



The Integration Of Circular Supply Chains And Customer-Based Brand Equity In Mapping Brand Strength: A Systematic Literature Review

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ABSTRACT

The objective of this study is to conduct a systematic literature review (SLR) by mapping brand strength in the era of sustainability, integrating the Circular Supply Chain (CSC) and Customer-Based Brand Equity (CBBE). Through an analysis of 43 selected articles from the Scopus and Emerald databases, this study summarizes how circular operations such as reverse logistics and resource efficiency can be transformed into valuable assets in the eyes of consumers. Findings indicate that supply chain transparency supported by Industry 4.0 technologies serves as a signal that mitigates the risk of greenwashing while strengthening brand awareness and loyalty. When combined with a strong brand position, this integration not only improves environmental performance but also generates long-term competitive advantage. This study provides a framework for aligning circular operational strategies with brand communication to optimize brand equity.

INTRODUCTION

The current business environment has been drastically altered by the worldwide paradigm change from a linear "take-make-dispose" economy to a circular economy (CE) model. The circular supply chain (CSC) approach combines the concepts of sustainable product life cycles with green supply chain management (Liu et al., 2018). CSC focuses not only on operational efficiency but also on creating long-term value through resource recovery and waste reduction. The urgency of implementing CSC is driven by increasing regulatory pressure and global environmental awareness. Practical implementations such as reverse logistics and circular network design have proven capable of maximizing profitability and environmental impact (Gharibi and Abdollahzadeh, 2025). However, significant challenges arise in specific sectors such as apparel retail, where institutional barriers and organizational costs hinder the adoption of circularity (Zaidi and Chandra, 2025). On the other hand, these operational barriers for SMEs

often overlap with the need to strategically position brands in competitive markets (Mondal, Singh and Gupta, 2025).

Although the operational aspects of CSC have been widely discussed, its relationship with Customer-Based Brand Equity (CBBE) warrants further exploration. Sustainable marketing, supported by corporate social responsibility, has been shown to foster responsible consumption behavior (Jia et al., 2023). In addition to practical quality, modern customers assess items based on the "signals" of sustainability that businesses send through their supply chains. The use of eco-friendly raw materials can now build a positive image in customers' minds (Kim and Oh, 2020). This integration is accelerated by digital transformation via Industry 4.0 technologies like Big Data Analytics and the Internet of Things (IoT). Digital circular economy innovations not only enhance efficiency but also foster corporate competitiveness and social well-being (Al-Omouh, 2025). The data transparency generated by these technologies helps validate sustainability claims, thereby strengthening consumer trust and brand loyalty (Farrukh Shahzad, Liu and Zahid, 2025).

However, the current literature indicates a research gap regarding how circular operational mechanisms specifically translate into brand strength across various industrial sectors, ranging from manufacturing to the hospitality industry. Thus, the purpose of this work is to map the integration between CSC and CBBE by conducting a systematic review of 43 important studies. Through this analysis, it is hoped that a framework can be formulated to explain how supply chain circularity strengthens brand equity and mitigates consumer skepticism in the digital age. To address this gap, this study examines the following research questions:

1. RQ1: What are the trends in the literature regarding the integration of CSC and CBBE over the past decade?
2. RQ2: What are the key operational practices in CSC that have the strongest impact on the equity dimension?
3. RQ3: What are the mechanisms underlying the relationship between circular operations and the dimensions of CBBE, including the roles of mediating and moderating variables?

LITERATURE REVIEW

Circular Supply Chain

The circular supply chain (CSC), which emphasizes the product life cycle, combines the concepts of the circular economy and green supply chain management (Liu *et al.*, 2018). In practice, integrating green factors into reverse logistics network design has proven capable of maximizing both profitability and environmental efficiency (Gharibi and Abdollahzadeh, 2025). In addition, the Green Customer Value has emerged as a key determinant of positive attitudes toward eco-friendly brands (Amanda and Zai, 2025). The use of frameworks such as the "*Greening Factor*" is crucial for identifying an organization's transition points toward full circularity (El-Tahan *et al.*, 2026).

Customer-Based Brand Equity

Customer-based brand equity (CBBE) is driven by consumers' psychological responses to a company's sustainability commitments. Sustainable marketing supported by CSR activities has been shown to significantly enhance brand image and drive responsible consumption behavior (Jia *et al.*, 2023). The biggest factor in creating a green brand identity within the CBBE dimension is associations with the usage of environmentally friendly raw materials (Kim and Oh, 2020). Furthermore, the credibility of information sources regarding circular practices strongly determines how consumers form their perceptions of the brand image (Wu, Lim and Lim, 2026).

