


POLICY IMPLICATIONS FOR GREEN BANKING DEVELOPMENT IN VIETNAM

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 20 February 2023</p> <p>Accepted 08 May 2023</p>	<p>Purpose: The article studies the factors affecting the development of green banking in Vietnam. Based on the research results, the authors proposed policy implications that contribute to the development of green banking in Vietnam.</p>
<p>Keywords:</p> <p>Green; Banking; Technology; Legal Framework; Environmental; Policy Development; Risk Management.</p>	<p>Theoretical framework: The article studies the factors affecting the development of green banking in Vietnam. Based on the research results, the authors proposed policy implications that contribute to the development of green banking in Vietnam.</p>
	<p>Design/methodology/approach: To survey the level of understanding of bank managers on issues related to green banking, green banking development, and the level of knowledge of officers and employees about green banking development areas, The authors used qualitative and quantitative methods. Quantitative research was carried out from January to February 2023. The authors used structural equation model analysis to test the fit of models with SPSS 20.0 and Amos.</p>
	<p>Findings: Quantitative and qualitative indicators have been introduced to measure the development of green banking and the economy. The factor of banking technology has the most substantial impact on the development of green banking and the economy. This is a new research paper finding in the context of the banking industry's digital transformation.</p>
	<p>Research, Practical & Social implications: The study also shows that green banking development depends on financial capacity, supporting policies, legal framework, and state regulations. In addition, the study has included the factors of green banking development affecting the green economy from different approaches and analytical methods to evaluate.</p>
	<p>Originality/value: Developing green banks not only brings profits but also helps banks increase their prestige, reputation, and value. In addition, the development of green banking associated with the green economy is not only a form but will become the core value of the bank, recognized and appreciated in the trend of integration and sustainable development.</p>
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IMPLICAÇÕES DE POLÍTICAS PARA O DESENVOLVIMENTO DE BANCOS VERDES NO VIETNÃ

RESUMO

Objetivo: o artigo estuda os fatores que afetam o desenvolvimento do green banking no Vietnã. Com base nos resultados da pesquisa, os autores propuseram implicações políticas que contribuem para o desenvolvimento do banco verde no Vietnã.

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Referencial teórico: O artigo estuda os fatores que afetam o desenvolvimento do green banking no Vietnã. Com base nos resultados da pesquisa, os autores propuseram implicações políticas que contribuem para o desenvolvimento do banco verde no Vietnã.

Desenho/metodologia/abordagem: Levantar o nível de entendimento dos gerentes de bancos sobre questões relacionadas a green banking, desenvolvimento de green banking e o nível de conhecimento de executivos e funcionários sobre as áreas de desenvolvimento de green banking. Os autores usaram métodos qualitativos e quantitativos. A pesquisa quantitativa foi realizada de janeiro a fevereiro de 2023. Os autores usaram a análise de modelos de equações estruturais para testar o ajuste dos modelos com SPSS 20.0 e Amos.

Resultados: Indicadores quantitativos e qualitativos foram introduzidos para medir o desenvolvimento do banco verde e da economia. O fator da tecnologia bancária tem o impacto mais substancial no desenvolvimento do sistema bancário verde e da economia. Este é um novo trabalho de pesquisa encontrado no contexto da transformação digital do setor bancário.

Pesquisa, implicações práticas e sociais: O estudo também mostra que o desenvolvimento de bancos verdes depende da capacidade financeira, políticas de apoio, estrutura legal e regulamentações estaduais. Além disso, o estudo incluiu os fatores de desenvolvimento de bancos verdes que afetam a economia verde a partir de diferentes abordagens e métodos analíticos para avaliar.

Originalidade/valor: Desenvolver bancos verdes não apenas traz lucros, mas também ajuda os bancos a aumentar seu prestígio, reputação e valor. Além disso, o desenvolvimento do green banking associado à economia verde não é apenas uma forma, mas se tornará o valor central do banco, reconhecido e valorizado na tendência de integração e desenvolvimento sustentável.

Palavras-chave: Verde, Bancário, Tecnologia, Enquadramento Jurídico, Ambiental, Desenvolvimento de Políticas, Gerenciamento de Riscos.

IMPLICACIONES POLÍTICAS PARA EL DESARROLLO DE LA BANCA VERDE EN VIETNAM

RESUMEN

Propósito: El artículo estudia los factores que afectan el desarrollo de la banca verde en Vietnam. Con base en los resultados de la investigación, los autores propusieron implicaciones políticas que contribuyen al desarrollo de la banca verde en Vietnam.

