Article

Not peer-reviewed version

Enhancing Brand Value Through Circular Economy Service Quality: The Mediating Roles of Customer Satisfaction, Brand Image, and Customer Loyalty

Amit Kumar Sah , Yao-Ming Hong * , Kuo-Chung Huang

Posted Date: 14 January 2025

doi: 10.20944/preprints202501.1043.v1

Keywords: Circular economy; service quality; brand value; customer satisfaction; brand image; customer loyalty

Article

Enhancing Brand Value Through Circular Economy Service Quality: The Mediating Roles of Customer Satisfaction, Brand Image, and Customer Loyalty

Amit Kumar Sah [1], Yao-Ming Hong [2,*] and Kuo-Chung Huang [3]

[1] Department of Business Administration, Nanhua University, Chiayi 622301, Taiwan
[2] Correspondence author, Department of Natural Resources and Environmental Studies, National Dong Hwa University, Hualien 97401, Taiwan
[3] Department of Business Administration, Nanhua University, Chiayi 622301, Taiwan
* Correspondence: hongyaoming@gmail.com

Abstract: This study rigorously examines the relationship between circular economy service quality and brand value, focusing on the mediating roles of customer satisfaction, brand image, and customer loyalty. Amid growing adoption of circular economy principles to enhance sustainability and resource efficiency, the impact of such practices on brand value remains underexplored. This research addresses the gap by developing and testing an integrated model of circular economy service quality and its influence on brand value. Using a quantitative methodology, the study collected data from customers engaged with companies employing circular economy practices. A structured survey assessed perceptions of circular economy service quality, customer satisfaction, brand image, customer loyalty, and brand value. Advanced statistical techniques, including structural equation modeling (SEM), were employed to analyze the data and evaluate the proposed relationships. The results reveal significant positive correlations between circular economy service quality, customer satisfaction, brand image, and customer loyalty. Furthermore, the mediating roles of customer satisfaction, brand image, and customer loyalty in the relationship between circular economy service quality and brand value are validated. High-quality circular economy services foster customer satisfaction, enhance brand image, and strengthen customer loyalty, collectively driving increased brand value. This research underscores two critical implications. First, circular economy service quality is identified as a pivotal factor in enhancing brand value. By offering sustainable and efficient services, organizations can deliver superior customer experiences, cultivate a strong brand image, and ultimately boost brand value. Second, the mediating variables—customer satisfaction, brand image, and customer loyalty—are shown to play essential roles in amplifying the impact of circular economy service quality on brand value. Organizations should strategically focus on optimizing these factors to maximize brand performance. The findings provide valuable insights for businesses aiming to integrate sustainability into their operations while enhancing brand equity and market performance.

Keywords: Circular economy; service quality; brand value; customer satisfaction; brand image; customer loyalty

1. Introduction

In the dynamic and evolving landscape of contemporary business, the concept of the circular economy (CE) has emerged as a transformative paradigm, addressing pressing environmental challenges while fostering economic growth (Geissdoerfer et al., 2017; Kirchherr et al., 2017). Unlike the traditional linear economic model, the circular economy aims to decouple economic progress from resource consumption and waste generation by advocating for the principles of reduce, reuse, and recycle (Geissdoerfer et al., 2017; Kirchherr et al., 2017). This paradigm necessitates a

 doi:10.20944/preprints202501.1043.v1

fundamental redesign of organizational business models, products, and services, creating value through enhanced resource efficiency, waste minimization, and closed-loop systems (Bocken et al., 2016; Ghisellini et al., 2016). By shifting focus from a "take-make-dispose" model to a regenerative system, the circular economy not only addresses environmental sustainability but also fosters long-term economic resilience.

While the adoption of circular economy principles continues to expand, understanding their broader implications beyond environmental sustainability remains critical. One particularly underexplored area of research concerns the impact of circular economy practices on brand-related outcomes, notably brand value. Brand value, encompassing elements such as brand equity, reputation, and perception, serves as a key indicator of a brand's financial worth, market position, and competitive advantage (Aaker, 1996; Kapferer, 2012; Keller, 1993). Brand value reflects not only the tangible benefits offered by a company but also its intangible assets, such as trust, loyalty, and customer perception. While prior research has highlighted the relationship between sustainability initiatives and brand value (Sen et al., 2006), the specific influence of circular economy practices remains insufficiently explored.

Service quality is a critical determinant of customer perceptions and experiences and is essential for organizations seeking to enhance brand value. Defined as the organization's ability to deliver services that meet or exceed customer expectations, service quality forms a foundation for successful customer engagement (Parasuraman et al., 1988; Grönroos, 1982). In the context of the circular economy, service quality goes beyond conventional measures to incorporate principles of sustainability and resource efficiency. For example, organizations aligning their service delivery with circular economy principles often focus on delivering environmentally responsible and efficient services, reflecting both the Nordic model (Grönroos, 1984) and the SERVQUAL framework (Parasuraman et al., 1988). The circular economy service quality thus encompasses the organization's commitment to providing value while adhering to principles of environmental and social responsibility (Wijaya et al., 2020; Lubis & Andayani, 2017).

A key mechanism through which service quality influences brand value is customer satisfaction. Customer satisfaction, defined as the extent to which customers perceive their expectations to be met or exceeded, is fundamental to building strong customer relationships (Oliver, 1997). Research consistently highlights that satisfied customers exhibit higher levels of brand loyalty, engage in positive word-of-mouth communication, and contribute to enhanced brand image (Anderson et al., 1994; Fornell et al., 1996). In the circular economy context, customer satisfaction is influenced not only by product and service quality but also by the perception of contributing to environmental preservation (Salem et al., 2016; Irfan et al., 2016). Satisfied customers often feel a sense of pride and fulfillment when their purchases align with their values, reinforcing their commitment to the brand (Azizan & Yusr, 2019).

The brand image, another vital component of brand value, refers to the perceptions, associations, and reputational attributes a brand holds in the minds of consumers (Aaker, 1996; Keller, 1993). A positive brand image fosters credibility, attractiveness, and differentiation in competitive markets, ultimately enhancing brand loyalty and customer retention (Bernarto et al., 2020; Lee et al., 2014). For organizations embracing circular economy principles, a strong brand image often resonates with environmentally conscious consumers who prioritize sustainability. Such perceptions not only strengthen brand credibility but also drive customers' willingness to pay premium prices (Ries, 2002; Išoraitė, 2018). Sustaining a positive brand image, however, is a long-term process that requires consistent effort and alignment with customer values.

Customer loyalty, defined as the consistent preference and patronage customers exhibit toward a brand, plays a central role in driving brand value (Reichheld & Sasser, 1990; Zeithaml et al., 1996). Loyal customers not only generate consistent revenue streams but also exhibit reduced sensitivity to price changes and resistance to competitive offerings (Mellens et al., 1996; Cheng et al., 2011). For organizations operating within a circular economy framework, loyalty is often influenced by customers' alignment with the brand's environmental values and practices (Menaga et al., 2024; Moisescu, 2018). This alignment reinforces customer commitment and positions the organization as a leader in sustainable practices.

 doi:10.20944/preprints202501.1043.v1

Finally, brand value represents the culmination of these interrelated factors. As the financial worth of a brand, brand value is shaped by attributes such as awareness, association, loyalty, and perceived quality (Aaker, 1991; Keller, 1993). For companies adopting circular economy principles, brand value is further enhanced by operational cost reductions, improved environmental performance, and strengthened consumer trust (Abedi & Azma, 2019). Moreover, the alignment between circular economy practices and consumer values creates a competitive edge, differentiating these organizations from traditional market players.

This study investigates the relationship between circular economy service quality and brand value, focusing on the mediating roles of customer satisfaction, brand image, and customer loyalty. By integrating these constructs into a comprehensive framework, the research seeks to address the gap in understanding how circular economy initiatives influence brand performance. The findings aim to contribute both theoretically and practically by providing actionable insights for organizations leveraging circular economy practices to enhance their competitive advantage and market presence.

