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From corporate responsibility to green loyalty: How CSR initiatives shape sustainable choices among banking consumers in China

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ABSTRACT

Climate change and environmental degradation demand sustainable corporate responses. In the Chinese banking sector, CSR is increasingly recognized as a driver of green customer loyalty. This study fills a gap by employing a dual mediation-moderation model grounded in Social Identity Theory. Our model reveals that CSR directly influences loyalty ($\beta=0.11, p<0.001;$ 32.2 % variance explained) and indirectly affects loyalty through enhanced customer communal relationships ($\beta=0.194, p<0.001)$ and pro-environmental self-identity ($\beta=0.352, p<0.001)$. Moreover, higher environmental knowledge amplifies these effects. The findings advance theory by demonstrating that CSR fosters a shared identity between banks and consumers, strengthening emotional bonds and driving sustainable loyalty. Practically, our results suggest that banks should integrate CSR into core operations through green financial products and adopt segmented CSR communication strategies, detailed sustainability reports for environmentally savvy customers, and educational content for others. These targeted measures can enhance customer loyalty and support the transition to sustainable banking practices.

1. Introduction

Climate change is one of the most critical issues in the modern world, which needs the cooperation of all the stakeholders in society (Abbass et al., 2022). With the current challenges of environmental degradation due to industrialization, it has become important for business organizations to embrace sustainability (Ahmad, Scholz, AlDhaen, et al., 2021). Environmental deterioration exceeds dangerous thresholds because carbon emissions have hit record highs resulting in global temperature rise by 1.1 $^{\circ}\text{C}$ and massive biodiversity decline with severe ecological damage across various regions during the last century (Ahmad, Samad, & Han, 2023). The disturbing figures illustrate the intensive requirement for scheduled approaches to protect the environment (Murtaza et al., 2021). Businesses, as both contributors to environmental harm and potential drivers of change, possess the resources and influence to drive positive impact (Guan et al., 2023). Hence, the corporate world is central to charting the course towards a better and sustainable world for the global population. Customers can be seen as an important stakeholder in the sustainability process in this changing context. While consumers used to base their decisions mostly

on price and quality, sustainability policies are now becoming more important (Ahmad, Ahmad, & Siddique, 2023). As a result of this shift, sustainability is now a source of competitive advantage for business organizations. This shift shows that sustainability is now a source of competitive advantage for business organizations. Consumers of today demand that companies be socially responsible and in return, they are likely to support such companies. As a result, sustainability has shifted from being a marginal factor to a core competence that is critical in sustaining customer loyalty and trust (Ahmad, Ahmad, & Siddique, 2024).

Although the manufacturing sector has been the primary target for environmental concerns because of its direct influence on resources and pollution, the service sector, especially the financial sector, is also not immune to criticism. Unlike the manufacturing sector, where there is an easy association with environmental impact due to the extraction of raw materials and disposal of waste, the service sector plays a significant role in influencing consumer behavior and promoting sustainable practices. A growing number of studies are demonstrating that the banking sector can have a significant impact on environmental results through corporate actions and client relationships (Sun et al., 2020).

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Corporate social responsibility (CSR) has become one of the crucial business strategies that offer a roadmap to companies on how to handle their responsibilities towards the environment and society (Zhang et al., 2021). CSR functions beyond its corporate responsibility status to become a business strategy that combats environmental challenges (Xu et al., 2022). A combination of ecological imperative alignment in business activities allows firms to protect the environment and enhance market success. Practical examples abound in industries such as renewable energy and sustainable finance, where CSR-driven innovations have led to measurable reductions in environmental impact and bolstered consumer trust. This logical imperative creates a connection between company business activities and community objectives as it aligns with new academic concepts that promote economicsocial-environmental integration. The analysis utilizes China's banking sector background to examine strategic CSR implementation approaches for green customer loyalty development. From a sustainability angle, CSR activities help organizations integrate their activities with other social objectives, thus improving their image and increasing stakeholder trust. Especially in the banking sector, CSR plays a very important role in showing the company's ethics and responsibility towards the environment which can influence customer loyalty and trust (Ahmad, Mahmood, Ariza-Montes, et al., 2021; Carroll, 2016a, 2016b). Since consumers are gradually becoming more environmentally conscious, those banks that engage in CSR by promoting sustainability are likely to benefit from increased customer loyalty since such practices are in tune with the modern world. In this study, we investigate how CSR activities affect green customer loyalty in the Chinese banking industry while taking psychological and personal factors into account as mediators and moderators. As one of the most extensive and influential sectors in China's economy (Matthews et al., 2023), the banking sector can play a crucial role in promoting sustainable consumer behavior. It is important to understand how CSR leads to green loyalty among Chinese consumers not only to extend the existing literature but also to provide valuable information to banks that would like to increase their sustainability and customer engagement (Wang et al., 2003). The Chinese banking sector demonstrates fast development together with government-directed modernizations as well as traditional cultural heritage fused with contemporary financial systems. The combination of cultural characteristics and economic factors in this setting makes it suitable for CSR initiatives to have significant effects on consumer conduct. The Chinese banking environment allows CSR to advance beyond regulatory standards into a strategic instrument that connects with core community principles while embracing rising environmental awareness. The combination of China's evolving economy and collectivist cultural traditions makes Chinese banks essential for developing green loyalty strategies. Through examination of this context both the research validity and practical usage for sustainability-based competitive advantages become apparent for practitioners.

Decision-making in the environmental context is a multifaceted process that depends on psychological and personal factors as well as the context in which the decision is made (Ahmad, Ullah, AlDhaen, & Siddique, 2023b). Even though CSR appears to positively impact customerrelated variables like loyalty and trust, the mechanisms through which this occurs in the banking industry require further study. As part of this study, we explore the moderating role of environmental knowledge, as well as the mediating roles of customer communal relationships and proenvironmental self-identity in the CSR-green customer loyalty relationship. Due to the complexity of the process, loyalty to a bank is largely influenced by customers' perceptions, values, and knowledge (Raza et al., 2020). The purpose of this study is therefore to examine the relationship between CSR and green customer loyalty in the context of banking with the mediating variables of customer communal relationships and pro-environmental self-identity and environmental knowledge as moderators.

Customer communal relationship is the level of commitment and attachment customers have towards an organization (a particular bank

in the current study) (Song et al., 2021). Such kinds of relationships are the intermediaries because they depict the kind of trust and warmth that the CSR programs can develop. CSR may be beneficial when understood and practiced by banks in a manner that customers understand and hold the same belief then the bond within the community is strengthened and loyalty is enhanced (Caruana & Vella, 2024b). In the same way, proenvironmental self-identity refers to the degree to which see themselves as environmentally conscious, shaping how they perceive and react to CSR initiatives (van der Werff et al., 2021). When CSR initiatives of a bank align with the environment-friendly self-identity of the customer, it results in a positive attitude towards the customer.

