which leave the visible properties of the product unchanged; and the substitution of traditional animal leather with bio-based alternatives, most notably mycelium-based leather, which carries no prior product identity and is therefore less likely to trigger the quality concerns associated with other sustainable materials (Hemonnet-Goujot et al., 2022).

For brands to invest in these innovations, however, they need evidence that doing so is commercially viable. Generation Z, broadly defined as individuals born between 1997 and 2012, stands out as the segment most likely to reward such investment: this cohort is both the most environmentally engaged consumer generation to date and the fastest-growing force in luxury consumption, projected to account for 25 to 30% of global personal luxury purchases by 2030

(D'Arpizio et al., 2023; McKinsey & Company, 2025). Yet environmental concern alone does not guarantee that consumers will translate their values into actual economic commitment. The Theory of Planned Behavior (Ajzen, 1991) posits that beliefs shape attitudes, attitudes generate intentions, and intentions drive behavior. However, the final link in this chain is well known to be fragile, giving rise to the extensively documented attitude–intention–behavior gap (Carrington et al., 2010). Whether Generation Z's pro-environmental orientations translate into genuine willingness to pay for sustainable product attributes therefore remains an open empirical question, and one with direct strategic implications for brands.

This study seeks to provide the empirical foundation for that decision. Using a best–worst scaling attitudinal instrument and a discrete choice experiment administered to a sample of Portuguese female Generation Z consumers, it pursues four interconnected objectives: to measure the actual level of environmental concern within this segment and identify whether meaningful heterogeneity exists across individuals; to estimate the willingness to pay for eco-friendly product attributes in the context of affordable luxury handbags; to examine whether consumers with stronger environmental orientations assign greater value to sustainable attributes in actual choice behavior; and to assess whether stronger environmental concern is associated with lower price sensitivity. Together, these objectives allow for a direct comparison between stated and revealed preferences, shedding light on whether — and to what extent — the attitude–behavior gap operates within this segment.

The remainder of this dissertation is structured as follows. **Section 2** reviews the relevant literature. **Section 3** presents the research methodology. **Section 4** presents and discusses the empirical findings. **Section 5** outlines the managerial implications and limitations of the study, and **Section 6** concludes.

2. Literature Review

2.1 Sustainability and Consumer Behavior: The Attitude–Behavior Gap

The growing consumer interest in sustainability raises an immediate empirical question: does stated environmental concern translate into actual purchasing behavior? The theoretical framework most widely used to explain this progression is Ajzen's (1991) Theory of Planned Behavior, which posits that beliefs shape attitudes, attitudes generate intentions, and intentions ultimately drive behavior. Applied to green consumption, this chain implies that consumers who hold stronger environmental beliefs and more favorable attitudes toward sustainable products are more likely to translate those orientations into actual purchase decisions (Mostafa, 2007; Hartmann & Apaolaza-Ibáñez, 2012).

However, the empirical record reveals that this chain frequently breaks down at its final link. Despite widespread evidence of positive environmental attitudes, the market share of eco-friendly products remains stubbornly low (Vermeir & Verbeke, 2006; Grimmer & Miles, 2016). This disconnect, broadly referred to as the attitude–intention–behavior gap (Carrington et al., 2010), is one of the most extensively documented phenomena in the sustainable consumption literature, with price sensitivity, perceived quality concerns, and social desirability pressures all contributing to explaining why genuinely concerned consumers often fail to act on their values at the point of purchase (Park & Lin, 2020). As will become apparent in **Section 4**, understanding this gap is central to interpreting the results of the present study.

2.2 Luxury and Sustainability

The attitude–behavior gap takes on a particularly interesting character in the luxury sector. Luxury consumers are, by definition, less financially constrained than the average consumer, which might suggest that price is a less binding barrier to sustainable purchasing. Yet the specific values that define luxury consumption create a distinct set of tensions with sustainability. Traditional luxury was, in many respects, inherently sustainable: products built to exceptional artisanal standards were designed to last decades, embodying a "buy less, keep longer" ethos fundamentally opposed to excess (Kapferer & Michaut-Denizeau, 2014). However, the broader industry has progressively shifted toward a mass luxury paradigm, expanding production volumes and approximating the business model of fast fashion, thereby inheriting many of its sustainability challenges (Hemonnet-Goujot et al., 2022; Athwal et al., 2019). This

transformation is particularly acute in leather goods, where expanding production has intensified the ethical and environmental pressures associated with livestock farming (Sultana et al., 2026), with research identifying the use of animal skins as among the practices most likely to generate consumer resistance (Kapferer & Michaut-Denizeau, 2014; Achabou, 2021).

Alongside these material concerns, a parallel transformation has reshaped how consumers relate to luxury branding. As the democratization of luxury diluted the exclusivity signals associated with recognizable logos, a growing segment of consumers began gravitating toward more discreet forms of consumption, described in the literature as inconspicuous consumption (Berger & Ward, 2010; Han et al., 2010). This preference is particularly pronounced among younger and more educated consumers, and directly motivates the inclusion of logo prominence as one of the attributes evaluated in this study.

The academic literature reveals two competing perspectives on whether sustainable innovation can coexist with luxury at the product level. The historically dominant view holds that the two are fundamentally incompatible: incorporating recycled materials into luxury products negatively affects quality perceptions (Achabou & Dekhili, 2013), and the civic values associated with sustainability conflict with the self-enhancement values that drive luxury consumption (Torelli et al., 2012). More recent research offers a more nuanced picture, suggesting that sustainability can function as an asset when it enhances rather than replaces the attributes consumers value most (Janssen et al., 2014; Skard et al., 2021). Hemonnet-Goujot et al. (2022) provide the most directly relevant contribution: innovations drawing on materials without a prior product identity, such as genuinely new bio-based alternatives, do not produce the same penalizing effect as recycled or upcycled materials. This distinction is central to the present study, which examines two innovation types: the replacement of traditional animal leather with mycelium-based leather, a bio-based alternative with no prior product identity; and the adoption of more environmentally responsible manufacturing processes, which leave the visible properties of the product unchanged and are therefore less likely to trigger quality concerns (Skard et al., 2021).

2.3 Generation Z: Environmental Concern and Luxury Consumption

Generation Z stands out as the segment most likely to value these innovations. Having grown up amid intensifying climate discourse, members of this cohort tend to internalize

environmental responsibility as a core personal value, with climate change consistently ranking as their top concern and the cohort demonstrating comparatively higher engagement in sustainable consumption practices (Salguero et al., 2024; Prayag et al., 2022). In the luxury context, Generation Z redefines the category around authenticity and values alignment rather than conspicuous status signaling, with sustainability emerging as a defining criterion through which this cohort evaluates brands (Brandão & Magalhães, 2023). From a market perspective, Generation Z's spending is growing twice as fast as that of preceding generations and is projected to account for 25 to 30% of global personal luxury purchases by 2030 (D'Arpizio et al., 2023; McKinsey & Company, 2025).

Yet, as discussed in **Section 2.1**, the attitude–behavior gap is well-documented within this cohort too, with financial constraints and cognitive dissonance contributing to the discrepancy between stated environmental values and actual choices (Hosany et al., 2025). Whether Generation Z's pro-environmental orientations translate into genuine economic commitment at the point of purchase therefore remains an open empirical question.

2.4 Willingness to Pay for Sustainable Luxury

A growing body of research has begun to examine this question, yet the findings remain fragmented. At the brand level, Diallo et al. (2021) find that CSR actions positively influence willingness to pay for luxury brands, contingent on consumers' long-term orientation, while Zhang et al. (2026) show that perceived brand ethicality increases willingness to pay but sustainability communication can simultaneously reduce perceived product quality. At the product attribute level, Park et al. (2022) and Essiz (2024) demonstrate that scarcity cues reinforce the luxury-sustainability fit and enhance willingness to pay, while research on sustainable fashion finds that premiums above 30% are generally deemed unacceptable (Colasante & D'Adamo, 2021). Among younger consumers, Generation Z may exhibit comparatively greater willingness to pay than older cohorts (Gomes et al., 2023), though the magnitude of these premiums and whether they hold when consumers face real economic trade-offs remain insufficiently tested.

What the literature lacks is rigorous quantitative evidence on how much consumers are willing to pay for specific sustainable product attributes at the core of luxury goods, estimated through revealed preference methods that confront consumers with real economic trade-offs

rather than attitudinal measures. Research has also focused predominantly on established luxury markets, leaving younger cohorts in emerging European contexts comparatively underexplored, particularly within affordable luxury (Ma & Coelho, 2024; Brandão & Magalhães, 2023). It is precisely this gap that the present study seeks to fill.

3. Research Methodology

This section outlines the research questions guiding the study and presents the theoretical framework that supports them. It then describes the data collection instrument, a stated preferences survey, and concludes by introducing and explaining the model used to derive the results.

3.1 Theoretical Framework and Research Questions

As highlighted in **Section 1**, sustainability has become an increasingly central concern in recent years, particularly among younger generations. Consumers increasingly integrate environmental considerations into their values, beliefs, and purchasing decisions, reflecting greater awareness of the impact of individual consumption on the environment. This shift is especially relevant in the luxury fashion sector, where growing pressure from consumers and advocacy groups pushes brands to adopt more sustainable practices. In this context, understanding how environmental concern, attitudes, and purchase intentions interact to shape pro-environmental behavior becomes particularly relevant (Kuchinka et al., 2018).

The Theory of Planned Behavior (TPB) provides the theoretical foundation for this study. According to this framework, consumer behavior follows a sequence of cause-and-effect relationships: beliefs shape attitudes, attitudes form intentions, and intentions ultimately drive behavior (Grimmer & Miles, 2016). Applied to green purchasing, this chain implies that consumers with stronger environmental beliefs and more favorable attitudes toward sustainable products are more likely to translate those orientations into actual purchase decisions (Mostafa, 2007). However, the link between intention and behavior is often weak, giving rise to the well-documented attitude–intention–behavior gap (Grimmer & Miles, 2016; Carrington et al., 2010). Many authors highlight the relevance of the TPB in understanding green purchase behavior across a range of consumption contexts (Mishal et al., 2017), making it a suitable theoretical lens for the present study.

Building on this framework, this study examines how these relationships unfold in practice among Portuguese female Generation Z consumers in the context of affordable luxury handbags, evaluating whether the progression from concern to intention and ultimately to

behavior holds when consumers face real purchase trade-offs. To address this, the study is guided by the following research questions:

RQ1: What is the level of environmental concern among Portuguese female Generation Z consumers, and does it conceal meaningful heterogeneity across individuals — that is, do distinct attitudinal profiles emerge within this segment?

RQ2: What is the willingness to pay of Portuguese female Generation Z consumers for eco-friendly attributes in the context of affordable luxury handbags?

RQ3: Do consumers displaying stronger sustainability-oriented profiles assign greater value to eco-friendly product attributes in their actual choices? Are they willing to pay a higher premium for sustainable alternatives?

RQ4: Are consumers with stronger environmental orientations comparatively less sensitive to price when evaluating affordable luxury handbags?

3.2. Survey Design

This study follows a quantitative research approach. Data was collected through a structured questionnaire, composed of three main sections described in detail throughout this subsection.

Participation in the survey was restricted to adult female members of Generation Z, the group of interest, and was anonymous.

In the first section, participants were informed about the purpose of the study, provided with relevant instructions, and asked to answer three sociodemographic questions on age, level of education, and household monthly income. These variables allow for the characterization of the sample and the identification of potential heterogeneity across individuals.

The second section consisted of an attitudinal study designed to assess respondents' level of environmental concern through an indirect, choice-based approach. As discussed in **Section 3.1**, environmental concern plays a central role in shaping pro-environmental attitudes, intentions, and ultimately behavior. However, the underlying psychological constructs through which this concern manifests are not directly observable, which justifies the use of indirect methods to capture them.

To address this, respondents were presented with a series of statements reflecting different levels of environmental orientation across five dimensions derived from the Theory of

Planned Behavior: beliefs, affect, attitudes, behavioural intention, and stated willingness to pay. For each dimension, three statements were defined, corresponding to low, moderate, and high levels of alignment with pro-environmental views, as detailed in **Table 1** in the **Appendix**. To systematically evaluate these 15 statements ($v = 15$) without causing respondent fatigue, the choice sets were generated using an Incomplete Block Design (IBD) optimized for near-balance and orthogonality (Cochran & Cox, 1957). The experimental design consisted of a total of 20 unique choice sets ($b = 20$). Following this configuration, each choice set was composed of exactly three statements ($k = 3$), ensuring that every individual statement appeared exactly four times ($r = 4$) across the evaluation matrix to achieve optimal information efficiency. Within these structured blocks, a Case 1 Best-Worst Scaling (BWS) elicitation method was applied (Louviere, 2015); respondents were asked to look at each specific combination and identify the single statement they agreed with most (Best) and the one they agreed with least (Worst). An example is presented in **Figure 1**, in the **Appendix**.

