The impact of ESG on customer equity and customer loyalty in the banking sector: A case study of selected commercial banks in Hanoi

Abstract

This study investigates the impact of ESG (Environmental, Social and Governance) on customer loyalty through the mediating role of customer attitudes and customer equity (brand equity, relationship quality and perceived value) in the banking industry in Hanoi, Vietnam. Using a quantitative approach, data were collected from 358 valid responses of individual customers from selected commercial banks and analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM). The results confirmed that all the proposed relationships were statistically significant, with brand equity showing the strongest direct impact on customer loyalty ($\beta = 0.549$). Governance (GOV) had the most significant influence on customer attitudes, followed by environmental (ENV) and social (SOC) factors. Attitudes significantly influenced brand equity, perceived value and relationship quality. Perceived value and relationship quality also positively influence customer loyalty. The measurement model demonstrates good reliability and validity, while hypothesis testing supports all proposed paths. These findings highlight the strategic importance of ESG in building long-term customer loyalty and contribute to the growing body of literature on ESG and customer behavior in emerging markets.

Key words: Environmental, Social, and Governance (ESG); Customer loyalty; Customer equity.

1. Introduction

Environmental, Social and Governance (ESG) originated from the concept of Corporate Social Responsibility (CSR) and has increasingly become a core component of modern corporate management strategies (Chow & Ho, 2024; UNPRI, 2006). The adoption of the Sustainable Development Goals (SDGs) in 2015 and the impact of the

COVID-19 pandemic have further emphasized the need for ESG initiatives in corporate operations (Ferrell & Ferrell, 2021). In this context, the banking sector, as an important financial intermediary, is expected to make a significant contribution to the green transition and sustainable development. In Vietnam, ESG principles have been referenced in many policy documents issued by the State Bank of Vietnam, especially related to green credit, financial inclusion and modern banking governance (Vietnam Fair Finance Initiative, 2024). However, the relationship between ESG implementation and customer behavior in the banking industry has not been explored at the empirical level.

Although ESG has become a global trend and is increasingly integrated into the development strategies of Vietnamese commercial banks, empirical research on the impact of ESG on customer equity and customer loyalty in the banking industry is still scarce. Previous studies have mainly focused on financial performance, risk management or environmental and social commitments at the macro level. The relationship between ESG activities and customer behavior in the specific context of the Vietnamese commercial banking industry has not been fully addressed.

The novelty of the study lies in integrating ESG dimensions into quantitative models in the field of marketing and customer behavior, an interdisciplinary approach that has not been widely applied in Vietnam. This study applies a quantitative approach using Structural Equation Modeling (SEM) to examine the relationship between ESG, customer perceived value and customer loyalty, using a sample of selected commercial banks in Hanoi. The primary data will be collected through surveys targeting individual customers using services at several commercial banks in Hanoi in 2024. The paper is structured as follows: (1) Introduction; (2) Literature review and research model; (3) Research methodology; (4) Data analysis and discussion; (5) Conclusions and policy implications.

2. Literature review

2.1. ESG Research

The research Environmental, social, governance (ESG), and financial performance of European banks (Oana-Marina Batae, Voicu D. Dragomir, Liliana FELEAGA, 2020). This paper compares of variables that measure the ESG and financial performance of European banks based on three classifications: the geographical regions of Europe, functional currency, and cluster analysis on GDP and population of European countries, respectively. The comparison of ESG and financial performance data contributes to practice by highlighting which regions of Europe have banks with the highest and lowest ESG values and financial performance, as well as controversies

and audit fees. The study

helps investors, policymakers, regulators, bank managers and auditors to recognize the significant differences within Europe and to adopt appropriate measures to improve the financial performance and sustainability of banks. The results show the ESG and financial performance of banks classified as Developed Europe vs. Emerging Europe; Eurozone vs. Non-Euro countries; Western, CEE, North and South banks; Small GDP – Large Population and Large GDP – Small Population Clusters.

The research titled "The Relationship between Environmental, Social, and Financial Performance in the Banking Sector: A European Study" (Bătae, Dragomir and Feleagă (2021)), analyzes the relationship between environmental, social, and financial performance in the European banking industry during 2015–2019. Using data from 104 banks and applying a regression approach with fixed and random effects, the study finds that the overall ESG score is positively associated with financial performance, especially with ROA and ROE. Among the three ESG pillars, the social and governance aspects show a significant positive effect on financial performance, while the environmental aspect has no significant impact. This result highlights the important role of social responsibility and corporate governance in improving bank performance, and suggests that European banks should pay more attention to S and G factors to promote financial performance in the context of sustainable development.

2.2. ESG research impacts customer equity

With the release of "Impact of CSR Practices on Customers' Attitude Toward Business – An Empirical Study" Ali et al. (2022) analyze the impact of corporate social responsibility (CSR) activities on customer attitudes towards businesses. Based on a survey of 212 participants from departments related to CSR, the authors used quantitative methods and multiple regression analysis to test the research hypotheses. The results showed that CSR activities such as improving customer satisfaction, participating in community activities and communicating CSR via social networks have a positive impact on customer attitudes. In contrast, formal activities such as organizing celebrations with customers do not have a significant impact. Therefore, the study emphasizes that businesses need to invest in practical CSR activities with clear social value to build trust and sustainable relationships with customers.

