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# ELECTRONICS AND FASHION CONSUMPTION BALANCING SUSTAINABILITY AND ACCESSIBILITY

The electronics and apparel industries are facing serious environmental crises, yet the transition to circular models is hindered by the tension between sustainability and affordability. This study, based on paradox theory, examines how consumers navigate these tensions. Qualitative Phase 1 reveals the perceived advantages of refurbished and second-hand products. In Phase 2, through an experimental study with 1,603 participants, we identify six behavioral profiles and analyze the associated psychological factors. Our results reveal that a paradoxical mindset does not always correlate with consistent behavior, suggesting that some sustainable choices may become internalized habits. This study provides new insights into the psychology of circular consumption.

CIRCULAR ECONOMY//SECOND-HAND//PARADOX THEORY//PARADOXICAL MINDSET//SUSTAINABILITY



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The electronics and apparel sectors sit at the epicenter of two escalating sustainability crises. Smartphones drive emissions, resource depletion, and e-waste (European Commission, 2022; Eurostat, 2024), while fast fashion fuels pollution and textile waste (European Parliament, 2020). Despite EU policies promoting circularity (European Commission, 2023; 2025), real progress still depends on consumers choosing more sustainable options, something that remains difficult despite growing awareness.

Several studies confirm a persistent gap between sustainable intentions and actual buying behavior (Eurobarometer, 2024; Geissdoerfer et al., 2017; Gomes et al., 2022). To explain this phenomenon, paradox theory offers useful insight. When consumers face conflicting goals (e.g., price

vs. sustainability) that require more than “either/or” thinking (Smith and Lewis, 2022), a “paradox mindset” helps them hold these tensions without shutting one or the other out (Miron-Spektor et al., 2018; Testa et al., 2025). But we still lack real-world evidence on how this way of thinking shapes behavior, especially in relation to circular solutions. In our research, we aim to understand how consumers navigate the core tension between environmental sustainability and economic affordability – not only in what they buy, but also in how they perceive, frame, and justify their decisions.

The present study breaks down into two complementary and sequential pieces of work. Phase 1 (interviews and a focus group) showed that consumers struggle with the trade-off between affordability and sustainability yet often perceive refurbished or second-hand products as promising solutions to solve these tensions. In Phase 2 (two-wave experiments ( $n = 1,603$ )) we identified six behavioral profiles, and examined their psychological underpinnings by measuring environmental concern, perceived consumer effectiveness, paradox mindset, and other key constructs.

Our results show that consumers who consistently choose circular products do not necessarily exhibit the highest levels of paradox mindset, suggesting that these options may have become internalized preferences that no longer require active cognitive engagement. By contrast, consumers who are consistently sustainability-oriented or behaviorally inconsistent report both high levels of perceived tension and a strong paradox mindset, indicating ongoing cognitive engagement with competing goals. These findings offer a more nuanced view of sustainable and circular consumption, highlighting the psychological dynamics underlying different behavioral profiles and individual decision-making.

## BACKGROUND

Consumer electronics and apparel are sectors facing major environmental and social challenges,

making them critical areas for introducing pro-environmental production and consumption patterns.

Digital technologies account for approximately 8–10% of global electricity use and 2–4% of total greenhouse gas emissions (European Commission, 2025). In 2022 alone, 4.4 million tons of electrical and electronic equipment were sold on the EU market, yet only 5 million tons were properly collected for recycling (Eurostat, 2024). The situation is especially critical for small devices like smartphones: only 5% are returned to formal collection systems, while an estimated 700 million remain unused in European households (European Commission, 2022). Smartphones also rely on lithium, cobalt, and rare earth elements (used in batteries and circuit boards) which are linked to resource depletion, mining, and habitat destruction (European Commission, 2022).

The apparel sector raises similarly urgent concerns, accounting for around 10% of global CO<sub>2</sub> emissions and 20% of global industrial water pollution (European Commission, 2022). Textile production consumes vast amounts of land, energy, and chemicals, with severe downstream impacts. In the EU alone, 5.8 million tons of textile waste are generated annually (about 11 kg per person), yet less than 1% is recycled into new textiles (European Parliament, 2020). Globally, a truckload of textiles is landfilled or incinerated every second, exposing the unsustainability of the current linear model. Fast fashion is largely to blame, relying on economies of scale to keep prices low while ignoring environmental and social externalities. In regions like Southeast Asia, for instance, this leads to severe air and water pollution from chemicals and waste, harming local communities and ecosystems.

