

The Role of Consumers Within a Circular Economy Model

Final report of the research project "The Role of Consumers Within a Circular Economy Model"

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Preface

Hakon Swenson stiftelsen

In 2023, Hakon Swenson stiftelsen awarded a grant to the project “The Role of Consumers Within a Circular Economy Model”

As we move toward more sustainable ways of living, it's clear that consumers are key to making the circular economy work. Hakon Swenson stiftelsen recognizes the importance of supporting research that explores how people make choices around reducing, reusing, and recycling—and what factors influence these decisions.

The insights from this project are valuable not only for academics but also for brands looking to lead in sustainability. Understanding what motivates consumers brings us closer to realizing the full potential of a circular economy.

Hakon Swenson Stiftelsen would like to thank Aylin Cakanlar for conducting such a thorough and impactful research project.



Lena Litens,
Chairman Hakon Swenson stiftelsen

Summary

With climate change posing significant global challenges, extensive research has explored factors driving sustainable consumer behavior, particularly during the acquisition phase, such as purchasing eco-friendly products, and the disposal phase, including recycling habits. However, less attention has been given to reducing consumption—a critical factor at the heart of most environmental issues.

A circular economy advocates for a closed-loop system where products and materials are reused, repaired, or recycled to minimize waste and resource depletion. This project investigates consumers' roles in the circular economy, focusing on behaviors like secondhand purchasing and extending product lifespans. It also examines how adopting minimalist design can promote sustainable consumption.

While recycling is the final stage in the "Reduce, Reuse, Recycle" hierarchy, its limitations (e.g., material downgrading and restricted markets for recycled plastics; OECD, 2023) mean reducing and reusing are often more impactful. However, recycling remains critical for certain materials, such as paper and aluminum, which conserve natural resources and save energy compared to producing new raw materials. Recognizing this, the final project in this research focuses on the drivers of paper recycling behavior.

Through 25 experiments, this research examines the psychological and situational factors influencing sustainable behaviors across reducing, reusing, and recycling. By understanding these dynamics, the findings provide actionable insights for businesses, offering pathways to enhance consumer engagement in the circular economy and promote sustainable practices.

Level 1. Reduce

Project 1: Transformation Salience and Reduce

Prioritizing product longevity allows brands to mitigate the environmental costs of production, distribution, and disposal, offering a more sustainable alternative to the traditional linear consumption model. In response to this shift, a growing number of companies are promoting initiatives that encourage product repurposing and reuse, effectively extending their lifecycle. These efforts not only reduce waste but also align with the principles of a circular economy, which aim to keep products and materials in use for as long as possible, thereby minimizing environmental impact.

- Our findings reveal that transformation messaging (i.e., giving products a new life by transforming them) can significantly enhance how consumers perceive a product's utility. This, in turn, influences their preference for the brand and their purchase decisions.

- Transformational messaging encourages consumers to view products not just for their immediate purpose but also for their potential to deliver ongoing value and meet long-term needs. This shift in perception leads to an expectation of extended product usage. Since consumers increasingly value resourcefulness and favor products that are perceived as durable and longlasting, this expectation positively impacts how they evaluate brands and decide what to buy.

- Leveraging transformational messages can create a win-win situation by increasing consumer interest, extending product usage, and reducing environmental impact.

Level 2. Reuse

Project 2: Encouraging consumers to engage in second-hand consumption

Buying secondhand items significantly reduces the overall environmental footprint, making it vital to understand what drives consumers to choose secondhand products. This research focuses on the role of residential mobility—a socially relevant and actionable factor—in shaping consumer interest in secondhand goods.

- Residentially mobile consumers, who frequently move, tend to have more favorable responses toward brands when they offer second-hand products than residentially stable consumers, who tend to stay in one place for long time.

- Residential mobility is not just a demographic factor—it can also be triggered situationally. By framing marketing messages around the idea of mobility, businesses can make second-hand products more appealing. For example, a campaign message like "Fuel your wanderlust with our secondhand gear—perfect for those who embrace a life of mobility and adventure" can tap into consumers' sense of movement and exploration, boosting interest in second-hand purchases.

Project 3: Minimalism

Minimalist design and sustainability are closely connected, as both prioritize simplicity, efficiency, and the responsible use of resources. Minimalist products often feature clean, timeless designs that emphasize functionality over excess, reducing the need for unnecessary materials and manufacturing processes. In this research, we explore how consumers' preferences for product design differ depending on whether the product is intended for individual use (solo consumption) or shared use.

- For brands specializing in minimalist goods, emphasizing their suitability for shared experiences—such as group gatherings or family use—could increase their appeal. Conversely, for maximalist products, highlighting their value for individual, solo use might resonate more with consumers.

- Digital platforms like Meta offer even more specific targeting opportunities. For example, because many people publicly display their relationship status and married consumers often engage in shared consumption, minimalist products could be promoted directly to married users.

Level 3. Recycle

Our research demonstrates that consumers are less likely to recycle items containing private information compared to those without such information. Our study highlights an important insight: reducing the visibility of private information on documents, such as through shredding (or similar methods when shredding isn't available), significantly increases the likelihood of consumers recycling. This finding underscores the potential for targeted strategies to encourage responsible waste disposal while advancing environmental sustainability.

- For example, businesses that mail documents containing private information could prompt recipients to shred or otherwise obscure sensitive details before recycling.

- Promoting shredding and other privacy-preserving measures as standard practice not only addresses consumer concerns about information security but also supports increased paper recycling. These actions align with privacy laws while demonstrating environmental leadership, potentially setting new industry standards.

Table of Contents

Introduction	1
1. Background, Purpose and Questions	2
Level 1. Reduce	2
Project 1: Transformation Salience and Reuse	2
Level 2. Reuse	2
Project 2: Secondhand consumption	2
Project 3: Minimalism	3
Level 3. Recycling	4
Project 4: Privacy and Recycling Behavior	4
2. Method of the Study	5
2.1 Experiments	5
Online Experiments	5
Field Experiments	5
Lab Experiments	5
Secondary Data Analysis	5
2.2 Measurement of Sustainable Behavior	5
Intention to Prefer Secondhand Products	5
Intention to Reuse Products	5
Actual Behavior	5
Click-Through Rates	5
3. Results	8
Level 1. Reduce	8
Project 1: Transformation Salience and Reuse	8
Level 2. Reuse	11
Project 2: Secondhand consumption	11
Project 3: Minimalism	13
Level 3. Recycle	15
Implications and practical significance for the retail industry	17
Level 1. Reduce	17
Project 1: Increasing consumers’ willingness to reuse their products	17
Level 2. Reuse	17
Project 2: Encouraging consumers to engage in second-hand consumption	17
Project 3: Minimalism	18
Level 3. Recycle	19
Project 4: Private information and recycling	19
4. References	20

Introduction

Climate change stands as one of the most significant and urgent challenges facing humanity today (Loy, Reese, & Spence, 2022). It has led to the exacerbation of various critical global issues, including health problems, poverty, hunger, escalating sea levels, inequality, and the degradation of ecosystems (Zhenmin & Espinosa, 2019). Given the far-reaching consequences of climate change, substantial research has focused on the factors that influence consumers’ sustainable choices during both the acquisition phase, such as purchasing sustainable products (Dixon & Mikolon, 2021; White, Habib, & Hardisty, 2019), and the disposal phase, including recycling behavior (Trudel & Argo, 2013). However, there has been limited research addressing the crucial issue of reducing consumption, which lies at the core of most environmental problems. Studies indicate that many consumers opt to buy new products instead of repairing their existing ones (Sabbaghi et al., 2017). For example, recent reports reveal that 31% of washing machines, 56% of TVs, and 69% of smartphones are replaced for reasons other than being broken (van den Berge et al., 2021). This linear approach significantly contributes to the environmental crisis, underscoring the need for a transition to a circular economy. A circular economy promotes a closed-loop system, where products and materials are reused, repaired, or recycled to minimize waste and resource consumption.