The study titled "The Impact of Perceived CSR on Corporate Reputation and Purchase Intention" by Bianchi, Bruno, and Sarabia-Sánchez (2019) analyzes how consumers' perceptions of corporate social responsibility (CSR) affect corporate reputation and purchase intention. Based on a survey of 429 consumers and using structural equation modeling, the study found that perceived CSR has a positive impact on both purchase intention (short-term impact) and corporate reputation (long-term impact). In addition, mediating factors such as brand image, satisfaction, and loyalty

play an important role in connecting CSR with consumer behavior. However, CSR does not significantly affect emotional satisfaction. The results of the study emphasize that positively perceived CSR activities can help businesses enhance their reputation and promote purchase behavior, thereby suggesting that businesses need to seriously invest in CSR strategies and effectively communicate with customers.

In the study "Investigating the Impact of ESG on Customer Equity in Retail Banks" by Chow and Ho (2024), this study focused on exploring the impact of ESG (environmental, social and governance) initiatives on customer attitudes, customer equity and purchase intention in the retail banking sector in Hong Kong. Based on survey data of 300 customers and PLS-SEM structural equation modeling, the results showed that only governance initiatives had a positive and significant impact on customer attitudes, which led to an increase in perceived value equity, brand equity and relationship equity. In contrast, environmental and social initiatives did not have a significant impact on customer attitudes. In addition, among the three components of customer value, only value equity and relationship equity had a positive impact on purchase intention, while brand equity was not statistically significant. In particular, the study also confirms the partial mediating role of customer attitudes in the relationship between ESG and customer value. These results imply that banks should prioritize investments in governance initiatives – such as transparency, compliance, and effective governance structures – to increase customer trust and loyalty. At the same time, ESG is not only a regulatory compliance tool but can also become a strategic lever in marketing and customer relationship management. The study contributes to the nascent ESG marketing literature in the financial services sector, while opening up further research directions in other industries and regions.

The study "Investigating the impact of ESG on customer value of retail banks" by Burmann, Jost-Benz, and Riley (2009) proposed an identity-based brand equity model, aiming to clarify the role of intrinsic brand identity in building and maintaining sustainable brand value. Instead of focusing only on the customer perspective (outside-in), this model incorporates the inside-out perspective, emphasizing that brand identity – formed from corporate culture, core values and employee behavior – is the foundation for the brand image in the minds of customers. The study suggests that intrinsic brand strength will influence extrinsic brand strength and thereby form overall brand value. The model also suggests measuring brand value not only through financial indicators but also behavioral assessments, such as employee engagement. In conclusion, the brand identity-based model helps businesses take a more comprehensive approach to brand management, creating differentiation and increasing the engagement of both employees and customers.

Thus, we propose the following hypothesis:

H1a: Environment initiatives are positively related to customer equity H1b: Social initiatives are positively related to customer equity

H1c: Governance initiatives are positively related to customer equity

2.3 ESG research impacts customer loyalty

Oliver, R. L., (1999), Whence consumer loyalty? defined customer loyalty as "a deeply held commitment to rebuy or re-patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts, having the potential to cause switching behavior". Moreover, Oliver proposed a model for the development of customer loyalty which includes four phases, consumers being theorized to become loyal "in a cognitive sense first, then later in an affective sense, still later in a conative manner, and finally in a behavioral manner" (Oliver, 1999, p. 34-35)

Moisescu, O. I. (2017) paper entitled "From ESG to Customer Loyalty: An Empirical Investigation in the Retail Banking Industry of a Developing Country" focuses on analyzing the impact of customer perceptions of CSR on customer loyalty in the retail banking industry of Romania, a developing country. The aim of the study is to clarify the relationship between CSR – specifically how customers perceive the social responsibility of banks – and customer loyalty in the context of the retail banking industry in developing countries, in order to fill the gap in previous studies on CSR in the service industry, especially in Central and Eastern European countries. The author conducted a survey with a sample of 1,449 retail banking customers in Romania, using observed variables grouped into reflective latent variables and analyzed using a multiple regression model to assess the impact of each CSR aspect on customer loyalty. The results showed that customer loyalty is positively and statistically significantly influenced by perceptions of the bank's CSR activities. Among the CSR aspects, the bank's responsibility to customers was identified as the most important factor influencing loyalty, while other aspects such as responsibility to employees, community, environment and government also had positive impacts but at different levels. Notably, the perception of responsibility to shareholders had a slight negative impact on loyalty, which was explained by cultural differences and Romanian customers' negative views of banks' excessive focus on profits and shareholders. In terms of practical implications, the study recommends that banks in developing countries should focus on developing and communicating CSR policies, especially customer-oriented policies, to increase loyalty. CSR communication should be done selectively, focusing on aspects that have a clear positive impact on customers. The

study results can also be applied similarly to

the retail banking industry in other developing countries, especially Central and Eastern European countries that used to have centrally planned economies.

