

## GREEN BANKING ADOPTION STRATEGY (CASE STUDY OF BANKS IN JABODETABEK)

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**Abstract:** Green banking is a bank's operational activities to reduce environmental damage and preserve nature, thereby contributing to sustainable development. Green banking provides solutions for companies to various customer problems and business competition. The rapidly developing information and communication technology and the increasing number of people using the internet are opportunities for banks to transform to green banking. This study aims to prove the relationship between the variables that influence the adoption of green banking with the factors that influence the adoption of green banking, analyze the strategy by using SWOT analysis, and formulate managerial implications for increasing the adoption of green banking. The study was conducted on bank employees who have implemented green banking with 88 respondents who were determined by voluntary sampling. Data were collected using an online questionnaire. The statistical analysis used is the Structural Equation Model (SEM)-PLS. The results showed that all variables strongly correlate with the factors influencing green banking adoption. Banks can adopt green banking strategies based on the SWOT analysis results: green banking product innovation, increasing community empowerment programs, developing internal capabilities, collaboration with fintech and improving public education about the use of green banking. Several managerial implications that companies can carry out are with the latest marketing mix and formulating various green banking adoption strategies.

**Keywords:** brand image, competitor pressure, green banking adoption, top management support, value creation

**Abstrak:** Perbankan hijau merupakan kegiatan operasional bank untuk mengurangi kerusakan lingkungan dan menjaga kelestarian alam, sehingga berkontribusi terhadap pembangunan berkelanjutan. Perbankan hijau memberikan solusi kepada perusahaan terhadap berbagai permasalahan pelanggan dan persaingan bisnis. Teknologi informasi dan komunikasi yang berkembang pesat serta meningkatnya jumlah masyarakat yang internet membuka peluang bagi bank untuk bertransformasi ke perbankan hijau. Penelitian ini bertujuan untuk membuktikan hubungan antara variabel-variabel yang mempengaruhi adopsi perbankan hijau dengan faktor-faktor yang mempengaruhi adopsi perbankan hijau; menganalisis strategi dengan menggunakan analisis SWOT; dan merumuskan implikasi manajerial untuk meningkatkan adopsi perbankan hijau. Penelitian dilakukan pada pegawai bank yang telah menerapkan perbankan hijau dengan responden sebanyak 88 orang yang ditentukan secara voluntary sampling. Data dikumpulkan menggunakan kuesioner online. Analisis statistik yang digunakan adalah Structural Equation Model (SEM) PLS. Hasil penelitian menunjukkan bahwa seluruh variabel memiliki hubungan yang kuat terhadap faktor-faktor yang mempengaruhi adopsi perbankan hijau. Strategi-strategi yang dapat dilakukan bank dalam adopsi perbankan hijau berdasarkan hasil analisis SWOT yaitu inovasi produk perbankan hijau, peningkatan program pemberdayaan masyarakat, pengembangan kemampuan internal, kolaborasi dengan fintech dan peningkatan edukasi kepada masyarakat tentang penggunaan perbankan hijau. Beberapa implikasi manajerial yang dapat dilakukan perusahaan adalah dengan bauran pemasaran terkini dan merumuskan berbagai strategi adopsi perbankan hijau.

**Kata kunci:** adopsi perbankan hijau, citra merek, dukungan manajemen puncak, penciptaan nilai, tekanan pesaing

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## INTRODUCTION

Indonesia has entered the industrial revolution 4.0 which is marked by increasing digitization and automation in all fields. This revolution is a major change in the technology field that causes fundamental changes in how people live and work processes (Ellitan, 2020). This encourages businesspeople to prepare strategies and continue to innovate to survive, compete, and meet the needs of the community. The green concept has become a symbol of environmental awareness in the world (Nath et al. 2014). Banking is one of the sectors that implement green with the term green banking. Banking activities do not directly damage the environment but banks contribute indirectly by funding projects that can harm the environment (Alshebami, 2021). Banks require large energy use in buildings, high dependence on computers and electricity, travel activities to offer services, and generate commercial waste (Chew et al. 2016).

Green banking is a bank that considers all social and environmental (ecological) factors to protect the environment and conserve natural resources (Indian Banks' Association (IBA) 2014). Bank Indonesia issued Bank Indonesia Regulation (PBI) No. 14/15/PBI/2012 concerning Asset Quality Assessment of Commercial Banks. This is relevant to the Regulation of the Financial Services Authority (OJK) No. 51/POJK/2017 concerning the implementation of sustainable finance for financial service institutions, issuers, and public companies.