### *EU policy framework for circularity*

In response to systemic challenges, policy frameworks are evolving accordingly. The EU’s circular economy framework, rooted in the Green Deal and Circular Economy Action Plan 2020, introduces cross-sectoral requirements for durability, repairability, and circularity, notably through the Eco-design for Sustainable Products

Regulation (ESPR) and the implementation of the Digital Produce Passport. Sector-specific strategies, like the 2024 Right to Repair Directive, bolster consumer access to repair services for electronics and household appliances. The EU Strategy for Sustainable Textiles has a similar aim with the Extended Producer Responsibility for collection, reuse and recycling. However, as emphasized by the Ellen MacArthur Foundation, real progress depends on consumer behavior. Unlocking value from electronics requires “innovation not only in product design, but also in business models that decouple ownership from use” (Ellen MacArthur Foundation, 2018), such as refurbishment or device-as-a-service schemes. In textiles, environmental impact could be cut by shifting to “resale, rental, repair, and remaking,” but adoption remains low due to perceived “lower hygiene or quality” and limited access to services (Ellen MacArthur Foundation, 2021).

### *Consumers facing dilemmas*

Despite growing environmental awareness and increasing regulatory and corporate efforts, shifting consumer behavior toward more environmentally sustainable choices remains a complex challenge across both the electronics and apparel sectors. While research indicates that nearly 60% of European citizens declare they are willing to pay more for products that are easier to repair, recyclable or made with a lower environmental impact (Eurobarometer, 2024), actual purchasing often reveals a persistent intention-behavior gap.

Academic literature attributes this discrepancy to the complex nature of sustainable consumption, shaped by competing values, needs, and social expectations (Testa et al., 2021; Geissdoerfer et al., 2017; Gomes et al., 2022). Consumers are often caught in trade-offs between sustainability and affordability, or between environmental ideals and everyday constraints. This internal conflict can lead to ambivalence, hesitation, or inconsistent behavior (Bhattacharyya et al., 2023; Collier et al., 2022).

Moreover, sustainable choices are not linear or stable over time, but emerge from dynamic

and sometimes contradictory cognitive processes (Anderson, 1999; Pappas et al., 2016). Even among highly motivated individuals, greater awareness and knowledge do not always simplify decisions. Indeed, in some cases, they may even intensify tensions and lead to inaction (Longo et al., 2019).

### *Paradox theory and research question*

Among the theoretical lenses that attempt to capture this complexity, paradox theory (Smith and Lewis, 2011; 2022) and the related concept of the paradox mindset (Miron-Spektor et al., 2018) have proven particularly promising. The paradox mindset is a cognitive and behavioral orientation enabling individuals to accept and navigate tensions between seemingly contradictory goals.

In the domain of corporate sustainability, individuals with a paradox mindset demonstrate greater cognitive complexity, which allows them to integrate economic, social, and environmental dimensions, rather than choosing one and neglecting the others (Hahn et al., 2014; Sharma and Jaiswal, 2018). They are more likely to consider both short- and long-term impacts, resist simplistic trade-offs, and engage in nuanced decision-making. As a result, a paradoxical cognition can foster creative responses to sustainability dilemmas.

This mindset has also proven relevant in explaining consumer behavior in the face of sustainability-related trade-offs (Testa et al., 2025). Theoretical frameworks suggest that consumers frequently face inherent tensions (such as the desire to act pro-environmentally versus the appeal of affordability, performance, or aesthetics) and differ in their ability to integrate these opposing demands. A paradox mindset allows individuals to manage such conflicts without reducing them to binary choices, instead seeking synergistic solutions.

Drawing on this context, we adopted a two-fold approach grounded in paradox theory to explore how consumers navigate the tension between environmental sustainability and economic affordability. Phase 1 is a qualitative, exploratory stage based on interviews and a focus group, investigating the question: *What are the*

key paradoxical tensions that hinder sustainable consumption in the electronics and apparel sectors? Phase 2 involves experimental studies, examining: *Which psychographic characteristics are associated with different consumer behavioral profiles?*

EXPLORATORY QUALITATIVE STUDIES

A total of 12 individual interviews and one focus group involving 10 participants were conducted in July 2023, aiming to provide a representative insight into the Italian population. The demographic characteristics of the participants are summarized in Table 1.