Environmental Knowledge also has an important moderating effect on this relationship. It is a consumer's knowledge of the environment and how they perceive it, which affects their perception and appreciation of CSR (Issock Issock et al., 2020). Customers with a higher level of environmental knowledge are likely to have a higher perception of CSR hence increasing the effectiveness of CSR on green customer loyalty. As a result, including environmental knowledge as a moderator acknowledges the fact that consumers differ in terms of their awareness and concern towards the environment and that this factor has a strong influence on the CSR-loyalty relationship. With this dual mediation and moderation perspective in a unified research model, this study seeks to contribute to a better understanding of how CSR impacts customer loyalty in the banking industry. This approach recognizes that customer behavior is not only a function of external CSR initiatives but also of internal factors such as identity and knowledge, which are dynamic and may therefore, have moderating effects on the results. Such a view is crucial for the creation of CSR initiatives that are meaningful to the customers and that would lead to their loyalty in a highly competitive and environmentally sensitive world (Rousta & Allaf Jafari, 2024).

The key contributions and research objectives of our study are summarized as follows:

- To develop an integrated framework that elucidates the role of CSR in fostering green customer loyalty through the mediating effects of customer communal relationships and pro-environmental self-identity.
- To examine the moderating influence of environmental knowledge in strengthening the CSR–loyalty link.
- To extend the triple bottom line perspective by connecting economic, social, and environmental dimensions with sustainable consumer behavior in China's banking sector.
- To provide empirical insights that inform both academic paradigms and practical CSR strategies, thereby offering novel guidance for firms operating in emerging, non-Western markets.

Research on CSR and its effect on consumer behavior is extensive (Jiang et al., 2025), but some research gaps still exist in the literature. Studies on CSR's effect on customer loyalty have mostly focused on manufacturing and retail industries because the effects are tangible when pollution is involved (Le, 2023; Salam et al., 2022). Service sectors, especially banking, have received little attention although they influence consumer behavior and promote sustainable practices through their financial products. By focusing on the Chinese banking industry, this study aims to fill this gap in service industry CSR research. It was also noted that there is a lack of knowledge about the psychological processes by which CSR operates to affect the consumer. Although prior studies have mainly established a positive relationship between CSR and customer loyalty from a general perspective (Osakwe & Yusuf, 2021), the underlying processes that explain this relationship from a specific angel, for example, green customer loyalty, remain poorly understood, especially in the context of financial services. Studies consider CSR as a single construct while ignoring the fact that CSR activities are associated with customers' self-identities and values. This study fills this gap by proposing customer communal relationships and pro-environmental self-identity as the two mediators in order to provide a more

sophisticated view of how CSR activities enhance customer loyalty, especially, green loyalty through affective connections.

Furthermore, the impact of consumer knowledge as a moderator of CSR effectiveness has not received adequate attention, especially in the banking context. Although some of the researchers agree that the extent of consumers' awareness of CSR activities has an impact on the effectiveness of the activities (Zhang & Ahmad, 2021), there is little research that has paid attention to how environmental knowledge in particular influences the CSR-customer loyalty nexus in the banking industry. To fill this gap, this study introduces environmental knowledge as a significant moderator, underlining the role of consumer awareness in determining the effectiveness of CSR initiatives and providing suggestions for banks to address CSR messaging to various customer groups. Also, most of the previous research has been carried out in western countries hence creating geographical bias in the analysis of CSR effects on consumer behavior. As China has a different socio-economic and cultural context and is a key player in sustainable development, it is important to study the impact of CSR in this context. This study contributes to filling this gap by concentrating on the Chinese banking industry and revealing how CSR works in a context that is non-Western and how it can build green loyalty among Chinese consumers. The research extends the existing literature by showing how CSR creates green loyalty through comprehensive mechanism analysis. Using two mediation factors that combine customer communal relationships and pro-environmental self-identity alongside environmental knowledge as a moderator allows us to better understand consumer behavior. Customer communal relationships produce enduring loyalty because they establish deep emotional connections and shared core values (Caruana & Vella, 2024a), yet pro-environmental self-identity represents how consumers accept environmental values promoted through CSR initiatives. Environmental knowledge functions as a moderating mechanism that enhances this conceptual model by demonstrating how consumer environmental knowledge either intensifies or reduces CSR's effectiveness. This comprehensive research structure supports modern triple-bottom-line research connecting economic with social and environmental outcomes and expands the framework to demonstrate how these processes unite in non-Western settings (Faroog et al., 2021). The research contribution includes theoretical understanding together with concrete CSR strategy design principles that match local consumer values to achieve sustainable loyalty.

Last of all, there is a call for empirical studies that will encompass psychological aspects of consumers, individual characteristics, and the external environment concerning CSR and consumer behavior. Most of the existing research employs single mediating or moderating variables (Ahmad, Scholz, Ullah, et al., 2021; Raza et al., 2020), and there are only a few models that provide an explanation for the multifaceted nature of individual's behavior in response to CSR (Ahmad, Han, & Kim, 2024). This research proposes a dual mediation model with a moderating mechanism, which is a more comprehensive framework for explaining the effect of CSR on customer loyalty. This integrated approach improves the theoretical knowledge and offers guidelines for the business that is willing to improve its sustainability strategies.

2. Literature review

2.1. Theoretical background

Social Identity Theory (SIT) delivers an effective explanation of how people build their self-identity by joining groups. Although several grand theories, such as social exchange theory (Homans, 1958) and relationship marketing theory (Gronroos, 1994), offer valuable insights into customer behavior, SIT is particularly well-suited to explain the dynamics of green loyalty in the banking sector. Social exchange theory examines cost–benefit assessments (Ahmad, Scholz, Ullah, et al., 2021; Ahmad, Ullah, AlDhaen, & Siddique, 2023a) and relationship marketing handles transactional along with relational aspects, but they both fall

short of explaining the psychological and emotional aspects of identity formation. SIT provides an explanation of rational CSR assessment with insights into how shared values and group identification cause sustainable loyalty. Our study uses SIT as its theoretical basis to unite identitybased (pro-environmental self-identity) and relational (customer communal relationships) mechanisms that create the CSR-green loyalty connection. A thorough analysis explains the effect of CSR practices on customer conduct within the culturally distinct non-Western banking sector which connects CSR activities to sustained loyalty of environmentally mindful banking customers. According to SIT, CSR practices of banks deliver value systems that match customer self-identities. The customer identification process creates a perception that the bank belongs to their personal group which strengthens their emotional link and their commitment to the institution. CSR initiatives that correspond with the pro-ecological values of customers allow them to form identity connections beyond transactional associations. Business customers develop enduring institutional connections because their ethical values and environmental beliefs find representation at their financial institutions.