As a result, an increasing number of brands are embracing circular economy practices to promote sustainability and reduce waste. For example, H&M has introduced a resale platform for pre-owned clothing, enabling customers to buy and sell secondhand items. The second-hand market has grown rapidly, with the number of brands offering secondhand options rising from fewer than ten in 2020 to over 160 in 2023 (ThredUp, 2024). Moreover, over 70% of

retail executives from companies not yet in the secondhand market are planning or considering entry (ThredUp, 2024). Similarly, IKEA’s ”Help Your Furniture Live Longer” initiative encourages consumers to repair and refurbish furniture, offering buy-back and resale programs to extend product usability.

These efforts reflect a broader industry shift toward sustainability, focusing on product longevity and resource efficiency. This trend aligns with changing consumer preferences and increasing regulatory pressures to address environmental concerns.

This project examines the role of consumers in the circular economy, focusing on behaviors that drive secondhand purchasing and motivations for extending product lifespans. Additionally, it explores the adoption of minimalist design as a pathway to sustainable consumption. Though recycling is at the end of the 3R Principle of Reduce Reuse, Recycle for good reason, as it has its limitations (e.g., downgrading and limited market for recycled plastics; Hopewell et al., 2009; OECD, 2023), there are some products (e.g., paper, aluminum) for which recycling is still an important sustainable behavior as it not only conserves natural resources, such as trees used for paper, but also saves energy compared to the production of new raw materials (de Wildt & Meijers, 2023). Therefore, the last project focuses on the factors that drive paper recycling. Through 25 experiments, this research investigates the psychological and situational factors influencing these behaviors, offering actionable insights for businesses. The report begins with a brief literature review, followed by a detailed explanation of the experimental methodology. The findings are then presented, concluding with key managerial implications to guide industry stakeholders in promoting sustainable practices and advancing circular economy principles.

1. Background, Purpose and Questions

Level 1. Reduce

Project 1: Transformation Salience and Reuse

Over the past decade, sustainability has evolved into a central priority for stakeholders worldwide, gaining recognition as a critical global concern (Nenkov, 2024; Winterich, Reczek, & Makov, 2023). This shift reflects heightened awareness of environmental challenges and the pressing need for responsible resource management. Brands, in particular, are responding to growing consumer and societal demand for sustainability by adopting initiatives aimed at minimizing their environmental footprint (Wallach & Dopovich, 2023).

Traditionally, sustainability efforts have focused on practices such as sustainable product acquisition, recycling, and the integration of eco-friendly materials. However, there is a growing recognition that extending the lifespan of products—ensuring they remain in use for longer periods—can significantly enhance resource efficiency and help reduce greenhouse gas emissions (Cox et al., 2013). Prioritizing product longevity allows brands to mitigate the environmental costs of production, distribution, and disposal, offering a more sustainable alternative to the traditional linear consumption model.

In response to this shift, a growing number of companies are promoting initiatives that encourage product repurposing and reuse, effectively extending their lifecycle. These efforts not only reduce waste but also align with the principles of a circular economy, which aim to keep products and materials in use for as long as possible, thereby minimizing environmental impact.

This research investigates how transformation messaging (i.e., giving products a new life by transforming them), which has been used to boost recycling rates (Winterich, Nenkov, and Gonzales 2019) can be harnessed to increase the duration of product usage and affect brand attitudes and purchase outcomes. By examining

this approach, the research aims to provide actionable insights for brands seeking to enhance sustainability through product longevity and circular economy practices.

Research question: How does transformation messaging affect consumers' usage of products?

Research question 2: How does transformation messaging affect consumers' brand attitude and purchase outcomes?

Level 2. Reuse

Project 2: Secondhand consumption

Secondhand consumption, defined as acquiring pre-owned goods through various channels, encompasses the purchase of items previously owned by others (Roux & Guiot, 2008; Padmavathy, Swapana, & Paul, 2019). Once primarily viewed as a cost-effective alternative to buying new, the appeal of secondhand shopping now extends well beyond financial savings. Ethical considerations, fashion interest, and a desire for unique or nostalgic items are significant drivers of this behavior (Ferraro et al., 2016; Guiot & Roux, 2010).

Consumer behavior research has frequently examined secondhand consumption in the context of luxury and vintage goods. Previous research shows that individuals can seek these products to express individuality, enhance self-image, or connect with nostalgia and historical authenticity (Amatulli et al., 2018; Cervellon et al., 2012; Sarial-Abi et al., 2017). Recent studies highlight new dimensions of secondhand consumption, such as the increasing trend of consumers reselling pre-owned items (Huang & Wong, 2024) and the emotional factors that drive these behaviors. For instance, feelings of loneliness have been shown to amplify interest in purchasing secondhand goods (Huang & Fishbach, 2021). This evolving perspective underscores secondhand consumption as a multifaceted behavior influenced by a blend of personal and social dynamics.

In this research, we explore how specific life-style factors, particularly residential mobility, influence engagement in secondhand consumption. Residential mobility refers to the frequency and extent to which individuals relocate from one place to another (Oishi & Tsang, 2022). Moving is an integral aspect of modern life, driven by various factors such as pursuing education, career changes, seeking new environments, shifts in personal relationships, or retirement (Koo, 2022). Each year, millions of individuals relocate within and across cities (Oishi, 2010; Oishi & Tsang, 2022), and globalization has further accelerated the prevalence of residential transitions worldwide (Oishi & Talhelm, 2012).

Recent trends indicate a notable rise in global migration, with 2022 marking a record number of immigrants employed worldwide (OECD, 2023). Additionally, climate change has emerged as a critical driver of human movement, as rising sea levels, extreme weather events, and changing agricultural landscapes force individuals to seek new homes (Dobbs, 2022).

Beyond its societal and economic implications, residential mobility presents a valuable opportunity for businesses to segment markets and tailor their strategies. Mobility data, available at local, regional, and national levels, provides actionable insights for marketers aiming to engage consumers in transition (Koo, 2022; Oishi, 2010; Oishi & Tsang, 2022; Wang et al., 2021). This information is particularly useful for promoting products and services that cater to individuals undergoing significant life changes, such as relocation (Wang et al., 2021).

In this project, we investigate how residential mobility and associated lifestyle factors influence consumer engagement in secondhand consumption. By understanding these connections, businesses can better align their strategies with the needs and preferences of mobile consumers, while contributing to more sustainable consumption patterns.

Research question: How does residential mobility—the extent to which people move from one place to another—affect consumers' engagement in secondhand consumption?

Project 3: Minimalism

Minimalist design and sustainability are closely connected, as both emphasize reducing excess and focusing on essential, high-quality elements. Minimalism prioritizes simplicity, functionality, and the elimination of unnecessary features, which naturally leads to reduced material consumption and waste. By choosing fewer, well-made items, consumers are encouraged to invest in durable, versatile products that stand the test of time, reducing the need for frequent replacements. This aligns with sustainable practices, as it minimizes resource extraction, manufacturing energy, and waste generation. Furthermore, minimalist design often incorporates streamlined production processes, which further reduces the environmental footprint. Ultimately, the principles of minimalism and sustainability converge in their shared goal of promoting mindful consumption and responsible use of resources.

This study examines whether consumers' aesthetic preferences for product design differ depending on the intended context of use—shared versus personal, solo consumption. Shared consumption refers to scenarios where a product is used or experienced in the presence of others, such as hosting guests. In contrast, solo consumption involves individual use, where the buyer interacts with the product privately. By analyzing these contrasting contexts, we aim to uncover how and why aesthetic preferences may shift between shared and solo consumption scenarios.

