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Consumer Engagement in SME-Based Circular Economy Practices: Evidence from a Plastic Upcycling Enterprise in Indonesia

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ABSTRACT

Circular economy practices depend not only on waste-processing technologies but also on consumer participation in sustaining material circulation and value creation. This study examines how consumers engage in circular economy practices and contribute to economic, social, and environmental value creation in Paste Lab Yogyakarta, a community-embedded plastic upcycling SME in Indonesia. Using a qualitative single-case design, the study collected data through seven semi-structured interviews with six consumer informants and one internal informant for triangulation, complemented by observation and documentation. The study analyzed the data thematically, guided by stakeholder theory and perspectives on value co-creation. The findings identify three recurring consumer roles: material contributors who supply post-consumer plastic, co-design collaborators who support product and application development, and advocates who extend sustainability narratives and stakeholder networks. These roles contribute to resource circulation, commercial opportunities, social legitimacy, and environmental value, although participation is constrained by limited consumer literacy, durability concerns, price sensitivity, and restricted design options. The study concludes that consumer engagement can support distributed value co-creation in SME-based circular economy practices by linking material recovery, application, and network diffusion within a local circular value chain.

Keywords: Circular Economy, Consumer Engagement, & Value co-creation, & Upcycling

1. Introduction

Plastic waste has become a global environmental concern, particularly in emerging economy contexts where rapid consumption growth is not matched by adequate waste management capacity (OECD, 2022). Recent statistics show that global plastic waste generation has reached approximately 360 million metric tons annually, while recycling accounts for less than 10% of total waste, with a substantial proportion remaining mismanaged or leaking into the environment (Statista, 2025). Plastic waste accumulates and contributes to environmental degradation, ecosystem disruption, and long-term socio-environmental risks (Borrelle et al., 2020; Kibria et al., 2023), with studies estimating that around 19 to 23 million metric tons of plastic waste enter aquatic ecosystems each year (Borrelle et al., 2020). While advances in waste treatment and recycling technologies have improved material recovery in some contexts, a substantial share of plastic waste worldwide remains unmanaged or disposed of through conventional end-of-pipe approaches (Geyer et al., 2017; OECD, 2022). This situation highlights the limitations of linear production and consumption systems and underscores the need for alternative, more regenerative models that retain material value while reducing environmental leakage (Bocken et al., 2016).

The circular economy has increasingly been promoted as a strategic framework to address these challenges by extending material lifecycles and transforming waste into resources (Ghisellini et al., 2016). Rather than treating waste as an inevitable by-product of consumption, circular economy approaches seek to reintegrate materials into production processes through practices such as reuse, recycling, and upcycling (Bocken et al., 2016). However, circular economy implementation often remains overly focused on operational and technological solutions, while the social and behavioral conditions that enable circular systems to function over time receive less attention (Kirchherr et al., 2018; Vidal-Ayuso et al., 2023).

This limitation is especially evident in small and medium-sized enterprises (SMEs). SMEs often operate under resource constraints that limit access to advanced technologies and formal waste management systems, shaping how they adopt and scale circular practices (Dey et al., 2022). Their capacity to implement circular economy principles therefore depends not only on technical capability but also on relational and ecosystem-based mechanisms that support design, development, and commercialization of circular business models (Reim et al., 2025). Proximity to consumers and local material flows position SMEs to experiment with participatory forms of circularity embedded in everyday consumption and social interaction (Hobson, 2020).

Upcycling-oriented SMEs provide a relevant context for examining such participatory dynamics. By transforming post-consumer plastic waste into products with functional and aesthetic value, upcycling creates pathways for material recirculation that align with the broader aim of closing resource loops (Bocken et al., 2016; Vidal-Ayuso et al., 2023). However, upcycling model success depends on more than production outcomes. Market acceptance, perceived product quality, and price justification remain recurring challenges, particularly when products are derived from waste materials, which can shape consumers' willingness to pay and purchase responses (Boyer et al., 2021; Pretner et al., 2021). These challenges highlight consumers' central role in shaping the viability of circular business models through how they evaluate and respond to circular offerings (Aarikka-Stenroos et al., 2021; Sairanen et al., 2024).

More broadly, customer brand engagement research increasingly conceptualizes engagement as extending beyond transactional exchange to sustained, value-laden consumer-brand relationships, and shows that engagement patterns vary across contexts, platforms, and audience characteristics (Zahrudy, 2026). Within circular economy practices, consumers can no longer be understood merely as end users who purchase finished products. Instead, consumers increasingly function as active participants whose engagement influences circular practices and outcomes (De Chiara et al., 2024; Tabas et al., 2025). In upcycling-based models, consumers may contribute not only through purchase decisions but also by participating in initiatives that support circular meanings and practices, including collection and engagement activities (Gomes et al., 2024). At the same time, circular practices can require additional effort and coordination, with participation shaped by values, motivations, and lived experience of contributing to ecological transition (Guyader et al., 2022; Sutcliffe, 2022). Through these roles, consumer engagement becomes closely linked to creating and reinforcing economic, social, and environmental value within circular systems (Tabas et al., 2025).

Despite growing recognition of the importance of stakeholder participation in sustainability transitions, empirical evidence on how consumer engagement operates within SME-led circular economy initiatives remains limited, particularly in emerging economy contexts. Existing studies have often emphasized technology-, supply-, and business-model perspectives, while consumer behavior and decision-making remain comparatively underexplored (Ferasso et al., 2020; Vidal-Ayuso et al., 2023). More specifically, prior studies predominantly position consumers as end-users or adopters of circular products, rather than as active contributors embedded within circular value creation processes (Aarikka-Stenroos et al., 2021; Vidal-Ayuso et al., 2023). Moreover, research on stakeholder and customer engagement in circular economy ecosystems highlights the need for a more holistic understanding of how engagement is configured and sustained in practice (Tabas et al., 2025), yet existing empirical evidence is largely derived from large-scale firms or macro-level analyses, offering limited insight into how such engagement is enacted within resource-constrained SME contexts (Reim et al., 2025; Tabas et al., 2025). As a result, qualitative insight into how consumer involvement is organized at the micro level and how it contributes to multidimensional value creation under real-world constraints remains limited (Hobson, 2020). In particular, little is known about how consumers simultaneously

function as material contributors, co-design collaborators, and social advocates within community-based circular economy practices.