2.2. Hypotheses

CSR plays an important role in influencing the customers' decisionmaking and their perception of the brand regarding trust, satisfaction, loyalty, and advocacy (Ahmad, Samad, & Mahmood, 2024). CSR can be defined as a company's responsibility towards society over and above its economic responsibilities (Carroll, 2016a, 2016b). CSR activities can help a company to improve its image, strengthen its relations with its stakeholders, and stand out from its competitors, which results in positive consequences for customers since modern consumers prefer to deal with companies that are interested in the well-being of society (Saeidi et al., 2015). Customer loyalty can be described as a long-term relationship with a product or service where the customer is committed to repeatedly purchasing or using the product or service in the future (Oliver, 1999). The loyal consumers not only keep on consuming the products but also encourage others to consume the products of the specific brand (Ahmad, Ahmad, Lewandowska, & Han, 2024). The relationship between CSR and customer loyalty has been positively established with CSR being said to enhance trust and emotional attachment hence higher loyalty (Lodsgård & Aagaard, 2017; Pérez & Rodríguez del Bosque, 2015).

In the context of the banking sector, the CSR-loyalty affiliation is particularly significant (Aramburu & Pescador, 2019). As the key financial institutions, banks are under pressure to integrate sustainable policies and show concern for social issues. Customers are interested not only in the financial products that they can obtain from the banks but also in the moral and ecological policies of those banks. In this competitive industry, CSR can help to increase customer loyalty as the values of the bank and its customers will be the same (Osakwe & Yusuf, 2021).

This study relies on SIT which posits that people have an identified self-image that is derived from the groups they belong to such as the brands they support. SIT avers that when a company's CSR is congruent with the customer's personal values, it strengthens the customer's self-schema and, therefore, brand associations (Tajfel, 1978). In banking, CSR activities that are relevant to customers' values are likely to increase the customer's loyalty to a particular bank. Hence:

H1. Green customer loyalty in Chinese banks is positively influenced by Corporate Social Responsibility.

CSR is known to develop long-term, communal relationships between businesses and consumers (Song et al., 2021). Unlike traditional business-to-business exchanges, such relationships include emotional interdependency and concern for each other's well-being (Bolton & Mattila, 2015). Those who believe that a company is concerned with their welfare and the general welfare of society other than the profit it

will make are likely to develop these relationships. CSR is also instrumental in maintaining such bonds by ensuring that the behavior of the company is in harmony with the ethical standards of its customers (Zhang et al., 2019). When companies get involved in CSR like supporting environmental causes or practices or fair labor practices they are saying to their customers that they are like them. Such an alignment creates a feeling of oneness and an emotional bond that enhances the level of customers' commitment to the firm (Hur et al., 2020). Specifically, the emotional bond is most valuable in industries that require trust and where long-term relationships are the key success factors, such as banking.

Customer communal relationships are key components of customer loyalty (Caruana & Vella, 2024b). If the customers feel that a particular company is concerned with their welfare and that it is a company they can associate with their principles then they will be loyal to the company. The basis for this concept is the norm of reciprocity when consumers are ready to help those firms that are concerned about their wellbeing and the state of the world around them (Fournier, 1998). This phenomenon is even more amplified in green loyalty in which customers keenly monitor how a firm conducts its business and whether it meets their environmental standards.

In the context of the banking sector, CSR can help build communal relations that will greatly improve customer loyalty. When customers feel close emotionally to their bank and are confident of the bank's commitment to environmental sustainability, they are likely to remain loyal and promote the bank (Ahmad, Mahmood, Ariza-Montes, et al., 2021). Consequently, a customer communal relationship is expected to mediate the relationship between CSR and green customer loyalty. CSR activities that are in sync with customer values create strong communal relationships that in turn lead to customer loyalty.

It is possible to comprehend these relations when analyzing in the framework of SIT. The CSR is congruent with a customer's personal values; it enhances the customer's identification with the company. This enhanced identification leads to a higher level of affective commitment and brand loyalty (Glaveli, 2021). In the context of the banking industry, environmental CSR communication can strengthen the customers' communal affiliations with the bank and, therefore, enhance their loyalty. Consequently, CSR impacts green customer loyalty indirectly by fostering these core relational aspects that define a customer.

- **H2.** CSR positively influences customer communal relationships in the Chinese banking sector.
- **H3.** Customer communal relationships positively influence green customer loyalty in the Chinese banking sector.
- **H4.** CSR and green customer loyalty in the Chinese banking industry are mediated by customer communal relationships.

If consumers have a perception that the business organization is fully committed to the environment, they are likely to have an enhanced proenvironmental self-identity (Waris et al., 2024). Prior theoretical research has shown that when organizations commit to CSR activities with regard to sustainability, they can strengthen and even socially construct the environmental identities of the consumers (Li & Rabeeu, 2024). This coordination between the company's CSR initiatives and the consumer's environmental attitude enhances the consumer's environmental self-identity, thus making them more receptive to the company.

Pro-environmental self-identity is a measure of a consumer's dedication to environmental values and it is a predictor of a consumer's buying patterns and brand allegiance (Jang & Kim, 2024). The existing research has also established that consumers who are highly sensitive to environmental issues are likely to be loyal to companies that are also sensitive to the same issues through their CSR initiatives. This can be evidenced through repeat patronage, recommendation of the company and its products to others, and a general affinity for the company as opposed to other similar companies. Studies have found that one of the most important antecedents of green consumer behavior is

environmental self-identity that is, a person's identification with environmental issues; this leads consumers to be loyal to brands that support such causes (Becerra et al., 2023). Since pro-environmental self-identity is one of the most important factors influencing consumer behavior, it could be supposed that this identity can also mediate the connection between CSR and green customer loyalty. When a consumer's environmental values are reflected by a company's CSR, then this strengthens the consumers' pro-environmental self-identity and thus increases the consumers' loyalty towards the company. The mediating effect identified here is consistent with the SIT. In this regard, pro-environmental self-identity mediates the relationship between CSR and customer loyalty, which is in line with SIT, as identification with environmental values increases the consumers' attachment to companies. Therefore:

- H5. CSR positively influences pro-environmental self-identity.
- **H6.** Pro-environmental self-identity positively influences green customer loyalty.
- **H7**. Pro-environmental self-identity mediates the relationship between CSR and green customer loyalty.

Furthermore, the level of environmental knowledge also has a significant function as a moderator in the mediated effect of the relationship between CSR and green customer loyalty. In particular, in the mediated relationship between CSR and green customer loyalty through customer communal relationships, the impact of environmental knowledge can strengthen this channel. Higher levels of environmental knowledge make the consumers aware of and appreciate CSR programs (Issock Issock et al., 2020), strengthening their communal relationship with the firm (Babiak & Trendafilova, 2011). This stronger communal relationship in turn increases loyalty especially when the consumer is knowledgeable about the environment. As such, environmental knowledge moderates the mediating role of customer communal relationships on the relationship between CSR and green customer loyalty.

Likewise, environmental knowledge enhances the mediated link between CSR and green customer loyalty through pro-environmental self-identity. In a similar vain, Sampene et al. (2024) argued that increased environmental knowledge enhances the chances of the consumer identifying with the CSR values promoted by the company and this enhances the loyalty the consumer has for the firm. This implies that environmental knowledge not only increases the impact of direct CSR effects but also the overall mediated path from CSR to green customer loyalty.