2. Hypothesis Development

The hypotheses in this study are developed to examine the intricate relationships between circular economy service quality, customer satisfaction, customer loyalty, brand image, and brand value. Circular economy service quality is posited as a central driver that influences customer satisfaction, loyalty, and brand image, ultimately contributing to enhanced brand value. The hypotheses also explore the mediating roles of customer satisfaction, loyalty, and brand image, along with their serial mediation effects. Additionally, the potential moderating effect of gender on the relationship between circular economy service quality and brand value is incorporated to account for individual differences in consumer responses to circular economy practices. The following hypotheses outline these relationships and mediating or moderating dynamics comprehensively:

2.1. Circular Economy Service Quality and Customer Satisfaction

Circular business models emphasizing closed loops, slowed loops, intensified loops, narrowed loops, and dematerialized loops can significantly improve service quality by reducing waste, enhancing resource efficiency, and improving the overall customer experience. Such models align with circular economy principles, which aim to balance environmental sustainability and customer satisfaction (van Boerdonk et al., 2021). Empirical evidence demonstrates a positive relationship between service quality and customer satisfaction (Chao et al., 2015; Dam & Dam, 2021; Sivadas & Baker-Prewitt, 2000). However, the social dimensions of circular economy adoption remain underexplored, necessitating further research into how these transitions impact customer perceptions and satisfaction (Padilla-Rivera et al., 2020).

Hypothesis 1: Circular Economy Service Quality positively influences Customer Satisfaction levels.

2.2. Circular Economy Service Quality and Customer Loyalty

The circular economy has garnered increasing attention as a sustainable approach to business operations. Service quality, a core aspect of the circular economy, has been shown to directly influence customer loyalty (Wijaya et al., 2020). Studies across various industries, such as restaurants, travel agencies, and airlines, underscore that superior service quality drives loyalty by enhancing customer experiences and satisfaction (Virappan & Chan, 2020). For example, high-quality services under circular economy principles have been linked to increased profitability, cost savings, and market share for organizations (van Boerdonk et al., 2021).

Hypothesis 2: Circular Economy Service Quality positively and significantly influences Customer Loyalty.

2.3. Circular Economy Service Quality and Brand Image

Organizations implementing circular economy principles often enjoy an enhanced brand image due to their focus on sustainability and customer-centric practices. These companies design products for longevity, reuse, and recyclability while engaging stakeholders across the value chain, reflecting

 doi:10.20944/preprints202501.1043.v1

their commitment to environmental and social responsibility (Adam et al., 2017; Xu & Wang, 2008). By transparently communicating the benefits of their circular practices, they can position themselves as leaders in sustainable innovation and reinforce their brand image.

Hypothesis 3: Circular Economy Service Quality contributes positively to the formation of Brand Image.

2.4. Circular Economy Service Quality and Brand Value

Circular economy principles, when integrated into organizational practices, foster brand differentiation and enhance brand value. By emphasizing resource efficiency, environmental responsibility, and customer-centric solutions, companies strengthen trust and loyalty, which are key contributors to brand value (Chirumalla, 2021; Centobelli et al., 2020). Effective communication of the quality and environmental benefits of circular products reinforces this value proposition and bolsters brand reputation.

Hypothesis 4: Circular Economy Service Quality positively and significantly influences Brand Value.

2.5. Customer Satisfaction and Customer Loyalty

Customer satisfaction and loyalty are interdependent constructs that play pivotal roles in marketing and customer relationship management. Satisfied customers are more likely to remain loyal, repurchase products, and advocate for a brand, which, in turn, drives profitability and market share (Pinem et al., 2019; Tjahjaningsih et al., 2021). Studies confirm that customer satisfaction serves as a strong predictor of loyalty (Kumar et al., 2013), making it an essential focus for businesses pursuing sustainable growth.

Hypothesis 5: Customer Satisfaction is positively linked to Customer Loyalty.

2.6. Customer Loyalty and Brand Image

Loyal customers significantly contribute to building a positive brand image by reinforcing perceptions of trust and reliability. This relationship is particularly relevant in the circular economy, where customers prioritize brands that align with their values of sustainability and responsible consumption (Kim et al., 2021; Tanveer et al., 2021). Research shows that loyal customers influence brand reputation through advocacy and repeat purchases, thereby strengthening the brand's image (Cretu & Brodie, 2009).

Hypothesis 6: Customer Loyalty is positively associated with Brand Image.

2.7. Customer Satisfaction and Brand Image

Customer satisfaction serves as a foundation for a strong brand image. Positive customer experiences foster favorable perceptions of the brand, influencing its reputation and emotional appeal (Maheshwari & Kumar, 2013; Neupane, 2015). Satisfied customers often advocate for the brand, amplifying its visibility and strengthening its image, especially in sustainability-focused contexts (Kim et al., 2021; Liu et al., 2011).

Hypothesis 7: Customer Satisfaction is positively correlated with Brand Image.

2.8. Customer Loyalty and Brand Value

Customer loyalty is a critical driver of brand value, as loyal customers consistently support the brand through repeat purchases and advocacy. Studies highlight that customer loyalty programs significantly enhance brand revenue and profitability (Zhang et al., 2010; Chinomona, 2016). In the circular economy, loyalty gains further importance as environmentally conscious consumers prefer sustainable brands, reinforcing brand value through trust and sustained engagement.

Hypothesis 8: Customer Loyalty is positively linked to Brand Value.

2.9. Brand Image and Brand Value

A strong brand image is integral to building brand value. Positive consumer perceptions foster recognition, differentiation, and trust, which translate into higher market share, customer loyalty,

 doi:10.20944/preprints202501.1043.v1

and price premiums (Išoraitė, 2018; Gong et al., 2023). By cultivating a compelling brand image, companies can enhance their brand value and maintain a competitive edge (Agung et al., 2019).

Hypothesis 9: Brand Image has a significantly positive effect on Brand Value.

2.10. Customer Satisfaction and Brand Value

Customer satisfaction directly contributes to brand value by shaping consumers' perceptions of the brand's worth. Research demonstrates that satisfied customers perceive brands as more valuable, particularly when sustainability is a core aspect of the brand's identity (Suresh et al., 2011; Paetz, 2021).

Hypothesis 10: Customer Satisfaction is positively and significantly correlated with Brand Value.

2.11. Mediating Roles and Moderating Effects

Customer satisfaction, customer loyalty, and brand image are critical mediators that shape the relationship between circular economy service quality and brand value. For instance, high-quality circular economy services, such as closed-loop recycling programs and repair services, can elevate customer satisfaction by meeting both functional and emotional needs. This satisfaction, in turn, fosters a positive brand image and strengthens customer loyalty, thereby enhancing brand value. Loyal customers recognize and appreciate the brand's commitment to sustainability, further contributing to its market reputation and financial worth. Given the interconnected nature of these constructs, it is essential to investigate their individual and combined mediating roles. Furthermore, the role of individual characteristics, such as gender, may also influence these relationships. Research has shown that female consumers tend to exhibit higher sensitivity toward ethical and sustainable practices, potentially moderating their perceptions of circular economy service quality and its impact on brand value (Marín-García et al., 2021; Yang et al., 2022).

The following hypotheses are therefore formulated to address these relationships comprehensively:

Hypothesis 11: Customer Satisfaction mediates the relationship between Circular Economy Service Quality and Brand Value.

Hypothesis 12: Customer Loyalty mediates the relationship between Circular Economy Service Quality and Brand Value.

Hypothesis 13: Customer Satisfaction and Customer Loyalty serially mediate the relationship between Circular Economy Service Quality and Brand Value.

Hypothesis 14: Brand Image mediates the relationship between Circular Economy Service Quality and Brand Value.