Minimalism and maximalism represent two distinct design philosophies situated at opposite ends of the aesthetic spectrum (Wilson & Bellezza, 2022). Minimalist design emphasizes simplicity, featuring clean lines, geometric forms, and a deliberate absence of decorative elements (Obendorf, 2009; Sotheby's, 2021). Products or advertisements with a minimalist aesthetic are often characterized by monochromatic or muted color schemes, minimal ornamentation, and extensive use of negative (white) space (Pracejus, Olsen, & O'Guinn, 2006; Wilson & Bellezza, 2022). In contrast, maximalism is defined by its boldness, vibrancy, and a celebration of visual abundance (Budds, 2020);

Longobucco, 2021). Maximalist designs incorporate rich, multi-layered textures (Komar, 2018), intricate geometric patterns (Bramley, 2018), eclectic and whimsical elements (Davis, Hempel, & Monahan, 2019), and bright, saturated colors (Longobucco, 2021). Where minimalism seeks an understated elegance, maximalism revels in expressive complexity and visual richness.

Both styles enjoy popularity in the marketplace (Nemoy, 2016), yet it remains unclear why and when consumers gravitate toward one aesthetic over the other—especially when the consumption context varies.

This research investigates whether the intended use of a product—shared or solo—affects consumer preferences for minimalist or maximalist designs. We explore whether shared consumption contexts, which inherently involve social interactions, create a stronger preference for a particular design style. By focusing on the intersection of consumption context and design preference, this study seeks to provide a deeper understanding of how social and individual consumption dynamics influence consumer choices. These insights have significant implications for product design, marketing, and branding strategies, helping businesses tailor their offerings to align with the aesthetic expectations of different consumption scenarios.

Research question: How do consumers’ aesthetic design preferences differ between shared and solo consumption contexts, and what factors drive these differences?

Level 3: Recycling

Project 4: Privacy and Recycling Behavior

Recycling, while a key component of the “Reduce, Reuse, Recycle” hierarchy, has its limitations—particularly for materials like plastics, which can degrade in quality and have limited markets for reuse (Hopewell et al., 2009; OECD, 2023). However, for certain materials, such as paper and aluminum, recycling remains a vital sustainability practice. Recycling these materials helps conserve natural resources (like trees for paper production) and saves energy compared to manufacturing from raw materials (de Wildt & Meijers, 2023). This study focuses on paper recycling, one of the most recyclable and frequently repurposed materials (Krofsofsky, 2021). Despite a relatively high recycling rate of 68%, far above the 32% average across all materials (Krofsofsky, 2021), millions of tons of paper still end up in landfills. In 2018 alone, 17.2 million tons of paper waste contributed to over 10% of the total municipal solid waste in landfills (EPA, 2018).

Previous studies have explored various factors influencing recycling behavior, including identity (Trudel, Argo, & Meng, 2016), consumer traits (such as environmental concern; Schultz & Oskamp, 1996), and product attributes (Trudel & Argo, 2013). However, there has been little examination of how privacy concerns affect consumers’ willingness to recycle. This research seeks to bridge that gap by investigating the role of privacy concerns in shaping recycling behavior.

People often handle documents that carry sensitive personal information, such as bank statements and medical bills (Warford et al., 2021). Despite the widespread availability of digital alternatives, almost three-quarters of consumers still prefer to receive these types of documents by mail rather than online (Cribby, 2021). This preference may stem from concerns over digital identity theft, where fraudsters misuse someone’s personal details to commit illegal activities (McNally & Newman, 2008). With the need to protect private information more critical than ever (Hummer & Rebovic, 2023; Okazaki et al., 2020), many individuals perceive paper documents as a safer option.

However, the threat of identity theft is not limited to the digital realm. In fact, the Federal Trade Commission recently recorded 5.7 million reports of fraud and identity theft, with 1.4 million cases directly related to identity theft (National Council on Identity Theft Protection, 2024). Contrary to popular belief that identity theft is mostly a digital problem, authorities warn that one of the most common tactics scammers use to steal personal information is “dumpster diving”—rummaging through discarded paper documents, like bank statements or tax forms, found in the trash (USAGov, 2023).

This raises a crucial question: how do consumers dispose of paper documents containing private information? Imagine a situation where someone needs to discard an old credit report filled with personal details. Would they throw it in the recycling bin or opt for the trash, possibly thinking it’s safer there? Or do they believe that disposing of private documents in a trash bin offers more security than recycling? This study aims to investigate how consumers handle the disposal of paper items that carry sensitive information, shedding light on whether privacy concerns influence their recycling behavior.

Research question: how do consumers handle documents that contain private information?

2. Method of the Study

2.1 Experiments

Experiments were conducted from December 1 2023 until November 1 2024. In this project, a total of 25 experiments. Table 1 illustrates the distribution of studies across various projects. Various types of studies were conducted within these projects.

Online Experiments

A significant portion of the experiments was conducted digitally using the Qualtrics platform for experimental design. Participants were recruited via three distinct online platforms: Prolific, Amazon Mechanical Turk (MTurk), and Cloud Research. Both MTurk and Cloud Research function as web-based services for recruiting and compensating participants to complete designated tasks (Goodman & Paolacci, 2017). Prolific, a newer UK-based platform, specializes in recruiting participants for academic studies and subject experiments (Palan & Schitter, 2018).

Field Experiments

Field experiments were employed to test hypotheses in real-world contexts, providing greater ecological validity (Söderlund, 2018). For instance:

In one study exploring secondhand consumption, real products were purchased, and participants’ choices between secondhand and new items were observed.

In another project examining reuse behavior, participants were provided with real products, and their usage duration was monitored after exposure to specific stimuli.

Lab Experiments

Laboratory experiments were conducted at Boston College in the United States, as access to labs in Sweden was unavailable. These experiments focused on observing actual sustainable behaviors, providing insights beyond mere intentions. This method allowed for controlled conditions to measure authentic consumer actions related to sustainability.

Secondary Data Analysis

To complement experimental findings, secondary data from various platforms were analyzed. This approach provided real-world evidence to support the observed effects.

Facebook A/B Tests

Facebook's A/B testing feature was leveraged to assess the effectiveness of different advertisements in driving engagement, specifically click-through rates. This method is widely used by marketers and researchers for optimizing communication strategies (Orazi & Johnston, 2020).

2.2 Measurement of Sustainable Behavior

Consumers’ participation in the circular economy initiatives was assessed through multiple approaches across experiments:

Intention to Prefer Secondhand Products

Participants’ intentions to choose secondhand products over new ones were measured, consistent with prior research (Huang & Fishbach, 2021).

Intention to Reuse Products

To evaluate reuse intentions, participants were asked to estimate the duration they would use specific items, such as furniture, after exposure to experimental manipulations.

Actual Behavior

Real behavior was observed in field experiments. For example, participants were given a choice between a secondhand book and a new book as a thank-you gift. Their selections, following exposure to experimental stimuli, were recorded and analyzed.

Click-Through Rates

Click-through rates (CTR), a common metric used by organizations to gauge consumer interest (Orazi & Johnston, 2020), were measured in experiments involving Facebook advertisements. These studies assessed whether communication strategies influenced consumer engagement. This multifaceted methodological approach ensures robust insights into consumer behavior, blending experimental rigor with real-world applicability.