Various studies have shown that: When businesses in general and banks in particular carry out their environmental responsibilities, they will receive more attention from consumers in terms of attitudes (more sympathy), thereby leading to increased service usage and, inevitably, enhanced behavioral loyalty (Bae et al., 2023; Chow, M.Y.C., Ho, S.P.S., 2024). Therefore, the authors posit the following hypothesis:

H2a: Environmental initiatives, as demonstrated through environmental commitment, positively affect customer loyalty

H2b: Social responsibility initiatives, as demonstrated through social commitment, positively affect customer loyalty

H2c: Governance initiatives, as demonstrated through governance commitment, positively affect customer loyalty

Customer attitude explains a customer's global evaluation of a product or service offering. It means that the customer evaluation corresponds to the customer's overall judgment about the product or service, and is not simply limited to an evaluation of a specific transaction (Sahoo and Pillai 2017). To assess the impact of ESG on customer equity and customer loyalty, the study included customer attitude as a mediating variable affecting customer equity.

The conceptual framework and proposed hypotheses of this study can be illustrated in Fig.1

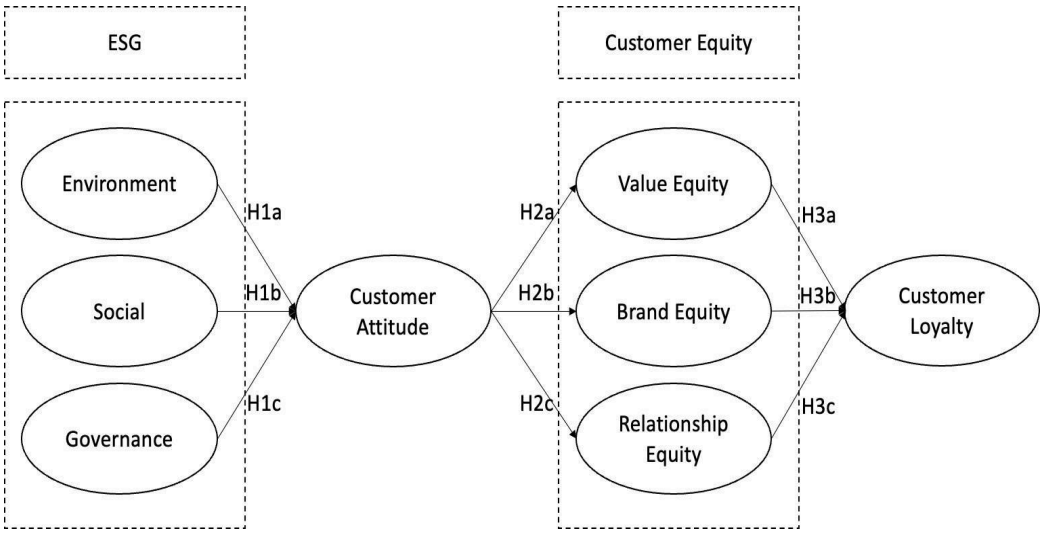

Fig. 1 Conceptual model

Source: Research team's synthesis

3. Research method

3.1 Research process

The research was implemented in two main phases: (1) a preliminary qualitative study and (2) an official quantitative study.

Preliminary qualitative study: Based on the identified research problem, questions, and objectives, along with a review of relevant theoretical foundations, a conceptual framework was developed, including proposed hypotheses and measurement constructs. In-depth interviews were conducted with subject-matter experts to refine and adjust the measurement scales, ensuring clarity and contextual relevance. As a result of this phase, one additional indicator was added to the scale, enhancing its comprehensiveness.

Official quantitative study: The quantitative phase was conducted using a sample of commercial banks located in Hanoi. The primary aim of this stage was to evaluate the appropriateness of the research model and empirically test the proposed hypotheses.

3.2 Measuring the scale

In this study, three core constructs are examined: ESG (environmental responsibility (ENV), social responsibility (SOC), governance practices (GOV), Customer equity (Value Equity - VAL, Brand Equity - BRA, Relationship - REL), and customer loyalty (CL). The ESG construct is measured using three observed variables (OVs), adopted from the study of Chow and Ho (2024). Similarly, Customer equity (VAL, BRA, REL) is evaluated using three OVs, also based on Chow and Ho (2024). Customer loyalty (CL) is measured using four OVs developed by Moisescu (2017). All observed variables are assessed using a 5-point Likert scale, ranging from (1) Strongly disagree to (5) Strongly agree.