This study addresses this gap through a qualitative single-case study of Paste Lab, a plastic upcycling SME located in Yogyakarta, Indonesia. Conceptually, the study integrates stakeholder theory and value co-creation as complementary perspectives. Stakeholder theory explains why consumers matter as actors whose relationships with the firm can influence value creation and organizational outcomes. In contrast, value co-creation explains how value emerges through interaction, participation, and consumer contributions rather than being produced exclusively by the firm (Freeman et al., 2023; Prahalad & Ramaswamy, 2004). Recent research further conceptualizes stakeholder value creation as a system of relational flows and identifies reciprocal, advocative, and ecosystemic relationships as important forms of stakeholder engagement in circular economy contexts (Civera et al., 2025; De Tommaso & Borini, 2024).

Integrating these perspectives lets us examine consumer engagement not simply as behavioral responses, but as a relational process through which consumers contribute resources, knowledge, and network connections to circular value creation. Empirically, this study examines whether and how these contributions are enacted within a resource-constrained, community-embedded SME. The study therefore distinguishes its empirical contribution—identifying consumers as material contributors, co-design collaborators, and advocates—from its theoretical contribution, which shows how these roles jointly connect stakeholder participation with distributed value co-creation across different stages of a local circular value chain.

Accordingly, the study addresses two research questions: RQ1: How do consumers engage in circular economy practices within an SME-based plastic upcycling enterprise? RQ2: How does consumer engagement contribute to economic, social, and environmental value creation within this setting

2. Methods

2.1 Research Design and Case Selection

This study adopted a qualitative approach using a single-case study design. The research aimed to capture consumers' lived experiences, perceptions, and meanings associated with their participation in circular economy practices, rather than to measure predefined variables. A qualitative case study was therefore considered appropriate for exploring processes, interactions, and contextual dynamics embedded in everyday practices, particularly when the boundaries between the phenomenon and its real-life context are not clearly evident (Yin, 2018).

The selected case was Paste Lab, a community-embedded plastic upcycling SME operating in Yogyakarta. Paste Lab was selected for its distinctive characteristics as a community-embedded upcycling SME that actively integrates consumers into multiple stages of its circular business model, including material sourcing, co-creation, and advocacy. The enterprise positions consumers not only as end users of upcycled products but also as partners who contribute materials, ideas, and advocacy. Compared with many SMEs that focus primarily on production and sales, Paste Lab takes a more participatory approach by systematically involving consumers in value-creation processes, making it an analytically relevant case for examining consumer engagement in practice. Such characteristics make Paste Lab particularly suitable for examining how consumer engagement is operationalized within a circular economy framework at the SME level (Yin, 2018).

The unit of analysis was consumers directly involved in Paste Lab's circular activities. Consumers were conceptualized as active stakeholders rather than passive buyers, as they supplied post-consumer plastic waste, participated in co-creation activities, and supported sustainability campaigns. The case boundaries were limited to Paste Lab's operations and consumer-related practices within the Yogyakarta context during the study period. Internal organizational perspectives were included only as needed for contextual clarification and triangulation, ensuring the analytical focus remained centered on consumers' perspectives and experiences.

2.2 Data Collection

The study used purposive sampling to identify informants with direct, relevant experience of Paste Lab's circular practices. Purposive sampling was appropriate given the study's exploratory nature and the need to access information-rich cases that could provide in-depth insights into consumer engagement processes (Guest et al., 2006). We conducted seven semi-structured interviews: six with consumer informants, the primary unit of analysis, and one with an internal Paste Lab informant for contextual clarification and triangulation. The six consumers had engaged with Paste Lab through different combinations of product purchase, material contribution, campaign participation, co-design activities, professional application of recycled materials, and network advocacy. This variation was intentionally retained to capture different forms of engagement rather than to achieve statistical representation. The internal informant was not treated as equivalent to the consumer informants in answering the research questions.

The researchers assessed data adequacy iteratively during fieldwork by comparing each successive consumer interview with the evolving coding and thematic matrix. After each interview, the researchers reviewed whether new codes, relationships, or higher-order patterns relevant to the research questions had emerged. Recruitment ceased as later consumer interviews increasingly reinforced existing patterns rather than generating substantively new higher-order themes. In later consumer interviews, accounts primarily elaborated on or confirmed patterns already represented in the thematic matrix, and by the completion of the sixth consumer interview, the thematic structure was considered sufficiently developed for the bounded case. Within this focused single-case study, saturation was therefore treated as case-specific thematic sufficiency rather than as exhaustive representation of the wider population (Guest et al., 2006). Primary data were generated through semi-structured in-depth interviews.

This approach allowed flexibility in probing informants' experiences while maintaining alignment with the research objectives, enabling participants to articulate meanings and interpretations in their own terms. Interviews were conducted either face-to-face or online, depending on informants' availability and location. Each interview lasted approximately 45 to 75 minutes and occurred in a single session per informant, with follow-up clarification, when necessary, through brief communication. Each interview began with an explanation of the research purpose and confirmation of informed consent. With permission, we audio-recorded interviews and supplemented them with field notes. Table 1 (Interview Guide) summarises the interview themes.

Table 1. Interview Guide.

No.	Theme	Guiding Questions
1	Informant profile	Can you describe your role as a consumer or supporter of Paste Lab in the context of the circular economy?
2	Value creation	What core value do you see in Paste Lab's upcycled products, and what motivates your interest?
3	Stakeholder collaboration	How did you first become involved with Paste Lab? Have you contributed materials or participated in sustainability campaigns?
4	Empathy map – Think & Feel	What do you think and feel when you purchase or encounter upcycled products like those produced by Paste Lab?
5	Empathy map – See & Hear	What do consumers typically see or hear about Paste Lab products, either directly or through social media and communities?
6	Empathy map – Say & Do	How do you usually talk about upcycled products to others? Have you ever recommended Paste Lab to others?
7	Empathy map – Pain	What concerns, doubts, or barriers did you experience before purchasing or using circular economy-based products?
8	Empathy map – Gain	What benefits or value did you expect from purchasing upcycled products, and did they meet those expectations?
9	V3C – Value	In your view, what distinguishes Paste Lab's products from similar offerings in the market?

No.	Theme	Guiding Questions
10	V3C – Customer	Who do you think is most suited to become a Paste Lab customer, and why are they attracted to upcycled products?
11	V3C – Competitor	Have you encountered similar products from other enterprises? How do those experiences compare with Paste Lab's products?
12	V3C – Collaborator	Are you aware of or involved in collaborations between Paste Lab and other communities or organizations that engage consumers?
13	Implementation challenges	What challenges does Paste Lab face in encouraging broader consumer participation in circular economy practices?

In addition to interviews, direct observation captured interactions and practices in natural settings. Observations focused on consumer-related activities such as material drop-off processes, educational workshops, co-creation sessions, and points of interaction between Paste Lab and consumers, including partner cafés. The team recorded observational data as field notes and, where permission was granted, supported them with visual documentation to enrich contextual understanding.

