Goal-Framed Attitude and Sustainability Literacy in Shaping Circular Consumption Intention in Fast Fashion

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Adapting the circular economy to fast fashion requires transitioning to a responsible business model that reduces overstock and promotes a pro-environmental 'less consumption' trend. This study, grounded in the goal-framing theory (Lindenberg & Steg, 2007) examines how goal-framed attitudes and sustainability literacy influence consumers' circular consumption intentions. Analyzing data from 299 Prolific respondents, multiple regression results showed that goal-framed attitudes toward 'circular economy' and 'reliable information,' alongside sustainability literacy on 'circular initiatives' and 'environmental awareness,' positively impact intentions to engage in circular product purchases and practices. Clustering analysis identified three circular-minded consumer groups with differing perceptions of goal-framed attitudes, sustainability literacy, and circular consumption intentions. Fast fashion consumers prioritize reliable information on circular economy goals, intending to adopt circular practices, such as the 6Rs (Reducing, Recycling, Repairing, Redesigning, Reselling, and Renting), which reinforce circular business models in fast fashion.

Keywords: circular economy, fast fashion, goal-framed attitude, sustainability literacy

INTRODUCTION

Recent attention to the circular economy which emphasizes longevity and reusability (Bocken et al., 2017; Niero & Kalbar, 2019), seeks to decouple economic growth from resource consumption by adopting non-extractive technologies, renewable materials, and systems that return valuable resources to productive uses (Plan, 2020). This circular economy model presents challenging but provoking goals for the fast fashion industry (Ozdamar Ertekin & Atik, 2015). Ideally, this approach reduces net material consumption and minimizes environmental impact. However, achieving this in fast fashion is challenging due to its short product life cycle, rapid supply chain, low prices, and responsiveness to consumer demand (Atik & Zeynep, 2023).

Fast fashion's core business goal has usually been to quickly translate catwalk trends into affordable products in their stores or online (Bick, et al., 2018). Globalized production allows brands to source materials and manufacture in low-cost regions, keeping consumer prices low (Bick et al., 2018). Unfortunately, this affordability has fueled global overconsumption of clothing, with US consumers alone discarding approximately 3.8 billion pounds of clothing in landfills annually (Bick et al., 2018). Until recently, the economic attraction of fast fashion shielded it from critique over waste, slowing the industry's progress toward circular models (McNeill & Moore, 2015). Brands like The North Face, Uniqlo, New Balance, and H&M have begun integrating sustainability initiatives into their business strategies (Kaikobad et al., 2015). H&M has launched a program that addresses job creation in developing countries, utilizes recyclable resources, and educates consumers on ethical consumption, targeting economic, environmental, and social sustainability (Kaikobad et al., 2015).

A report by McKinsey & Company (2021) found that around 60% of fashion consumers now consider environmental impacts in their purchasing decisions, with 65% beginning to prioritize high-quality, long-lasting items. In response, some fast fashion brands are moving away from disposable trends to 'less consumption.' An increased focus on goal-framed attitudes toward circularity, whether for personal gains or social norms, could support these pro-environmental behaviors, encouraging consumers to participate in circular fashion practices (do Canto et al., 2023). This insight is valuable for designing campaigns across various sectors, from marketing to environmental advocacy, to achieve desired behavioral outcomes (Knošková & Garasovâ, 2019). Although these changes are necessary, consumers must discern between genuine improvements and greenwashing tactics to support companies committed to real change in the industry.

Fast fashion brands often leverage consumer assumptions by launching programs that reward recycling clothing items in their stores (Diddi et al., 2019). To enhance information reliability and transparency about circularity, a need for third-party audits and fair-trade certification to help consumers identify truly sustainable brands (Bick et al., 2018). However, these actions often increase both business expenses and environmental costs (Knošková & Garasovâ, 2019), as the detrimental environmental impacts, social well-being, excessive consumption, and rapid production practices threaten future generations (Atik & Zeynep, 2023). This calls for feasible sustainable solutions, promoted through social marketing, targeting both consumers and fast fashion businesses. Thus, this study examines how consumers' goal-framed attitudes toward circularity and sustainability literacy impact their intentions toward circular consumption practices, such as buying custom-made, eco-friendly, high-quality/timeless designs, and fair/ethical products. Although socially conscious consumers support sustainability, many do not apply these values fully to their fashion choices, often failing to translate ethical ideals into circular practices (Kaikobad et al., 2015). While a completely circular model may be unattainable for fast fashion, initiatives aimed at circular goals and informed consumers can have a lasting influence, encouraging circular practices in daily consumption and showing circularity as a viable strategy for the industry through social marketing.

LITERATURE REVIEW

Circular-Minded Practices in Fast Fashion

Today's pro-environmental and eco-conscious consumers increasingly prioritize practices that extend product lifecycles, reduce waste, and minimize the fashion industry's environmental footprint (Ozdamar Ertekin & Atik, 2020a). Particularly, circularity practices in fast fashion reflect a shift in consumer attitudes and behaviors toward circular sustainability, focusing on efficient resource use, reduced environmental impact, and responsible consumption (Atik & Zeynep, 2023). These circularity-minded practices are driven by social responsibility knowledge, environmental awareness, and the circular economy's contribution and initiatives. This sustainability literacy empowers consumers to believe that, through their buying choices, they can actively address pressing environmental, social, and ethical issues, thereby driving positive social change (Qureshi, 2020). Indeed, circular sustainability initiatives like EarthDay and resource-saving campaigns have fueled social movements that seek to balance environmental and economic priorities, raising awareness (Chang & Watchravesringkan, 2018).