Table 1: Observed variables and scales

Construct	Symbol	Measurement items	Source
Environment (ENV)	ENV1	I think my bank communicates with its customers on its environmental initiatives	Chow & Ho (2024)
	ENV2	I think my bank runs internal programs to improve awareness of and capacities for environmental management	Chow & Ho (2024)

	ENV3	I think my bank has environmental management policies, such as reducing greenhouse gas emissions	Chow & Ho (2024)

	ENV4	I think my bank makes efforts to protect the environment and runs related programs	Chow & Ho (2024)
Social (SOC)	SOC1	I think my bank makes efforts to fulfill its social responsibilities by implementing policies for local community development	Chow & Ho (2024)
	SOC2	I think my bank provides funding for social and cultural activities to contribute to the development of society	Chow & Ho (2024)
	SOC3	I think my bank has policies to realize and expand equal employment	Chow & Ho (2024)
	SOC4	I think my bank makes efforts to comply to consumer-related laws	Chow & Ho (2024)
Govenance (GOV)	GOV1	I think my bank runs its business in a way that conforms to legal guidelines and the expectations of the government	Chow & Ho (2024)
	GOV2	I think my bank has a transparent, comprehensive and strict ethical code of conduct to prevent any illegal activities, including bribes and corruption	Chow & Ho (2024)
	GOV3	I think my bank makes efforts to create a healthy governance structure	Chow & Ho (2024)
	GOV4	I think my bank makes efforts to create a healthy capital structure	Chow & Ho (2024

			)
Customer attitude (ATT)	ATT1	I feel positive about my bank	Chow & Ho (2024)
	ATT2	I have good feelings about my bank	Chow & Ho (2024)
	ATT3	I like my bank very much	Chow & Ho (2024)

Perceived value (VAL)	VAL1	The quality of the bank services is far superior to its price	Chow & Ho (2024)
	VAL2	The prices of bank services are fair compared to the other banks	Chow & Ho (2024)
	VAL3	My bank provides convenient services	Chow & Ho (2024)
Brand value (BRA)	BRA1	I can recognize my bank with attractive brand	Chow & Ho (2024)
	BRA2	My bank has a different image from other brands	Chow & Ho (2024)
	BRA3	My bank has a good name and reputation	Chow & Ho (2024)
Relationship value (REL)	REL1	I feel intimately connected with my bank	Chow & Ho (2024)
	REL2	I know my bank well	Chow & Ho (2024)
	REL3	My bank matches my image	Chow & Ho (2024)
Customer Loyalty (CL)	CL1	I intend to continue using this bank's services in the future	Moisescu, O. I. (2017)
	CL2	I will recommend this bank to my friends or family	Moisescu, O. I. (2017)

	CL3	I remain loyal to this bank even when other banks offer similar services	Moisescu, O. I. (2017)
	CL4	I always choose this bank over other banks	Moisescu, O. I. (2017)

Source: Research team's synthesis

3.3 Research sample

The survey was conducted with individual customers at selected commercial banks in Hanoi, as the city serves as a major economic hub with a high concentration of banking institutions and is one of the largest providers of financial and banking services

in Vietnam. The official research sample was selected using a convenience sampling method, and data were collected through an online survey via Google Form. Upon obtaining respondents' consent, the survey link was sent directly to customers of the selected banks.

According to the guidelines of Hair et al. (2006), the minimum sample size for convenience sampling should be determined using the formula: 5 × (number of observed variables – OV). Based on the results of the qualitative phase, the model included 28 observed variables, leading to a minimum required sample size of 140. A total of 500 valid responses were collected, which exceeded this threshold and ensured sufficient statistical power for the quantitative analysis.

4. Research results and discussion

4.1. Description of research sample

The descriptive statistics show the demographic characteristics of 358 individual customers who participated in the survey on banking services. Regarding gender, the majority of participants were female, accounting for 53.07% (190 respondents), while males made up 46.65% (167 respondents) and one case belonged to another category (0.28%). In terms of age group, the largest proportion of respondents fell within the 26– 35 age range (46.93%), followed by those aged 18–25 (24.30%), 36–45 (24.02%), and over 45 years old (4.75%). Concerning educational background, most respondents had at least a bachelor's degree or higher, representing 49.72% (with 39.66% holding a bachelor's degree and 10.06% having postgraduate education). The next largest group had vocational college or associate degrees (37.43%), while 12.85% had only completed secondary or high school education. In terms of monthly income, the sample was relatively evenly distributed across income levels. The largest group earned between 10 million and under 20 million VND per month (28.77%), followed by those earning under 10 million VND/month (27.37%), 20–30 million VND/month (17.04%), 30–40 million
VND/month (11.73%), and over 40 million VND/month (15.08%). Regarding occupation, the sample included various professional groups. The largest proportion consisted of office workers (enterprise employees) (45.53%), followed by students/unemployed individuals (27.37%), specialists/technical staff (15.08%) and other occupational groups collectively making up a smaller share (11.73%).

These demographic characteristics reflect the diversity of the sample and ensure its representativeness for the personal customer segment using banking services in Hanoi particularly among younger, well-educated individuals in the prime working age group.