Green banking has many advantages for companies, society, and the environment. The advantage of green banking is that all banking transactions are carried out online, thus avoiding the use of paper, businesspeople will be more aware of environmental and social responsibilities to implement environmentally friendly business practices, banks develop environmentally friendly credit policies in business activities that will influence business owners to change their business to environmentally friendly, so that it is good for future generations (Ragupathi and Sujatha, 2016). Green banking also increases banks' competitiveness, reduces long-term costs, increases customer goodwill, achieves sustainable economic development of a country, increases bank profits in the long term, and promotes bank image (Zhang et al. 2022). There are many ways that can be done to adopt green banking, namely online banking, internet banking, green checking accounts,

green loans, mobile banking, electronic banking outlets and energy use savings that contribute to environmental sustainability programs (Gupta, 2015).

Every bank needs to be responsible for environmental sustainability because stakeholders are starting to care about the environment and want real action in environmental protection. Stakeholders such as competitors, customers, shareholders, and top management directly and indirectly influence the adoption of green banking (Choudhury et al. 2013).

A positive brand image is the company's first step towards success in attracting more customers. Reputation and brand image are the reasons for purchasing activities, decisions, and people's behavior (Shantha, 2019). Value creation is an important concept and process that differentiates a business from its competitors, helps secure long-term customers, and promotes branding (Ndzibah et al. 2022). Customer pressure is defined as consumer demand for sustainable products increasing pressure on organizations to adopt sustainability practices in the organization's supply chain (Alblas et al. 2014). The community is a stakeholder who directly or indirectly influences the company's environmental strategy (Bukhari et al. 2019). System quality describes the quality of an information system related to its operational characteristics (Benmoussa et al. 2018). Top management is responsible for supporting changes in business processes due to adoption of new technologies, reducing user resistance, and demonstrating commitment through actions to ensure successful adoption (Kulkarni et al. 2017).

The challenges of green banking relate to customer acceptance, use of technology, data protection, costs, and employee capabilities (Gupta, 2015). The Covid-19 pandemic has contributed to the acceleration of the digitization of business models and the shift of commercial activities from offline to online (Amankwah-Amoah et al. 2021) This pandemic has changed several banks from conventional to mobile banking. Banks must be prepared to face changes during a pandemic and make strategies to survive by switching to green banking.

Currently, there is literature that can provide a framework or guideline for the banking sector to adopt green banking. Previous research sets out several concepts regarding the issue of green banking and the factors that influence the adoption of green banking.

The purposes of this study are to prove the relationship between the variables that influence the adoption of green banking with the factors that influence the adoption of green banking; analyze the strategy by using SWOT analysis; and formulate managerial implications for increasing adoption of green banking.

## METHODS

The study was conducted in Jabodetabek from April until July 2022. The approach used in this study was a quantitative approach with a survey method. Sources of data used in this study are primary data and secondary data. The sampling technique used in this study is non-probability sampling with a voluntary sampling approach. Data was collected through filling out an online questionnaire using a google form. The questionnaire contains structured questions starting with profiling to determine the characteristics of respondents through gender, age, status, education, type of bank, position, and length of service.

The study was conducted on bank employees who have implemented green banking with 88 respondents. The variables used in this research are the dependent and independent variables. The dependent variables of this study are green banking, brand image, and value creation. The independent variables include competitor pressure, customer pressure, community pressure, system quality, and top management support. Research variables were measured using a Likert scale. This study uses SEM type Partial Least Square (PLS) because it can describe latent variables that can be measured using indicators (Ghozali, 2016).

The existence of competitive pressure also causes companies to use the organization's internal resources more efficiently (Wu et al. 2012). Banks that adopt green banking will be motivated to imitate the successful adoption of other competitors, thereby helping banks to capture untapped market opportunities and gain market advantage (Prajogo et al. 2012).

H<sub>1</sub>: Competitor pressure has a positive effect on green banking adoption

Empirical evidence shows that customer pressure stimulates companies to adopt green innovations and has been shown to increase competitiveness because

products are different from competitors, thereby enhancing product image and company reputation (Horbach et al. 2012; Qi et al. 2013).