This structure required respondents to make repeated best–worst selections across the different combinations of statements. Based on these choices, a scoring procedure was implemented to quantify each respondent's environmental orientation. Each time a statement was selected as the most agreed upon, it was assigned a value of +1, and each time it was selected as the least agreed upon, it was assigned a value of −1, with zero assigned otherwise. This generated individual-level scores for each statement, which were subsequently used to establish a ranking of statements according to their relative importance for each respondent.

These scores served as the basis for the attitudinal analysis presented in **Section 4.2**, where they are used to characterize the sustainability-related orientations of the sample and to identify distinct attitudinal profiles within it. A more detailed explanation of the analytical procedure is provided in that section.

The use of this approach, instead of a traditional Likert scale, was a deliberate methodological choice. While Likert scales are widely used to measure environmental attitudes, they are subject to well-documented limitations, particularly response biases such as social desirability and scale use heterogeneity, which may lead respondents to overstate their level of environmental concern (Paulhus, 1991; Devinney et al., 2010).

By contrast, the choice-based approach adopted in this study requires respondents to make trade-offs between alternatives, forcing them to reveal relative preferences rather than simply express agreement with individual statements. This makes it possible to better discriminate between different levels of environmental concern and to reduce the tendency to provide uniformly positive responses (Louviere et al., 2015). This is particularly relevant in the context of this study, which aims to examine to what extent environmental concern translates into actual economic trade-offs, a question that benefits from attitudinal measurement approaches that minimize the risk of overstating pro-environmental orientations (Auger et al., 2007; Carrington et al., 2010).

The third and final section of the questionnaire consisted of a discrete choice experiment (DCE), also referred to as choice-based conjoint (CBC) analysis. In this setting, respondents were repeatedly asked to choose between alternative product profiles that varied in their attributes, allowing the relative importance of each attribute level and the corresponding willingness to pay to be inferred (Louviere et al., 2000).

In the design implemented, each respondent was presented with 12 choice scenarios, each including three hypothetical handbag alternatives, identified using generic labels (A, B, and C). When present, the logo "B" referred to a hypothetical brand named "Brand". Real brands were intentionally excluded from the experimental design. In the context of the luxury fashion industry, brand is widely recognised as a key driver of consumer choice, often embodying symbolic value, status, and identity. Including real brands could therefore dominate respondents' choices and mask the effects of the remaining attributes, preventing the identification of their isolated contributions to consumer utility (Louviere et al., 2000).

Each alternative was defined by a set of pre-established attributes and corresponding levels, which varied systematically across choice scenarios. To enhance realism and reduce the cognitive burden associated with evaluating multiple attributes, the handbags were visually represented, making the choice task more intuitive and closer to real purchasing situations such as online shopping. The images were generated using artificial intelligence tools, specifically Copilot (Louviere et al., 2000).

Within each choice set, respondents were first asked to identify the most and least preferred handbags among the three alternatives presented. They were then asked to indicate their purchase intention by stating whether they would consider purchasing any of the handbags,

some but not others, or none. This second question served as an indirect way of incorporating a no-choice option, or outside option, into the experiment. Accounting for this possibility increases the realism of the choice task, as in real purchase situations consumers can always decide not to buy any of the available alternatives (Louviere et al., 2000).

This approach offers an important advantage over directly including a "none of the alternatives" option within the choice set. Even when respondents indicate that they would not purchase any of the alternatives, their answers to the first question still reveal a ranking of preferences, allowing the researcher to extract information on relative valuations while simultaneously identifying individuals who would opt out of purchasing altogether (Louviere et al., 2000). An example of a choice set is presented in **Figure 2**, in the **Appendix**.

By analyzing the data collected through the DCE, it is possible to infer the value individuals assign to different product attributes based on the trade-offs they make when choosing between alternatives. In other words, respondents' choices allow for the estimation of the relative importance of each attribute and its corresponding levels within their utility functions. From these estimates, willingness to pay (WTP) for each attribute can be derived (McFadden, 1973).

The selection of attributes included in the DCE was guided by a careful consideration of the consumer decision-making process and the characteristics most relevant in a real purchase context, particularly how affordable luxury handbags are presented and evaluated in online retail environments.

Accordingly, the attributes included in the experiment were material, logo prominence, sustainable manufacturing process, limited availability, color, hardware, and price. Given the objective of the study, particular attention was given to the two sustainability-related attributes. In terms of material, handbags could be made either from conventional animal leather or from a sustainable vegan alternative derived from mycelium. Regarding the manufacturing process, some alternatives were produced using more environmentally friendly methods, involving reduced use of natural resources such as water, energy, and hazardous chemicals compared to conventional production.

The number of attributes was also carefully considered, as previous research suggests that when the number of attributes becomes too large, individuals may experience increased cognitive burden and adopt simplifying strategies, such as ignoring some attributes altogether

(Louviere et al., 2000). To minimize this risk, the number of attributes in the present study was limited to seven, remaining well within the recommended threshold..

With regard to the definition of attribute levels, most attributes were specified with two levels to keep the choice task clear and manageable for respondents (Louviere et al., 2000). In some cases, however, additional levels were introduced to better reflect real market conditions. This was the case for logo prominence and color, for which three levels were considered, capturing the variety typically observed in luxury handbags available online.

By contrast, the price attribute included a greater number of levels. Given its central role in the study, particularly for the estimation of willingness to pay, a wider range of values was necessary to accurately capture the relationship between price and respondents' utility. These values were defined based on price ranges observed in the market, contributing to a more realistic experimental setting and more reliable parameter estimates (Louviere et al., 2000).

For all qualitative attributes, brief explanations were provided to ensure that respondents clearly understood the meaning of each level and to reduce potential ambiguity (Louviere et al., 2000). Additional clarification was included for the sustainability-related attributes, given their central role in the study, as eco-friendly alternatives in the luxury leather goods segment remain relatively unfamiliar to most consumers.

To support respondents during the choice tasks, information about the sustainable manufacturing process attribute remained accessible throughout the experiment. An interactive element was embedded in the choice scenarios, allowing participants to revisit the explanation at any point. By placing the cursor over the "Yes" label, a short description appeared clarifying that it referred to an eco-friendly manufacturing process with significant reductions in water, energy, and hazardous chemicals. A summary of the attributes and their corresponding levels is presented in **Table 2**, in the **Appendix**

The previously mentioned attribute-levels were then combined to form different alternatives according to a design matrix. A complete factorial design incorporating four attributes with two levels, two attributes with three levels, and one attribute with six levels would result in 864 possible combinations. However, presenting such a large number of alternatives to respondents would be excessively burdensome (Louviere et al., 2000). For this reason, a fractional subset of the complete design was used.

The selected design follows the logic of an orthogonal array, in which main attribute effects are estimated under the assumption that higher-order interaction effects are not significant (Louviere et al., 2000). The orthogonal array accommodating the combination of attribute levels in this study ($2^4 \times 3^2 \times 6^1$) was retrieved from Kuhfeld's (n.d.) catalogue of orthogonal arrays, resulting in a total of 36 product profiles.

In order to determine the number of profiles to be presented to respondents and select the appropriate design, it was necessary to define the number of choice sets. On the one hand, increasing the number of choice sets allows for the collection of more observations, potentially improving the robustness of the results. On the other hand, it also increases the cognitive effort required from respondents, which may negatively affect response quality and completion rates. As respondents become fatigued, they may rely on simplifying strategies or make more random choices, which can compromise the reliability of the data. This reflects the trade-off between statistical efficiency and task complexity commonly discussed in the literature (Louviere et al., 2000). Taking this aspect into consideration, it was considered appropriate to present respondents with 12 choice sets.

This design resulted in a total of 36 product profiles, organized into sets of three alternatives. The decision to include three alternatives per choice set reflects a balance between the amount of information collected and the cognitive burden placed on respondents. After obtaining the design matrix, the design codes were converted into the corresponding attribute levels, allowing for the construction of the final choice scenarios presented to participants (Louviere et al., 2000).

After constructing the choice scenarios, the next step was to verify the presence of dominated and dominant profiles, that is, alternatives in which all attributes take either the least or the most favorable levels, respectively. Such profiles should be avoided, as they are likely to be systematically chosen as the least and most preferred options, providing little additional information and potentially leading to biased parameter estimates (Louviere et al., 2000).

In the present study, no dominated or dominant alternatives were identified, and the design matrix was therefore retained without modification.

Lastly, each choice scenario included two questions: respondents were asked to identify the most and least preferred alternatives and to indicate their purchase intention, that is, whether

they would consider buying all, some, or none of the options presented. This structure allowed the collection of both preference rankings and purchase intention within each choice task.

The choice tasks described above constitute the core of the empirical analysis, generating the data used to estimate the model coefficients and infer consumers' preferences. By analysing these coefficients, it is possible to understand how young Portuguese female consumers, on average, value the different product attributes and how these influence their purchasing decisions.

The DCE further enables the estimation of the rate of substitution between price and the eco-friendly attributes, providing a measure of respondents' willingness to pay (WTP) for more sustainable products. Stated preference methods are particularly well suited for estimating such preference parameters, including marginal rates of substitution (McFadden, 1973).

Taken together, these estimates make it possible to examine the relationship between environmental concern and economic behaviour from multiple angles: whether respondents expressing stronger sustainability-related orientations derive greater utility from eco-friendly attributes, whether this translates into a higher willingness to pay for sustainable alternatives, and whether the attitudinal measures collected in the previous section are reflected in the behavioural outcomes observed in the DCE.

3.3 Data Collection

Data were collected through a single online survey, administered via Pureprofile, an online panel provider that enables targeted respondent recruitment based on predefined screening criteria. This mode of administration allowed for efficient access to the target population and a neutral, anonymous response environment.

The survey specifically targeted Portuguese female consumers aged between 18 and 29 years old, a segment particularly relevant to the affordable luxury handbag category and therefore more likely to be familiar with the attributes and trade-offs considered in the study. A target sample of 200 respondents was established, considered adequate for the estimation of reliable main effects in the discrete choice experiment.

Fieldwork took place between the 22nd of April and the 4th of May 2026.

3.4 Stated Choice Methods and Discrete Choice Modelling

Valuation methods in consumer research are fundamentally divided into two distinct paradigms: revealed preferences (RP) and stated preferences (SP). Revealed preference methods infer preferences from choices observed in actual market transactions, whereas stated preference methods rely on controlled experiments in which respondents evaluate hypothetical alternatives specifically designed by the researcher (Louviere et al., 2000).

Although RP data reflect actual behaviour, they present important limitations when the objective is to estimate the value of individual product attributes. In real markets, product characteristics are jointly determined by firms, making attributes such as price, quality and brand highly correlated. Consequently, it is often difficult to isolate the marginal contribution of each attribute to consumers' choices. Moreover, RP methods are inherently unable to evaluate products or attributes that do not yet exist in the marketplace (McFadden, 2001; Louviere et al., 2000).

The econometric foundations underlying modern stated choice analysis originate from McFadden's extension of classical consumer demand theory to discrete choice settings. Traditional microeconomic theory assumes that individuals behave as utility maximizers, selecting the alternative that provides the greatest utility among the available options. McFadden (1973, 2001) extended this principle to situations in which consumers choose among a finite set of mutually exclusive alternatives by integrating utility maximization with probabilistic decision theory and statistical estimation methods, establishing the theoretical foundations of modern discrete choice modelling.

Within this framework, consumer utility is not directly observable by the researcher. Random Utility Theory (RUT) therefore decomposes the utility associated with alternative j for individual n into two components: a systematic component, observable by the researcher and explained by the attributes included in the model, and a random component capturing all unobserved influences affecting choice. Accordingly, total utility is expressed as:

$$U_{jn} = V_{jn} + \varepsilon_{jn}$$

where V_{jn} denotes the systematic (observable) utility and ε_{jn} represents the stochastic component of utility (McFadden, 1973; Louviere et al., 2000).