Marco teórico: El artículo estudia los factores que afectan el desarrollo de la banca verde en Vietnam. Con base en los resultados de la investigación, los autores propusieron implicaciones políticas que contribuyen al desarrollo de la banca verde en Vietnam.

Diseño/metodología/enfoque: para encuestar el nivel de comprensión de los gerentes bancarios sobre temas relacionados con la banca verde, el desarrollo de la banca verde y el nivel de conocimiento de los funcionarios y empleados sobre las áreas de desarrollo de la banca verde. Los autores utilizaron métodos cualitativos y cuantitativos. La investigación cuantitativa se llevó a cabo de enero a febrero de 2023. Los autores utilizaron el análisis de modelos de ecuaciones estructurales para probar el ajuste de los modelos con SPSS 20.0 y Amos.

Hallazgos: Se han introducido indicadores cuantitativos y cualitativos para medir el desarrollo de la banca y la economía verdes. El factor de la tecnología bancaria tiene el impacto más sustancial en el desarrollo de la banca verde y la economía. Este es un nuevo hallazgo de un trabajo de investigación en el contexto de la transformación digital de la industria bancaria.

Implicaciones de investigación, prácticas y sociales: el estudio también muestra que el desarrollo de la banca verde depende de la capacidad financiera, las políticas de apoyo, el marco legal y las regulaciones estatales. Además, el estudio ha incluido los factores de desarrollo de la banca verde que inciden en la economía verde desde diferentes enfoques y métodos analíticos a evaluar.

Originalidad/valor: el desarrollo de bancos verdes no solo genera ganancias, sino que también ayuda a los bancos a aumentar su prestígio, reputación y valor. Además, el desarrollo de la banca verde asociada a la economía verde no es solo una forma sino que se convertirá en el valor central del banco, reconocido y apreciado en la tendencia de integración y desarrollo sostenible.

Palabras clave: Verde, Bancario, Tecnología, Marco Legal, Ambiental, Desarrollo de Políticas, Gestión de Riesgos.

INTRODUCTION

The current situation and development solutions. After the 2008 global financial crisis, most countries around the world have re-evaluated their organization and operating models in their financial systems, including the banking system. Issues of sustainable development, business responsibility and social responsibility, ethics and environment are all revisited under a higher importance. Green banking emerges as an ideal model for future banking, a foundation for moving towards a green economy and sustainable development. The article outlines the current situation as well as some challenges to promoting the development of green banking in Vietnam and proposes policy recommendations to promote green banking development in Vietnam in the coming time. The article outlines the current situation as well as some challenges to promoting the development of green banking in Vietnam and proposes policy recommendations to promote green banking development in Vietnam in the coming time.

Many countries worldwide have chosen to develop green economies for long-term sustainable economic development. Green banking policies are essential to save energy and reduce harmful emissions, driving the economy towards green growth (Alwahaishi & Snasel, 2013; Parveen et al., 2020). Green growth and banking development strategies are essential in the Vietnamese economy. Besides, the banking industry plays a critical role in greening investment capital flows; directing financial resources into green fields; limiting capital flows to projects that affect the environment; contributing to promoting borrowers to convert projects and loan purposes into environmentally friendly projects.

It can be said that green banking will be an essential resource to implement the green growth strategy in 2025 because the banking system can contribute to limiting environmental and social risks by not lending capital to projects that cause pollution or have adverse impacts on the environment and people's lives. On the other hand, strict control from the bank appraisal stage also encourages businesses to move towards cleaner and safer production and business activities. To contribute to the implementation of the national action plan on green growth, the State Bank of Vietnam (SBV) has issued Directive No. 03/CT-NHNN to promote green bank growth and manage environmental risks and risks. Besides, social activities improve the efficiency of resource and energy use, improve environmental quality, protect human health, and ensure sustainable development. However, there are still no specific regulations on the fields of industries that need to be prioritized for support and those that need to be restricted in the green banking development strategy to serve as a basis for commercial banks in the appraisal process fixed, bank level.

Realizing the limitations in previous studies and the need to study the factors affecting the development of green banking in commercial banks in Vietnam is also an urgent issue. Both theoretically and practically, the authors have chosen the topic "Policy implications for green banking development in Vietnam" for research. With this topic, the authors will focus on studying the factors affecting the development of green banking at commercial banks in Vietnam. This will be a reliable basis for the authors to propose policy implications from the stability and green banking development perspective to stimulate green economic growth (Sadiq et al., 2020; Hendri et al., 2022).