Therefore, we hypothesize the following:

- **H8.** The mediated relationship between CSR and green customer loyalty through communal relationships is strengthened when environmental knowledge is high, and vice versa.
- **H9.** The mediated relationship between CSR and green customer loyalty through pro-environmental self-identity is strengthened when environmental knowledge is high, and vice versa.

3. Methodology

The study uses a cross-sectional quantitative design with structured surveys to analyze CSR effects on green customer loyalty practices in Chinese banking markets. The study used purposive non-probability sampling since there was no complete sampling frame for banking consumers (Gupta et al., 2021; Zhou et al., 2023). Our study analyzed active customers from four major banks that operate in Beijing, Shanghai, Guangzhou, and Shenzhen regions because these banks release their CSR information publicly while actively implementing CSR initiatives. The study narrowed its scope to these banks to achieve consistency in CSR knowledge availability. Questions were asked to verify that online participants actively used banking services because they were actual customers. An independent samples *t*-test analysis confirmed data consistency between online and offline collection

methods because no statistically significant differences emerged between the responses.

. To further ensure the diversity and representativeness of our sample, specific inclusion criteria were applied to guarantee respondents came from banks with varying levels of CSR involvement. This purposive approach was essential to capture the influence of CSR initiatives across different organizational contexts. In addition, we pre-tested the questionnaire with a pilot sample of 50 banking consumers. This pretesting phase allowed us to refine the questionnaire items for clarity and reliability, thereby enhancing the transparency and rigor of the instrument development process. Data collection involved a structured questionnaire distributed both online and in-person. Respondents were approached at commercial centers, banks, and through online banking forums and social media. Participation was voluntary, with respondents informed about the study's purpose and assured of anonymity. They were also told they could withdraw at any time without consequence. To determine the sample size, we followed recommendations for structural equation modeling (SEM), which suggests a sample size over 400 is sufficient for reliable results (Kline, 2017; Wang et al., 2024). The research team distributed 700 questionnaires through online and offline channels. The research analysis utilized 487 valid questionnaire responses from a total of 700 survey distributions to active bank users. The survey achieved a relatively high non-response rate because several questionnaires remained incomplete and because participants who failed to match the specified criteria were excluded from the study. We tested and ruled out non-response bias through two steps including comparing early versus late participants while investigating participant background data. The results from this analysis showed no significant variations between different groups which establishes that non-response bias does not affect the study. The demographic distribution of the sample is detailed in Table 1, showing the frequency and percentage distribution of respondents by age, gender, education, income, and banking service usage frequency. To provide a clear picture of our test group, we present the demographic distribution of the 487 valid respondents in Revised Table 1. As shown, the majority of participants

Table 1The demographic details of respondents.

Demographic Variable	Category	Frequency	Percentage (%)	
Age	Under 18	24	5.2	
· ·	18-24	112	24.5	
	25-34	182	39.7	
	35-44	86	18.8	
	45–54	35	7.6	
	55–64	12	2.6	
	65 and above	7	1.5	
Gender	Male	238	52.0	
	Female	210	45.9	
	Other	6	1.3	
	Prefer not to say	4	0.8	
Education Level	High School or lower	43	9.4	
	Associate Degree	72	15.7	
	Bachelor's Degree	203	44.3	
	Master's Degree	114	24.9	
	Doctoral Degree	26	5.7	
Monthly Income (RMB)	< 5000	36	7.9	
	5000-10,000	108	23.6	
	10,001-15,000	154	33.6	
	15,001-20,000	98	21.4	
	20,001-25,000	48	10.5	
	> 25,000	14	3.0	
Frequency of Banking Services	Rarely (1–2 times/ month)	31	6.8	
	Sometimes (3–5 times/month)	112	24.5	
	Often (6–10 times/ month)	204	44.5	
	Very often (>10 times/month)	111	24.2	

were aged 25–34 (39.7 %), with a balanced gender distribution (52.0 % male, 45.9 % female), and most held a bachelor's or master's degree. This table enhances readers' understanding of the sample structure.

In the study, key variables were measured using validated scales. Responses were collected using a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Alvarado-Herrera et al. (2017) developed an 18-item scale for CSR that measures social, environmental, and economic responsibility. Sample items include: "This bank is highly committed to ethical principles" (social), "This bank allocates resources to offer environmentally compatible services" (environmental), and "This bank maximizes profits to ensure continuity" (economic). In order to measure green customer loyalty, a 5-item scale adapted from Muflih et al. (2024) was used, which included items such as "I will keep my money in this bank since it supports environmentally friendly practices." Customer communal relationships were evaluated using a 7-item scale, with items such as "I have warm feelings whenever I think of this bank," adapted from Aggarwal (2004). Pro-environmental self-identity, a mediator, was measured with a 4-item scale adapted from Dermody et al. (2018), including items like "I think of myself as a consumer who prefers eco-friendly banking services." Environmental knowledge, the moderator, was assessed using a 4-item scale from Mohd Suki and Mohd Suki (2015), with a sample item like "I am familiar with banks' environmental policies."

To reduce potential common method bias, several steps were taken. Procedurally, respondent anonymity was ensured to minimize social desirability bias, and the questionnaire included both positively and negatively worded items to reduce acquiescence bias (Ahmad, Ullah, Ryu, et al., 2023; Li et al., 2024). Additionally, respondents were told there was no right or wrong answer to encourage honesty.

We conducted Harman's single-factor test to assess the potential impact of common method bias (CMB) on our data. The analysis indicated that the first factor accounted for 35.7 % of the total variance, well below the 50 % threshold generally considered problematic (Podsakoff et al., 2003). Although CMB is a topic of ongoing debate and is often criticized for its limitations, this relatively low percentage, coupled with the multiple procedural remedies we implemented (such as ensuring respondent anonymity, using varied scale formats, and pre-testing our questionnaire), provides robust justification that CMB is not a significant concern in our study.

Table 2 includes the full list of items to measure the variables.