Hypothesis 15: Customer Satisfaction and Brand Image serially mediate the relationship between Circular Economy Service Quality and Brand Value.

Hypothesis 16: Customer Loyalty and Brand Image serially mediate the relationship between Circular Economy Service Quality and Brand Value.

Hypothesis 17: Customer Satisfaction, Customer Loyalty, and Brand Image serially mediate the relationship between Circular Economy Service Quality and Brand Value.

Hypothesis 18: The relationship between Circular Economy Service Quality and Brand Value is moderated by gender.

The hypotheses comprehensively address the direct, mediating, serial mediating, and moderating effects of these constructs, offering a robust framework for understanding the interplay between circular economy practices and brand value. The inclusion of gender as a moderator highlights the nuanced ways in which individual differences may influence consumer perceptions and responses to circular economy initiatives.

3. Circular Economy Service Quality Framework and Data Measuremen

3.1. Data Collection and Sampling

This study aims to investigate the role of circular economy service quality (CESQ) in creating brand value, while also examining how customer satisfaction, customer loyalty, and brand image

 doi:10.20944/preprints202501.1043.v1

contribute to achieving this goal. To fulfill the study's objectives, a quantitative approach was employed to test the hypotheses developed. Data were collected through a structured questionnaire administered to customers. The questionnaire design adhered to ethical standards, minimizing potential concerns (Regmi et al., 2016). Participants were carefully selected based on their use of products or services from companies integrating circular economy principles. A multi-channel approach was used to reach potential participants. Customers visiting shopping centers to purchase products aligned with circular economy practices were invited to complete the survey. Additionally, some participants were approached via online messaging platforms and email. Participation in the survey was voluntary, and respondents were assured of anonymity and confidentiality. They were instructed to reflect on the company products or services they had used while responding to the questionnaire items. After excluding incomplete responses, a total of 232 valid responses were included in the final analysis.

3.2. Conceptual Framework

The conceptual framework of this study explores the relationships among Circular Economy Service Quality (CESQ), Customer Satisfaction (CS), Customer Loyalty (CL), Brand Image (BI), and Brand Value (BV). The model incorporates ten direct hypotheses (H1 to H10) to examine the effects of CESQ on CS, CL, BI, and BV, as well as the interrelationships among CS, CL, BI, and BV. Furthermore, the framework includes hypotheses to test the mediating roles of CS, CL, and BI in the relationship between CESQ and BV (H11 to H13). The moderating role of gender in the relationship between CESQ and BV is also analyzed (H14). This comprehensive framework seeks to provide a deeper understanding of how CESQ impacts customer perceptions and brand outcomes, addressing both direct and indirect effects. Figure 1 displays the conceptual framework of this research.

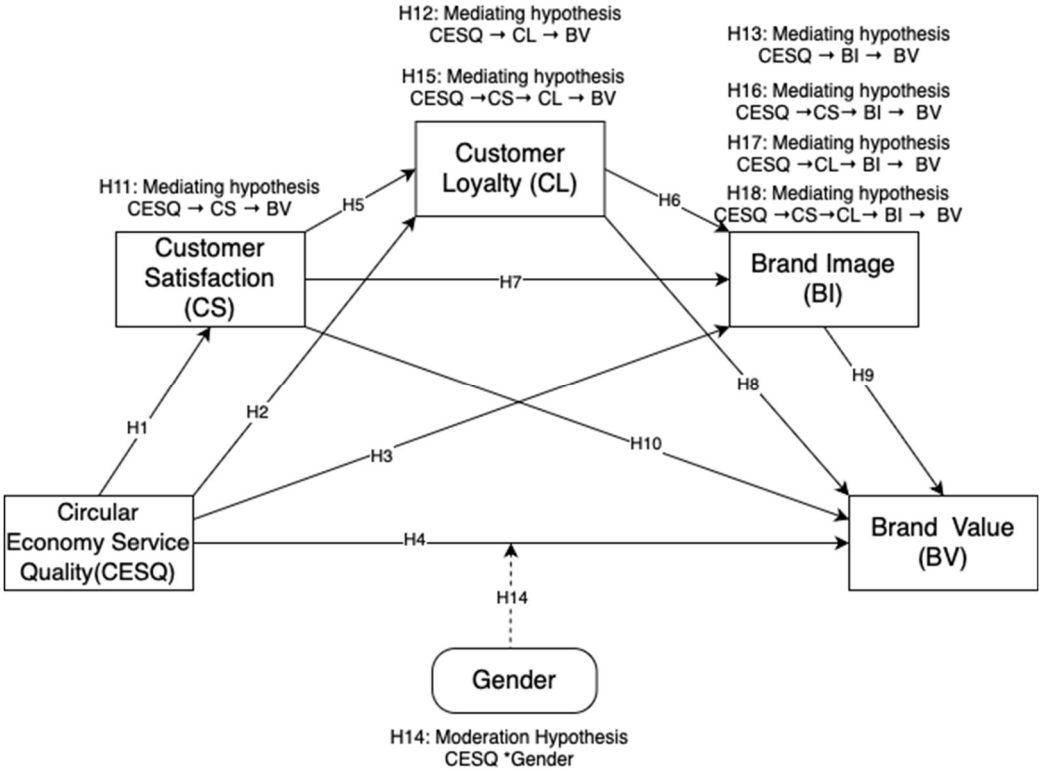

Figure 1. Conceptual framework of this research.

3.3. Data Measurement

To measure the variables in this study, several parts of the questionnaire were adapted from established scales and modified to align with the research objectives. For instance, items measuring Customer Satisfaction and Brand Image were adopted and refined from scales developed by Bernarto and Purwanto (2022) and Rosanti and Salam (2021). Customer Loyalty items were adapted from

 doi:10.20944/preprints202501.1043.v1

Twum et al. (2021), and Brand Value was assessed using a five-item scale, partially derived from Diallo et al. (2021). The items measuring Circular Economy Service Quality were developed by the authors, drawing on prior research on service quality constructs, particularly those of Rosanti and Salam (2021). Each questionnaire item utilized a five-point Likert scale, where 1 indicated "Strongly Disagree" and 5 indicated "Strongly Agree." Statistical analyses were conducted using IBM SPSS Statistics 25, which facilitated the calculation and examination of the data.

4. Data Analysis and Key Findings

4.1. Demographic Characteristics of the Sample

A frequency analysis was conducted to examine the gender distribution within the sample. As detailed in Table 1, male participants constituted the majority, accounting for 53.4% (n = 124) of the sample, while female participants represented 46.6% (n = 108).

Descriptive statistical analysis was utilized to summarize the age distribution of respondents. Table 2 illustrates that the largest proportion of participants fell within the 30-45 years age group, comprising 53.0% of the sample (n = 123). This was followed by participants aged 15-30 years, accounting for 25.9% (n = 60), and those aged 45 years and older, who constituted 14.7% (n = 34). A smaller subset of respondents belonged to the 0-15 years age group, making up 5.6% (n = 13), while 0.9% (n = 2) of participants chose not to disclose their age.

Table 1. Frequency distribution for Gender.

Gender	N	Percent
1= (Male)	124	53.4
2= (Female)	108	46.6

Note. N: Sample Size.

Table 2. Frequency distribution for Age.

Age	Frequency	Percent	Cumulative Percent
0-15 Years old	13	5.6	5.6
15-30 years old	60	25.9	31.5
30-45 years old	123	53.0	84.5
45+	34	14.7	99.1
Prefer not to say	2	.9	100.0
Total	232	100.0	

The descriptive statistics for the duration of using products or services from circular economy-based companies revealed that most respondents had been using such products or services for less than 5 years (n = 97, 41.8%). This was followed by respondents with a usage duration of more than 5 years (n = 55, 23.7%), less than 3 years (n = 46, 19.8%), and less than 1 year (n = 18, 7.8%). Additionally, a small portion of respondents (n = 16, 6.9%) were uncertain about the duration. Table 3 displays the frequency distribution for duration.