Assuming a linear-in-parameters specification, the systematic component of utility can be expressed as:

$$V_{jn} = \sum_{k=1}^K \beta_k X_{jk}$$

where X_{jk} represents the observed attribute levels describing alternative j , and β_k corresponds to the preference parameters to be estimated.

Because the present experiment employs generic, unlabeled alternatives (Handbag A, B and C), the utility specification contains no Alternative-Specific Constants (ASCs), allowing utility to depend exclusively on the product attributes included in the experiment (Louviere et al., 2000). For this study, the systematic utility function is specified as:

$$V_{jn} = \beta_1 \text{Price} + \beta_2 \text{Material} + \beta_3 \text{Logo} + \beta_4 \text{Sustainable Manufacturing} \\ + \beta_5 \text{Limited Availability} + \beta_6 \text{Color} + \beta_7 \text{Hardware}$$

Under utility maximization, individual n chooses alternative j if its utility exceeds that of every other alternative in the choice set. This behavioural rule can be expressed as:

$$P_{jn} = \Pr(U_{jn} > U_{zn}) = \Pr(V_{jn} - V_{zn} > \varepsilon_{zn} - \varepsilon_{jn}), \quad \forall j \neq z \in c$$

Since the stochastic component of utility is unobservable, choice can only be modelled probabilistically. Assuming that the error terms are independently and identically distributed according to a Type I Extreme Value distribution, McFadden (1973) demonstrated that the resulting choice probabilities take the familiar Multinomial Logit (MNL) form:

$$P_{jn} = \frac{\exp(V_{jn})}{\sum_{i=1}^J \exp(V_{in})}$$

The unknown preference parameters are estimated through Maximum Likelihood Estimation (MLE), which identifies the parameter values that maximize the probability of observing the choices recorded in the sample (McFadden, 1973; Louviere et al., 2000).

Finally, once the preference parameters have been estimated, willingness to pay (WTP) for each attribute can be obtained as the marginal rate of substitution between the attribute and price:

$$WTP_k = -\frac{\beta_k}{\beta_{price}}$$

This measure represents the additional amount consumers are willing to pay for a one-unit improvement in a given attribute while holding utility constant (McFadden, 1973; Louviere et al., 2000).

While McFadden established the behavioural and econometric foundations of discrete choice modelling, subsequent developments focused on obtaining the data required to estimate these models in situations where revealed preference data were unavailable or insufficient. Building on Random Utility Theory, Louviere and colleagues developed stated choice experiments, in which respondents repeatedly choose between experimentally designed hypothetical alternatives whose attribute levels are systematically varied according to statistical design principles (Louviere et al., 2000). These experiments provide the preference data necessary to estimate discrete choice models and recover consumers' underlying utility functions.

The present study employs a multi-profile Best–Worst Scaling (BWS) elicitation format, originally introduced by Louviere and Woodworth (1990). Within each choice set, respondents identify both the most and the least preferred handbag among three hypothetical alternatives. Compared with collecting only the preferred alternative, this approach extracts additional preference information from each task while imposing only a limited increase in cognitive effort, thereby improving the statistical efficiency of the experiment (Louviere et al., 2015).

4. Results and Discussion

The current section begins with a descriptive analysis of the sample, followed by the presentation and interpretation of the results.

4.1 Sample Characteristics

Table 3, which can be consulted in the **Appendix**, presents the demographic composition of the sample used in this study ($N = 201$). Since the research focuses specifically on Generation Z consumers, respondents were distributed across three age sub-groups: 18–21 years old (17.4%), 22–25 years old (25.9%), and 26–29 years old (56.7%). Although the sample is predominantly concentrated in the older segment of Generation Z, the presence of all three age ranges contributes to a certain degree of heterogeneity within the sample, which may be relevant given the potential differences in purchasing power, educational attainment, and consumption behaviour across these sub-groups.

Regarding educational attainment, 40.3% of respondents reported having secondary education or below, while 30.9% held a bachelor's degree and 26.9% reported having a master's degree or higher. Of those reporting secondary education or below, 30.9% are aged between 18 and 21 years old, 17.3% between 22 and 25, and the remaining 51.9% between 26 and 29, suggesting that lower levels of educational attainment are not confined to the youngest cohort but extend across all age groups within the sample (see **Appendix, Table 4**). The implications of this distribution for consumer preferences and willingness to pay will be examined in the context of the discrete choice experiment results presented in the following sections.

Concerning household monthly income, the sample appears relatively distributed across the intermediate income categories, particularly between €1,000 and €2,999 per month. Although the proportion of respondents belonging to higher-income households is comparatively smaller, this does not necessarily represent a limitation for the study. Household monthly income, while a useful indicator of purchasing power at the household level, does not directly translate into the amount of disposable income that individual respondents are able and willing to mobilise for a specific purchase. Within a given income bracket, actual spending capacity varies considerably depending on individual preferences, financial commitments, and the degree of price sensitivity each consumer brings to different product categories. In this sense, the distribution observed

across income categories does not preclude meaningful heterogeneity in respondents' willingness to pay for the product attributes under analysis.

4.2 Attitudinal Analysis

As discussed in Section 3.2, the second section of the questionnaire aimed to assess the extent to which Gen Z consumers display a sustainability-oriented mindset and whether such orientation is sufficiently strong to potentially translate into actual economic commitment toward sustainable products. Drawing on the Theory of Planned Behavior (TPB), the analysis focused on four interconnected attitudinal dimensions, which are beliefs, affect, attitudes, and behavioural intention, as well as respondents' stated willingness to pay (WTP) for environmentally friendly products. According to the TPB framework, pro-environmental behaviour is expected to emerge through a progressive attitudinal process, whereby favourable sustainability-related beliefs contribute to positive attitudes and stronger behavioural intentions, ultimately increasing the likelihood of environmentally responsible behaviour (Ajzen, 1991). In the context of this study, this relationship is particularly relevant, as sustainability can only represent a viable value-creation strategy within the affordable luxury sector if positive environmental orientations extend beyond general agreement with sustainability principles and effectively translate into consumers' willingness to financially support sustainable alternatives.

To explore these attitudinal patterns, two complementary analyses were conducted. First, an analysis of the average Best–Worst (BWS) scores was performed in order to provide an overall descriptive view of the “average” Gen Z respondent regarding sustainability-related beliefs, attitudes, behavioural intentions, and willingness to pay. Second, an exploratory factor analysis was conducted to further investigate whether these observed dimensions reflected a broader underlying latent orientation toward environmental concern. Together, these analyses aimed to provide a more comprehensive understanding of how sustainability is perceived and valued within the sample.

The results obtained from the average BWS scores suggest that respondents generally hold moderately favourable views toward sustainability-related issues. Overall, respondents tended to align more closely with statements reflecting balanced and pragmatic sustainability positions, while displaying comparatively lower alignment with both environmentally dismissive

and highly demanding statements. Rather than revealing highly polarized attitudes, the findings appear to indicate a relatively moderate form of environmental concern, characterised by general sympathy toward sustainability-related issues but limited willingness to engage in more demanding forms of sustainable consumption behaviour.

Table 5, which can be consulted in the **Appendix**, presents the average Best–Worst (BWS) scores obtained for each statement across the five dimensions analysed. Scores range from -4 to $+4$, where positive values indicate greater relative alignment with a given statement, while negative values indicate comparatively lower alignment or rejection. Because all statements were evaluated using the same Best–Worst procedure and expressed on a common scale, the resulting scores are directly comparable across both statements and dimensions. The values reported correspond to the average score obtained for each statement across respondents. Consistent with the Best–Worst Scaling methodology, the sum of scores across all statements is, by construction, equal to zero.

Within the beliefs dimension, the statement “Environmental issues matter, but solving them requires more than just individual consumer choices” obtained the highest score within the dimension ($+0.84$), followed by the statement “The way we consume on a daily basis plays an important role in shaping environmental outcomes” ($+0.47$). By contrast, the statement suggesting that environmental issues are often overcomplicated and that individual choices make little difference obtained a comparatively negative score (-0.79). Taken together, these findings appear to suggest that respondents generally recognise the relevance of environmental issues and acknowledge some role for consumer behaviour, although without expressing particularly strong or radical environmental positions.

A similar pattern emerges in the affect dimension. Respondents displayed comparatively low alignment with the statement “I never bring up environmental topics when talking about products with friends or family” (-1.06), which may suggest that environmental issues are not perceived with indifference. However, the statement “I actively promote environmentally friendly products to everyone around me” also received a negative score (-0.39). Instead, respondents aligned more closely with the more moderate statement referring to occasionally discussing environmentally friendly products when the topic arises naturally ($+0.25$). These results appear to indicate the presence of environmental concern, although at a relatively moderate and non-activist level.

The attitudes dimension displayed the strongest pro-environmental orientation overall. The statement “Choosing eco-friendly products is usually the more responsible choice” obtained the highest score in the entire analysis (+0.94), while the more moderate statement “Eco-friendly products can be a good option, depending on the situation” also received a relatively positive evaluation (+0.58). These findings suggest that respondents generally perceive environmentally friendly products positively and tend to associate sustainability with responsible consumption behaviour. Nevertheless, the moderate magnitude of the scores also suggests that these orientations may not reflect particularly strong or unconditional commitments toward sustainable consumption.

This pattern becomes more visible when moving closer to actual purchasing behaviour. In the behavioural intention dimension, respondents aligned most closely with the statement “I sometimes choose the greener option when it is convenient and not much more expensive” (+0.49), while the more demanding statement “I always seek out the most environmentally responsible product available, regardless of convenience” received a negative score (−0.25). Similarly, respondents displayed relatively low alignment with the statement “I rarely think about whether a product is environmentally friendly when I shop” (−0.51). Taken together, these findings suggest that sustainability considerations may influence purchase intentions to some extent, although primarily under conditions of limited sacrifice in terms of price or convenience.

An even weaker orientation emerges in the willingness to pay dimension. Respondents displayed slightly positive alignment with the statement “I would not pay any extra for a product just because it is labelled environmentally friendly” (+0.09), while both statements involving payment of a price premium received negative scores. In particular, the statement “I am willing to pay significantly more for products that demonstrably reduce environmental harm” obtained one of the lowest scores in the analysis (−0.63), while even the statement referring to a small premium of up to 5% received a slightly negative evaluation (−0.17). These findings appear to suggest that although respondents generally express favourable sustainability-related beliefs and attitudes, such orientations may not be sufficiently strong to consistently translate into meaningful economic commitment toward environmentally friendly alternatives. This pattern is consistent with the broader literature suggesting that strong general environmental beliefs and attitudes do not always extend to more demanding behavioural intentions, such as a stated willingness to pay a price premium (Carrington et al., 2010; Auger et al., 2007). Whether this gap

between attitudes and stated willingness to pay further extends to actual purchasing behaviour is examined directly in the discrete choice experiment presented in **Section 4.3**.

While the average BWS scores presented previously provide a useful descriptive overview of the sustainability-related orientations expressed by the sample, such analysis mainly reflects the positioning of the “average” respondent within the Gen Z segment. Although this aggregated perspective already provides relevant insights regarding how sustainability is generally perceived and valued, it does not fully capture the potential heterogeneity underlying respondents’ attitudes and behavioural orientations. In particular, although the aggregated results suggest relatively moderate sustainability-related orientations at the sample level, respondents may nevertheless differ substantially in the way sustainability-related beliefs, emotional engagement, behavioural intentions, and willingness to pay are combined across individuals.

One of the main advantages of the Best–Worst Scaling methodology adopted in this study is precisely its ability to generate richer and more discriminating information than more traditional attitudinal measurement approaches, such as Likert scales. Consequently, the data collected make it possible to explore the internal structure of respondents’ sustainability-related orientations in greater depth and to investigate whether distinct attitudinal patterns appear to emerge within the sample. This issue is particularly relevant in the context of the present study. While the previous descriptive analysis suggests that the “average” Gen Z respondent may not display sufficiently strong sustainability-related orientations to consistently support substantial price premiums for environmentally friendly products, it remains possible that smaller subgroups of respondents displaying comparatively stronger environmental orientations and willingness to pay may nevertheless exist within the sample.