4. Results

Confirmatory factor analysis (CFA) was employed to validate our measurement scales. All items demonstrated acceptable factor loadings (> 0.7) (Ahmad, Samad, & Han, 2024; Yuxiang et al., 2024), composite reliability (CR > 0.7), and average variance extracted (AVE > 0.5) (Fu et al., 2023; Liu et al., 2023). This rigorous CFA supports the reliability and validity of our constructs. For clarity, Table 3 (below) presents a consolidated view of all measurement items, their sub-dimensions, and sources. All factor loadings are above the acceptable threshold of 0.7, indicating that there is a strong correlation between items and constructs. These CR values, which are all >0.7, provide evidence of the constructs' internal consistency. The CR of CSR across different dimensions, such as economics (CSR-ECO), environment (CSR-ENV), and social (CSR-SOC), is in the range of 0.938 to 0.946, confirming its accuracy. As long as the AVE for each construct is >0.5, it means that it captures a significant proportion of variance from its indicators. Convergent validity of customer communal relationships (CUMR) can be demonstrated by the AVE of 0.759. R2 values indicate the model's explanatory power, with 32.2 % of the variance in green customer loyalty (CGLY) explained by the independent variables ($R^2 = 0.322$). The R² for CUMR is 0.434, and for pro-environmental self-identity (PENSI), it is 0.514, showing moderate to strong predictive power, especially for PENSI. Fig. 1 includes our measurement model. The Q² values for our endogenous constructs are all above zero, which indicates

Table 2
Measurement Scales with Items and Sources

Table 2 (continued)

/ariable	Sub- Dimension	Item	Source		Dimension		
Commonato Conial		In many aminism, this hamb	Almonodo			In my opinion, this bank is committed to creating	Alvarado- Herrera et a
Corporate Social Responsibility	Social	In my opinion, this bank respects the human rights	Alvarado- Herrera et al.			value for its customers,	(2017)
(CSR)		of its employees and	(2017)			shareholders, and the	
		customers.				wider community.	
		In my opinion, this bank	Alvarado-			In my opinion, this bank	Alvarado-
		encourages diversity in its	Herrera et al.			promotes ethical economic	Herrera et a (2017)
		workforce and ensures equal opportunities for all	(2017)			practices, including transparency and integrity	(2017)
		customers.				in all transactions.	
		In my opinion, this bank	Alvarado-			In my opinion, this bank	Alvarado-
		promotes financial	Herrera et al.			ensures fair competition in	Herrera et a
		inclusion for	(2017)			the financial market and avoids anti-competitive	(2017)
		disadvantaged groups. In my opinion, this bank	Alvarado-			practices.	
		respects and upholds the	Herrera et al.			In my opinion, this bank	Alvarado-
		labor rights of its	(2017)			fosters innovation in	Herrera et a
		employees.				financial products and	(2017)
		In my opinion, this bank	Alvarado-			services to support	
		actively supports the professional development	Herrera et al. (2017)			economic growth and meet customer needs.	
		and well-being of its	(2017)	Customer	_	I would have warm	Aggarwal
		employees.		Communal		feelings whenever I think	(2004)
		In my opinion, this bank	Alvarado-	Relationships		of this bank.	
		actively contributes to the	Herrera et al.		-	This bank cares for me as a	Aggarwal
		welfare of the	(2017)			valued customer. This bank is likely to help	(2004) Aggarwal
		communities where it operates, including			_	me in times of financial	(2004)
		providing financial				need.	()
		education and resources.			-	I'd miss this bank if I had to	Aggarwal
F	Environmental	In my opinion, this bank	Alvarado-			switch to another.	(2004)
		minimizes its negative	Herrera et al.		_	This bank treats me with	Aggarwal
		impact on the environment through	(2017)		_	special attention. This bank seems to	(2004) Aggarwal
		responsible operations.				appreciate customers like	(2004)
		In my opinion, this bank is	Alvarado-			me.	
		committed to using	Herrera et al.		-	I care about my	Aggarwal
		environmentally friendly	(2017)			relationship with this	(2004)
		practices, such as reducing		Pro-		bank. I think of myself as a	Dermody
		paper use and promoting digital banking.		environmental	_	consumer who prefers eco-	et al. (2018)
		In my opinion, this bank	Alvarado-	Self-identity		friendly banking services.	
		works to reduce energy	Herrera et al.		-	I consider myself someone	Dermody
		consumption in its	(2017)			who is very concerned	et al. (2018
		branches and offices.	A livouro di o			with the environmental practices of banks.	
		In my opinion, this bank is committed to supporting	Alvarado- Herrera et al.		_	I would not be	Dermody
		recycling programs and	(2017)			embarrassed to be seen	et al. (2018)
		reducing waste.				choosing environmentally-	
		In my opinion, this bank	Alvarado-			friendly banking services.	
		aims to minimize its	Herrera et al.		-	I would want my family or	Dermody
		carbon footprint by investing in green energy	(2017)			friends to think of me as someone who prioritizes	et al. (2018)
		and sustainable practices.				eco-friendly banking	
		In my opinion, this bank	Alvarado-			services.	
		supports environmental	Herrera et al.	Customer	-	Compared to an average	Mohd Suki
		protection initiatives,	(2017)	Environmental		person, I am familiar with	and Mohd
		including financing green		Knowledge		banks' environmental policies.	Suki (2015)
		projects and offering eco- friendly financial			_	Compared to my friends, I	Mohd Suki
		products.				am familiar with banks'	and Mohd
	Economic	In my opinion, this bank	Alvarado-			green programs.	Suki (2015)
		contributes to economic	Herrera et al.		_	Compared to people who	Mohd Suki
		development by	(2017)			manage their finances a lot, I am familiar with	and Mohd Suki (2015)
		supporting small businesses and				banks' green labels.	JUNI (2015)
		entrepreneurship.			_	I am knowledgeable about	Mohd Suki
		In my opinion, this bank	Alvarado-			the energy-saving	and Mohd
		ensures long-term	Herrera et al.			practices and symbols	Suki (2015)
		economic sustainability	(2017)	0		used by banks.	36.00
		through sound financial		Green Customer	_	I will always keep my	Muflih et al
		practices.		Loyalty		funds in this bank because	(2024)
						it supports activities that	

(continued on next page)

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Table 2 (continued)

Variable	Sub- Dimension	Item	Source
	-	I prefer to use various products offered by this bank because they contribute positively to environmental sustainability.	Muflih et al. (2024)
	-	I will continue doing transactions at this bank because it is committed to environmentally friendly practices.	Muflih et al. (2024)
	-	I recommend this bank to colleagues because of its strong commitment to environmental sustainability.	Muflih et al. (2024)
	-	I will share positive comments about this bank with friends and family due to its dedication to environmental responsibility.	Muflih et al. (2024)

that our model has acceptable predictive relevance. In tandem, the f^2 values, reflecting the effect sizes of the exogenous constructs on the endogenous variables, range from small to moderate, confirming the practical significance of our hypothesized relationships.

A comparison of the correlation values, square roots of the AVE values, and heterotrait-monotrait ratio (HTMT) analyses provides insight into the discriminant validity of the constructs (Table 4). AVE

square roots for each construct are higher than correlations with other constructs, indicating good discriminant validity. CGLY has a square root of 0.729, higher than correlations with CSR (0.387) and CUMR (0.485). All constructs exhibit this pattern, suggesting each is more strongly correlated with its indicators than with others. HTMT analysis further supports discriminant validity, with most values below the 0.85 threshold. For instance, the HTMT between CGLY and CSR is 0.354, and between CSR-ECO and CSR-ENV, it is 0.796. The HTMT value between CSR-ENV and CSR-SOC is slightly higher at 0.826 but still within an acceptable range, indicating these constructs are distinct, yet closely related.