H<sub>2</sub>: Customer pressure has a positive effect on green banking adoption

The community is a stakeholder who directly or indirectly influences the company's environmental strategy (Bukhari et al. 2019).

H<sub>3</sub>: Community pressure has a positive effect on green banking adoption

The quality of the system in implementing green banking should be developed considering the policy, response time, system reliability, system availability, functionality, and compatibility with all categories of customer projects (Bouteraa et al. 2021).

H<sub>4</sub>: System quality has a positive effect on green banking adoption

Top management can exert an important influence on the implementation of green policies and practices by other business units (Ahmed 2012). The company's top management commitment to green practices can play an important role in facilitating the adoption of green banking (Bukhari et al. 2022).

H<sub>5</sub>: Top management support has a positive effect on green banking adoption

Banks that adopt a green approach to improve sustainability are considered to have taken adequate steps in building a positive image for the bank (Falcone et al. 2018). Previous research has shown that green banking has a positive role in restoring customer trust through brand image (Sharma and Choubey, 2022).

H<sub>6</sub>: Adoption of green banking has a positive effect on brand image

Value creation consists of any company activity that generates innovation and creates value for customers. The Bank has principles for a sustainable banking system and helps the industry to make a positive contribution to society (Handajani et al. 2019).

H<sub>7</sub>: Adoption of green banking has a positive effect on value creation

Figure 1 shows the relationship between the variables that influence the adoption of green banking and the factors that influence the adoption of green banking.

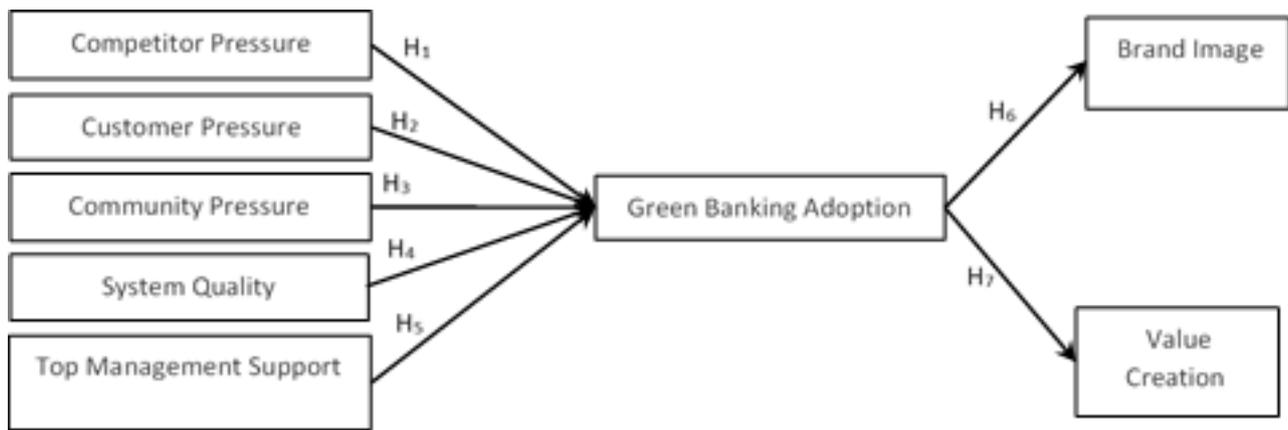


Figure 1. Conceptual Model

## RESULTS

### Characteristics of Respondents

The number of respondents in this study were 88 people with 46.6 percent male and 53.4 percent female. The age range of respondents in this study was dominated by the age group of 41 to 60 years, 43.2 percent. The education level of the respondents is dominated by undergraduate (S1) by 80.7 percent. Questionnaires were distributed to bank employees in 13 banks that have implemented green banking in Jabodetabek. Banks consist of state-owned, private, and foreign banks. These banks include Bank Mandiri, BRI, BNI, BCA, BSI, Muamalat, Bank Artha Graha Internasional, Bank Jabar Banten, Bank OCBC NISP, Bank CIMB Niaga, Bank HSBC Indonesia, Maybank Indonesia, and Bank Panin. State-owned bank employees dominated respondents in this study by 80.7 percent. Private banks accounted for 18.2 percent and foreign banks 1,1 percent.

