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Satisfaction and green finance continuance behaviour at Ho Chi Minh City commercial bank

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Abstract: Customers are displaying heightened awareness and involvement in their banking arrangements, and they are actively assessing and remembering information to make informed decisions regarding the allocation of their financial resources towards environmental protection solutions such as clean energy, sustainable construction, climate change control and social protection. Based on the current theoretical gap of factors influencing customer satisfaction and thereby encouraging continued engagement in green finance initiatives, this study aims to identify the factors influencing customer satisfaction as a means of fostering greater participation in green finance amongst customers of commercial banks in Ho Chi Minh City. Using data from a survey of 479 individuals who are customers at commercial banks in Ho Chi Minh City, this study analyses and evaluates the impact of factors influencing customer satisfaction and the role of customer satisfaction in green finance continuance behaviour. Combining basic analysis techniques in quantitative research such as statistics, evaluation of Cronbach's alpha reliability, exploratory factor analysis (EFA), measurement models and Partial Least Squares structural equation modelling (PLS-SEM) from SPSS and SMART PLS software. the results of this research indicate that: (1) Green Banking initiative (GB), Information Support (IS) and Emotional Support (ES) positively impact Customer Satisfaction (SA); (2) Customer Satisfaction (SA) positively impacts Green Finance Continuance Behaviour (GF).

Keywords: satisfaction; green banking; green finance; behaviour; support

1. Introduction

The financial and economic crises, in combination with climate and environmental changes, have propelled an increasing trend towards sustainability, with modern marketing practices closely tied to green environments over recent decades (Al Amin et al., 2023). In response to this trend, the banking sector has undergone a transformation to meet market demands for sustainability, innovation and contemporary marketing professionalism. Moreover, credit crises have raised questions about the operational efficiency and stability of traditional banks, demanding the full integration of values and ethical principles into banking activities (Lymperopoulos et al., 2012; Kumar et al., 2022). This process is known as green finance (e.g., green banking, socially responsible banking, climate finance, green investment, social banking, or sustainable banking), which also provides a full range of products and services like a traditional bank, such as deposit-taking, lending, trade financing, leasing activities, mutual funds and guarantee services, amongst others, yet with a focus on environmental protection (Zhelyazkova and Kitanov, 2015). Furthermore, the concept of green finance has evolved into a well-established set of rules in the financial services industry (Zhelyazkova and Kitanov, 2015).

Additionally, the World Bank has publicly declared its intention to prioritise environmental protection and respond to the growing demand for green finance (Ullah et al., 2022; Zhang et al., 2019). Consequently, most banks today emphasise the development of green products for enhancing consumer environmental awareness and social responsibility (Afzal et al., 2022; Kumar et al., 2022; Sharma and Choubey, 2021).

Within the Vietnamese context, in recent years, the policies and legal frameworks related to green credit and green banking have been progressively enhanced. The State Bank of Vietnam (SBV) Governor issued Directive No.03/CT-NHNN on 24 March 2015, focusing on promoting green credit and managing environmental and social risks in lending activities. Additionally, Decision No.1552/QD-NHNN, issued on 6 August 2015, introduced the Action Plan for the banking sector to implement the National Strategy on Green Growth until 2020. These directives have served as foundational policies for the development of green banking in Vietnam, ensuring alignment with and support for the nation's green growth objectives. Furthermore, the SBV also introduced the Scheme on Green Banking Development in Vietnam and the SBV's Action Plan to implement Resolution No. 54/NQ-CP, dated 12 April 2022. These documents emphasize green credit and green banking as vital tools to encourage bank lending in sectors focused on low-carbon emission production and consumption (State Bank of Vietnam, 2022).

Besides, customers are demonstrating higher levels of awareness and engagement, identifying, memorising and perceiving to determine the best allocation of their financial resources into environmental initiatives such as clean energy, green construction, climate change mitigation and social protection, leading banks to implement environmental strategies and engage in providing green banking products and services to meet current societal needs, while also significantly investing in enhancing customer satisfaction and promoting customers' green finance continuance behaviour (Khairunnessa et al., 2021; Sharmeen et al., 2018).

Therefore, it is essential to research customers' green finance continuance behaviour. Despite the increasing concerns of academics and practitioners about this evolving topic, there is still a limited research focus on examining the vital part of customer satisfaction in driving green finance continuance behaviour in commercial banks in a Vietnamese context. Through examining the impact of satisfaction in enhancing green finance continuance behaviour at Ho Chi Minh City commercial banks, the research aims to highlight the factors influencing customer satisfaction as the foundation for increasing green finance continuance behaviour amongst customers at commercial banks in Ho Chi Minh City.

2. Literature review

2.1. Customer satisfaction

Customer satisfaction in the banking industry can be described as a psychological state of the customers, reflecting their satisfaction with the bank's products, services and experiences. According to Oliver (1981), customer satisfaction is the summation of psychological states resulting from a cognitive assessment of expectations congruency connected with consumers' preference

emotions about consumption experience. Customer satisfaction plays both a crucial role in maintaining relationships with the bank and also influences purchasing decisions, loyalty and customer retention.

2.2. Green finance

Green finance is a concept in the financial and banking sector that focuses on developing financial products and services with positive impacts on both the environment and society. According to the International Finance Corporation (IFC), green finance is an investment strategy protecting the environment, as well as promoting social equity and economic success. Taken as a whole, banks and society can be protected from future risks such as global economic instability, climate change, social unrest and business scandals (IFC, 2009).

Green finance is a financial approach aimed at promoting sustainable development and environmental protection. According to the European Commission's Green Action Plan Implementation Working Group (GARP), green finance is the use of capital, investment and financial strategy planning to support environmentally beneficial activities while maintaining sustainable financial management principles (European Commission, 2018).

