



Lasting luxury: how symmetrical product design boosts sustainable consumption

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Abstract

Aesthetics is a core element of luxury products. While prior research has primarily examined how aesthetics contributes to luxury products' appeal, the present research investigates how aesthetic design features may influence sustainable consumption. Specifically, we propose that symmetry—a key aesthetic characteristic—encourages consumers to use luxury products longer rather than discard them. Five experiments demonstrate that the symmetric (vs. asymmetric) design of luxury fashion products increases both intended and actual length of product usage, as symmetrical designs are perceived as more timeless. The results further reveal the moderating role of consumers' fashion orientation. By linking visual design properties to consumers' anticipated duration of product use, this research extends the product aesthetics literature and highlights how aesthetic cues can shape more sustainable consumption patterns. The findings also offer practical insights for luxury marketers seeking to leverage product design to promote more responsible luxury consumption.

Keywords Luxury consumption · Luxury aesthetics · Symmetry · Sustainable consumption · Length of product usage

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1 Introduction

The fashion industry has earned a reputation for being extremely harmful to the environment—due in no small part to fashion companies contributing around 3–8% of global greenhouse gas emissions (Janmark et al., 2024). While the business model of fast fashion is the biggest driver of these estimates, luxury fashion brands face their own increasing pressure to improve their carbon footprint. On this point, a growing number of scholars are converging on the idea that luxury products can be *inherently* sustainable thanks to their high-quality materials and more artisanal production processes, which ultimately allow such products to last longer compared to mass-market ones (e.g., Amatulli et al., 2017; Sun et al., 2021). While we concur with such a *product-based view* of product durability, we contend that the lifespan of luxury products crucially depends on how long consumers are willing to use them. In other words, we advance a *consumer-based view* of sustainable luxury built around the idea that consumers' experiences with a product shape the length of product usage (LPU), above and beyond products' *tangible* durability.

Drawing on the importance of aesthetics to the luxury product experience (Cesareo et al., 2023; D'Aniello et al., 2025; Kapferer & Valette-Florence, 2021), we propose that certain aesthetic characteristics might affect luxury products' LPU and thereby contribute to sustainable consumption. Luxury products often function as emotionally salient stimuli that capture consumers' attention and elicit strong affective responses (Pozharliev et al., 2015), suggesting that their aesthetic properties may have important behavioral consequences. While aesthetics might potentially affect LPU also in the fast fashion sector, we investigate this relationship in the luxury context because luxury goods typically exhibit higher material quality than mass-market ones (e.g., Sun et al., 2021), making them inherently suited for prolonged use. Accordingly, for the purpose of this study, we adopt a definition of luxury fashion items as products characterized by superior material quality and the capacity to guarantee long-lasting functional durability (Sun et al., 2021). As a result, consumers' decision regarding how long to use the product could have important implications for sustainability. In this context, when consumers discontinue using a luxury item prematurely—due to aesthetic fatigue or perceived fashion obsolescence—the environmental cost could be particularly salient, as it undermines the potential extended usage embedded in the product's functional durability. On the contrary, in the fast fashion context, limited functional durability would still bring them to dispose the product sooner. Even though aesthetic experiences depend heavily on individual taste (e.g., Hoyer & Stokburger-Sauer, 2012; Wang, 2022), the field of empirical aesthetics has identified several fundamental factors that impact aesthetic preferences: contrast, clarity, color, unity, order, and symmetry (Cesareo et al., 2023; Hagtvædt, 2022).

We focus on product design symmetry (e.g., Bettels & Wiedmann, 2019), since it is easily detectable by consumers (Treder, 2010) and can be an effective means of conveying the anticipated product experience (Harper & Simonsen, 2017). Pombo and Velasco (2021) found that symmetry drives customer preferences

and conveys perceptions of a premium product. Similarly, Bigoin-Gagnan and Lacoste-Badie (2018) showed that symmetrical information displayed on packaging can predict consumers' purchase intention toward food, while Bajaj and Bond (2018) found that asymmetry is associated with higher brand excitement. It seems generally evident that individuals prefer simplicity and symmetry (Harper & Simonsen, 2017; Palmer et al., 2013; Shepherd & Bar, 2011), but whether product symmetry affects sustainable luxury consumption remains unclear. We fill this gap by investigating the effect of product symmetry on LPU.

Across five experiments, we demonstrate that symmetry (vs. asymmetry) in luxury fashion products' design leads to higher expected and actual LPU. Moreover, we propose one possible explanation for this effect: namely, the construct of timelessness (operationalized through perceptions of products' continuity; Morhart et al., 2015) whereby design symmetry creates the impression that products are enduring, coherent, and resistant to trends. Prior conceptual work in design research has argued that timelessness can be achieved through prototypicality and cognitive simplicity, as designs that are easily recognizable and visually balanced may sustain positive aesthetic experiences across time (Flood Heaton & McDonagh, 2017). However, such design-oriented theorization does not address how consumers perceive and respond to timeless design features. Our research builds on this foundation by empirically examining timelessness as a consumer-perceived construct that mediates the effect of design symmetry on sustainable consumption. Consistent with work on luxury brand authenticity, we interpret timelessness as a form of continuity over time that signals enduring value and resistance to trends (Beverland, 2006; Morhart et al., 2015). Additionally, we demonstrate that consumers' fashion orientation—the personal tendency to look for the latest fashions and new experiences (Gupta et al., 2019; Sproles & Kendall, 1986)—shapes the positive effect of product symmetry on LPU.

Overall, our work provides relevant theoretical and managerial contributions. Theoretically, we advance the literature on sustainable luxury consumption by shifting the focus from product-based durability to consumer-based duration of product use. While prior work has linked luxury products' durability to tangible product elements such as material quality and production processes (Amatulli et al., 2017; Kapferer, 2010; Sun et al., 2021), it has not explored whether consumers' experiences can shape how long luxury products are actually used. Furthermore, a recent meta-analysis of product visual aesthetics (PVAs) has revealed that there is currently insufficient research quantifying the impact of PVAs on consumer responses, especially when it comes to behavioral outcomes (Peng et al., 2025). We fill this gap by showing that aesthetic design features, namely product symmetry, can influence consumers' anticipated product experience and, consequently, their length of product usage (LPU). In doing so, our research contributes to the product aesthetics literature going beyond immediate product evaluations.