Secondary data were collected through documentation review. Sources included internal records, activity reports, campaign materials, and relevant social media content related to Paste Lab's circular initiatives. Document analysis traced activities over time, corroborated interview and observational data, and enhanced contextual understanding (Bowen, 2009). Interviews, observations, and documentation formed a multi-source data collection strategy, as summarised in Table 2 (Data Collection Techniques). The researcher conducted fieldwork between May and August 2025, allowing them to observe ongoing practices and capture recent developments in Paste Lab's consumer engagement activities.

Table 2. Data Collection Techniques.

Data Type	Technique	Source / Unit of Analysis	Purpose
Primary	In-depth interviews	Consumers and one internal informant	To obtain in-depth insights into consumer roles, engagement practices, and value creation in the circular economy context
Primary	Direct observation	Production processes and stakeholder interactions at Paste Lab	To capture operational context and collaborative dynamics in natural settings
Secondary	Documentation review	Internal documents, social media content, activity reports, and relevant literature	To complement primary data and provide contextual verification

2.3 Data Analysis

The analysis followed Braun and Clarke's six-phase thematic analysis procedure: familiarisation with the data, generating initial codes, developing candidate themes, reviewing themes, defining and naming themes, and producing the analytical narrative (Braun & Clarke, 2006, 2019). Initial coding remained closely grounded in participants' accounts and was conducted manually using structured spreadsheets. The researchers then compared related codes across informants and organized them into candidate themes representing recurrent patterns of consumer engagement, value creation, collaboration, and participation barriers. The researchers iteratively moved between transcripts, field notes, documentary materials, codes, and candidate themes until each theme showed internal coherence and clear distinction from the others.

The researchers used stakeholder theory and value co-creation as sensitizing and interpretive perspectives rather than predetermined coding categories. Stakeholder theory directed analytical attention to the relationships through which consumers influenced or were influenced by Paste Lab's circular activities, while value co-creation focused on interaction, resource contribution, and jointly produced value (Freeman et al., 2023; Prahalad & Ramaswamy, 2004). At the interpretive stage, we also compared emerging themes with recent perspectives on stakeholder value creation and circular-economy relationships to examine whether

consumer roles reflected reciprocal, advocative, or ecosystem-connecting participation (Civera et al., 2025; De Tommaso & Borini, 2024). This approach allowed the three major empirical roles—material contributor, co-design collaborator, and advocate—to remain grounded in the case while being interpreted through complementary theoretical lenses.

Cross-source comparison was undertaken through thematic matrices in which interview-derived patterns were compared with observational field notes and documentary materials. Interviews served as the primary analytical evidence, while observations and documents corroborated, contextualized, or qualified interpretations. The analysis maintained an audit trail documenting coding decisions, theme development, analytical memos, and revisions to the thematic structure.

2.4 Trustworthiness of the Study

Several strategies were employed to ensure the trustworthiness of the qualitative findings. Triangulation was achieved by integrating multiple data sources and methods, including interviews, observations, and documentation, reducing reliance on a single source of evidence (Yin, 2018). The study systematically compared evidence from consumer interviews, observational field notes, and documentary materials to identify convergent, complementary, or divergent evidence relevant to the emerging themes.

Member checking involved returning concise summaries of preliminary interpretations to selected informants to verify that the meanings captured reflected their experiences; feedback was incorporated when clarification or refinement was needed.

The study addressed ethical considerations throughout. Participation was voluntary, and the study obtained informed consent before data collection. Informants' anonymity was preserved through role-based identifiers, and all data were stored securely and used exclusively for research purposes. These measures supported the study's credibility, dependability, and ethical integrity, consistent with established criteria for rigor in qualitative research (Whittemore et al., 2001).

3. Results and Discussion

The findings show that consumer engagement in Paste Lab's circular economy practice extends beyond consumption and serves as a core mechanism for producing and sustaining circular value. Rather than being embedded solely in products or technologies, value emerges through interaction between consumers and the enterprise, particularly in how materials are supplied, meanings are constructed, and practices are maintained over time. Within the Paste Lab case, the findings indicate that circular economy implementation operates as a socially embedded process in which continuity is associated with sustained consumer participation across multiple roles under real-world constraints.

3.1 Informant Overview and Study Context

The study included one internal stakeholder from Paste Lab and six consumer informants who engaged with the enterprise in different professional contexts. To protect identities, the study referred to all informants by codes (AZ, DS, ME, HS, RA, LP, FR). The internal informant (AZ) described responsibilities focused on market education, consumer activation, and trust-building through portfolio communication and storytelling. From this perspective, recurring constraints included limited color and pattern variability in recycled outputs, price concerns, and the need for material certification. These constraints resonate with wider discussions that circular offerings can face acceptance barriers rooted in consumer uncertainty and market frictions rather than purely technological limitations (Kirchherr et al., 2018; Korhonen et al., 2018).

The consumer informants represented coffee businesses, architecture, and creative consulting. This diversity is analytically significant, indicating that consumer engagement is shaped by role-specific motivations and resource capacities. Business-oriented informants emphasized commercial viability and customer experience, while design-oriented actors prioritized functional integration and aesthetic compatibility. DS and ME participated as café owners exploring product collaboration and planning collection initiatives. HS and RA engaged through design and architectural applications, including product diversification efforts and an interior project that processed more than 130 kg of plastic. LP connected with clients and emphasized aesthetics and

durability as key decision criteria. FR described efforts to advocate circular products in a large-city context, while facing constraints related to campaign costs and uneven consumer awareness. This diversity indicates that consumers functioned as stakeholders whose involvement extended beyond purchasing to include co-creation, advocacy, and material participation, as summarised in Table 3. Analytically, this suggests a shift from passive consumption to active stakeholder participation, where consumers contribute to value creation processes rather than simply responding to market offerings. This stakeholder positioning aligns with research arguing that circular economy implementation depends on active consumer roles and enabling conditions, not passive consumption alone (Tabas et al., 2025; Vidal-Ayuso et al., 2023).

Table 3. Informant Profile and Form of Involvement.