LITERATURE REVIEW

Theories of the Green Banking Development (PTNHX)

Green banking refers to activities that encourage environmental activities and reduce carbon emissions, such as encouraging the use of green products and services, applying environmental standards to approve loans, or providing preferential banking for CO2 reduction projects (Yeyanran & Qiang, 2016; Wang et al., 2020; Rehman et al., 2021). In short, a bank is said to be green when it meets both conditions: (i) providing green products and services in the short term and (ii) having a long-term business strategy that meets environmental and regulatory criteria and social responsibility. In other words, green banks all focus on the central issues, which are: (1) reducing carbon emissions in the bank's internal operations, (2) developing green products and services, and (3) promoting working for the environment through green banking policy (Tara et al., 2015; Igbudu et al., 2018; Kristin & Morten, 2016).

Green banking development is the process of strengthening the application and implementation of professional measures, activities and standards according to green criteria in the bank to move towards green operation, investment, and finance strategy (Masukujjaman & Aktar, 2014; Mumtaz & Smith, 2019).

Factors Affecting the Green Banking Development

Banking technology (CN): In recent years, the world has witnessed a strong boom and the far-reaching effects of science and technology on the development of the global economy in general and the Vietnamese economy in particular. That includes the banking sector. Since the 4th industrial revolution, digital technology has continuously developed and brought about many significant changes in the operation of corporations, companies, consumers, and national governments (Jan et al., 2019; Grover & Kaur, 2019; Chen et al., 2018). The development of

information technology and technical infrastructure, technology is the main factor affecting the development of banks, including green banks. Banking technology, particularly the Internet and the spread of digital products and services worldwide, have driven rapid change in many areas, including the banking sector (Goyal & Joshi, 2012; Anna, 2018; Afshan & Sharif, 2016). Based on the above analysis, the authors propose hypothesis H1:

H1: Banking technology has a positive impact on green banking development.

Financial capacity (TC): Financial capacity is vital and is the ability to ensure financial resources for the bank's operations to achieve the bank's goals. Or, correctly understood, financial capacity is the ability to mobilize capital to meet the bank's activities and the ability to ensure the bank's financial safety. The context of deep integration into the world economy poses many difficulties and challenges for the banking system, especially commercial banks. Because according to international practices, the capital adequacy ratio of commercial banks must be 9% or more. If this ratio is not guaranteed, commercial banks will not be able to expand operations, even standing still. in danger of bankruptcy (Bahl, 2012; Chaurasia, 2014; Jayadatta & Nitin, 2017; Meena, 2013). Therefore, improving financial capacity will help commercial banks implement risk prevention measures, ensure capital safety in operations, and minimize possible customer damage. commercial banking (Rahman & Rahman, 2020; Sharma & Choubey, 2022). Based on the above analysis, the authors proposed the hypothesis H2:

H2: Financial capacity has a positive impact on green banking development.

Marketing strategy (MK): Environmental issues are increasingly concerned, stemming from the 2008 economic crisis and especially when the Covid-19 epidemic has not shown any signs of decline as it is now. Since then, commercial banks have switched to using green and digital marketing. Going green in marketing activities, from design and process change to making customers aware of the benefits of the green process, is not easy. However, the link between business ethics and greening marketing activities, the impact of green marketing on the environment is positive (Xu et al., 2020; Vidyakala, 2020; Chen et al., 2022; Al-Ahmad et al., 2012). This result also affirmed that the bank considers the greening of marketing activities a mandatory trend, demonstrating its social responsibility. Based on the above analysis, the authors propose the hypothesis H3:

H3: Marketing strategy has a positive impact on green banking development.

Quality of human resources (NNL): The quality of human resources is of particular importance to an organization, including banks. No organizational activity can be effective without human resource management. The quality of human resources is the cause of success

or failure in business activities. The fundamental goal of any organization is to effectively use human resources to achieve the organization's goals. The problem is how to promote the role of the human factor in the bank's development goals (Biswas, 2011; Bennett & Iqbal, 2013; Hossain et al., 2016). Therefore, the first hypothesis that the authors propose for this study is hypothesis H4 as follows:

H4: Quality of human resources has a positive impact on green banking development.

Risk management (RR): Risk management plays an essential role in ensuring the safety of the bank's credit activities and contributes to minimizing risks in green banking activities. Risk management is critical because of the following factors: (1) preventing and limiting credit risks for green, environmentally friendly projects is a complex problem for all commercial banks, Because credit risk is an objective necessity, always associated with credit activities, and at the same time very diverse and complex (Duan & Niu, 2011; Hart & Dowell, 2011; Choudhury et al., 2013). Based on the above analysis, the authors propose hypothesis H5 as follows:

H5: Risk management has a positive impact on green banking development.