The interviews were structured around five open-ended questions to identify: 1) key drivers of purchasing decisions; 2) perceived tensions between conflicting goals; 3) the role of sustainability in the decision-making process;

4) factors that facilitate or hinder sustainable consumption; and 5) perceptions of refurbished and second-hand products.

The qualitative interviews, each lasting around 40 minutes, revealed distinct but converging patterns across the electronics and apparel sectors regarding consumers' sustainability-related choices. They were recorded, transcribed, and coded independently by the researchers involved in this study. Insights from the focus group were noted by hand and then coded using the same logic applied to the interviews.

FINDINGS

*Affordability vs. environmental sustainability as a main paradoxical tension*

In both sectors, participants prioritized functional and aesthetic goals (such as quality, durability, price, and technical performance) over environmental

TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF INTERVIEWEES

|                      | INTERVIEWS |      | FOCUS GROUP |      |
|----------------------|------------|------|-------------|------|
|                      | Gender     |      |             |      |
| Female               | 4          | 33%  | 6           | 60%  |
| Male                 | 8          | 67%  | 4           | 40%  |
|                      | 12         | 100% | 10          | 100% |
| Age group            |            |      |             |      |
| 18-26 (Gen Z)        | 1          | 8%   | 6           | 60%  |
| 27-42 (Millennials)  | 5          | 42%  | 4           | 40%  |
| 43-58 (Gen X)        | 3          | 25%  | 0           | 0%   |
| 59-70 (Baby boomers) | 3          | 25%  | 0           | 0%   |
|                      | 12         | 100% | 10          | 100% |
| Working              |            |      |             |      |
| Yes                  | 11         | 92%  | 0           | 100% |
| No                   | 1          | 8%   | 10          | 0%   |
|                      | 12         | 100% | 10          | 100% |
| Education            |            |      |             |      |
| High School degree   | 3          | 25%  | 0           | 0%   |
| Bachelor's degree    | 7          | 58%  | 10          | 100% |
| Postgraduate degree  | 2          | 17%  | 0           | 0%   |
|                      | 12         | 100% | 10          | 100% |

sustainability. For electronics, 67% of participants spontaneously mentioned repairability and refurbishment as meaningful factors, although only a minority explicitly referred to environmental sustainability. In the apparel category, instead, environmental sustainability was explicitly mentioned as a purchase driver even less frequently, yet it was more often implicitly associated with quality or natural fibers.

Most respondents reported experiencing goal conflict, especially between price and quality, while sustainability-related tensions emerged for fewer participants and often required prompting. Goal conflict was perceived more acutely in electronics, particularly between price and technical performance or brand, with one-third of participants acknowledging tensions with sustainability. Below is a sample of direct quotes.

*“I was looking for a phone that was original – both in design and innovative features – and compact. I had to balance several attributes: size, design, price, functionality, and brand. In the end, I gave up on a low price to get what I really wanted (a Google Pixel 6A). I checked many online reviews, and I find Google reliable and innovative. Originality was the most important feature for me.” (smartphone)*

*“Yes, because the (unspoken) goal is social and environmental sustainability, but right now that’s an unbridgeable gap. The trade-off between price and technical features is just too great.” (smartphone)*

*“I always feel conflicted when shopping online: Should I save time and buy online, or go to a physical store? Another dilemma: price versus quality. How much is it really worth spending on a piece of clothing? What if it turns out not to be as good as advertised and I’ve wasted a lot of money?” (apparel)*

*“I was drawn to a new piece of clothing – I really liked it – but I decided not to buy it because I was following my rule of buying fewer clothes. Of course, if someone bought just two things a year, but with high value – like a handcrafted garment – those pieces would last much longer and be more environmentally friendly.” (apparel)*

*“What emerged clearly from the focus group is that brand recognition, product longevity, technical capabilities,*

*cost-effectiveness, and the option of refurbished devices are the key factors.” (focus group validation, smartphone)*

### *Second-hand and refurbished as viable solutions*

Across both sectors, second-hand or refurbished formats were recognized as potential strategies to reconcile competing goals, especially when accompanied by trust-enhancing measures such as warranties, certifications, or detailed information.