Second, we identify perceived timelessness, operationalized as product continuity (Beverland, 2006; Morhart et al., 2015), as a key psychological mechanism explaining why symmetry leads to higher LPU than asymmetry. By empirically linking symmetric design to perception of timelessness, our findings shed light on

how certain aesthetic cues may sustain positive product experiences over time, thus encouraging sustainable consumption habits.

Third, we advance research on sustainable luxury consumption by testing the role of a to-date uninvestigated individual trait: fashion orientation. Our study complements previous works that have focused on traits such as consumers' level of materialism (Talukdar & Yu, 2020), status consumption orientation (e.g., Amatulli et al., 2018), and conspicuous consumption orientation (e.g., Sestino et al., 2021). Finally, our research offers practical indications for luxury managers by suggesting that design choices emphasizing symmetry and timelessness may be able to encourage longer product usage and support more sustainable consumption patterns.

2 Theoretical background and hypothesis development

Aesthetics is undoubtedly a core feature of luxury (Kapferer, 2014; Venkatesh et al., 2010): Luxury brand managers invest a substantial amount of their time in trying to satiate consumers' desire for enjoyable and visually pleasing experiences (D'Aniello et al., 2025). However, the question of whether product aesthetics might encourage the sustainable consumption of luxury goods remains unanswered.

Previous, non-empirical research has suggested that the creation of potentially enduring goods relies heavily on aesthetics (Harper & Simonsen, 2017). In this vein, work in sustainable product design has indicated that some aesthetic features—such as simplicity and minimalism, logicity and functionality, natural forms and materials, upgradability, prototypicality, and modularity—can enhance product durability (Flood Heaton & McDonagh, 2017; Zafarmand et al., 2003). Adding to this view, the field of empirical aesthetics suggests that individuals generally prefer simplicity and symmetry (Harper & Simonsen, 2017; Palmer et al., 2013; Shepherd & Bar, 2011). The latter is often referred to as the simplest case of balance (Creusen et al., 2010), which can be easily identified in objects that display two identical halves that are mirror-inverted (Peng et al., 2025; Treder, 2010). Tinio and Leder (2009) suggest that the effect of symmetry on individuals' judgment is usually consistent across contexts. Non-complex, symmetrical aesthetics are easily detectable (Treder, 2010) and thus an effective means of activating recipients' immediate gratification, that is, their anticipated experiences when interacting with an object (e.g., how it should feel when handled, held, lifted, or worn) (Harper & Simonsen, 2017). Asymmetric products, in contrast, are those designed such that their components do not follow a mirrored or balanced pattern (Bettels & Wiedmann, 2019).

Historically, design theory has largely emphasized symmetry, as symmetrical products are typically seen as more harmonious and aesthetically pleasing, offering a sense of familiarity and ease of processing (Bettels & Wiedmann, 2019; Wu, 2025). In contrast, asymmetric designs break away from these traditional norms by introducing irregularity, which can provoke stronger emotional reactions from consumers. Asymmetry is often strategically employed to set products apart, especially in industries where uniqueness and innovation are highly valued, such as in fashion, automotive design, and consumer electronics (Farhana & Bimenyimana, 2015; Li & Liu, 2019). Indeed, according to Bian and Forsythe (2012), “luxury

brands' recognizable designs visibly help to communicate consumers' intrinsic values." Other work has highlighted that asymmetric logos are perceived as more exciting than symmetric ones (Stamatogiannakis et al., 2015) and that asymmetric forms spur a higher level of arousal as they are related to excitement and uniqueness (Krupinski & Locher, 1988; Luffarelli et al., 2019; Simonson & Schmitt, 1997). Further expanding this perspective, Li and Liu (2019) found that high-end products benefit from distinctive asymmetrical designs, while low-end offerings can leverage aesthetic similarities to their premium counterparts to signal luxury cues. These findings suggest that design asymmetry, when strategically employed, may sustain consumer interest through perceived differentiation. We extend research on product symmetry (vs. asymmetry) by testing how this aesthetic dimension affects LPU. We reason that, while it could be possible that some consumers (for instance, with a higher need for uniqueness) might prefer luxury products with asymmetric vs. symmetric designs, we argue that such a preference might not necessarily translate into longer usage. In fact, we theorize that despite initial interest, asymmetric products may still be perceived as more trend-sensitive and thus more likely to go out of style quickly reducing perceived LPU. On the opposite side, when products are instinctively liked and consistently seen as harmonious and balanced, they are more likely to be maintained and preserved over time, reducing the likelihood of disposal (Harper & Simonsen, 2017), as consumers perceive their value as enduring (Creusen et al., 2010; Harper & Simonsen, 2017; Palmer et al., 2013). Our argument finds additional support in previous research suggesting that asymmetry is associated to perceptions of lower product functionality than symmetry (Bettels & Wiedmann, 2019). Such perceptions may translate into lower perceived durability and performance for asymmetric products. In other words, symmetric (vs. asymmetric) designs might convey consumers the feeling that the product might be more functional and comfortable, and this, in turn, might increase their belief that the product can be used over an extended period of time. Linking these arguments with the evidence that product durability depends on an object's functional and stylistic benefits (Levinthal & Purohit, 1989), we propose that product design symmetry can be an effective means of inducing luxury buyers to use products for longer.

Formally, we hypothesize that:

H1: Symmetric (vs. asymmetric) luxury product design increases LPU.