Table 3. Frequency distribution for Duration.

Duration	Frequency	Percent	Cumulative Percent
Less than 1 Year	18	7.8	7.8
Less than 3 Year	46	19.8	27.6
Less than 5 Year	97	41.8	69.4
More than 5 Year	55	23.7	93.1
Not sure	16	6.9	100.0
Total	232	100.0	

4.2. Measurement Results for Relevant Research Variables

 doi:10.20944/preprints202501.1043.v1

A. Circular Economy Service Quality

Descriptive statistics for Circular Economy Service Quality indicate an overall mean score of 3.779 (SD = 0.665), reflecting a generally positive perception of service quality among customers. Among the items, SQ5 recorded the highest mean value, suggesting that customers strongly agree that the company's products appear to be sustainable. Table 4 shows the descriptive analysis for circular economy service quality variable.

Table 4. Descriptive analysis for Circular economy service quality variable.

Items	N	Minimum	Maximum	Mean	Std. Deviation
CESQ1: The packaging of the circular products of the company is attractive	232	1	5	3.81	.821
CESQ2: The circular products of the company have extended durability	232	1	5	3.64	.846
CESQ3: The circular products have a distinctive characteristic	232	1	5	3.71	.883
CESQ4: The circular products have advantages over other products	232	1	5	3.84	.862
CESQ5: The products of the company seem sustainable	232	1	5	3.90	.860

B. Customer satisfaction

Descriptive statistics for customer satisfaction indicate an overall mean score of 3.814 (SD = 0.683), reflecting a positive perception of service quality among customers. Among the items, CS5 achieved the highest mean value, suggesting that customers feel reassured in their decision to be associated with this company. Table 5 displays the descriptive analysis for customer Satisfaction variable.

Table 5. Descriptive analysis for Customer Satisfaction variable.

Items	N	Minimum	Maximum	Mean	Std. Deviation
CS1: The quality of goods is up to my expectation	232	1	5	3.87	.888
CS2: I feel comfortable in this company	232	1	5	3.77	.845
CS3: I love this company	232	1	5	3.74	.796
CS4: The product of this company is according to my desire and requirement	232	1	5	3.80	.815
CS5: I feel reassured to be the customer of this company	232	1	5	3.89	.942

C. Brand Image

Descriptive statistics for Brand Image indicate an overall mean score of 3.879 (SD = 0.661), reflecting a positive perception of service quality among customers. BI1 recorded the highest mean value, suggesting that customers perceive the company as well-known both nationally and globally. Table 6 displays the descriptive analysis for brand image variable.

Table 6. Descriptive analysis for Brand Image variable.

Items	N	Minimum	Maximum	Mean	Std. Deviation
BI1: This company is a well-known company in your country or globally	232	1	5	3.96	.829
BI2: The brand image of this company is different from other company	232	1	5	3.81	.790
BI3: The brand image of this company reflects a quality and classy impression to consumer	232	1	5	3.87	.827

 doi:10.20944/preprints202501.1043.v1

D. Customer Loyalty

Descriptive statistics for Customer Loyalty indicate an overall mean score of 3.934 (SD = 0.72), reflecting a positive perception of service quality among customers. CL1 achieved the highest mean value, suggesting that customers are more likely to use the company's circular products in the future. Table 7 shows the descriptive analysis for customer loyalty variable.

Table 7. Descriptive analysis for Customer Loyalty variable.

Items	N	Minimum	Maximum	Mean	Std. Deviation
CL1: I will use more of the company circular products in future	232	1	5	4.01	.843
CL2: I will recommend the company circular products to other users or to my friends and family	232	1	5	3.88	.854
CL3: I will provide feedback to the company like suggestion for improvement, report issues or share my positive experiences	232	1	5	3.91	.898

E. Brand Value

Descriptive statistics for Brand Value indicate an overall mean score of 3.816 (SD = 0.677), reflecting a positive perception of service quality among customers. BV5 recorded the highest mean value, suggesting that customers feel strongly attracted to this company. Table 8 displays the descriptive analysis for brand value variable.

Table 8. Descriptive analysis for Brand Value variable.

	N	Minimum	Maximum	Mean	Std. Deviation
BV1: In my mind, the higher price of this company product equal higher quality	232	1	5	3.72	.835
BV2: Being higher in price makes this company product more desirable	232	1	5	3.74	.830
BV3: Owning this company product is a symbol of prestige, achievement, social status	232	1	5	3.84	.845
BV4: I would like to buy this company products before others	232	1	5	3.82	.906
BV5: I am very attracted to this company	232	1	5	3.96	.879

4.3. Factor Analysis and Reliability Tests

For dimensionality reduction, data exploration, and construct validation, this study employed factor analysis, correlation analysis, and Cronbach's α analysis. Exploratory factor analysis was initially conducted using principal component analysis for each research construct to determine its dimensionality. Following this, Cronbach's α and the correlation matrix were analyzed to assess internal consistency and construct reliability. Several measurement criteria were applied to ensure robust results. For factor analysis, the eigenvalue was required to exceed 1, and the minimum factor loading was set at 0.6. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy needed to surpass 0.5 for suitability. Bartlett's test of sphericity was performed to evaluate the statistical significance of the correlation matrix components. For reliability analysis, item-to-total correlation values had to exceed 0.3, and Cronbach's α was required to be greater than 0.7 to confirm construct reliability (Hair et al., 2013).

A. Circular Economy Service Quality

The circular economy service quality construct was measured using five items, with the results of the factor analysis and reliability test presented in Table 9. Bartlett's test of sphericity yielded a significant result, $x^2(n=232) = 412.004$ ($p<0.001$), indicating that the data was suitable for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.931, exceeding the

 doi:10.20944/preprints202501.1043.v1

threshold of 0.5 and confirming the appropriateness of the data for factor analysis. Additionally, the total variance explained by the items was 60.613%. Construct validity was assessed using Cronbach's α, which revealed that the circular economy service quality scale with five items was reliable (α= 0.837).

Table 9. Result of factor analysis and reliability test of Circular economy service quality.

Service Quality Items	Factor loading	Eigen Value	Explained Variance	Item-to-Total Correlation	Cronbach's α
SQ4	0.816	3.031	60.613	0.688	0.837
SQ3	0.804			0.668	
SQ1	0.781			0.641	
SQ5	0.753			0.608	
SQ2	0.736			0.589	

B. Customer satisfaction

The customer satisfaction construct was measured using five items, and the results of the factor analysis and reliability test are presented in Table 10. Bartlett's test of sphericity was significant, $x^2(n=232) = 473.173$ ($p<0.001$), confirming the data's suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.835, exceeding the minimum threshold of 0.5 and validating the data's appropriateness for factor analysis. The total variance explained by the items was 63.459%. Construct validity was assessed using Cronbach's α, which demonstrated that the customer satisfaction scale with five items was reliable (α= 0.855).

Table 10. Result of factor analysis and reliability test of Customer satisfaction.

Customer Satisfaction Items	Factor loading	Eigen Value	Explained Variance	Item-to-Total Correlation	Cronbach's α
CS5	0.813	3.173	63.459	0.693	0.855
CS1	0.812			0.691	
CS2	0.802			0.678	
CS3	0.784			0.653	
CS4	0.771			0.637	

C. Brand Image

The brand image construct was measured using three items, and the results of the factor analysis and reliability test are presented in Table 11. Bartlett's test of sphericity was significant, $x^2(n=232) = 149.415$ ($p<0.001$), indicating the data's suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.685, exceeding the threshold of 0.5, confirming the appropriateness of the data for factor analysis. The total variance explained by the items was 65.634%. Construct validity was evaluated using Cronbach's α, and the results demonstrated that the brand image scale was reliable (α= 0.738).

