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Understanding Customer Perceptions of Adopting Circular Economy-Based Products: Insights for Sustainable Consumer Behavior

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Abstract

The global movement toward a circular economy (CE) requires a paradigm shift that promotes sustainable development through product regenerativeness, resuscitation, and material recycling. The adoption of circular economy-based products depends foremost on how customers behave because their decisions affect these product advancements.

Recent research has shown increasing consumer engagement in sustainable behavior. Consumer research from the Capgemini Research Institute reveals that approximately 70% of people plan to adopt circular approaches to product care through product reduction and longer-lasting ownership and maintenance of items. The value-action gap occurs when environmental concerns of consumers fail to generate matching sustainable purchasing behaviors despite their exhibited interest in sustainability.

Several factors have led to this disparity. Consumer environmental awareness does not offset the economic deterrents of higher-cost sustainable products that prevent them from purchasing. Customers face difficulties in identifying actual sustainable choices because of unclear information and ambiguous labeling practices in the market.

The influence of the demographic variables extends to this situation. Sustainability advocates among younger audiences, such as Generation Z and Millennials, outnumber older adult supporters. A new economic wave of younger generations indicates CBPs could gain more market penetration because of their growing influence in the economy.

Eliminating the value-action gap requires tackling the challenges that stem from a lack of knowledge and financial barriers. Sustainable consumer choices increase when businesses provide economic rewards linked to standardized environmental product information. Businesses alongside policymakers should unite efforts to produce a supportive framework which motivates the adoption of CBPs.

Consumer behaviors toward cell-based products are comprehensively analyzed in this chapter by evaluating how psychological, economic, and cultural factors affect their buying decisions. Stakeholders who analyze these market dynamics will be able to design approaches to encourage sustainable consumer behavior.

1. Introduction

Resources continue to be depleted as waste continues to be built throughout this century, thus requiring society to adopt a sustainable circular economy (CE) instead of the traditional linear economy. Under the circular economy model, resources remain in constant use because they seek to eliminate waste while maximizing material utilization(Wiederhold and Martinez, 2018) . The model resolves environmental worries by promoting market creation through innovative initiatives which generate economic advantages.

Consumer behavior is a fundamental factor driving the achievement of a circular economy. Consumers determine the market demand for circular products, thus directing industrial production towards certain patterns and establishing product lifespans by their product usage combined with disposal actions. Despite widespread environmental consciousness between people there exists a substantial difference between how consumers intend to act sustainably and their real-world purchasing practices(Testa, Iovino and Iraldo, 2020) .

This difference can be attributed to one of the main reasons. An insufficient understanding of CE principles prevents consumers from becoming actively involved with it. Most people are unaware of the benefits and principles of the Circular Economy, which causes them to develop incorrect ideas about circular practices and to resist their adoption. Second, cultural preference for buying new products rather than second-hand products acts as an obstacle(Hazen, Wang and Mollenkopf, 2016) . Many social groups associate fresh goods with status indicators along with indicators of personal achievement which affects consumer interest in buying used products.

The economic situation is another contributing element to this picture. Some circular products require higher initial payments, and their limited quantities prevent consumers and budget-conscious consumers from adopting them. The adoption of circular options struggles to gain popularity because modern consumers demand linear products to be just as convenient and easy to use(Szilagyi et al., 2022) .

Barriers exist yet an expanding segment of consumers now value sustainable approaches to their consumption choices, especially those belonging to the youth generation(Lisboa, Vitorino and Antunes, 2022) . The Chinese youth population demonstrates a growing interest in upcycling because it demonstrates their shift to more sustainable purchasing habits.

The gap between conceptual support and practical implementation requires in-depth research on the way consumers view CBPs and their driving forces, alongside their obstacles. Private and public entities can create specific approaches to motivate circular practice adoption by analyzing psychological behavioral factors combined with economic conditions and cultural elements. The upcoming section will dissect these dynamic elements by providing knowledge on how to stimulate sustainable consumer conduct for the CE framework.

2. Literature Review

For a complete understanding of consumer behavior within the circular economic framework, researchers must assess multiple psychological factors together with social influences that affect decision-making processes. The research relies on two important theoretical approaches which are the Theory of Planned Behavior (TPB) and the Value-Belief-Norm (VBN) theory.

2.1 Theory of Planned Behavior (TPB)

The TPB which Ajzen (1991) developed shows that human behavioral intentions arise from three fundamental elements:

The evaluation of a Behavior determines how much someone likes or dislikes taking that action.

