

Factors affecting the development of green banks at commercial banks in Ho Chi Minh City

Nguyen Van Tuan¹

^a Ho Chi Minh City University of Industry and Trade, Faculty of Finance – Accounting
140 Le Trong Tan St., Tay Thanh Ward, Tan Phu Dist., Ho Chi Minh City, Vietnam

© 2024 Nguyen Van Tuan. This is an open-access article distributed under the Creative Commons Attribution-NonCommercial-NoDerivs license (<http://creativecommons.org/licenses/bync-nd/3.0/>)

DOI 10.2478/WSBJBF-2024-0021

Abstract

The banking sector plays a special intermediary role in providing financial support to various sectors of the economy. Therefore, by incorporating green standards into its lending decisions, the commercial banking system (CB) will promote economic development and help build a greener and cleaner world. In Vietnam, research on Green Banking is limited compared to many international investigations. Most of these studies focus on reports and presentations that review experiences from other countries. Therefore, there are still many gaps in theoretical and practical research on green banking in Vietnam, making this an area ripe for further quantitative exploration. Consequently, it is necessary to research both the theoretical and practical aspects of “green banking” and establish quantitative models to assess the impact on the development of green banking in Vietnam. The objective of this study is to find out the factors that can promote the development of green banking at commercial banks in Ho Chi Minh City in the coming time. By using EFA and regression model, the results show 07 factors, including: (1) Potential benefits; (2) Concern for the environment; (3) Pressure from stakeholders; (4) Green product development; (5) Banking technology; (6) Bank brand; (7) Banking policy have the main influence on the development of green banking at commercial banks in Ho Chi Minh City. From the research results, the author makes some recommendations to improve the development of green banking activities of commercial banks in Ho Chi Minh City.

Keywords: factors, green bank development, commercial banking, Ho Chi Minh City

1 Introduction

A green environment is becoming the most important goal when everywhere in the world is calling for environmental protection towards sustainable development. Countries that are pursuing a green revolution, according to which the development of economic sectors is encouraged only when there are no negative environmental consequences. Greening the financial institution's system plays a very important role in that process because this is the main funding source for investment and development projects in all economic sectors. In the period of international economic integration, the Government of Vietnam is trying to develop and implement different strategies to find the best economic growth and environmental protection solutions. On August 7, 2018, the State Bank of Vietnam (SBV) officially approved the Green Bank Development Project in Vietnam, covering objectives and solutions in state management activities of the SBV and business activities of credit institutions (credit institutions) to enhance awareness and responsibility of the banking system for environmental protection, combating climate change; contributing to gradually greening banking activities, actively promoting green growth and sustainable development. Many studies have confirmed that green banks are the inevitable development of

¹ Corresponding author. Tel.: +84903738777; E-mail address: diepbh@huit.edu.vn

banks in the future, when environmental awareness, civil society, climate change ... and the growing population put pressure on banks to implement greening strategies (Syed Samar Hasnain et al., 2018). However, banks' initiative in general and Vietnamese commercial banks in particular towards "greening" is not high; many banks only take countermeasures to avoid negative consequences instead of sacrificing for sustainable and long-term development strategies. Thus, to effectively implement the greening strategy, the question is: What factors affect the development of green banks of Vietnamese commercial banks today? Understanding these factors will be the basis for practical solutions to improve the proactiveness of the banking system and bring a green financial sector as a premise for sustainable economic development.

2 Theory and Literature Review

2.1 Theoretical review

Green bank concept: Today, stemming from society's increasing interest in environmental issues, all organizations are facing the process of "greening". Playing an important role in the socio-economic development of a country, commercial banks initially implement green banking activities to protect the environment and reduce carbon emissions. There are 2 approaches to green banking:

First, the green bank focuses on the green transformation of the bank's internal operations. This means that banks adopt appropriate measures to leverage renewable energy, automation, and other measures to minimize carbon emissions from banking activities;

Secondly, green banks demonstrate the application of environmental standards to the credit sector by measuring the environmental risks of each project before making lending decisions, and at the same time, have special support policies for "green" projects (Deepa and Karpagam, 2018).