Table 1. Overview of the Studies

	Participants	Findings
Project 1: Reuse		
Study 1	450 participants from Prolific	Transformation messaging—emphasizing the repurposing of old products for new uses—will enhance consumers’ anticipated usage of these products, compared to their baseline tendencies and the conventional sustainability messages commonly employed by brands.
Study 2	58 participants at Boston College	This study assesses the impact of transformation messaging on actual product usage.
Study 3	200 participants from Amazon Mechanical Turk	Transformation messaging can lead to more favorable brand evaluations and purchase decisions, which is partially explained by consumers’ anticipated product usage.
Study 4	348 students at Boston College	This study tests the full conceptual model and shows that transformational messaging encourages consumers to see greater utility in products, highlighting not just their immediate usefulness but also their capacity to deliver benefits and meet needs over a longer period leading to an expectation to use products longer.
Study 5	300 students at Boston College	This study examines the impact of transformational messaging by assessing its influence on consumers’ interest in an actual brand.
Project 2: Secondhand consumption		
Study 1	305 participants from Connect	This study provides initial evidence that residentially mobile people are more likely to choose a second-hand product over a new product, but no such difference emerges for residentially stable people.
Study 2	Field study (120 participants at Boston College)	This study provides further evidence for our predictions and replication study 1 in a realworld setting.
Study 3	356 participants from Amazon Mechanical Turk	This study explores whether the preference of residentially mobile consumers toward second-hand products can extend to the evaluation of brands that venture into second-hand markets.
Study 4A	171 students at Boston College	This study explores why consumers with higher residential mobility show a greater preference for brands offering secondhand products compared to other types of brands.
Study 4B	500 participants from Prolific Academic	This study provides further evidence for the mechanism by using a different sample of consumers.
Study 5A	Google Trends Data	This study utilizes Google Trends data to offer real-world evidence of the impact of residential mobility on consumers’ second-hand product consumption.

Table 1. (continued)

	Participants	Findings
Project 3: Minimalism		
Study 1	402 Participants from Prolific	Study 1 demonstrates that consumer preference for minimalist (vs. maximalist) product aesthetics increases when choosing for shared (vs. solo) consumption.
Study 2	300 Participants from Connect	Study 2 replicates these findings with a different sample of consumers (i.e., married consumers).
Study 3	603 participants from Prolific Academic	Study 3 rules out alternative explanation.
Study 4	321 Students from University of Connecticut	Study 4 replicates these findings by randomly assigning participants to either a singlerecipient group or a multiple-recipients group.
Study 5A	401 participants from Prolific Academic	Study 5A examines the underlying process by using the Linguistic Inquiry and Word Count Program (LIWC).
Study 5B	400 participants from Prolific Academic	Study 5B provides further support the process by using a Likert scale.
Study 6	1202 participants from Prolific Academic	Study 6 provides further evidence by using a moderation-by-process design.
Study 7	Facebook campaign	We conducted a Facebook A/B test to provide real-world evidence for our effect.
Project 4: Recycling		
Study 1	300 participants from Prolific Academic	Study 1 examines how consumers recycle paper with and without private information in their daily lives.
Study 2	300 participants from Connect	Study 2 replicates these findings by manipulating the type of information present on the paper.
Study 3	299 participants from Prolific Academic	Study 3 provides further support for the effect of private information on recycling decisions and examines the underlying mechanism.
Study 4	700 participants from Prolific Academic	Study 4 shows that the act of shredding documents, which reduces the visibility of private information, can potentially boost consumers’ engagement in recycling behaviors.
Web Appendix Study	133 participants from Boston College	We provide further evidence of our effect in a behavioral lab.

3. Results

Level 1. Reduce

Project 1: Transformation Salience and Reuse

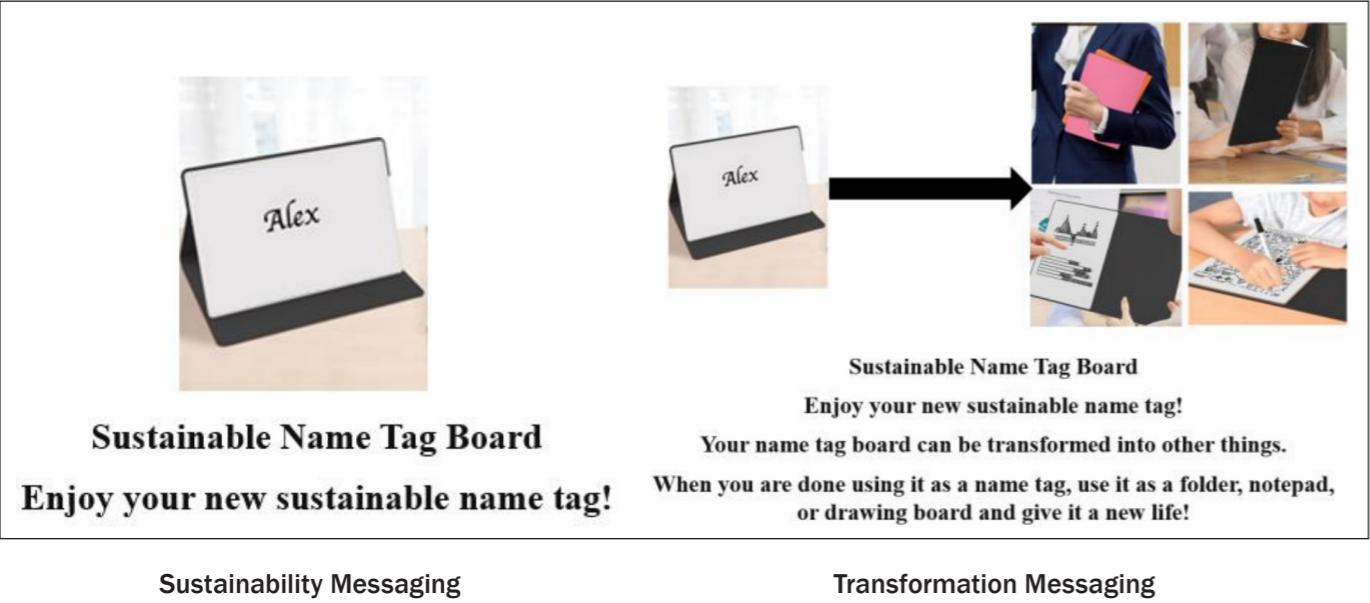
In this research, we examine how different types of messages can affect participants' product usage, which in turn can affect brand attitudes and purchase intentions. Specifically, we investigate how transformation messaging (i.e., giving products a new life by transforming them), which has been used to boost recycling rates (Winterich, Nenkov, & Gonzales, 2019) can be harnessed to increase the duration of product usage and affect brand attitudes and purchase outcomes. We conducted 5 studies to test our predictions.

As an example, we looked at how participants actually used a product over time. We purchased 58 name tag boards to distribute to students at the start of a course in January 2024. Each student was given a name tag board to write their name on and display in the classroom for the course director and other participants.

All students were introduced to the product as a sustainable option, with the message: "Sustainable Name Tag Board. Enjoy your New Sustainable Name Tag." However, one group of students (30 participants) received additional information emphasizing the product's potential for reuse. They were told, "Your name tag board can be transformed into other things. When you're done using it as a name tag, use it as a folder, notepad, or drawing board to give it a new life." Along with this message, they were shown images of the name tag board repurposed into a folder, drawing board, and notepad (referred to as the "transformation messaging"; see Figure 1).

The other group of students (28 participants) received only the basic sustainability message and no additional information about repurposing. This setup allowed us to explore whether highlighting a product's potential for transformation influenced how participants used it.

Figure 1



After about six weeks, participants completed a survey to evaluate how they used the name tag. We assessed its broader use by asking participants if they had also used the name tag in other classes (0 = No, 1 = Yes).

The results showed that participants exposed to transformation messaging were more likely to use the name tag in other classes compared to those who only received the sustainability message. In other words, transformation messaging encouraged participants to make greater use of the product, extending its lifecycle and conserving resources (see Figure 2).

Figure 2



This finding raises an important question: does transformation messaging have benefits for the brand beyond promoting product longevity? Some companies might hesitate to adopt such messaging, fearing it could reduce repeat purchases by encouraging consumers to keep products longer. However, we argue that transformation messaging can create a win-win situation for both consumers and brands.

As consumers become increasingly focused on sustainability (Haws et al., 2014) and prefer durable products (Sun et al., 2021), the perception of longer product lifespans can enhance brand appeal. Consumers may view such brands more favorably, associating them

with resourcefulness and environmental responsibility. To explore these broader implications, we conducted additional studies to examine how transformation messaging influences brand perceptions and purchase intentions.