Supporting policies (HT): Commercial banks are under the management and supervision of the State Bank of Vietnam (SBV), so the green banking development strategy should follow the orientation of the State Bank. These orientations will directly affect the formulation of a green banking development strategy. In addition, planning policies, legal regulations, and practical support from State management agencies will contribute to removing difficulties for commercial banks in developing social banks in general and banking services in particular. The SBV needs to coordinate with ministries and branches to develop a specific list of fields and industries that need priority support and limitations in the green banking development strategy for commercial banks to refer to as a basis. In the process of granting credit for projects; at the same time, there should be sanctions for commercial banks that finance credit for projects that have severe impacts on the environment and society (Eyraud et al., 2013; Jin & Mengqi, 2011; Kandavel, 2013; Borghesi et al., 2014). With the problems analyzed above, the authors propose the research hypotheses H6 as follows:

H6: Supporting policies has a positive impact on green banking development.

Legal framework (PL): In recent years, the Government has issued some policies to support and promote the development of green banking. Efforts to encourage the development of green banks, which focus mainly on forming the legal framework for green banking development, encourage green credit. Apply some incentives to commercial banks and credit

institutions performing banking greening operations (Masood et al., 2015; Masukujjaman et al., 2019). However, green banking development in other countries is being assessed at a medium level. Among the factors affecting the development of green banks, the legal framework factor is a policy to promote banking development and is also an essential factor that significantly influences banking development green. From the theoretical bases of this factor, the authors proposed hypothesis H7 follows.

H7: Legal framework has a positive impact on green banking development.

Environmental policy (MT): Environmental protection is an issue that most countries worldwide pay special attention to and make great efforts to implement. For Vietnam, environmental protection and promotion of green growth is a significant policy identified in many medium and long-term development strategies and plans. To achieve environmental protection and promote green growth, it is necessary to have an effective combination of many different policies, including green finance policy and green banking development. Environmental policies have been gradually improved by focusing on encouraging investment, producing according to clean and energy-saving technologies, and supporting the implementation of the national green growth strategy. In addition, environmental policy is also focused on prioritizing national target programs related to environmental protection and developing green and environmentally friendly projects through green banks (Nizam et al., 2019; Zheng et al., 2021; Al-Obaidi & Almashhadani, 2022; Iqbal et al., 2018; Bihari, 2011). From the theoretical bases of this factor, the authors propose hypothesis H8 as follows:

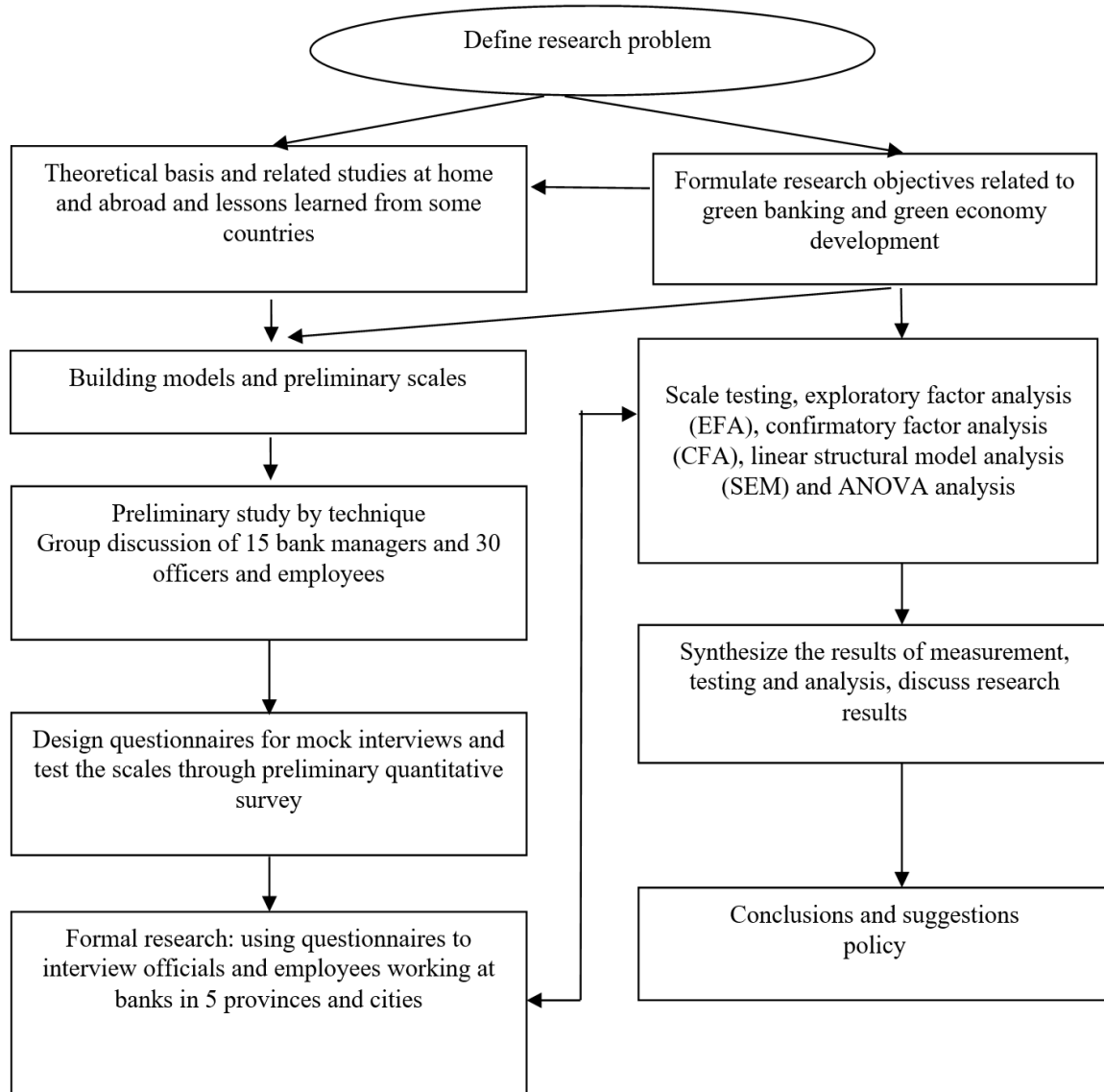
H8: Environmental policy has a positive impact on green banking development.