To further explore these underlying patterns, the original 15 statements were reorganised into five synthetic constructs corresponding to the dimensions analysed throughout the study: beliefs, affect, attitudes, behavioural intention, and willingness to pay. More specifically, for each dimension, a construct was created by subtracting the score associated with the low-orientation statement from the score associated with the high-orientation statement. As a result, higher values of each construct reflect stronger alignment with sustainability-oriented positions within the corresponding dimension, whereas lower values reflect comparatively weaker sustainability orientations.

These constructs subsequently served as the basis for an exploratory factor analysis. Factor analysis is a statistical method frequently employed in psychology and social sciences to reduce a large number of observed variables into a smaller and more manageable set of latent dimensions, commonly referred to as factors (Hair et al., 2019). In practical terms, the method simplifies complex data structures by identifying hidden patterns and shared variation across variables. Importantly, the factors obtained are orthogonal, meaning that they are uncorrelated with one another. Each factor corresponds to a linear combination of the original variables included in the analysis, while the factor loadings, one of the main outputs obtained from the analysis, represent the coefficients associated with each variable within these linear combinations (Hair et al., 2019). Consequently, each factor can be interpreted as a broader statistical summary of the original constructs, capturing underlying attitudinal patterns that may not be immediately observable when analysing the variables separately.

Within the context of the present study, the factor analysis aimed to examine whether the five constructs (beliefs, affect, attitudes, behavioural intention and stated wtp), could be summarised into a smaller number of broader dimensions, capturing different environmental orientations within the sample. More specifically, the analysis sought to identify whether distinct sustainability-related profiles appeared to emerge among female Gen Z respondents regarding environmentally friendly products.

The factor analysis resulted in the extraction of two uncorrelated factors. As presented in **Table 6**, in the **Appendix**, the first factor displayed positive loadings across all five constructs, particularly affect and behavioural intention. The pattern of uniformly positive loadings suggests the presence of a broader underlying dimension capturing the variance shared across the different sustainability-related constructs considered in the study. A graphical representation of the factor loadings is provided in **Figure 3**, in the **Appendix**.

Within the context of the present study, this common dimension appears to reflect a general environmental orientation. More specifically, respondents scoring higher on this factor tend to display stronger sustainability-related beliefs, greater emotional engagement with environmental issues, more favourable attitudes toward environmentally friendly products, stronger behavioural intentions, and, to a lesser extent, higher willingness to pay. The comparatively smaller loading associated with willingness to pay is consistent with the descriptive findings presented previously, suggesting that favourable environmental orientations do not

necessarily translate into equally strong willingness to financially support environmentally friendly alternatives.

By contrast, the second factor displayed a comparatively different internal structure. In this case, willingness to pay was positively associated with the factor, while beliefs presented a comparatively negative association. Although these relationships should be interpreted cautiously, the second factor appears to capture a distinct attitudinal configuration in which stated willingness to pay for environmentally friendly products does not necessarily coincide with comparatively stronger sustainability-related beliefs. In other words, the results seem to suggest that willingness to pay for sustainable alternatives may not always emerge from the same broader sustainability-oriented pattern captured by the first factor.

Taken together, these findings further reinforce the idea that environmental orientations within the sample are not entirely homogeneous. While some respondents appear to display more internally consistent beliefs, attitudes, behavioural intentions, and willingness to pay, others seem to combine these dimensions in more contrasting ways. This result is particularly relevant within the context of the present study, as it suggests that the moderate sustainability orientation observed for the “average” respondent may conceal the existence of smaller subsegments displaying distinct sustainability-related profiles and economic orientations toward environmentally friendly products.

These two factors carry distinct implications for the behavioural analysis that follows. Respondents displaying higher values on Factor 1, that is, those whose sustainability-related beliefs, affect, attitudes and behavioural intentions appear more strongly aligned, would be expected to assign greater utility to the eco-friendly product attributes included in the discrete choice experiment, namely sustainable vegan leather and eco-friendly manufacturing processes. Whether this stronger attitudinal orientation also translates into a lower sensitivity to price, or higher valuation of these attributes remains, however, an open empirical question, given the well-documented tendency for environmental attitudes to fail to fully materialise into economic trade-offs. By contrast, respondents displaying higher values on Factor 2, those whose stated willingness to pay appears comparatively elevated relative to their underlying environmental beliefs, present a more ambiguous behavioural prediction. While their declared openness to paying a premium for sustainable products might suggest a greater valuation of eco-friendly attributes, the disconnect between stated willingness to pay and broader sustainability

orientations raises the possibility that this declared predisposition may not be consistently reflected in actual choice behaviour.

To further explore these underlying differences across respondents, the values of each factor were calculated for every individual and subsequently used to segment the sample based on the positive or negative positioning across the two extracted factors, yielding four relatively balanced groups: $(f1 - f2-)$, $(f1 + f2-)$, $(f1 - f2+)$, and $(f1 + f2+)$, containing 50, 49, 57, and 45 respondents, respectively. Because both factors are, by construction, centered around zero and statistically uncorrelated from one another, this segmentation corresponds to the four quadrants formed by Factors 1 and 2. Importantly, rather than representing fixed consumer categories, these groups should be interpreted as simplified statistical representations of different attitudinal configurations identified within the sample.

Table 7 (see **Appendix**) presents the mean standardized values obtained for each construct within the four factor-based groups. Overall, the results suggest substantial variation between groups, particularly regarding the relationship between environmental beliefs and willingness to pay. This supports the idea that the moderate orientation observed at the aggregate level conceals different attitudinal configurations within the sample.

Respondents belonging to the $(f1 - f2-)$ group appear to display weaker environmental orientations across most dimensions. In particular, this group presents below-average values for affect, attitudes, behavioural intention and willingness to pay, with the latter displaying the lowest value observed among all four groups. Although beliefs remain marginally positive, the overall pattern appears to reflect limited engagement with environmental issues and weak predisposition toward environmentally oriented purchasing behaviour.

A different pattern emerges for respondents belonging to the $(f1 + f2-)$ group. This segment presents above-average values for beliefs, affect, attitudes, and behavioural intention, suggesting comparatively favourable environmental orientations across most dimensions. Nevertheless, willingness to pay remains close to the sample average and slightly negative. This pattern suggests that positive environmental orientations are not always accompanied by a corresponding willingness to incur higher financial costs.

Respondents belonging to the $(f1 - f2+)$ group display an almost opposite configuration. While beliefs, affect, attitudes, and behavioural intention remain below the sample average, willingness to pay is slightly positive. These findings suggest the presence of respondents whose

willingness to financially support environmentally friendly products does not appear to stem from broader pro-environmental orientations across the remaining dimensions. This interpretation is also consistent with the distinct structure previously associated with the second factor.

Finally, the (f1+ f2+) group appears to display the strongest overall environmental profile within the sample. Respondents in this segment present comparatively high values for affect, behavioural intention, and especially willingness to pay, which displays the highest value observed across all four groups. While beliefs remain close to the sample average and attitudes broadly aligned with the overall mean, the overall configuration seems to suggest the presence of respondents combining stronger engagement with environmental issues and greater willingness to financially support environmentally friendly alternatives.

Overall, the differences observed across the four groups suggest that respondents may react differently when confronted with the eco-friendly product attributes included in the discrete choice experiment, namely sustainable vegan leather and eco-friendly manufacturing processes. Given the particularly low stated willingness to pay observed for the (f1– f2–) group, respondents belonging to this segment would be expected to assign lower utility to these eco-friendly attributes and display limited willingness to accept the price premiums associated with environmentally friendly alternatives.

By contrast, although respondents in the (f1+ f2–) group display comparatively favourable environmental beliefs and attitudes, their willingness to pay remains limited. As such, while eco-friendly product attributes may still generate positive utility within this segment, the associated willingness to pay would be expected to remain relatively modest within the simulated purchase context.

A different pattern emerges once again for the (f1– f2+) group. Despite displaying weaker environmental orientations across most dimensions, respondents in this segment still appear comparatively more willing to financially support environmentally friendly products. Consequently, this group may still assign positive utility to eco-friendly product attributes and reveal moderate willingness to pay premiums associated with sustainable vegan leather and eco-friendly manufacturing processes.

Finally, the (f1+ f2+) group appears to represent the segment displaying the strongest alignment between environmental orientations and willingness to pay. Respondents within this

group would therefore be expected to assign higher utility to eco-friendly product attributes and reveal greater willingness to pay for sustainable vegan leather and eco-friendly manufacturing processes. In this sense, this segment may potentially represent the subgroup displaying the greatest market potential for sustainability-oriented innovation strategies within the affordable luxury sector.

To further examine whether the attitudinal configurations identified through the factor analysis appear to be associated with respondents' sociodemographic characteristics, a linear regression of each factor on the available demographic variables was conducted. The results suggest that Factor 1 displays statistically significant associations with both educational attainment and household income. Regarding education, respondents holding a master's degree or higher present comparatively higher Factor 1 values ($\beta = 0.327$, $p = 0.026$), which appears consistent with the broader literature suggesting that higher levels of education tend to be associated with stronger environmental orientations. Regarding household income, respondents belonging to the €1,000–€1,999 and €4,000 or more income brackets also display comparatively higher Factor 1 values, although the non-linear nature of this pattern warrants caution in its interpretation. By contrast, Factor 2 does not display any statistically significant association with the demographic variables considered, suggesting that the attitudinal paradox captured by this factor does not appear to be systematically explained by age, educational attainment, or household income. A visual representation of how respondents are distributed across Factor 1 and Factor 2, disaggregated by educational attainment, is provided in **Figure 4** in the **Appendix**.

Against this background, the following section presents the results obtained from the discrete choice experiment, examining the extent to which the attitudinal orientations identified in the preceding analysis appear to be reflected in respondents' actual choice behaviour. The analysis is structured as follows. First, a baseline multinomial logit model is estimated using the full sample, providing an aggregate picture of how Portuguese female Generation Z consumers value the different product attributes when choosing between affordable luxury handbags. Subsequently, the role of environmental concern is examined more closely through interaction effects based on Factor 1, which appears to capture a broader sustainability-oriented orientation encompassing beliefs, attitudes, affect, and behavioural intention. This is complemented by an analysis of Factor 2, which seems to reflect a distinct attitudinal configuration in which stated willingness to pay does not necessarily coincide with comparatively stronger environmental

beliefs. Finally, the analysis is extended to the four attitudinal groups identified in the preceding section, allowing for a more granular examination of how different sustainability-related profiles may translate into different product attribute preferences and willingness to pay estimates within the simulated purchase context.

4.3 Discrete Choice Experiment Results

This section presents and interprets the results obtained from the discrete choice experiment, structured as follows.

Section 4.3.1 presents the results for the full sample of 201 respondents, providing an aggregate picture of how Portuguese female Generation Z consumers value, on average, the different product attributes when choosing between affordable luxury handbags. **Sections 4.3.2** and **4.3.3** examine whether consumers displaying different environmental orientations respond differently to the product attributes. **Section 4.3.2** focuses on Factor 1, estimating interaction effects that capture the additional contribution of a stronger general environmental orientation (F1+) to the valuation of each attribute, first for the broader F1+ group and subsequently for the top quartile of Factor 1. **Section 4.3.3** applies the same approach to Factor 2, examining whether respondents whose stated willingness to pay is not grounded in comparatively stronger environmental beliefs (F2+) display a systematically different pattern of attribute valuation. In both sections, the interpretation focuses on the interaction effects, that is, on how each attribute's estimated effect changes relative to the reference model. **Section 4.3.4** presents two additional analyses to validate the preceding findings, together with joint statistical tests assessing their overall significance. Finally, **Section 4.3.5** extends the analysis to the four attitudinal groups identified in **Section 4.2**, with a separate model estimated independently for each group.

All models were estimated using McFadden's conditional logit model, as described in **Section 3.4**. Willingness to pay estimates were derived by dividing the coefficient of each attribute by the price coefficient of the overall model (-0.00170), used as a common denominator across all specifications. As becomes apparent in the results that follow, the price coefficient remains broadly stable across specifications, indicating no meaningful change in price sensitivity from model to model, which supports the use of a common denominator and ensures

that differences in willingness to pay across specifications reflect genuine differences in consumer preferences. Full model estimates for all specifications, including the robustness checks presented in **Section 4.3.4**, are presented in **Table 8** in the **Appendix**. A corresponding table of willingness to pay estimates is presented in **Table 9** in the **Appendix**. **Figure 6** (see **Appendix**) provides a comparative visual overview of the estimated coefficients across the overall model and the three interaction effect specifications, serving as a reference guide for the interpretation that follows.