Beyond predicting this effect, we also explore the mechanism possibly explaining it. A few marketing studies have analyzed the psychological consequences of symmetry versus asymmetry. Bettels and Wiedmann (2019), for instance, investigated the effect of brand logo symmetry on consumers' product inferences, finding that symmetry is preferred because it conveys perceptions of higher product aesthetics, functionality, and symbolism. Meanwhile, Bajaj and Bond (2018) found that product design symmetry (vs. asymmetry) enhances a brand's perceived sophistication (vs. consumers' excitement).

Building on these results, we propose the construct of product timelessness, operationalized as the well-established dimension of continuity in brand authenticity, which refers to the perceived ability of a brand or design to remain relevant

across time and trends (Morhart et al., 2015). In the context of luxury branding, authenticity has been shown to hinge on continuity and resistance to fashion-driven change, that is a form of aesthetic timelessness that conveys enduring value (Beverland, 2006; Morhart et al., 2015). As Morhart et al. (2015) demonstrate, consumers perceive authentic brands as those that “stay the same over time,” maintaining a stable identity and visual coherence while transcending short-lived trends. In our conceptualization, timelessness captures this same perception of stability and durability, but at the product level rather than the brand level: it reflects the extent to which a product’s visual form communicates constancy, coherence, and resistance to obsolescence.

Within design research, Flood Heaton and McDonagh (2017) conceptualized timelessness as a design quality achievable through prototypicality—that is, through forms that are cognitively fluent and easily recognized as representative of a product category. Their work argues that such designs, by fostering visual simplicity and cognitive economy, can prolong positive aesthetic experience and therefore support product longevity. However, their theorization remains designer-oriented and conceptual, focusing on how timelessness can be created through design strategies rather than how it is perceived and acted upon by consumers.

While product functionality and physical durability can prevent premature product disposal (Levinthal & Purohit, 1989), they are not sufficient to guarantee prolonged use. Therefore, the present research adopts a consumer-centered perspective and extends this line of inquiry by examining how timelessness operates psychologically as a perceived attribute mediating the relationship between product design symmetry and sustainable use. In particular, we conceptualize continuity as the operational manifestation of timelessness in the context of product design—defined as the extent to which a product’s visual form is perceived as enduring and resistant to short-term trends (Morhart et al., 2015). Symmetrical products, by virtue of their balanced proportions, convey simplicity and coherence, which reduce perceptions of trend sensitivity and enhance perceptions of long-term relevance (Bajaj & Bond, 2018; Creusen et al., 2010; Harper & Simonsen, 2017). Conversely, due to its deviation from conventional category forms, asymmetry frequently serves as a stylistic indicator that distinguishes products within a certain fashion era, hence facilitating their association with specific trends (Luffarelli et al., 2019). As a result, symmetric luxury products may be seen as more timeless, thereby increasing consumers’ expectations of extended product use.

Thus, we hypothesize:

H2: The positive effect of luxury product design symmetry on LPU is driven by perceived timelessness.

We also argue that the effect of product symmetry on LPU might crucially depend on consumers’ level of fashion orientation, defined as consumers’ tendency to “buy more new fashion items in order to satisfy their need to keep current” (Gupta et al., 2019, p. 190). Less fashion-oriented consumers are less likely to shop frequently, as they are looking for clothes that reflect their long-term identities (Gupta et al., 2019). Moreover, they tend to develop emotional connections with their longer-lasting

products and look for more sustainable options (Trudel et al., 2016). Consequently, even when buying asymmetric products, less fashion-oriented consumers might tend to use them for a longer time. Therefore, we propose that product symmetry will not make a difference in terms of LPU for less fashion-oriented consumers.

In contrast, consumers high in fashion orientation constantly look for novel products and experiences (Cho et al., 2015). Since they gain pleasure from buying new things and being up to date with styles (Sproles & Kendall, 1986), we generally expect them to use products for a shorter time. Indeed, previous research supports the idea that a higher fashion orientation can lead to unsustainable behaviors (Gupta et al., 2019) due to those consumers indulging a perpetual desire for new products (Fletcher 2008). Thus, we propose that product symmetry should increase LPU for consumers higher in fashion orientation.

Thus, we hypothesize that:

H3: For consumers with a lower fashion orientation, product symmetry will not affect LPU, while for consumers with a higher fashion orientation, product symmetry will lead to higher LPU.

3 Research methodology

We tested our hypotheses across five experiments aimed at exploring whether symmetric (vs. asymmetric) product design increases intended LPU for imagined (Study 1a) and real products owned by consumers (Study 1b), whether timelessness drives this effect (Study 2a and 2b), and whether fashion orientation moderates it (Study 3). The majority of the studies were pre-registered and designed as a 2-cell between-subject design where we manipulated product symmetry.

Table 1 summarizes the main results of each study.

3.1 Study 1a: the effect of product design symmetry on LPU

Study 1a investigates whether consumers plan to continue using a luxury product characterized by symmetric (vs. asymmetric) design over a longer period (i.e., higher LPU), thus testing H1.

3.1.1 Methods

We recruited 211 consumers (59.2% females; $M_{Age}=31.95$, $SD_{Age}=10.914$) on Prolific and randomly assigned them to one of the two experimental conditions: symmetric vs. asymmetric luxury product. In both cases, participants read “*This unisex t-shirt is produced by a luxury brand*” and then they were shown a black t-shirt with either a symmetric or asymmetric design. A pretest confirmed that the asymmetric condition was seen as more asymmetric in design ($M_{symmetric}=1.88$ vs. $M_{asymmetric}=5.75$, $SD=1.76$; $t(73.36)=-11.68$; $p<.001$; see Web Appendix for further details of all studies).

