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Developing and Validating a Measurement Scale for Customer Social Responsibility in Green Financial Product Consumption: Evidence from Vietnamese Commercial Banks

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ABSTRACT

This study develops and validates a multidimensional scale for the construct of Customer Social Responsibility (CuSR) in the context of green financial product consumption, thereby addressing an important measurement gap in the literature on sustainable finance and ethical consumption. Departing from prior approaches that primarily adapt scales from corporate social responsibility or generalized green consumption, this study reconceptualizes CuSR as an attitude–behavioral construct that is specific to financial decision-making processes. The construct emphasizes ethical responsibility, community-oriented value orientations, and value congruence between customers and socially responsible financial institutions. The scale was developed through a three-stage procedure (expert evaluation, EFA, and CFA). The findings confirm a theoretically consistent four-dimensional structure and provide strong evidence of reliability and construct validity (CR > 0.88; AVE > 0.60; HTMT < 0.85). Furthermore, tests of nomological and criterion validity indicate that CuSR is positively associated with green financial intention, trust in socially responsible banks, and the actual use of green financial products. Taken together, these results contribute to theory by introducing one of the first CuSR scales specifically standardized for the green finance context in an emerging market. The study also clarifies the conceptual boundary between responsible consumption and customers' ethically oriented financial behavioral capability, thereby offering a robust measurement foundation for future comparative studies, model testing, and theoretical extensions.

Keywords: Customer Social Responsibility (CuSR), green financial products, commercial banks, Vietnam.

INTRODUCTION

In the context of a global transition toward sustainable development, green finance is regarded as one of the key instruments for directing capital flows toward environmentally friendly activities and reducing carbon emissions. According to the World Bank, global funding for sustainable finance has increased significantly over the past decade, with the market value of green bonds and loans exceeding USD 1.6 trillion in 2023 (World Bank, 2023). At the systemic level, commercial banks play a pivotal intermediary role in promoting green financial products and fostering sustainable consumption behavior across society (Ng & Tao, 2016; Weber, 2017)

However, the success of green finance initiatives does not depend solely on the strategies of banks; it is also strongly influenced by customers' perceptions, motivations, and sense of social responsibility in the financial decision-making process. Recent studies indicate that consumers are increasingly concerned with ethical

considerations and social impacts when choosing products and services, including financial services (Vitell, 2015; Chatzidakis & Mitussis, 2007). In addition, a Nielsen (2019) survey shows that approximately 73% of global consumers are willing to change their consumption behavior to reduce environmental impacts — yet a considerable gap remains between intention and actual behavior. This trend has also been observed in the context of green finance in Vietnam, where recent studies have begun to clarify moral motivations, social values, and the role of customers as responsible actors in the consumption of green financial products (Nguyen.T.Nhung et al., 2025).

In this context, the concept of Customer Social Responsibility (CuSR) has emerged as an important approach to explaining the proactive role of customers as moral agents with community awareness and social responsibility in consumption behavior (Vitell, 2015; Peloza & Shang, 2011). Nevertheless, most prior studies have examined CuSR in the context of consumer goods or conventional service consumption, while the green finance context — particularly in emerging economies such as Vietnam — remains relatively limited in empirical evidence (Nguyen. T.Nhung et al., 2023; Weber & ElAlfy, 2020). Although several recent studies in Vietnam have contributed to conceptualizing CuSR and exploring behavioral factors related to the consumption of green financial products (Nguyen.T.Nhung et al., 2025), these studies have mainly focused on describing phenomena and behavioral mechanisms rather than developing a specialized measurement instrument for CuSR in this domain..

Another important gap lies in the absence of a rigorously developed and validated measurement system specifically designed for CuSR in the consumption of green financial products. Many existing studies tend to adopt scales from the fields of CSR or generalized green consumption without fully assessing conceptual validity, convergent validity, discriminant validity, and contextual appropriateness for financial services (Bhattacharya & Sen, 2004; Papista & Krystallis, 2013). This limitation constrains the comparability and generalizability of research findings and hinders a deeper understanding of the intention–behavior gap in the field of green finance.

This study aims to develop and validate a measurement scale for Customer Social Responsibility in the consumption of green financial products within the context of Vietnamese commercial banks. By integrating theoretical foundations with empirical evidence, the study develops a set of measurement items tailored to the specific characteristics of financial services, while simultaneously assessing the reliability and validity of the scale through advanced statistical analysis techniques. Accordingly, the study contributes in three key aspects: (i) enriching the academic evidence on the conceptual structure of CuSR in the context of green finance, (ii) verifying nomological and criterion validity by demonstrating that CuSR is positively associated with green financial intention, trust in socially responsible banks, and the actual use of green financial products, and (iii) providing a reliable measurement instrument that supports banks in designing policies, products, and strategies to effectively promote green financial consumption behavior.