Low management positions by 29.5 percent dominated respondents in this study. Middle management and frontliners are 19.3 percent. Back-office staff by 14,8 percent. Marketing staff are 11,4 percent. Other positions amounted to 5.7 percent. The research is dominated by respondents who have worked for more than 16 years by 40.9 percent. The second order is respondents who have worked for 1 to 5 years with a percentage of 25 percent. Characteristics of respondents in Table 1.

### Measurement Model Fit Test

Validity is the degree of accuracy between the data that occurs on the object and the data collected by the researcher (Sugiyono, 2017). The validity test used the Pearson Correlation by measuring the correlation between the variables and the total score of the variables. The correlation value or  $r_{count} > r_{table}$  indicates that the instrument is valid. If the correlation value or  $r_{count} < r_{table}$ , then the instrument is considered invalid. This study has a df value of 86, with an alpha value of  $\alpha = 0.05$ . The results of the validity test on the questionnaire showed that all questions on the questionnaire were valid, with  $r_{count}$  greater than  $r_{table}$  (0.213). The criteria for the suitability of the measurement model are measured based on the validity of the indicator variables on the latent variables. An indicator is declared valid if it has a loading factor value greater than equal to 0.5. The latent variables' validity and reliability include customer pressure, community pressure, system quality, top management support for green banking adoption, brand image, and value creation. Testing is done using SmartPLS. The outer loading value represents the reliability of the indicator in the construct. The recommended value for outer loading must be greater than equal to 0.7. Based on the outer loading test, it shows that all indicators are reliable because they have an outer loading value  $> 0.7$ . The results of the outer loading test can be seen in Table 2.

Table 1. Characteristics of respondents

Characteristics	Total (n)	(%)	Characteristics	Total (n)	(%)	Characteristics	Total (n)	(%)
<b>Gender</b>			PhD Degree	1	1.1	<b>Length of work</b>		
Male	41	46.6	<b>Bank Type</b>			Less than 1 year	11	12.5
Female	47	53.4	Private	16	18.2	1 – 5 years	22	25
<b>Age</b>			State-owned	71	80.7	6 – 10 years	12	13.6
20 – 30 years old	34	38.6	Foreign	1	1.1	11 – 15 years	7	8
31 – 40 years old	16	18.2	<b>Position</b>			Over 16 years	36	40.9
41 – 60 years old	38	43.2	Frontliner	17	19.3			
<b>Level of Education</b>			Back Office Staff	13	14.8			
High School	2	2.3	Marketing Staff	10	11.4			
Diploma	3	3.4	Low Management	26	29.5			
Bachelor’s Degree	71	80.7	Middle Management	17	19.3			
Master’s Degree	11	12.5	Others	5	5.7			

Table 2. Measurement model fit test

Laten Variable	Indicator	Loading Factor	r-count	Note	Laten Variabel	Indicator	Loading Factor	r-count	Note
Competitor pressure (CR)	CR1	0.836	0.753	Valid	Brand image (BI)	GB21	0.847	0.812	Valid
	CR2	0.891	0.768	Valid		GB22	0.779	0.751	Valid
	CR3	0.903	0.799	Valid		GB23	0.865	0.835	Valid
	CR4	0.864	0.808	Valid		GB24	0.854	0.829	Valid
	CR5	0.893	0.731	Valid		GB25	0.810	0.763	Valid
	CR6	0.919	0.757	Valid		GB31	0.850	0.760	Valid
Customer pressure (CM)	CM1	0.798	0.543	Valid	GB32	0.890	0.836	Valid	
	CM2	0.927	0.676	Valid	GB33	0.833	0.776	Valid	
	CM3	0.905	0.707	Valid	GB41	0.891	0.880	Valid	
Community pressure (CP)	CP1	0.741	0.672	Valid	GB42	0.813	0.779	Valid	
	CP2	0.927	0.774	Valid	GB43	0.664	0.595	Valid	
	CP3	0.934	0.802	Valid	GB44	0.829	0.777	Valid	
	CP4	0.939	0.788	Valid	BI11	0.913	0.875	Valid	
System quality (SQ)	SQ1	0.828	0.565	Valid	BI12	0.894	0.827	Valid	
	SQ2	0.868	0.544	Valid	BI13	0.893	0.856	Valid	
	SQ3	0.835	0.612	Valid	BI14	0.950	0.890	Valid	
	SQ4	0.915	0.658	Valid	BI21	0.945	0.894	Valid	
	SQ5	0.908	0.624	Valid	BI22	0.932	0.876	Valid	
	SQ6	0.867	0.643	Valid	BI31	0.893	0.843	Valid	
Top management support (TM)	TM1	0.883	0.755	Valid	BI32	0.859	0.840	Valid	
	TM2	0.923	0.849	Valid	BI33	0.857	0.819	Valid	
	TM3	0.911	0.850	Valid	Value creation (VC)	VC11	0.910	0.871	Valid
	TM4	0.942	0.842	Valid		VC12	0.953	0.887	Valid
	TM5	0.933	0.825	Valid		VC13	0.942	0.867	Valid
Green banking (GB)	GB11	0.798	0.704	Valid		VC21	0.915	0.821	Valid
	GB12	0.825	0.745	Valid		VC22	0.919	0.793	Valid
	GB13	0.857	0.830	Valid	VC23	0.948	0.864	Valid	
	GB14	0.891	0.876	Valid	VC31	0.925	0.825	Valid	
	GB15	0.756	0.803	Valid	VC32	0.908	0.830	Valid	
	GB16	0.823	0.835	Valid					