Table 1 Summary of online experiments

Study	Pre-registration link	Sample	Recruited through	Hypothesis tested	Supported	Key findings
1a	https://aspredicted.org/IP9_L7Y	<i>N</i> = 211	Prolific	H1	Yes	Consumers plan to continue using a luxury product characterized by symmetric (vs. asymmetric) design over a longer period (i.e., higher LPU)
1b	https://aspredicted.org/X6B_6T5	<i>N</i> = 170	Prolific	H1	Yes	Consumers plan to use an owned symmetric (vs. asymmetric) product that they recalled for longer (i.e., higher LPU)
2a	https://aspredicted.org/YBC_PT5	<i>N</i> = 213	Prolific	H2	Yes	Luxury product symmetry increases perceived timelessness and this, in turn, increases LPU
2b	Robustness Check	<i>N</i> = 151	Prolific	H2	Yes	Mediation of timelessness is confirmed. Negative affect mediates the effect but offers limited, incremental insight. Excitement and perceptual fluency are ruled out as alternative explanations
3	https://aspredicted.org/MNR_K44	<i>N</i> = 165	Prolific	H3	Yes	The more the consumer is fashion oriented, the higher the positive effect of symmetry on LPU

We measured LPU by asking participants how long they would plan on using the described product before they no longer wanted it (1 = “0–6 months”; 2 = “6 months–1 year”; 3 = “1 year–1.5 years”; 4 = “1.5 years–2 years”; 5 = “2 years–2.5 years”; 6 = “2.5 years–3 years”; 7 = “> 3 years”; adapted from Sun et al., 2021). For exploratory purposes, respondents also answered an open-ended question about the reason for their choice. Finally, we administered a manipulation check and asked participants to disclose their age and gender.

3.1.2 Results

As expected, the results of the independent sample t-test showed that the t-shirt with the symmetric design led to higher LPU than the one with the asymmetric design ($M_{\text{symmetric}} = 5.58$ ($SD = 2.00$); $M_{\text{asymmetric}} = 4.58$ ($SD = 2.42$); $t(201.26) = 3.280$; $p < .0001$; Cohen’s $d = .452$), supporting H1.

3.2 Study 1b: the effect of product design symmetry on LPU with real products

Study 1b further tested H1 by replicating the effect of symmetry (vs. asymmetry) on LPU by examining the expected LPU for a real luxury item that consumers recalled. Respondents first examined different pictures of luxury products and accessories characterized by either a symmetric or asymmetric design (see Web Appendix); then, they were prompted to think about a real luxury product that they had already purchased that had a similar symmetric or asymmetric design.

3.2.1 Methods

The sample consisted of 170 luxury consumers (61% female; $M_{\text{Age}} = 38.51$, $SD_{\text{Age}} = 11.802$) recruited through Prolific. We applied Prolific’s filter to limit the sample to consumers who owned at least two luxury products that cost over £200 each. They were randomly assigned to one of two conditions, and instructed to think about a product they owned, which was characterized by symmetry (or asymmetry) in the design. They were also asked to specify the product category.

Afterward, respondents answered a few questions about their owned product: (1) LPU (Sun et al., 2021), (2) future disposal (“What will you do with the product when you no longer want it?” with the options “sell it,” “give it to someone else,” “throw it away,” “donate it,” “keep it even though I will not wear it,” and “other-specify”; Sun et al., 2021) and (3) to what extent they liked the product (1 = not at all; 7 = very much). Finally, participants provided information on their age and gender.

3.2.2 Results

As expected, the results of the independent-sample t-test showed that the recalled symmetric luxury product was associated with higher LPU than the recalled asymmetric luxury product ($M_{\text{symmetric}} = 6.01$ ($SD = 1.503$) vs. $M_{\text{asymmetric}} = 4.91$ ($SD = 2.060$); $t(159.04) = 4.007$; $p < .001$; Cohen’s $d = .608$). We also found a

significant effect of symmetry on product liking ($M_{symmetric} = 6.24$ ($SD = .988$) vs. $M_{asymmetric} = 5.08$ ($SD = 1.400$); $t(156.796) = 6.298$; $p < .001$, Cohen's $d = .955$), which aligns with theories on visual aesthetics and preferences (Palmer et al., 2013).

Study 1b offers further support to H1 by showing that the effect of product symmetry on LPU also holds when considering real consumers' luxury products.

3.3 Study 2a: the mediating role of perceived timelessness

Study 2a builds on the design of Study 1a and aims to test H2, namely whether symmetric (vs. asymmetric) product design increases LPU by enhancing perceived timelessness.

3.3.1 Method

We recruited 213 respondents (44% males; $M_{Age} = 29.20$, $SD_{Age} = 8.898$) through Prolific and randomly assigned them to one of the two experimental conditions (the same as in our previous experiments). Participants were asked about (1) LPU (Sun et al., 2021) and (2) perceived timelessness (operationalized as continuity using 4 items on a 7-point Likert scale, adapted from Morhart et al., 2015). Finally, participants completed the manipulation check and reported their demographic data.

3.3.2 Results

LPU As expected, the symmetric luxury t-shirt generated higher LPU than the asymmetric one ($M_{Symmetric} = 5.30$, $SD = 2.00$ vs. $M_{Asymmetric} = 4.40$, $SD = 2.32$, $t(207.95) = 3.023$, $p = .001$, Cohen's $d = .413$).

Timelessness Symmetry made the luxury product seem higher in timelessness ($M_{Symmetric} = 5.57$, $SD = 1.38$ vs. $M_{Asymmetric} = 4.15$, $SD = 1.75$, $t(1, 202.130) = 6.521$, $p < .001$, Cohen's $d = .891$).

Mediation We ran a mediation analysis (PROCESS MACRO Model 4; Hayes, 2022) with product design as the independent variable (0 = asymmetric, 1 = symmetric), perceived timelessness as the mediator and LPU as the dependent variable, and found a significant and positive indirect effect ($b = .6297$, $SE = .17.09\%$ [95% CI.3328;.9947]). When the luxury t-shirt was symmetric, consumers reported higher perceived timelessness ($b = 1.4108$, $SE = .2171$, $t(211) = 6.4989$, $p < .0001$), which, in turn, positively affected LPU ($b = .4463$, $SE = .0894$, $t(210) = 4.9931$, $p < .0001$; see Fig. 1). When considering the mediator, the effect of the independent variable on LPU was not significant ($b = .2674$, $SE = .3088$, $t(211) = .8660$, $p = .3875$), indicating full mediation. Overall, these results support H2.