Informant code	Age	Gender	Affiliation/Occupation	Location	Form of involvement
AZ	30	Male	Head of Marketing, Paste Lab	Yogyakarta	Marketing strategy, market education, storytelling, workshops
DS	33	Male	Owner, coffee business	Surabaya	Product collaboration, planned plastic collection campaign
ME	35	Male	Architect and café owner	Yogyakarta	Design project, planned café cup recycling program
HS	30	Male	Coffee founder and business consultant	Yogyakarta	Product diversification (e.g., keychains, plaques), community networking
RA	30	Male	Architect	Yogyakarta	Arah Kopi interior application (processed >130 kg plastic)
LP	26	Female	Creative consultant	Yogyakarta	Client connector, campaign initiation
FR	27	Male	Coffee owner and CMO	Jakarta	Social–environmental collaboration, educational campaign

3.2 Forms of consumer engagement in Paste Lab's circular economy practice

Across interviews, three recurring forms of consumer engagement were identified: material contribution, co-design participation, and advocacy. These forms connected consumer participation to both resource flows and meaning-making within Paste Lab's circular practices. Rather than treating consumers only as purchasers, the findings show how different participation forms operated at distinct points in the local circular value chain.

To contextualize these engagement forms, Figure 1 illustrates how consumer participation materializes across Paste Lab's circular value chain, linking post-consumer material input, participatory processes, and downstream application. The figure visually synthesizes how recycled materials move from consumer contribution to tangible products and collaborative use contexts, complementing the interview-based findings discussed in the following sections. Analytically, Figure 1 shows that consumer engagement bridges upstream material recovery and downstream application. Rather than a linear process, the circular value chain is sustained through iterative feedback loops where consumers repeatedly contribute as suppliers, users, and advocates. Within the Paste Lab case, these recurring interactions indicate that consumer participation helped connect upstream material recovery with downstream application and advocacy. The evidence therefore supports a case-specific interpretation: continuity in consumer involvement helped maintain these local material and relational linkages, without implying system-level effectiveness beyond the observed setting.

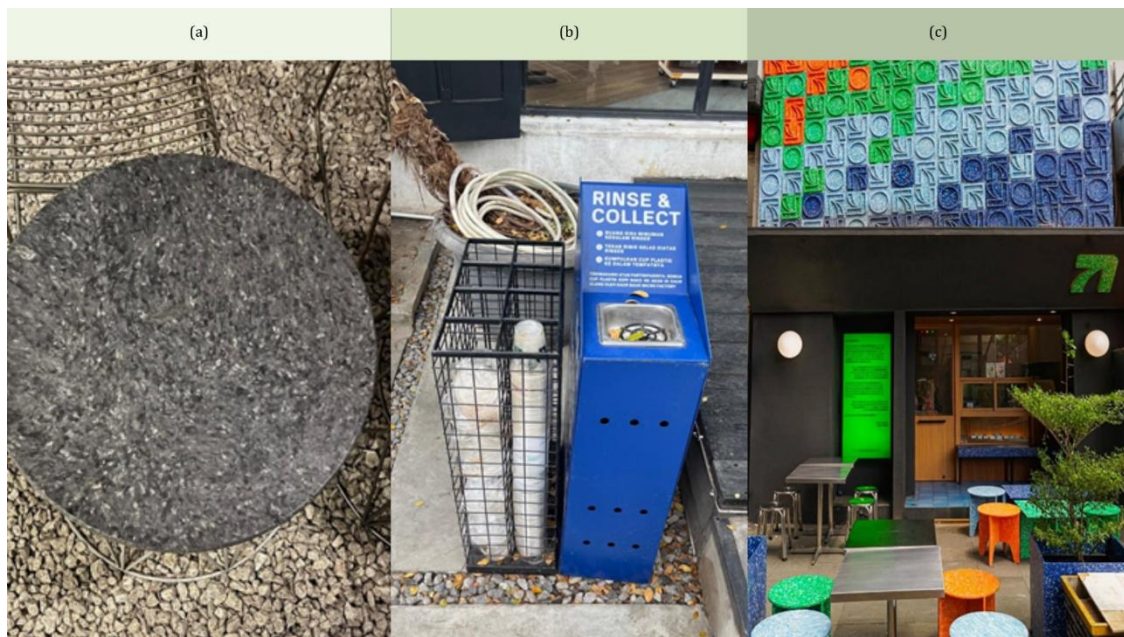


Figure 1. (a) Upcycled plastic table as a tangible output of circular production; (b) “rinse and collect” station enabling consumer participation in post-consumer plastic recovery; (c) café applying Paste Lab’s recycled products as part of collaborative and sustainability-oriented practices.

Material contribution was most visible in workshops and campaigns, where consumers were asked to bring household plastic so they could observe and experience circularity. AZ described this experiential emphasis: “we also developed workshops based on simple technology such as a plastic shredding machine driven by a bicycle.” This suggests that experiential participation made circular practices tangible, reducing abstraction and enabling consumers to connect everyday waste with visible transformation. This suggests that participation requires consumers to invest effort, time, and learning, meaning circular practices depend on active engagement rather than passive acceptance. In the café context, ME framed collection as collective participation: “the plastic collection campaign in our café was not only about collecting waste, but also making customers feel they were part of a social movement.” This reflects how circular participation can be sustained when consumers attach social meaning to otherwise inconvenient routines, a dynamic also observed in research on circular customer experiences where inconvenience may be offset by value-driven satisfaction (Guyader et al., 2022). HS similarly pointed to community learning effects: “through this activity, the local community became aware that plastic waste was not the end, but the beginning of something new.” Taken together, the accounts indicate that material contribution is reinforced by experience-based engagement and shared narratives rather than being purely transactional. This implies that participation is sustained not solely by environmental awareness, but by experiential reinforcement that reduces perceived inconvenience and strengthens engagement continuity.

Non-material contribution emerged through co-creation and product/application development. Consumers described how ideas were proposed, filtered, and implemented within production capacity. ME highlighted a professional application motive: “there was a plan to create a special product design for my architecture studio ... so the sustainability concept could be directly felt by our clients.” This suggests that co-design served as a mechanism to translate circular principles into client-facing experiences, aligning with studies that emphasize the importance of communicating and designing circular offerings in ways that make value perceptible to end users (Aarikka-Stenroos et al., 2021; Gomes et al., 2024). RA’s Arah Kopi application further illustrates co-creation through real-world use, demonstrating how consumer-led projects can move circularity from concept to application. LP emphasized product diversification as a route to broader relevance: “we helped design souvenirs and small products ... so Paste Lab could have wider variety.” DS reinforced that workshops enabled ideas to materialize rather than remain symbolic: “each time I joined a workshop, I saw participants’ ideas could really be realized, not just stop as discourse.” These findings show that consumers contribute directly to innovation and legitimacy formation, suggesting that firms co-construct circular value through interaction.

rather than delivering it unilaterally. This pattern reflects value co-creation as an interaction-based process in which consumers contribute knowledge, ideas, and contextual resources to value formation rather than merely receiving value embedded in finished products (Prahalad & Ramaswamy, 2004). In the Paste Lab case, co-design therefore represented an empirically distinct contribution from material provision because consumers helped shape how circular materials translated into usable, market-facing applications.