Table 11. Result of factor analysis and reliability test of Brand Image.

Brand Image Items	Factor loading	Eigen Value	Explained Variance	Item-to-Total Correlation	Cronbach's α
BI3	0.828	1.969	65.634	0.588	0.738
BI1	0.803			0.553	
BI2	0.799			0.547	

D. Customer Loyalty

The customer loyalty construct was measured using three items, and the results of the factor analysis and reliability test are presented in Table 12. Bartlett's test of sphericity was significant, $x^2(n=232) = 190.087$ ($p<0.001$), confirming the data's suitability for factor analysis. The Kaiser-Meyer-

 doi:10.20944/preprints202501.1043.v1

Olkin (KMO) measure of sampling adequacy was 0.701, exceeding the threshold of 0.5, thereby validating the data's appropriateness for factor analysis. The total variance explained by the items was 69.403%. Construct validity was evaluated using Cronbach's α, and the results indicated that the customer loyalty scale was reliable (α= 0.779).

Table 12. Result of factor analysis and reliability test of Customer Loyalty.

Customer Loyalty Items	Factor loading	Eigen Value	Explained Variance	Item-to-Total Correlation	Cronbach's α
CL1	0.845	2.082	69.403	0.634	0.779
CL2	0.837			0.621	
CL3	0.816			0.592	

E. Brand Value

The brand value construct was measured using five items, with the results of the factor analysis and reliability test shown in Table 13. Bartlett's test of sphericity was significant, $x^2(n=232) = 437.901$ ($p<0.001$), confirming the data's suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.852, exceeding the acceptable threshold of 0.5, thus validating the data for factor analysis. The items collectively explained 62.060% of the total variance. Construct validity was assessed using Cronbach's α, and the results indicated that the brand value scale was reliable (α= 0.846).

Table 13. Result of factor analysis and reliability test of Circular economy service quality.

Brand Value Items	Factor loading	Eigen Value	Explained Variance	Item-to-Total Correlation	Cronbach's α
BV4	0.826	3.103	62.060	0.509	0.846
BV2	0.806			0.464	
BV3	0.802			0.470	
BV5	0.751			0.387	
BV1	0.751			0.383	

F. Structural Model Assessment

The results of the structural model assessment (Table 14) indicate that all ten hypotheses (H1 to H10) are supported, as each association is statistically significant, with p-values of 0.000. The β coefficients range from 0.674 (H6: CL → BI) to 0.821 (H5: CS → CL), indicating strong relationships between the constructs. The R-square values, representing the variance explained by the independent variables, range from 0.480 (H4: CESQ → BV) to 0.635 (H10: CS → BV). These results suggest that customer satisfaction accounts for 63.5% of the variation in brand value, while circular economy service quality explains 48%. Additionally, the model demonstrates stability through significant F-statistics and T-statistics. Overall, these findings underscore the importance of circular economy service quality, customer satisfaction, customer loyalty, and brand image in influencing brand value and highlight their interactions within the context of this study.

Table 14. Hypothesis Testing Results for Structural Model Assessment.

Hypothesis	Regression Weights	β Coeff.	R^2	F	T-statistics	p-value	Result
H1	CESQ→CS	0.769	0.560	292.819	17.112	0.000	Supported
H2	CESQ→CL	0.770	0.506	235.235	15.337	0.000	Supported
H3	CESQ→BI	0.710	0.511	240.413	15.505	0.000	Supported
H4	CESQ→BV	0.705	0.480	212.515	14.578	0.000	Supported
H5	CS→CL	0.821	0.608	356.218	18.874	0.000	Supported
H6	CL→BI	0.674	0.540	270.306	16.441	0.000	Supported
H7	CS→BI	0.746	0.597	340.050	18.440	0.000	Supported

 doi:10.20944/preprints202501.1043.v1

H8	CL→BV	0.731	0.605	351.903	18.759	0.000	Supported
H9	BI→BV	0.751	0.538	267.998	16.371	0.000	Supported
H10	CS→BV	0.789	0.635	400.997	20.025	0.000	Supported

4.4. Mediation Analysis

The study examined the mediating roles of customer satisfaction, customer loyalty, and brand image in the relationship between circular economy service quality (CESQ) and brand value (BV) using the Hayes Process Macro Model 6 in SPSS. The findings revealed significant indirect effects of CESQ on BV through:

Customer satisfaction ($\beta = 0.279$, $p < 0.005$), supporting H11.

Customer loyalty ($\beta = 0.094$, $p < 0.005$), supporting H12.

Customer satisfaction and customer loyalty ($\beta = 0.136$, $p < 0.005$), supporting H13.

Brand image ($\beta = 0.038$, $p < 0.005$), supporting H14.

Customer satisfaction and brand image ($\beta = 0.048$, $p < 0.005$), supporting H15.

Customer loyalty and brand image ($\beta = 0.012$, $p < 0.005$), supporting H16.

Customer satisfaction, customer loyalty, and brand image ($\beta = 0.018$, $p < 0.005$), supporting H17.

However, the direct effect of CESQ on BV in the presence of mediators was not significant ($\beta = 0.077$, $t = 1.312$) as the t-value was less than 1.96. The analysis results are presented in Table 15. The mediation analysis demonstrated that circular economy service quality (CESQ) significantly enhances brand value (BV), primarily through indirect effects mediated by customer satisfaction (CS), customer loyalty (CL), and brand image (BI). All proposed mediation models were fully mediated, indicating that the impact of CESQ on BV is entirely channeled through these mediating factors. These findings emphasize the importance of customer-centric factors in assessing the effectiveness of circular economy initiatives. By improving customer satisfaction, fostering loyalty, and enhancing brand perception, organizations can leverage circular economy strategies to strengthen their brand reputation and drive long-term success.

Table 15. Result of mediational analysis.

Total Effect		**Direct Effect**		**Relationship**	**Indirect Effect**			
β Coeff.	**t- value**	**β Coeff.**	**t-value**		**β Coeff.**	**Confidence Interval**		**Conclusion**
						Lower Level	**Upper Level**	
				H11: CESQ→CS→BV	0.279*	0.158	0.402	Fully Mediation
				H12: CESQ →CL→BV	0.094*	0.042	0.335	Fully Mediation
				H13: CESQ→CS →CL→BV	0.136*	0.724	0.208	Fully Mediation
0.705*	14.577	0.077	1.312	H14: CESQ→BI→BV	0.038*	0.005	0.086	Fully Mediation
				H15: CESQ→CS→BI→BV	0.048*	0.009	0.093	Fully Mediation
				H16: CESQ→CL→BI→BV	0.012*	0.002	0.028	Fully Mediation
				H17: CESQ→CS→CL→BI→BV	0.018*	0.002	0.042	Fully Mediation

*p<0.005.

4.5. Moderation Analysis

The moderation test, conducted using the Hayes Process Macro Model 1 in SPSS, revealed that Circular Economy Service Quality (CESQ) has a strong and positive impact on the dependent

 doi:10.20944/preprints202501.1043.v1

variable, likely brand value (BV), as shown by a significant β coefficient of 0.705 ($p < 0.005$) with a confidence interval that excludes zero. However, gender alone does not significantly affect the dependent variable, with a β coefficient of -0.036 ($p = 0.579$) and a confidence interval that includes zero. Furthermore, the interaction term between CESQ and gender is also not significant (β coefficient = 0.713, $p = 0.465$). The results of the analysis are summarized in Table 16.

The findings indicate that CESQ has a significant positive impact on BV, independent of gender. While gender alone does not significantly influence brand value, it also does not moderate the relationship between CESQ and BV. This suggests that the positive effect of CESQ on brand value is consistent across genders. These results highlight the importance of implementing robust circular economy practices to enhance brand value, irrespective of the demographic characteristics of the target audience.