Stemming from incorporating green standards into the banking sector, the Indian Bankers Association (IBA, 2014) states that "green banking is like a normal bank but considers all social and environmental and ecological factors with the aim of environmental protection and conservation of natural resources". The Institute of Banking and Science Research and Development (IDRBT), established by the Reserve Bank of India (RBI, 2013), provides a broader definition of green banking, whereby: "Green banking is an umbrella term for the activities and principles that make banks economically sustainable, environment and social aspects. The Green Bank aims to use technological advances and state-of-the-art facilities to deliver the highest possible efficiency, with zero or minimal environmental impact." In this study, a green bank is understood as any bank's activities towards sustainable development through reducing carbon emissions within the bank and financing projects that meet green standards.

2.2 Literature review

Recently, we often hear terms such as sustainable development, green economy, and green consumption ... including "green banks". According to the World Commission on Environment and Development (WCED), "Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet the needs" (Smith, Rees, and Gareth 1998). In particular, green banks are considered one of the tools to achieve sustainable development goals. Therefore, environmental groups worldwide always try to motivate the financial community to implement green banking policies seriously.

Nigamananda Biswas's (2011) study on sustainable green banking approaches concludes that, In recent years, the payments market in India has undergone a significant transformation due to the development of technology and the growing interest in digital payments. The paper is part of a relevant and timely research trend related to the prevailing phenomenon of digitalization and can provide valuable new information and background material for further research. Although green banking is not yet the main reason for customers' choice of financial institutions, increasing customer demand and environmental awareness make some financial institutions "greener".

According to a study by Heim and Zenklusen (2005) on strategic choices for a financial institution when implementing sustainable development goals, the authors stated that in addition to customer demand and banks' awareness of the environment, cost savings are an important factor determining the development of green banks row. Similarly, Jeucken (2001) also argues that green banking will reduce risk, help manage the environment effectively, and increase operating profitability. On the other hand, Hartmann's team, Ibáñez, and Sainz (2005)

sought a link between green banking and green brands by examining the impact of green brands on customers' perceptions of brands. The results show that a green positioning strategy if implemented well, leads to better brand awareness for a bank. It can be seen that the above studies have made a judgment on the factors affecting the bank in its decision to implement its "greening" strategy, including Pressure from environmental protection groups, customer demand, environmental awareness, cost savings, green brand...

In Vietnam, research on green banks can be mentioned as:

Huan (2014) researched international experiences on green banks and drawing lessons for Vietnam. The author said that quite a few financial institutions in Vietnam 4 Nam are pioneering in implementing green banks.

Research by Tu and Hao (2016) on green banking development in Vietnam stated that "green banks will be an important resource to implement the Green Growth Strategy to 2020" and made some policy suggestions based on the current situation of green banking development in Vietnam and experiences of some countries around the world. In general, the authors praised the role of green banks in realizing long-term sustainable economic development goals and recognized the shortcomings in greening Vietnam's banking system. However, no studies specifically analyze what factors affect banks when making decisions about their "green" or "not yet green". This is the research gap that the topic covers.

2.3 Theoretical Background

TPB Theory: TPB theory was developed from the theory of reasoned action (TRA) (Ajzen and Fishbein, 1975), in which TPB added an irrational element to increase the accuracy of the behavior prediction model, TPB pointed out the limitation of the theory before determining that human actions are entirely controlled by reason. Ajzen (1991) suggested that the intention to commit behavior will be influenced by three factors, namely attitudes toward behavior, subjective standards, and perceptions of behavior control, to improve the predictive power of TRA (Fig. 1).

TAM model: Davis (1986) proposed the TAM model. TAM researches consumer behavior, especially in information technology and e-commerce. The TAM fundamentally considers two essential determinants of the adoption of information technology. It is the feeling of usefulness and the sense of ease of use; these are considered two factors that play a decisive role in consumers' intention to use technology and use technology. (Fig. 2)