Thus, the development of green banking is placed in the context of the general development of the domestic and international economy and the specific development of the commercial banking system. Therefore, this development is affected by internal and external factors of commercial banks.

METHODOLOGY

The study used a combination of qualitative and quantitative research methods through a research process that is carried out through the following main steps:

Figure 1. The research process for factors affecting green banking development in Vietnam



Source: Prepared by the authors (2023)

To interpret the research questions and achieve the study's objectives, the authors used a combination of qualitative and quantitative research methods. The authors used qualitative research with an in-depth interview technique with 15 managers of 15 banks and 30 officers and employees who have worked for 10 years or more raised and knowledgeable about the credit field in Dong Nai, Ho Chi Minh City. This technique allows the authors to clarify the nature of the problem and, learn deeply about the research object, adjust the scales to suit the current research context (Hair et al., 2021).

The above group discussion study results show that the questions identified at the original scale do not have variables removed, and those factors are pronounced. The results of the final group discussion showed that there are 10 factors, of which 8 are independent

variables, 02 are dependent variables and a total of 39 questions. The results of in-depth interviews with all 30 officers and employees all agreed with the content with additional and detailed corrections (Hair et al., 2021).

The authors collect primary data in this research paper after determining the sample size and sampling method. The authors used the official questionnaire to send to each officer and employee of commercial banks in five provinces and cities of Vietnam, with 900 survey panels corresponding to 900 officials and employees working at 15 banks in 5 provinces and cities mentioned above. Specifically, the authors surveyed each province and city with 180 officers and employees for 15 banks, so on average, each bank surveyed 12 officers and employees (Hair et al., 2021). The authors guide to answering and collecting the answer sheet after completing the answer sheet, checking the accuracy, cleaning the data, and removing the invalid votes. Survey time is from 01/2023 to 03/2023.

EMPIRICAL RESULT

Analysis of Regression Coefficients in the SEM model

Table 1: Results for testing the structural equation model

Independent factors	Prioritize perform	Standardized Coefficients	Std. Error	C.R	P-value
Banking Technology (CN)	1	0.533	0.028	17.848	***
Legal Framework (PL)	2	0.148	0.029	4.896	***
Environmental Policy (MT)	3	0.095	0.052	3.369	***
Risk Management (RR)	4	0.092	0.028	3.068	0.002
Support Policy (HT)	5	0.092	0.023	3.337	***
Quality of human resources (NNL)	6	0.090	0.045	3.110	0.002
Financial capacity (TC)	7	0.081	0.026	2.847	0.004
Marketing Strategy (MK)	8	0.072	0.030	2.917	0.004