LITERATURE & CONCEPTUALIZATION OF CUSTOMER SOCIAL RESPONSIBILITY

From Corporate Social Responsibility (CSR) to Customer Social Responsibility (CuSR)

Corporate Social Responsibility (CSR) is commonly understood as a firm's commitment to pursuing policies and actions that are aligned with societal values and expectations, going beyond purely economic or legal requirements. A substantial body of research has examined the effects of CSR on corporate reputation, trust, customer satisfaction, and loyalty, while also developing a variety of multidimensional CSR scales at the firm level (Turker, 2009; Öberseder, Schlegelmilch & Murphy, 2014; Moisescu, 2015). Within this dominant research stream, customers are primarily viewed as recipients of CSR activities: they evaluate firms' social initiatives and respond through their attitudes, purchase intentions, or loyalty behaviors.

Parallel to this firm-oriented approach, research on ethical consumption and socially responsible consumption has increasingly emphasized that consumers themselves also bear responsibility for the social and environmental consequences arising from their consumption behaviors. Studies on socially responsible consumption highlight dimensions such as environmental concern, fairness in exchange, and the avoidance of harmful or unethical products (Leigh, Murphy & Enis, 1988; Webb, Mohr & Harris, 2008; François-Lecompte & Robert, 2006). Recent studies further argue that social responsibility is not solely the obligation of firms, but rather a shared responsibility between firms and customers, with mutually reinforcing roles in promoting sustainable development (Vitell, 2015; Palacios-González, Chamorro-Mera & de Ledesma, 2020).

On this basis, the concept of Consumer/Customer Social Responsibility (CnSR/CuSR) has emerged to more clearly describe the extent to which consumers perceive themselves as moral agents who must consider the social and environmental impacts of their consumption decisions. Instead of focusing on the evaluation of firms' CSR activities, CuSR centers on measuring customers' own socially responsible perceptions, attitudes, and behaviors.

Studies on Socially Responsible Consumption and the CuSR Scale

There are three streams of measurement research that are directly related to the development of the CuSR scale

The first stream of research focuses on socially responsible consumption. The scales developed by Leigh et al. (1988), Webb et al. (2008), François-Lecompte and Robert (2006), and Palacios-González et al. (2020) measure behaviors such as choosing environmentally friendly products, supporting fair trade, boycotting unethical firms, and considering social impacts in purchase decisions. These scales typically conceptualize socially responsible consumption as a multidimensional construct and have been validated across various cultural contexts, including adapted applications in Vietnam.

The second stream of research relates to CSR perceptions from the customer perspective. The scales proposed by Turker (2009), Öberseder et al. (2014), and Moisescu (2015) measure the extent to which customers perceive firms as engaging in CSR across dimensions such as environmental responsibility, ethical behavior, community contribution, and stakeholder orientation. Although these scales are highly valuable for explaining customer responses to CSR (e.g., trust, satisfaction, and loyalty), they remain fundamentally firm-centered, as they measure perceptions of corporate CSR activities rather than customers' own social responsibility.

The third — and more recent — stream of research focuses directly on the social responsibility of consumers/customers. Vitell (2015) introduced the concept of consumer social responsibility and identified its links with socially oriented consumption and ethically driven decision-making behavior. Quazi, Amran, and Nejati (2016) further advanced this construct in a multidimensional form, emphasizing individuals' willingness to act on social issues. At the same time, Davis, Rives, and Ruiz-de-Maya (2021) developed the Personal Social Responsibility scale, which reflects individuals' concern for social welfare and their awareness of personal responsibility for the consequences of their actions.

Overall, these research streams provide an important conceptual foundation for measuring social responsibility at the customer level. However, most of them have been developed in the context of goods consumption, and only a limited number of studies have examined CuSR in financial services. Some recent evidence indicates that CuSR is positively associated with sustainable consumption behavior and green choices among young consumers (Borah, Dogbe & Marwa, 2024; Uzdavinyte, 2023; Vu, 2022). Nevertheless, no standardized scale has yet been developed specifically for CuSR in the context of green financial product consumption, particularly in emerging markets.

Customer Social Responsibility in the Consumption of Green Financial Products

Green financial products such as green savings accounts, green bonds, and sustainability-linked investment instruments enable customers to contribute to social and environmental goals through their financial decisions. Studies on green financial behavior indicate that CSR perception, environmental concern, and sustainability-oriented attitudes may encourage the intention to use green financial products (Vu, 2022; Borah et al., 2024). However, most of these studies continue to place emphasis on banks' CSR or the environmental benefits of green products, while paying relatively little attention to customers' self-perceived social responsibility as financial decision-makers.

In this context, CuSR in green finance can be understood as customers' belief that they should proactively use financial products in ways that contribute to social and environmental benefits. This does not merely reflect a preference for green products, but also encompasses:

1. a sense of ethical responsibility when choosing financial products;
2. a willingness to support banks that pursue sustainable development;
3. a tendency to avoid financial products or institutions that generate negative impacts; and
4. the level of participation, support, or advocacy for green finance practices

Some recent qualitative evidence in Vietnam indicates that many customers — particularly younger generations — perceive the use of green financial products as part of their personal responsibility toward society and the environment (Nguyen.T.Nhung et al., 2025). However, this perception has not yet been translated into a standardized and quantitatively validated measurement scale.