Reliability is one indicator of convergent validity. Many researchers also use Cronbach alpha as a measure of reliability even though Cronbach alpha provides lower reliability (Prayogo and Nirawati, 2019). The measurement model is assessed by construct reliability and variance extracted for each construct. The composite reliability and cronbach alpha results show good measurement results of Construct Reliability (CR) and Average Variance Extracted (AVE) indicate that the indicators used in this study have a reliability value that can measure the construct. Based on this, it can be concluded that the overall measurement model fits the data. All indicators in the research results are declared reliable and valid. The value of reliability and construct validity in Table 3.

### Contribution of Indicators to Competitor Pressure Variables

The competitor pressure variable has six reflective indicators. Based on SEM calculations, the indicator that has the highest contribution value is CR6 with a loading factor value of 0.919. This means that the CR6 indicator provides the strongest picture of the competitor's pressure variable. Distribution channels

at banks that encourage banks to implement green banking are ATMs, online banking, telephone banking, and agents. Another indicator, namely CR3 has a loading factor value of 0.903, CR5 indicator with a loading factor of 0.893, CR2 has a loading factor of 0.891, CR4 and CR1 indicators with a loading factor of 0.864 and 0.836, respectively. In summary, banks implement green banking because of competition from competitors, so that banks can have a competitive advantage.

### Contribution of Indicators to Customer Pressure Variables

The customer pressure variable has three reflective indicators. The results showed that the indicator with the highest contribution was CM2 with a loading factor value of 0.927. Banks implement green banking due to customer demand. The next indicator is CM3, then finally CM1 with each loading factor value of 0.905 and 0.798. Based on the results of the study indicate that banks that implement green banking will be considered more innovative than those that do not switch to green banking.

Table 3. The value of reliability and construct validity

Indicator	Composite Reliability	Cronbach Alpha	Average Variance Extracted (AVE)
Competitor pressure	0.956	0.944	0.783
Customer pressure	0.772	0.854	0.772
Community pressure	0.791	0.909	0.791
System quality	0.758	0.936	0.758
Top management support	0.844	0.954	0.884
Green banking	0.686	0.973	0.686
- Green Product Dimension	0.756	0.935	0.756
- Operational Dimension	0.800	0.938	0.800
- Customer Dimension	0.850	0.912	0.850
- Bank Policy Dimension	0.729	0.876	0.729
Brand image	0.816	0.972	0.816
- Brand Strength Dimension	0.879	0.954	0.879
- Brand Favorable Dimension	0.955	0.953	0.955
- Brand Unique Dimension	0.832	0.899	0.832
Value creation	0.859	0.976	0.859
- Customer Benefit	0.928	0.961	0.928
- Business Domain	0.912	0.952	0.912
- Business Partner	0.927	0.921	0.927

### **Contribution of Indicators to Community Pressure Variables**

The community pressure variable has four indicators. Based on the results of SEM calculations, the CP4 indicator has a very strong contribution compared to other indicators with a loading factor value of 0.939. That is, the indicator that describes the most about the encouragement from the community for banks to implement green banking. The next indicator, CP3 and CP2, has a loading factor value of 0.934 and 0.939. The form of bank responsibility to the community is carried out by implementing green banking. In addition, the adoption of green banking is also a form of support for community social activities. The CP1 indicator has the smallest contribution value with a loading factor value of 0.741. This indicates that the bank responds to the inputs from the community with the implementation of green banking.