Young consumers strongly support sustainable fashion practices, demonstrating positive attitudes toward ethical consumption and environmental awareness (Pomarici & Vecchio, 2014). As an extending segment, these consumers are more inclined to adopt circularity practices in fashion, aiming to maintain these habits as they age (Gazzola et al., 2020). This mindset shift has influenced not only individual behaviors but also the broader fashion industry, as sustainable practices become ever more relevant in product acquisition, usage, and disposal (Kim & Damhorst, 1998). However, while sustainability literacy and goal-framed attitudes toward circularity are rising, barriers like convenience, social image, and trend-following continue to impact how widely circularity practices are adopted among consumers. McNeill and Moore (2015) categorize fashion consumers into three groups: 'Self' consumers, focused on hedonistic needs; 'Social' consumers, driven by social image; and 'Sacrifice' consumers, who aim to minimize their environmental impact. These groups have contrasting perspectives on fast fashion, resulting in distinct implications for marketing sustainably produced fashion products to each segment. Each segment varies in its commitment to sustainable fashion and circular practices. In this study, we compare consumers' different circular-minded clusters regarding goal-framed attitudes, sustainability literacy, and circularity consumption across various types of circular-minded identity groups.

Goal-Framed Attitudes Toward Circularity

Understanding pro-environmental behaviors requires a multidimensional approach incorporating internal and external factors (Stephens, 1985). Effective models can account for motivations, attitudes, values, contextual or situational influences, social norms, and personal capabilities and habits (Stern, 2000). Consumers' pro-environmental behaviors are influenced by social norms and lifestyle choices on the one hand and by societal institutions and structures on the other. Bagozzi and his colleagues (2002) proposed the 'Integrative Consumer Action (ICA) model,' by viewing consumer actions as the outcome of a complex interplay of attitudes, desires, anticipated emotions, social influences, and goal and implementation intentions. Notably, the ICA model differentiates between the intention to achieve a desired outcome (goal intentions) and the specific plans necessary to attain this goal (implementation intentions) (Bagozzi et al., 2002).

Goal framing theory (Lindenberg & Steg, 2007) explains what motivates people to behave in a certain way (Steg et al., 2016), with the basic premise that most behaviors are influenced by multiple goals (Kopetz et al., 2012). To explore circularity in fast fashion, multi-dimensional goal-framed attitudes can be a constructive approach. For instance, while a consumer may intend to buy sustainable products, this intention is more likely to be realized when accompanied by a concrete plan for where and how to make such purchases (Thøgersen, 2006). The hedonic goal frame addresses the need for immediate satisfaction, the gain goal frame emphasizes enhancing and protecting personal resources, and the normative goal frame focuses on performing the appropriate action in a given context (Lindenberg & Steg, 2007).

Goal framing theory suggests that individuals often have multiple activated goals at any time, and compatibility with their background strengthens goal pursuit (do Canto et al., 2020). Background factors such as the availability and affordability of circular fashion products, can affect pro-environmental behaviors (Thøgersen, 2006). Moreover, framing can be positive or negative. Positive framing highlights the benefits of engaging in certain behaviors, while negative framing emphasizes perceived risk, such as the toxic risks associated with fabric chemical use. Based on goal framing theory in fast fashion, the four goal-framed attitudes are posited to influence consumers' circular practices.

Attitude Toward Circular Economy

The European Union (EU) launched the 'Circular Economy Action Plan' in 2020 to support economic actors, consumers, citizens, and civil society organizations (Plan, 2020). For consumers, the circular economy aims to provide high-quality, functional, and safe products that are efficient, affordable, durable, and designed for reuse, repair, and high-quality recycling (Almulhim & Abubakar, 2021). In addition, a wide range of sustainable services, products, and digital solutions is expected to improve quality of life, create innovative jobs, and foster upgraded knowledge and skills (Jabbour et al., 2023).

Attitude Toward Reliable Information

By promoting the mobilization and digitalization of product information through digital passports, tagging, and watermarks, consumers can access trustworthy and relevant information about their purchases (Plan, 2020). This information should include essential aspects such as expected lifespan, product care, and repairability (Plan,2020). Furthermore, brands must commit to protecting consumers from greenwashing, which can be achieved by establishing minimum standards for using sustainability labels or logos and implementing an industry-wide reporting and certification system (Khorsand et al., 2023).

Attitude Toward Circular Design

Circular design is critical for extending product lifespans and promoting efficient resource use (Bocken et al., 2016). By empowering manufacturers and incorporating recycled materials, resources can be reused more effectively (Okogwu et al., 2023). High-quality and timeless designs and materials contribute to longer product lifespans and, at the end of life, enable reintegration into the production cycle, facilitating transformation into new items (Plan, 2020). Marketing these products as services encourages producers to retain ownership, motivating brands to take full responsibility for the product's performance and lifecycle (Plan, 2020).

Attitude Toward Product Quality

Currently, less than one percent of all textiles are recycled into new textiles, primarily due to the prevalence of low-quality materials that cannot be recycled (Plan, 2020). Enhancing a product's durability, reusability, upgradeability, and reparability extends its lifespan for the initial consumer, while high product quality ensures its potential for recycling into new items (Schmidt, 2024). Therefore, brands should focus on codesigning products compatible with circularity, encouraging consumers to choose sustainable textiles that are durable, easy to reuse, and repairable (Bakker, 2021).

Sustainability Literacy

Sustainable literacy refers to the knowledge, skills, attitudes, and behaviors necessary for individuals to understand and address sustainability-related issues, as knowledge fosters a sense of responsibility for behavior (Qureshi, 2020). If consumers improved their sustainability literacy, they would be more likely to engage in sustainable living practices (Qureshi, 2020), due to its favorable influences on sustainability knowledge and pro-environmental purchasing decisions (Qureshi, 2020). However, many consumers overlook this potential (Diddi et al., 2019), leading to increased purchases of fast fashion items (Atik & Zeynep, 2023). Improved sustainability literacy can positively impact the circularity of fast fashion by emphasizing corporate social responsibility (CSR) knowledge, environmental awareness, and contribution to a circular economy.