When we ask: *What do you think could increase or reduce these tensions?* The responses highlight circular solutions as the best possible way to meet both needs – affordability and environmental sustainability.

*“I buy a refurbished phone from my favorite brand, Apple (at a lower and more affordable price for me, with environmental benefits too), but I have doubts about its performance – or should I just get a new phone? The first time it didn’t go well (the battery didn’t perform, and I returned it). The second time went well (the refurbished phone worked perfectly).” (smartphone)*

*“Consumer awareness depends on information – if people also knew about water usage, workers’ wages, and not just where a product is made, all consumers would be more conscious. Or, like with cigarette warnings, if you were told ‘before buying that item, consider a second-hand alternative... or think about bartering.’ I’m thinking of the example of Humana.” (apparel)*

*“Even in this context, a refurbished smartphone is seen as a way to reconcile the tension between sustainability and technical performance.” (focus group validation, smartphone)*

These findings reveal that, while tensions between affordability and sustainability are deeply felt, consumers are not indifferent to possible solutions. Circular options (particularly second-hand and refurbished products) emerged as the most promising middle ground, provided they are supported by clear information, guarantees, and trusted sources. These insights not only underscore the practical potential of circular models but also emphasize the importance of consumer trust and awareness in driving sustainable behavior.

## EXPERIMENTAL STUDIES

Building on insights from preliminary interviews, we conducted two online pilot tests ( $n = 99$  and  $n = 203$ ) with representative samples of the Italian population to validate whether circular formats were perceived as paradoxical solutions. We adopted a between-subjects design with three framing conditions: (a) a sustainability frame, presenting an expensive smartphone and a pair of jeans with lower environmental impact; (b) an affordability frame, offering a cheap smartphone and fast-fashion jeans with higher environmental impact; and (c) a paradoxical frame, featuring a refurbished smartphone and second-hand jeans that were both more affordable than the sustainable option and more sustainable than the cost-driven one. Participants then evaluated their perceived sense of conflict and complementarity using 7-point Likert-scale ratings (with scales adapted from Miron-Spektor et al., 2011).

The results confirmed that refurbished and second-hand products were seen as paradoxical products that effectively enabled participants to perceive the coexistence of affordability and sustainability, while reducing the sense of conflict. Therefore, we assumed that circular products are seen as cognitive and behavioral bridges between conflicting goals, which help individuals facing price-sustainability dilemmas.

Building on the results from the pilots, we developed two-wave experimental studies ( $n = 1,603$ ) simulating real-life shopping scenarios, replicating the same design once in the consumer electronics sector (February 2024) and once for the apparel sector (October 2024), using the same panel of participants in both waves. The aims of these experimental studies were to (1) identify distinct consumer profiles based on their shopping choices in the context of price-sustainability dilemmas; and (2) characterize them according to key psychographic variables. This repeated-measures design allowed us to observe individual behavioral patterns across different product categories and over time.

Participants were initially asked to choose between a more sustainable but more expensive product and a less sustainable, lower-cost alternative. Prices were calibrated based on each participant's self-reported average budget for the respective product category. Those who expressed indecision were then presented with a third alternative: a reconditioned version of the sustainable smartphone in the electronics experiment, and a second-hand version of the sustainable jeans in the apparel experiment.

Alongside the experimental task, we measured psychographic variables through a structured questionnaire. We included validated scales for the most well-established constructs in the sustainable consumption literature: environmental concern (items adapted from Testa et al., 2020); environmental attitude (authors' elaboration based on definitions from Ajzen, 1991; Fishbein, 1979); perceived consumer effectiveness (items adapted from Kang et al., 2013); green purchasing behavior (items adapted from Sudbury-Riley & Kohlbacher, 2016); other sustainability-related behaviors (items adapted from Larson et al., 2015); perceived tensions (items deduced from our exploratory interviews); and paradox mindset (items adapted from Miron-Spektor et al., 2018). All constructs were measured on 7-point Likert scales (1 = strongly disagree; 7 = strongly agree).

## FINDINGS AND DISCUSSION

A total of 1,603 Italian participants completed both waves of the study (consumer electronics and apparel). Sociodemographic characteristics are reported in Table 3. This final sample includes only participants with valid responses in both waves, after accounting for drop-outs. No evidence of attrition bias was detected between the two data collection waves.