As one example, participants recruited from an online panel were shown one of two different advertisements. One group saw an ad with "transformation messaging," which focused on how old products can be repurposed and given a new life. The other group saw an ad highlighting the brand's sustainability efforts, emphasizing actions like offsetting CO2 emissions (see figure 3).

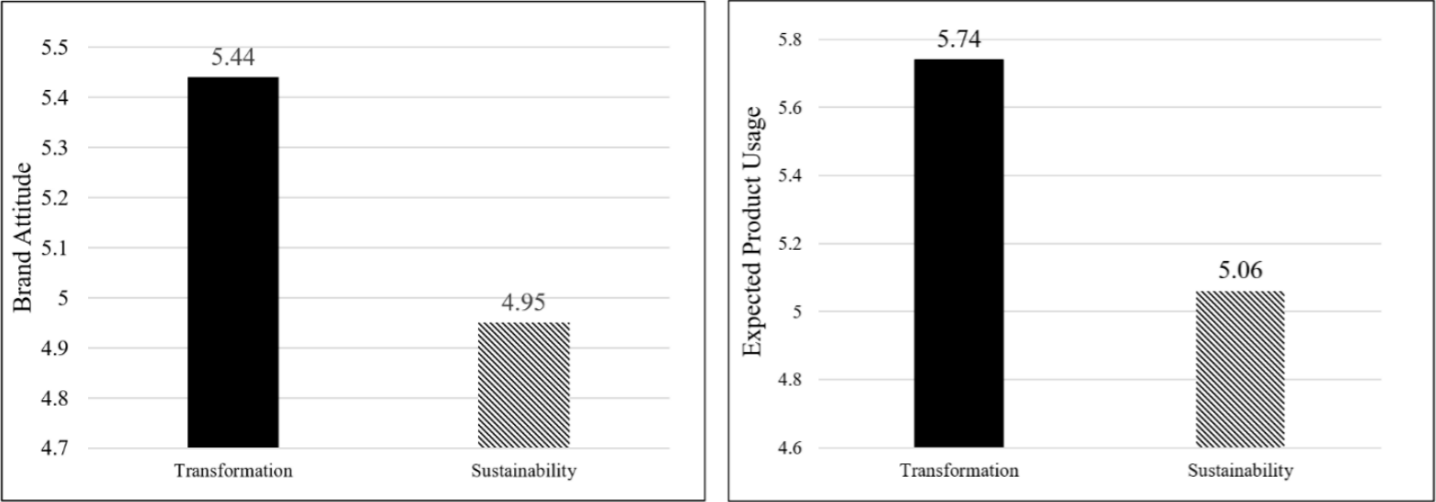
Figure 3



Next, participants rated their impressions of the Eco-Denim brand using a 7-point scale (e.g., from “unfavorable” to “favorable”). They were also asked to estimate how long they anticipated using the jeans, responding to a single question on a 7-point scale: “How long do you think you will be able to use this product?” (1 = very short time, 7 = very long time).

The results show that participants who saw the transformation messaging had a more positive opinion of the Eco-brand compared to those who saw the sustainability messaging. Additionally, participants exposed to the transformation messaging expected to use the product for a longer time than those exposed to the sustainability messaging. Importantly, the findings indicate that the expectation of longer product usage, prompted by the transformation messaging, led to more favorable attitudes toward the brand (see Figure 4).

Figure 4



Level 2. Reuse

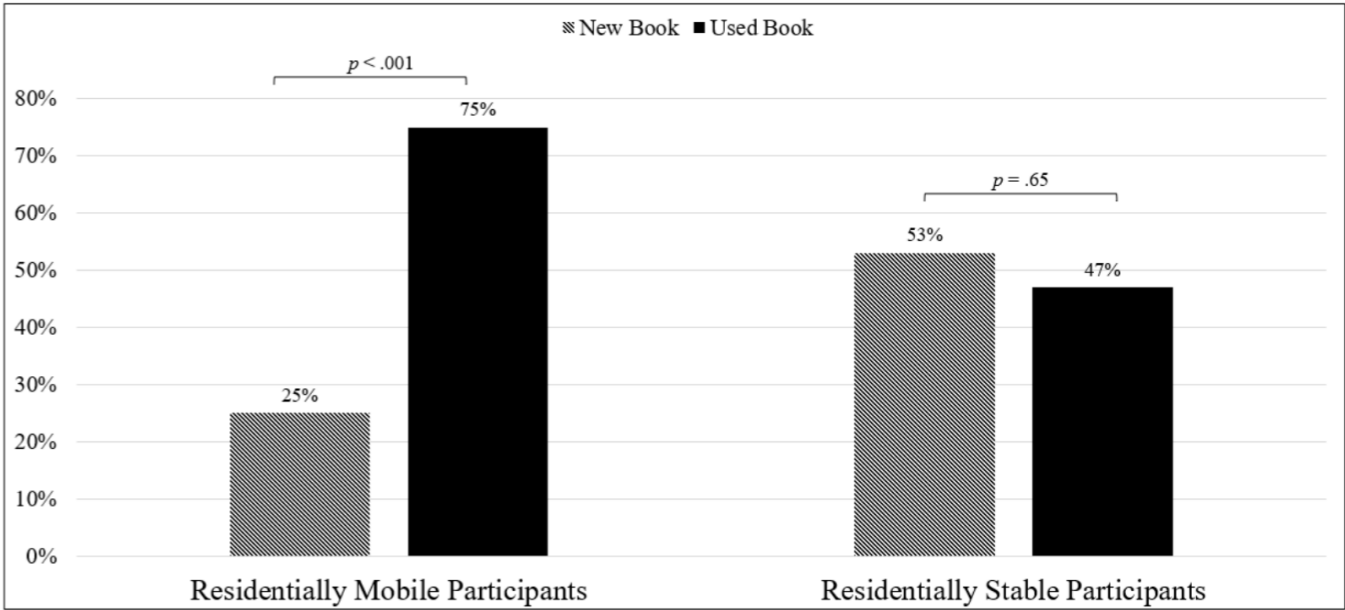
Project 2: Secondhand consumption

In this project, we explore how certain aspects of people’s lifestyles influence their interest in secondhand products. Specifically, we focus on residential mobility—how often people move from one place to another. Residential mobility can be situationally triggered (Wang et al., 2021) and is relatively easy to measure. We conducted seven studies to explore the connection between residential mobility and secondhand consumption. In one study, participants were asked to report whether they had ever moved from one city to another and how many times they had done so (0 = never moved, 1 = once, 2 = twice, 3 = three times, 4 = four times, 5 = five times, 6 = six times, 7 = more than seven times). Participants

were then asked to imagine they wanted to buy the book *The Little Prince* and were presented with two options: “A new book (\$6.70)” or “A used book in good condition (\$3.50)” (adapted from Huang & Fishbach, 2021).

The findings revealed that participants who frequently moved—defined as residentially mobile —were significantly more likely to choose the secondhand book over the new one (75% vs. 25%). In contrast, residentially stable participants showed no strong preference, with 47% choosing the secondhand option and 53% choosing the new one. Moreover, residentially mobile participants were overall more likely to opt for the secondhand book (75%) compared to their stable counterparts (47%; see Figure 5).

Figure 5



In another study, we conducted a real-world field experiment during an Earth Day event in 2024 at a private U.S. university. We purchased 120 pocket-sized copies of *The Little Prince* and set up a table on campus with a poster inviting students to participate: “Complete a short survey and get a free book.” Two boxes, each containing 60 books, were placed on the table. One box was labeled “Brand-New Books from [university name] Bookstore,” and the other was labeled “Used Books from [university name] Students.” Although all the books were new, we intentionally made half of them look used by distressing the covers and folding some pages.