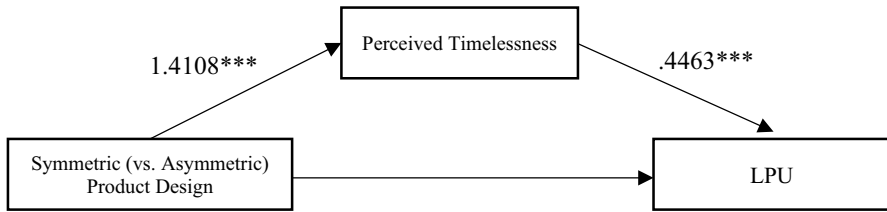


Fig. 1 The mediation effect of perceived timelessness as tested in Study 2. *** $p < .0001$

3.4 Study 2b: robustness check to rule out alternative explanations

The objective of Study 2b was to rule out alternative explanations: namely, whether symmetric (vs. asymmetric) product design increases LPU due to (a) perceptual fluency, (b) excitement, and (c) buyer's remorse.

3.4.1 Method

We recruited 151 respondents (57.6% males; $M_{Age} = 30.87$, $SD_{Age} = 11.434$) through Prolific and randomly assigned them to one of the two experimental conditions (the same as in Study 1a). Participants were asked about (1) LPU (Sun et al., 2021), (2) perceived timelessness (Morhart et al., 2015), (3) perceptual fluency of the experimental stimuli (Graf et al., 2018), (4) excitement (Richins, 1997), and (5) buyer's remorse measured as the three-dimensional scale of cognitive dissonance (Sweeney et al., 2000).

Finally, participants completed the manipulation check and reported their demographic data.

3.4.2 Results

LPU As expected, the symmetric luxury t-shirt generated higher LPU than the asymmetric one ($M_{Symmetric} = 5.41$ ($SD = 1.86$) vs. $M_{Asymmetric} = 4.56$ ($SD = 2.31$), $t(141.86) = -2.48$, $p = .007$, Cohen's $d = -.40$).

Timelessness Symmetry made the luxury product seem higher in timelessness ($M_{Symmetric} = 5.3421$, $SD = 1.33$ vs. $M_{Asymmetric} = 4.3689$, $SD = 1.94255$, $t(1, 130.887) = -3.585$, $p < .001$, Cohen's $d = -.585$).

Alternative explanations None of the alternative explanations except for the Emotional Dimension of Cognitive dissonance were significant.

Perceptual fluency (not significant) $M_{Symmetric} = 4.5895$, $SD = .58471$ vs. $M_{Asymmetric} = 4.5120$, $SD = .52040$; $p = .195$.

Excitement (not significant) $M_{Symmetric}=7.1404$, $SD=3.002$ vs. $M_{Asymmetric}=6.5289$, $SD=3.465$, $t(1, 145.475)=-1.158$, $p=.124$, Cohen's $d=-.189$.

Wisdom of purchase (not significant) $M_{Symmetric}=3.44$, $SD=1.792$ vs. $M_{Asymmetric}=3.700$, $SD=1.939$, $p=.197$.

Concern over deal (not significant) $M_{Symmetric}=2.75$, $SD=1.806$ vs. $M_{Asymmetric}=2.86$, $SD=1.757$, $p=.361$.

Emotional Cognitive Dissonance $M_{Symmetric}=1.3907$, $SD=.65846$ vs. $M_{Asymmetric}=1.7026$, $SD=1.0842$, $t(1, 121.753)=2.133$, $p=.017$, Cohen's $d=.348$.

Mediation We ran a mediation analysis (PROCESS MACRO Model 4; Hayes, 2022) with product design as the independent variable (0=asymmetric, 1=symmetric), perceived timelessness and emotional cognitive dissonance as the mediators and LPU as the dependent variable.

We confirm a significant indirect effect of timelessness ($b=.4163$, $SE=15.79\%$ [95% CI.1407;.7621]) and emotional cognitive dissonance ($b=.1700$, $SE=09.42\%$ [95% CI.0117;.3770]). When the luxury t-shirt was symmetric, consumers reported higher timelessness ($b=.9732$, $SE=.2708$, $t(151)=3.5934$, $p=.0004$); in turn, perceived timelessness positively affected LPU ($b=.4277$, $SE=.0967$, $t(151)=4.4249$, $p<.0001$).

Also, when the luxury t-shirt was symmetric, consumers reported lower negative emotions ($b=-.3119$, $SE=.1458$, $t(151)=-2.1395$, $p=.0340$); in turn, emotional cognitive dissonance negatively affected LPU ($b=-.5450$, $SE=.1796$, $t(151)=-3.0344$, $p=.0029$).

When considering the two mediators, the effect of the independent variable on LPU was not significant ($b=.2616$, $SE=.3176$, $t(151)=.8237$, $p=.4114$), which still suggests a full mediation effect. Figure 2 shows the main results of Study 2b.

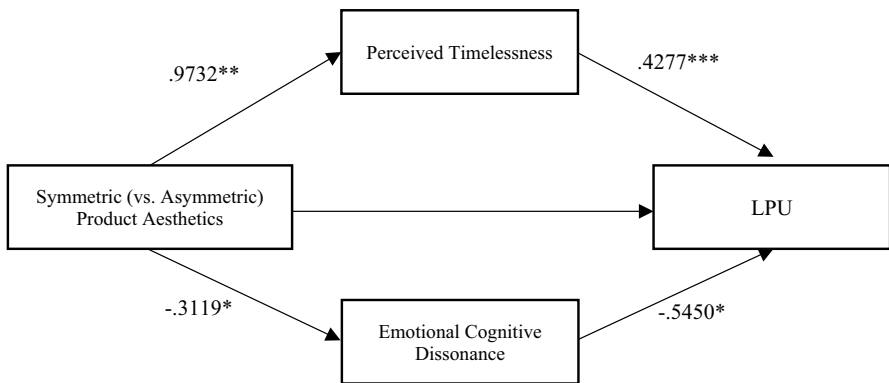


Fig. 2 The mediation effect of perceived timelessness and emotional cognitive dissonance as tested in Study 2b. * $p <.05$; ** $p <.001$; *** $p <.0001$

Although significant, we highlight that the inclusion of emotional cognitive dissonance in our model offers fewer incremental insights into the proposed relationship, while the path of perceived aesthetic timelessness remains stronger.