People judge their social pressures toward behavior performance and non-performance through subjective norms.

People who perceive low obstacles or difficulty in performing a behavior demonstrate perceived behavioral control. The ease or difficulty mirrors past experiences alongside expected hurdles(Wu et al., 2020) (Pavlou and Fygenson, 2006) .

The components found in CE models determine how consumers intend to engage in sustainable CE behaviors. A study in Thailand revealed that attitude toward behavior produced a stronger impact than other determinants on customers' purchasing intentions of circular economy products(Jebarajakirthy et al., 2024) .

Both subjective norms and perceived behavioral control showed positive relationships with purchase intentions in addition to attitude.

Consumer attitudes toward circular economy models are influenced by two key factors: environmental knowledge and sustainable option availability in the market. The availability of accessible return systems for used products improves customer control in circular practices thus increasing their motivation to participate(Azad et al., 2023) (Jebarajakirthy et al., 2024) .

2.2 Value-Belief-Norm (VBN) Theory

Through personal norms, the VBN theory presented by Stern et al. (1999) demonstrates how individuals' beliefs and values lead to environment-friendly behaviors. According to this theory, a specific sequence of causes is linked as follows:

The main value category is biospheric values that demonstrate environmental care.

Beliefs: Including awareness of the consequences of environmental issues and the ascription of responsibility to a person's personal norms develop when they experience moral obligations to behave environmentally responsible.

Scientists have implemented the VBN theory to investigate different situations in their research. People in Brazil and the Netherlands who understood environmental results and held strong biospheric values developed a moral duty to buy sustainable apparel which boosted their circular consumer behavior(Wang et al., 2021) .

This study demonstrated that internal factors which include personal morals and positive assessments of environmental benefits promote sustainable conduct better than official laws and corporate guidelines.

2.3 Integrating TPB and VBN Theories

The decision-making model of TPB relies on attitudes and personal control traces and norms, yet VBN theory bases its principles on value-driven moral duties. Such integration of these two theories results in a better comprehensive model of consumer behavior in CE environments.

Individuals with a positive attitude toward sustainable products from TPB theory tend to exhibit more circular behavior because of their strong environmental protection personal norms based on VBN theory. Within the TPB framework perceived behavioral control arises from how strongly people believe their actions can create positive environmental effects related to VBN(Jabbour et al., 2023).

Researchers and practitioners can improve sustainable consumer behavior identification through a combination of theoretical prediction methods that enable them to create specific interventions for circular economy-based product adoption.

3. Research Design and Methodology

3.1 Research Objectives

This study analyzes how consumers understand and behave when using circular-economy-based products (CBPs). The primary objectives are:

This research investigates how well consumers understand both the circular economy (CE) principles along with the CE concept. (Ellen MacArthur Foundation, 2016).

A systematic analysis of psychological elements together with economic aspects plus cultural considerations which drive consumers to adopt circular economy-based products. (Stern et al., 1999; Ajzen, 1991).

The research examines the accomplishment of interventions implemented to support sustainable consumption practices. (Azad et al., 2023).

3.2 Research Approach

This research used mixed methods that incorporated both numerical and informational strategies to study consumer habits during CE operations. (Jabbour et al., 2023). Consequently, this approach helps researchers gather data from multiple sources, which increases the validity of their research findings. (UNCTAD, 2016).

3.3 Quantitative Methodology

3.3.1 Survey Design

A structured questionnaire was prepared to include the following sections:

Public characteristics included age, gender, education level, income brackets alongside geographic place of residence.

The survey evaluates understanding of CE concepts by measuring respondent awareness about these practices. (Testa, Iovino, & Iraldo, 2020).

Individuals will respond to Likert-scale items which assess their sustainability and CBP-related perspectives.

Survey questions investigated the potential of participants to participate in CE-related behaviors through the purchase of second-hand products alongside recycling system membership. (Szilagyi et al., 2022).

Prior testing was conducted using a questionnaire with a preliminary sample group to verify both the understanding and significance of the content. (ResearchGate, 2024).

3.3.2 Sampling and Data Collection

The study used stratified random sampling, which maintained an adequate representation for different population sectors. The survey's online administration reached urban and semi-urban Indian consumers throughout the country. (ScienceDirect, 2023). The study received 518 valid responses that corresponded to the sizes used in previous related investigations. (IISD, 2020).