2.3. Green finance continuance behaviour

Customers are increasingly investing significant mental energy and psychological engagement, utilizing their cognitive abilities such as judgment, memory, and perception to decide how to best direct their financial resources toward environmentally conscious initiatives like clean energy, green building, combating climate change, and promoting social inclusion (Al Amin et al., 2023). Green finance continuance behaviour can be defined as the intention and action of continually purchasing green banking products and services or investing in green financial securities. There has been a call raised by previous studies for more research efforts focusing on this ongoing behavior in influencing customers' decisions or actions regarding the purchase of green products (Cheung and To, 2019; Kautish and Sharma, 2018).

2.4. Research hypotheses

Relationship between green banking marketing initiatives and customer satisfaction:

Peattie and Charter (1999) define green marketing as a comprehensive management process responsible for identifying, forecasting and satisfying customer and societal needs, both profitably and sustainably. Meanwhile, Evangelinos et al. (2009) argue that green marketing refers to creating new financial products, such as loans, which are environmentally friendly to finance cleaner technologies and sustainable strategies, such as energy saving programmes and waste management, helping banks to improve continuously and enhance trustworthiness. Thus, green banking marketing initiatives include factors relating to living standards, environmental ethical concerns and marketing programmes related to banking products and services serving environmental pollution reduction (Donaldson and

Dunfee, 2002), and socially responsible banking to fund environmentally conscious projects (Lymperopoulos et al., 2012; Scholtens, 2009). According to Sharma and Choubey (2021), green banking marketing initiatives include developing business loans for green logistics and waste management, renewable energy sources, loans granted for producing organic products, green investment funds and other green products, installing solar energy systems, and investing in producing environmentally friendly products, green mortgages and green bonds. In their study, Al Amin et al. (2023) show that green banking marketing initiatives are a driving force behind customer satisfaction because green banking products and services contribute positively to society, improve the environment and provide both a better and a healthier life. Therefore, customers will be more satisfied when using green banking products and services (Sharma and Choubey, 2021). Notably, the model of Unified Theory of Acceptance and Use of Technology (UTAUT) also helps to explain the relationship between green banking marketing initiatives and customer satisfaction (Herath and Herath, 2022). The model has four independent variables, including effort expectancy, performance expectancy, social influence and facilitating conditions, and it has two dependent variables, intention to use technology and use behaviour (Attuquayefio and Addo, 2014). In the context of green banking marketing initiatives, performance expectancy refers to the degree to which a customer perceives that green banking would be more useful than traditional banking. Besides, convenience and ease of use features, especially connected with the application of green banking marketing initiatives, also correspond to the effort expectancy variable of the UTAUT model. In other words, a customer will be satisfied with a channel, product or service which is more convenient than traditional banking such as the green banking initiative (Agrawal et al., 2009).

Thus, the author proposes the hypothesis, H1: Green banking marketing initiatives positively impact Customer Satisfaction.

Relationship between Information Support and Customer Satisfaction:

Information support from financial organisations is evaluated through an individual's perceptions of being cared for, receiving feedback and receiving support from members of financial organisations (Liang et al., 2011). Information support is essential in helping customers interact with society in the context of using information systems and they are the most common support mechanisms to influence customers' technology usage behaviour (Liang et al., 2011; Lin et al., 2018; Sheikh, 2018). Information support helps individual customers to solve problems, generate new ideas and make good decisions by providing advice, guidance or useful information. Many studies have found that information support influences customer satisfaction in the context of online banking, e-government services and corresponding online brand communities (Al Amin et al., 2021c, 2023; Veeramootoo et al., 2018; Zhu et al., 2016). Thus, information support can influence customer satisfaction by providing information and guidance to generate new ideas and knowledge in determining customers' green financial behaviour (Al Amin et al., 2023). Remarkably, social support theory can provide theoretical grounds to reason the impact of information support and customer satisfaction. According to social support theory, amongst the various types of support such as emotional, instrumental, informational and appraisal support types, two are particularly crucial for promoting

social interaction within the realm of information system use (Liang et al., 2011; Lin et al., 2018; Sheikh, 2018). These supports significantly affect an individual's decision to engage with specific technologies. Informational support, which provides advice, guidance and useful information, is key in aiding individuals to troubleshoot, innovate or make informed decisions. Research has demonstrated that informational support significantly impacts customer satisfaction in various online services such as internet banking, e-government services and online community brands, as well as the continued use of a social networking site (e.g., Al Amin et al. (2021c, 2023), Bao (2016), Santouridis et al. (2009), Veeramootoo et al. (2018), Zhu et al. (2016)). Consequently, it is suggested that informational support can enhance customer satisfaction by supplying relevant information and guidance that aids in the generation of new ideas and knowledge, specifically influencing behaviours related to green finance customer behaviour.

Thus, the author proposes hypothesis H2: Information support positively impacts Customer Satisfaction.

Relationship between Emotional Support and Customer Satisfaction:

Emotional support is defined as the emotional support from the combination of different emotions, feelings and different actual states when choosing alternative products (Kashif et al., 2016). In green finance, emotional support is considered as the ability to perceive basic products to attract positive or negative emotions from customers (Kushwah et al., 2019). Gelbrich et al. (2020) and Zhu et al. (2016) found a direct influence of Emotional Support on customer satisfaction. Specifically in the green finance environment, Al Amin et al. (2023), Sharma and Choubey (2021) also bring significant benefits to customer satisfaction. The application of social support theory also helps to support the argument about the influence of emotional support on customer satisfaction (Liang et al., 2011; Lin et al., 2018; Sheikh, 2018). Therefore, the author proposes hypothesis H3: Emotional Support positively impacts Customer Satisfaction.