### *Behavioral consumer profiles*

We created consumer profiles using data collected from the same participants across two different

product categories (electronics and apparel). This approach allowed us to go beyond single-category analyses and to construct distinct behavioral profiles based on how individuals navigated the trade-offs between sustainability and affordability in both domains. By combining participants' choices across these two contexts, we identified consistent or divergent decision-making patterns that reflect the complexity of real-world sustainable consumption.

Based on participants' combined choices across the electronics and apparel experiments, we initially identified nine behavioral combinations, derived from a cross-classification of the three available options in each sector: a low environmental impact product (sustainable), a cost-driven product (cheap), and a circular alternative (refurbished or second-hand). To facilitate interpretation and theoretical conceptualization, these nine combinations were subsequently aggregated into six broader profiles by merging conceptually similar patterns. Specifically, two configurations were grouped under the Paradoxical Sustainable profile and two under the

Paradoxical Economic profile, both expressing a mixed but goal-oriented use of circular options. The full distribution is summarized in Table 3.

The largest group was the **Coherent Economic** profile (28.8%), representing consumers who consistently chose the cheapest option in both categories, suggesting a strong price orientation. In contrast, **Coherent Sustainable** consumers (18.5%) consistently prioritized low environmental impact. A smaller but meaningful segment (8.9%) fell into the **Coherent Paradoxical** profile, consistently choosing circular options (refurbished and second-hand), indicating a reconciliatory strategy. The **Paradoxical Economic** and **Paradoxical Sustainable** profiles (10.4% and 12.5%, respectively) reflected participants who integrated circular options either in a price-driven or sustainability-driven manner, using these products as a means to pursue one goal over the other. Finally, **Confused** participants (20.8%) represented the second largest group and displayed inconsistent behavior across sectors, possibly indicating ambivalence or context-sensitive decision-

**TABLE 2. SOCIODEMOGRAPHIC PROFILE OF THE PANEL SAMPLE (N = 1,603)**

|                           | N.   | (%)  |
|---------------------------|------|------|
| <b>Sex</b>                |      |      |
| Male                      | 769  | 48.0 |
| Female                    | 834  | 52.0 |
| <b>Age group</b>          |      |      |
| 18-24                     | 160  | 10.0 |
| 25-34                     | 234  | 14.6 |
| 35-44                     | 260  | 16.2 |
| 45-54                     | 367  | 22.9 |
| 55-70                     | 582  | 36.3 |
| <b>Geographical area</b>  |      |      |
| Northwest                 | 429  | 26.8 |
| Northeast                 | 311  | 19.4 |
| Center                    | 329  | 20.5 |
| South                     | 361  | 22.5 |
| Islands                   | 173  | 10.8 |
| <b>Education (binary)</b> |      |      |
| No university degree      | 1196 | 74.6 |
| University degree         | 407  | 25.4 |

making. Together, these profiles offer a typology of consumer behavior when facing sustainability–affordability dilemmas in distinct product domains.

### Characterizing profiles

To characterize these profiles and examine whether the six behavior-based groups also differed meaningfully in their psychological orientation, we relied on a set of psychographic variables collected at both time points: environmental concern, environmental attitude, perceived consumer effectiveness (PCE), green purchasing behavior, other sustainability-related behaviors, perceived tensions, paradox mindset. For each variable, we computed the average score across the two experimental waves, thereby obtaining more robust and stable measures by reducing potential noise associated with situational or product-specific fluctuations.

To statistically test for differences across profiles, we conducted Kruskal–Wallis tests on all core constructs. This non-parametric alternative to one-way ANOVA was selected due to the unequal group sizes resulting from the ex-post construction of behavioral profiles and the likely non-normal distribution of psychographic measures (Hecke, 2012). This approach ensured valid comparisons without relying on assumptions that could not be satisfied in our sample. Results revealed significant differences ( $p < 0.001$ ) across the nine original choice combinations for all psychographic variables

considered. These findings support the construct validity of our segmentation: Consumer behavior is meaningfully associated with underlying values and psychological dispositions.