CSR Knowledge

The corporate social responsibility often pertains to knowledge about labor rights, decent work, health and safety, human rights, governance, and community infrastructure (Pelletier et al., 2018). Labor rights and decent work cover social issues such as fair wages and workers' strike rights. For example, Bangladesh's ready-made apparel industry employs approximately 3.6 million workers, eighty percent of whom are women (Naved et al., 2018). Health and safety knowledge encompasses workers' well-being and injury prevention. Levi and H&M have improved health and safety by banning sandblasting in denim production and using alternatives like aluminum oxide and silicon carbide to create abrasions (Clark, 2010). However, this distressing process has been linked to increased silicosis risk among garment workers lacking protective gear (Clark, 2010). In response, many companies have adopted laser technology as a safer, cost-effective alternative for customizing garments (Nayak & Padhye, 2016). Human rights concerns often gender inequality in the apparel industry. Studies in Turkey show that women workers frequently face harassment, discrimination, and judgment from male supervisors (Can, 2017). Governance knowledge addresses legal systems and corruption, such as the Uzbekistan cotton boycott, where forced and child labor was used during cotton harvests. Despite efforts by brands like Nike, GAP, and H&M to end this practice

starting in 2013, Uzbekistan still employed over 100,000 individuals through forced labor in 2019 (Tashkent, 2020). Community infrastructure knowledge includes sanitization, drinking water, and factory resilience improvements. For example, in the 2013 Rana Plaza collapse, workers had reported structural cracks and poor maintenance but were forced to reenter the building before it collapsed (Bolle, 2013).

Circular Initiatives

This focuses on business initiatives that impact economic systems, emphasizing justice and efficiency in human-nature relationships over the long term (Baumgärtner & Quass, 2010). Although economic growth can support future generations, sustainability requires balancing long-term development with limited natural resources (Fung, 2021). Over 90 percent of Fortune 75 companies report efforts to address sustainability challenges, with most citing waste management improvement, however, fewer than 25 percent of profit from these practices or circular economy strategies. Reusing and recycling resources can help companies reduce costs by lowering raw material purchases (Romero-Hernández & Romero, 2018). However, fashion production often uses an open-ended system in which natural resources are transformed into products and disposed of afterward (Nasir et al., 2017). Resources must be reused to create a closed-loop system, such as recycling water in denim wash cycles, a concept central to the circular economy (Colucci & Vecchi, 2021). The circular economy concept promotes resource reuse during and after production, recycling garments into new fibers for new products (Sandvik & Stubbs, 2019).

Environmental Awareness

The fashion industry's growth has been driven by overconsumption. For example, the sportswear market alone is expected to grow by $ 630 million from 2020 to 2024, currently accounting for around eight percent of global greenhouse gas emissions (Fung, 2021). The rising global population has intensified the demand for natural resources, pressuring agricultural productivity as the need for plant-based and animal fibers grows. The International Cotton Advisory Committee reported an eleven percent increase in cotton consumption, equivalent to 25.4 million tons, in the previous year (Sharma et al., 2022). Environmental impacts persist throughout the supply chain; manufacturing and garment finishing stages contribute to chemical usage, water waste, and other environmental harms. For instance 2015, the International Wool Textile Organization reported that 1.163 billion sheep were required to produce 1.16 million kilograms of clean wood to meet consumer demand (Sharma et al., 2022).

Circular Consumptions

Purchase Circular Products

The concept of circularity supports a sustainability movement focused on efficient resource use and minimizing environmental impact (United Nations, 2015). Circularity often aligns with social sustainability, as reducing pollution can improve supply chain working conditions and worker health. Circularly, pro-environmental behaviors prioritize demand-driven or custom-made apparel, timeless design, high-quality production, environmentally friendly processes, and ethical manufacturing. When no longer needed, these items should be passed to secondhand shops or shared within social circles to curb the demand for new products (Alexander, 2019). However, many consumers remain unaware that these behaviors constitute circular consumption (Diddi et al., 2019). Customization options, offered by brands like Louis Vuitton and Levi's, allow consumers to personalize products, fostering a stronger connection and reducing the likelihood of disposal (Dissanayake, 2019). A 'green and clean' approach should span the entire product's life cycle, involving sustainable practices, cleaner production, increased efficiency, and reduced environmental risk (Akter et al., 2020). Clean manufacturing encompasses organic materials, sustainable distribution, waste management, and efficient energy use through renewable sources, which reduce carbon emissions (Akter et al., 2020). Fair and ethical production also ensures respect for human and animal rights, an important counter to fast fashion practices that often neglect these principles (Alexander, 2019).

Engage in 6Rs Practices

The 6Rs (Reducing, Recycling, Repairing, Redesigning, Reselling, and Renting) offer alternatives to discarding apparel products. Reducing minimizes the amount of waste by consuming less and be mindful of resource usage (McKinsey & Company, 2021). Recycling repurposes unwanted items, often incentivized by brands, though it can sometimes encourage more consumption (Diddi et al., 2019). Repairing, redesigning, and upscaling practices breathe new life into products through alterations, extending product use, and maintaining premium prices with quality materials (McKinsey & Company, 2021). Reselling has gained popularity, especially among younger consumers, though hygiene concerns may deter older generations. Depop, a platform used to buy and resell apparel products, saw a 300% increase in 2020 (McKinsey & Company, 2021). Initiatives like Mulberry's 'leather library' allow consumers to rent, resell, or repair items, reducing the need for new stock (McKinsey & Company, 2021). Although younger consumers have quickly embraced reselling, older generations sometimes hesitate due to hygiene issues (McKinsey & Company, 2021). These reservations can hinder widespread acceptance of secondhand purchasing, as many consumers remain uncomfortable sharing apparel with strangers (McKinsey & Company, 2021). Renting through platforms like 'Rent the Runway' enables wardrobe updates without purchasing new items, ideal for occasional-use pieces such as travel gear or formalwear, allowing multiple users to share items over their lifecycle (Yuan & Shen, 2019).

Research Framework and Hypotheses

The study hypothesizes that if consumers enhance their goal-framed attitudes and sustainability literacy, they will adopt assertive circularity practices in their fast fashion consumption. Based on the Goal Framing Theory (Lindenberg & Steg, 2007), the study examines the influences of consumers' goal-framed attitudes toward circularity and sustainability literacy on encountering their circularity practices in fast fashion consumption. Additionally, it seeks to differentiate circular-minded consumer groups based on their perceptions of goal-framed attitudes toward circularity, sustainability literacy, and circularity practices in fast fashion consumption. Thus, the following hypotheses are proposed.

Hypotheses 1-4: Goal-framed attitudes toward circularity positively influence behavioral intentions toward circular consumption.