Table 16. Results of Moderation Analysis: Circular Economy Service Quality and Brand Value by Gender.

Independent variable	β Coeff.	t-value	p-value	Confidence Interval	
				Lower Level	Upper Level
CESQ	**0.705**	**14.455**	0.000	0.609	0.802
Gender	-0.036	-0.554	0.579	-0.164	0.092
CESQ * Gender	0.713	0.732	0.465	-0.121	0.263

5. Discussion

The findings of this study provide substantial evidence supporting the proposed hypotheses, highlighting the critical role of Circular Economy Service Quality (CESQ) in enhancing customer satisfaction, loyalty, brand image, and ultimately, brand value. The structural model assessment reveals that CESQ significantly and positively influences customer satisfaction (H1), customer loyalty (H2), brand image (H3), and brand value (H4), with all associations being statistically significant. These results align with existing literature emphasizing the importance of service quality in driving customer-related outcomes and brand perceptions (Grönroos, 2007; Zeithaml, 2000).

5.1. Key Relationships and Mediation Effects

Customer satisfaction emerged as a pivotal mediator in this study. The significant direct relationship between customer satisfaction and customer loyalty (H5) underscores the notion that satisfied customers are more likely to remain loyal to the brand (Oliver, 1999). Furthermore, the positive association between customer loyalty and brand image (H6), along with the direct link between customer satisfaction and brand image (H7), emphasizes the interconnectedness of these constructs in building a strong brand reputation (Aaker, 1991). The strong β coefficients observed in these relationships indicate robust connections, reinforcing the idea that satisfied and loyal customers contribute significantly to the formation and enhancement of the brand image.

The direct effects observed between customer loyalty and brand value (H8) and brand image and brand value (H9) further validate the significance of these constructs in driving brand equity. The R-square values suggest that customer satisfaction alone accounts for 63.5% of the variance in brand value, highlighting its dominant role. Additionally, CESQ accounts for 48% of the variance in brand value, indicating that nearly half of the brand's value can be attributed to the quality of circular economy services provided.

5.2. Mediation Analysis

Mediation analysis results confirm the mediating roles of customer satisfaction, customer loyalty, and brand image in the relationship between CESQ and brand value. The significant indirect effects through customer satisfaction (H11), customer loyalty (H12), and brand image (H13) suggest that CESQ enhances brand value not only directly but also indirectly by improving these mediators. This finding aligns with the conceptual framework proposed in previous studies, which suggests that service quality impacts brand equity through intermediate variables such as customer satisfaction and loyalty (Parasuraman, Zeithaml, & Berry, 1988).

 doi:10.20944/preprints202501.1043.v1

5.3. Moderation Analysis

Interestingly, the moderation analysis reveals that gender does not significantly moderate the relationship between CESQ and brand value (H18). This indicates that the positive impact of CESQ on brand value is consistent across genders, suggesting that circular economy initiatives resonate equally well with male and female customers. This consistency can be attributed to the growing awareness and value placed on sustainability and environmental responsibility among consumers, regardless of gender (Haws, Winterich, & Naylor, 2014).

5.4. Implications, Limitations and Future Research

In conclusion, this study provides compelling evidence that CESQ plays a crucial role in enhancing brand value through its positive effects on customer satisfaction, loyalty, and brand image. The results underscore the importance for brands to invest in high-quality circular economy services as a strategic approach to building strong customer relationships and enhancing brand equity.

Despite the valuable insights provided by this study, several limitations should be acknowledged. First, the research is cross-sectional, which limits the ability to establish causality among the studied variables. Longitudinal studies are needed to confirm the direction of these relationships over time. Second, the study relies on self-reported data, which may be subject to response biases such as social desirability bias. Future research could incorporate objective measures of CESQ and brand value to validate these findings. Third, the study's sample may not be representative of all industries or geographic regions, limiting the generalizability of the results. Replicating this study in different contexts could provide a more comprehensive understanding of the relationships among CESQ, customer satisfaction, loyalty, brand image, and brand value.

Building on the findings and limitations of this study, several avenues for future research are suggested. First, future studies could explore additional moderating variables, such as cultural differences, age, and income levels, to understand how different customer segments perceive and respond to CESQ. This could provide more tailored insights for companies targeting diverse customer bases. Second, examining the long-term effects of CESQ on brand value through longitudinal studies could offer a deeper understanding of how sustainable practices contribute to brand equity over time. Third, researchers could investigate the impact of specific circular economy practices, such as product take-back schemes or recycling programs, on customer satisfaction and brand loyalty. This would help identify the most effective practices for enhancing brand value. Lastly, expanding the research to different industries and regions could provide a more comprehensive perspective on the generalizability of the findings and the unique challenges and opportunities faced by various sectors in implementing circular economy initiatives.

6. Conclusions

This study comprehensively investigates the impact of Circular Economy Service Quality (CESQ) on brand value, incorporating key constructs such as customer satisfaction, customer loyalty, and brand image. The findings strongly support the proposed hypotheses, demonstrating that CESQ significantly enhances customer satisfaction, loyalty, brand image, and ultimately, brand value. The mediating roles of customer satisfaction, loyalty, and brand image underscore the indirect pathways through which CESQ contributes to brand value, highlighting the importance of adopting a holistic approach to sustainability and customer relationship management.

Additionally, the moderation analysis reveals that the positive effect of CESQ on brand value is consistent across genders, indicating a universal consumer appreciation for circular economy practices. This consistency aligns with the growing trend of consumer preference for sustainable brands, emphasizing the strategic importance of integrating circular economy principles into business operations.

In conclusion, this study provides compelling evidence that investing in high-quality circular economy services is an effective strategy for enhancing brand equity. By fostering customer satisfaction, loyalty, and a positive brand image, companies can significantly improve their brand value. These findings offer practical guidance for businesses and policymakers seeking to leverage sustainability as a competitive advantage in today's market. Future research should explore

 doi:10.20944/preprints202501.1043.v1

additional moderating variables and examine diverse industry contexts to further validate and expand upon these insights.