Advocacy and network diffusion constituted a third form of engagement. Consumers described recommending Paste Lab, sharing stories online, and connecting it to wider networks, particularly in creative communities and urban markets. FR stated: “We wanted to bring this sustainability issue to Jakarta so more people could see that plastic could have a second life.” In this case, advocacy allowed some consumers to connect Paste Lab with professional, community, and urban networks beyond the immediate transaction. This relational pattern aligns with advocative and ecosystemic forms of stakeholder engagement described in circular economy research (Civera et al., 2025), providing an empirical basis for interpreting these consumers as boundary-spanning actors in the case. This suggests that consumer networks play a critical role in extending circular practices beyond the firm, although their impact remains uneven across different social contexts. However, informants also noted that advocacy was stronger within particular circles, suggesting limits to diffusion into broader consumer segments—consistent with evidence that consumer interest and awareness can remain a central barrier to scaling the circular economy (Kirchherr et al., 2018; Vidal-Ayuso et al., 2023). This suggests that advocacy remains context-dependent and may not easily scale beyond already sustainability-oriented networks.

Taken together, these engagement forms indicate that consumers contribute not only through market transactions but also through resource inputs, collaborative innovation, and meaning diffusion. The following section synthesizes these contributions through a triple-bottom-line lens to clarify how consumer engagement translates into economic continuity, social legitimacy, and environmental circularity.

3.3 Consumer Contribution to Value Creation Across Triple Bottom Line

The findings indicated that consumer engagement contributed to value creation across economic, social, and environmental dimensions. This contribution followed an input–output pattern: consumers provided materials, ideas, advocacy, and purchasing support, which in turn produced outcomes such as revenue opportunities, social legitimacy, and material circularity. This indicates that value is experienced as multi-dimensional, combining economic, social, and environmental outcomes rather than being limited to environmental benefits alone. Table 4 consolidates these contributions, showing how informants emphasized different aspects while reflecting a common triple-bottom-line logic. However, these contributions involve trade-offs, as economic feasibility, social acceptance, and environmental impact do not always align, highlighting tensions between sustainability goals and market realities in SME contexts.

Table 4. Consumer contributions to value creation, with internal triangulation evidence.

Informant code	Economic value	Social value	Environmental value
AZ (internal triangulation informant)	Positioned consumers as agents of change supporting repeat orders and collaborative projects	Facilitated community relationships through storytelling and campaigns	Developed recycling workshops as consumer education
DS	Created sales opportunities through café collaborations	Connected Paste Lab with café customer community	Initiated plastic collection campaigns at the café
ME	Provided direct projects for recycled material supply	Networked within architecture community to expand visibility	Planned café cup recycling program with Paste Lab
HS	Supported product diversification to broaden market reach	Emphasized triple bottom line and community diffusion	Encouraged recycled material integration in design work
RA	Used Paste Lab products in commercial design/architecture	Demonstrated sustainable material application in a visible setting	Processed >130 kg plastic for interior application

Informant code	Economic value	Social value	Environmental value
LP	Opened collaboration opportunities via F&B networks	Connected Paste Lab to creative clients and communities	Planned campaign initiatives within networks
FR	Pursued large-city market entry despite cost constraints	Mainstreamed social–environmental advocacy	Highlighted consumer literacy constraints related to recycling

Economic value was described through purchases, project collaborations, and potential repeat orders that supported business continuity and commercial legitimacy. ME linked recycled materials to demonstrability in professional services: “we used Paste Lab recycled materials for architecture projects so our clients could see that sustainability was not just a concept, but real in their space.” This implies that economic value strengthens when circularity can be visually and materially verified, consistent with research showing that the functional value of circular offerings often dominates customer-perceived value and supports adoption when quality is credible (Aarikka-Stenroos et al., 2021; Sairanen et al., 2024). RA reinforced the linkage between applied use and storytelling: “the interior of our café used more than a hundred kilos of processed plastic, and it also became a unique story for customers.” Here, economic value was framed as differentiation and narrative-based appeal rather than volume alone. DS similarly framed collaboration as commercially meaningful when connected to mission: “each collaboration ... could increase sales because consumers felt part of a social mission.” This aligns with evidence that consumers may attach pride and novelty to upcycled products, which can increase willingness to engage when sustainability meaning is salient (Adıgüzel & Donato, 2021). Nonetheless, relying on differentiation and sustainability narratives may limit scalability when products compete on price and performance against conventional alternatives.

Social value emerged through community education, networking, and consumers' role in bridging Paste Lab and other stakeholders. HS noted the accessibility logic of smaller product formats: “the triple bottom line concept was important ... and small products such as keychains or plaques could be a simple way to reach a wider community.” This suggests that social diffusion may depend on approachable entry points and communication practices, echoing work that positions consumer engagement and communication design as critical layers for circular transition (Gomes et al., 2024; Tabas et al., 2025). LP described her connector role: “I often introduced Paste Lab to other creative clients, so they knew there was an alternative environmentally friendly material.” FR emphasized advocacy ambitions but also resource limits: “We kept pushing advocacy through social media, but limited resources meant the reach was not as large as expected.” These accounts indicate that social value creation emerged through relational flows between Paste Lab, consumers, clients, and communities rather than through firm action alone. This pattern aligns with stakeholder value-creation perspectives that conceptualize value as arising from multiple interdependent relationships and flows among firms and stakeholders (De Tommaso & Borini, 2024). In this case, however, value remained uneven because its diffusion depended on the strength and reach of particular consumer networks.

Environmental value was most clearly anchored in material diversion and circular application. RA stated: “The Arah Kopi project succeeded in processing more than 130 kilograms of plastic into interior elements, and that made us realize waste could have a second life.” This provides concrete proof that circularity was enacted through practical use. DS described an effort to maintain material flow continuity: “we started a plastic collection program in the café so the material flow to Paste Lab would never break.” ME highlighted participation as environmental agency: “every customer who contributed waste felt they had a direct role in an environmental solution.” Collectively, these statements reflect circular economy principles that emphasize multiple actors' role in closing loops and maintaining resource circulation through sustained participation (Ghisellini et al., 2016; Vidal-Ayuso et al., 2023). However, environmental impact remains contingent on consistent material supply and participation scale, which may limit broader systemic impact when participation remains fragmented.