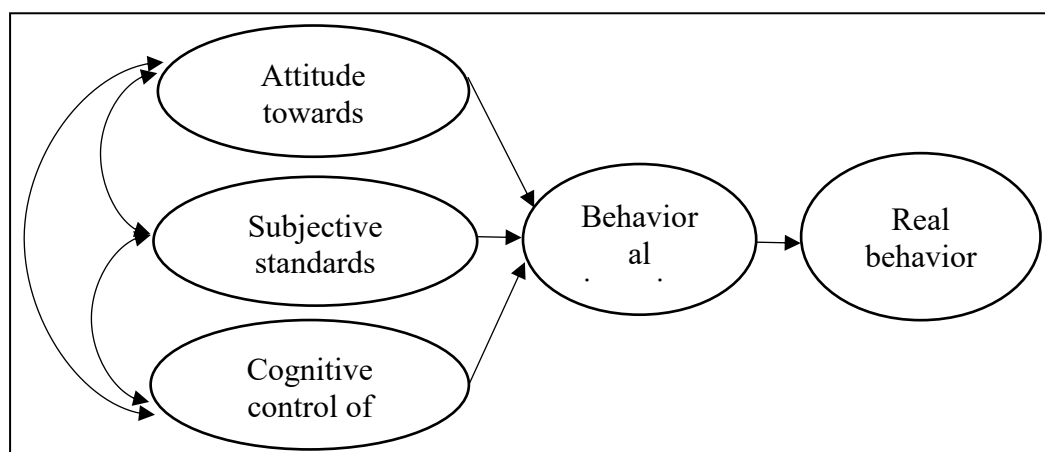


Fig. 1 Model of TPB theory, Source: From the TPB theory

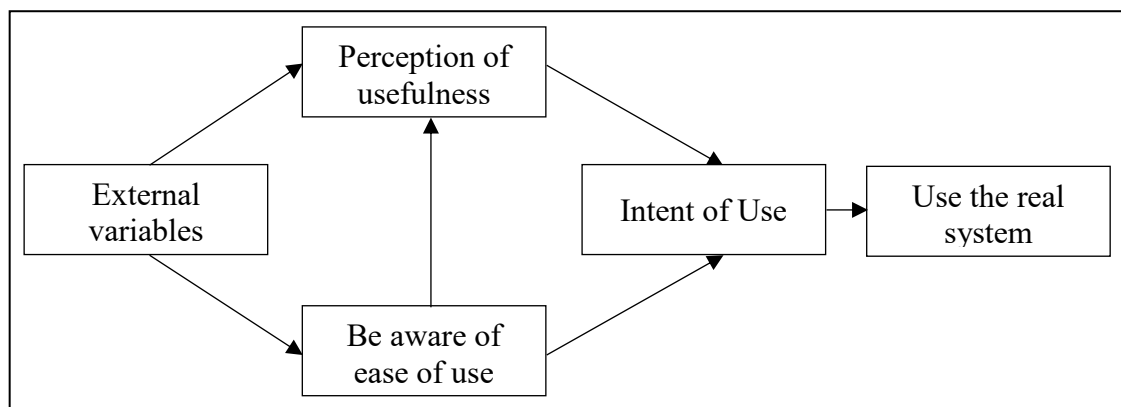


Fig. 2 Model of TAM, Source: From the TAM theory.

=> Select TPB theory and TAM theory as the theoretical basis for specific research content as follows:

The study uses a combination of the TAM theoretical model and the TPB theoretical model as the research foundation, and the TAM model is suitable for good behavior in the field of technology and technology; the TPB model is consistent with consumer behavioral intent. The author decided to make such a choice because e-banking is an integral part of green banking development, and it is considered new technology. The behavior of customers accepting the use of new technology is similar to the act of accepting green banking services.

3 Materials and methods

3.1 Research data

The study uses data from surveys of officials and employees of commercial banks in Ho Chi Minh City in the period of March 2024

Samples: According to Hair et al. (1998), to be able to perform an exploratory factor analysis, it is necessary to collect data with a sample size of at least 5 samples per 1 observed variable, preferably on 10 samples [28]. However, the aim of improving sample quality and reasonable sample distribution ensures extensive thinking. The study model has an observed variable count of 38. If, according to the standard of 5 samples for an observed variable, then the required sample size is $(n = 38 \times 5 = 190)$. Therefore, the author chooses a sample size of 250 to meet the required sample size of 190 breaks (EFA) and regression analysis (presented using the international standard decimal spelling).

Sampling technique: The author surveyed commercial banks in Ho Chi Minh City via Google Forms to collect research data.