Conceptualization and Dimensional Structure of CuSR in This Study

Building on prior studies, this research conceptualizes Customer Social Responsibility in the consumption of green financial products as follows: "CuSR is a multidimensional construct that reflects the extent to which customers proactively orient their financial decisions toward social and environmental benefits, while simultaneously perceiving themselves as responsible actors in the marketplace."

Drawing on scales of socially responsible consumption (Leigh et al., 1988; Webb et al., 2008; François-Lecompte & Robert, 2006; Palacios-González et al., 2020), CSR perception scales (Turker, 2009; Öberseder et al., 2014; Moisescu, 2015), and studies on personal and consumer social responsibility (Vitell, 2015; Quazi et al., 2016; Davis et al., 2021), CuSR in this study is expected to consist of several related dimensions, such as:

1. social and environmental awareness in financial decision-making;
2. responsible financial consumption behavior;
3. support for and participation in green finance initiatives; and
4. personal ethical commitment in the role of a financial customer.

These dimensions serve as the conceptual foundation for the development and validation of the CuSR scale in the context of green financial product consumption in Vietnamese commercial banks.

Table 1. Comparison of the Novel Contributions of the CuSR Scale

Research / Measurement Scale	**Conceptual Nature of Measurement**	**Application Context**	**Academic Limitations**	**New Contributions of the CuSR Scale (This Study)**
Webb et al. (2008) – Socially Responsible Consumption	Measures socially responsible consumption behavior (green purchasing, boycotting, supporting ethical products)	Consumer goods, traditional marketing context	Focuses on general consumer behavior without distinguishing the financial services domain; does not yet capture elements of value congruence and institutional trust	Extends the concept to financial behavior, emphasizing the role of customers as moral agents in green financial decision-making
François-Lecompte & Robert (2006) – Responsible Purchasing Scale	Emphasizes social responsibility awareness in purchasing decisions (fair trade, environmental concerns)	Consumption of goods / physical products	The concept is strongly tied to transactional purchasing contexts and is not yet well aligned with the specific characteristics of financial services and investment decision-making	Adapted and reconceptualized in line with the intangible, high-risk, and long-term nature of green financial services
Vitell (2015) – Consumer Social Responsibility (CnSR)	Conceptualizes a personal social responsibility orientation, with an emphasis on a moral–normative perspective	High level of abstraction, with a philosophical–cognitive orientation	Does not develop a standardized empirical scale and lacks tests of convergent and discriminant validity	Translates CnSR into a multidimensional quantitative scale with evidence of CR, AVE, HTMT, EFA, CFA, and nomological and criterion validity
Quazi & O'Brien (2016) – Consumer Social Responsibility Scale	Measures the extent of personal commitment to social issues	General, non-specialized consumption environment	Does not take into account moral trust and value congruence with the providing organization	Adds the dimensions of Ethical Trust and Value Alignment with banks, establishing a clear conceptual distinction
The CuSR Measurement Scale Developed in This Study	Conceptualizes CuSR as an attitude–behavior construct associated with social responsibility in financial decision-making	Green finance – commercial banking – Vietnam (emerging market)		(i) Develops a specialized scale for green finance; (ii) introduces four theoretically strong new dimensions (social–environmental motivation, responsible financial behavior, green finance advocacy, ethical trust and value alignment); (iii)

				employs a multi-stage validation process (Study 1–3) to ensure reliability and measurement validity; (iv) contributes to narrowing the intention–behavior gap in green finance.

Source: authors

Unlike prior scales that were primarily developed in the context of goods consumption or that approached CuSR at a highly generalized cognitive level, this study advances the concept by conceptualizing CuSR as an attitude–behavior construct specific to green financial decision-making. The scale is designed to reflect the distinctive characteristics of financial services, institutional trust, and customers' social responsibility as co-creators of sustainable value, and it is rigorously validated through a sequence of EFA–CFA–CR–AVE–HTMT analyses together with tests of nomological and criterion validity. This represents one of the first standardized CuSR scales in the field of green finance within an emerging market context, thereby making a substantial contribution to the theoretical foundation of ethically oriented financial behavior.

Scale Development Procedure

The development and validation of the Customer Social Responsibility (CuSR) scale were conducted in accordance with the classical guidelines for scale development proposed by Churchill (1979), Hinkin (1998), and DeVellis (2017). The procedure comprised three consecutive stages: (i) item generation and expert evaluation, (ii) pilot survey and exploratory factor analysis (EFA), and (iii) confirmatory factor analysis (CFA) and the assessment of the scale's reliability and validity. This multi-stage design ensures conceptual rigor and psychometric reliability for the CuSR construct in the context of green financial product consumption.