### **Contribution of Indicators to System Quality Variables**

The system quality variable is measured using six indicators. The indicators of the system's quality and the loading factor are presented in Table 31. The SQ4 indicator is the most important indicator with the largest loading factor value (0.915). In fulfilling the green loan requirements in several green products such as green financing projects, green housing loans, energy-saving financing projects do not require a long process (SQ4) having a loading factor of 0.835. This relates to the speed of the procedure in meeting the requirements of green loans on green products (SQ5) with a loading factor of 0.908. The process on the green product bank is not too long to be able to "go green" (SQ2) has a loading factor of 0.868. Procurement of documents required to meet the requirements of green loans in green products does not slow down acceptance by customers (SQ6) has a loading factor of 0.867. Furthermore, product variations in green banking are in accordance with customer needs (SQ3) with a loading factor of 0.835. The last influential indicator is the adoption of green banking that does not take much time (SQ1) with a loading factor of 0.828. In short, the system's quality factor, which has a fast process and does not take a long time, allows banks to implement green banking.

### **Contribution of Indicators to Top Management Support Variables**

Top management support variable uses five indicators. Top management indicator of a bank has a supportive structural arrangement in implementing green banking (TM4) being the indicator that has the greatest influence on the top management support variable. The value of the TM4 loading factor is 0.942. Bank top management's enthusiasm for green banking has the second largest influence with a loading factor of 0.923. Top management who is enthusiastic about using green banking will accelerate the occurrence of green banking. The resources owned by top management will make it easier for banks to implement green banking. The last indicator is top management who supports the implementation of green banking with a loading factor value of 0.883.

### **Contribution of Indicators to Green Banking Variables**

The green banking variable is measured by four dimensions: green product, operations, customers, and bank policies. The green product dimension consists of six indicators, while the operational variable has five indicators. The customer dimension includes three indicators, and the bank policy dimension consists of four indicators. The indicator that the bank provides green financing projects (GB14) is the most important factor with the largest loading factor in all dimensions of green banking. Sustainable or non-destructive financing and investment programs include financing for biogas projects, microhydro, hydroelectric power, solar power, wind power, organic farming, and others. The Bank educates customers to transact online through internet banking, mobile banking, and sms banking (GB31), the second most important indicator. Third, the bank handles and responds to customer complaints using digital banking (GB33). In addition to digital banking, banks use social media as requests for information, suggestions, and public complaints. The fourth indicator is that banks provide infrastructure to support operational activities to save energy (GB23). The Covid-19 outbreak in Indonesia has caused banks to implement work from home and prepare all infrastructure to support this work pattern. Work from home causes reduced carbon emission because employees do not use transportation (*Laporan Keberlanjutan BCA Digital, 2021*). Fifth, the bank builds an environmentally friendly culture

for all customers (GB32). This is done by providing education, control, and waste management by banks. Sixth, the bank implements a green office/green building (GB24). The Bank conducts operational activities in a sustainable manner by implementing green office programs such as increasing the number of glass panels in the head office building so that during the day it can optimize sunlight.

Seventh, banks provide environmentally friendly project financing (GB13). Eighth is the bank providing energy-saving financing projects (GB16). Ninth, the bank has a credit policy that stipulates to avoid granting credit to projects that harm the environment (GB42). The Bank carries out a credit identification and screening process for the Sustainable Business Activity Category (KKUB) in the palm oil industry, renewable energy, and social forest sectors. The tenth indicator is the bank's efficiency in material consumption such as electricity, water, and fuel with a loading factor of 0.889. Eleventh, the bank saves on the use of plastic or paper (paperless) with a loading factor of 0.885. This is done by the bank by reusing the paper that has been used. Twelfth, namely the bank ensures that the palm oil/CPO sector must have an ISPO certificate or proof of ISPO registration with a loading factor value of 0.878. The thirteenth indicator is that the bank is transforming its work culture with a loading factor of 0.874. The Bank builds a sustainability culture in various ways, namely increasing the competence of management and employees according to their respective positions, socializing various sustainability topics, and building sustainability as part of the operational system (*Laporan Keberlanjutan Bank BNI, 2020*). In addition, work culture can be applied by turning off the electricity in the room if there is no work activity.