Relationship between Customer Satisfaction and Green Finance Continuance Behaviour:

According to Al Amin et al. (2023) and Oliver (1981), customer satisfaction is defined as the summation of psychological states resulting from a cognitive assessment of expectations congruency connected with consumer's preference emotions about consumption experience. A satisfied customer is likely to strengthen his/her relationship with a service provider, while an unsatisfied customer is likely to reassess the current relationship and seek alternative options (Anderson and Srinivasan, 2003; Cao et al., 2013). Extant studies such as Al Amin et al. (2023), Cao et al. (2013), Franque et al. (2021), Singh and Chauhan (2020) provide evidence that satisfaction drives the intention to continue because satisfied customers have a better attitude towards service providers and consider continuing to use their services in the future. Based on the experimental evidence related to the impact of customer satisfaction on green finance continuance behaviour, Al Amin et al. (2023) have shown that satisfaction positively impacts green finance continuance behaviour. Therefore, the author proposes hypothesis H4: Customer Satisfaction positively impacts Green Finance Continuance Behaviour.

The hypotheses presented were developed based on suggestions from previous studies, highlighting certain similarities between this research and the findings of earlier works. However, this study extends beyond previous research by offering a more comprehensive theoretical perspective through the synthesis and analysis of the connections between the hypotheses. This approach creates a broader understanding of the mediating role of customer satisfaction in the relationships between influencing factors and green finance continuance behavior. Additionally, the study's novelty lies in its incorporation of the UTAUT theory to explain the relationship between green banking marketing initiatives and customer satisfaction. The research model is presented in the **Figure 1** as the following:
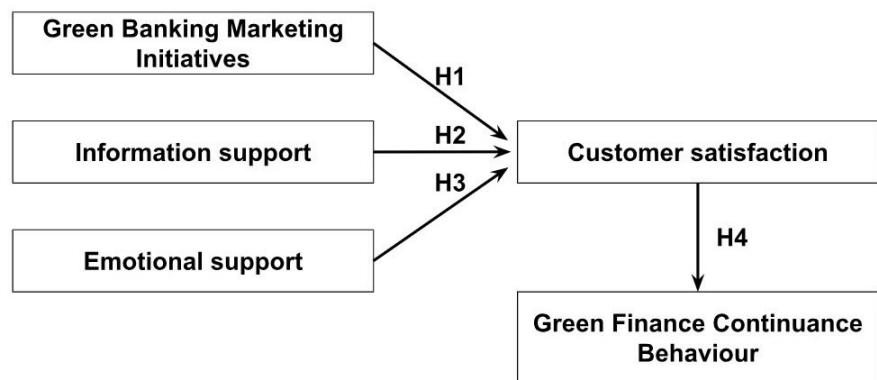
Figure 1. Research model.

3. Research methodology

The research applies the specific methods given in this section.

Qualitative research synthesises theories and findings from previous researchers related to the author's research topic to propose hypotheses and construct a research model. The author then discusses the adjustment and supplementary measurement scales as well as research models to fit the research context better with 10 experts within a focus group. The qualitative research methods allow the authors to explore existing literature, identify research gap, determine research objectives, develop research model and hypotheses. The employment of focus group is also helpful in assessing and improving the understandability, clarity and suitability of the measurement scales (research questionnaires).

Besides, quantitative research is also applied due to its nature and advantages. Quantitative methods typically aim to evaluate the accuracy of a theory by scientifically measuring and analyzing results (Creswell, 2014). One of the key benefits of a quantitative research approach is its ability to target a specific issue. Moreover, findings derived from this approach are considered highly valid and reliable, as statistical methods are used to verify and test these results (Creswell, 2014). The high validity and reliability are also attributed to the large sample sizes, making the results generalizable to other similar studies (Saunders et al., 2012). Quantitative research is conducted by the author through basic analysis methods such as statistics, Cronbach's alpha, EFA, a measurement model and Partial Least Squares Structural Equation Modelling (PLS-SEM) from survey data of 500

customers at commercial banks in Ho Chi Minh City, obtaining 479 valid responses. These analysis techniques are chosen due to their suitability with the research objectives, research scope, research context and authors' resources. These techniques are also widely accepted and applied in the research world, especially across different studies with similar topics. The results of quantitative research reflect specific factors affecting Customer Satisfaction and the role of Customer Satisfaction in increasing Green Finance Continuance Behaviour of customers at commercial banks. Refer to the **Table 1** for the measurement scales of factors in the research model.

Table 1. The scales of factors in the research model.

No.	Factors	Code	Scales	Source
1		GB1	Your bank participates in green development areas (e.g., providing loans for renewable energy sources; green logistics; waste management).	
2	Green Banking Marketing Initiatives	GB2	Your bank focuses on developing green financial products and services.	Lymperopoulos et al. (2012); Sharma and Choubey (2021)
3		GB3	Your bank regularly introduces green financial products and services to you.	
4		GB4	Your bank has a policy of prioritising customers when using green financial products and services.	
5		IS1	Friends and family will provide suggestions when you need assistance concerning your intention to continue with green financial behaviours.	
6	Information Support	IS2	The bank will provide suggestions when you need assistance concerning your intention to continue with green financial behaviours.	Lin et al. (2018); Sheikh (2018); Zhu et al. (2016)
7		IS3	The bank always creates the best conditions for you when you want to use green financial products and services.	
8		ES1	You can see the benefits from green financial products and services.	
9	Emotional Support	ES2	You desire stable financial usage.	Lin et al. (2018); Sheikh (2018); Zhu et al. (2016)
10		ES3	Green finance ensures safety in your transactions.	
11		ES4	Green finance provides comfort for you during transactions.	
12		SA1	You are very pleased to use green finance for financial transactions.	
13		SA2	You are very enthusiastic about using green finance for financial transactions.	
14	Customer Satisfaction	SA3	You are willing to introduce green financial products and services to family, friends and acquaintances.	Anderson and Srinivasan (2003); Alalwan (2020)
15		SA4	You always prioritise green financial products and services when you need financial transactions	
16		SA5	You are excited to demonstrate green financial products and services.	
17		GF1	You intend to use green finance for financial transactions.	
18	Green Finance Continuance Behaviour	GF2	You are interested in green financial products and services for financial transactions.	Alalwan (2020); Faraoni et al. (2019)
19		GF3	You will use green finance for financial transactions in the future.	
20		GF4	You are willing to increase the use of green financial products and services in future financial transactions.	