References

1. Aaker, D. A. (1991). Managing brand equity: Capitalizing on the value of a brand name. *New York*, *28*(1), 35–37.
2. Aaker, D. A. (1996). *Building strong brands. 1. Painos*. London: Simon & Schuster UK Ltd.
3. Abedi, R., & Azma, F. (2019). Relationship between the Brand Identity with Brand Loyalty due to the Mediating Role of Perceived Value. *Dutch Journal of Finance and Management*, *3*(1). https://www.djfm-journal.com/download/relationship-between-the-brand-identity-with-brand-loyalty-due-to-the-mediating-role-of-perceived-5876.pdf
4. Adam, S., Bucker, C., Desguin, S., Vaage, N., & Saebi, T. (2017). *Taking Part in the Circular Economy: Four Ways to Designing Circular Business Models* (SSRN Scholarly Paper 2908107). https://doi.org/10.2139/ssrn.2908107
5. Agung, L., Rahmat, S. T. Y., & Angga, N. D. (2019). The relationship of brand communication, brand image, and brand trust to brand loyalty of samsung cellular phone product. *Russian Journal of Agricultural and Socio-Economic Sciences*, *88*(4), 138–143.
6. Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. *Journal of Marketing*, *58*(3), 53–66.
7. Azizan, N. S., & Yusr, M. M. (2019). The influence of customer satisfaction, brand trust, and brand image towards customer loyalty. *International Journal of Entrepreneurship and Management Practices*, *2*(7), 93–108.
8. Bernarto, I., Berlianto, M. P., Meilani, Y. F. C. P., Masman, R. R., & Suryawan, I. N. (2020). The influence of brand awareness, brand image, and brand trust on brand loyalty. *Jurnal Manajemen*, *24*(3), 412–426.
9. Bernarto, I., & Purwanto, A. (2022). The effect of perceived risk, brand image and perceived price fairness on customer satisfaction. *Brand Image and Perceived Price Fairness on Customer Satisfaction (March 1, 2022)*.
10. Bocken, N. M. P., de Pauw, I., Bakker, C., & van der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, *33*(5), 308–320. https://doi.org/10.1080/21681015.2016.1172124
11. Bocken, N. M., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, *65*, 42–56.
12. Bowen, J. T., & Chen, S. (2001). The relationship between customer loyalty and customer satisfaction. *International Journal of Contemporary Hospitality Management*, *13*(5), 213–217. https://doi.org/10.1108/09596110110395893
13. Chandon, P. (2003). *Note on measuring brand awareness, brand image, brand equity and brand value*. Insead Fontainebleau. https://courseware.cutm.ac.in/wp-content/uploads/2020/06/2003-19.pdf
14. Chao, R.-F., Wu, T.-C., & Yen, W.-T. (2015). The influence of service quality, brand image, and customer satisfaction on customer loyalty for private karaoke Roomsin Taiwan. *The Journal of Global Business Management*, *11*(1), 59–67.
15. Cheng, C. C., Chiu, S.-I., Hu, H.-Y., & Chang, Y.-Y. (2011). A study on exploring the relationship between customer satisfaction and loyalty in the fast food industry: With relationship inertia as a mediator. *African Journal of Business Management*, *5*(13), 5118.
16. Chinomona, R. (2016). Brand communication, brand image and brand trust as antecedents of brand loyalty in Gauteng Province of South Africa. *African Journal of Economic and Management Studies*, *7*(1), 124–139. https://doi.org/10.1108/AJEMS-03-2013-0031
17. Cretu, A. E., & Brodie, R. J. (2009). Chapter 7 Brand image, corporate reputation, and customer value. In M. S. Glynn & A. G. Woodside (Eds.), *Business-To-Business Brand Management: Theory, Research and Executivecase Study Exercises* (Vol. 15, pp. 263–387). Emerald Group Publishing Limited. https://doi.org/10.1108/S1069-0964(2009)0000015011
18. DAM, S. M., & DAM, T. C. (2021). Relationships between Service Quality, Brand Image, Customer Satisfaction, and Customer Loyalty. *The Journal of Asian Finance, Economics and Business*, *8*(3), 585–593. https://doi.org/10.13106/JAFEB.2021.VOL8.NO3.0585

 doi:10.20944/preprints202501.1043.v1

19. Diallo, M. F., Ben Dahmane Mouelhi, N., Gadekar, M., & Schill, M. (2021). CSR actions, brand value, and willingness to pay a premium price for luxury brands: Does long-term orientation matter? *Journal of Business Ethics*, *169*, 241–260.
20. Fornell, C. (1992). A National Customer Satisfaction Barometer: The Swedish Experience. *Journal of Marketing*, *56*(1), 6–21. https://doi.org/10.1177/002224299205600103
21. Fornell, C., Gardner, B. B., & Levy, S. J. (1955). The Product and the Brand. *Harvard Business Review*, *33*, 33–39.
22. Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American customer satisfaction index: Nature, purpose, and findings. *Journal of Marketing*, *60*(4), 7–18.
23. Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The Circular Economy – A new sustainability paradigm? *Journal of Cleaner Production*, *143*, 757–768. https://doi.org/10.1016/j.jclepro.2016.12.048
24. Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy: The expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production*, *114*, 11–32. https://doi.org/10.1016/j.jclepro.2015.09.007
25. Gong, Y., Xiao, J., Tang, X., & Li, J. (2023). How sustainable marketing influences the customer engagement and sustainable purchase intention? The moderating role of corporate social responsibility. *Frontiers in Psychology*, *14*, 1128686. https://doi.org/10.3389/fpsyg.2023.1128686
26. Grönroos, C. (1982). An applied service marketing theory. *European Journal of Marketing*, *16*(7), 30–41.
27. Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of Marketing*, *18*(4), 36–44.
28. Guyader, H., Ponsignon, F., Salignac, F., & Bojovic, N. (2022). Beyond a mediocre customer experience in the circular economy: The satisfaction of contributing to the ecological transition. *Journal of Cleaner Production*, *378*, 134495. https://doi.org/10.1016/j.jclepro.2022.134495
29. Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning*, *46*(1–2), 1–12.
30. Hom, W. (2000). *An Overview of Customer Satisfaction Models.* https://eric.ed.gov/?id=ed463825
31. Irfan, M., Shamsudin, M. F., & Hadi, N. U. (2016). How important is customer satisfaction? Quantitative evidence from mobile telecommunication market. *International Journal of Business and Management*, *11*(6), 57–69.
32. Išoraitė, M. (2018). Brand image development. *Ecoforum*, *7*(1), 0–0.
33. Janonis, V., & Virvilaitė, R. (2007). Brand image formation. *Engineering Economics*, *52*(2). https://www.ceeol.com/search/article-detail?id=144212
34. Jones, T. O., & Sasser, W. E. (1995). Why satisfied customers defect. *Harvard Business Review*, *73*(6), 88.
35. Kano, N., Seraku, N., Takahashi, F., & Tsuji, S. (1984). *Attractive quality and must-be quality*. https://www.sid.ir/paper/600594/fa
36. Kapferer, J.-N. (2012). The new strategic brand management: Advanced insights and strategic thinking. Kogan page publishers.
37. Keller, K. L. (1993). Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing*, *57*(1), 1–22. https://doi.org/10.2307/1252054
38. Kim, S., Baek, W., Byon, K. K., & Ju, S. (2021). Creating Shared Value to Enhance Customer Loyalty: A Case of a Sporting Goods Company in Korean Athletic Shoe Market. *Sustainability*, *13*(13), Article 13. https://doi.org/10.3390/su13137031
39. Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling*, *127*, 221–232. https://doi.org/10.1016/j.resconrec.2017.09.005
40. Krumay, B., & Brandtweiner, R. (2010). Are customer service offerings influencing e-loyalty? A graphical chain model approach in the austrian mobile phone service provider industry. https://aisel.aisnet.org/bled2010/17/