The fourteenth indicator is that the bank has environmental, social and governance (LST) policies in priority sectors such as CPO, energy, construction, FMGC (GB41) which has a loading factor value of 0.850. The objective of formulating policies for the palm oil and CPO plantation sector is to set sustainable standards for palm oil customers. Fifteenth are banks using digital banking to reduce emissions (GB12) with a loading factor of 0.845. Sixteenth are banks providing green housing loans (GB15). Seventeenth, the bank provides various digital banking facilities such as mobile applications, ATM, e-commerce, e-money, sms banking (GB11).

The last indicator is that banks avoid giving credit to projects that are speculative, gambling, pornographic, contrary to moral norms, narcotics, or other sectors prohibited by laws and regulations (GB44) with the lowest loading factor value of 0,786. In summary, banks avoid providing credit for projects or businesses that harm the environment.

### **Contribution of Indicators to Brand Image Variables**

Brand image variable is measured by three dimensions, consisting entirely of nine indicators. Based on the results of SEM calculations from the order that contributes the highest to the lowest, BI21 with a loading factor value of 0.978, BI22 (loading factor value 0.977), BI12 has a loading factor value of 0.948, BI14 with a loading factor value of 0.941, BI11 with a loading factor of 0.935, BI13 (loading factor value) 0.924, BI32 has a loading factor value of 0.923, BI31 has a loading factor value, and BI33 has a loading factor value of 0.895. The BI21 indicator that contributes the most to the adoption of green banking means that products and services that function well are the company's advantages and can improve the bank's image. Access to professional bank services has a great influence in improving the bank's image.

### **Contribution of Indicators to Value Creation Variables**

Value creation is measured by three dimensions with a total of eight indicators. Based on the results of SEM calculations, the VC12 indicator has a very strong contribution with a loading factor value of 0.968 compared to other indicators. This means that the VC12 indicator, namely that banks can create or develop variations of green banking-based services, is able to create the highest value. The VC31 indicator which states that banks can create green banking-based partnerships with customers in increasing customer loyalty with a loading factor value of 0.963. The next indicator is that banks can create quality standards based on green banking (VC13) and can create business networking based on green banking with competent parties (VC32) having each load factor of 0.962. Furthermore, banks can create or develop new services based on green banking (VC11) having a loading factor of 0.960. Finally, banks can create green banking-based products that are different from competitors (VC21). Bank indicators can create standards in accessing green banking on time (VC22) with the same loading factor value of 0.957.

## SWOT Analysis

The adoption of green banking in banks has an impact on the development of the banking sector in Indonesia (Figure 2). These impacts are improving brand image and creating value for the company. Companies need to make strategic plans to achieve their goals using a SWOT analysis. SWOT analysis is a strategic planning method to evaluate the influencing factors in achieving company goals, consisting of strengths, weaknesses, opportunities, and threats, both for short- and long-term goals (Marginingsih, 2019).

## Managerial Implications

SWOT analysis produces strategies that can be carried out by companies in implementing green banking. The result of the Strength-Opportunity (SO) strategy is the development of green products or innovations to compete and meet the needs of the community. The development and implementation of environmental, social and governance policies by banks is

necessary to strengthen the implementation of green banking. Another strategy is to increase community empowerment programs. This is done so that people who are starting to become aware of the environment can participate in protecting the environment and using green banking products. In addition, the company's internal capabilities are developed by providing training and workshops. Based on the research results, top management has a structural arrangement that supports the implementation of green banking (TM4).

Weakness-Opportunity (WO) strategy can be done by increasing the capacity and quality of the network quality to have reliable green banking products. Banks that can reach the wider community will make it easier for customers to access green banking to increase company revenues and satisfy customers. Improved provision of education to customers when conducting transactions with tellers/customer service, so that customers can clearly understand the use of digital applications.