4.3.1 Overall Model

The overall multinomial logit model was estimated using the full sample of 201 respondents, generating a total of 19,296 observations, reflecting the best-worst scaling structure in which each respondent evaluated 12 choice sets, each containing four alternatives. The estimated coefficients and the corresponding willingness to pay estimates are presented in the “All” column of the aforementioned **Tables 8** and **9**, respectively. **Figure 6** (see **Appendix**) provides a graphical overview of the willingness to pay estimates and corresponding 95% confidence intervals for all product attributes, offering a more directly interpretable summary of the results in monetary terms.

The results reveal a clear and expected negative effect of price on the probability of choice ($\beta = -0.0017$, $p < 0.001$), confirming that higher prices reduce the likelihood of a handbag being selected. This finding is consistent with standard consumer theory and provides a meaningful denominator for the subsequent willingness to pay calculations.

Regarding the sustainability-related attributes, the findings present a nuanced picture. The eco-friendly manufacturing process attribute is positively valued and statistically significant ($\beta = +0.193$, $p < 0.001$), with a corresponding willingness to pay of €113. This suggests that, on average, Portuguese female Generation Z consumers are willing to pay a meaningful premium for handbags produced through more environmentally responsible manufacturing practices. By contrast, the sustainable vegan leather attribute does not reach statistical significance at the aggregate level ($\beta = -0.066$, $p = 0.064$), with a corresponding willingness to pay estimate of -€39. This finding indicates that, when evaluated across the full sample, the replacement of

traditional animal leather with a mycelium-based alternative does not generate a statistically significant positive response, and may even be associated with a modest negative valuation.

Beyond the sustainability-related attributes, several additional findings merit attention. The outside option coefficient is negative and highly significant ($\beta = -0.565$, $p < 0.001$), indicating that respondents generally prefer to select one of the available handbag alternatives rather than opt out of purchasing altogether. The visible logo attribute is associated with a significant negative coefficient ($\beta = -0.238$, $p < 0.001$) and a willingness to pay of $-\text{€}140$, indicating that respondents display, on average, a clear preference against conspicuous branding, consistent with the generalised trend, among young consumers, of inconspicuous consumption documented in the literature and mentioned in **Section 2**. Gold hardware is positively valued ($\beta = +0.128$, $p < 0.001$; $\text{WTP} = +\text{€}75$), while both camel ($\text{WTP} = -\text{€}227$) and beige ($\text{WTP} = -\text{€}118$) colours are associated with significant negative valuations relative to black, suggesting a strong preference for the latter within this sample. The discreet logo and limited availability attributes do not reach statistical significance, indicating that these product features do not systematically influence choice behaviour at the aggregate level.

Taken together, these results suggest that Portuguese female Generation Z consumers are, on average, receptive to sustainability at the process level but do not yet assign significant positive value to material-level innovation in the form of vegan leather. Whether this aggregate picture conceals meaningful heterogeneity across consumers with different environmental orientations is the question addressed in the following sections.

4.3.2 The Role of Environmental Concern: Evidence from Factor 1

— 4.3.2.1 Factor 1 Positive Respondents (F1+)

This specification tests whether respondents displaying a stronger general environmental orientation, as captured by Factor 1, value the eco-friendly product attributes differently from the overall model.

The results show significant positive interaction effects for both sustainability-related attributes. Sustainable vegan leather displays a positive and statistically significant interaction effect ($+0.256$, $p < 0.001$), indicating that respondents with higher Factor 1 values assign meaningfully greater value to this attribute, in clear contrast with its non-significant valuation in

the overall model. The eco-friendly manufacturing process similarly displays a significant positive interaction effect (+0.221, $p = 0.002$), suggesting that stronger environmental orientation is associated with a greater premium for process-level sustainability as well. Among the remaining attributes, the outside option (+0.541, $p = 0.005$) also displays a significant interaction effect, while logo prominence, colour, limited availability, and gold hardware do not differ significantly from the overall model. The price interaction remains negligible in magnitude, consistent with the broader pattern of stability discussed above.

Taken together, these results suggest that a stronger general environmental orientation is associated with a meaningfully greater valuation of both eco-friendly attributes, pointing to the existence of a sustainability-oriented consumer segment within the sample whose preferences diverge substantially from the average.

— 4.3.2.2 Top Quartile of Factor 1

Restricting the analysis to the top quartile of Factor 1 isolates the most environmentally oriented respondents in the sample and allows for a more direct test of whether the effects identified for the broader F1+ group intensify at the upper end of the distribution.

The results confirm this pattern. Both sustainability-related attributes display significant positive interaction effects: sustainable vegan leather (+0.265, $p = 0.001$) and the eco-friendly manufacturing process (+0.330, $p < 0.001$). Notably, both effects are larger in magnitude than those observed for the broader F1+ group, suggesting that the valuation of sustainable attributes intensifies specifically among the most environmentally oriented respondents. The camel colour also displays a significant positive interaction effect (+0.232, $p = 0.016$), while logo prominence, limited availability, beige, and gold hardware do not differ significantly from the overall model. The price interaction term is statistically significant ($p = 0.043$) but remains negligible in magnitude, consistent with the broader pattern of price stability discussed above.

Taken together, these findings reinforce the pattern identified in the preceding subsection: stronger environmental orientation is associated with a greater valuation of both eco-friendly attributes, and this association becomes more pronounced as environmental orientation becomes more extreme.

4.3.3 The Attitude-Behavior Gap: Evidence from Factor 2

A parallel question arises for Factor 2, which captures a more paradoxical attitudinal configuration. As discussed in **Section 4.2**, Factor 2 reflects the divergence between two specific attitudinal dimensions: stated willingness to pay and environmental beliefs. The factor loadings associated with these two constructs are of similar magnitude but opposite in sign (0.212 and -0.199 , respectively), meaning that respondents scoring high on Factor 2 tend to report a comparatively elevated stated willingness to pay while simultaneously displaying comparatively weaker environmental beliefs. It is this specific divergence, rather than a general level of environmental concern, that Factor 2 captures.

The results reveal a striking pattern. Sustainable vegan leather displays a negative and statistically significant interaction effect (-0.276 , $p < 0.001$), indicating that respondents with higher Factor 2 values, that is, those whose stated willingness to pay exceeds what their underlying environmental beliefs would predict, penalise this attribute more strongly than the reference group. The eco-friendly manufacturing process, by contrast, does not display a significant interaction effect (-0.076 , $p = 0.295$), suggesting that process-level sustainability generates no meaningful differential response among these respondents. Among the remaining attributes, the outside option ($+0.411$, $p = 0.033$), the visible logo ($+0.233$, $p = 0.017$), and the camel colour ($+0.280$, $p = 0.001$) show significant interaction effects, while logo prominence beyond visible, limited availability, beige, and gold hardware do not differ significantly from the overall model.

Taken together, these results reinforce the disconnect between Factor 2's attitudinal profile and respondents' actual choices. The finding that a higher stated willingness to pay, when not grounded in comparatively stronger environmental beliefs, does not translate into a positive valuation of material-level sustainable innovation in practice is noteworthy. It is worth emphasising that, unlike traditional Likert-scale surveys where social desirability pressures may lead respondents to overstate pro-environmental orientations, the best-worst scaling approach adopted in this study was specifically designed to mitigate such biases by forcing trade-offs between alternatives. The pattern observed here therefore reflects a genuine attitudinal configuration: when willingness to pay diverges from underlying beliefs, this divergence has a

specific and measurable effect on actual choice behaviour, with respondents in this group displaying a systematically different, and less sustainability-oriented, pattern of attribute valuation.

4.3.4 Robustness Checks and Statistical Tests

The first additional analysis estimates the Factor 1 and Factor 2 interaction effects simultaneously in a single model, allowing each factor to control for the other. This addresses a natural concern arising from the separate analyses in **Sections 4.3.2** and **4.3.3**: since each factor was estimated independently, the interaction effects identified for Factor 1 could potentially capture some influence of Factor 2 that was not accounted for, and vice versa. The results remain broadly consistent with those obtained from the separate analyses, confirming that the effects identified in the preceding sections are genuine and not an artefact of omitting the other factor. Full results are presented in **Table 8** in the **Appendix** (column "F1+F2").

The second analysis additionally estimates the second order effects, that is, whether respondents who are simultaneously F1+ and F2+ display any additional effect on attribute valuation beyond the simple combination of the two separate contributions. The results indicate that this is not the case: with the exception of the discreet logo attribute (+0.396, $p = 0.041$), no additional effects are observed for any of the remaining attributes, including both sustainability-related dimensions, as detailed in **Table 8** (column "F1+F2+F1×F2").

To formally assess the statistical significance of these findings, joint tests were conducted for each block of interaction coefficients. The results confirm that the Factor 1 and Factor 2 interaction effects are each jointly significant ($\chi^2(10) = 29.69$, $p = 0.001$ and $\chi^2(10) = 56.10$, $p < 0.001$, respectively), validating the findings from the separate analyses. By contrast, the second order effects are not jointly significant ($\chi^2(10) = 14.46$, $p = 0.153$), confirming that the combined effect of Factor 1 and Factor 2 on product preferences is well approximated by the sum of their separate contributions, with no meaningful additional interaction between them. The full statistical test outputs are presented in **Table 10** in the **Appendix**.

Taken together, these results confirm that Factor 1 and Factor 2 are two genuinely distinct and independent dimensions of environmental orientation, each contributing separately and robustly to the heterogeneity in product preferences observed in this sample.

4.3.5 Consumer Segmentation: Insights from the Four Attitudinal Groups

The analyses presented in the preceding sections examined the role of Factor 1 and Factor 2 separately, providing initial evidence on how different dimensions of sustainability-related orientation shape product preferences and willingness to pay in the simulated purchase context. To obtain a more complete picture, this section extends the analysis to the four attitudinal groups identified through the factor-based segmentation described in **Section 4.2**, each of which represents a distinct combination of the two factors. The estimated coefficients and willingness to pay estimates for each group are presented in **Tables 11** and **12** in the **Appendix**, respectively.

Consistent with the pattern observed throughout this section, the price coefficient remains broadly stable across the four group models, indicating no meaningful differences in price sensitivity across segments. In line with the approach adopted throughout this section, and given that differences in the price coefficient across groups do not reach statistical significance, the price coefficient of the overall model (-0.00170) is used as a common denominator for all willingness to pay calculations presented in this section.

Respondents belonging to the (f1 – f2–) group display a pattern that is broadly consistent with the attitudinal profile identified in **Section 4.2**. This segment presented the most negative stated willingness to pay among all four groups, alongside below-average values across virtually all sustainability-related dimensions, suggesting limited engagement with environmental issues and a weak predisposition toward eco-friendly consumption. In the simulated purchase context, this profile appears to be largely confirmed: neither sustainable vegan leather ($-\text{€}36$, $p = 0.403$) nor the eco-friendly manufacturing process ($+\text{€}83$, $p = 0.055$) reaches statistical significance, suggesting that sustainability considerations do not systematically influence the purchasing decisions of this segment. This segment also displays the strongest aversion to the outside option ($-\text{€}712$, $p < 0.001$) and the most pronounced penalisation of the camel colour ($-\text{€}388$, $p < 0.001$).

A markedly different pattern emerges for respondents belonging to the (f1+ f2–) group. Despite displaying a declared willingness to pay that remained close to the sample average and slightly negative in the attitudinal analysis, this segment reveals a substantially greater valuation of both eco-friendly attributes in the discrete choice experiment. The willingness to pay for sustainable vegan leather reaches $+\text{€}127$ ($p = 0.003$) and for the eco-friendly manufacturing

process +€194 ($p < 0.001$), the highest estimates observed for both attributes across all four groups. This finding is particularly noteworthy, as it suggests that the strength of the underlying environmental orientation captured by Factor 1 may exert a more powerful influence on actual choice behaviour than the declared willingness to pay would have anticipated. In this sense, the results appear to reveal an inverse form of the attitude–behaviour gap for this segment: rather than overstating their economic commitment to sustainability, these respondents appear to understate it.