41. Kumar, V., Pozza, I. D., & Ganesh, J. (2013). Revisiting the Satisfaction–Loyalty Relationship: Empirical Generalizations and Directions for Future Research. *Journal of Retailing*, *89*(3), 246–262. https://doi.org/10.1016/j.jretai.2013.02.001
42. Lee, J. L., James, J. D., & Kim, Y. K. (2014). A Reconceptualization of Brand Image. *International Journal of Business Administration*, *5*(4), p1. https://doi.org/10.5430/ijba.v5n4p1
43. Levesque, T., & McDougall, G. H. (1996). Determinants of customer satisfaction in retail banking. *International Journal of Bank Marketing*, *14*(7), 12–20.
44. Liu, J., Xue, Y., & Duan, J. (2011). An empirical study on impacts of brand cognition on brand loyalty. *2011 2nd International Conference on Artificial Intelligence, Management Science and Electronic Commerce (AIMSEC)*, 959–962. https://doi.org/10.1109/AIMSEC.2011.6010692
45. Lubis, A. S., & Andayani, N. R. (2017). Pengaruh kualitas pelayanan (service quality) terhadap kepuasan pelanggan pt. Sucofindo batam. *Journal of Applied Business Administration*, *1*(2), 232–243.
46. Maheshwari, K., & Kumar, D. V. (2013). *To Create a Positive Brand Image Through Corporate Social Responsibility* (SSRN Scholarly Paper 2466844). https://doi.org/10.2139/ssrn.2466844
47. Marín-García, A., Gil-Saura, I., Ruiz-Molina, M. E., & Berenguer-Contrí, G. (2021). Sustainability, store equity, and satisfaction: The moderating effect of gender in retailing. *Sustainability*, *13*(2), 1010.
48. Mellens, M., Dekimpe, M., & Steenkamp, J. (1996). A review of brand-loyalty measures in marketing. *Tijdschrift Voor Economie En Management*, *4*, 507–533.
49. Menaga, A., Vasantha, S., & Lokesh, S. (2024). Analysing the Bibliometric of Circular Economy and Customer Behavior: A Study from 2018 to 2023. *3rd International Conference on Reinventing Business Practices, Start-Ups and Sustainability (ICRBSS 2023)*, 410–425. https://www.atlantis-press.com/proceedings/icrbss-23/125998429
50. Moisescu, O.-I. (2018). From perceptual corporate sustainability to customer loyalty: A multi-sectorial investigation in a developing country. *Economic Research-Ekonomska Istraživanja*, *31*(1), 55–72.
51. Neupane, R. (2015). The Effects of Brand Image on Customer Satisfaction and Loyalty Intention in Retail Super Market Chain UK. *International Journal of Social Sciences and Management*, *2*(1), Article 1. https://doi.org/10.3126/ijssm.v2i1.11814
52. Oliver, R. L. (1997). Emotional expression in the satisfaction response. *Satisfaction: A Behavioral Perspective on the Consumer*, *291325*.
53. Oliver, R. L. (1999). Whence Consumer Loyalty? *Journal of Marketing*, *63*(4_suppl1), 33–44. https://doi.org/10.1177/00222429990634s105
54. Onyancha, G. K. (2013). The impact of bank brand image on customer satisfaction and loyalty: A case of Kenya commercial bank. *European Journal of Business and Management*, *5*(21), 35–39.
55. Padilla-Rivera, A., Russo-Garrido, S., & Merveille, N. (2020). Addressing the Social Aspects of a Circular Economy: A Systematic Literature Review. *Sustainability*, *12*(19), Article 19. https://doi.org/10.3390/su12197912
56. Paetz, F. (2021). Recommendations for Sustainable Brand Personalities: An Empirical Study. *Sustainability*, *13*(9), Article 9. https://doi.org/10.3390/su13094747
57. Parasuraman, A., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *1988*, *64*(1), 12–40.
58. Pinem, S., Husnan, L. H., & Handayani, B. R. (2019). THE IMPACT OF SERVICE QUALITY ON CUSTOMER LOYALTY WITH MODERATING EFFECT OF CUSTOMER SATISFACTION IN DITLANTAS POLDA NTB. *Russian Journal of Agricultural and Socio-Economic Sciences*, *9*(93), 17–26. https://doi.org/10.18551/rjoas.2019-09.02
59. Regmi, P. R., Waithaka, E., Paudyal, A., Simkhada, P., & van Teijlingen, E. (2016). Guide to the design and application of online questionnaire surveys. *Nepal Journal of Epidemiology*, *6*(4), 640–644. https://doi.org/10.3126/nje.v6i4.17258
60. Reichheld, F. F., & Sasser, W. E. (1990). Zero defections: Quality comes to services. *1990*, *68*(5), 105–111.
61. Ries, A. (2002). *Positioning: The battle for your mind*. Salemba Empat. http://digilib.fisipol.ugm.ac.id/handle/15717717/13733

62. Rosanti, N., & Salam, K. N. (2021). The Effects of Brand Image and Product Quality on Purchase Decisions. *Quantitative Economics and Management Studies*, *2*(6), 365–375.
63. Salem, M. A., Shawtari, F. A., Shamsudin, M. F., & Hussain, H. I. (2016). The relation between stakeholders' integration and environmental competitiveness. *Social Responsibility Journal*, *12*(4), 755–769.
64. Sen, S., Bhattacharya, C., & Korschun, D. (2006). The Role of Corporate Social Responsibility in Strengthening Multiple Stakeholder Relationships: A Field Experiment. *Journal of The Academy of Marketing Science - J ACAD MARK SCI*, *34*, 158–166. https://doi.org/10.1177/0092070305284978
65. Sivadas, E., & Baker-Prewitt, J. L. (2000). An examination of the relationship between service quality, customer satisfaction, and store loyalty. *International Journal of Retail & Distribution Management*, *28*(2), 73–82. https://doi.org/10.1108/09590550010315223
66. Smith, A. D., Damron, T., & Melton, A. (2017). Aspects of corporate wellness programs: Comparisons of customer satisfaction. *Benchmarking: An International Journal*, *24*(6), 1523–1551.
67. Suresh, S., Mohanan, P., & Gopal, N. (2011). *Brand Success Redefined: An Analysis of the Interrelationships Among Various Brand Dimensions* (SSRN Scholarly Paper 1867880). https://doi.org/10.2139/ssrn.1867880
68. Tanveer, M., Ahmad, A.-R., Mahmood, H., & Haq, I. U. (2021). Role of Ethical Marketing in Driving Consumer Brand Relationships and Brand Loyalty: A Sustainable Marketing Approach. *Sustainability*, *13*(12), Article 12. https://doi.org/10.3390/su13126839
69. Tjahjaningsih, E., Widyasari, S., Maskur, A., & Kusuma, L. (2021). *The Effect of Customer Experience and Service Quality on Satisfaction in Increasing Loyalty*. 395–399. https://doi.org/10.2991/aebmr.k.210311.079
70. Twum, K. K., Yalley, A. A., Agyapong, G. K.-Q., & Ofori, D. (2021). The influence of Public University library service quality and library Brand image on user loyalty. *International Review on Public and Nonprofit Marketing*, *18*, 207–227.
71. van Boerdonk, P. J. M., Krikke, H. R., & Lambrechts, W. (2021). New business models in circular economy: A multiple case study into touch points creating customer values in health care. *Journal of Cleaner Production*, *282*, 125375. https://doi.org/10.1016/j.jclepro.2020.125375
72. Virappan, T. M., & Chan, T. J. (2020). Predictors of Corporate Reputation through Service Quality: A Study of Air Asia Customers Perspectives. *Journal of Business and Social Review in Emerging Economies*, *6*(2), Article 2. https://doi.org/10.26710/jbsee.v6i2.947
73. Waworuntu, E. C., Mandagi, D. W., & Pangemanan, A. S. (2022). 'I See It, I Want It, I Buy It': The Role of Social Media Marketing in Shaping Brand Image and Gen Z's Intention to Purchase Local Product. *Society*, *10*(2), 351–369.
74. Wijaya, A. F. B., Surachman, S., & Mugiono, M. (2020). The effect of service quality, perceived value and mediating effect of brand image on brand trust. *Jurnal Manajemen Dan Kewirausahaan*, *22*(1), 45–56.
75. Xu, J., & Wang, H. (2008). Build competitive advantage through the integration of sustainable supply chains. *2008 IEEE International Conference on Service Operations and Logistics, and Informatics*, *2*, 2177–2180. https://doi.org/10.1109/SOLI.2008.4682895
76. Yang, X., Kittikowit, S., Noparumpa, T., Jiang, J., & Chen, S.-C. (2022). Moderated Mediation Mechanism to Determine the Effect of Gender Heterogeneity on Green Purchasing Intention: From the Perspective of Residents' Values. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.803710
77. Yi, Y., & Jeon, H. (2003). Effects of Loyalty Programs on Value Perception, Program Loyalty, and Brand Loyalty. *Journal of the Academy of Marketing Science*, *31*(3), 229–240. https://doi.org/10.1177/0092070303031003002
78. Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *Journal of Marketing*, *60*(2), 31–46. https://doi.org/10.2307/1251929
79. Zhang, J. Q., Dixit, A., & Friedmann, R. (2010). Customer Loyalty and Lifetime Value: An Empirical Investigation of Consumer Packaged Goods. *Journal of Marketing Theory and Practice*, *18*(2), 127–140. https://doi.org/10.2753/MTP1069-6679180202

 doi:10.20944/preprints202501.1043.v1

disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.