4.2. Evaluation of measurement model

- *Reliability Assessment (Cronbach's Alpha, Composite Reliability)*

In this study, reliability was assessed using two key indicators: Cronbach's Alpha and Composite Reliability (CR). Cronbach's Alpha values range from 0 to 1, with values above 0.7 generally considered acceptable. The results show that all constructs in the study had high Cronbach's Alpha values: ATT (0.843), BRA (0.829), CL (0.853), ENV (0.867), GOV (0.997), REL (0.838), SOC (0.882), and VAL (0.994), indicating that the
measurement scales were reliable.

In addition to Cronbach's Alpha, Composite Reliability (CR) is also an important indicator that often provides a more accurate measure of reliability in structural models. All constructs achieved CR values above 0.7, with specific results as follows: ATT (0.909), BRA (0.897), CL (0.897), ENV (0.909), GOV (0.998), REL (0.903), SOC
(0.916), and VAL (0.996). These findings confirm that all measurement scales have strong composite reliability.

Table 2. Reliability of the scales

OVs	Cronbach's Alpha	Composite Reliability
ATT	0.843	0.909
BRA	0.829	0.897
CL	0.853	0.897
ENV	0.867	0.909
GOV	0.997	0.998
REL	0.838	0.903
SOC	0.882	0.916
VAL	0.994	0.996

Source: Analysis results of the research team.

Thus, the Cronbach's Alpha and Composite Reliability indicators demonstrate that the measurement scales used in this study are highly reliable, which is crucial for ensuring the accuracy of research results. In particular, the GOV construct (0.997 for Cronbach's Alpha and 0.998 for CR) and VAL construct (0.994 for Cronbach's Alpha and 0.996 for CR) indicate extremely high reliability. In summary, the reliability and convergent validity tests confirm that the measurement model meets the required standards, providing a solid foundation for conducting structural equation modeling (SEM) to test the proposed research hypotheses.

- *Convergent value (AVE, outer loading)*

Table 3. Convergent validity of the scales

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ATT	0.843	0.849	0.909	0.771

BRA	**0.829**	**0.845**	**0.897**	**0.744**
CL	**0.853**	**0.873**	**0.897**	**0.686**
ENV	**0.867**	**0.867**	**0.909**	**0.715**
GOV	**0.997**	**0.997**	**0.998**	**0.991**
REL	**0.838**	**0.841**	**0.903**	**0.757**
SOC	**0.882**	**0.909**	**0.916**	**0.733**
VAL	**0.994**	**0.994**	**0.996**	**0.987**

Source: Analysis results of the research team

In this study, convergent validity was assessed using the Average Variance Extracted (AVE) and factor loadings. According to Fornell & Larcker (1981) and Hair Jr. et al. (2021), an AVE value of 0.50 or higher indicates good convergent validity. The results show that all constructs exceeded this threshold: ATT (0.771), BRA (0.744), ENV (0.715), REL (0.757), SOC (0.733), CL (0.686), GOV (0.991), and VAL (0.987),

indicating that a large proportion of the variance in the observed items is explained by the underlying constructs. Notably, GOV and VAL demonstrated exceptionally high convergence. Although the outer loadings were not presented directly, the high AVE values suggest strong item loadings, typically ≥ 0.70. Therefore, all measurement scales in the model achieved acceptable convergent validity, ensuring reliability for subsequent analyses.

- *Discriminant Validity (Fornell-Larcker Criterion)*

The next criterion for evaluating the reliability of the measurement model is discriminant validity, which reflects the extent to which a construct is distinct from other constructs in the model (Hair Jr. et al., 2021). A commonly used method is the Fornell- Larcker criterion (1981), which requires that the square root of the AVE for each construct be greater than its correlations with other constructs to confirm discriminant validity.

Table 4. Fornell-Larcker Criterion Results Table

	ATT	BRA	CL	ENV	GOV	REL	SOC	VAL
ATT	0.878							
BRA	0.339	0.863						
CL	0.294	0.763	0.828					
ENV	0.281	0.249	0.083	0.845				
GOV	0.294	0.348	0.284	0.222	0.996			

REL	0.264	0.622	0.537	0.168	0.546	0.870		

SOC	0.255	0.247	0.202	0.370	0.225	0.267	0.856	
VAL	0.225	0.653	0.631	0.138	0.228	0.409	0.200	0.994

Source: Analysis results of the research team

The results table from SmartPLS using the Fornell-Larcker criterion shows that the square root of the AVE (the top value in each column) is greater than the correlations between latent variables (the values below the top value in each column). Therefore, discriminant validity is confirmed (Fornell & Larcker, 1981).