3.5 Study 3: the moderating role of fashion orientation

The objective of Study 3 was to test H3 by investigating whether the effect of product symmetry on LPU changes depending on consumers' level of fashion orientation.

3.5.1 Method

We recruited 165 respondents (51.5% males; $M_{Age} = 31.81$, $SD_{Age} = 10.339$) from Prolific. First, we asked them about their fashion orientation using 7 items rated on a 5-point Likert scale (Gupta et al., 2019). Next, they were exposed to the same experimental conditions as in Study 1a and 2 and asked about their intended LPU (Sun et al., 2021). Finally, participants completed a manipulation check and provided information on their age and gender.

3.5.2 Results

Once again, the independent-sample t-test confirmed the proposed effect ($M_{symmetric} = 5.35$ ($SD = 1.959$); $M_{asymmetric} = 4.10$ ($SD = 2.277$); $t(163) = 3.800$; $p < .001$; Cohen's $d = .592$). Next, we ran a moderation analysis (PROCESS MACRO Model 1; Hayes, 2022) with product design as the independent variable (0 = asymmetric, 1 = symmetric), fashion orientation as the moderator, and LPU as the dependent variable. We found a significant negative effect of fashion orientation on LPU ($b = -.56$; $se = .15$; $t(159) = -3.66$; $p < .001$). More importantly, the effect of the product design x fashion orientation interaction was positive and significant ($b = .43$; $se = .20$; $t(159) = 2.10$; $p = .04$).

To test H3, we look at the effect of product design on LPU at different, continuous levels of the fashion orientation scale, using the Johnson-Neyman approach (Fig. 3) (Spiller et al., 2013). The results show that for fashion orientation values lower than 1.91 product design had a non-significant effect on LPU, while for values higher than 1.91 product symmetry had a significant and increasingly positive effect on LPU (see Fig. 4). These results support H3.

4 General discussion

Luxury brands are increasingly pressured to make positive contributions to the environment in which they operate. While luxury products evidently have some peculiar characteristics (e.g., rarity and durability) that may render them inherently sustainable (Amatulli et al., 2017), it remains unclear whether luxury brands can trigger a more sustainable product use via aesthetic design features. We addressed this

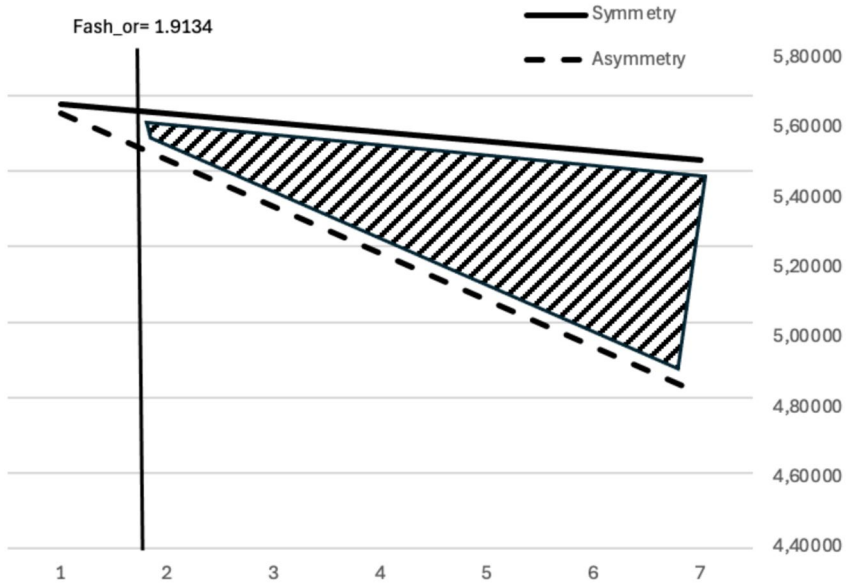


Fig. 3 Johnson-Neyman output of study 3

question by examining how a specific aesthetic design feature—symmetry—affects the length of time consumers use a luxury product (LPU). Across five experiments, we show that symmetry increases both intended and actual LPU, that perceived timelessness (operationalized as product continuity) mediates this relationship, and that consumers’ fashion orientation moderates the effect (i.e., the higher consumers’ fashion orientation, the greater the positive effect of product symmetry on LPU).

Overall, our work makes relevant theoretical and managerial contributions.

First, we contribute to the literature on sustainable luxury consumption by shifting attention from product-based durability to a consumer-centered perspective on product longevity. While prior work has linked luxury products’ durability to tangible product elements such as the quality of materials and production processes (Kapferer, 2010; Sun et al., 2021), we show that aesthetic design properties can also shape how long consumers actually use luxury products. In doing so, we answer a recent call for a more nuanced understanding of durability within the luxury sector

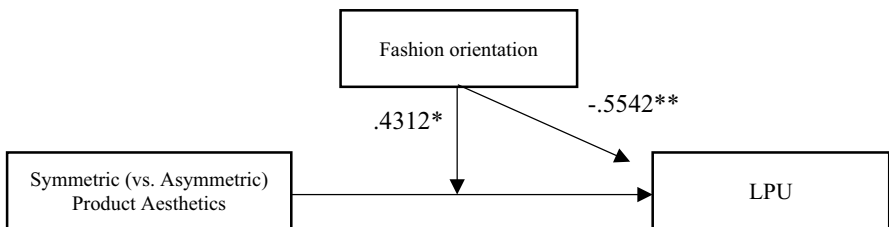


Fig. 4 The moderating role of fashion orientation as tested in study 3. * $p < .05$; ** $p < .001$