In addition, it will also enhance transparency and build trust among stakeholders (Widyastuti and Endarwati, 2025).

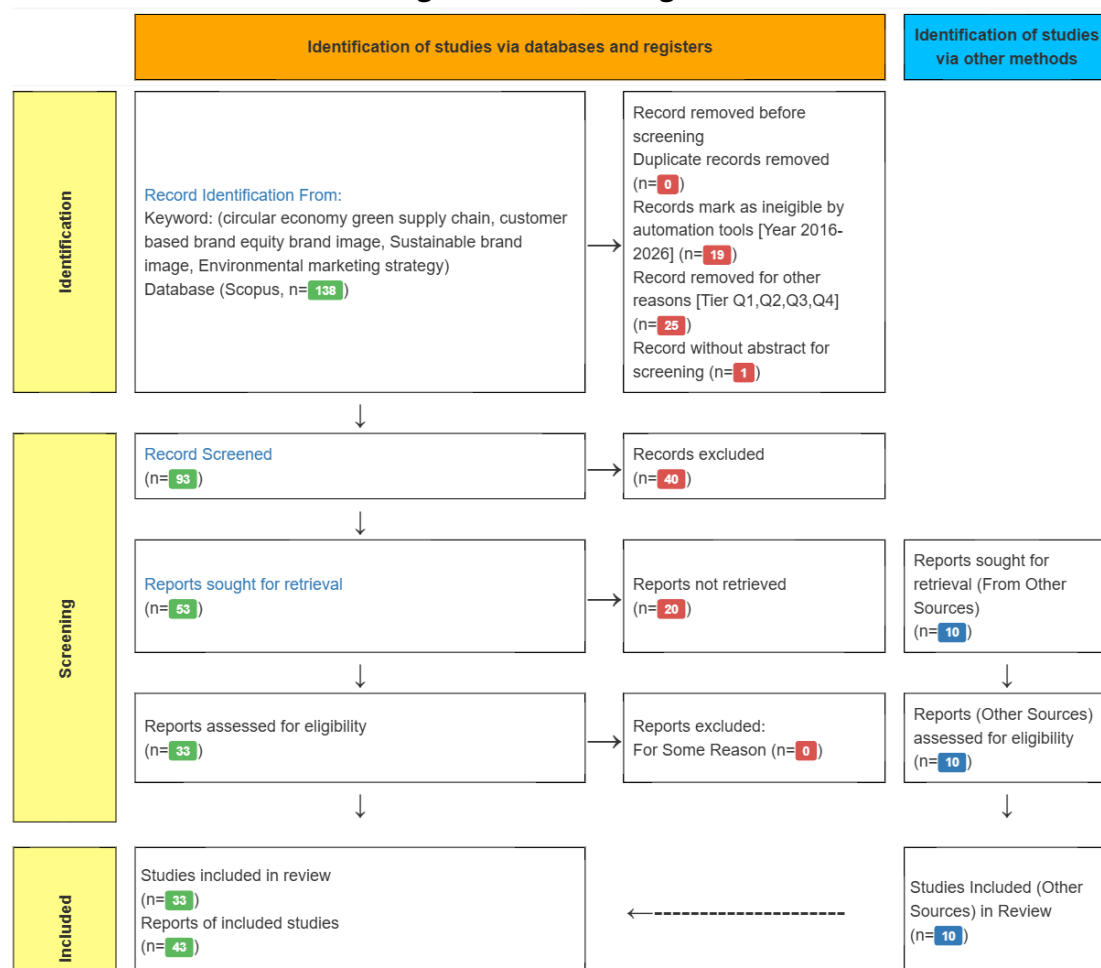
Theoretical Framework

This study draws on several key theories to explain the mechanisms of integration. Signaling Theory explains that circular operational practices function as credible signals to reduce information asymmetry and build customer trust (Santos, Coelho and Neves, 2026). Kemampuan digital dan analisis Big Data dipandang sebagai sumber daya strategis yang meningkatkan kinerja sirkular dan keunggulan kompetitif dari sudut pandang Resource-Based View (RBV). (Mousa Mousa *et al.*, 2025). Meanwhile, Institutional Theory focuses on regulations in encouraging companies to adopt environmental innovations to maintain brand legitimacy in the public eye (Zaidi and Chandra, 2025)

METHODS

This study followed the SLR protocol in accordance with the PRISMA guidelines. A search was conducted in Scopus and Emerald for journal articles published between 2016 and 2026 in journals ranked in quartiles Q1–Q4. The keywords used included combinations of “Circular Supply Chain,” “Brand Equity,” “Sustainability,” and “Environmental Marketing.” The selection process consisted of four stages: Identification, Screening, Eligibility and Selection. The final result was 43 high-quality articles that formed the basis for data synthesis. Based on the established criteria, this is illustrated in the following PRISMA diagram:

Figure 1 PRISMA Diagram



RESULTS

Bibliometric Analysis and Literature Trends (RQ1).