Source: Authors' own research.

Based on the number of variables in the research model and following the sample size theory for studies applying exploratory factor analysis (EFA), the minimum sample size is determined as 4 or 5 times the number of variables (Hoang and Chu, 2008). Therefore, according to this study, the minimum sample size is 5 × 20 = 100 samples. However, to ensure persuasiveness and increase reliability, the

author conducted a survey of 500 samples and collected 479 valid samples from these. The **Table 2** below illustrates descriptive statistics results.

Table 2. Descriptive statistics results.

Variables	Classification	*n*	%
Gender	Male	256	53.4
	Female	223	46.6
Education Level	Intermediate, College	29	6.1
	University	330	68.9
	Postgraduate	120	25.1
Age	Below 30 years old	94	19.6
	From 30 to 40 years old	187	39.0
	From 41 to 50 years old	133	27.8
	Above 50 years old	65	13.6

Source: Authors' own research.

Out of the 479 individuals surveyed who gave valid replies, there were 223 females, accounting for 46.6% and 256 males, accounting for 53.4%. The most common educational level was university, comprising 68.9%. The most common age group was between 30 and 40 years old, accounting for 39.0%.

4. Research results

The first step in the PLS-SEM structural model is to assess the reliability of Cronbach's alpha, with 20 variables from 5 groups of factors involved in the analysis (including: Green Banking Marketing Initiative (GB), Information Support (IS), Emotional Support (ES), Customer Satisfaction (SA) and Green Finance Continuance Behaviour (GF)), where all variables meet the requirements with the Corrected Item-Total Correlation greater than 0.3. Additionally, all Cronbach's alpha coefficients are above 0.8, ranging from a minimum of 0.839 (Emotional Support factor) to a maximum of 0.932 (Green Banking Marketing Initiative factor). Refer to the **Table 3** for results of Cronbach's alpha.

Table 3. Results of Cronbach's alpha.

Factors	The initial number of variables	Cronbach's alpha	The number of valid variables
Green Banking Marketing Initiative	4	0.932	4
Information Support	3	0.886	3
Emotional Support	4	0.839	4
Customer Satisfaction	5	0.895	5
Green Finance Continuance Behaviour	4	0.879	4

Source: Authors' own research.

Therefore, after assessing the Cronbach's alpha reliability, the study has 20 suitable variables belonging to 5 factors for conducting the Exploratory Factor Analysis (EFA) to explore the measurement structure of the 5 factor groups: Green Banking Marketing Initiative (GB), Information Support (IS), Emotional Support

(ES), Customer Satisfaction (SA) and Green Financial Continuance Behaviour (GF).

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

KMO value		0.938
	Chi-Square	6451.970
Bartlett's test	df	190
	Sig.	0.000

Source: Authors' own research.

The Exploratory Factor Analysis (EFA) with a Kaiser-Meyer-Olkin (KMO) measure of 0.938, greater than 0.5, confirms that the EFA results are entirely appropriate for exploring the structure of the scales (refer to the **Table 4**). Additionally, the Barlett's test has a Chi-Square value of 6451.970 with a Sig. coefficient less than 5%, indicating that the EFA results are statistically significant.

Table 5. Results of factor rotation.

	Component				
	1	2	3	4	5
SA3	0.884				
SA5	0.844				
SA4	0.836				
SA2	0.797				
SA1	0.760				
GB2		0.928			
GB3		0.901			
GB1		0.893			
GB4		0.879			
GF4			0.873		
GF2			0.865		
GF1			0.815		
GF3			0.799		
ES3				0.841	
ES2				0.824	
ES1				0.817	
ES4				0.792	
IS1					0.917
IS2					0.866
IS3					0.807
Eigenvalue	9.184	2.116	1.508	1.189	1.014
% of Variance	45.919	10.581	7.541	5.944	5.071
Cumulative %	45.919	56.500	64.041	69.986	75.056

Source: Authors' own research.

Additionally, the results of the exploratory factor analysis (EFA) indicate that the stopping point is at the 5th row with an eigenvalue of 1.014, which is greater than

1. This confirms that the variables included in the analysis are grouped into 5 factor clusters, and the cumulative variance explained at the 5th row is 75.056%, exceeding 50%. This indicates the extent to which the variation in the data is explained up to 75.056%.

Furthermore, the results of the factor rotation show that the 20 variables included in the analysis are specifically organised into 5 factor clusters: Green Banking Initiative (GB), Information Support (IS), Emotional Support (ES), Customer Satisfaction (SA) and Green Finance Continuance Behaviour (GF), as detailed in **Table 5**.

Next, the author proceeded to utilise SMARTPLS software to implement the structural equation modelling (SEM).

Hair et al. (2016) argue that outer loading coefficients need to be equal to or greater than 0.7 for an observed variable to be considered as being good quality. According to the results in **Table 6**, we observe that all observed variables meet this requirement as their outer loading coefficients are all greater than 0.7. Therefore, all variables belonging to the 5 factor clusters: Green Banking Initiative (GB), Information Support (IS), Emotional Support (ES), Customer Satisfaction (SA) and Green Finance Continuance Behaviour (GF) have met the criteria during the PLS-SEM model.