(Sun et al., 2021) which is extremely relevant given the high costs of discontinued use. Specifically, we extend sustainability and design research (Harper & Simonsen, 2017; Zafarmand et al., 2003) by demonstrating that symmetry can function as a subtle cue that can promote green behavior without explicit environmental appeals. While functional benefits have long been recognized as drivers of product durability (Levinthal & Purohit, 1989; Sun et al., 2021), our results indicate that stylistic benefits, highlighting perceptions of aesthetic balance and timelessness, are equally crucial in prolonging product use over time (e.g., Levinthal & Purohit, 1989; Sun et al., 2021). This perspective complements recent reviews highlighting that most research on product visual aesthetics has focused on attitudinal responses rather than behavioral outcomes (Peng et al., 2025). By showing that a visual design cue can influence how long consumers expect to use a product, our findings extend research on product aesthetics beyond immediate evaluation to the temporal dynamics of consumption. More broadly, our findings suggest that aesthetic design cues may influence not only whether consumers like a product, but also how long they expect to use it. Indeed, to the best of our knowledge, this study is the first in the field of luxury consumption to show the impact of a specific aesthetic feature on LPU.

Second, we empirically extend design research that conceptualizes timelessness as a visual property that can promote sustainability (Flood Heaton & McDonagh, 2017). Indeed, whereas prior work has approached timelessness as a design strategy achieved through prototypicality and cognitive simplicity, our results reveal how timelessness operates psychologically, as a consumer perception of continuity that influences sustainable use of fashion items. Importantly, we acknowledge that prototypical forms are not static but evolve through processes of aesthetic adaptation (Carbon, 2010; Hekkert, 2006). Research in empirical aesthetics further shows that repeated exposure to novel designs gradually reshapes consumers' aesthetic standards, allowing initially unconventional forms to become integrated into category prototypes over time (Carbon, 2010). Design research similarly suggests that product prototypes evolve through iterative refinement processes involving both incremental adjustments and more substantial shifts in form and function (Real et al., 2023). Within this dynamic landscape of evolving stylistic conventions, however, certain structural principles of form—such as symmetry, balance, and visual coherence—tend to remain relatively stable anchors of aesthetic evaluation consistent with Gestalt principles of perceptual organization (Bloch, 1995; Cho et al., 2024; Harper & Simonsen, 2017; Palmer et al., 2013). In this sense, symmetry may signal alignment not merely with transitory stylistic conventions but with more enduring structural properties of form. Consistent with this perspective, our findings suggest that symmetric designs may therefore signal alignment with enduring category structures, conveying a perception of timelessness that encourages consumers to anticipate longer product usage even as fashion trends evolve.

Third, by examining the moderating role of fashion orientation, we add nuance to the understanding of heterogeneity in sustainable consumption. Consistent with prior work (Gupta et al., 2019), fashion-oriented consumers tend to engage in less sustainable behaviors due to their stronger orientation toward novelty, yet we show that symmetrical designs can attenuate this tendency by signaling lasting aesthetic relevance.

From a managerial standpoint, our research clearly indicates that the symmetry of product design is a subtle yet effective cue for influencing green behaviors. Importantly, our findings do not suggest a single optimal design strategy, nor do they imply that symmetry should universally replace asymmetry in luxury fashion. Rather, they highlight how different aesthetic choices may call for different sustainability pathways. For products intended to remain in collections over time, luxury brand managers may leverage symmetrical design to communicate enduring style, aesthetic balance, and long-term value. As symmetrical designs are processed as more timeless and stylistically continuous, they can be particularly effective in mitigating unsustainable usage patterns among fashion-oriented consumers, who typically exhibit shorter product lifecycles.

Second, we find that although product durability is not always a primary consideration in consumption decisions (Sun et al., 2021), luxury buyers are confident that their luxury purchases will functionally endure. Thus, communication about product durability should emphasize its permanent stylistic benefits (Levinthal & Purohit, 1989) in terms of the product's timelessness. Highlighting these qualities could strengthen consumers' attachment to products and prolong their lifecycle. Furthermore, such interventions could be tailored to different consumer segments. For example, highlighting product longevity may reinforce sustainability motivations among environmentally concerned consumers. Conversely, for fashion-oriented consumers, we suggest positioning resale or donation as a stylish and responsible extension of the fashion cycle.

Regarding asymmetric designs, we acknowledge that some consumers—particularly fashion-forward ones—may actively seek these products as it happens for the so-called “*ugly luxury*”: visually unappealing products that are mainly chosen as status signals (e.g., Bellezza 2023; Cesareo et al., 2023). While the extant literature has examined why some consumers prefer hideous items over beautiful ones (Cesareo et al., 2023), our study suggests that this trend could lead to unsustainable consumer behavior that brands and policymakers may need to address. We recognize that it would be unrealistic—and likely ineffective—for policymakers to regulate design choices, especially when asymmetric designs are embraced for their signaling power. Instead, we suggest that luxury brand managers could play a pivotal role in promoting the sustainable use of asymmetric products. This could be achieved by emphasizing their enduring value through targeted messaging, extended warranties, and post-purchase services such as restyling, refurbishment, or even co-design opportunities that allow consumers to update and personalize their products over time.

Furthermore, it is important to highlight that short product lifespans are not intrinsically unsustainable if the items are resold or donated rather than disposed of. This viewpoint is especially pertinent in the luxury sector, where items are frequently crafted with exceptional materials and artistry that enable them to last beyond the initial ownership period (Amatulli et al., 2017). Our concern lies not with brief personal usage itself, but with the premature withdrawal from the consumption cycle. We aim to prevent scenarios in which luxury goods, despite their intrinsic durability, remain unused or are discarded without being introduced into secondary markets. This underscores an opportunity for luxury brands to enable

circular consumption models: Brands should embrace resale platforms and brand-backed second-hand markets as mechanisms to extend the life cycle of asymmetric products, particularly for consumers who shift quickly between fashion trends. These interventions could help mitigate the trend-sensitivity and shorter life cycles often associated with asymmetric luxury items.