Respondents belonging to the (f1– f2+) group present perhaps the most counterintuitive findings of the entire analysis. Recalling their attitudinal profile, this segment was characterised by below-average values for environmental beliefs, affect, attitudes, and behavioural intention, combined with a comparatively elevated stated willingness to pay. Based on this profile, one might have anticipated at least a moderate positive valuation of the eco-friendly attributes in the simulated purchase context. The results, however, tell a very different story. Sustainable vegan leather is significantly penalised by this group, with a willingness to pay estimate of –€173 ($p < 0.001$), the most negative value observed across all four segments. The eco-friendly manufacturing process, by contrast, does not reach statistical significance (+€30, $p = 0.438$), suggesting that process-level sustainability generates no meaningful response among these respondents. These findings mirror those observed for Factor 2 positive respondents in **Section 4.3.3** and are consistent with the broader pattern identified in that section: when willingness to pay diverges from underlying environmental beliefs, this divergence has a specific and measurable effect on actual choice behaviour.

Finally, the (f1+ f2+) group, which displayed the highest stated willingness to pay of all four segments in the attitudinal analysis and was therefore initially expected to display the greatest potential for sustainable attribute valuation, displays a willingness to pay for the eco-friendly manufacturing process of +€173 ($p < 0.001$), the second highest estimate for this attribute across all four segments. However, sustainable vegan leather does not reach statistical significance for this group (–€48, $p = 0.281$), suggesting that even among respondents combining strong environmental orientation with a comparatively elevated declared willingness to pay, the replacement of traditional animal leather with a mycelium-based alternative does not generate a significant positive response. This result is consistent with the broader finding from the overall model and the Factor 1 analysis, and may reflect the particular sensitivity of luxury

consumers to material-level changes in product composition, even when their sustainability-related orientations are comparatively strong.

Taken together, the findings from the four-group analysis reveal a nuanced and heterogeneous picture of how sustainability-related attitudinal profiles translate into product preferences and willingness to pay in the affordable luxury handbag context. Across all segments, the eco-friendly manufacturing process emerges as the more consistently valued sustainable attribute, generating the largest and most significant willingness to pay estimates among the (f1+ f2-) and (f1+ f2+) groups, both of which display a positive orientation on Factor 1. Sustainable vegan leather, by contrast, presents a more divided response: positively valued only by the (f1+ f2-) group, strongly penalised by the (f1- f2+) group, and not reaching statistical significance for the remaining two segments. These patterns collectively suggest that process-level sustainability innovation may represent a more immediately viable pathway for luxury brands seeking to integrate sustainability into their product offering, while material-level innovation involving the replacement of traditional leather remains a more contested proposition, even among environmentally oriented consumer segments.

5. Final Considerations

In the following sections, the managerial implications that can be retrieved from the results obtained are presented, followed by the main limitations of the study and suggestions for further research.

5.1 Managerial Implications

The present dissertation contributes to the growing body of literature on sustainable luxury consumption, while also offering actionable insights for brands operating in the affordable luxury segment. Two sets of recommendations emerge from the findings, each reflecting a different level of strategic ambition.

A first, more straightforward recommendation follows directly from the aggregate findings. Portuguese female Generation Z consumers are readily identifiable through observable characteristics such as age and gender, both at the point of sale and through digital data, making it possible to design dedicated strategies targeted at this segment. Brands should adapt their product configurations to reflect the attributes this segment values most and is willing to pay a premium for. In terms of sustainability, the findings are unambiguous: the eco-friendly manufacturing process generates a significant and meaningful premium of €113 among the average consumer in this segment, making investment in more environmentally responsible production processes commercially compelling. Beyond sustainability, the results also point to clear preferences regarding the remaining product attributes: black emerges as the strongly preferred colour, gold hardware is positively valued, and visible branding is significantly penalised. Designing products around this configuration would allow brands to capture the willingness to pay premium associated with each of these dimensions simultaneously. Ensuring that consumers are aware of the brand's sustainability efforts is equally important: shop assistants should be trained to proactively communicate these commitments at the point of sale, and digital channels should be used to reinforce this message consistently, fostering engagement and contributing to the consumer's perception that their purchase is making a positive impact.

If brands wish to go further, the study provides the basis for a more sophisticated strategy capable of extracting a greater share of consumer surplus. The four-group segmentation reveals meaningful heterogeneity within the segment, identifying in particular two consumer

profiles of strategic relevance: a group of environmental enthusiasts ($f1+f2-$), willing to pay a significant premium for both sustainable vegan leather (+€127) and the eco-friendly manufacturing process (+€194); and a group of environmentally indifferent consumers ($f1-f2-$), for whom neither sustainable attribute generates a significant premium. Since these groups are defined by latent, unobservable variables, brands cannot identify them directly. The question, then, is how to capture the additional surplus of those willing to pay significantly more, without being able to observe who they are. The answer lies in the strategy of second-degree price discrimination: rather than charging different prices to different consumers directly, firms design distinct product configurations that lead consumers to reveal their type through their own choices. Applied to the present context, two configurations could be offered. A first, lower-priced configuration (Bag 1) combining traditional animal leather with conventional manufacturing processes, designed to appeal to environmentally indifferent consumers. A second, higher-priced configuration (Bag 2) combining sustainable vegan leather with an eco-friendly manufacturing process, designed to capture the substantially higher willingness to pay of the most environmentally oriented consumers. Crucially, both configurations would share the non-sustainability attributes most valued by the average consumer in this segment, namely black, no branding, and gold hardware, ensuring that the premium associated with each of these dimensions is captured across both offerings. In this way, each consumer self-selects into the configuration that best reflects their preferences, allowing brands to extract the maximum possible surplus from each consumer type without needing to identify them in advance.

Taken together, these two recommendations illustrate how the empirical findings of this study can be translated into concrete value-creating strategies for brands operating in the affordable luxury segment, from straightforward product and communication decisions grounded in the preferences of the average consumer, to more sophisticated pricing strategies capable of extracting a greater share of consumer surplus from a heterogeneous market.

5.2 Limitations and Further Research

This study has a few limitations that should be acknowledged and that point to avenues for future research.

First, the study was conducted exclusively in the Portuguese market, meaning that the findings cannot be directly extrapolated to other countries or generalised to the adult female Generation Z segment as a whole. Replicating this study in markets where the luxury sector is more established, such as the United States or China, would enable a meaningful cross-country comparison and provide a clearer picture of how environmental concern and willingness to pay for sustainable attributes vary across different cultural and economic contexts. Second, the analysis was restricted to female consumers; extending this research to male Generation Z consumers within the same product category (Fashion and Leather Goods) would allow for a direct comparison of environmental concern levels across genders and of how these translate into willingness to pay.

From a methodological standpoint, an additional limitation should be noted. Although the sample size of 201 respondents was adequate for the estimation of reliable main effects, a larger sample would have allowed for more precise estimates and greater statistical power, particularly in the subgroup analyses where the number of observations is more limited.

6. Conclusion

This dissertation set out to examine whether and to what extent environmental concern among Portuguese female Generation Z consumers translates into genuine willingness to pay for sustainable product attributes in the context of affordable luxury handbags. The findings offer a nuanced but ultimately encouraging picture.

The attitudinal analysis revealed only moderate environmental concern on average, alongside a comparatively weak stated willingness to pay for sustainable products, a result that, taken at face value, might suggest limited commercial potential for sustainable innovation within this segment. The factor analysis, however, uncovered meaningful heterogeneity beneath this aggregate picture, identifying distinct attitudinal profiles and, in particular, one subsegment combining high environmental concern with an elevated stated willingness to pay ($f1+f2+$), which appeared to hold particular promise.

The discrete choice experiment told a more complex and, in many respects, more encouraging story. Despite their modest stated environmental concern, the average Portuguese female Generation Z consumer assigns a significant premium of €113 to the eco-friendly manufacturing process in actual choice behavior — a finding that runs counter to the attitude–behavior gap widely documented in the literature, and underscores the importance of using revealed preference methods rather than relying on stated intentions alone. Sustainable vegan leather, by contrast, does not generate a significant premium at the aggregate level, confirming that material-level innovation remains a more contested proposition within this segment. Among more environmentally oriented consumers, the premiums for both sustainable attributes increase substantially, with one group in particular ($f1+f2-$), whose declared willingness to pay was close to zero, displaying willingness to pay estimates of +€127 for material and +€194 for process, the highest observed across all segments. This inverse of the attitude–behavior gap is among the most striking findings of the study, and highlights the limitations of relying on stated preferences as a proxy for actual economic commitment.

From a managerial standpoint, the findings support two complementary recommendations. First, and most directly, brands should invest in eco-friendly manufacturing

processes: the premium this generates among the average consumer in this segment is substantial and commercially compelling, and can be further amplified through targeted in-store and digital communication. Second, for brands willing to go further, the study provides the empirical foundation for a second-degree price discrimination strategy, designing distinct product configurations that allow consumers to self-select according to their environmental orientation, thereby capturing the additional surplus of the most environmentally committed consumers without needing to identify them in advance.

Future research could extend this framework to other markets, consumer segments, and product categories within the luxury sector, to assess the broader applicability of these findings and track how the willingness to pay for sustainable attributes evolves as Generation Z's purchasing power grows and environmental awareness deepens.

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Appendix

Table 1- Statements Used in the Attitudinal Section

A. Cognition (Beliefs)

Level	Statement
Low	People tend to overcomplicate environmental issues — in the end, individual choices don't make much difference.
Moderate	Environmental issues matter, but solving them requires more than just individual consumer choices.
High	The way we consume on a daily basis plays an important role in shaping environmental outcomes.

B. Affect (Feelings)

Level	Statement
Low	I never bring up environmental topics when talking about products with friends or family.
Moderate	I occasionally mention green products to others if the topic comes up naturally.
High	I actively promote environmentally friendly products to everyone around me.

C. Evaluation (Attitudes)

Level	Statement
Low	Eco-friendly products often seem more like a trend than a real improvement.
Moderate	Eco-friendly products can be a good option, depending on the situation.
High	Choosing eco-friendly products is usually the more responsible choice.

D. Behavioral Intention

Level	Statement
Low	I rarely think about whether a product is environmentally friendly when I shop.
Moderate	I sometimes choose the greener option when it is convenient and not much more expensive.
High	I always seek out the most environmentally responsible product available, regardless of convenience.

E. Willingness to Pay (WTP)

Level	Statement
Low	I would not pay any extra for a product just because it is labelled environmentally friendly.
Moderate	I would pay a small premium (up to 5%) for a certified green product.
High	I am willing to pay significantly more for products that demonstrably reduce environmental harm.

Note: Statements were designed to capture increasing levels of environmental orientation within each dimension, based on their alignment with pro-environmental beliefs, attitudes, and behaviors. Each statement was included multiple times across different choice sets following a balanced design.

Most must be different from Least

	Agree with Most	Agree with Least
I occasionally mention green products to others if the topic comes up naturally.	☐	☐
I actively promote environmentally friendly products to everyone around me.	☐	☐
I sometimes choose the greener option when it is convenient and not much more expensive.	☐	☐

Figure 1 - Example of a choice set used in the attitudinal section

We are interested in understanding how consumers like you make choices when considering an investment in a luxury handbag.
Please carefully review the characteristics of each luxury handbag presented below and answer the 3 questions at the bottom of the screen.





Attribute	Handbag A	Handbag B	Handbag C
Material	Leather	Leather	Sustainable vegan leather
Logo	Discreet logo	Discreet logo	Visible logo
Sustainable manufacturing process	Yes	Yes	No
Limited availability	Yes	No	No
Color	Camel	Black	Beige
Hardware	Gold	Silver	Gold
Price	350 EUR	590 EUR	430 EUR

• Please tell us which handbag you favor the **most** and which handbag you favor the **least**

	Handbag A	Handbag B	Handbag C
Prefer the MOST	☐	☐	☐
Prefer the LEAST	☐	☐	☐

• Please choose the option that best characterizes your potential interest.