Table 6. Results of outer loading.

Variables	ES	GB	GF	IS	SA
ES1	0.838				
ES2	0.790				
ES3	0.830				
ES4	0.825				
GB1		0.868			
GB2		0.925			
GB3		0.928			
GB4		0.924			
GF1			0.871		
GF2			0.872		
GF3			0.845		
GF4			0.839		
IS1				0.894	
IS2				0.908	
IS3				0.906	
SA1					0.849
SA2					0.849
SA3					0.834
SA4					0.831
SA5					0.833

Source: Authors' own research.

Based on the results in **Table 7**, the Cronbach's alpha and Composite Reliability

values of the factors are all above 0.8, and the AVE values are above 0.6. This indicates that the factors ensure reliability and convergence for inclusion in the PLS-SEM structural model analysis.

Table 7. Results of reliability and convergence.

Factors	Cronbach's alpha	Rho A	Composite reliability	Average Variance Extracted (AVE)
ES	0.839	0.842	0.892	0.674
GB	0.932	0.937	0.952	0.831
GF	0.879	0.880	0.917	0.734
IS	0.886	0.887	0.929	0.814
SA	0.895	0.896	0.922	0.704

Source: Authors' own research.

Furthermore, the discriminant validity values demonstrate the distinctiveness of a structure when compared to other structures within the model. The traditional approach to assessing discriminant validity is to use the square root of AVE as suggested by Fornell and Larcker (1981), whereby the square root of AVE should be greater than the correlation coefficient between the latent variables.

Based on **Table 8**, it is evident that the correlation coefficients between the factors are all smaller than the square root of the AVE values. This indicates that the factors ensure discriminant validity when included in the PLS-SEM structural model analysis.

Table 8. Results of discriminant.

Factors	ES	GB	GF	IS	SA
ES	0.821				
GB	0.427	0.912			
GF	0.302	0.553	0.857		
IS	0.397	0.611	0.602	0.902	
SA	0.368	0.556	0.626	0.596	0.839

Source: Authors' own research.

Table 9. Results of PLS-SEM model.

|	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	VIF
ES → SA	0.096	0.098	0.042	2.281	0.023	1.269
GB→ SA	0.278	0.280	0.049	5.686	0.000	1.706
IS → SA	0.388	0.386	0.049	8.006	0.000	1.655
SA → GF	0.626	0.626	0.037	16.854	0.000	1.000

Source: Authors' own research.

The results of the PLS-SEM model indicate that the relationships between the factors all show Sig. (*P* values) smaller than 5%; thus, the relationships between the factors are statistically significant. Additionally, all regression coefficients are greater than 0, indicating positive relationships (i.e., positive effects) between the factors.

According to the PLS-SEM model results, the factor Green Banking Initiative

(GB), Information Support (IS) and Emotional Support (ES) positively influence Customer Satisfaction (SA) with regression coefficients of 0.278, 0.388 and 0.096 respectively. This implies that when the factors Green Banking Initiative (GB), Information Support (IS) and Emotional Support (ES) each improve/increase by 1 unit, Customer Satisfaction (SA) increases by 0.278, 0.388 and 0.096 units respectively, while the other factors remain constant.

Moreover, the factor Customer Satisfaction (SA) positively influences Green Finance Continuance Behaviour (GF) with a regression coefficient of 0.626. This means that when Customer Satisfaction (SA) improves/increases by 1 unit, Green Finance Continuance Behaviour (GF) increases by 0.626 units, while the other factors remain constant.

Furthermore, according to Hair et al. (2019), VIF < 3 indicates that there is no multicollinearity issue in the PLS-SEM model. From the obtained results, we observe that the VIF coefficients of the factors in **Table 9** are all smaller than 3; thus, it is confirmed that the model does not have a multicollinearity issue.
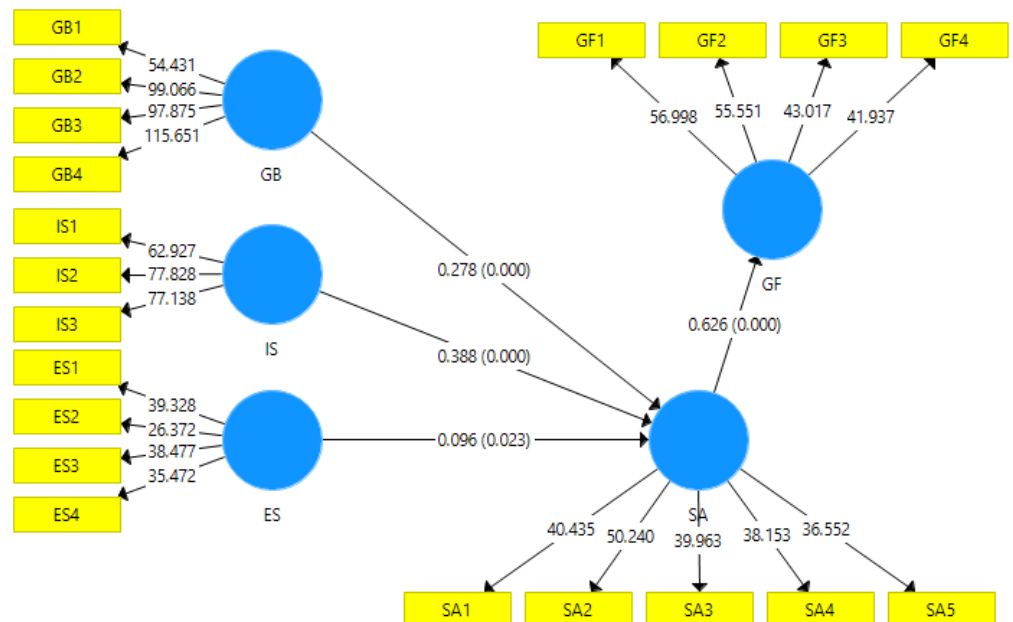
Figure 2. Results of the PLS-SEM model.
Source: Authors' own research.