Hypothesis testing provided valuable insight into the relationships between key variables in the study. The path from CSR to CGLY showed a positive beta value of 0.11, which was statistically significant (p 0.001), suggesting that CSR influences CGLY directly. A beta value of 0.194 and a p-value of 0.000 indicate that CSR had a significant positive effect on CUMR in H2. CUMR is significantly enhanced by CSR initiatives, indicating the significance of communal relationships here. A beta value of 0.214 and a p-value of 0.002 indicate that CUMR positively influences CGLY, which confirms that strong community relationships increase customer loyalty. CUMR partially mediates the impact of CSR on CGLY by 0.042 beta value and 0.005 p-values for H4, which tests its mediating role in the CSR-CGLY relationship. Based on the beta value of 0.35 and p-value of 0.000, H5 finds that CSR is positively correlated with PENSI. Thus, CSR initiatives are crucial to enhancing PENSI. It was also found that the path from PENSI to CGLY, tested in H6, has a significant beta value of 0.329 and a p-value of 0.001, suggesting that a strong proenvironmental self-identity contributes to customer loyalty.

Moreover, H7, which assesses PENSI's mediating effect in the CSR-CGLY relationship, indicates that PENSI mediates the relationship

Table 3 Measurement Model and Structural Model Summary (with Q^2 and f^2 Values).

Construct	Items	Factor Loadings	Mean	Mode	Max	Min	Composite Reliability	AVE	R^2	Q^2	f^2
CGLY	CGLY1	0.775	3.4	3	5	1	0.848	0.531	0.322	0.15	0.11
	CGLY2	0.853	3.7	4	5	2					
	CGLY3	0.768	2.9	3	4	1					
	CGLY4	0.756	2.5	2	4	1					
	CGLY5	0.660	2.8	3	4	1					
CSR-ECO	ECO1	0.854	3.6	4	5	2	0.944	0.738	N/A	N/A	N/A
	ECO2	0.847	3.1	3	5	1					
	ECO3	0.891	3.8	4	5	2					
	ECO4	0.836	2.7	3	4	1					
	ECO5	0.843	3.4	3	5	1					
	ECO6	0.880	3.9	4	5	2					
CSR-ENV	ENV1	0.835	3.5	4	5	2	0.938	0.751	N/A	N/A	N/A
	ENV3	0.892	3.2	3	5	2					
	ENV4	0.888	3.0	3	4	1					
	ENV5	0.823	2.6	3	4	1					
	ENV6	0.893	3.7	4	5	2					
CSR-SOC	SOC1	0.852	3.8	4	5	2	0.946	0.746	N/A	N/A	N/A
	SOC2	0.884	3.5	4	5	2					
	SOC3	0.912	3.4	3	5	2					
	SOC4	0.882	3.1	3	4	1					
	SOC5	0.866	2.9	3	4	1					
	SOC6	0.780	2.8	3	4	1					
CUMR	CUMR1	0.726	3.0	3	4	1	0.949	0.759	0.434	0.25	0.14
	CUMR2	0.925	3.7	4	5	2					
	CUMR4	0.934	3.5	4	5	2					
	CUMR5	0.927	3.8	4	5	2					
	CUMR6	0.923	3.4	3	5	2					
	CUMR7	0.766	2.6	3	4	1					
ENKW	ENKW1	0.879	3.9	4	5	2	0.944	0.809	N/A	N/A	N/A
	ENKW2	0.947	3.8	4	5	2					
	ENKW3	0.885	3.2	3	5	2					
	ENKW4	0.885	3.0	3	4	1					
PENSI	PENSI1	0.715	2.9	3	4	1	0.783	0.540	0.514	0.30	0.12
	PENSI2	0.729	2.7	3	4	1					
	PENSI3	0.737	2.8	3	4	1					
	PENSI4	0.770	3.1	3	4	1					

Note: N/A indicates that Q^2 and f^2 are not applicable for exogenous constructs or when the construct is not predicted by the model.

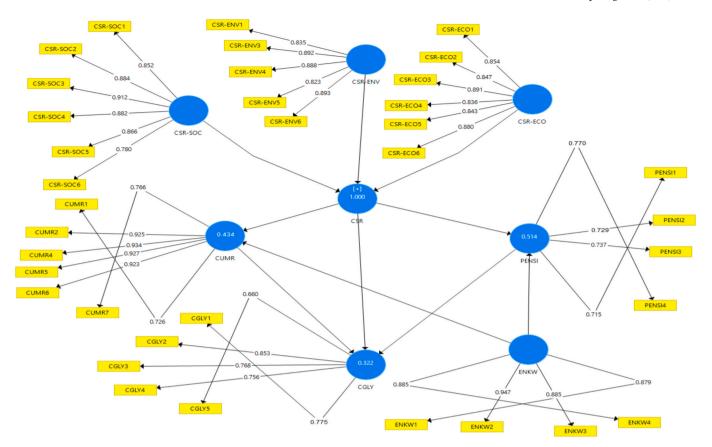


Fig. 1. The measurement model of this study, showing the factor loadings and r square values among the hypothesized relationships.

Table 4Discriminant validity.

Construct	CGLY	CSR	CSR-ECO	CSR-ENV	CSR-SOC	CUMR	ENKW	PENSI
Square Root of AVE	0.729	0.811	0.859	0.867	0.864	0.871	0.900	0.823
Correlation (CGLY)	0.729	0.387	0.313	0.380	0.386	0.485	0.309	0.334
HTMT (CGLY)		0.354	0.282	0.365	0.376	0.455	0.304	0.653
Correlation (CSR)		0.811	0.731	0.750	0.741	0.444	0.481	0.351
HTMT (CSR)			0.783	0.883	0.791	0.472	0.503	0.496
Correlation (CSR-ECO)			0.859	0.829	0.792	0.470	0.512	0.481
HTMT (CSR-ECO)				0.796	0.850	0.518	0.551	0.396
Correlation (CSR-ENV)				0.867	0.860	0.417	0.453	0.550
HTMT (CSR-ENV)					0.826	0.458	0.492	0.539
Correlation (CSR-SOC)					0.864	0.352	0.379	0.406
HTMT (CSR-SOC)						0.385	0.407	0.503
Correlation (CUMR)						0.871	0.493	0.375
HTMT (CUMR)							0.834	0.509
Correlation (ENKW)							0.900	0.468
HTMT (ENKW)								0.486
Correlation (PENSI)								0.823
HTMT (PENSI)								

between CSR and CGLY with a beta value of 0.116 and a p-value of 0.004. In addition, there were significant moderating effects. According to H8, ENKW moderates the relationship between CSR and CGLY via CUMR by 0.056 and 0.003 *p*-values. In addition, H9, which tests ENKW's moderating effect via PENSI on the CSR-CGLY relationship, is supported by beta values of 0.041 and 0.036. These results are summarized in Table 5 below, while Fig. 2 shows the full structural model used.