Table 1 Table describing variables in the model

Get lost	ENCODE	CONTENT	RESEARCH OVERVIEW
(1) Potential benefits	LITN1	Consider environmental benefits as the interests of banks	Dhamayanthi et al, 2018; Heim, G. et al, (2005)
	LITN2	Ensuring the bank's sustainable operation	
	LITN3	Increase operating profit	
	LITN4	Reduce utility costs (electricity, water ...)	
	LITN5	Reduce paperless transaction costs	
(2) Concern for the environment	SQTMT1	Consider green economic development as a priority investment segment	Sabrin Sultana, (2015)
	SQTMT2	Air pollution	
	SQTMT3	Concerned about mangroves	
	SQTMT4	Improving global warming	
	SQTMT5	National energy efficiency	

(3) Pressure from stakeholders	ALTCB1	Pressure from environmental protection organizations	(Dhamayanthi et al, (2018))
	ALTCB 2	Pressure from international organizations	
	ALTCB3	Customer demand for green credit	
	ALTCB4	Government Policy	
	ALTCB5	Pressure from mouthpieces	
(4) Green products	SPX1	Business products conducive to the use of renewable energy, electric vehicles, or environmentally friendly technologies.	Lympelopoulous et al, (2012);
	SPX2	Developing business products that benefit the environment	
	SPX3	Accompanying businesses to protect the environment	
	CNNH1	The commercial bank has modern equipment	
	CNNH2	Online applications of commercial banks in the area are highly secure	
(5) Banking technology	CNNH3	Customer information of first-time transactions is stored by commercial banks in the area for the next transaction	Abram & CTG (2015)
	CNNH4	Customers do not have to write documents when coming to transact at ACB	
	CNNH5	Customer information is kept confidential when saving at ACB	
	THNH1	Enhance brand image	
	THNH2	The bank's brand is trusted by many people	
(6) Bank brand	THNH3	The bank builds a customer-friendly brand	Hartmann et al, (2005)
	CSNH1	There are many preferential policies	
	CSNH2	Consider green banking development as a vision and direction	
	CSNH3	Take care of supporting customers doing business in the field of smokeless, environmentally friendly	
	PTNHX1	Green bank development is a priority policy	
(7) Banking policy	PTNHX2	The bank develops more green products and services	Rahman et al, (2021); Shaumya, Arulrajh (2017)
	PTNHX3	Green banking development is aimed at limiting risks	
(8) Green bank development			Damayanti; Arumugam And; Teresa Sirute (2018)

Source: Author's synthesis

3.2 Research methodology

Research using quantitative method: this method is carried out by collecting information by surveying opinions of officials and employees of commercial banks in Ho Chi Minh City In the period of 3/2024 and conducting the following analysis steps: (1) First, conduct a preliminary quantitative study and clean the data before proceeding with the analysis steps; (2) checking the rigor and correlation between the observed variables, the author proceeds to evaluate the reliability of the scale using Cronbach's Alpha confidence coefficient; (3) Exploratory Factor Analysis (EFA) to screen out observed variables with duplicate, redundant or unreliable content, thereby finding factors affecting the development of green banks at commercial banks in Ho Chi Minh

City; (4) regression analysis to verify the impact of each factor on the development of green banks in commercial banks in Ho Chi Minh City. All analysis steps in quantitative research methods are handled through SPSS25 statistical analysis software.

4 Results

4.1 Research model

To accomplish the research objectives, the author builds a research model that shows the relationship between green bank development and 7 independent variables (Fig. 3).