It can be seen that, following the PLS-SEM model, as shown in the **Figure 2**, the study has demonstrated the factors influencing Customer Satisfaction and the role of Customer Satisfaction in increasing the Green Finance Continuance Behaviour of customers at retail banks, specifically: (1) Green Banking Initiative (GB), Information Support (IS) and Emotional Support (ES) positively impact Customer Satisfaction (SA); (2) Customer Satisfaction (SA) positively influences Green Finance Continuance Behaviour (GF).

The research findings are in line with previous studies which also found that Customer Satisfaction is positively impacted by the Green Banking Initiative (Al Amin et al., 2023; Sharma and Choubey, 2021), Information Support (Al Amin et al., 2021c, 2023; Veeramootoo et al., 2018; Zhu et al., 2016) and Emotional Support

(Gelbrich et al., 2020; Zhu et al., 2016) while Customer Satisfaction positively impacts Green Finance Continuance Behaviour (Gelbrich et al., 2020; Zhu et al., 2016). Despite the similarities between the current research findings and previous research results, this study still has some theoretical contributions. The contributions can be considered in terms of the systematic literature review, the proposal of a research model and validation of the model in the context of the Vietnamese banking sector within Ho Chi Minh, in which there is limited academic attention to the role of customer satisfaction in driving green finance continuance behaviour. This study also applied two relevant theories, including the UTAUT model and social support theory as the theoretical grounds to propose the research hypotheses. Such theory adoption can be seen as a contribution to knowledge and can be used as a reference for future related research.

5. Conclusion and managerial implications

5.1. Conclusion

This study focuses on highlighting the role of customer satisfaction in increasing Green Finance Continuance Behaviour. Therefore, based on this research, the author has demonstrated the foundational theories which are related to customer satisfaction in the banking and green finance sectors.

Based on the research findings of previous scholars, the author synthesised measurement scales and proposed a research model along with conducting qualitative research to refine the scales and model to be more appropriate for the research context.

The main results of the study demonstrate the factors influencing Customer Satisfaction and the role of Customer Satisfaction in increasing Green Finance Continuance Behaviour of customers at commercial banks, specifically: (1) Green Banking Initiative (GB), Information Support (IS) and Emotional Support (ES) positively impact Customer Satisfaction (SA); (2) Customer Satisfaction (SA) positively influences Green Finance Continuance Behaviour (GF).

5.2. Managerial implications

Based on the results of the research model, the author proposes managerial implications to enhance Green Finance Continuance Behaviour. Overall, commercial banks should design and execute effective green marketing strategies to boost customer engagement and satisfaction, which can, in turn, drive the broader adoption of green finance practices. This can be accomplished through educational and awareness initiatives that highlight the advantages of green finance, instill a sense of urgency and importance in adopting such practices, and create opportunities for customer participation. Furthermore, banks can partner with local organizations and communities to promote environmental sustainability and reinforce their green finance initiatives, enhancing their reputation as environmentally responsible entities. Lastly, by offering green financial products and services that cater to customer needs, such as eco-friendly loans, green mortgages, and sustainable investment options, banks can further encourage customers to embrace and utilize green finance practices.

More specific recommendations are provided as follows:

Green Banking Initiative (GB):

The bank needs to focus on developing green financial products and services as an effective way for promoting sustainable development. By prioritising investment in projects and activities that have positive impacts on the environment and society, they play a crucial role in building a sustainable and harmonious future.

The bank should regularly introduce green financial products and services to customers as an important step for encouraging sustainable development. In doing so, they support customers in making conscientious investments as well as contributing to environmental and social protection.

Additionally, the bank should implement priority policies for customers using green financial products and services as a positive measure for promoting sustainable lifestyles. In this way, the bank encourages investment in—and the use of—financial products that bring long-term economic, social and environmental benefits.

Information Support (IS):

Bank staff play a crucial role in guiding and assisting customers regarding green finance. When customers need assistance or intend to continue investing in green financial products and services, staff will provide appropriate suggestions, detailed information, and they will answer any queries. This helps customers to feel that there is clear guidance and to become confident in the process of using and investing in green financial products.

The bank commits to providing the best conditions for customers when they want to use green financial products and services. This includes offering special packages, attractive interest rates and flexible policies to encourage investment in sustainable projects. Additionally, the bank also provides expert advice and diverse support in helping customers to understand the benefits and risks associated with green finance better.

Emotional Support (ES):

The bank plays a crucial role in helping customers to recognise and understand the benefits of using green financial products and services. By providing detailed information and expert advice, the bank helps customers realise the economic, social and environmental benefits they can achieve through investing in sustainable projects and activities. This promotes awareness and positive actions towards green finance from customers.

Green finance brings environmental benefits and also provides transaction safety for customers. Banks should focus on products and services that have positive impacts on the environment and society, thereby building trust in their usage. Moreover, stringent standards and risk control processes of green finance protect assets and enhance stability in financial transactions.

Banks should be transparent in their transaction processes, and high ethical standards also play a crucial role in creating a safe and transparent trading environment for customers.

Despite efforts to improve the research to the best of our abilities, there are certain limitations due to constraints in time and knowledge. The sample size is relatively small, and the scope of the study is limited to commercial banks within Ho Chi Minh City. Therefore, future research should increase the sample size and

expand the scope of the study to include multiple provinces and cities, as well as more commercial banks in various provinces and cities, to enhance the applicability of the research findings.