Fig. 3 illustrates the moderating effect of ENKW on CSR and CUMR. It can be seen from the graph that CSR and CUMR are positively correlated at all levels of ENKW, but the strength of this correlation varies based on the ENKW level. Specifically, when ENKW is high (represented by the green line at $+1\,$ SD), the relationship between CSR and CUMR is stronger compared to when ENKW is at the mean level (red line) or low

(blue line at -1 SD). It can be concluded that higher levels of ENKW enhance CSR's ability to foster stronger social relationships between the bank and its customers.

Fig. 4 shows how ENKW moderates the relationship between CSR and PENSI. In a similar way to the previous figure, CSR and PENSI show a positive relationship at all levels of ENKW. Additionally, the strength of this relationship increases when ENKW (green line) is high, suggesting that people with more environmental knowledge are more likely to have a stronger pro-environmental self-identity as a result of their involvement in CSR. A weaker impact of CSR on PENSI is seen at lower ENKW levels (blue line), suggesting ENKW plays an important moderating role in this relationship.

Table 5 Hypotheses summary.

Hypothesis	Path	Beta values	SD	t- values	p- values	Lower Limit Confidence Interval (2.5 %)	Upper Limit Confidence Interval (97.5 %)
H1	CSR → CGLY	0.11	0.05	2.2	0.000	0.078	0.252
H2	$CSR \rightarrow CUMR$	0.194	0.029	6.727	0.000	0.139	0.252
НЗ	CUMR → CGLY	0.214	0.068	3.137	0.002	0.101	0.307
H4	$CSR \rightarrow CUMR \rightarrow CGLY$	0.042	0.015	2.821	0.005	0.021	0.070
H5	CSR → PENSI	0.352	0.055	6.454	0.000	0.250	0.462
Н6	PENSI → CGLY	0.329	0.100	3.296	0.001	0.118	0.441
H7	$CSR \rightarrow PENSI \rightarrow CGLY$	0.116	0.040	2.872	0.004	0.027	0.177
Н8	Moderating Effect 1→CUMR → CGLY	0.056	0.018	3.039	0.003	0.025	0.087
Н9	Moderating Effect 2 →PENSI→ CGLY	0.041	0.019	2.109	0.036	0.012	0.083

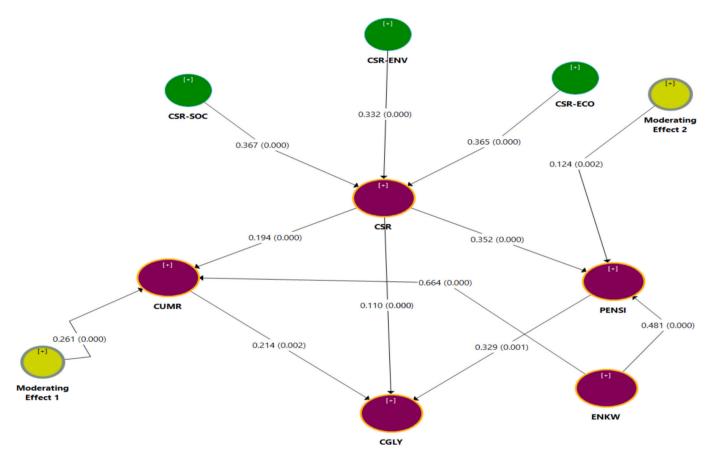


Fig. 2. The full structural model of this study showing the path coefficients (regression weights) and p values.

5. Discussion

The study enhances existing research about CSR effects on consumer response within the Chinese banking industry through its expanded research dimensions. Our research endorses previous findings which demonstrate positive links between CSR programs and customer results (Ahmad, Samad, & Mahmood, 2024; Carroll, 2016a, 2016b) yet establishes a discovery that CSR boosts customer loyalty through two separate mediators, customer communal relationships and pro-environmental self-identity. The research applies SIT to create a more advanced theoretical framework that explains how CSR initiatives develop shared bank-consumer identities. The alignment of consumer identity with the bank strengthens emotional connections and extended customer loyalty which proves that CSR creates dual identity and relational effects. The findings of Song et al. (2021) receive validation through our study which demonstrates that CSR builds brand-customer emotional bonds.

Additionally, our work verifies the key role of CSR in enhancing proenvironmental self-identity as Waris et al. (2024) showed. Our research has a distinct value because we show how these tools serve as active linking paths between CSR efforts and our definition of "green loyalty" which represents sustainable customer commitment.

Environmental knowledge plays a moderating function which enhances the effectiveness of CSR initiatives on consumers who demonstrate advanced environmental awareness. The research outcomes validate scientific literature (Issock Issock et al., 2020) and emphasize the essential roles of consumer education in enhancing CSR effects on community engagement and loyalty. The framework creates new research opportunities by linking the systems between interpersonal interactions with personal identity and environmental knowledge understanding. Further, our dual mediation-moderation model demonstrates that CSR initiatives foster green loyalty not only directly but also indirectly by strengthening customer communal relationships and

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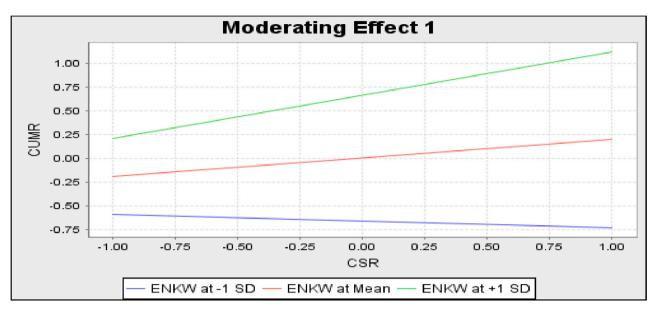


Fig. 3. Moderating Effect of Environmental Knowledge on the Relationship Between Corporate Social Responsibility (CSR) and Customer Communal Relationships (CUMR).

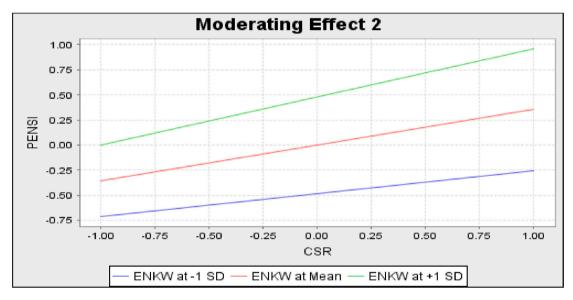


Fig. 4. Moderating Effect of Environmental Knowledge on the Relationship between Corporate Social Responsibility (CSR) and Pro-environmental Self-identity (PENSI).

enhancing pro-environmental self-identity. By integrating Social Identity Theory (SIT), we show that when banks engage in CSR, they signal shared values that resonate with consumers' self-concepts and group affiliations. This process of identity alignment reinforces emotional bonds and long-term commitment, thereby providing deeper theoretical insight into the mechanisms linking CSR and sustainable consumer behavior.