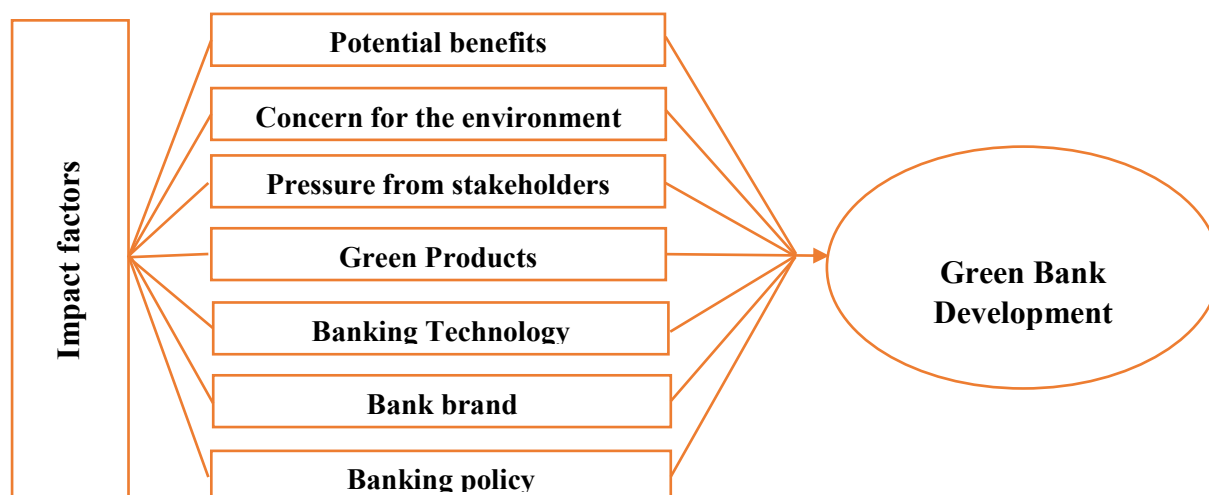


Fig. 3 Proposed model of the research topic, Source: From the author's research results

4.2 Results

Scale testing

Through Cronbach's Alpha analysis, if an observed variable has a total variable correlation coefficient < 0.3 , it will be excluded from the EFA analysis and each influencing factor component must have a Cronbach's Alpha coefficient > 0.6 (the standard for evaluating scale composition). Cronbach's Alpha assessment results of the scale components and factors affecting credit quality are presented in Table 2. The results showed that Cronbach's Alpha coefficient of the scale was > 0.6 .

Table 2 Cronbach's Alpha test results for official scales

STT	Independent variables and dependent variables	Number of observed variables	Cronbach's alpha coefficient	Cronbach's alpha coefficient if the largest variable is removed	Smallest total variable correlation coefficient
1	Potential benefits	4	0.855	0.893	0.529
2	Concern for the environment	5	0.839	0.825	0.572
3	Pressure from stakeholders	5	0.874	0.873	0.588
4	Green Products	4	0.739	0.717	0.464
5	Banking Technology	4	0.733	0.733	0.429
6	Bank brand	4	0.783	0.763	0.524
7	Banking policy	4	0.761	0.738	0.499
8	Green Bank Development	3	0.778	0.767	0.557

Source: Author analyzed and synthesized from SPSS 26.0

EFA Discovery Factor Analysis Results

EFA exploratory factor analysis is a statistical analysis method used to reduce a set of interdependent observed variables to a set of variables (called factors) that are less meaningful but still contain most of the information content of the original set of variables (Hair & Associates, 1998).

All 33 observed variables were included in factor analysis (except 5 were eliminated at Cronbach's alpha step). In particular, the scales of 7 components are: (1) Potential benefits; (2) Concern for the environment; (3) pressure from relevant parties; (4) Green products; (5) Banking technology; (6) Bank brand; (7) Banking policy. Includes 30 observations of the independent variable and 03 observational variables of the dependent variable scale "green bank development".

EFA is performed with Principle Component extraction with Varimax rotation and Community standards ≥ 0.5 , factor loading ≥ 0.5 , Eigenvalue ≥ 1 , total variance = 0.5 (50%), and KMO coefficient (Kaiser – Meyer – Olkin) ≥ 0.5 to ensure suitable data for factor analysis.

EFA analysis of scales belonging to independent variables:

Table 3 EFA discovery factor analysis, Source: SPSS26 analysis results

Get lost	FACTOR						
	1	2	3	4	5	6	7
ALTCB2	0.830						
ALTCB5	0.829						
ALTCB1	0.808						
ALTCB4	0.806						
ALTCB3	0.714						
SQTMT1		0.877					
SQTMT5		0.795					
SQTMT2		0.732					
SQTMT3		0.707					
SQTMT4		0.631					
LITN2			0.873				
LITN1			0.826				
LITN3			0.816				
LITN4			0.628				
CSNH4				0.758			
CSNH3				0.738			
CSNH5				0.725			
CSNH1				0.701			
THNH1					0.832		
THNH5					0.756		
THNH4					0.723		
THNH2					0.545		
SPX4						0.789	
SPX5						0.774	
SPX3						0.731	
SPX2						0.678	
CNNH4							0.825

CNNH3							0.745
CNNH2							0.739
Progressive extraction variance (%)	12.505	23.409	33.639	42.832	51.334	59.240	66.555
Eigenvalue COEFFICIENT	5.305	4.066	2.920	2.305	1.786	1.540	1.379
SME: 0.767							
SIG: 0,000							