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References

Afzal, A., Rasoulinezhad, E., & Malik, Z. (2022). Green finance and sustainable development in Europe. Economic Research-Ekonomska Istrazivanja, 35(1), 5150–5163. https://doi.org/10.1080/1331677X.2021.2024081

Agarwal, R., Rastogi, S., & Mehrotra, A. (2009). Customers' perspectives regarding e-banking in an emerging economy. Journal of Retailing and Consumer Services, 16(5), 340–351. https://doi.org/10.1016/j.jretconser.2009.03.002

Al Amin, M., Abdul Ahad Mia, M., Bala, T., et al. (2023). Green finance continuance behavior: the role of satisfaction, social supports, environmental consciousness, green bank marketing initiatives and psychological reactance. Management of Environmental Quality, 34(5), 1269–1294. https://doi.org/10.1108/MEQ-09-2022-0257

Al Amin, M., Arefin, M. S., Alam, M. S., et al. (2022). Understanding the predictors of rural customers' continuance intention towards mobile banking services applications during the COVID-19 pandemic. Journal of Global Marketing, 35(4), 324–347. https://doi.org/10.1080/08911762.2021.2018750

Al Amin, M., Arefin, M. S., Sultana, N., et al. (2020). Evaluating the customers' dining attitudes, e-satisfaction and continuance intention towards mobile food ordering apps (MFOAs): Evidence from Bangladesh. European Journal of Management and Business Economics, 30(2), 211–229. https://doi.org/10.1108/EJMBE-04-2020-0066

Al Amin, M., Arefin, M. S., Rasul, T. F., & Alam, M.S. (2021c). Understanding the determinants of mobile banking services continuance intention in rural Bangladesh during the COVID-19 pandemic. Journal of Global Marketing. https://doi.org/10.1080/08911762.2021.2018750

Al Amin, M., Muzareba, A. M., Chowdhury, I. U. (2023). Understanding e-satisfaction, continuance intention, and e-loyalty toward mobile payment application during COVID-19: an investigation using the electronic technology continuance model. Journal of Financial Services Marketing, 1–23. https://doi.org/10.1057/s41264-022-00197-2

Alalwan, A. A. (2020). Mobile food ordering apps: an empirical study of the factors affecting customer e-satisfaction and continued intention to reuse. International Journal of Information Management, 50, 28–44. https://doi.org/10.1016/J.IJINFOMGT.2019.04.008

Anderson, R. E., & Srinivasan, S.S. (2003). E-satisfaction and e-loyalty: a contingency framework. Psychology and Marketing, 20(2), 123–138. https://doi.org/10.1002/mar.10063

Attuquayefio, S., & Addo, H. (2014). Review of studies with UTAUT as conceptual framework. European Scientific Journal, 10(8), 620–629.

Bao, Z. (2016). Exploring continuance intention of social networking sites: an empirical study integrating social support and network externalities. Aslib Journal of Information Management, 68(6), 736–755. https://doi.org/10.1108/AJIM-05-2016-0064

Cao, H., Jiang, J., Oh, L., et al. (2013). A Maslow's hierarchy of needs analysis of social networking services continuance. Journal of Service Management, 24(2), 170–190. https://doi.org/10.1108/09564231311323953

Cheung, M. F. Y., & To, W. M. (2019). An extended model of value-attitude-behavior to explain Chinese consumers' green purchase behavior. Journal of Retailing and Consumer Services, 50, 145–153. https://doi.org/10.1016/j.jretconser.2019.04.006

Creswell, J. W. (2014). A Concise Introduction to Mixed Methods Research. SAGE Publications, Thousand Oaks, California.

Donaldson, T., & Dunfee, T. W. (2002). Ties that bind in business ethics: social contracts and why they matter. Journal of Banking and Finance, 26(9), 1853–1865. https://doi.org/10.1016/s0378-4266(02)00195-4

European Commission. (2018). Communication from the commission to the European parliament, the European council, the European economic and social committee, the committee of the regions and the European investment bank. Available online: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0773 (accessed on 2 June 2024).

Evangelinos, K. I., Skouloudis, A., Nikolaou, I. E., & Filho, W. L. (2009) An Analysis of Corporate Social Responsibility (CSR) and Sustainability Reporting Assessment in the Greek Banking Sector. In: Idowu, S., Leal Filho, W. (editors). Professionals' Perspectives of Corporate Social Responsibility. Springer: Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-02630-0_9

Faraoni, D., Meier, J., New, H. V., et al. (2019). Patient blood management for neonates and children undergoing cardiac surgery: 2019 NATA guidelines. Journal of Cardiothoracic and Vascular Anesthesia, 33(12), 3249–3263. https://doi.org/10.1053/j.jvca.2019.03.036

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of marketing research, 18(1), 39–50.

Franque, F. B., Oliveira, T., Tam, C., & Santini, F. D. O. (2021). A meta-analysis of the quantitative studies in continuance intention to use an information system. Internet Research, 31(1), 123–158. https://doi.org/10.1108/INTR-03-2019-0103

Gelbrich, K., Hagel, J., & Orsingher, C. (2020). Emotional support from a digital assistant in technology-mediated services: effects on customer satisfaction and behavioral persistence. International Journal of Research in Marketing, 27(14). https://doi.org/10.1016/j.ijresmar.2020.06.004

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Thousand Oaks, CA: Sage Publications.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to Use and How to Report the Results of PLS-SEM. European Business Review, 31, 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Herath, H., & Herath, H. (2022). Impact of green banking initiatives on customer satisfaction. IOSR Journal of Business and Management, 24(7), 1–19. https://doi.org/10.9790/487X-2407030119

Hoang, T., & Chu, N. M. N. (2008). Textbook of Data Analysis with SPSS Episodes 1 & 2. Hong Duc Publishing: HCM City.