	Please choose 1 option
I would consider purchasing any of the above handbags.	☐
I would consider purchasing some of the above handbags but not others.	☐
I would not consider purchasing any of the above handbags. I would keep on looking.	☐

Figure 2 - *Example of a choice set used in the DCE*

Table 2 — Attributes and levels used in the discrete choice experiment

Attribute	Levels
Material	Leather; Sustainable vegan leather
Logo	No logo; Discreet logo; Visible logo
Sustainable manufacturing process	Yes; No
Limited availability	Yes; No
Color	Camel; Beige; Black
Hardware	Gold; Silver
Price	€350; €430; €510; €590; €670; €750

Table 3 - Sample demographic characteristics (N=201)

Demographic characteristics	Absolute frequency (N)	Relative frequency (%)
Age		
18-21	35	17.4
22-25	52	25.9
26-29	114	56.7
Education		
Secondary education or below	81	40.3
Bachelor's degree	62	30.9
Master's degree or higher	54	26.9
Prefer not to say	4	2.0
Income		
Less than €1,000	29	14.4
€1,000 – €1,999	53	26.4
€2,000 – €2,999	56	27.9
€3,000 – €3,999	23	11.4
€4,000 or more	25	12.4
Prefer not to say	15	7.5

Table 4- Educational attainment by age group (N=201)

	18-21	22-25	26-29	Total
Secondary education or below	25 (30.9%)	14 (17.3%)	42 (51.9%)	81
Bachelor's degree	6	17	39	62
Master's degree or higher	3	20	31	54
Prefer not to say	1	1	2	4
Total	35	52	114	201

***Note:** Percentages in parentheses represent the distribution of each educational level across age groups.*

Table 5 – Average Best-Worst scores across environmental attitude dimensions

Dimension	Level	Statement	Average BWS Score
Attitudes	High	Choosing eco-friendly products is usually the more responsible choice.	+0.94
Beliefs	Moderate	Environmental issues matter, but solving them requires more than just individual consumer choices.	+0.84
Attitudes	Moderate	Eco-friendly products can be a good option, depending on the situation.	+0.58
Intent	Moderate	I sometimes choose the greener option when it is convenient and not much more expensive.	+0.49
Beliefs	High	The way we consume on a daily basis plays an important role in shaping environmental outcomes.	+0.47
Affect	Moderate	I occasionally mention green products to others if the topic comes up naturally.	+0.25
Attitudes	Low	Eco-friendly products often seem more like a trend than a real improvement.	+0.14
WTP	Low	I would not pay any extra for a product just because it is labelled environmentally friendly.	+0.09
WTP	Moderate	I would pay a small premium (up to 5%) for a certified green product.	-0.17
Intent	High	I always seek out the most environmentally responsible product available, regardless of convenience.	-0.25
Affect	High	I actively promote environmentally friendly products to everyone around me.	-0.39
Intent	Low	I rarely think about whether a product is environmentally friendly when I shop.	-0.51
WTP	High	I am willing to pay significantly more for products that demonstrably reduce environmental harm.	-0.63
Beliefs	Low	People tend to overcomplicate environmental issues — in the end, individual choices don't make much difference.	-0.79
Affect	Low	I never bring up environmental topics when talking about products with friends or family.	-1.06

Note: Scores range from -4 to $+4$. Positive values indicate greater alignment with the statement, whereas negative values indicate rejection.

Table 6 – Factor loadings for the two extracted factors

Construct	Factor 1	Factor 2
Beliefs	0.455	-0.199
Affect	0.563	0.026
Attitudes	0.473	-0.096
Behavioral Intention	0.628	0.084
Willingness to Pay	0.325	0.212

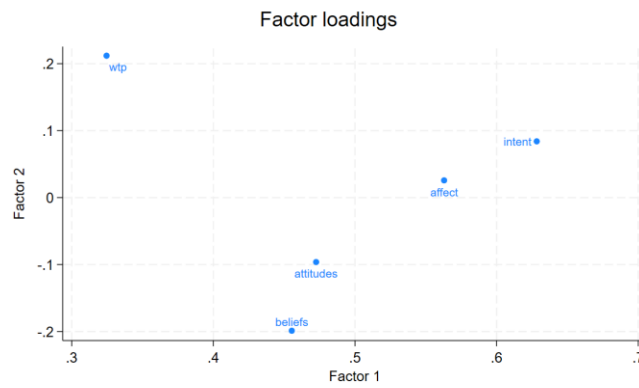


Figure 3– Graphical representation of the factor loadings across the two extracted factors

Table 7 – Mean standardized construct values across the four factor-based groups

Construct	f1- f2-	f1+ f2-	f1- f2+	f1+ f2+
Beliefs	0.12	0.87	-0.88	0.03
Affect	-0.47	0.49	-0.53	0.66
Attitudes	-0.19	0.78	-0.54	0.06
Behavioural Intention	-0.93	0.54	-0.30	0.82
Willingness to Pay	-0.87	-0.14	0.27	0.79

Note: Values correspond to standardized construct scores (z -scores). Positive values indicate above-average positioning relative to the full sample, while negative values indicate below-average positioning

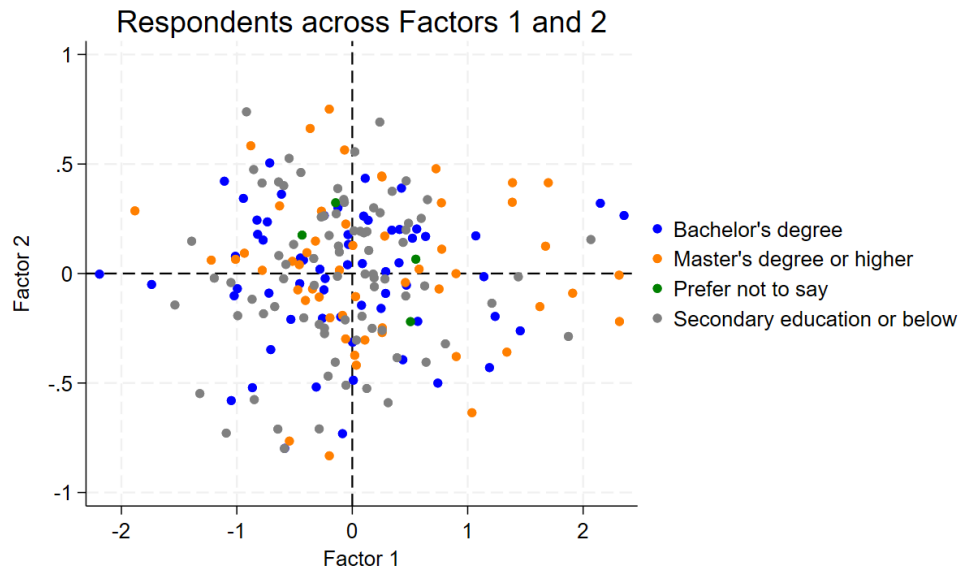


Figure 4 – Distribution of respondents across Factor 1 and Factor 2, by educational attainment

Table 8- MNL Full Model Estimates: Overall Model and Interaction Effects

	All	F1+	F1 Top25%	F2+	F1 + F2	F1+F2+ F1xF2
Outside option	-0.565*** (0.0962)	-0.819*** (0.132)	-0.863*** (0.112)	-0.785*** (0.139)	-1.066*** (0.169)	-1.210*** (0.196)
Sustainable vegan leather	-0.0664 (0.0359)	-0.185*** (0.0492)	-0.132** (0.0415)	0.0757 (0.0516)	-0.0435 (0.0627)	-0.0608 (0.0726)
Discreet logo	0.0410 (0.0480)	0.0442 (0.0659)	0.0139 (0.0557)	0.0347 (0.0691)	0.0378 (0.0841)	0.138 (0.0976)
Visible logo	-0.238*** (0.0487)	-0.159* (0.0667)	-0.248*** (0.0564)	-0.360*** (0.0704)	-0.282*** (0.0854)	-0.243* (0.0989)
Sustainable manufacturing process	0.193*** (0.0360)	0.0904 (0.0493)	0.111** (0.0417)	0.234*** (0.0523)	0.127* (0.0634)	0.141 (0.0736)
Limited availability	0.0503 (0.0361)	0.0479 (0.0492)	0.0320 (0.0417)	-0.0215 (0.0523)	-0.0276 (0.0632)	0.0150 (0.0733)
Camel	-0.385*** (0.0416)	-0.457*** (0.0570)	-0.444*** (0.0482)	-0.532*** (0.0602)	-0.616*** (0.0731)	-0.660*** (0.0849)
Beige	-0.200*** (0.0417)	-0.248*** (0.0570)	-0.205*** (0.0482)	-0.184** (0.0603)	-0.234** (0.0732)	-0.194* (0.0850)
Gold hardware	0.128*** (0.0359)	0.119* (0.0493)	0.124** (0.0416)	0.0584 (0.0518)	0.0459 (0.0631)	0.0257 (0.0734)
Price	-0.00170*** (0.000145)	-0.00178*** (0.000199)	-0.00188*** (0.000168)	-0.00224*** (0.000212)	- (0.000257)	- (0.000300)

Outside option x F1	0.541** (0.193)	0.565** (0.194)	0.853** (0.278)
Sustainable vegan leather x F1	0.256*** (0.0721)	0.243*** (0.0723)	0.277** (0.103)
Discreet logo x F1	-0.00621 (0.0964)	-0.00606 (0.0967)	-0.208 (0.138)
Visible logo x F1	-0.173 (0.0977)	-0.162 (0.0982)	-0.242 (0.141)
Sustainable manufacturing process x F1	0.221** (0.0724)	0.218** (0.0727)	0.189 (0.105)
Limited availability x F1	0.00621 (0.0726)	0.0130 (0.0729)	-0.0729 (0.105)
Camel x F1	0.154 (0.0836)	0.170* (0.0839)	0.255* (0.121)
Beige x F1	0.102 (0.0836)	0.0998 (0.0840)	0.0186 (0.121)
Gold hardware x F1	0.0182 (0.0720)	0.0259 (0.0724)	0.0666 (0.104)
Price x F1	0.000164 (0.000292)	0.000218 (0.000294)	0.000864* (0.000425)
Outside option x F1 Top25%	1.173*** (0.223)		
Sustainable vegan leather x F1 Top25%	0.265** (0.0830)		
Discreet logo x F1 Top25%	0.107 (0.111)		
Visible logo x F1 Top25%	0.0310 (0.112)		
Sustainable manufacturing process x F1 Top25%	0.330*** (0.0835)		
Limited availability x F1 Top25%	0.0768 (0.0842)		
Camel x F1 Top25%	0.232* (0.0965)		
Beige x F1 Top25%	0.0155 (0.0962)		
Gold hardware x F1 Top25%	0.0143 (0.0825)		
Price x F1 Top25%	0.000682* (0.000337)		
Outside option x F2		0.411* (0.193)	0.442* (0.194)
			0.702** (0.266)

Sustainable vegan leather x F2	-0.276*** (0.0720)	-0.264*** (0.0722)	-0.233* (0.0990)			
Discreet logo x F2	0.0106 (0.0964)	0.0106 (0.0966)	-0.175 (0.133)			
Visible logo x F2	0.233* (0.0977)	0.225* (0.0980)	0.154 (0.134)			
Sustainable manufacturing process x F2	-0.0759 (0.0724)	-0.0647 (0.0726)	-0.0895 (0.0995)			
Limited availability x F2	0.138 (0.0725)	0.139 (0.0727)	0.0612 (0.0993)			
Camel x F2	0.280*** (0.0836)	0.290*** (0.0838)	0.369** (0.115)			
Beige x F2	-0.0379 (0.0836)	-0.0329 (0.0838)	-0.107 (0.115)			
Gold hardware x F2	0.136 (0.0721)	0.138 (0.0723)	0.174 (0.0995)			
Price x F2	0.00102*** (0.000293)	0.00103*** (0.000293)	0.00161*** (0.000403)			
Outside option x FlxF2			-0.550 (0.388)			
Sustainable vegan leather x FlxF2			-0.0648 (0.145)			
Discreet logo x FlxF2			0.396* (0.194)			
Visible logo x FlxF2			0.154 (0.197)			
Sustainable manufacturing process x FlxF2			0.0534 (0.146)			
Limited availability x FlxF2			0.167 (0.146)			
Camel x FlxF2			-0.165 (0.168)			
Beige x FlxF2			0.159 (0.168)			
Gold hardware x FlxF2			-0.0783 (0.145)			
Price x FlxF2			-0.00123* (0.000589)			
LL	-6421.3	-6401.8	-6391.0	-6382.5	-6364.2	-6357.0
N	201	201	201	201	201	201

Note: Standard errors in parentheses. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. The "All" column presents the estimated coefficients for the full sample of 201 respondents. The remaining columns present the full set of coefficients for each interaction effect specification, including the reference group coefficients and the corresponding interaction terms.