3.4 Consumer Role in Stakeholder Collaboration and Ecosystem Expansion

From the consumer perspective, collaboration unfolded across three arenas: café-based operational collaboration, applied design and architecture collaboration, and advocacy-driven ecosystem expansion. In café-based collaboration, consumers who also operated businesses framed their venues as sustainability touchpoints that enabled participatory practices. DS stated: “We wanted the café not only to be a place to hang out, but also a space for sustainability education for customers.” This suggests that cafés function as micro-infrastructures for circular engagement, linking routine consumption with education and material collection. ME emphasized a behavioral loop: “we involved consumers directly, from drinking coffee to contributing the waste back into the cycle.” Such accounts mirror broader arguments that circular practices must be embedded in everyday routines to be sustained, yet they often require added effort and coordination (Hobson, 2020; Sutcliffe, 2022).

In applied design collaboration, architects served as consumers who expanded the use context of recycled materials. RA framed his project as applied proof: “for me this project was proof that architecture could be a medium for sustainability, not only aesthetics.” This suggests that professional application can legitimize circular claims by demonstrating functional and aesthetic viability. At the same time, circular adoption in such contexts can be sensitive to quality and performance expectations, which literature identifies as critical to customer acceptance of circular offerings (Aarikka-Stenroos et al., 2021; Pretner et al., 2021). LP’s role as a connector to clients further demonstrates how consumer networks can bridge Paste Lab to new collaboration opportunities, consistent with ecosystem-oriented views of stakeholder engagement in circular transitions (Reim et al., 2025; Tabas et al., 2025).

Advocacy-driven expansion was described as a consumer-led attempt to broaden reach beyond local circles. FR stated: “We tried to bring Paste Lab into the Jakarta market so the sustainability issue had a bigger stage.” AZ reinforced the strategic importance of consumer voices for legitimacy: “consumers were not only buyers, but agents of change who could convince the public.” Viewed through a circular ecosystem lens, these accounts suggest that consumers may act as boundary spanners, connecting SMEs to broader stakeholder groups and opening pathways for diffusion, while also facing limits tied to awareness and perceived competitiveness (Kirchherr et al., 2018; Tabas et al., 2025). Within the Paste Lab case, the findings suggest that a community-embedded SME can operate as a local relational node through which consumers connect material recovery, applied use, and sustainability advocacy. Whether this configuration can be replicated or scaled across other SMEs requires further empirical investigation.

3.5 Consumer experience insights using empathy map (pain–gain focus)

The empathy map evidence highlighted how perceived gains and pains shaped engagement sustainability. Gains were often described as emotional satisfaction, reputational benefits, and business differentiation tied to visible sustainability practices. DS stated: “Paste Lab was unique because it could transform plastic waste into valuable products, and it made me proud to be involved.” This aligns with evidence that consumers may experience pride and novelty with upcycled products, which can reinforce engagement when sustainability is identity-relevant (Adıgüzel & Donato, 2021). HS similarly emphasized impact-based satisfaction: “there was a particular satisfaction when I knew our involvement truly had an impact on sustainability.” LP framed engagement as differentiation in a competitive context: “working with Paste Lab gave a unique added value in F&B because not all businesses cared about this issue.” RA described reputational implications: “our social image increased because people saw our project was not only aesthetic, but also contributed to the environment.” These gains indicate that circular value was experienced not only as environmental benefit but also as symbolic and identity-relevant value, consistent with multidimensional value frameworks in circular contexts (Aarikka-Stenroos et al., 2021; Sairanen et al., 2024). Table 5 synthesizes these consumer pain and gain dimensions in the empathy map framework.

Table 5. Consumer empathy map summary with internal triangulation evidence.

Informant code	Think & feel	Say & do	See	Pain & gain
AZ (internal triangulation informant)	Consumers should be positioned as agents of change generating social and economic impact.	Emphasized collaboration strategy and storytelling	Consumers were viewed as a legitimacy channel	Gain: increased credibility; Pain: required consistent public advocacy
DS	Recycled products were unique and added value for the café	Initiated plastic collection program in the café	Paste Lab was viewed as a partner for sustainability image	Gain: business differentiation; Pain: low customer literacy
ME	Engagement was framed as café social responsibility	Planned café cup recycling with Paste Lab	Paste Lab was seen as a pioneer in F&B–sustainability collaboration	Gain: positive café image; Pain: limited customer participation
HS	Design should be meaningful and environmentally responsible	Integrated recycled products into design work	Paste Lab was viewed as a sustainable material provider	Gain: added project value; Pain: small scale of utilization
RA	Recycled material could be a practical solution in commercial projects	Used >130 kg of plastic in interior applications	Paste Lab was viewed as a driver of sustainable architecture innovation	Gain: greener project; Pain: relatively high cost
LP	Sustainability was important for the future of F&B	Recommended Paste Lab to clients and community	Paste Lab was viewed as a strategic partner in F&B	Gain: expanded business networks; Pain: campaigns required wider support
FR	Motivated to bring Paste Lab to urban markets despite challenges	Advocated within Jakarta networks	Paste Lab was seen as a social–environmental business model	Gain: expanded business networks; Pain: campaigns required wider support

Pains centered on adoption frictions that could limit engagement continuity and scaling. Uncertainty about durability and limited information on material quality were prominent. FR noted: “many clients still doubted the durability of the product; they always compared it with conventional materials.” This mirrors experimental evidence that circular products can face perceived quality concerns that dampen willingness to pay unless credible information or verification supports them (Pretner et al., 2021). Price sensitivity also emerged as a barrier. HS stated: “Price often became the deciding factor; sometimes people agreed with the sustainability idea but canceled because it felt more expensive.” This resonates with findings that consumer willingness to pay for circular attributes varies by perceived circularity level and how value is communicated (Boyer et al., 2021; Pretner et al., 2021). Aesthetic constraints further shaped acceptance. LP stated: “color and texture choices of recycled materials were limited, so not all consumers could immediately accept the final result.” Uneven environmental literacy also affected campaign effectiveness and participation. ME noted: “The recycling campaign in the café ran, but it took a long time for all customers to truly understand,” aligning with evidence that awareness and interest remain persistent barriers to circular economy implementation (Kirchherr et al., 2018; Vidal-Ayuso et al., 2023). These frictions matter because they can weaken key inputs that enable circularity: stable material flows, willingness to adopt recycled outputs in client-facing contexts, and advocacy beyond already receptive circles.

3.6 Synthesis: Positioning Consumers as Co-Creators and Boundary Spanners

The combined evidence distinguishes three empirically observed consumer roles within Paste Lab's circular practice: material contributor, co-design collaborator, and advocate. These categories are empirical, derived from the case rather than predetermined theoretical roles. Their theoretical significance becomes clearer when stakeholder and value co-creation perspectives are considered together. Stakeholder theory explains consumers' relational position as actors who can influence and be influenced by the enterprise's circular activities, whereas value co-creation explains how their materials, ideas, experiences, and network resources enter the value-creation process (Freeman et al., 2023; Prahalad & Ramaswamy, 2004). The case therefore extends existing discussion by showing that the same consumer may move across multiple relational roles rather than remaining confined to a single position as buyer or adopter.