Source: Author analyzed and synthesized from SPSS 26.0

The KMO coefficient in the analysis is equal to $0.767 > 0.5$, which indicates that the result of the factor analysis guarantees reliability. Bartlett's Test has a Sig coefficient of $0.000 < 0.05$, indicating that the factor analysis results ensure statistical significance. The variance extracted is equal to 66.555%, indicating that the variability of the analyzed factors can explain 66.555% of the variability of the initial survey data, which is a decent level of significance. The Eigenvalues coefficient of the 7th factor is equal to $1.379 > 1$, showing the convergence of the analysis stopping at the 7th factor, or the analysis results show that there are 7 factors extracted from the survey data. The element load factor of each observed variable representing factors is greater than 0.5, indicating that the observed variables all exhibit an affinity with the factors they represent.

Factor analysis explores scales of dependent variables

Table 4 EFA factor analysis results for credit accessibility factor scale, Source: SPSS26 analysis results

Get lost	Load factor	Accreditation	Value
PTNHX1	0.870	SME	0.684
PTNHX2	0.839	Say	0.000
PTNHX3	0.791	Eigenvalues	2.086
		Extraction variance	69.535

Source: Author analyzed and synthesized from SPSS 26.0

The KMO coefficient in the analysis is equal to $0.684 > 0.5$, indicating that the result of the factor analysis guarantees reliability. Bartlett's Test has a Sig coefficient of $0.000 < 0.05$, indicating that the factor analysis results ensure statistical significance. The variance extracted by 69.535% indicates that the variability of the analyzed factors can explain 69.535% of the variability of the original survey data, which is a fairly high level of significance. The Eigenvalue coefficient of the 1st factor is equal to $2.086 > 1$, showing the convergence of the analysis stopping at the 1st factor, or the analysis results show that the 01 factor is extracted from the survey data. The factor load factor of each observed variable representing factors is greater than 0.7, indicating that the observed variables influence the factors they represent. Thus, the factor analysis results with green bank development ability scales also show high reliability.

Pearson's test correlation between variables

Table 5 Pearson's test results correlation between, Source: Data processing results on SPSS26 software

		ALTCB	SQTMT	LITN	CSNH	THNH	SPX	CNNH
Green Bank Development	Correlation coefficient	0.398**	0.494**	0.548**	0.136*	0.158*	0.226**	0.326**
	Say	0.000	0.000	0.000	0.032	0.012	0.000	0.000

Notes:

*: The significance level is less than 5% (0.05).

** : The significance level is less than 1% (0.01).

Source: Author analyzed and synthesized from SPSS 26.0

The above result (table 5) shows that the correlation coefficient between the independent and dependent variables is quite high, ranging from 0.136 to 0.548. The Sig values of the elements are all less than 0.05. This indicates that the model has a correlation between the dependent and independent variables and that the inclusion of independent variables in the model is correct since it has a certain influence on the dependent variable. This shows that green banking development is mainly influenced by the abovementioned factors. Therefore, in analyzing the influence, the topic will focus on studying these factors.

Results of regression analysis

Table 6 Results of multivariate regression analysis, Source: Data processing results on SPSS26 software

Model	Unnormalized regression coefficient		Normalized regression coefficient	T	Sig.
	B	Std. Error	Beta		
Constant	0.064	0.245		0.259	0.796
ALTCB	0.162	0.031	0.257	5.242	0.000
SQTMT	0.214	0.036	0.292	5.915	0.000
LITN	0.227	0.036	0.321	6.258	0.000
CSNH	0.149	0.043	0.176	3.494	0.001
THNH	0.017	0.039	0.022	0.427	0.669
SPX	0.139	0.033	0.190	4.250	0.000
CNNH	0.101	0.037	0.130	2.748	0.006
R² correction = 0.522; Test F with Sig value: 0.000					

Source: Author analyzed and synthesized from SPSS 26.0

The result in Table 6 shows that the F-test gives a Sig. Value of < 0.01 proves to be a suitable model, and with it, the corrected R2 has a value of 0.522. This means that the regression model explains 52.2% of the variability of the dependent variable.

Thus, the model has a fairly high explanatory value. Besides, we see that the "bank brand" factor has a Sig value of 0.669 > 0.05, so it can be concluded that this factor is not statistically significant. The rest of the factors affect credit access due to the Sig value < 0.01. From the above analysis.