H1: *The circular economy goal positively influences intentions to 6Rs practices (H1a) and purchase circular products (H1b).*

H2: *The reliable information goal positively influences intentions to 6Rs practices (H2a) and purchase circular products (H2b).*

H3: *The circular design goal positively influences intentions to 6Rs practices (H3a) and purchase circular products (H3b).*

H4: *The product quality goal positively influences intentions to 6Rs practices (H4a) and purchase circular products (H4b).*

Hypotheses 5-7: Sustainability literacy positively influences behavior intentions to circular consumption.

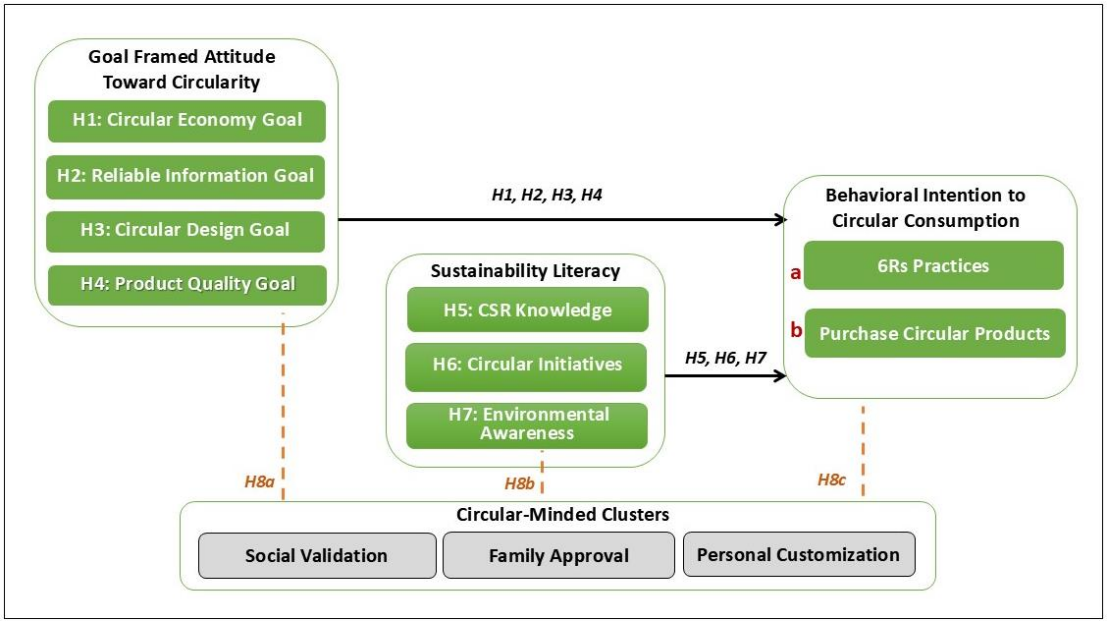
H5: *CSR knowledge positively influences intentions to 6Rs practices (H5a) and purchase circular products (H5b).*

H6: *Circular initiatives positively influence intentions to 6Rs practices (H6a) and purchase circular products (H6b).*

H7: *Environmental awareness positively influences intentions 6Rs practices (H7a) and purchases circular products (H7b).*

Hypothesis 8: There are significant differences in goal-framed attitudes (H8a), sustainability literacy (H8b), and behavioral intention toward circular consumption (H3c) across circular-minded clusters.

FIGURE 1
THE GOAL-FRAMED CIRCULARITY IN FAST FASHION



RESEARCH METHODS

Questionnaire Development

A self-administered questionnaire was developed based on the previous studies in goal framing theory, the circular economy model, sustainability literacy, and circular-minded identity, utilizing established scales from the literature. A 33-item scale for sustainable literacy was adapted from a triple-bottom-line perspective, covering CSR knowledge (11 items; Chang & Watchravesringkan, 2018), circular economy contribution (11 items; Belleau et al., 2007), and environmental awareness (11 items; Stephens, 1985). Since specific measures for goal-framed attitude toward circularity and behavioral intention in fast fashion did not exist, scales were modified from the European Commission 2020 report, "For a Cleaner and More Competitive Europe," resulting in 18 items on goal-framed attitude toward circularity and 7 items on behavioral intentions (Plan, 2020). Additionally, 10 items on consumer circular-minded identity were adopted from McNeill and Moore (2015).

Most items were measured on a 5-point Likert scale, from strongly disagree (1) to strongly agree (5), chosen for their reliability in intercultural contexts (Lee & Turban, 2001). The questionnaire included a cover page requesting participants, a screening for recent fast fashion purchases, and demographic questions (age, ethnicity, education, and monthly income) for the descriptive analysis. A pretest with 45 graduate students at a southwestern public university in the US confirmed internally consistent (Cronbach's alpha =.49-.99), constructs discrimination, and face validity, with slight modifications to enhance readability.

Sample and Data Collection

Institutional Review Board approval for protecting human subjects was obtained before data collection. Using 300 survey panels from Prolific, a total of 299 usable responses were analyzed. Recent studies indicate that Gen Z and millennial consumers are more likely to reduce, reuse, and recycle products than older generations (Topic & Mitchell, 2019). Respondents were first required to provide their age (under 41 years) and report the frequency of their fast fashion purchases over the last six months to ensure appropriate participation.

The majority of the sample were under 41 years old (n=255, 85.3%), with participants reporting fast fashion purchases from brands such as H&M (n=138), Zara (n=61), and Forever 21 (n=81) within the last six months. Most respondents identified as Caucasian (*n* = 219, 73.2%), had a monthly income of less than $1,000 (n=178, 59.5%), and held a bachelor's degree (*n* = 135, 45.1%) or a high school diploma (n=91, 30.4%)

Statistical Analysis

Several statistical methods were employed, including frequency distribution, descriptive statistics, factor analysis, multiple regression analyses, cluster analysis, and ANOVA, all using Statistical Package for Social Sciences (SPSS) version 28.0. Multi-item scales underwent a series of principle component factor analyses with varimax or quartimax rotations to identify the underlying dimensions of the variables. Reliability was assessed to measure the consistency of the variables developed from scales used as predictor components. Cronbach's alpha served as an index of reliability, indicating the internal consistency of the underlying construct. In summary, the scales demonstrated internal consistency, construct discrimination, and adequacy as indicators of the theoretical variables.