- *Assessing the convergent validity*

Convergent validity was evaluated through the outer loadings of observed indicators on their respective latent constructs, in accordance with the guidelines proposed by Hair et al. (2021). Outer loadings of 0.70 or higher are considered acceptable, indicating that the observed variables effectively represent the constructs they are intended to measure. The analysis results demonstrate that all items in the model meet the required loading threshold: Attitude (ATT): ATT1 (0.945), ATT2 (0.946), and ATT3 (0.726) all exceed the 0.70 benchmark, with ATT1 and ATT2 showing particularly strong convergence; Brand (BRA): Loadings range from 0.836 to 0.883, confirming satisfactory convergent validity; Customer Loyalty (CL): CL1 through CL4 range from 0.734 to 0.871, all falling within the acceptable range; Environment (ENV): Indicators load between 0.840 and 0.852, confirming strong construct representation; Government (GOV): Exceptionally high loadings between 0.994 and 0.996 reflect excellent convergent validity; Relationship (REL): REL1 (0.913), REL2 (0.879), and REL3 (0.815) all exceed the recommended threshold; Social (SOC): SOC1 to SOC4 range from 0.800 to 0.909, indicating robust convergence; Perceived Value (VAL): The loadings of VAL1 to VAL3 range from 0.991 to 0.998, demonstrating extremely high levels of convergence.

Table 5. Outer Loadings of observed variables

	ATT	BRA	CL	ENV	GOV	REL	SOC	VAL
ATT1	**0.945**							
ATT2	**0.946**							
ATT3	**0.726**							
BRA1		**0.883**						
BRA2		**0.836**						
BRA3		**0.867**						
CL1			**0.871**					
CL2			**0.833**					

CL3			0.867				
CL4			0.734				
ENV1				0.840			
ENV2				0.845			
ENV3				0.846			
ENV4				0.852			
GOV1					0.996		
GOV2					0.994		
GOV3					0.996		
GOV4					0.995		
REL1						0.913	
REL2						0.879	
REL3						0.815	
SOC1							0.800
SOC2							0.907
SOC3							0.803
SOC4							0.909
VAL1							0.991
VAL2							0.998
VAL3							0.992

Source: Analysis results of the research team

4.3. Assessment of the Structural Model

After evaluating the measurement model based on the criteria of reliability, convergent validity, and discriminant validity, the next step is to assess the model by running bootstrapping.

Table 6. Confidence Intervals

	Original Sample (O)	Sample Mean (M)	5.0%	95.0%
ATT -> BRA	0.339	0.339	0.243	0.430
ATT -> REL	0.264	0.261	0.171	0.351
ATT -> VAL	0.225	0.228	0.134	0.323
BRA -> CL	0.549	0.551	0.464	0.625
ENV -> ATT	0.180	0.183	0.089	0.280
GOV -> ATT	0.223	0.220	0.124	0.310

REL -> CL	0.101	0.101	0.025	0.183
SOC -> ATT	0.138	0.138	0.053	0.221
VAL -> CL	0.231	0.230	0.160	0.305

Source: Analysis results of the research team

All relationships in the model (ATT → BRA, ATT → REL, ATT → VAL, BRA → CL, ENV → ATT, GOV → ATT, REL → CL, SOC → ATT, VAL → CL) have confidence intervals that do not include zero, indicating that they are statistically significant at the 5% level. The relationship BRA → CL (O = 0.549) shows the strongest effect, with a confidence interval of (0.464 – 0.625), highlighting the prominent role of brand in fostering customer loyalty. The relationships ATT → BRA (0.243 – 0.430), ATT → REL (0.171 – 0.351), and ATT → VAL (0.134 – 0.323) also demonstrate substantial influence, reflecting the positive impact of attitude on various outcome variables within the model. The variables ENV, GOV, and SOC significantly influence ATT, with GOV → ATT having a confidence interval of (0.124 – 0.310). The relationship REL → CL shows a weaker effect (0.025 – 0.183) but remains statistically significant. Meanwhile, the impact of VAL → CL (0.231) also has a relatively high confidence interval (0.160 – 0.305), emphasizing the importance of perceived value in shaping customer loyalty.