=> Thus, the regression function from the research results is rewritten as follows:

$$PTNHX = 0.321 \text{ LITN} + 0.292 \text{ SQTMT} + 0.257 \text{ ALTCB} + 0.190 \text{ SPX} + 0.176 \text{ CSNH} + 0.130 \text{ CNNH}$$

5 Discussion

Cronbach's Alpha test results: The collected data is processed and run on SPSS software; the results of SPSS running can be seen; the given scales all have Cronbach's Alpha coefficient greater than 0.6 and Cronbach's coefficient. The total variable alpha of each variable is greater than 0.3. Thus, through analysis and testing of Cronbach's Alpha, the model has 7 scales ensuring good quality. After testing the quality of the scale using Cronbach's Alpha coefficient, the author continued to analyze the EFA exploratory factor. Using the Principal component coefficient extraction method with Varimax rotation, the EFA results obtained, the KMO coefficient is $0.949 > 0.5$, and the Bartlett test is statistically significant; the Sig value is $< 5\%$, so the EFA analysis is Fit.

Linear regression analysis shows that all factors have Sig values $< 5\%$. An adjusted R² has a value of 0.522. This means that the regression model explains 52.2% of the variability of the dependent variable. "Green Bank Development" is explained by seven observed variables: (1) Potential benefits; (2) Concern for the environment; (3) Pressure from stakeholders; (4) Green product development; (5) Banking technology; (6) Bank brand; (7) Banking policy are due to the impact of factors other than the model. There is also no multicollinearity phenomenon in these variables (because all VIF values of the variables are less than 10). The regression equation shows that the dependent variable is expressed as $PTNHX = 0.321 LITN + 0.292 SQTMT + 0.257 ALTCB + 0.190 SPX + 0.176 CSNH + 0.130CNNH$.

Observing the recovery method shows that the factor "Potential benefits" has a beta coefficient = 0.321 and has a positive relationship with the variable "Green banking development". This is also the variable with the largest activity (32.3%) for green banking development.

6 Conclusions and recommendations

6.1 Conclusions

The results of the research model identified 6 factors affecting the development of green banks at commercial banks in Ho Chi Minh City in order of high to low impact, including (1) Potential benefits; (2) Concern for the environment; (3) Pressure from stakeholders; (4) Green products; (5) Banking policy; (6) Banking technology. Bank brand variables with a Sig value of $0.669 > 0.05$ should be excluded from the model. This result is consistent with research by Dhamayanthi Arumugam and Teresa Chirute (2018) and Sabrin Sultana and Md. Jakir Hasan Talukder (2015) on the development of green banks. The research results show the suitability of the commercial banking system in Vietnam in general and commercial banks in Ho Chi Minh City in particular when the development of green banks is still in the early stages and does not bring clear economic benefits. Meanwhile, pressure from stakeholders and policy and legal factors always strongly affect commercial banks in the current conditions - when environmental protection goals are at the top of each country's action programs, regionally and worldwide.

The study has identified the factors and the degree of influence on the development of green banks of commercial banks in Ho Chi Minh City. However, the limitation of the study is that it only considers the development of green banks from the perspective of banks that provide services. So, from the perspective of customers - service users, what will it mean to develop a green bank? The author will carry out this research direction in subsequent research papers. In recent years, Vietnam has been one of the countries severely affected by environmental pollution. With the indirect role of environmental protection through limiting environmental pollution activities, lending to environmentally friendly projects, and limiting investment in areas that pollute the environment, it can be said that green banks are an important link to fight pollution within the country and the region, and towards a broader concept of sustainable development. This study shows that banks are approaching and developing green banks for several reasons. Banks are increasingly introducing "green" standards into their business operations. Banks recognize that green banking not only does not reduce profits but also helps banks reduce operating costs and risk. In addition, the bank's green activities also help increase the bank's brand value in the eyes of customers. Based on the research results, some suggestions were made to promote the development of green banks in Ho Chi Minh City in the coming time, specifically as follows:

6.2 Recommendations

For Government: The research results show that policy and legal factors have a high influence on the development of green banks in Ho Chi Minh City, including the Government's policies, demonstrating the important role of the Government in supporting the development of green banks. Therefore, the government needs to have appropriate policies on taxes and fees to support banks in providing green products and services. On the

other hand, it must encourage businesses to invest in environmentally friendly projects. In addition, the Government also needs to raise customers' awareness of green banks, thereby directing customers to choose banks with higher "green" standards.