Multiple regression analysis was conducted using the enter method to test the hypothesized relationships (H1 through H7). The Variance Inflation Factor (VIF) was calculated to check for redundancy among variables to detect multicollinearity. All VIF values were below the common cutoff threshold of 1.1, indicating that multicollinearity was not an issue.

K-Means cluster analysis was used to segment the consumer groups based on circular-minded identity, examining intra-group homogeneity and intergroup heterogeneity. ANOVA was then applied to analyze mean differences among the clusters regarding goal-framed attitudes toward circularity, sustainability literacy, and behavioral intention toward circular consumption to test H8a, H8b, and H8c.

RESULTS AND DISCUSSIONS

Identifying the Underlying Dimensions of Variables: Exploratory Factor Analysis

A series of principal component factor analyses with varimax rotations identified four underlying dimensions of goal-framed attitudes toward circularity, three dimensions of sustainability literacy, and two dimensions of behavioral intention to circular consumption. Additionally, consumers' circular-minded identities revealed three factors distinguishing the three clusters.

Goal-Framed Attitude Toward Circularity

A factor analysis was conducted employing 18 items of attitude toward circularity. The goal-framed attitude was identified across four factors: 'circular economy goal,' 'reliable information goal,' 'circular design goal,' and 'product quality goal,' with a total explained variance of 79.99%. Cronbach's alphas ranged from .94 to .74, indicating the internal consistency of items within each factor (Table 1).

TABLE 1
FACTOR ANALYSIS RESULTS FOR GOAL-FRAMED ATTITUDES TOWARD CIRCULARITY

Goal-framed attitude toward circularity			FL	EV (α)
Circular economy goal	PEG 1	The brand offers rental services	.879	28.81% (.94)
	PEG 2	The brand offers trade-in services for credit/discount	.819	
	PEG 3	Created with efficient energy use	.769	
	PEG 4	The brand offers repair or alteration services	.767	
	PEG 5	The product can be recycled in the future	.695	
	PEG 6	The product is made from recycled materials	.686	
	PEG 7	Receive lifespan/repair info with vintage/secondhand	.673	
Reliable information goal	REC 1	The brand has banned unsold goods' destruction	.870	25.71% (.93)
	REC 2	The brand has reduced its carbon footprint	.832	
	REC 3	The brand has committed to no greenwashing	.823	
	REC 4	The brand uses third-party sustainability certifications	.787	
	REC 5	Disclosure of potential chemicals used	.624	
Circular design goal	PDG 1	The product is custom-made to fit	.916	13.53% (.78)
	PDG 2	The Product can be tailored to fit perfectly	.860	
	PDG 3	The product can be redesigned or upgraded	.552	
Product quality goal	PQG 1	High-quality/timeless products	.854	11.88 % (.74)
	PQG 2	The product is durable and can be repaired and reused	.810	

FL (Factor Loadings) EV(Explained variance) α (Cronbach's α)

Sustainability Literacy

A factor analysis was conducted using 33 items focused on knowledge related to sustainable literacy. The analysis identified three dimensions: 'corporate social responsibility (CSR),' 'circular initiatives,' and 'environmental awareness,' with a total explained variance of 73.95%. Cronbach's alphas for these dimensions were .96, .50, and .94, respectively, indicating the internal consistency of items within each factor (Table 2).

TABLE 2
FACTOR ANALYSIS RESULTS FOR SUSTAINABILITY LITERACY

Sustainability literacy			**FL**	**EV (α)**
CSR knowledge	CSR 1	Maintaining or improving the health of workers	.857	31.30 % (.96)
	CSR 2	Fair wages	.855	
	CSR 3	Equality in the labor force	.849	
	CSR 4	Safety for workers	.846	
	CSR 5	Ensuring worker wellness	.840	
	CSR 6	Fair labor practices	.836	
	CSR 7	Human Rights	.787	
	CSR 8	Infrastructure	.582	
Circular initiatives	CEK 1	Use fewer resources	.871	27.82 % (.50)
	CEK 2	Implement a used clothing collection	.840	
	CEK 3	Regenerate natural system	.783	
	CEK 4	Align clothing design and recycling processes	.780	
	CEK 5	Design products that can constantly be used	.773	
	CEK 6	Reduce plastic microfibers	.660	
	CEK 7	Make clothing care more accessible	.625	
	CEK 8	Increase clothing utilization	.602	
Environmental awareness	ENK 1	Air pollution occurs during common dye processes	.813	14.83 % (.94)
	ENK 2	Chemicals during the manufacturing of synthetic fibers	.809	
	ENK 3	Dyeing and finishing processes use lots of water	.763	
	ENK 4	Chemicals are not produced by processing natural fibers	-.439	

FL (Factor Loadings) EV(Explained variance) α (Cronbach's α)

Behavioral Intention to Circular Consumption

Two factors were identified: '6Rs practices' and 'purchase of circular fashion products,' with a total explained variance of 61.04%. Cronbach's alphas were .70 and .58, representing the internal consistency of items within each factor (Table 3).

TABLE 3
FACTOR ANALYSIS RESULTS FOR BEHAVIORAL INTENTION TO CIRCULAR CONSUMPTION

Behavior Intention to Circular Consumption			FL	EV (α)
6 Rs practices	6R 1	Repair, redesign, or upcycle apparel products	.819	34.14% (.704)
	6R 2	Purchase secondhand or vintage products	.791	
	6R 3	Rent, borrow, or trade apparel	.740	
Purchase circular products	PCP 2	Purchase fair and ethical products	.802	26.90% (.582)
	PCP 3	Purchase apparel that is high quality/timeless design	.752	
	PCP 5	Purchase custom-made apparel/products/accessories	.608	

FL (Factor Loadings) EV(Explained variance) α (Cronbach's α)

Circular-Minded Identity. A factor analysis resulted in three identities of 'social validation', 'family approval,' and 'personal customization' factors with a total explained variance of 72.26%. Cronbach's alphas were .84, .83, and .96, showing the internal consistency of items within each factor.