Study 1: Item Generation and Expert Evaluation

Item generation: The initial pool of measurement items was developed through an extensive review of prior studies on socially responsible consumption, CSR perception, consumer ethics, and consumer/customer social responsibility (Leigh et al., 1988; Webb et al., 2008; François-Lecompte & Robert, 2006; Turker, 2009; Öberseder et al., 2014; Moisescu, 2015; Vitell, 2015; Quazi et al., 2016; Davis et al., 2021). The items were adapted to the context of green financial product consumption, reflecting customers' socially responsible beliefs and behaviors in financial decision-making processes. Redundant statements were removed, and wording was refined to ensure clarity, contextual relevance, and comprehensibility for respondents. The resulting preliminary scale comprised 20 observed items representing the potential dimensions of CuSR.

Table 2. Conceptualization of the Customer Social Responsibility (CuSR) Scale

Item Code	Concept / Dimension	Conceptual Definition	Observed Items	Supporting Scale References
PEM	**Prosocial & Environmental Motivation in Finance**	The extent to which customers make decisions to use green financial products based on their responsibility toward the environment and social well-being.	PEM1: I choose green financial products because they help reduce negative impacts on the environment. PEM2: Using green financial products makes me feel that I am contributing to society. PEM3: Social and environmental benefits are important criteria when I decide to use financial products. PEM4: I am willing to prioritize green financial products even when they are less convenient or slightly more costly.	Roberts (1996); Webb et al. (2008); Balderjahn et al. (2013); Barbarossa & De Pelsmacker (2016); Devinney et al. (2010)

			PEM5: I feel a moral responsibility to support sustainable financial solutions	
RCB	**Responsible Green Consumption Behavior**	The extent to which customers proactively seek, select, use, and maintain green financial products that are aligned with sustainable values.	RCB1: I proactively search for information about green financial products offered by banks. RCB2: I prioritize banks that provide environmentally friendly credit, savings, or investment services. RCB3: I have switched, or considered switching, to using financial services that are environmentally responsible. RCB4: I try to align my financial decisions with green and sustainable values. RCB5: I intend to continue using green financial products in the future.	Young et al. (2010); Joshi & Rahman (2015); Testa et al. (2015); Nguyen, Lobo & Greenland (2017)
SAG	**Support & Advocacy for Green Finance**	The extent to which customers encourage, recommend, share, and participate in activities that promote green finance within the community.	SAG1: I recommend green financial products to people around me. SAG2: I encourage others to support banks that invest in sustainable projects. SAG3: I am willing to participate in programs that promote green financial behavior. SAG4: I share information about green financial products when I find that they generate social benefits. SAG5: I feel proud when talking about my choice to use green financial services.	Peloza & Shang (2011); Bhattacharya & Sen (2003); Iglesias et al. (2011)
ETA	**Ethical Trust & Alignment with Bank Values**	The extent to which customers hold ethical trust in, and perceive value congruence with, banks that provide green financial products.	ETA1: I believe that banks offering green financial products genuinely care about social and environmental responsibility. ETA2: The values of green financial institutions are consistent with my personal ethical values. ETA3: I trust banks that are committed to sustainable development and environmental protection. ETA4: When a bank demonstrates social responsibility, I am more likely to support its products.	Brown & Dacin (1997); Rahman & Norman (2016); Cucari et al. (2018); Scholtens (2006); Lăzăroiu et al. (2020)

			ETA5: I feel a sense of connection with banks that make positive contributions to society through green finance activities.	

Source: authors

Content Validity Assessment and Expert Review. The content validity of the scale was evaluated through consultations with an expert panel consisting of academics and researchers in the fields of marketing, sustainable development, and banking, together with industry practitioners from commercial banks experienced in implementing green financial products. The experts assessed each item according to the following criteria: (1) conceptual relevance to CuSR; (2) clarity and linguistic accuracy; (3) adequacy of conceptual coverage; and (4) potential redundancy or semantic ambiguity. Items receiving low relevance ratings or inconsistent interpretations were revised or eliminated. Following the expert review process, the scale was refined and 18 observed items were retained for the pilot survey.

To ensure content validity and conceptual appropriateness of the CuSR scale, the study conducted an expert evaluation with a panel of 12 experts selected using purposive sampling based on disciplinary relevance. This approach is consistent with the recommendations of Churchill (1979) and Hinkin (1998), who emphasize the use of expert judgment in the item development stage to ensure conceptual rigor. The expert panel comprised: (i) five academics and researchers in marketing, consumer behavior, and sustainable development (doctoral-level, with at least five years of research experience); and (ii) seven industry professionals from commercial banks with direct experience in designing, implementing, or managing green financial products and CSR/ESG programs (with a minimum of seven years of professional experience).

The criteria for expert selection included: (1) possessing in-depth knowledge of green finance, social responsibility, consumer ethics, or sustainable marketing; (2) having a solid understanding of the Vietnamese commercial banking context; and (3) demonstrating the ability and willingness to participate in content review of the scale. The experts were identified through academic networks, research collaborations, and referrals from banking partners, and were subsequently invited via email to participate in the evaluation, together with the draft item pool and review guidelines.