	<p><b>Strengths (S)</b></p> <ol style="list-style-type: none"> <li>1. Mobile banking has many users</li> <li>2. Mobile banking can be used to open a savings account, so there is no need to come to the branch office</li> <li>3. Green banking product variants can be used 24 hours</li> <li>4. Green banking provides convenience, speed of service, and can save costs</li> <li>5. Improve employee performance</li> <li>6. Eco-friendly</li> </ol>	<p><b>Weaknesses (W)</b></p> <ol style="list-style-type: none"> <li>1. Requires internet network to access green banking</li> <li>2. Banks are experiencing problems with errors or errors in the mobile application</li> <li>3. There are still customers who have not received education on the use of mobile banking applications</li> <li>4. Green banking requires a large upfront investment</li> </ol>
<p><b>Opportunities (O)</b></p> <ol style="list-style-type: none"> <li>1. Policies or regulations by the government, OJK and BI support green banking</li> <li>2. The number of Indonesians who use cell phones is increasing</li> <li>3. The number of Indonesians accessing the internet is increasing</li> <li>4. Communities are starting to become aware of environmental conservation</li> </ol>	<p><b>SO Strategies</b></p> <ol style="list-style-type: none"> <li>1. Development of green products or product innovations so as to meet the needs of the community (S1, S2, S3, S4, O1, O2, O3)</li> <li>2. Development and implementation of environmental, social, and governance policies (S6, O3, O4)</li> <li>3. Increasing community empowerment programs (S1, O4)</li> <li>4. Development of training for internal companies, such as workshops with various expert sources (S5, O1)</li> </ol>	<p><b>WO Strategies</b></p> <ol style="list-style-type: none"> <li>1. Improved network capacity and quality so as to have reliable green banking products (W1, W2, O1, O2, O3)</li> <li>2. Increased education to customers when customers make transactions with tellers/customer service (W3, O2, O3)</li> <li>3. Strengthening the company's long-term plans (W4, O1)</li> </ol>
<p><b>Threats (T)</b></p> <ol style="list-style-type: none"> <li>1. Risk of crime such as data breach, cyber crime, wiretapping, and so on</li> <li>2. The arrival of competitors such as fintech, digital bank, neobank</li> </ol>	<p><b>ST Strategies</b></p> <ol style="list-style-type: none"> <li>1. Human resources division recruits new talent by developing employee competencies (S5, T1)</li> <li>2. Collaboration with various financial technology companies or banks to create their own fintech (S1, S3, T2)</li> <li>3. Strengthening cyber security (S1, S2, T1)</li> </ol>	<p><b>WT Strategies</b></p> <ol style="list-style-type: none"> <li>1. Improved system security on mobile applications or internet banking (W2, O3)</li> <li>2. Increased marketing and introduction of green banking products through various channels such as social media (instagram, facebook, youtube) (W3, T2)</li> </ol>

Figure 2. Green banking adoption SWOT analysis

The human resources division can carry out the Strength-Threats (ST) strategy by recruiting new talents and developing employee competencies. Collaboration with various financial technology companies or banks to create their own fintech. Strengthening cyber security needs to be improved in mitigating the risk of data breaches, cyber crime, and other crimes.

The Weakness-Threats (WT) strategy can be carried out by increasing system security in electronic banking applications such as mobile banking, increasing marketing, and introducing green banking products through various channels such as social media.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

All indicators make a strong contribution to the variables. Strategies that banks can carry out in adopting green banking based on the results of the SWOT analysis are green banking product innovation, increasing community empowerment programs, developing internal capabilities, collaboration with fintech and increasing public education about the use of green banking. The form of managerial implications that banks can do in adopting green banking is with the latest marketing mix and service improvement from all human resources owned by banks to create superior bank platform services for stakeholders. Banks create collaborations with partners such as e-commerce, fintech institutions, merchants, and digital wallets to enrich customer transaction service features. This provides convenience in accessing banking services for existing or new customers. Efforts to establish partners together can reach a wider range of customers.

The Bank improves its programs according to customer profiles and habits in conducting transactions. Banks utilize various information media to respond to customer complaints. Using these media can improve communication because every message the customer gives can be followed up, resulting in two-way communication. The use of social media must be optimized in socializing, educating, or promoting green banking activities.

### Recommendations

All banks must be able to implement green banking to have a competitive advantage and survive in competition by similar banks and digital banks. This is because banks adopting green banking not only support environmental sustainability but can also create a good image and create corporate value.

This research is still general in nature, does not refer to any bank that has implemented green banking, so that further research can be conducted on banks that have implemented green banking so that the strategy used can be more in line with the company's conditions. In addition, this study only proves the relationship between the variables that influence green banking adoption and the factors that influence green banking adoption, so that further research can consider the influence of other variables on green banking adoption and other factors due to the implementation of green banking.

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