Items associated with the first factor, social approval, highlight the importance young consumers, particularly GenZ and millennials, place on social media engagement and friends' opinions. For instance, these consumers value social media interactions and are mindful of circular behaviors that could influence their friends' perceptions. The second factor emphasizes family and friends' approval in shaping circular behavior, suggesting that individuals may avoid behaviors that could negatively impact their family's or close friends' opinions. The third factor centers on the importance of product customization and adaptability, with young consumers prioritizing products that can be custom-made, tailored, or upgraded to meet their personal circular needs.

Although the study identifies three consumer identity types, they do not directly correspond to those proposed by McNeill and Moore. However, associated characteristics are evident. For example, 'Self' consumers, focused on hedonistic needs, align with the 'personal customization' factor, reflecting preferences for custom-made or tailored products to meet personal circular needs. 'Social' consumers, driven by social image align with the 'social approval' factor, engaging with the opinion of social media users and friends. 'Sacrifice' consumers, who aim to minimize environmental impact, are similar to the 'family approval' factor, actively engaged in circular practices in fast fashion. This diverse landscape has led to distinct consumer segments, each with unique implications for marketing sustainably produced fashion products based on varying levels of commitment to sustainable and circular practices.

All participants in the study had purchased at least one fast fashion item within the past six months. The novel identity emerged from social-media-oriented consumers, who highly value online presence and social media interactions. These consumers indicated they would avoid certain behaviors that might harm their image among their social media followers.

TABLE 4
FACTOR ANALYSIS RESULTS FOR CIRCULAR-MINDED IDENTITY

Consumer Identity			FL	EV (α)
Social validation	CIDEN 1	People interacting with social media posts is important	.887	25.73% (.837)
	CIDEN 2	Avoid certain behaviors if they affect friends' opinions	.837	
	CIDEN 3	I care about what people on social media think	.699	
Family approval	CIDEN 4	I care about my friends' opinions of me	.911	24.66 % (.832)
	CIDEN 5	I care about my family's opinion of me	.852	
	CIDEN 6	Avoid behaviors if they affect my family's opinion of me	.690	
Personal customization	CIDEN 7	I care product is custom-made to fit	.916	21.87 % (.956)
	CIDEN 8	I care products can be tailored to fit perfectly	.860	
	CIDEN 9	I care product can be redesigned or upgraded	.552	

FL (Factor Loadings) EV(Explained variance) α (Cronbach's α)

Hypothesis Testing: Multiple Regression Analysis

A series of multiple regression analyses were conducted using the enter method to asses each independent variable's contribution to the regression models and to test the hypothesized relationships (H1 through H7). Out of fourteen hypotheses, four (H1a, H2b, H6b, and H7b) were supported, while the remaining hypotheses were rejected (Table 5).

H1a demonstrated that if consumers frame their attitude toward the circular economy goal ($\beta = .14$, $p < .05$), they show greater intent toward 6Rs (Recycling, Repairing, Redesigning, Reselling, and Renting) practices [$F = 2.826$, $p < .05$, $R^2 = .142$]. H2b was supported showing that consumers' goal-framed attitude toward reliable information ($\beta = .42$, $p < .01$) positively impacts their intention to purchase circular fashion products [$F = 3.302$, $p < .05$, $R^2 = .173$]. Additionally, H6b and H7b were supported, indicating that enhanced literacy about circular economy contribution ($\beta = .44$, $p < .01$) and environmental awareness ($\beta = .33$, $p < .05$) increase consumers' intent to purchase circular products from fast fashion brands [$F = 5.127$, $p < .01$, $R^2 = .283$]

Despite these findings, many fast fashion brands release hundreds of, sometimes thousands, of new products daily. Consumers are increasingly aware that excessive consumption causes irreversible harm to the environment and supply chain workers due to production methods and landfill waste. However, fast fashion consumers are still lagging in framing attitudinal goals and developing sustainability literacy, resulting in only partial motivation toward circular consumption (Natália Rohenkohl et al., 2023). These results provide valuable marketing insights, underscoring the importance of fast fashion brands effectively communicating their circularity efforts to target customers through transparent and reliable information on circular economy practices and environmental awareness initiatives.

TABLE 5
RESULTS OF MULTIPLE REGRESSION ANALYSIS

Predictor variables	Dependent variables (Standardized beta coefficient)		Predictor variables	Dependent variables (Standardized beta coefficient)	
Goal-framed attitude	**6Rs Practices**	**Purchase circular products**	**Sustainability literacy**	**6Rs Practices**	**Purchase circular products**
H1 **Circular Economy Goal**	**.14*** H1a supported	n/s	H5 CSR Knowledge	n/s	n/s
H2 **Reliable Information Goal**	n/s	**.42 **** H2b supported	H6 **Circular Initiatives**	n/s	**.44**** H6b supported
H3 Circular Design Goal	n/s	n/s	H7 **Environmental Awareness**	n/s	**.33*** H7b supported
H4 Product Quality Goal	n/s	n/s			
R^2	**.248**	**.220**	**R^2**	.139	**.283**
Adjusted R^2	**.173**	**.142**	**Adjusted R^2**	.072	**.229**
F	**3.302***	**2.826***	***F***	2.092	**5.127****

*p<.05, **p<.01, n/s (not significant)

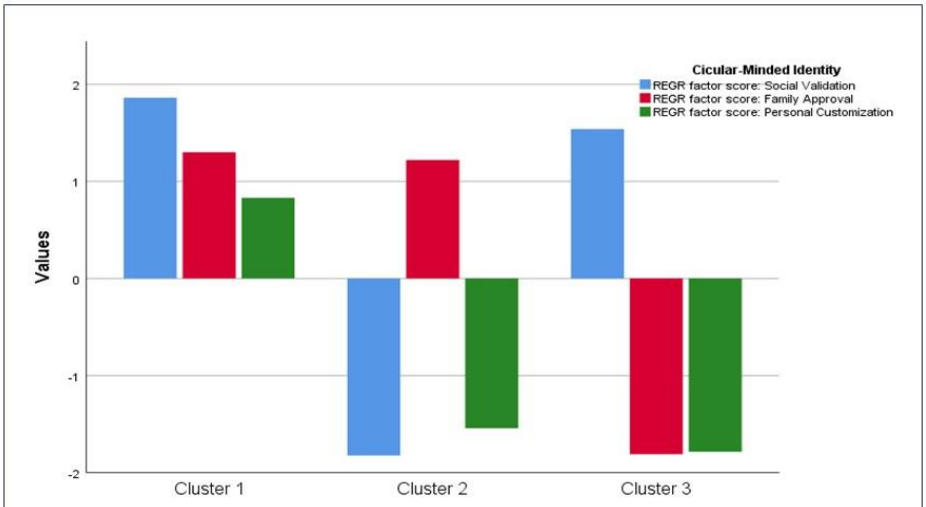
Consumer Identity Grouping: Cluster Analysis and ANOVA