For the State Bank of Vietnam: The factor of economic benefits is one of the reasons for developing green banks of commercial banks in Ho Chi Minh City. Therefore, the SBV needs to raise the awareness of commercial banks about green banks, starting with raising the awareness of managers and senior leaders of banks so that they can have detailed and specific plans to establish green development strategies at each level suitable for each bank. In addition, as the operating center of the banking system, the SBV needs to issue specific policies and regulations to guide commercial banks in fulfilling their responsibilities to protect the environment, especially through the implementation of green banking activities.

For commercial banks: Commercial banks should consider green banks as a development strategy for their entire operations. However, implementing green products and services requires bankers to be able to inspect, evaluate, and analyze the environmental impacts of projects. Therefore, measures to greenen internal operations should be implemented, and financing of green projects should be encouraged. Banks need to focus on improving the capacity of their staff, creating a foundation for green and sustainable development.

It is necessary to focus more on developing strategies to manage environmental and other natural resource risks (land, water resources...) during business operations. In addition, promoting the role of microfinance institutions is important in developing green banks. Increase awareness of the importance of the environment in sustainable development to create a healthy and safe living environment. Gradually change the philosophy of business investment, prioritize investment, and finance "green" goods and products, thereby creating pressure on manufacturers and customers, forcing them to implement "green" projects in the future.

References

- Hoang Trong – Chu Nguyen Mong Ngoc (2008), *Analyzing research data with SPSS*, Hong Duc Publishing House.
- Biswas, N. (2011), '*Sustainable Green Banking Approach: The Need of the Hour*', Business Spectrum, Volume-I, No.-1, January -- June 2011.
- Dhamayanthi Arumugam and Teresa Chirute (2018), "*Factors determining the adoption of green banking amongst commercial banks in Malaysia*", Electronic Journal of Business & Management 2 (2018) 50 – 62.
- Hartmann, P., Ibáñez, V.A. and Sainz, F.J.F. (2005), '*Green branding effects on attitude: Functional versus emotional positioning strategies*', Marketing Intelligence & Planning, Vol.23, No. 1, PP. 9–29. 4.
- Heim, G. and Zenklusen, O. (2005), '*Sustainable Finance: Strategy Options for Development Financing Institutions*', Eco: Fact, Stampfenbachstrass, Zurich, 2005.
- Ho Ngoc Tu and Nguyen Mai Hao (2016), "*Developing Green Banks in Vietnam: International Experience and Some Suggestions*", Institute for Financial Strategy and Policy.
- IDRBT (2013), Green banking for Indian banking sector. Indian Institute for Development and Research in Banking Technology.
- Indian Banks' Association (2014), Green Banking Innovations, Retrieved from *The Indian Banks' Association* (<http://www.iba.org.in>)
- Jeucken, M. (2001), '*Sustainable Finance and Banking, The finance Sector and The Future of the Planet*', London, Earthscan.
- Nguyen Huu Huan (2014), "*Building Green Banks in Vietnam*", Journal of Development and Integration, No. 14(24).
- Nigamananda Biswas (2011), "*Sustainable Green Banking Approach: The Need of the Hour*", Business Spectrum, Volume-I, No.-1, January -- June 2011.

Nguyen Thi Le Huyen (2019), *"Factors influencing the adoption of green banking in Vietnamese commercial banks"*, Journal of Banking Science & Training, No. 208- September. 2019.

P Deepa and Dr. CR Karpagam (2018), *"A study on customer's awareness on green banking in selected public and private sector banks with reference to Tirupur"*, International Journal of Advanced Research and Development, Volume 3; Issue 1; January 2018; Page No. 58-63.

Sabrin Sultana and Md. Jakir Hasan Talukder (2015), *"A Study on Determining Factors of Obstacles to Develop Green Banking in Bangladesh"*.

Smith, Rees, and Gareth (1998), *Economic Development* (2nd edition), Basingstoke: Macmillan. ISBN 0-333 72228-0.

Syed Samar Hasnain et al (2018). *"Concept paper on green banking"*, State Bank of Pakistan.