The panel size of 12 experts was determined based on recommendations in the scale development and content-validity literature, which suggest that a range of 6–15 experts is appropriate to ensure adequate conceptual coverage while avoiding redundant assessments (Lynn, 1986; DeVellis, 2017). At the same time, the combination of academic and practitioner experts strengthens contextual validity and content relevance of the CuSR scale in the domain of green financial product consumption (Polit & Beck, 2006).

Table 3. Results of CuSR Scale Refinement after Content Validity Assessment and Expert Review

Item Code	Dimension	Status after Expert Review	Revised Item Content	Expert Comments
PEM1	Prosocial & Environmental Motivation	Retained	I choose green financial products because they help reduce negative impacts on the environment.	The content is appropriate and accurately reflects environmentally responsible motivation.
PEM2	Prosocial & Environmental Motivation	Retained	Using green financial products makes me feel that I am contributing to society.	Clearly articulated and broadly reflects social benefits.
PEM3	Prosocial & Environmental Motivation	Slightly revised	Social and environmental benefits are important criteria when I decide to use a bank's financial products.	Adds "of the bank" to enhance contextual relevance.
PEM4	Prosocial & Environmental Motivation	Retained	I am willing to prioritize green financial products even when they are less convenient or slightly more costly.	Appropriately reflects cost–benefit trade-offs.
PEM5	Prosocial & Environmental Motivation	Retained	I feel a moral responsibility to support sustainable financial solutions.	Necessary for capturing personal moral motivation

RCB1	Responsible Green Consumption Behavior	Retained	I proactively search for information about green financial products offered by banks.	Reflects proactive behavior and is non-redundant.
RCB2	Responsible Green Consumption Behavior	Retained	I prioritize banks that provide environmentally friendly credit, savings, or investment services	Consistent with the behavioral domain of choice.
RCB3	Responsible Green Consumption Behavior	**Removed**		Content overlaps with RCB2, and the level of discriminability is not clearly evident.
RCB4	Responsible Green Consumption Behavior	Slightly revised	I adjust my financial decisions in accordance with green values and sustainable development.	Semantic standardization to enhance clarity.
RCB5	Responsible Green Consumption Behavior	Retained	I intend to continue using green financial products in the future.	A strong representative indicator of behavioral intention to maintain usage.
SAG1	Support & Advocacy	Retained	I recommend green financial products to people around me.	Represents direct advocacy behavior.
SAG2	Support & Advocacy	Retained	I encourage others to support banks that invest in sustainable projects.	Carries social and community significance
SAG3	Support & Advocacy	Slightly revised	I am willing to participate in activities or programs that promote green financial behavior	Expands the scope from "programs" to "activities."
SAG4	Support & Advocacy	**Removed**		Content overlaps with SAG1 and SAG3
SAG5	Support & Advocacy	Retained	I feel proud when talking about my choice to use green financial services	Retained because it reflects emotional and social identity factors.
ETA1	Ethical Trust & Value Alignment	Retained	I believe that banks offering green financial products genuinely care about social and environmental responsibility.	Reflects core ethical trust
ETA2	Ethical Trust & Value Alignment	Retained	The values of green financial institutions are consistent with my personal ethical values.	A strong representative indicator of value alignment.
ETA3	Ethical Trust & Value Alignment	Retained	I trust banks that are committed to sustainable development and environmental protection.	Conceptually clear and non-redundant.
ETA4	Ethical Trust & Value Alignment	Slightly revised	When a bank demonstrates social responsibility, I am more likely to support and choose its products.	Clarifies behaviors associated with CuSR-related beliefs.
ETA5	Ethical Trust & Value Alignment	Retained	I feel a sense of connection with banks that make positive contributions to society through green finance activities	Provides strong support for the emotional attachment dimension.

Source: authors

Study 2: Pilot Survey and Exploratory Factor Analysis (EFA)

Pilot Data Collection. The pilot survey was conducted with customers who had used or expressed interest in green financial products offered by commercial banks in Vietnam. The pilot study aimed to conduct a

preliminary assessment of the scale structure through Exploratory Factor Analysis (EFA). The target respondents were customers who had used or were interested in green financial products at Vietnamese commercial banks. The sample was selected using convenience sampling with screening, whereby only respondents meeting the screening criteria (having used, explored, or intended to use green financial products) were included in the analysis. This approach is appropriate for the scale development and refinement stage, in which the primary objective is to test the initial measurement structure within the correct target group (Hinkin, 1998; DeVellis, 2017).

The sample size in Study 2 was determined based on widely accepted recommendations in the scale development literature. Specifically, many scholars suggest that EFA sample size should reach at least 5–10 observations per measured variable and not fewer than 150–200 observations to ensure stability of the factor matrix (Hair et al., 2010; Osborne & Costello, 2009). In addition, Hinkin (1998) recommends that, at the pilot-testing stage, a sample size of approximately 150–200 respondents is appropriate for item screening and refinement. Based on these guidelines, the study collected n = 250 valid responses, satisfying and exceeding the minimum sample size requirements for EFA.

The survey respondents were primarily individual banking customers with a certain level of awareness of green finance. Basic demographic variables such as gender, age, educational level, and experience with financial services were collected for descriptive purposes and for use as control variables in subsequent analyses.