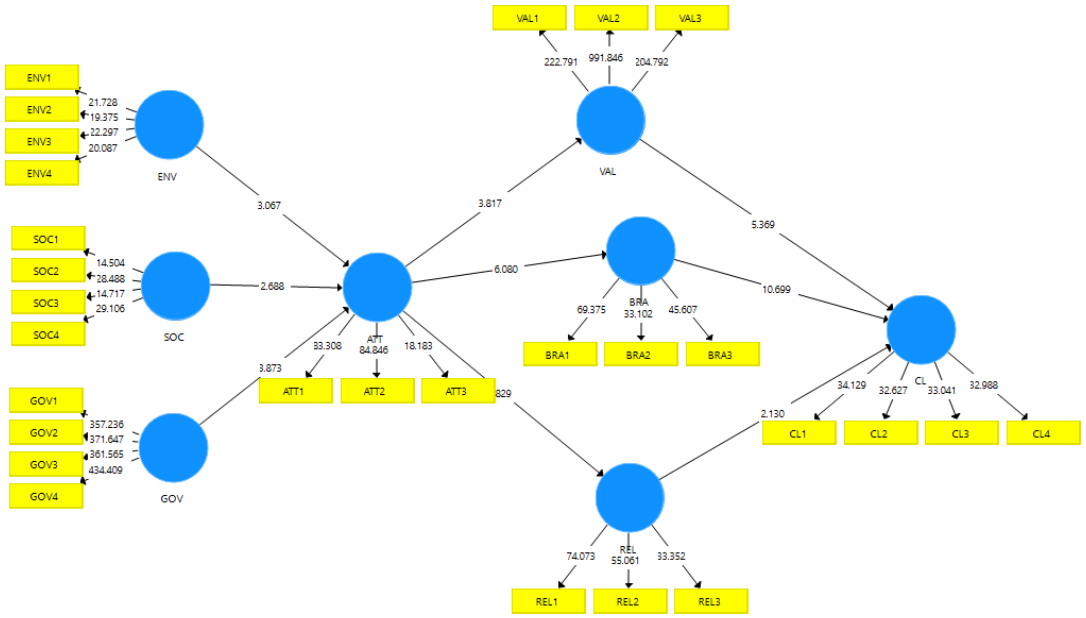

Fig. 2. Results – Bootstrapping

Source: Analysis results of the research team

From the above results, summarize the results of hypothesis testing below:

Table 7. Hypothesis Testing Results

Order	Hypothesis	Path Coefficient	t-values	p-values	Conclusion
H1a	**ENV -> ATT**	0.180	3.067	**0.002**	Accepted
H1b	**SOC -> ATT**	0.138	2.688	**0.007**	Accepted
H1c	**GOV -> ATT**	0.223	3.873	**0.000**	Accepted
H2a	**ATT -> VAL**	0.225	3.817	**0.000**	Accepted
H2b	**ATT -> BRA**	0.339	6.080	**0.000**	Accepted
H2c	**ATT -> REL**	0.264	4.829	**0.000**	Accepted
H3a	**VAL -> CL**	0.231	5.369	**0.000**	Accepted
H3b	**BRA -> CL**	0.549	10.699	**0.000**	Accepted
H3c	**REL -> CL**	0.101	2.130	**0.034**	Accepted

Source: Analysis results of the research team

According to conventional statistical standards (p-value < 0.05), all nine tested hypotheses yielded p-values less than 0.05, indicating that all proposed relationships among the variables are statistically significant. The path coefficients indicate the direction and strength of the relationships. The relationship between BRA and CL (H3b) has the highest path coefficient (0.549), suggesting that BRA exerts the strongest and most positive effect on CL. In contrast, the relationship between REL and CL (H3c) shows the smallest path coefficient (0.101), indicating a positive but relatively weaker effect.

In summary, based on the test results, all hypotheses from H1a to H3c are supported at the 0.05 significance level. This implies that the proposed relationships among ENV, SOC, GOV, ATT, VAL, BRA, REL, and CL are empirically supported by the data.

- *Assessment of Multicollinearity in the Reflective Measurement Model*

Multicollinearity occurs when predictor variables are highly correlated, potentially leading to biased interpretation of regression results. According to Hair et al. (2021), a VIF value greater than 5 indicates significant multicollinearity, while values between 3 and 5 may still pose potential concerns (Mason & Perreault Jr., 1991; Becker et al., 2015). Ideally, VIF values should be around 3 or lower.

Table 8. Table of Inner VIF Values

	ATT	BRA	CL	ENV	GOV	REL	SOC	VAL

ATT		**1.000**				**1.000**		**1.000**
BRA			**2.366**					
CL								
ENV	**1.186**							
GOV	**1.079**							
REL			**1.630**					
SOC	**1.188**							
VAL			**1.742**					

Source: Analysis results of the research team

Based on the SmartPLS output, all inner VIF values are below 5, ranging from 1.000 to 2.366. This indicates that no multicollinearity issue is present in the model.

- *Evaluation of the Measurement Model – R^2 Coefficient*

Table 9. R Square Results

	R Square	R Square Adjusted
ATT	0.151	0.146
BRA	0.115	0.113
CL	0.619	0.617
REL	0.070	0.068
VAL	0.051	0.049

Source: Analysis results of the research team.

The analysis of the R^2 table shows the extent to which the variance of the dependent variables is explained by the independent variables in the research model. The R^2 coefficient indicates the proportion of variance in the dependent variable that is predicted from the independent variables. The adjusted R^2 is a modified version of R^2 that accounts for the number of independent variables in the model and the sample size. For the dependent variable ATT, the R^2 value is 0.151, meaning that approximately 15.1% of its variance is explained by the independent variables. The adjusted R^2 is 0.146. This suggests that the independent variables play a certain role in explaining ATT, but there are likely other external factors not included in the model that also influence ATT.

For BRA, the R^2 value is 0.115, indicating that about 11.5% of the variance in BRA is explained by the independent variables. The adjusted R^2 is 0.113. This relatively

low explanatory power implies that other factors may play a more important role in explaining BRA.

For CL, the R^2 value is 0.619, the highest in the table. This means that around 61.9% of the variance in CL is explained by the independent variables. The adjusted R^2 is 0.617, which is very close to the original R^2, indicating that the model accounts for a substantial part of the variation in CL.