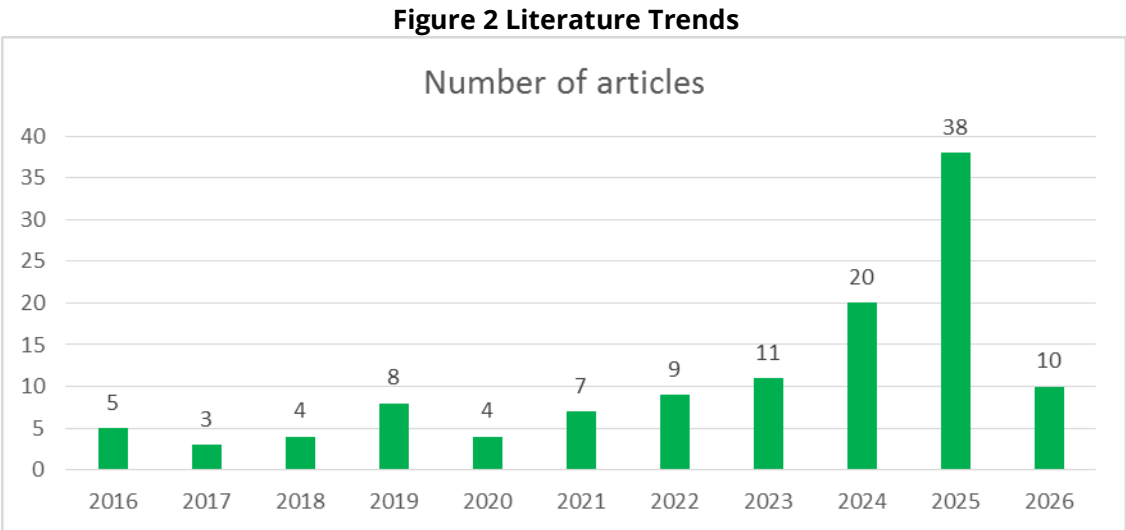
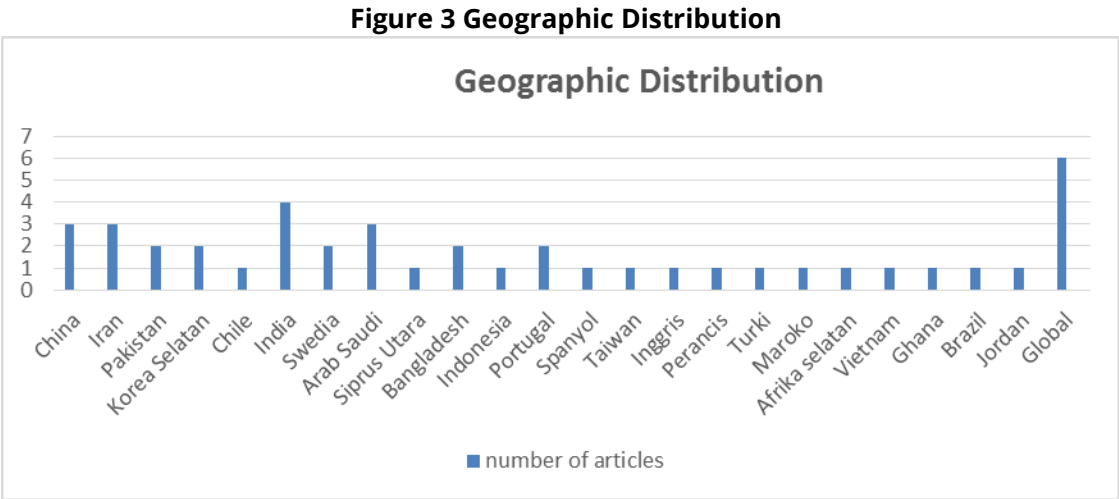
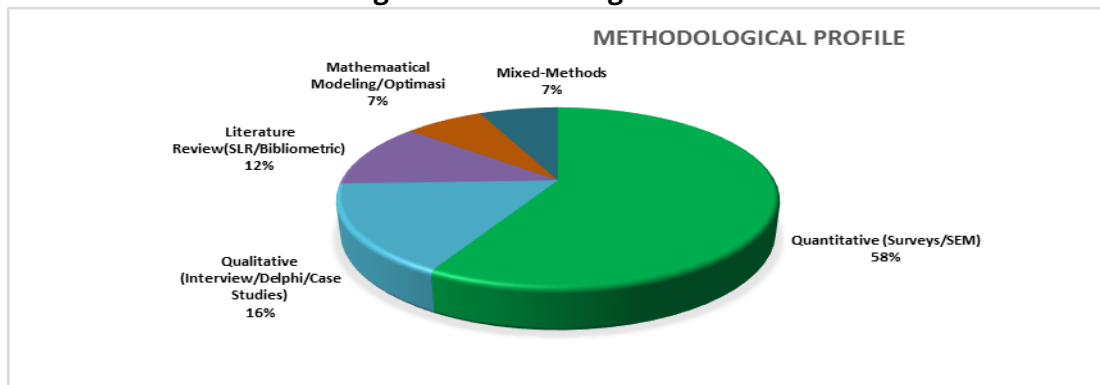