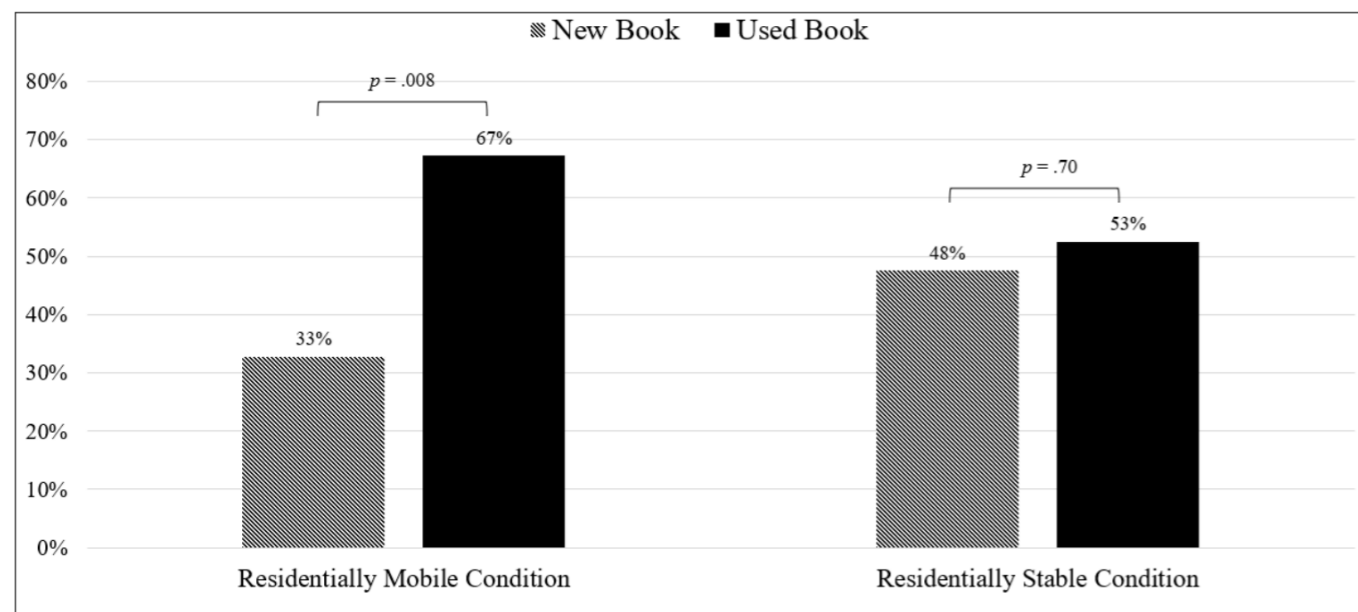
Participants completed a short paper survey before selecting a free book. The survey asked them to imagine their post-graduation lifestyle. In the residentially mobile scenario, participants

imagined leaving their apartment and moving to various places, adopting a transient, mobile lifestyle. In the residentially stable scenario, they imagined moving into a new apartment where they would stay long-term, leading a steady life.

After completing the survey, participants were offered a choice between “*The Little Prince*, a brand-new book from [university name] bookstore” or “*The Little Prince*, a used book from [university name] students.”

The results revealed that participants who imagined a mobile lifestyle were significantly more likely to choose the secondhand book over the new one (67.2% vs. 32.8%). This difference was not observed among participants who imagined leading a long-term, stable lifestyle in a single location (see Figure 6).

Figure 6



Project 3: Minimalism

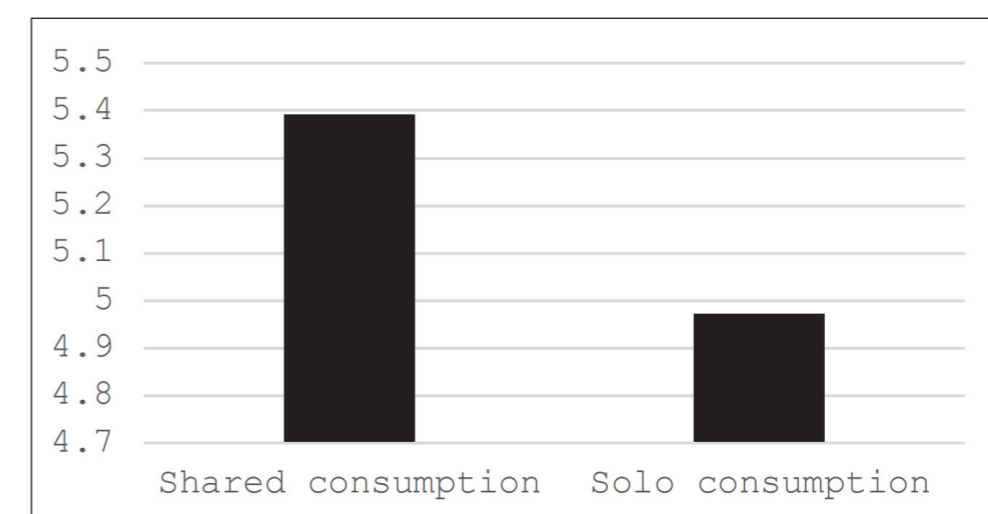
In this research, we explore how consumers’ preferences for product design differ depending on whether the product is intended for individual use (solo consumption) or shared use. Specifically, we focus on the distinction between minimalist designs—simple, clean, and understated—and maximalist designs—bold, ornate, and visually complex. By bridging the fields of product aesthetics and shared consumption, we aim to understand how context influences design choices.

To investigate this, we conducted seven studies where participants were asked to imagine either a shared or solo consumption scenario and then indicate their preferences for minimalist versus maximalist designs.

For example, in one study, we recruited 300 married participants from an online platform. Participants were asked to consider purchasing a car either for their own use (solo consumption) or for use by both themselves and their partner (shared consumption). They were then shown descriptions of two car brands: Brand A, known for its maximalist designs, featured cars with bold and diverse elements, including numerous curated features, decorative embellishments, and vibrant color options. Brand B, known for its minimalist designs, offered cars with simple and streamlined features, muted color palettes, and clean, understated aesthetics.

Participants rated their preferences on a scale from 1 (“Brand A”) to 7 (“Brand B”). The results revealed that participants who imagined sharing the car with their partner were more likely to prefer the minimalist design compared to those who imagined using the car solely for themselves (see Figure 7).

Figure 7



This effect is not only seen when people choose for shared consumption with their partner or friend, but also when they make decisions for a group of others without being involved themselves. In one study, participants were asked to imagine buying a gift. One group imagined purchasing a gift for multiple people (five acquaintances), while the other group imagined buying a gift for just one person. They were then shown example images of phone cases from two different brands and asked to indicate their preferences on a 7-point scale. This setup allowed us to explore whether choosing for a group versus an individual influenced their design preferences.