IFC. (2009). Financing a sustainable future. Available online: https://www.ifc.org/wps/wcm/connect/011806ad-c8b6-4d32-9459-3f100fb162a3/sustFinance.pdf?MOD5AJPERES&CVID5kccKMIr (accessed on 2 June 2024).

Kashif, M., Zarkada, A., & Ramayah, T. (2016). The impact of attitude, subjective norms, and perceived behavioural control on managers' intentions to behave ethically. Total Quality Management and Business Excellence, 29(5/6), 481–501. https://doi.org/10.1080/14783363.2016.1209970

Kautish, P., & Sharma, R. (2018). Study on relationships among terminal and instrumental values, environmental consciousness and behavioral intentions for green products. Journal of Indian Business Research, 13(1), 1–29. https://doi.org/ 10.1108/jibr-01-2018-0013.

Khairunnessa, F., Vazquez-Brust, D. A., & Yakovleva, N. (2021). A review of the recent developments of green banking in Bangladesh. Sustainability, 13(4), 1904. https://doi.org/10.3390/su13041904

Kumar, V., Thrikawala, S., & Acharya, S. (2022). Financial inclusion and bank profitability: evidence from a developed market. Global Finance Journal, 53(1), 100609. https://doi.org/10.1016/j.gfj.2021.100609

Kushwah, S., Dhir, A., & Sagar, M. (2019). Ethical consumption intentions and choice behavior towards organic food. Moderation role of buying and environmental concerns. Journal of Cleaner Production, 236, 117519. https://doi.org/10.1016/j.jclepro.2019.06.350

Liang, T. P., Ho, Y. T., Li, Y. W., & Turban, E. (2011). What drives social commerce: the role of social support and relationship quality. International Journal of Electronic Commerce, 16(2), 69–90. https://doi.org/10.2307/23106394

Lin, J., Li, L., Yan, Y., & Turel, O. (2018). Understanding Chinese consumer engagement in social commerce: The roles of social support and swift guanxi. Internet Research, 28(1), 2–22. https://doi.org/10.1108/IntR-11-2016-0349

Lymperopoulos, C., Chaniotakis, I.E., & Soureli, M. (2012). A model of Green Bank Marketing. Journal of Financial Services Marketing, 17(2), 177–186. https://doi.org/10.1057/fsm.2012.10

Oliver, R. L. (1981). Measurement and Evaluation of Satisfaction Processes in Retail Settings. Journal of Retailing, 57(3), 25–48. http://psycnet.apa.org/psycinfo/1984-10995-001

Peattie, K., & Charter, M. (1999). Green marketing. In: Baker, M. (editor). The Marketing Book, 4th ed. Butterworth Heinemann:

Oxford.

Santouridis, I., Trivellas, P., & Reklitis, P. (2009). Internet service quality and customer satisfaction: Examining internet banking in Greece. Total Quality Management, 20(2), 223–239. https://doi.org/10.1080/14783360802623084

Saunders, M. N., & Lewis, P. (2012). Doing Research in Business and Management: An Essential Guide to Planning your Project. Pearson Publisher, London.

Scholtens, B. (2009). Corporate social responsibility in the international banking industry. Journal of Business Ethics, 86(2), 159–175. https://doi.org/ 10.1007/s10551-008-9841-x

Sharma, M., & Choubey, A. (2021). Green banking initiatives: a qualitative study on Indian banking sector. Environment, Development and Sustainability, 24(1). https://doi.org/10.1007/s10668-021-01426-9

Sharmeen, K., Hasan, R., & Miah, M. D. (2018). Underpinning the benefits of green banking: a comparative study between Islamic and conventional banks in Bangladesh. Thunderbird International Business Review, 61(5), 735–744. https://doi.org/10.1002/tie.22031

Sheikh, M. A. (2018). Childhood disadvantage, education, and psychological distress in adulthood: A three-wave population-based study. Journal of Affective Disorders, 229, 206–212. https://doi.org/10.1016/j.jad.2017.12.051

Singh, R. P., & Chauhan, A. (2020). Impact of lockdown on air quality in India during COVID-19 pandemic. Air Quality, Atmosphere and Health, 13, 921–928. https://doi.org/10.1007/s11869-020-00863-1

State Bank of Vietnam. (2022). Green credit, green banking towards sustainable development in Vietnam. State Bank of Vietnam. Available online: https://sbv.gov.vn/webcenter/portal/en/home/sbv/news/Latestnews (accessed on 2 June 2024).

Ullah, H., Wang, Z., & Mohsin, M. (2022). Multidimensional perspective of green financial innovation between green intellectual capital on sustainable business: the case of Pakistan. Environmental Science and Pollution Research, 29(13), 5552–5568. https://doi.org/10.1007/s11356-021-15919-7

Veeramootoo, N., Nunkoo, R., & Dwivedi, Y. K. (2018). What determines success of an e-government service? Validation of an integrative model of e-filing continuance usage. Government Information Quarterly, 35(2), 161–174. https://doi.org/10.1016/j.giq.2018.03.004

Zhang, D., Zhang, Z., & Managi, S. (2019). A bibliometric analysis on green finance: current status, development, and future directions. Finance Research Letters, 29, 425–430. https://doi.org/10.1016/j.frl.2019.02.003.

Zhelyazkova, V., & Kitanov, Y. (2015). Green banking—definition, scope, and proposed business model. Ecology and Safety, 9, 309–315.

Zhu, D. H., Sun, H., & Chang, Y. P. (2016). Effect of social support on customer satisfaction and citizenship behavior in online brand communities: The moderating role of support source. Journal of Retailing and Consumer Services, 31, 287–293. https://doi.org/10.1016/j.jretconser.2016.04.013