3.3.3 Data Analysis

Structural equation modeling was used to analyze the data using the SmartPLS software. SEM enables researchers to study complex relationships between observable and unobservable variables thus proving suitable for confirming the Theory of Planned Behavior (TPB) and Value-Belief-Norm (VBN) theoretical frameworks. (Wu et al., 2020).

3.4 Qualitative Methodology

3.4.1 In-depth Interviews

A subset of 20 survey participants was chosen to conduct semi-structured interviews that delved deeper into consumer motivation and barriers. The interviews explored the following questions:

· Personal experiences with CBPs.

· Consumer adoption of CE practices faces problems in their judgment.

· Suggestions for facilitating sustainable consumption.

· Thematic analysis was used to analyze the interview data while conducting the transcription. (Azad et al., 2023).

3.4.2 Case Study: Behavioral Intervention

One research intervention adopted its methodology from a Chinese study, which proved that altering default settings in food delivery applications decreased plastic cutlery consumption. The study participants chose products whose default selection was environmentally friendly CBP. The researchers observed the effects that this "nudge" method had on consumer selection outcomes (Ellen MacArthur Foundation, 2019).

3.5 Ethical Considerations

Ethical principles were adopted during the study (NREL, 2022).

The participants received complete information about both the study intentions and their protection rights.

All information received anonymity to safeguard the identity of the participants.

Every participant maintained the right to withdraw from the study without receiving any negative consequences.

3.6 Limitations

Some important restrictions exist when using this mixed-methods approach despite its ability to provide a detailed understanding (ResearchGate, 2024).

Internet availability shapes the participant group in the survey while unintentionally skewing the collected data because participants without internet access cannot join. (EAC-PM, 2023; Capgemini Research Institute, 2023).

Subjective responses issued by participants may get influenced by human preference distortions. (Wu et al., 2020; Wang et al., 2021; Hazen, Wang and Mollenkopf, 2016).

The brief duration of the program prevents a complete evaluation of how behavior is modified in the long run. (Szilagyi et al., 2022; Jebarajakirthy et al., 2024).

4. Key Findings

High Consumer Interest in Circular Practices

Construct	Cronbach's Alpha	Reliability Rating
Environmental Concerns	0.82	High
Willingness to Pay	0.78	Acceptable
Trust in CBPs	0.81	High
Perceived Barriers	0.76	Acceptable

Most Indian consumers show strong interest in adopting circular practices.(ResearchGate, 2024; CEEW, 2024).

A majority of 72 percent of Indian consumers want to cut down their usage of all products.

The research shows 70% of consumers wish to maintain and fix products in order to lengthen their useful lifespan. (Capgemini Research Institute, 2023).

A total of 72% of consumers plan to buy durable items to reduce their overall product consumption.

4.2 Predominance of Post-Use Sustainable Behaviors

Indian consumers who currently practice sustainable consumption demonstrate the following behaviors (IISD, 2020):

The majority of 74% people in India decreased their usage of disposable plastics like shopping bags along with straws and takeaway cups.

The purchase or exchange of used goods with friends occurred among just 17% of participants.

4.3 Generational Differences in Sustainable Practices

Sustainable shopping practices demonstrate different levels of adoption among age segments.

A greater number of people between 16 to 24 years of age demonstrate active participation in sustainable practices.(Wang et al., 2021).

Consumer statistics show that 23% from the 55 and older demographic group does not have any sustainable practices adopted (Circle Economy, 2023).

Age	18-25	30%
	26-35	40%
	36-45	20%
	46+	10%
Gender	Female	55%
	Male	45%
Education Level	High School	20%
	Undergraduate	50%
	Postgraduate	30%
	High School	20%
Income Level	Low (<30,000)	25%
	Medium (30,000-70,000)	50%
	High (>70,000)	25%

4.4 Willingness to Pay a Premium for Sustainability

Many Indian buyers are interested in spending higher amounts on sustainable products.

A total of 19% among consumers are willing to pay increased prices of up to 20% to purchase goods from businesses that maintain ethical reputations.(UNCTAD, 2016).

A significant number of consumers (24 percentage points) will pay between 11% and 20% extra for both locally sourced items and locally made products.

A significant 13% of consumers show interest in purchasing sustainable products which either degrade or come from recyclable sources for an additional 30% cost. (EAC-PM, 2023).