Source: Prepared by the authors (2023)

Table 1 shows that the SEM model test results are satisfactory, the values of the regression coefficients are positive, and the statistical significance is less than 0.05. The column P value is the significance level of the relationship between the impact of the factors. If this value is less than 5%, the hypothesis is accepted. The analysis results show that there are 8 factors affecting the development of green banking, including (1) Quality of human resources (NNL), (2) Banking Technology (CN), (3) Policy to support Support (HT), (4) Risk Management (RR), (5) Financial Capacity (TC), (6) Environmental Policy (MT), (7) Legal Framework (PL), (8) Marketing Strategy (MK) with 1.0% significance level. Among the influencing factors, banking technology affecting green banking development was identified as

the most substantial influencing factor ($\beta = 0.533$), and the lowest influencing factor on green banking development was strategic Marketing ($\beta = 0.072$) (Hair et al., 2021).

The above results show that for the economy. Green banks contribute to transforming the economic growth model towards sustainability, positively contributing to the balanced and harmonious development between the ecological environment and economic growth. Table 1 shows the policy implications that must be prioritized to contribute to developing green banking in Vietnam in the coming time.

1. Policy implications for banking Technology (CN): Commercial banks continue to invest in information technology infrastructure, apply new and modern technologies in all banking services, and contribute to developing green banking and a green economy. In addition, the increasing use of cloud technology for core services to replace traditional storage technology. This trend has become apparent in the world's banking industry in recent years, helping commercial banks save many costs and space, enhancing storage and managed security, and better data. Continue to build an information technology development strategy towards professionalization; at the same time, develop an appropriate salary payment mechanism to attract information technology human resources and let them rest assured to devote and stick with the bank for a long time. Finally, commercial banks need to develop personal data protection and privacy regulations: Accompanying the development trend of digital products and services is the risk of exposing people's personal data. Therefore, banks need to focus on promulgating personal data protection and privacy regulations to bring data control back to users.

Commercial banks need to develop and implement a digital transformation strategy to contribute to developing green banking and a green economy. In addition, investing in and upgrading the core banking software system, security technology, and risk management system is also a mandatory requirement in the context that banking services are increasingly diversified and modern in a business environment increasingly uncertain environment. Unlike many businesses, Core banking is a critical application of each bank, but this investment does not happen once but must be continuously upgraded. It is necessary to develop a plan for the banking industry's digital transformation towards developing digital banking models, increasing utility and customer experience. Since then, the bank has achieved the goal of financial inclusion and sustainable development based on promoting the application of new and advanced technologies in the management and supply of products and services in the direction of process automation, process, and optimizing business operations.

2. Policy implications for legal Framework (PL): The State Bank should develop and issue guidelines to guide the development of green banking for credit institutions. Develop and issue preferential policies and support mechanisms for credit institutions to encourage the development of green banking. Studying preferential and supportive mechanisms and tools applied to banks to encourage the development of green banks and green credit, such as: (i) Prioritizing capital sources for green credit development through the policy of refinancing and rediscounting based on ensuring that the principle does not affect the management of monetary policy and inflation target in each period. (ii) Prioritizing access to concessional loans from international organizations and development partners through the State Bank to commercial banks with a high proportion of green credit loans. In addition, the State Bank should organize propaganda and raise awareness among officials, civil servants, public employees, and banking industry employees about green growth and sustainable development in general and about credit development green, green banks in particular.

The State Bank needs to provide detailed and precise regulations on the criteria for green bank development. In addition, the State Bank needs to coordinate with ministries and sectors to develop a specific list of fields and industries that need priority support, as well as limitations in the green banking development strategy to reference commercial banks as a basis in the credit granting process for projects. At the same time, there should be sanctions for commercial banks that provide credit for projects that seriously impact the environment and society. Finally, the State Bank should have policies to encourage commercial banks to grant preferential credits in terms of limits and interest rates to individuals and businesses to invest in energy- and technology-saving projects, green and environmentally friendly projects.

3. Policy implications for environmental policy (MT): Relevant ministries and sectors urgently develop circulars guiding loans with preferential interest rates, post-investment interest rate support, financing, co-financing, and other support for environmental protection activities. In addition, commercial banks need to expand and put more complex products and services on the online transaction system, such as remittance abroad, foreign exchange transactions, opening letters of credit, and requests for issuance guarantee or request automatic disbursement or automatic payment from the customer's accounting system. Commercial banks do not need customers to provide paper documents because they have computerized operating systems at their branches/transaction points. Limit most of the printed documents and supplies from the customer side. This will significantly reduce carbon emissions into the environment.