Exploratory Factor Analysis. EFA was performed using the Principal Axis Factoring method with Promax rotation, which is appropriate given the assumption that the latent factors may be correlated. Sampling adequacy was assessed using the KMO statistic (> 0.70) and Bartlett's test of sphericity, which was statistically significant ($p < 0.001$). The criteria for retaining observed items included:

1. factor loadings ≥ 0.50;
2. absence of substantial cross-loadings;
3. communalities ≥ 0.40; and
4. theoretical interpretability of the extracted factors.

Table 4a. Results of Exploratory Factor Analysis (EFA)

Evaluation Criteria	Results
KMO (Kaiser–Meyer–Olkin)	0.876
Bartlett's Test of Sphericity	$\chi^2 = 1{,}245.73$, df = 153, $p < 0.001$
Number of Extracted Factors	4
Total Variance Explained	67.84%
Eigenvalues (Factor 1 → Factor 4)	5.92 ; 3.14 ; 2.01 ; 1.10

Source: authors

Table 4b. Results of Exploratory Factor Analysis (EFA)

Item	Factor 1 (PEM)	Factor 2 (RCB)	Factor 3 (SAG)	Factor 4 (ETA)
PEM1	0.781			
PEM2	0.803			
PEM3	0.742			
PEM4	0.695			
PEM5	0.721			
RCB1		0.764		
RCB2		0.788		
RCB4		0.703		
RCB5		0.816		
SAG1			0.781	
SAG2			0.804	
SAG3			0.733	
SAG5			0.769	
ETA1				0.812
ETA2				0.786
ETA3				0.758
ETA4				0.701
ETA5				0.744

Source: authors

The EFA results confirmed a four-factor structure consistent with the proposed CuSR conceptualization. The KMO value (0.876) and Bartlett's test ($p < 0.001$) indicated sampling adequacy. Four factors with eigenvalues greater than 1.0 explained 67.84% of the total variance. All retained items exhibited satisfactory loadings (> 0.70) without problematic cross-loadings

Study 3: CFA, Reliability, and Construct Validity

Confirmatory Factor Analysis (CFA) was conducted to revalidate the conceptual structure of the CuSR scale established in Study 2. The survey respondents were individual customers who were using or had experience with green financial products and services at commercial banks in Vietnam. The sample was obtained using convenience sampling with screening, whereby only participants with experience in recognizing or using green financial products were retained for analysis. This approach is consistent with the objective of testing the measurement model within the target customer group (Hinkin, 1998; DeVellis, 2017).

The sample size for CFA was determined based on common recommendations in the CFA literature. Hair et al. (2010; 2022) suggest that CFA models should include a minimum sample size of at least 200 observations to ensure estimation stability. Kline (2016) and Bentler and Chou (1987) also recommend that a sample size equivalent to approximately 10 to 20 observations per estimated parameter or observed variable is appropriate in models of moderate complexity. Based on these recommendations, the study collected n = 300 valid responses, exceeding the minimum threshold and ensuring sufficient statistical reliability for CFA. The sample comprised diverse customer groups in terms of gender, age, occupation, and level of exposure to green finance. Demographic information was used for descriptive purposes and to enhance representativeness within the target customer segment, while also supporting robustness checks in subsequent analyses.

The measurement model demonstrated a good level of fit ($\chi^2/df < 3$; CFI and TLI > 0.90; RMSEA < 0.08; SRMR < 0.08), indicating an acceptable correspondence between the model and the survey data. All standardized factor loadings were positive and statistically significant at $p < 0.001$, with most exceeding the recommended threshold of 0.70 (see Table 5). These results provide initial evidence of convergent validity at the indicator level.

Table 5. Results of Confirmatory Factor Analysis (CFA)

Construct / Item	Standardized Loading (λ)	SE	t-value	p-value
Prosocial & Environmental Motivation (PEM) — CR = 0.892 ; AVE = 0.624				
PEM1	0.782	0.036	21.47	<0.001
PEM2	0.821	0.034	23.15	<0.001
PEM3	0.768	0.038	20.94	<0.001
PEM4	0.701	0.041	18.62	<0.001
PEM5	0.804	0.035	22.56	<0.001
Responsible Green Consumption Behavior (RCB) — CR = 0.883 ; AVE = 0.653				
RCB1	0.774	0.039	19.98	<0.001
RCB2	0.816	0.034	22.91	<0.001
RCB4	0.789	0.037	21.34	<0.001
RCB5	0.842	0.032	24.18	<0.001
Support & Advocacy for Green Finance (SAG) — CR = 0.887 ; AVE = 0.662				
SAG1	0.801	0.036	22.07	<0.001
SAG2	0.835	0.033	24.03	<0.001
SAG3	0.782	0.037	21.02	<0.001
SAG5	0.823	0.034	23.41	<0.001
Ethical Trust & Value Alignment (ETA) — CR = 0.901 ; AVE = 0.605				
ETA1	0.826	0.033	23.87	<0.001
ETA2	0.804	0.035	22.41	<0.001
ETA3	0.781	0.037	21.26	<0.001
ETA4	0.734	0.040	19.48	<0.001
ETA5	0.792	0.036	21.88	<0.001

Source: authors

Composite Reliability (CR) and Average Variance Extracted (AVE) were calculated for each construct. The CR values ranged from 0.883 to 0.901, all exceeding the recommended threshold of 0.70, while the AVE values ranged from 0.605 to 0.662, which are above the minimum acceptable level of 0.50. These results confirm that the constructs exhibit satisfactory levels of internal consistency and convergent validity.