The study used K-Means cluster analysis to classify fast fashion consumers by their consumer identity regarding circular fashion attitudes. K-Means clustering is suitable for exploratory research when the optimal number of clusters is unknown, as it helps determine clusters based on selected variables (Raybould & Fredline, 2012). In this study, the clusters were identified based on three identity factors (social validation, family approval, and personal customization) related to circular fashion engagement. A three-cluster solution was the most distinct, based on cluster size, factor scores comparisons, and ANOVA test among the clusters (Figure 2).

Identifying Circular-Minded Clusters

One-way ANOVA was conducted to examine differences among the three clusters in terms of circular fashion identity. The Tukey HSD procedure was applied for posthoc analysis, as it is appropriate for unequal cluster sizes (Field, 2009). As shown in Figure 2, cluster 1 (47.5 %, n=142) displayed high scores across all three factors (social validation, family approval, and personal customization) and was labeled the "active circular group." Cluster 2 (25.1 %, n = 75) scored only positively on family approval and was labeled the "uncertain circular group." Cluster 3 (27.4 %, n = 82) had a mixed identity, with a positive score on social validation but negative scores in family approval and personal customization; thus it was labeled as the "latent circular group."

FIGURE 2
CLUSTERS' COMPARISON OF CIRCULAR-MINDED IDENTITY FACTORS' STANDARDIZED REGRESSION SCORE



ANOVA

	Cluster		Error			
	Mean Square	df	Mean Square	df	F	Sig.
Socail Validation	12.928	2	.418	297	30.919	.000
Family Approval	10.586	2	.532	297	19.885	.000
Personal Customization	6.635	2	.725	297	9.149	.001

Distances between Final Cluster Centers

Cluster	1	2	3
1		2.062	1.976
2	2.062		2.270
3	1.976	2.270	

Differences in Goal-Framed Attitude

A one-way ANOVA was conducted to examine substantial differences in goal-framed attitudes across the three consumer groups. A significant difference was found only in the circular economic goal (F= 5.501, Sum of Squares = 11.939, P.<.01) (Table 6). The Tukey HSD multiple comparisons test revealed a significant difference between groups 1 and 2 versus groups 2 and 3. Cluster 1(active circular group) had the highest mean score of 4.83, while Cluster 3 (latent circular group) had a lower score of 3.58. Cluster 2 (uncertain circular group) was split, with a mean score of 4.41. Thus, H8a is supported only by the attitude toward product quality goals. This finding suggests an effective product positioning strategy for fast fashion brands, emphasizing product quality with a focus on durability, adequate sizing, and fit.

TABLE 6
DIFFERENCE ACROSS CONSUMER GROUPS: GOAL-FRAMED ATTITUDE TOWARD PRODUCT QUALITY

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Goal-framed attitude toward Product Quality	1	142	4.8333	1.01653	.22183	4.3706	5.2961	3.00	6.00
	2	75	4.4091	1.06813	.32205	3.6915	5.1267	3.50	6.00
	3	82	3.5833	1.06244	.30670	2.9083	4.2584	1.00	5.00
	Total	299	4.3864	1.14559	.17270	4.0381	4.7347	1.00	6.00

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Goal-framed attitude toward Product Quality	Between Groups	11.939	2	5.970	5.501	.008
	Within Groups	44.492	297	1.085		
	Total	56.432	299			

Differences in Sustainability Literacy Perception

A one-way ANOVA was conducted to examine differences in sustainability literacy across the three consumer groups. A significant difference was found only in the perception of circular initiatives (F= 5.862, Sum of Squares = 3.829, P.<.01). The Tukey HSD multiple comparisons test revealed a significant difference between groups 1 and 2 versus group 3. Cluster 1(active circular group) and Cluster 2 (uncertain circular group) had the highest mean scores, with M=4.38 and 4.39, respectively. In contrast, Cluster 3, the latent circular group, had a lower mean score of 3.69. Thus, H8b is supported only from a circular initiative perspective (Table 7). The findings indicate that active and uncertain circular groups possess greater knowledge of circular economy-related initiatives, suggesting that enhancing literacy on the economic benefits of circularity could motivate fast fashion consumers to support circularity practices within the industry.

TABLE 7
DIFFERENCES ACROSS THREE CLUSTERS: CIRCULAR INITIATIVES

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Circular Initiatives	1	142	4.3274	.55688	.12152	4.0739	4.5809	3.00	5.25
	2	75	4.3864	.58485	.17634	3.9935	4.7793	3.38	5.00
	3	82	3.6875	.58509	.16890	3.3158	4.0592	3.00	5.00
	Total	299	4.1676	.63277	.09539	3.9752	4.3600	3.00	5.25

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Circular Initiatives	Between Groups	3.829	2	1.914	5.862	.006
	Within Groups	13.388	297	.327		
	Total	17.217	299			

Differences in Behavior Intention to Circular Consumption

A one-way ANOVA was conducted to examine substantial differences in behavioral intention toward circular consumption across three groups. A significant difference was found only in the purchase intention of circular fashion products (*F*=3.572, Sum of Squares = 8.280, P.<.05). The Tukey HSD multiple comparisons test revealed a significant difference between groups 1 and 2 versus groups 2 and 3. Cluster 1(active circular group) had the highest mean score of 4.66, while Cluster 3 (latent circular group) had a lower score of 3.65. Cluster 2 (uncertain circular group) is divided, with a mean score of 4.03. Therefore, H8c is supported only with the purchase intention of circular fashion products. This finding presents an opportunity to target the active circular group, consisting largely of Gen Z and millennial consumers, by enhancing product quality and communicating reliable information on circular initiatives (Nam et al., 2017). Fast fashion brands must explore the circular model and provide transparent, trustworthy information about circular practices.