The State Bank needs to give incentives, refinance, and rediscount for environmental protection through green, clean, and environmentally friendly projects. Commercial banks must issue specific and explicit policies or programs on preferential interest rates or provide documents for businesses investing in green environmental protection and clean or resolutely refuse to grant credit for companies that adversely affect the environment and society. In addition, banks need to strictly implement the process of appraising and assessing the impacts of projects on the environment and society, assessing the environmental and social security risk factors of previous projects when granting credit.

4. Policy implications for risk management (RR): Commercial banks need to continue to improve the database system of the entire system. Commercial banks need to review, perfect, and organize the implementation of policies on security, information technology risk management, and compliance with legal documents of the State and regulations of the State bank. Develop a roadmap for applying international security and security standards to the system as well as online payment and card payment services; closely review the registration process, and activate the use of e-banking services to ensure the provision of services to the right customers. In addition, commercial banks need to step up the construction of a network security operation center to monitor, supervise and promptly prevent intrusion and cyberattacks. Regularly assess the weaknesses and vulnerabilities of the technology system. Building and implementing rehearsals of processes and scenarios to respond to network information security incidents, contributing to customer data security in the best and safest way.

Commercial banks must continue improving their organizational structure, apparatus, and risk management process according to international standards. Commercial banks need to strengthen internal control with the vital goal of building a system to look for potential negative trends, instability, and shortcomings in the bank's operations to take measures and rectification. When formulating operational strategies, it is necessary to analyze and calculate macroeconomic conditions and development trends of the service market and capital market, including the international situation. Finally, commercial banks need to improve their staff's professional quality while focusing on building the bank's brand to minimize human and operational risks.

5. Policy implications for support policy (HT): The State Bank needs to build a national green development fund to mobilize capital for green development. The State Bank of Vietnam needs to strengthen international cooperation to help the domestic financial system have the opportunity to access global capital and build a targeted credit program in line with

the reality and development conditions. Development of the country, based on consultation with investment funds and world financial institutions. Finally, the State Bank should issue preferential credit policies on interest rates, interest rate support, and incentives for collateral for customers implementing agricultural projects along the value chain, applying high public technology, and clean agriculture. Implement loan programs to plant production forests, programs to support the poor in housing to prevent climate change, and programs to reduce environmental pollution.

The State Bank needs to develop mechanisms, policies, processes, and regulations on risk prevention in green projects. There are guidelines on green lists and criteria for identifying green projects suitable to Vietnam's economic sub-sectors as a basis for commercial banks to have grounds for appraisal, assessment, and supervision when granting green credit use. Develop a roadmap for the implementation of mechanisms and policies to support green industries, such as taxes, fees, capital, techniques, markets, planning, development strategies, etc., of each sector and field synchronously to attract and promote the efficiency of green credit capital. Research and develop mechanisms and policies to support the development of the capital and green bond markets, creating a capital mobilization channel for investors to have more resources to deploy green and environmentally friendly projects. The State Bank should focus on building a green bank development model, supporting digital transformation in the banking industry, and developing digital platforms, infrastructure, banking products, and services to serve the development of the digital economy and society, contributing to sustainable development. Promote negotiations and create favorable conditions for international financial institutions and domestic and commercial banks to participate in international cooperation activities to finance green projects.

6. Policy implications for quality of human resources (NNL): Commercial banks need to build socially responsible human resources in green banking development. Besides training and fostering human resources, combining a practical assessment of risk management quality in banks is necessary by applying digital technology achievements to control banking operations on the Internet and other digital technology application platforms. In addition, commercial banks need to build a system of capable and visionary experts in assessing, forecasting, and preventing risks associated with the innovation of safety ratio capital. This is to gradually transform the management process toward hedging to meet the stakes in the digital economy on the virtual space market system.

Commercial banks need to develop human resources to ensure flexibility and creativity in implementing green banking. Based on increasing the application of information technology and digital transformation to develop the digital economy, it is necessary to establish standards that are updated regularly and periodically to set training and retraining requirements and improve the quality of the bank's human resources to adapt to digital transformation. The Bank builds the correct remuneration for employees and employs employees in the right positions by applying criteria and activities and allocating operating costs. From there, create a salary system based on labor productivity. Banks need to carry out procedures for promotion, promotion, and amendment. The bank announces promotion opportunities throughout the banking system. The bank only considers those who have overall better performance ratings than required. Evaluate those promoted based on viewing the specific requirements of the job description.