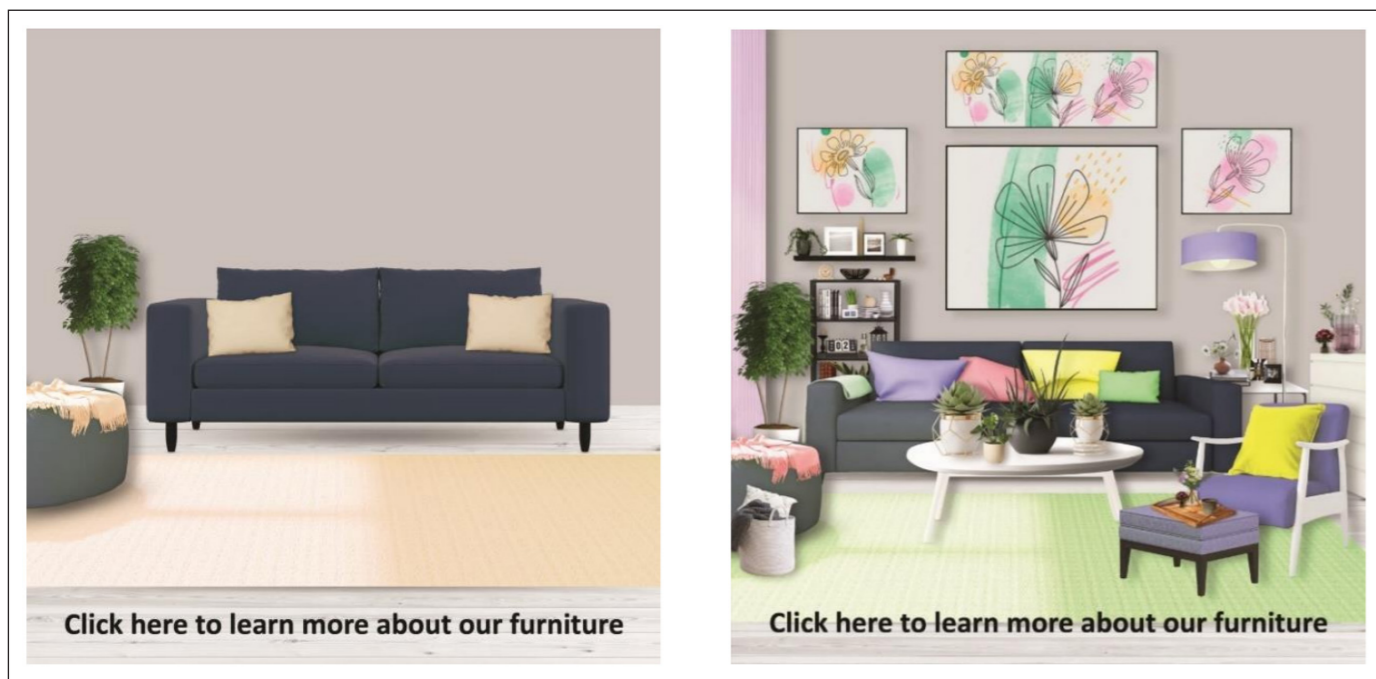
The results showed that participants choosing a gift for multiple people were significantly more likely to prefer the minimalist design compared to

those choosing a gift for just one person. In other words, considering a group increased the preference for minimalist designs by 13%.

In another study, we conducted a Facebook A/B test targeting married participants. Many people publicly display their relationship status on Meta, and research shows that married consumers often make joint decisions and engage in shared consumption (Etkin, 2016). This makes them an ideal audience for marketing minimalist products.

For this study, we targeted married consumers living in the United States and showed them advertisements for either a minimalist furniture brand or a maximalist furniture brand. Each ad included a “Learn More” button as a call to action¹, and the primary measure of interest was whether users clicked on the ad (see Figure 8).

Figure 8



The results showed that married users were more likely to click on the ad for the minimalist brand compared to the maximalist brand (0.04% vs. 0.01%). Although the Meta algorithm does not randomly assign users to ads—instead, it tailors ad targeting based on users’ interactions (Braun

et al., 2024)—this campaign offers valuable real-world insights. These findings demonstrate how minimalist brands can perform in shared consumption contexts, providing real-world validation that complements the controlled experimental evidence from our studies.

Level 3. Recycle

In this project, we explore how people dispose of items containing private information. Documents with sensitive details, such as credit card statements or tax documents, are considered confidential and require careful handling to protect against identity theft (McNally & Newman, 2008). Identity thieves often use methods like “dumpster diving”—searching through trash for personal information such as bank statements—to steal someone’s identity (USAGov, 2023; Vieraitis et al., 2015). This risk may make people especially cautious about how they dispose of such documents.

To understand this behavior, we conducted five studies examining how privacy concerns influence disposal decisions. In one study, participants were randomly assigned to two groups. One group imagined handling private information, such as a credit card statement containing their credit card number and transaction history (private information group). The other group imagined receiving a generic document, such as a brochure detailing the bank’s financial services (generic information group).

All participants were then presented with two disposal options: a recycling bin and a trash bin (see Figure 9). They were asked to choose where they would dispose of the document.

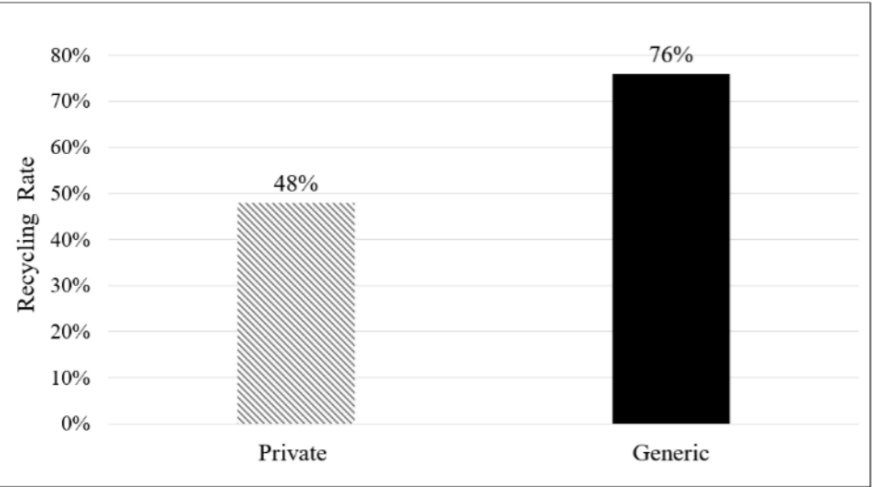
Figure 9



The results show that participants expressed a lower intention to recycle paper containing private results showed that participants were less likely to recycle paper containing private information, such as credit card details, compared to paper with general, non-sensitive information (see Figure 10).

¹ A pretest confirmed that while these advertisements garner similar levels of liking, they differ in the extent to which they are perceived as representing minimalist brands

Figure 10



So how can managers encourage recycling of documents containing private information? To encourage consumers to recycle documents with private information, managers should address concerns about the visibility of sensitive details in the recycling process. People often view recycling as a transformation process that involves human effort, and the fear that others might see their private information in the recycling bin reduces their willingness to recycle such documents. Reducing this visibility, such as through shredding, could make consumers more comfortable recycling.

To test this idea, we conducted a study focusing on the act of shredding. Participants imagined

receiving a letter from their bank with their name on it. Those in the private information group imagined it was a credit card statement containing confidential details like their credit card number, transaction history, and social security number. Those in the generic information group imagined it was a general document about the bank's financial services.

In the shredding condition, participants were told they shredded the document before disposing of it. In the no-shredding condition, shredding was not mentioned. Afterward, participants were presented with two disposal options—a recycling bin and a trash bin—and asked to choose where they would dispose of the document.

Figure 11



The results showed that when consumers handled documents containing private information, imagining that the document was shredded made them more likely to recycle it compared to when shredding wasn't mentioned (59% vs. 45%). In other words, shredding increased the recycling rate by 14%. However, for documents with general, non-sensitive information, shredding made little difference in recycling behavior (75% vs. 80%). This suggests that shredding specifically helps address privacy concerns, encouraging consumers to recycle sensitive documents (see Figure 11).

Implications and practical significance for the retail industry

These findings from various studies offer valuable insights for retailers, marketers, and policymakers striving to promote a circular economy—a system where resources are reused, recycled, and repurposed to minimize waste. The results highlight several key factors that influence consumers' participation in circular economy initiatives. For instance, elements of a consumer's lifestyle, such as residential mobility (how often they move), play a significant role in shaping behaviors like purchasing secondhand goods or reusing products. Second, whether a product is intended for shared use (e.g., with family or friends) or solo use also affect consumer preferences. For instance, shared consumption contexts often drive a preference for minimalist designs. Moreover, the way products are marketed can significantly impact consumer engagement. Highlighting how an old product can be transformed into something new and useful can inspire consumers to participate in circular practices like reuse.