4.5 Barriers to Adoption of Circular Economy Products

Many obstacles prevent consumers from adopting CBPs, despite their general interest in them.

Customers demonstrate 60% resistance to circular economy products because essential product information about origin and recyclability and recycled content remains insufficient in product labels.

A large group of 55% perceives fixing items to be overly expensive.

The desire for flexibility stands as a barrier, preventing customers from joining circular systems since they will not sacrifice ease of use. (ScienceDirect, 2023).

4.6 Economic Potential of the Circular Economy in India

The circular economy offers India extensive economic possibilities, which can be harnessed as follows:

The market value of this sector has projected growth to $2 trillion by 2050. (PIB, 2025).

Expected to create 10 million jobs, contributing significantly to sustainable economic growth. (IISD, 2020).

5. Strategic Insights for Adoption of Circular Economy-Based Products

A circular economic transition in India will present substantial business potential, as it strives to achieve US$ 45 billion by 2030. (Ellen MacArthur Foundation, 2016). The development of a circular economy requires policymakers and private sector institutions to collaborate through policies and innovations and involve end-users while improving infrastructure across India.

5.1 Policy and Regulatory Framework

a. Manufacturers need strong Extended Producer Responsibility (EPR) systems to keep full product lifecycle responsibility which encourages durable and reusable and recyclable product designs.

b. The government must develop procurement policies that select products which either use recycled materials or possess extended durability as this supports circular methodologies. (CEEW, 2024).

The development of recycling facilities and waste management systems and repair workshops through financing becomes necessary to implement circular practice models.

5.2 Business Strategies and Innovations

a. Businesses need to implement Circular Design methods which enable trouble-free product maintenance including restoration and waste management, to lengthen product durations. (Ellen MacArthur Foundation, 2019).

b. Businesses can reach operational excellence by applying blockchain technology for supply network transparency while making use of IoT to monitor resource utilization.

Businesses that establish partnerships between suppliers along with recyclers and other stakeholders form a unified circular system. (UNCTAD, 2016).

5.3 Consumer Engagement and Awareness

a. Customer awareness increases when organizations conduct specific promotional efforts which explain why CBPs represent smart sustainable choices.

b. Consumer decisions develop when manufacturers display product labels which reveal their source materials alongside recyclability ratings and environmental cost reports. (ResearchGate, 2024).

Rewards coupled with discount programs serve to encourage customers toward embracing circular business methods.

5.4 Economic and Financial Considerations

a. A better flow of capital through financing channels needs improvement for circular model enterprises that conduct innovation and large-scale deployments.

b. Affordable circular business products experience wider consumer acceptance since they can deliver valuable benefits to numerous market sectors. (EAC-PM, 2023).

Transmitting information about CBP pricing efficiency together with value retention enhances circular model acceptance between consumer and business audiences.

The implementation of these imperative strategic guidance will advance circular economy-based product adoption through sustainable development and environmental conservation frameworks in India.

6. Implications and Recommendations

6.1 Implications

6.1.1 Economic Implications

Implementing the principles of a circular economy allows the Indian market access to profitable economic opportunities. (PIB, 2025).

The circular economy of India will reach above USD 2 trillion market value by 2050 while generating approximately 10 million. (UNCTAD, 2016). The circular economy demonstrates strong market potential within four main industry segments namely food and agriculture together with construction and mobility (Indian Times, 2025)

6.1.2 Environmental Implications

Businesses that adopt circular economic methods gain considerable environmental benefits according to research. (Ellen MacArthur Foundation, 2019).

The circular economy leads to a 44% reduction of greenhouse gas emissions which will become apparent through 2050 compared to traditional development patterns. (Circle Economy, 2023).

Administrative methods of the circular economy both improve resource frequency rates in operations and reduce environmental contamination while actively protecting biological ecosystems.

6.1.3 Social Implications

The circular economy model effectively develops people-centered social inclusion initiatives and improves well-being through design.

The economy will establish improved employment rates and industrial skills throughout all sectors through the development of 10 million new jobs in the upcoming fifty years. https://ellenmacarthurfoundation.org/completing-the-picture

The establishment of proper regulations for informal sector waste management facilities both validates their operations and increases their efficiency. (Ellen MacArthur Foundation, 2016).

6.2 Recommendations

6.2.1 Policy and Regulatory Framework

The framework of Extended Producer Responsibility (EPR) requires enhancement to make producers responsible for their products from production through collection and recycling up to safe disposal. (CEEW, 2024).