7. Policy implications for financial capacity (TC): Commercial banks need to have strategies and plans to increase equity to meet capital needs for green credit growth. Raising charter capital is a long-term goal of commercial banks, which is especially urgent for commercial banks with low capital. Increasing charter capital helps commercial banks expand business activities and improve the capital adequacy ratio. Commercial banks can better withstand the risks encountered while doing business when the capital buffer is increased. To meet this requirement, domestic and commercial banks play a crucial role; transparent, competitive, safe, efficient, and sustainable operations; diversified structure in terms of ownership, scale, and type; based on technology, and advanced banking management, in line with operational standards following international practices, towards achieving a high level of development.

Commercial banks need to improve credit quality to meet green banking development goals. The State Bank should continue to closely monitor macroeconomic, financial, and monetary developments at home and abroad, support the recovery of economic growth and not be subjective to inflation to control the scale and growth associated with the economic growth credit quality. Directing credit to the fields of production and business strictly contains credit in potentially dangerous areas; creating favorable conditions for people and companies to access capital is the consistent view of the State Bank. In addition, commercial banks need to improve business efficiency from the depth aspect instead of the scale's size, which is the direction many banks are applying. Good financial capacity is the opposite premise of attracting customers by competing on the cost of products and services. Selling more to an existing customer instead of many new customers is one of the cost-saving measures, increasing the

product's profit margin per customer. Since then, improving the bank's financial situation, expanding the scale of profits.

8. Policy implications for marketing strategy (MK): Commercial banks must invest financial and human resources for digital marketing activities. In the bank's marketing activities, understanding customers' needs and desires is very important to meet the needs and improve business efficiency and competitiveness in each market segment. Building a bank marketing plan needs to be strategic. Making a marketing plan not only helps banks be proactive with market changes, but also serves as a basis for evaluating the effectiveness of marketing activities effectiveness. In particular, the development of a modern integrated and digital marketing strategy should focus on the following main activities: product policy, pricing policy, distribution policy, mixed promotion policy, and human resource policy, policy on physical manifestations, and policy on the process, especially the green credit process.

Commercial banks must develop online green products and services and direct green marketing activities through green communication. In addition, commercial banks need to invest both financial and human resources for banking marketing activities. Attention and resources should be devoted to banking marketing activities, but compared with actual needs, the scale of this investment is not commensurate. Marketing is a process, and the results of marketing investment are tremendous. Continuing to invest financial resources not only makes the implementation of marketing strategies convenient and professional but also attracts highly qualified marketing human resources to develop green banks. Improve communication and education for customers about the benefits of the bank, encourage customers to use e-banking, build green headquarters and propagate to customers about green credit, and attach green messages in the bank's brand promotion campaigns. Focusing on green bank promotions, implementing awareness campaigns in rural areas, and considering appropriate cost policies for the bank's green channels.

CONCLUSION

The study's main objective is to identify and measure the factors affecting the development of green banking in Vietnam. To achieve the research objective, the authors surveyed 900 questionnaires corresponding to 900 officials and employees working at 15 commercial banks in five provinces and cities of Vietnam, such as Binh Duong, Ho Chi Minh, and Ba Ria - Vung Tau, Dong Nai, and Can Tho. As a result, 865 suitable answer sheets were collected. The rate was 96.11%, with 39 questions. Data is collected, aggregated, processed,

and analyzed using two qualitative and quantitative methods. The authors has tested Cronbach's Alpha, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and tested the structural equation model (SEM) for the development of green banking and green economy through the software SPSS 20.0 and Amos. The authors propose policy implications for green banking development in Vietnam based on the research results.

The research results showed that 8 factors positively affect green banking development at 15 Vietnamese commercial banks with a significance level of 1.0%. In addition, there are 5 factors affecting the green economy, and green banking development also affects the green economy. Eight factors include banking technology, legal framework, environmental policy, risk management, support policy, quality of human resources, financial capacity, and marketing strategy. In addition, the authors have proposed 8 policy implications that contribute to developing green banking and the green economy.

Limitations of the research and suggestions for further study: This study only studies the factors affecting the development of green banking in general, has not delved deeply into the impact on the green economy, in addition has not deeply analyzed the actual situation of green banking development and the green economy, the background theory is still limited in the research process of the research paper. Since this is a relatively new topic about green banking, it is still a new concept in Vietnam. Many banks are still indifferent to greening. Therefore, future studies should continue to analyze in depth the status of green banking and green economy development with secondary and primary data sets that combine, compare, and contrast with successful banks in building and developing green banks to increase the content of background theory in further studies.

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