For REL, the R^2 value is 0.070, indicating that only about 7.0% of its variance is explained by the independent variables. The adjusted R^2 is 0.068. This very low explanatory power suggests that the independent variables play a minor role in explaining REL and that other important factors may be influencing it.

For VAL, the R^2 value is 0.051, meaning that only 5.1% of the variance in VAL is explained by the independent variables. The adjusted R^2 is 0.049. Similar to REL, this indicates limited explanatory power and suggests that other factors may be more significant in explaining VAL.

In summary, the research model best explains the variation in Customer Loyalty (CL), with over 60% of its variance accounted for by the independent variables. The model explains a moderate proportion of variance in ATT (about 15%), while the explanatory power for BRA and REL is relatively low (about 11.5% and 7.0%, respectively). The explanatory power for VAL is very low (about 5.1%).

These results indicate that the model predicts CL more effectively than the other dependent variables. For those variables with low R^2 values, it may be necessary to include additional independent variables to enhance the model's explanatory power.

- *Evaluation of the Measurement Model – f^2 Effect Size*

Table 10. f Square result

	ATT	BRA	CL	ENV	GOV	REL	SOC	VAL
ATT		0.130				0.075		0.053
BRA			**0.334**					
CL								
ENV	0.032							
GOV	0.054							
REL			**0.017**					
SOC	**0.019**							
VAL			0.080					

Source: Analysis results of the research team

The results show that the relationship between BRA and CL has a medium effect size ($f^2 = 0.334$). This indicates that BRA has a significant impact on explaining the variance in CL, highlighting its practical importance in shaping customer loyalty.

The relationships ENV → ATT ($f^2 = 0.032$), GOV → ATT ($f^2 = 0.054$), ATT → VAL ($f^2 = 0.053$), ATT → BRA ($f^2 = 0.130$), ATT → REL ($f^2 = 0.075$), and VAL → CL ($f^2 = 0.080$) all show small effect sizes. Although these relationships are statistically significant, the effects of the independent variables on their respective dependent variables are still moderate. Notably, the effect of ATT on BRA is close to the threshold of a medium effect.

In contrast, the SOC → ATT ($f^2 = 0.019$) and REL → CL ($f^2 = 0.017$) relationships show very small effect sizes. This implies that, although statistically significant, the actual effects of SOC on ATT and REL on CL are insignificant. While the relationship between BRA and CL shows a moderate effect, the other relationships show small or very small effects. These findings highlight the importance of considering effect sizes beyond statistical significance to better understand the practical relevance of relationships in a research model.

5. Conclusion and Implications

This study investigated the influence of Environmental, Social, and Governance (ESG) factors on customer equity and customer loyalty in the banking sector, focusing on selected commercial banks in Hanoi. Using PLS-SEM on survey data from 358 individual customers, the study found that all hypothesized paths were statistically significant. Among the key findings, governance (GOV) had the most substantial effect on shaping customer attitudes (ATT), while brand equity (BRA) emerged as the strongest predictor of customer loyalty (CL), followed by perceived value (VAL) and relationship quality (REL). These results highlight the strategic importance of ESG in enhancing customers' perceptions and behaviors, particularly in emerging markets like Vietnam.

Theoretically, the study extends the literature on ESG and relationship marketing by empirically validating the mediating roles of ATT, BRA, VAL, and REL in linking ESG perceptions to customer loyalty. Methodologically, the research demonstrates the applicability of PLS-SEM in modeling complex consumer behavior in financial services. Practically, the findings suggest that commercial banks should treat ESG initiatives not only as a regulatory necessity but also as a competitive advantage. Banks are advised to enhance transparency in governance, invest in socially responsible programs, and adopt environmentally sustainable practices to positively influence customer attitudes and perceptions of value.

In addition, communication strategies should be strengthened to ensure that customers are fully aware of ESG commitments. This can include integrating ESG content into marketing communications, reporting progress in sustainability reports, and offering ESG-related banking products. Customer loyalty programs can also be aligned with ESG values—e.g., by offering incentives for green banking behaviors or supporting community-based savings initiatives. Building personalized, ethical, and digitally enabled customer relationships will further reinforce brand equity and trust.

Nonetheless, this study has several limitations. Its focus on banks in Hanoi restricts generalizability, while the cross-sectional design limits causal inference. Furthermore, only customer perceptions of ESG were measured, and key constructs such as trust, satisfaction, or switching costs were not included. Future research should broaden the geographic scope to include other cities and countries, adopt longitudinal designs to track ESG impacts over time, and combine perceived ESG with objective performance metrics such as ESG ratings or verified sustainability indices. Including additional mediators and moderators, and exploring other customer segments—such as SMEs or institutional clients—would also enrich the understanding of ESG's role in customer relationship management.

In conclusion, ESG has evolved from an ancillary issue to a strategic pillar that significantly shapes customer value and loyalty in the banking sector. By integrating ESG principles into customer engagement strategies, commercial banks in Hanoi can not only enhance their reputational capital and stakeholder trust but also drive long-term, sustainable business performance.

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