TABLE 8
DIFFERENCE ACROSS THREE CLUSTERS: PURCHASE INTENTION OF CIRCULAR PRODUCTS

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Purchase Circular Fashion Product	1	142	4.6571	.82497	.18002	4.2816	5.0327	3.00	6.00
	2	75	4.0364	1.39662	.42110	3.0981	4.9746	1.80	6.00
	3	82	3.6500	1.14455	.33040	2.9228	4.3772	2.20	6.00
	Total	299	4.2273	1.13923	.17175	3.8809	4.5736	1.80	6.00

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Purchase Circular Fashion Product	Between Groups	8.280	2	4.140	3.572	.037
	Within Groups	47.527	297	1.159		
	Total	55.807	299			

CONCLUSIONS AND IMPLICATIONS

Sustainability advocates argue that the future of fashion must be circular, as the fast fashion industry generates massive textile waste, with one dump truck's worth disposed of in landfills every second. By 2025, clothing waste is projected to weigh as much as the world's population (Alexander, 2019). Industry professionals and academic scholars are working to transition from the current linear fashion model to a circular one, aiming to shift both business practices and consumer behaviors toward sustainable alternatives.

Academic Contribution

By employing the Goal Framing Theory (Lindenberg & Steg, 2007), this study bridges a gap in the literature on sustainable consumer behavior, specifically in the fast fashion context. The study contributes to the academic understanding of circularity in fast fashion by examining four concepts: 'goal-framed attitudes,' 'sustainability literacy, 'consumers' circular-minded identity,' and consumer intentions toward 'circular consumption.' Conducting the exploratory factor analysis, each variable specifies its underlying dimensions. A series of multiple regression analyses support four positive causal relationships. The framed attitudes toward the 'circular economy goal' and 'transparent, reliable information goal' in their young consumers are crucial to purchase intention for circular fast fashion products and practices aligned with the 6Rs (Recycling, Repairing, Redesigning, Reselling, Renting, and Reducing). Literacy about 'circular initiatives' and 'environmental awareness' significantly enhances adopting circularity in fast fashion consumption. As consumers gain awareness of circular and environmental sustainability, their intent to engage in these behaviors grows. However, only four out of fourteen hypotheses were supported in multiple regression tests, indicating that young consumers of fast fashion still struggle to translate their goal-framed attitudes into circular consumption and practices. Nonetheless, these results provide valuable insights for the fast fashion business, emphasizing the importance of transparent communication with their target customer, using reliable information about circular economy goals, initiatives, and environmental awareness.

The study identified three circular-minded clusters (i.e., active circular, uncertain circular, and latent circular) that reflect adjustments from McNeill and Moore's (2015) original consumer classifications of social, sacrifice, and self groups. Cluster 1, the active circular consumer group, had the highest mean across all four goal-framed attitudes. This group, closely tied to social-media engagement, values interactions and followers' opinions, and avoids behaviors that might negatively affect their online image. They show a strong commitment to circularity viewing their actions as a positive sacrifice for circularity. Cluster 2, the uncertain circular consumer group, ranked second overall in goal-framed attitudes except for circular design. This group prioritizes the opinions of friends and family, avoiding behaviors that could harm their

social relationships. Finally, cluster 3, the latent circular consumer group, showed the second-highest mean for circular design but the lowest for circular economy goals, reliable information goals, and product quality goals. Unlike the fashion-conscious consumers in McNeil and Moore's study (2015), this group appears torn between circular identity and traditional fashion-conscious values. This diversity in consumer identities underscores the importance of tailored marketing strategies. Fast fashion brands can enhance engagement by positioning circular initiatives around each group's unique motivations, leveraging reliable information and goal-framed messaging to encourage a shift toward circular consumption and practices.

Practical Implications

This study underscores the need for social marketing to strengthen their communication strategies by prioritizing transparency and reliability in information about circular economy initiatives and environmental impact. The promise of a circular economy has garnered substantial interest in the fashion industry, where brands identify cost-saving opportunities through resource efficiency, closed-loop systems, and enhanced reuse, remanufacturing, and recycling (Babbitt et al., 2018). Accenture estimates that implementing circular economy strategies within the US industry could unlock $4.5 trillion in economic potential by 2030 (Lacy et al., 2014). Particularly in social marketing sectors in fast fashion, this projection highlights tailored approaches for engaging diverse circular-minded consumer groups. For example, active circular consumers, who are highly responsive to social media engagement, could be influenced by campaigns focusing on social responsibility, product quality, and durability. Successful initiatives such as H&M's recycling campaign program (H&M Group, 2020), Rent-the-Runaway's rental model, and ASOS's circularity efforts offer feasible implications for other brands looking to close the loop on circularity. Further, Sousa-Zomer et al. (2018) point to the challenge of innovating business models to achieve circular economy goals. Case-based research could be instrumental in identifying practical barriers and solutions for brands transitioning to circular models, offering actionable social marketing strategies for brands aiming to adopt circular practices effectively (Ozdamar Ertekin & Atik, 2020b),.

Limitations and Future Studies

Although this study uses consumers', goal-framed attitudes, and sustainability literacy as components of pro-environmental knowledge to develop a more refined consumer behavior model, only approximately 28.6% of research hypotheses were supported. This suggests several considerations. First, the sample should be more refined and diverse. While 85.3% of data respondents were under 41, meeting the condition for young consumers, the sampling was not entirely comprehensive about millennials and the Gen Z generation. Second, since only one pretest was conducted during the questionnaire development process, multiple regression models with measurement items for each variable should be created to increase explained variance. Third, gathering a richer pool of fast fashion brands to examine differences in consumer responses by brand would be valuable for future research. Fourth, for a more inclusive test, analyzing the differences among the three clusters as a moderating effect through structural equation modeling with a stable sample size would be beneficial to retain the scholarly rigidness and generalizability of findings.

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