Figure 2, which illustrates trends in publications on circular operations and brand strength, shows exponential growth over the past five years. The peak in publications occurred during the 2024–2026 period, reflecting the global urgency for sustainable business models (Labaran and Masood, 2025;Al-Omoush, 2025; Nilsson and Hazen, 2025 ;Santos, Coelho and Neves, 2026) . The emphasis on operational efficiency in green supply chain management (GSCM) at the beginning of the decade has clearly shifted to a more comprehensive and customer-focused integration of the circular economy (Liu *et al.*, 2018 ;Roberto, Lerman and Benitez, 2026).



As shown in Figure 3, the research is dominated by studies in emerging markets, particularly in Asia. Significant contributions come from China and Pakistan (Jia *et al.*, 2023), India (Mondal, Singh and Gupta, 2025; Zaidi and Chandra, 2025), Iran (Gharibi and Abdollahzadeh, 2025) and Indonesia (Ardini and Fahlevi, 2024). This indicates that circularity has become a crucial competitive strategy for industries in regions undergoing environmental regulatory transformation.

Figure 4 Methodological Profile

As shown in Figure 4, In terms of methodology, the quantitative Partial Least Squares Structural Equation Modeling (PLS-SEM) technique for evaluating customer behavior predominates in this literature (Al-Omoush, 2025; Jia *et al.*, 2023). Network optimization also makes use of Mixed-Integer Linear Programming (Gharibi and Abdollahzadeh, 2025). while qualitative methods and the Delphi method are employed to identify institutional barriers (Zaidi and Chandra, 2025).

Classification of Circular Supply Chain (CSC) Practices and Their Impact on Consumer-Based Brand Equity (RQ2)

Circular supply chain (CSC) activities are categorized into four major classes based on their operational focus and the importance of their impact on brand equity dimensions, according to a synthesis of 43 articles.

Figure 5 Thematic Relationship Metrics

Reverse Logistics and Waste Management

This category is the largest group, supported by 15 of the 43 articles. The literature consistently emphasizes companies' ability to manage product returns and post-consumer recycling as strategic tools for building consumer trust (Gharibi and Abdollahzadeh, 2025 ; Tapia-Ubeda, Isbej Muga and Polanco-Lahoz, 2021). Key findings indicate that the effectiveness of closed-loop systems directly contributes to a 35% higher increase in Brand Loyalty compared to focusing solely on linear supply chains (Zahran, 2024). However, this success depends on mitigating organizational barriers and operational costs (Zaidi and Chandra, 2025).

Eco-Design and Resource Recovery

The second group consists of 11 articles analyzing material and product design innovations. The literature in this category argues that circular attributes inherent in a product serve as a credible “signal” of quality (Signaling Theory). The utilization of recycled materials and perceived quality were shown to be significantly positively correlated in nine out of the eleven articles in this group. (Kim and Oh, 2020;Plotkina, Rabeson and Bambauer-Sachse, 2025). Customers tend to place greater value on products that integrate a sustainability narrative from the design stage, which strengthens the brand’s position through green product differentiation (Bag *et al.*, 2022;Taherdangkoo, Mona and Ghasemi, 2019).