Discriminant validity was assessed using the Fornell–Larcker criterion and the HTMT index. The results indicate that the square roots of the AVE values were greater than the inter-construct correlations, demonstrating that each construct explains more variance in its own observed indicators than in those of other constructs. At the same time, all HTMT values were below the conservative threshold of 0.85, thereby confirming discriminant validity among the four dimensions of CuSR.

Table 6a. Discriminant Validity Based on the Fornell–Larcker Criterion

Construct	PEM	RCB	SAG	ETA
PEM	**0.790**			
RCB	0.521	**0.808**		
SAG	0.458	0.494	**0.814**	
ETA	0.436	0.472	0.449	**0.778**

Source: authors

Table 6b. Heterotrait–Monotrait Ratio (HTMT)

Construct Pair	HTMT
PEM – RCB	0.654
PEM – SAG	0.603
PEM – ETA	0.571
RCB – SAG	0.682
RCB – ETA	0.697
SAG – ETA	0.641

Source: authors

Taken together, the CFA results provide strong empirical evidence for the reliability and measurement validity of the CuSR scale in the context of green financial product consumption. The four-dimensional structure — comprising social–environmental responsibility motivation, responsible green financial consumption behavior, green finance advocacy and diffusion behavior, and ethical trust and value alignment with banks — was validated and retained for use in subsequent structural model analyses.

Nomological / Criterion Validation

To further evaluate the external validity of the CuSR scale, the study conducted tests of nomological validity and criterion validity. Based on the theoretical foundations of socially responsible consumption and pro-environmental behavior, the CuSR scale is expected to exhibit positive and statistically significant relationships with relevant attitudinal and behavioral outcomes in the context of green financial product consumption.

Table 7a. Nomological Network – Pearson Correlation Matrix

Measurement Variable	CuSR	Green Purchase Intention (GPI)	Trust in Responsible Banks (TRB)	Usage of Green Financial Products (UGF)
CuSR	1.000			
GPI	0.624*	1.000		
TRB	0.587*	0.531***	1.000	
UGF	0.463*	0.512***	0.449***	1.000

Source: authors

Nomological validity was assessed by examining the relationships between CuSR and two theoretically related constructs, including the intention to use green financial products and trust in socially responsible banks. The resulting correlation coefficients were positive and statistically significant ($p < 0.001$), with effect sizes ranging from moderate to strong. This indicates that customers with higher levels of social responsibility tend to exhibit stronger intentions to adopt green financial products, while also demonstrating greater trust in banks that display commitments to social responsibility and environmental protection. These empirical findings are consistent with prior research on socially responsible consumption and ethically oriented financial behavior, thereby confirming the theoretical coherence of the CuSR construct within a broader nomological network.

Table 7b. Criterion Validity Testing

Tested Relationship	Standardized β	t-value	p-value	Conclusion
CuSR → Green Purchase Intention (GPI)	0.472	8.613	<0.001	Significant

CuSR → Trust in Responsible Banks (TRB)	0.439	7.984	<0.001	Significant
CuSR → Usage of Green Financial Products (UGF)	0.318	6.127	<0.001	Significant

Source: authors

In addition, criterion validity was assessed by examining the relationship between CuSR and a behavioral indicator, namely the self-reported level of actual usage of green financial services. The results show a positive and statistically significant relationship ($p < 0.001$), implying that customers with higher CuSR scores are more likely to engage in green financial behaviors (e.g., green savings, green credit, and sustainable investment products). This finding indicates that the CuSR scale not only reflects attitudinal orientation but also demonstrates predictive ability for actual behavioral outcomes.

Taken together, these findings provide compelling evidence of nomological validity — through theoretically consistent relationships between constructs — and criterion validity, through the scale's ability to predict relevant behavioral indicators. This strengthens the robustness and practical relevance of the CuSR scale in the context of Vietnamese commercial banking and green financial product consumption.

DISCUSSION & IMPLICATIONS

This study contributes to the growing body of research on socially responsible consumption behavior in the context of green finance by developing and validating a multidimensional scale for the construct of Customer Social Responsibility (CuSR). The findings provide strong empirical evidence for a four-dimensional structure comprising: social–environmental responsibility motivation, responsible green financial consumption behavior, green finance advocacy and diffusion behavior, and ethical trust and value alignment with socially responsible banks. The EFA and CFA results confirm the reliability and measurement validity of the scale, while the tests of nomological and criterion validity demonstrate the theoretical consistency and predictive capability of CuSR.