More broadly, a key challenge for fashion designers moving forward will be to manage the delicate balance between innovation and creativity on the one hand, and long-term sustainability on the other. Our findings underscore the importance of design strategies that do not merely capture consumer attention in the short term but also extend the lifespan of luxury products through perceived timelessness and strategic brand engagement. Understanding how design features shape the temporal horizon of consumption may therefore represent an important step toward reconciling aesthetic innovation with sustainability in fashion and beyond.

5 Limitations and future research

Our work features several limitations that can serve as ideas for future research. First, our findings are limited to one specific aesthetic dimension (i.e., symmetry), but there are many other dimensions—such as contrast, color, unity, and order—that might positively impact sustainable consumption (e.g., Cesareo et al., 2023). Relatedly, most products combine two or more aesthetic features, which can simultaneously convey different aesthetic experiences. Future research should therefore explore whether other aesthetic features, or a combination of them, produces differential effects on LPU.

Second, although we tested alternative explanations for the relationship between symmetry and LPU—including perceptual fluency (Graf et al., 2018), excitement (Richins, 1997), and cognitive dissonance (Sweeney et al., 2000)—further research could explore additional psychological processes. For example, affective mechanisms (Kumar & Garg, 2010) or perceptions of functional obsolescence (Levinthal & Purohit, 1989) might interact with aesthetic judgments. Likewise, the positive aesthetic experience offered by symmetry may be driven by higher perceived functional durability. For example, it could be that asymmetric products are perceived as more perishable because of their unusual shape. It would also be valuable to investigate whether timelessness functions jointly with authenticity perceptions (Beverland, 2006; Morhart et al., 2015) to predict sustainable behavior.

Third, while we focused on individual fashion orientation as a key individual moderator, other consumer characteristics may be relevant. For example, scholars could explore variances among different product categories, as well as the impact of previous exposure to a similar design in that category (e.g., De Angelis et al., 2017), design literacy (Nielsen & Brønne, 2013) as well as consumers' motivations for luxury consumption (Amatulli & Guido, 2012). In addition, individual differences such as the need for uniqueness (Tian et al., 2001) or aesthetic expertise (Yeh & Peng, 2019) may influence how consumers interpret symmetrical versus unconventional designs.

Fourth, and related to the previous point, although our empirical context focuses on luxury fashion products, the mechanism identified in this research—linking aesthetic design features to perceived timelessness and product usage duration—may extend beyond luxury categories. Future research could examine whether similar effects emerge in other product domains where longevity is valued, such as furniture, consumer electronics, or automotive design. At the same time, it would be valuable to address the conceptual and empirical challenge of distinguishing luxury from premium products. This boundary is inherently blurred and represents a limitation of our work, as some of our stimuli and consumer perceptions may overlap with the premium segment. Future studies could compare whether symmetry-driven durability effects differ across market segments such as luxury, premium, masstige or fast-fashion products, where durability expectations and consumption cycles differ substantially.

Fifth, our theorization implicitly assumes that symmetrical designs align more closely with prototypical category forms, which contributes to perceptions of timelessness. However, as previously acknowledged, category prototypes are not static (Carbon, 2010). As consumers categorize products relative to existing exemplars within a category (Bloch, 1995), the features that define category prototypes may shift across time and contexts. Future research could therefore investigate how evolving prototypes influence perceptions of timelessness and whether symmetry is consistently interpreted as prototypical across different product categories and stylistic eras.

Furthermore, our operationalization of asymmetry as a binary contrast (symmetric vs. asymmetric) represents an additional limitation. Accordingly, we conducted an exploratory follow-up study testing two levels of asymmetry against symmetry, namely, moderate asymmetry, and high asymmetry. Although participants clearly distinguished among the three designs, both moderate and highly asymmetric designs yielded similarly lower usage expectations compared with the symmetric condition. Interestingly, the means displayed a directional pattern (with symmetric and highly asymmetric items showing somewhat higher LPU than moderately asymmetric ones), but the Bonferroni tests indicated no statistically significant difference between the two asymmetry levels. This suggests that within the boundaries of our stimuli, the degree of asymmetry does not meaningfully change perceived longevity. Nevertheless, the directional trend points to a theoretically intriguing possibility: a U-shaped relationship, where extremely harmonious or extremely distinctive designs may endure longer than those perceived as trend-sensitive or ambiguous. Consistent with research showing that aesthetic evaluations depend on the relationship between novelty and typicality (Hekkert, 2006), extremely typical designs may also risk appearing overly conventional, potentially reducing their perceived longevity. Future research using finer-grained manipulations, larger samples, and behavioral measures could systematically test whether such a non-linear effect exists and under which conditions it emerges.

Similarly, we also collected exploratory measures related to end-of-life behaviors, such as disposal intentions. Although symmetry did not significantly influence these outcomes, they conceptually align with our broader interest in product lifecycles and

suggest that aesthetic cues may primarily affect continued use rather than end-of-life decisions—a distinction that future research should explore further.

Finally, although our experiments measured expected and actual LPU, using hypothetical product stimuli and owned product recall, they were conducted online and relied exclusively on a self-reported measure which does not really capture wear frequency. Future research should consider collecting and analyzing field data about the aesthetic features of fashion items that consumers have retained in their closets. For instance, researchers could analyze consumers' real closets and usage diaries examining whether more symmetrical items are actually kept and used for longer. Combining longitudinal methods with design analytics could shed further light on how aesthetic timelessness translates into real-world sustainable consumption.

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Data availability The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The identity of respondents was completely anonymous.

Consent to participate Informed consent was obtained from all individual participants included in the study.

Conflict of interest The authors declare no competing interests.

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