Overall, this profiling unveils a nuanced landscape of consumer segments shaped by distinct configurations of values, cognitive orientations, and behavioral strategies. It offers insight into how individuals navigate the core tension between environmental sustainability and economic affordability – not only through their final choices, but also through the ways they frame and justify those choices.

**Coherent Sustainable** consumers consistently choose sustainable options and show a highly pro-environmental profile. They report high environmental concern (5.6), strong PCE (4.9), and relatively strong environmental attitudes (4.0). Behaviorally, they display the highest levels of green purchasing (3.5) and other sustainability-related behaviors (3.1). Despite perceiving tensions (4.2), they also exhibit the highest paradox mindset (4.5), suggesting a strong cognitive ability to reconcile competing goals through the consistent choice of low-impact products. Overall, this profile reflects a segment that is both value-driven and behaviorally coherent, capable of aligning intentions and actions in sustainability-oriented consumption.

The largest segment, **Coherent Economic** consumers prioritize affordability over sustainability.

**TABLE 3. CONSUMER PROFILES REFLECTING PRICE–SUSTAINABILITY TRADE-OFFS ACROSS TWO PRODUCT CATEGORIES**

| Consumer profile               | Choice combination                                                                       | Interpretation                                      | N.  | %    |
|--------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------|-----|------|
| <b>Coherent Sustainable</b>    | sustainable smartphone + sustainable jeans                                               | Consistently prioritize sustainability              | 297 | 18.5 |
| <b>Coherent Economic</b>       | cheap smartphone + cheap jeans                                                           | Consistently prioritize affordability               | 462 | 28.8 |
| <b>Coherent Paradoxical</b>    | refurbished smartphone + second-hand jeans                                               | Consistently choose circular alternatives           | 143 | 8.9  |
| <b>Paradoxical Economic</b>    | cheap smartphone + second-hand jeans OR refurbished smartphone + cheap jeans             | Circular formats used primarily for affordability   | 167 | 10.4 |
| <b>Paradoxical Sustainable</b> | sustainable smartphone + second-hand jeans OR refurbished smartphone + sustainable jeans | Circular formats used to support sustainable intent | 200 | 12.5 |
| <b>Confused</b>                | cheap smartphone + sustainable jeans OR sustainable smartphone + cheap jeans             | Inconsistent patterns, no clear orientation         | 334 | 20.8 |

They show the lowest scores across all variables, including environmental concern (4.6), attitude (3.5), PCE (4.0), green purchasing (2.9), and other behaviors (2.5). They also perceive lower tension (4.0) and report the lowest paradox mindset (4.1). This group appears disengaged from sustainability, both attitudinally and behaviorally, and less cognitively involved in perceiving conflicts and managing trade-offs.

**Coherent Paradoxical** consumers consistently select circular products across both domains. They report the highest levels of environmental concern (5.9), attitude (4.3), and perceived consumer effectiveness (5.0), along with strong behavioral engagement in green purchasing (3.5) and other sustainable actions (2.9). While their perceived tensions (4.2) and paradox mindset (4.1) are only moderate, their coherent preference for refurbished and second-hand products suggests they view circularity as a structurally effective and meaningful resolution to the sustainability – affordability dilemma.

**Paradoxical Sustainable** consumers alternate between sustainable and circular options across the two sectors. This behavioral pattern may reflect the use of circular products as a flexible strategy when the preferred sustainable option is inaccessible or unaffordable. However, this alternation remains within the same pro-environmental domain. In fact, these consumers display a consistently strong environmental orientation, with very high scores in environmental concern (5.9), attitude (4.2), and perceived consumer effectiveness (5.0). They are also behaviorally engaged, reporting high levels of green purchasing (3.5) and other sustainable behaviors (3.0). Notably, they perceive moderate levels of tension (4.2) and exhibit a higher paradox mindset (4.3) than the Coherent Paradoxical group.

**Paradoxical Economic** reflects a pragmatic strategy, blending affordability with partial engagement in sustainability. Their scores are moderate across the board, with concern (5.4), attitude (4.0), PCE (4.6), green purchasing (3.2), and other behaviors (2.8). They perceive some tension (4.1) and show a moderate paradox mindset (4.2).

Refurbished or second-hand products may appeal to them primarily for economic reasons, yet their moderate paradox mindset suggests some openness to value integration, even if secondary to cost.