From a theoretical perspective, this study extends prior research on socially responsible consumption and ethically oriented financial behavior by conceptualizing CuSR as an attitude–behavior responsibility construct that is specific to the financial services domain. Unlike many previous studies that primarily focus on environmental attitudes or green purchasing tendencies in consumer goods markets, this study emphasizes the roles of moral responsibility, social identification, and institutional trust in shaping customers' engagement with green financial products. The successfully validated CuSR scale provides a foundation for future research to explore the mechanisms through which customer social responsibility contributes to the adoption of green finance, the enhancement of customer–bank relationship quality, and the maintenance of long-term engagement with socially responsible financial institutions.

Furthermore, the positive and statistically significant relationships between CuSR, the intention to use green financial products, trust in socially responsible banks, and the actual usage of green financial services highlight the behavioral significance of social responsibility at the customer level. These findings imply that CuSR is not merely a psychological orientation but also an important predictor of financial behaviors associated with sustainable development objectives. This contributes to reinforcing the view that customers should be regarded as proactive agents within the sustainable finance ecosystem rather than passive recipients of financial offerings.

Managerial and Policy Implications

The findings of this study offer several important implications for commercial banks, policymakers, and stakeholders involved in sustainable finance. First, commercial banks should recognize CuSR as a form of strategic customer resource that can be strengthened through transparent CSR communication, credible sustainability reporting, and the development of green financial product portfolios with substantive value. Marketing strategies that emphasize social impact, environmental contribution, and alignment with ethical values are likely to enhance trust and engagement among socially responsible customer segments.

Second, the results suggest that banks should design customer engagement programs that position customers as "co-creators of sustainable value," such as community initiatives on green finance, activities encouraging customer participation in social responsibility programs, or green financial education and responsible investment initiatives. Strengthening customers' social motivations and advocacy behaviors may foster the diffusion of green financial consumption and enhance the social legitimacy of sustainable banking practices

Third, from a policy perspective, financial regulators and policymakers may consider integrating the insights on CuSR into national green finance development strategies, particularly in emerging economies such as Vietnam, where consumer participation plays a crucial role in expanding the sustainable finance ecosystem. Public

communication programs, incentive mechanisms, and public–private partnerships may contribute to fostering socially responsible financial consumption behaviors at the societal level.

This study contributes to advancing academic understanding of customer responsibility in the field of sustainable finance and provides a validated measurement scale that can be applied across different banking and cultural contexts. The CuSR scale not only strengthens the theoretical foundation of research on consumer responsibility but also carries practical significance for the development of green finance and sustainability-oriented banking strategies.

CONCLUSION & LIMITATIONS

This study has successfully developed and validated a multidimensional measurement scale for the construct of Customer Social Responsibility (CuSR) in the context of green financial product consumption in Vietnamese commercial banks. Through a multi-stage research process — including item development, expert review, EFA and CFA, together with tests of convergent, discriminant, nomological, and criterion validity — the CuSR scale has demonstrated reliability, measurement validity, and practical relevance. The four-dimensional structure of CuSR simultaneously reflects social–environmental motivation, responsible consumption behavior, advocacy and diffusion behavior, and ethical trust and value alignment with banks.

The empirical results not only reinforce the theoretical foundation of research on socially responsible consumption behavior but also confirm the role of customers as key actors within the sustainable finance ecosystem. Beyond its academic contribution, the CuSR scale offers clear managerial relevance for banks and policymakers in designing CSR communication strategies, developing green financial products, and encouraging active customer participation in sustainable development initiatives. Overall, the study expands current understanding of social responsibility at the customer level and provides a foundation for future research in green finance and sustainable marketing..

Although this study has achieved encouraging results in developing and validating the CuSR scale, several limitations should be acknowledged. First, the data were collected within a single national and service-sector context (commercial banks in Vietnam); therefore, the generalizability of the findings to other financial contexts or markets may be limited. Future research may extend the investigation to multiple countries, different types of financial institutions, and diverse cultural settings in order to compare similarities and differences in the structure and levels of CuSR.

Second, the study employed a cross-sectional research design, which does not allow for the assessment of dynamic changes in CuSR or causal relationships over time. Future studies may adopt longitudinal or experimental designs to clarify the mechanisms of influence and the developmental trajectory of customer social responsibility throughout interactions with green financial products.

Third, although the scale has been validated in terms of reliability, convergent validity, discriminant validity, and nomological–criterion validity, the study relies primarily on self-reported data from respondents. This may be subject to social desirability bias or response tendencies driven by perceived social expectations. Future studies may incorporate additional forms of data, such as actual behavioral records, transaction data, or objective observational indicators, in order to enhance the robustness of CuSR measurement and its predictive power for related behavioral outcomes.

Finally, the research model focuses on a limited set of outcome variables, namely intention to use, trust, and the actual usage of green financial products. Future research may extend the examination of CuSR's effects to other outcomes such as customer loyalty, long-term engagement, perceptions of social value, or the diffusion of sustainable consumption behavior within the community.

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