This multi-role pattern also adds a relational dimension to circular economy research. Consumer contributions were not confined to dyadic firm–customer interaction: material contributions connected consumers to recovery activities, co-design connected them to application contexts, and advocacy connected Paste Lab to wider professional and community networks. These patterns correspond with reciprocal, advocative, and ecosystemic stakeholder relationships identified in recent circular economy research (Civera et al., 2025) and with stakeholder value-creation systems characterized by interdependent flows among multiple actors (De Tommaso & Borini, 2024). Accordingly, the theoretical extension proposed here is not that these individual roles are inherently new, but that their combination within the same SME-based circular setting reveals a distributed form of co-creation that links material circulation, application, and network diffusion.

The most tangible proof point of circularity in this dataset was the Arah Kopi application, which processed more than 130 kg of plastic into interior elements, showing that circular practices were enacted in a real commercial setting rather than articulated only as aspiration. At the same time, sustained engagement depended on the balance between gains and pains described by consumers. Uncertainty about durability, price sensitivity, and limited color/pattern variety constrained adoption and scaling, while uneven environmental literacy undermined consistent campaign participation. These barriers matter because they can weaken core inputs enabling circularity: stable material flows and broader acceptance of circular offerings. In this respect, the case reflects broader critiques that circular economy implementation faces cultural and market barriers, and that consumer acceptance is shaped by perceived value, credibility, and experience quality rather than by circular intent alone (Kirchherr et al., 2018; Korhonen et al., 2018; Pretner et al., 2021). Overall, the Paste Lab case suggests that enhancing durability credibility, improving affordability perceptions, and expanding acceptable design options are central to sustaining consumer participation in an SME circular economy context, while consumer networks remain pivotal for collaboration and diffusion (Aarikka-Stenroos et al., 2021; Gomes et al., 2024; Tabas et al., 2025).

In practice, the Paste Lab case suggests that participatory mechanisms can complement technical circular-economy activities by integrating consumers into resource flows, innovation processes, education, and advocacy. Enhancing environmental literacy and embedding circular practices into everyday routines may therefore strengthen community participation in locally organized waste-management activities. Extending this interpretation to city-level circular transitions would require evidence beyond the present single case.

4. Conclusion

This study examined consumer engagement as a central element of circular economy practices in a single-case SME, Paste Lab Yogyakarta, from a consumer-centered qualitative perspective. The findings show that consumers act as active co-creators in this SME-based circular economy setting, where value is generated by integrating them into resource flows, co-design processes, and network-based advocacy rather than through passive consumption alone. Rather than operating as separate outcomes, economic, social, and environmental values are co-produced through interactive processes that link material contribution, experiential engagement, and meaning construction, indicating that circular value creation within this case was relational and multidimensional. Consumers also act as boundary-spanning actors, enabling collaboration between Paste Lab and actors in food and beverage communities, architecture and design practices, and urban markets, thereby extending Paste Lab's relational reach beyond its internal organizational capacity and linking economic

activity with social and environmental forms of value creation. Theoretically, the study connects stakeholder theory with value co-creation by showing how consumers' relational position as stakeholders becomes consequential when they contribute materials, ideas, and network resources to circular practices. The theoretical contribution therefore lies less in identifying entirely new consumer roles than in demonstrating how material contribution, co-design, and advocacy can coexist as a distributed pattern of co-creation within a resource-constrained SME setting. At the same time, constraints shape consumer engagement, including limited information on material durability and quality standards, price sensitivity, restricted color and pattern options inherent to recycled materials, and uneven sustainability literacy, suggesting that sustained participation requires clearer quality communication and stronger value-based narratives.

Several limitations bound these conclusions. The study examines a single upcycling SME and relies primarily on six consumer informants, with one internal informant used only for triangulation. The findings therefore support analytical interpretation and contextual transferability rather than statistical generalization. Moreover, the study documents perceived and observed forms of engagement but does not quantify system-level environmental outcomes, long-term behavioral persistence, or the scalability of the identified engagement mechanisms. Future research could test whether these patterns transfer across different circular-economy SMEs, sectors, and geographical contexts.

Overall, the Paste Lab case highlights that circular economy implementation can involve not only technical processes but also socially embedded forms of consumer participation. These findings have several practical and policy implications. First, increasing public literacy on circular economy practices may help reduce consumer uncertainty and strengthen participation in waste management activities. Second, community-based collaboration mechanisms, such as workshops, collection programs, and co-creation initiatives, can support more inclusive, participatory plastic waste management practices. Third, support for SME-based circular initiatives should prioritize issues identified in this case, particularly clearer communication on quality and durability, credible material standards, consumer education, and collaboration platforms that connect SMEs with communities and local partners. These case-based insights further suggest that consumer engagement may complement technological and infrastructural interventions in community-level circular practices; however, their relevance to wider city-scale transitions requires investigation across multiple organizational and geographical settings.

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6. Conflict of Interest

The authors declare no conflict of interest.

References

- Aarikka-Stenroos, L., Don Welathanthri, M., & Ranta, V. (2021). What is the customer value of the circular economy? Cross-industry exploration of diverse values perceived by consumers and business customers. *Sustainability (Switzerland)*, 13(24). <https://doi.org/10.3390/su132413764>
- Adigüzel, F., & Donato, C. (2021). Proud to be sustainable: Upcycled versus recycled luxury products. *Journal of Business Research*, 130, 137–146. <https://doi.org/10.1016/j.jbusres.2021.03.033>
- Bocken, N. M. P., de Pauw, I., Bakker, C., & van der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 33(5), 308–320. <https://doi.org/10.1080/21681015.2016.1172124>
- Borrelle, S. B., Ringma, J., Law, K. L., Monnahan, C. C., Lebreton, L., Mcgivern, A., Murphy, E., Jambeck, J., Leonard, G. H., Hilleary, M. A., Eriksen, M., Possingham, H. P., De Frond, H., Gerber, L. R., Polidoro, B., Tahir, A., Bernard, M., Mallos, N., Barnes, M., & Rochman, C. M. (2020). Predicted growth in plastic waste exceeds efforts to mitigate plastic pollution. *Science*, 369(6510), 1515–1518. <https://doi.org/10.1126/science.aba3656>
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>