**Level 1. Reduce
Project 1: Increasing consumers' willingness to reuse their products**

Our findings reveal that advertising and promotions emphasizing the transformation of old products into new, useful items can significantly enhance how consumers perceive a product's utility. This, in turn, influences their preference for the brand and their purchase decisions. Transformational messaging encourages consumers to view products not just for their immediate purpose but also for their potential to deliver ongoing value and meet long-term needs. This shift in perception leads to an

expectation of extended product usage. Since consumers increasingly value resourcefulness (Haws et al., 2014) and favor products that are perceived as durable and long-lasting (Sun et al., 2021), this expectation positively impacts how they evaluate brands and decide what to buy.

For businesses, adopting transformational messaging presents a powerful opportunity to achieve two key goals: capturing consumer interest and advancing sustainability initiatives. By showcasing how products can be repurposed or adapted for extended use, companies can reduce waste and encourage sustainable consumption patterns. Designing versatile products and providing guidance on how to repurpose them further strengthens this message. This strategy not only enhances the brand's reputation but also resonates with the growing consumer demand for environmentally conscious practices, creating a win-win for both businesses and their customers.

This approach also helps brands stand out in competitive markets by aligning with consumer values of sustainability and resource efficiency. Transformational messaging doesn't just boost short-term sales by making products more appealing; it also fosters long-term brand loyalty by demonstrating a commitment to delivering ongoing value. Additionally, it supports the transition to a circular economy by reducing dependence on single-use products and promoting responsible consumption. By embracing this strategy, businesses can achieve a sustainable competitive advantage, improving profitability while contributing to a more sustainable and environmentally friendly future.

**Level 2. Reuse
Project 2: Encouraging consumers to engage in second-hand consumption**

Addressing climate change is one of the most critical challenges of the 21st century (van Valkengoed, Abrahamse, and Steg, 2022). Changing consumer behavior is essential to tackling this issue (White et al., 2019; Trudel, 2019). Among the many strategies to reduce environmental impact, promoting reuse and resale activities, such as buying secondhand products, has gained global attention (Huang and Wong, 2024).

Buying secondhand items significantly reduces the overall environmental footprint, making it vital to understand what drives consumers to choose secondhand products. This research focuses on the role of residential mobility—a socially relevant and actionable factor—in shaping consumer interest in secondhand goods.

Our findings have practical implications for companies and marketers entering the second-hand market, a growing trend among businesses aiming to reduce their environmental impact (Nenkov, 2024). Understanding residential mobility as a factor influencing secondhand consumption can help firms better target their audiences. Since residential mobility can be tracked at city, state, or country levels, marketers and policymakers can easily identify populations likely to engage in secondhand shopping.

Moreover, our research provides valuable insights into how marketers and policymakers can craft effective messages to encourage secondhand consumption. Residential mobility is not just a demographic factor—it can also be triggered situationally. By framing marketing messages around the idea of mobility, businesses can make secondhand products more appealing. For example, a campaign message like “Fuel your wanderlust with our secondhand gear—perfect for those who embrace a life of mobility and adventure” can tap into consumers’ sense of movement and exploration, boosting interest in secondhand purchases.

In summary, this research highlights how residential mobility can drive demand for second-hand products and provides actionable strategies for businesses to engage consumers while supporting sustainability goals. By connecting with consumers’ lifestyles and values, marketers can promote secondhand consumption as an environmentally friendly choice, benefiting both businesses and the planet.

Project 3: Minimalism

Minimalist design and sustainability are closely connected, as both prioritize simplicity, efficiency, and the responsible use of resources. Minimalist products often feature clean, timeless designs that emphasize functionality over excess, reducing the need for unnecessary materials and

manufacturing processes. This approach aligns with sustainable practices by encouraging the production of durable, high-quality items that can be used and shared over long periods, minimizing waste. Additionally, minimalist aesthetics often appeal to consumers who value intentionality and recourse-conscious consumption, promoting a lifestyle that avoids overconsumption and favors longevity. By prioritizing designs that require fewer resources and have a smaller environmental footprint, minimalist products naturally support the principles of a circular economy, where the focus is on reducing, reusing, and repurposing materials. As a result, the intersection of minimalist design and sustainability creates opportunities for businesses to deliver products that not only meet consumer preferences but also contribute to environmental responsibility.

The impact of shared consumption on consumers’ preferences for minimalist designs has practical implications for businesses and marketers selling products that can be used in both shared and solo contexts. While most managers we surveyed recognized the importance of understanding consumers’ aesthetic preferences, they did not accurately predict the direction of this effect. Our research shows that brands can benefit from tailoring their messaging and targeting strategies based on whether their products are designed for shared or solo use.

For brands specializing in minimalist goods, emphasizing their suitability for shared experiences—such as group gatherings or family use—could increase their appeal. Conversely, for maximalist products, highlighting their value for individual, solo use might resonate more with consumers. This aligns with research showing that advertising which fits with consumers’ existing mental frameworks enhances preference and increases the likelihood of product choice (Biliciler et al., 2021). For instance, marketers promoting minimalist products could feature advertisements depicting shared consumption scenarios, like hosting a dinner party or enjoying a game night. On the other hand, advertisements for maximalist products might show a person enjoying a luxurious solo experience, such as gaming or indulging in a high-end personal item.

Digital platforms like Meta offer even more specific targeting opportunities. For example, because many people publicly display their relationship status and married consumers often engage in shared consumption (Etkin, 2016), minimalist products could be promoted directly to married users. Messaging could emphasize how minimalist designs fit seamlessly into shared lifestyles, such as “Clean, timeless designs for every shared moment.”

Online retailers can also enhance consumer engagement by tailoring website layouts and personalization algorithms to match consumption contexts. Minimalist product categories, such as dining sets or board games, could be highlighted for users browsing items associated with shared activities. Meanwhile, maximalist items like gaming consoles or luxury watches could be prominently featured for users interested in solo-oriented purchases.

By aligning their marketing strategies with these insights, businesses can effectively connect with consumers’ preferences, enhance the appeal of their products, and drive sales while creating a more personalized shopping experience.

Level 3. Recycle

Project 4: Private information and recycling

Our study highlights an important insight: reducing the visibility of private information on documents, such as through shredding (or similar methods when shredding isn’t available), significantly increases the likelihood of consumers recycling. This finding underscores the potential for targeted strategies to encourage responsible waste disposal while advancing environmental sustainability. For example, businesses that mail documents containing private information could prompt recipients to shred or otherwise obscure sensitive details before recycling. Promoting shredding and other privacy-preserving measures as standard practice not only addresses consumer concerns about information security but also supports increased paper recycling. These actions align with privacy laws while demonstrating environmental leadership, potentially setting new industry standards.

Such measures offer dual benefits by addressing privacy concerns and fostering sustainable waste management practices. They encourage businesses to adopt a more holistic approach to corporate responsibility, balancing environmental impact with data protection. However, not all consumers have access to shredders. In these cases, companies and recycling processors should educate consumers about the recycling process to reduce perceived risks. For instance, explaining that recycled paper is thoroughly broken down into small fibers during the recycling process—effectively eliminating any visible private information—can help alleviate privacy concerns and encourage more recycling.

To maximize impact, businesses could implement strategies that make shredding more accessible, such as offering shredding services or providing clear instructions on how to obscure private information manually. Pairing this with communication about the transformation process for recyclables would further reassure consumers and promote environmentally conscious behavior.

These findings also carry significant implications for public policy. Governments and regulatory bodies can play a key role in creating an environment that supports both privacy and recycling. For example, policies could require businesses to adopt secure data destruction protocols while encouraging recycling efforts. Governments might mandate that companies provide consumers with easy access to shredding facilities or services, paired with education about the importance of recycling sensitive documents. Additionally, policymakers could offer subsidies or tax incentives to businesses that implement secure document disposal and recycling practices.

By integrating these practices into regulatory frameworks, governments can ensure that environmental sustainability and data privacy work hand-in-hand. Such initiatives would not only promote compliance but also foster a culture of responsibility and sustainability. This approach can help create a society that values both privacy and the environment, driving widespread adoption of greener practices and reducing paper waste.

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