This research delivers practical implications to numerous sectors above banking institutions. Our findings enable hospitality businesses retailers and manufacturing companies to create CSR programs that match customer values for environmental protection and social values thereby generating sustainable customer loyalty. Organizations pursuing CSR initiatives that match public self-identity and create community bonds will build market advantages within environmentally aware consumer markets according to our findings. In summary, our discussion not only reinforces and extends Social Identity Theory by illustrating how CSR-driven identity processes enhance green loyalty but also

demonstrates the practical relevance of our dual mediation-moderation model. This comprehensive framework provides theoretical advancement and actionable insights, addressing long-standing research gaps and offering a roadmap for firms seeking to integrate sustainable practices into their core business strategies.

5.1. Theoretical implications

The research adds significant theoretical value to consumer behavior studies which appear in the current literature. Our study extends SIT from the literature review to show how banking sector CSR initiatives develop mutual customer-bank identities that influence consumer reactions. The dual mediation framework demonstrates that CSR creates customer loyalty through stronger communal relationships and reinforces their pro-environmental self-identity which acts as an indirect loyalty path. The study adds to SIT by demonstrating that identity processes function as essential linkages between CSR initiatives and

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consumer loyalty while operating within Chinese market conditions. The study expands consumer behavior theories by examining how environmental knowledge affects consumer responses towards CSR initiatives. Consumer loyalty towards CSR initiatives strengthens when environmental awareness levels increase among consumers thereby improving current consumer behavior models. Environmental cognition functions as an essential bridge to convert CSR programs into sustainable customer decisions. The inclusion of environmental knowledge within the theoretical structure produces a detailed picture of how informational elements and cognitive variables strengthen CSR's impact on customer loyalty.

Our research extends traditional transactional understanding through its combination of relational and identity-based consumer experience analysis. Such an extensive theoretical framework provides both an extensive research foundation and a robust mechanism for future research on CSR and consumer identity collaboration leading to behavioral outcomes. Our research enhances theoretical knowledge of consumer behavior by showing how CSR programs affect customer choices through relationship development and self-identification mechanics during which environmental awareness acts as a moderating variable in banking industry loyalty formation.

5.2. Practical implications

The findings from our study provide meaningful implications that directly affect banking institutions. Banks need to embed CSR initiatives within their essential operational structure alongside their product distribution system. Through the introduction of green banking services consisting of eco-friendly loans joined by preferential green credit schemes along with sustainable investment funds, banks achieve double benefits by promoting environmental responsibility and gaining customers who are more loyal. Industrial and Commercial Bank of China (ICBC) established the Green Credit Program that gave enhanced loan conditions to projects maintaining environmental compliance. The bank benefits through reputation improvement alongside attracting a growing number of eco-conscious consumers. The CSR communication strategies of banks must adapt based on the varying environmental understanding levels of their various customer segments. Banks need to design simple educational messages for customers with basic environmentally-related understanding which demonstrates why sustainable practices create benefits along with their ability to support both financial sustainability and ecological stability over time. Short educational videos combined with simple visual displays through infographics help people understand the favorable outcomes of implementing green plans. Customers who display environmental knowledge require detailed communication systems. Educational programs of the bank should cover extensive sustainability reports together with real-time ecological results displayed through data dashboards along with expert-led webinars that explain corporate social responsibility functions. Bank segmentation of their communication methods ensures that every customer demographic experiences complete information and engagement thus promoting green loyalty.

Banks should form CSR units that operate alongside marketing teams while working with operations departments to create their own green advisory boards. The purpose of these specialized teams entails both, tracking CSR results and producing reports about sustainable practice possibilities as well as maintaining CSR information consistency throughout every channel. Financial institutions should use mobile banking apps together with email newsletters along with social media platforms to distribute regular sustainability updates which keep customers aware of current progress in CSR activities. Environmental organizations that form partnerships with banks help extend the reach of CSR activities along with boosting their credibility. The bank's participation in sustainability-based community initiatives together with green events strengthens both sustainability dedication and customer trust. Banks can elevate CSR from being an extraneous practice into their

essential competitive edge by merging it with operational procedures and deploying focused marketing approaches while creating essential collaborative alliances. This method connects with environmentally concerned customers while enabling long-term business growth.

5.3. Limitations and future research directions

There are limitations to this study, which offers valuable insight into the impact of CSR on customer loyalty within the banking sector. Due to the research's focus on the Chinese banking industry, it might not be applicable to other cultures or industries. To test the robustness of the findings, future studies could examine these relationships in different countries or sectors. Furthermore, the cross-sectional design precludes causal conclusions; longitudinal studies are needed to analyze the effects of CSR over time. Moreover, self-reported data pose a risk of social desirability bias, suggesting that future research should employ objective measures. Additionally, while this study focused on customer communal relationships, environmental knowledge, and proenvironmental self-identity, future research could investigate other mediators and moderators of the CSR-loyalty relationship, including trust, corporate reputation, and customer satisfaction. In the future, studies could investigate how digital and technological innovations impact the perceptions and behaviors of customers in the banking sector. Finally, future research should incorporate qualitative methods-such as in-depth interviews and case studies-to gain a deeper, nuanced understanding of consumer CSR perceptions. This approach would complement our quantitative findings by uncovering the contextual factors and subtle dynamics that shape how consumers interpret and respond to CSR initiatives, as noted in our limitations.

6. Conclusion

All in all, this study contributes to the existing knowledge of CSR and customer loyalty relationships within the context of the banking industry in China. Through mediating customers' communal relationships and pro-environmental self-identity and the moderating role of environmental knowledge our study offers a more comprehensive understanding of how CSR programs can help to increase customers' loyalty. Accordingly, the research outcomes establish that CSR goes a long way in positively influencing customer communal relationships and proenvironmental self-identity which are pivotal in helping to realize enhanced customer loyalty out of CSR efforts. Further, the empirical results also indicate that the effect of CSR on customers' behavior depends on the level of environmental awareness of the customers, which implies that the banks should sensitize their CSR messages according to the groups of their customers. This study brings theoretical and practical implications to the understanding of the role of strategic CSR communications in supporting customer values and environmental sensitivity. In such a dynamically developing banking industry, incorporating these findings into CSR initiatives will be a significant value for enhancing customer loyalty and achieving sustainable business success.

CRediT authorship contribution statement

Xiao Han: Conceptualization, Investigation, Methodology, Validation, Writing – original draft. Sarminah Samad: Writing – original draft, Visualization, Investigation, Funding acquisition, Formal analysis, Data curation. Wansoo Kim: Writing – review & editing, Supervision, Project administration, Methodology. Feiqiong Wei: Writing – original draft, Project administration, Methodology, Investigation, Conceptualization.

Declaration of competing interest

The authors declare no competing interests.

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Data availability

The authors do not have permission to share data.

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