Table 9—Willingness to Pay Estimates (€): Overall Model and Interaction Effects

	All	F1+	F1 Top25%	F2+	F1 + F2	F1+F2+ F1xF2
Outside option	-332*** (57)	-482*** (78)	-507*** (66)	-462*** (82)	-627*** (99)	-712*** (116)
Sustainable vegan leather	-39 (21)	-109*** (29)	-78** (24)	45 (30)	-26 (37)	-36 (43)
Discreet logo	24 (28)	26 (39)	8 (33)	20 (41)	22 (49)	81 (57)
Visible logo	-140*** (29)	-93* (39)	-146*** (33)	-212*** (41)	-166*** (50)	-143* (58)
Sustainable manufacturing process	113*** (21)	53 (29)	65** (25)	137*** (31)	74* (37)	83 (43)
Limited availability	30 (21)	28 (29)	19 (25)	-13 (31)	-16 (37)	9 (43)
Camel	-227*** (24)	-269*** (34)	-261*** (28)	-313*** (35)	-362*** (43)	-388*** (50)
Beige	-118*** (25)	-146*** (34)	-120*** (28)	-108** (35)	-138** (43)	-114* (50)
Gold hardware	75*** (21)	70* (29)	73** (24)	34 (30)	27 (37)	15 (43)
Outside option x F1		318** (114)			333** (114)	502** (164)
Sustainable vegan leather x F1		151*** (42)			143*** (43)	163** (61)
Discreet logo x F1		-4 (57)			-4 (57)	-122 (81)
Visible logo x F1		-102 (57)			-96 (58)	-142 (83)
Sustainable manufacturing process x F1		130** (43)			129** (43)	111 (62)
Limited availability x F1		4 (43)			8 (43)	-43 (62)
Camel x F1		91			100*	150*

	(49)	(49)	(71)
Beige x F1	60	59	11
	(49)	(49)	(71)
Gold hardware x F1	11	15	39
	(42)	(43)	(61)
Outside option x F1	690***		
Top25%	(131)		
Sustainable vegan leather x F1	156**		
Top25%	(49)		
Discreet logo x F1	63		
Top25%	(65)		
Visible logo x F1	18		
Top25%	(66)		
Sustainable manufacturing process x F1	194***		
Top25%	(49)		
Limited availability x F1	45		
Top25%	(50)		
Camel x F1	136*		
Top25%	(57)		
Beige x F1	9		
Top25%	(57)		
Gold hardware x F1	8		
Top25%	(49)		
Outside option x F2	242*	260*	413**
	(114)	(114)	(157)
Sustainable vegan leather x F2	-162***	-155***	-137*
	(42)	(42)	(58)
Discreet logo x F2	6	6	-103
	(57)	(57)	(78)
Visible logo x F2	137*	133*	90
	(57)	(58)	(79)
Sustainable manufacturing process x F2	-45	-38	-53
	(43)	(43)	(59)
Limited availability x F2	81	82	36
	(43)	(43)	(58)
Camel x F2	165***	170***	217**
	(49)	(49)	(68)
Beige x F2	-22	-19	-63
	(49)	(49)	(68)
Gold hardware x F2	80	81	102
	(42)	(43)	(59)

Outside option x FlxF2	-323 (228)
Sustainable vegan leather x FlxF2	-38 (85)
Discreet logo x FlxF2	233* (114)
Visible logo x FlxF2	90 (116)
Sustainable manufacturing process x FlxF2	31 (86)
Limited availability x FlxF2	98 (86)
Camel x FlxF2	-97 (99)
Beige x FlxF2	94 (99)
Gold hardware x FlxF2	-46 (85)
N	201
	201
	201
	201
	201
	201

Note: Standard errors in parentheses. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Willingness to pay estimates are expressed in euros and calculated using equation 3.9. Given that differences in the price coefficient across specifications are small in magnitude and do not reach statistical significance, the price coefficient of the overall model (-0.00170) is used as a common denominator across all specifications. The "All" column presents willingness to pay estimates for the full sample of 201 respondents. The remaining columns present the willingness to pay equivalents of the interaction effects associated with each specification, capturing the additional monetary value attributed to each attribute by the corresponding consumer group relative to the reference group.

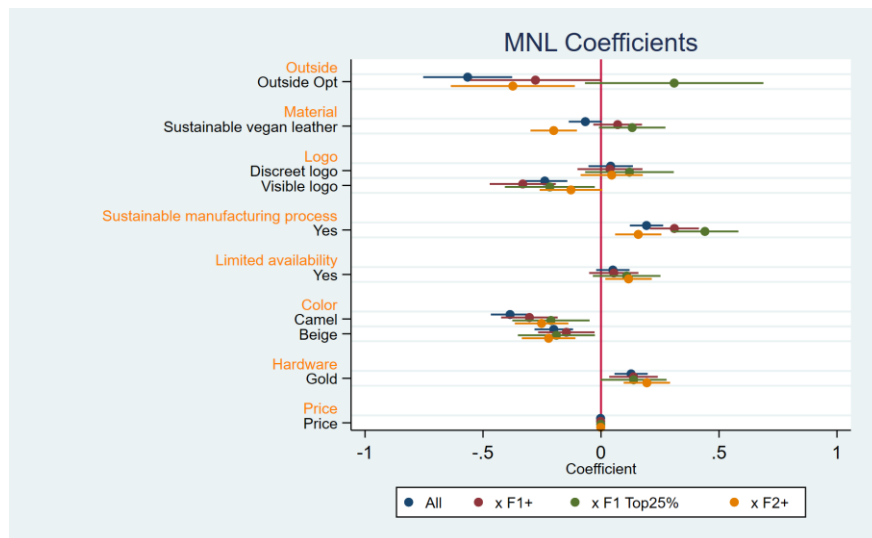


Figure 5 — MNL Coefficients Across Model Specifications

Note: Points represent estimated coefficients; horizontal lines represent 95% confidence intervals. Price is included to illustrate its stability across specifications.

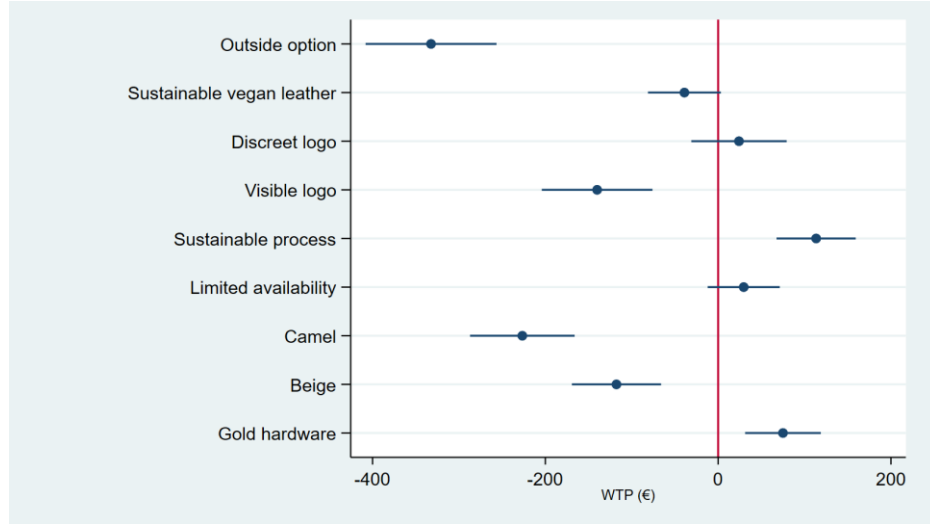


Figure 6 — Overall Model: Willingness to Pay Estimates and 95% Confidence Intervals

Note: Points represent willingness to pay estimates in euros. Horizontal lines represent 95% confidence intervals. Attributes whose confidence intervals do not cross the vertical line at zero are statistically significant at the 5% level. Reference levels are animal leather, no logo, conventional manufacturing process, unrestricted availability, black colour and silver hardware.

Table 10 — Statistical Tests: First and Second Order Factor Effects

Test	Chi-squared	df	p-value
F1 first order factor effects (joint)	36.47	10	0.001
F2 first order factor effects (joint)	74.62	10	<0.001
Second order factor effects (joint)	14.46	10	0.153

Note: Joint Wald tests assessing whether each block of interaction coefficients is jointly equal to zero. The first two tests are conducted within the joint estimation model (Analysis 3) and confirm that Factor 1 and Factor 2 each have a statistically significant and independent impact on attribute valuation ($p = 0.001$ and $p < 0.001$, respectively). The third test is conducted within the fully interacted model (Analysis 4) and confirms that there is no statistically significant interaction between the two factors ($p = 0.153$), indicating that their combined effect on product preferences is well approximated by the simple sum of their separate contributions.

Table 11 — MNL Coefficients by Attitudinal Group

Variable	All (N=201)	f1-f2- (N=50)	f1+f2- (N=49)	f1-f2+ (N=57)	f1+f2+ (N=45)
Outside option	-0.565*** (0.0962)	-1.210*** (0.196)	-0.358 (0.197)	-0.509** (0.180)	-0.206 (0.203)
Sustainable vegan leather	-0.0664 (0.0359)	-0.0608 (0.0726)	+0.216** (0.0737)	-0.294*** (0.0673)	-0.082 (0.0758)
Discreet logo	+0.0410 (0.0480)	+0.138 (0.0976)	-0.070 (0.0982)	-0.037 (0.0901)	+0.151 (0.101)
Visible logo	-0.238*** (0.0487)	-0.243* (0.0989)	-0.485*** (0.101)	-0.089 (0.0908)	-0.177 (0.102)
Sustainable manufacturing process	+0.193*** (0.0360)	+0.141 (0.0736)	+0.330*** (0.0748)	+0.052 (0.0669)	+0.294*** (0.0757)
Limited availability	+0.0503 (0.0361)	+0.015 (0.0733)	-0.058 (0.0750)	+0.076 (0.0670)	+0.170* (0.0762)
Camel	-0.385*** (0.0416)	-0.660*** (0.0849)	-0.405*** (0.0859)	-0.291*** (0.0775)	-0.201* (0.0876)
Beige	-0.200*** (0.0417)	-0.194* (0.0850)	-0.175* (0.0859)	-0.301*** (0.0775)	-0.123 (0.0876)
Gold hardware	+0.128*** (0.0359)	+0.026 (0.0734)	+0.092 (0.0734)	+0.200** (0.0672)	+0.188* (0.0756)
Price	-0.00170*** (0.000145)	-0.0027*** (0.000300)	-0.0018*** (0.000301)	-0.0011*** (0.000269)	-0.0014*** (0.000306)
LL	-6421.3	-1548.1	-1513.1	-1850.7	-1445.1

Note: Standard errors in parentheses. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Each group model was estimated independently using only the observations belonging to the corresponding attitudinal group. The "All" column was estimated using the full sample of 201 respondents and is included for comparison purposes. Given that differences in the price coefficient across groups are small in magnitude and do not reach statistical significance, the price coefficient of the overall model (-0.00170) is used as a common denominator for all willingness to pay estimates presented in Table 15.

Table 12 — Willingness to Pay Estimates (€) by Attitudinal Group

Variable	All (N=201)	f1-f2- (N=50)	f1+f2- (N=49)	f1-f2+ (N=57)	f1+f2+ (N=45)
Outside option	-332*** (57)	-712*** (116)	-210 (116)	-299** (106)	-121 (119)
Sustainable vegan leather	-39 (21)	-36 (43)	+127** (43)	-173*** (40)	-48 (45)
Discreet logo	+24 (28)	+81 (57)	-41 (58)	-22 (53)	+89 (60)
Visible logo	-140*** (29)	-143* (58)	-285*** (59)	-53 (53)	-104 (60)

Sustainable manufacturing process	+113*** (21)	+83 (43)	+194*** (44)	+30 (39)	+173*** (45)
Limited availability	+30 (21)	+9 (43)	-34 (44)	+45 (39)	+100* (45)
Camel	-227*** (24)	-388*** (50)	-238*** (51)	-171*** (46)	-119* (52)
Beige	-118*** (25)	-114* (50)	-103* (51)	-177*** (46)	-73 (52)
Gold hardware	+75*** (21)	+15 (43)	+54 (43)	+118** (40)	+111* (44)

Note: Standard errors in parentheses. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Willingness to pay estimates are expressed in euros and calculated using the price coefficient of the overall model (-0.00170) as a common denominator across all groups. Each group model was estimated independently using only the observations belonging to the corresponding attitudinal group. The "All" column was estimated using the full sample of 201 respondents and is included for comparison purposes.