**Confused** consumers alternate between sustainable and cheap options across product categories, displaying no consistent preference for either environmental or economic goals. Their scores fall in the lower–middle range for environmental concern (5.1), attitude (3.8), perceived consumer effectiveness (4.5), and both behavioral indicators (purchasing at 3.3 and other behaviors at 2.9). However, they report the highest levels of perceived tension (4.3) and paradox mindset (4.5) among all profiles. This suggests a strong cognitive awareness of the trade-off between sustainability and affordability, but also a possible difficulty in translating this awareness into coherent decision-making strategies. These consumers may be torn between competing goals, without a stable framework for reconciling them across contexts.

Overall, these findings suggest that sustainable consumption is not a fixed disposition, but rather a fluid spectrum of orientations and behaviors. Coherent Paradoxical consumers appear to have already internalized circular products as their default strategy: rather than actively grappling with conflicting goals, they resolve trade-offs implicitly, which may explain their relatively moderate paradox mindset. Coherent Sustainable consumers, by contrast, display both strong behavioral consistency and a high paradox mindset, suggesting a reflective and value-driven approach: they actively perceive tensions but consistently resolve them in favor of sustainability, even at a higher cost.

In this light, the Paradoxical profiles reveal that behavioral inconsistency does not necessarily indicate indifference; on the contrary, it may reflect an active cognitive engagement with competing goals. For these consumers, circular products serve as both cognitive and emotional bridges. This underscores the transformative potential of circularity, conceptualized here as a paradoxical solution, not only as a viable market

offering but also as a psychological mechanism for reconciling tensions between sustainability and affordability.

These patterns suggest that behavioral consistency and paradox mindset are not always aligned. Some consumers resolve tensions through internalized preferences or stable habits, requiring less active reflection. Others engage more consciously with the trade-off, evaluating each situation as it arises. Both approaches reflect distinct cognitive strategies for managing the sustainability–affordability dilemma.

## PRACTICAL IMPLICATIONS

Understanding how consumers reconcile conflicting objectives is essential to designing more effective policy interventions, marketing strategies, and product offerings that facilitate choices aligned with both environmental goals and individual constraints. This study offers crucial insights in this regard. Moreover, our work is a response to the World Economic Forum's (2024) call to transition from a “value-in-transaction” to a “value-in-use” paradigm, which demands new ways of designing, marketing, and regulating products and services.

Consumers often experience tensions between sustainability and cost, convenience, or social norms. But rather than viewing these tensions as barriers, managers and policy makers can frame them as levers for innovation. For managers, this means redesigning offerings and communications around paradox-resolving experiences. As an illustration, second-hand and refurbished products should not be marketed solely as cheap alternatives, but rather as smart, stylish, and sustainable choices. This involves elevating the perceived quality through warranties, certifications, storytelling, and visual merchandising (Cervellon et al., 2012; Kessous and Valette-Florence, 2019). To reframe consumption as both affordable and aspirational, effective tools are marketing messages like “Can you tell if it's new or

second-hand?” or QR codes that reveal the carbon savings of refurbished goods.

When it comes to sharing, the key is convenience. By using business models that make sharing as seamless as ownership (e.g., through real-time booking apps, user reviews, and flexible pricing), companies can alleviate the paradox between individual ease and collective good (Lang and Armstrong, 2018). Firms can use gamification and loyalty incentives to foster participation while strengthening community values. Likewise, repair services need to be visible, affordable, and emotionally engaging. Initiatives like in-store repair stations or storytelling campaigns around “loved and fixed” items (McNeill et al., 2020; Laitala et al., 2021) help transform repair from a chore into a badge of care and sustainability.

Policymakers can play a vital enabling role by mandating eco-labels and repairability scores (Kirchherr et al., 2017), offering tax incentives for repair services, or funding educational programs that enhance the appeal of circular behaviors. They can also embed paradox thinking into sustainability communication to help citizens understand that seemingly conflicting goals (e.g., cost vs. sustainability) can often be achieved together.

Ultimately, the findings presented here call for a shift in both market logic and policy framing: consumers don't simply need greener options, they need support in resolving internal dilemmas. By cultivating a paradox mindset (Miron-Spektor et al., 2018) through design, incentives, and messaging, organizations can open up a more inclusive, viable path toward sustainable consumption.



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