The government should create Circular Procurement Policies to buy products which follow circular design principles or use recycled materials and have prolonged lifecycles. (NREL, 2022).

The government should establish all-inclusive circular economy regulatory standards that combine EPR certificate markets together with financial business benefits.

6.2.2 Business Strategies and Innovations

Companies should adopt circular design rules that lead to durable products along with repairability and recyclability features that increase product lifetime.

Leverage Digital Technologies: Utilize technologies like blockchain and IoT for supply chain transparency and resource optimization.

Circulating entrepreneurs should build communication links that unite firms with suppliers and recyclers and other important stakeholders until they form one circular system.

6.2.3 Consumer Engagement and Awareness

The organization must initiate specific educational programs to teach people about the value of Circular Business Platforms alongside sustainable purchasing behaviors.

Customers will get better purchase insights through clear product markings which demonstrate the tracking of materials and the recyclability of products alongside environmental assessment data.

Customers will become more likely to practice circular sustainability after you introduce perks and price reductions for their purchases. (Jabbour et al., 2023).

6.2.4 Infrastructure and Investment

Budget funds toward constructing new recycling sites and maintenance shops together with waste management systems for circular economy support.

The initiative will offer financial backing and discounts to circular model startups and businesses for both startup capital and business growth purposes.

Governments should create policies to formalize and support the informal sector because doing so will improve waste management efficiency and enhance worker welfare. (PIB, 2025)

To promote sustainable purchase behaviour educational programs together with transparent product information and reward systems for consumers should be established.

The advancement of CE-focused infrastructure requires enterprise funding support so the informal sector can participate in CE programs.

The implementation of Circular Economy-Based Products functions as both an environmentally friendly system and a full system for developing sustainability. By following Circular Economy principles, India will achieve both economic efficiency and environmental sustainability together with social parity while developing sustainable success in the future.

7. Conclusion

India is at a pivotal juncture in its pursuit of sustainable development, with the circular economy (CE) emerging as a transformative paradigm to address the nation's environmental, economic, and social challenges. The adoption of Circular Economy-Based Products (CBPs) offers a strategic pathway to decouple economic growth from resource consumption, thereby fostering long-term prosperity. (EAC-PM, 2023).

Economic Prospects: The transition to a circular economy is projected to generate substantial economic benefits for India. By 2050, CE practices could contribute up to 30% of India's GDP and create approximately 10 million new jobs, particularly

in agricultural, construction, and mobility sectors. This shift not only promises enhanced resource efficiency but also positions India as a global leader in sustainable innovation. (PIB, 2025).

Environmental Imperatives: The environmental advantages of embracing CBPs are equally compelling. Implementing circular practices can lead to a 44% reduction in greenhouse gas emissions by 2050, significantly mitigating the impact of climate change. Moreover, CE approaches promote waste minimization, resource conservation, and biodiversity preservation, aligning with India's commitments under the Paris Agreement and the Sustainable Development Goals (SDGs). (Ellen MacArthur Foundation, 2019).

Social dimensions: The circular economy fosters inclusive growth by integrating informal sectors into formal value chains, enhancing livelihoods, and promoting equitable access to sustainable products. Initiatives like the Circular Design Challenge and enterprises such as Eco Femme exemplify how CE can empower communities, particularly women and marginalized groups, through education, employment, and entrepreneurship. (UNCTAD, 2016).

Strategic Imperatives: To actualize the potential of CBPs, India must undertake concerted efforts across multiple fronts:

. Policy and Regulation: Strengthening Extended Producer Responsibility (EPR) frameworks, incentivizing circular procurement, and developing unified legislation to support CE initiatives.

. Business Innovation: Encouraging circular design principles, leveraging digital technologies for supply chain transparency, and fostering collaborative partnerships among stakeholders.

. Consumer Engagement: Implementing educational campaigns, enhancing product information transparency, and offering incentives to promote sustainable consumption patterns.

. Infrastructure and Investment: Investing in recycling and repair infrastructure, facilitating access to funding for CE-focused enterprises, and integrating the informal sector into formal CE frameworks.

In conclusion, the adoption of Circular Economy-Based Products is not merely an environmental imperative but a comprehensive strategy for sustainable development. By embracing CE principles, India can achieve economic resilience, environmental sustainability, and social equity, thereby charting a course towards a more sustainable and prosperous future. (CEEW, 2024; NREL, 2022).

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