- Boyer, R. H. W., Hunka, A. D., Linder, M., Whalen, K. A., & Habibi, S. (2021). Product Labels for the Circular Economy: Are Customers Willing to Pay for Circular? *Sustainable Production and Consumption*, 27, 61–71. <https://doi.org/10.1016/j.spc.2020.10.010>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. In *Qualitative Research in Sport, Exercise and Health* (Vol. 11, Number 4, pp. 589–597). Routledge. <https://doi.org/10.1080/2159676X.2019.1628806>
- Civera, C., Moggi, S., Chiaudano, V., & Freeman, E. R. (2025). Stakeholder relationships in the circular economy. Conceptualizing relational approaches through systematic literature review. *Business Strategy and the Environment*, 34(8), 10698–10722. <https://doi.org/10.1002/bse.70142>
- De Chiara, A., Gallo, M., & Simonacci, V. (2024). Re-examining consumer engagement in the circular economy. *Journal of Consumer Marketing*, 41(7), 706–723. <https://doi.org/10.1108/JCM-03-2023-5918>
- De Tommaso, S. F. N., & Borini, F. M. (2024). Stakeholder value creation system: understanding the process. *Sustainability Accounting, Management and Policy Journal*, 15(4), 777–806. <https://doi.org/10.1108/SAMPJ-09-2023-0701>
- Dey, P. K., Malesios, C., Chowdhury, S., Saha, K., Budhwar, P., & De, D. (2022). Adoption of circular economy practices in small and medium-sized enterprises: Evidence from Europe. *International Journal of Production Economics*, 248. <https://doi.org/10.1016/j.ijpe.2022.108496>
- Ferasso, M., Beliaeva, T., Kraus, S., Clauss, T., & Ribeiro-Soriano, D. (2020). Circular economy business models: The state of research and avenues ahead. *Business Strategy and the Environment*, 29(8), 3006–3024. <https://doi.org/10.1002/bse.2554>
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & de Colle, S. (2023). The Problems That Stakeholder Theory Tries to Solve. In S. D. Dmytiryev & R. E. Freeman (Eds.), *R. Edward Freeman's Selected Works on Stakeholder Theory and Business Ethics* (Vol. 53, pp. 3–27). Springer. https://doi.org/10.1007/978-3-031-04564-6_1
- Geyer, R., Jambeck, J. R., & Law, K. L. (2017). Production, use, and fate of all plastics ever made. *Science Advances*, 3(7). <https://doi.org/10.1126/sciadv.1700782>
- Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy: The expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production*, 114, 11–32. <https://doi.org/10.1016/j.jclepro.2015.09.007>
- Gomes, G. M., Moreira, N., & Ometto, A. R. (2024). Consumer Engagement in Circular Consumption Systems: a Roadmap Structure for Apparel Retail Companies. *Circular Economy and Sustainability*, 4(2), 1405–1425. <https://doi.org/10.1007/s43615-023-00332-8>
- Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Guyader, H., Ponsignon, F., Salignac, F., & Bojovic, N. (2022). Beyond a mediocre customer experience in the circular economy: The satisfaction of contributing to the ecological transition. *Journal of Cleaner Production*, 378. <https://doi.org/10.1016/j.jclepro.2022.134495>
- Hobson, K. (2020). ‘Small stories of closing loops’: social circularity and the everyday circular economy. *Climatic Change*, 163(1), 99–116. <https://doi.org/10.1007/s10584-019-02480-z>
- Kibria, M. G., Masuk, N. I., Safayet, R., Nguyen, H. Q., & Mourshed, M. (2023). Plastic Waste: Challenges and Opportunities to Mitigate Pollution and Effective Management. *International Journal of Environmental Research*, 17(1). <https://doi.org/10.1007/s41742-023-00507-z>
- Kirchherr, J., Piscicelli, L., Bour, R., Kostense-Smit, E., Muller, J., Huibrechtse-Truijens, A., & Hekkert, M. (2018). Barriers to the Circular Economy: Evidence From the European Union (EU). *Ecological Economics*, 150, 264–272. <https://doi.org/10.1016/j.ecolecon.2018.04.028>
- Korhonen, J., Honkasalo, A., & Seppälä, J. (2018). Circular Economy: The Concept and its Limitations. *Ecological Economics*, 143, 37–46. <https://doi.org/10.1016/j.ecolecon.2017.06.041>
- OECD. (2022). *Global Plastics Outlook*. OECD Publishing. <https://doi.org/10.1787/de747aef-en>
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, 18(3), 5–14. <https://doi.org/10.1002/dir.20015>

- Pretner, G., Darnall, N., Testa, F., & Iraldo, F. (2021). Are consumers willing to pay for circular products? The role of recycled and second-hand attributes, messaging, and third-party certification. *Resources, Conservation and Recycling*, 175. <https://doi.org/10.1016/j.resconrec.2021.105888>
- Reim, W., Tabares, S., & Parida, V. (2025). Small and Medium-Sized Enterprises and the Circular Economy: Leveraging Ecosystem Strategies for Circular Business Model Implementation. *Organization and Environment*, 38(2 Special Issue: Organizational Transformations towards a Circular Economy), 257–283. <https://doi.org/10.1177/10860266251325247>
- Sairanen, M., Aarikka-Stenroos, L., & Kaipainen, J. (2024). Customer-perceived value in the circular economy: A multidimensional framework. *Industrial Marketing Management*, 117, 321–343. <https://doi.org/10.1016/j.indmarman.2024.01.006>
- Statista. (2025, March 7). *Plastic waste worldwide - statistics & facts*. <https://www.statista.com/topics/5401/global-plastic-waste/>
- Sutcliffe, T. E. (2022). Consumption work in household circular economy activities: findings from a cultural probe experiment. *Journal of Cultural Economy*, 15(5), 568–583. <https://doi.org/10.1080/17530350.2022.2066150>
- Tabas, A. M., Rehman, M. A., Khitous, F., & Urbinati, A. (2025). Stakeholder and customer engagement in circular economy ecosystems: A systematic literature review and research agenda. *Business Strategy and the Environment*, 34(1), 402–416. <https://doi.org/10.1002/bse.3989>
- Vidal-Ayuso, F., Akhmedova, A., & Jaca, C. (2023). The circular economy and consumer behaviour: Literature review and research directions. In *Journal of Cleaner Production* (Vol. 418). Elsevier Ltd. <https://doi.org/10.1016/j.jclepro.2023.137824>
- Whittemore, R., Chase, S. K., & Mandle, C. L. (2001). Validity in Qualitative Research. *Qualitative Health Research*, 11(4), 522–537. <https://doi.org/10.1177/104973201129119299>
- Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods*. Sage.
- Zahrudy, F. (2026). Customer brand engagement in digital environments: A systematic review and synthesis. *Multidisciplinary Reviews*, 9(12), 2026578. <https://doi.org/10.31893/multirev.2026578>