Digitalization and Traceability

The latest category is supported by 7 key articles published between 2024 and 2026. The main emphasis is on using Industry 4.0 technologies, such blockchain and the Internet of Things (IoT), to guarantee complete supply chain transparency (Farrukh Shahzad, Liu and Zahid, 2025;Labaran and Masood, 2025;Qian, Gao and Chen, 2023). Analysis shows that digital transparency significantly increases Brand Awareness and reduces consumer skepticism toward companies’ greenwashing claims (Al-Omoush, 2025;Tetteh, Obiri-Yeboah and Owusu Kwateng, 2026). This group represents a future trend in which circular data transforms into an intangible brand asset that strengthens customers’ digital trust (Zhou *et al.*, 2023).

Green Marketing and Corporate Social Responsibility

A total of 10 articles explore how strategic communication regarding circular operations influences brand associations. This literature finds that ethically communicated circular practices help brands establish an identity as responsible market leaders (Jia *et al.*, 2023). Sustainable marketing activities aligned with circularity values have been shown to enhance brand appeal and strengthen purchase intent through green value co-creation (Santos, Coelho and Neves, 2026;Martínez-Falcó *et al.*, 2024;Kaur, Gangwar and Dash, 2022).Such commitments not only improve brand image but also ensure that brand equity remains competitive (Vehbi, Farmanesh and Solati Dehkordi, 2025;Yu *et al.*, 2024).

Relationship, Mediation, and Moderation Mechanisms (RQ3)

The mechanism linking circular operations to the CBBE dimension involves complex intermediate variables. Technology Mediator through Digitalization through Industry 4.0 (AI, IoT, Blockchain) acts as a mediator that ensures data transparency, thereby strengthening trust and brand awareness (Farrukh Shahzad, Liu and Zahid, 2025;Labaran and Masood, 2025).Psychological mediators such as green brand image and the credibility of information sources mediate the influence of operational practices on long-term customer loyalty (Wu, Lim and Lim, 2026;Jia *et al.*, 2023).The process of green value co-creation also plays a key role in mitigating consumer skepticism (Santos, Coelho and Neves, 2026). Moderating variables such as organizational marketing capabilities and the level of environmental turbulence serve as moderators that determine the effectiveness of circular strategies in creating competitive advantage (Yu, Ramanathan and Nath, 2017;Vehbi, Farmanesh and Solati Dehkordi, 2025). A commitment to sustainable marketing as a whole strengthens brand appeal in the market (Yu *et al.*, 2024).

DISCUSSION

This study successfully mapped the integration between the Circular Supply Chain (CSC) and Customer-Based Brand Equity (CBBE) through a systematic review of 43 key articles. Broadly speaking, literature trends indicate a rapid increase in publications since 2022, with a predominance of research in emerging markets such as Asia that employs the PLS-SEM

quantitative methodology (RQ1). These findings confirm that circularity is no longer merely a technical operational issue but a crucial strategic marketing strategy.

The classification results indicate that reverse logistics practices, eco-friendly product design, digitalization, and green marketing have significant yet distinct impacts on the brand equity dimension (RQ2). Reverse logistics and waste management have been shown to be key drivers of brand loyalty through the building of consumer trust (Gharibi & Abdollahzadeh, 2024). Meanwhile, digital transparency through Industry 4.0 technologies such as blockchain and IoT has emerged as a new asset capable of mitigating consumer skepticism and strengthening brand awareness in the digital age (Shahzad et al., 2024; Al-Omoush, 2025). This relationship mechanism is reinforced by the mediating role of psychological variables such as green brand image and source credibility, as well as moderating variables such as marketing capabilities and environmental turbulence (RQ3). In theory, this work broadens the use of the Resource-Based View and Signaling Theory in the context of the circular economy. From a managerial perspective, the synergy between circular operational efficiency and transparent brand communication is key for companies to transform environmental responsibility into a brand equity asset with global competitiveness

CONCLUSION

Despite making a substantial theoretical contribution, this study contains a number of shortcomings that present possibilities for further investigation. First, the conclusions cannot be applied to the service sector and the SME segment, which have different resource structures, due to the predominance of the research on the large-scale manufacturing sector. Future research is expected to explore how the service sector adopts circularity to build brand equity.

Second, the variation in regulations across countries from an institutional theory perspective, as well as differing levels of consumer skepticism across cultural backgrounds, has not been thoroughly explored as moderator variables. Third, in terms of methodology, the predominance of cross-sectional studies emphasizes the necessity of further study employing experimental or longitudinal techniques to confirm the circular brand equity's long-term durability. Lastly, a critical new field of study for comprehending its influence on brand awareness in the digital era is the integration of cutting-edge technology like artificial intelligence (AI) for automating transparency in circular supply chains

SUGGESTION

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