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Determining Factors of Successful Commercial Banks in Implementing Sustainable Finance Policy in Indonesia

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Abstract: This study aims to determine the effectiveness of the implementation of a long-term policy, namely the Sustainable Finance (SF) policy made by the OJK (the Indonesia Financial Services Authority), especially in the initial phase of implementation. This study tries to answer whether an increase in a bank's perception of SF policy will be followed by a positive attitude towards the policy. Furthermore, this positive attitude will also be followed by proper actions to implement policy. This study also looks at whether the consideration of the size of the bank's business moderates the bank's perception of the bank's attitude and the bank's attitude towards the bank's actions to implement sustainable financial policy. This research also explores the bank's perception of the determinants of bank success in implementing SF policy. The combination method was used in this study. The quantitative method approach with one sample test and Structural Equation Model-Partial Least Square (SEM-PLS) and the qualitative method approach with Focus Group Discussion (FGD) were analyzed using NVivo. The results of statistical tests show that the level of bank perception of OJK's sustainable financial policy positively influences bank attitudes. Likewise, the bank's positive attitude towards SF policy positively affects the bank's actions. Bank size is not proven to moderate the positive influence of perception on attitudes and attitudes toward bank actions in implementing SF policy. A descriptive analysis of the bank's sustainability report shows that both large- and small-scale banks have a balanced response quality. The survey and FGD results show the bank's top management support, strengthening bank human resources, and appropriate incentives from the OJK and the government are very important to ensure the successful implementation of SF policy.

Keywords: Sustainable Finance, long-term, perception, attitude, action, bank size

Introduction

Research Background

One year before the 2015 Paris Agreement on Climate Change (Paris Climate Accords), the 2014 World Economic Forum (WEF) released the ten types of risks that need the most attention globally. Of the ten risks, four are related to the environment, namely the water crisis, the food crisis, extreme climates, and the failure of climate change mitigation and adaptation programs. Klaus Schwab, founder and executive chairman of the WEF, strongly emphasizes that these ten risks are not independent but interrelated, which can pose systemic risks (WEF, 2014).

Concern about the impact of climate change continues to increase, and it is proven that risks related to the environment are never out of the top ten risks. In the 2022 WEF publication, 5 out of 10 risks on a global scale in the next ten years will be climate related. Climate action failure ranked first, followed by extreme weather, biodiversity loss, human environmental damage, and natural resource crises.

Indonesia has an important position on climate change and has an interest in climate change action. Indonesia is one of the world's lungs, with around 126 million hectares (ha) of tropical forest (4th largest in the world). Meanwhile, the geographical position of an archipelago with 16,671 islands makes Indonesia vulnerable to the impact of rising sea

levels due to global warming. Indonesia is located among three large plate confluences and has 127 active volcanoes (ring of fire). In 2021, there are 10,519 earthquakes with the highest number of fatalities.

The 2015 Paris Climate Accords were ratified by 193 member countries of the United Nations Framework Convention on Climate Change (UNFCCC), including Indonesia. This agreement, among other things, explicitly emphasizes the need to make financial flows consistent with a low greenhouse gas (GHG) emission pathway and development that is resilient to the impacts of climate change. Indonesia's GHG emission reduction target with its own capability on the Updated Nationally Determined Contribution (UNDC) of 29% increases to 31.89% (2030).

The provision of climate finance includes both the government and the private sector. For the private sector, the transmission is through banking, capital markets, and the non-bank financial industry, such as insurance, pension funds, and multi-finance companies. There has been increasing international pressure for financial services institutions to implement environmental and social risk and governance (ESG) and increase green financing.

On the demand side, in the last ten years new businesses have also begun to emerge, such as clean and renewable energy, zero-emission transportation, green infrastructure and property, green tourism, and recycling businesses. The report issued by the Global Sustainable Alliance for 2020 informs us that sustainable investment in the United States, Canada, Japan, Australia, and Europe has reached USD 35.3 trillion (2020) and has grown by 15% in two years (2018–2020) and 55% in the last four years (2016–2020).

The contribution of banking to the Indonesian economy is significant. Total bank assets by the end of 2021 reached IDR 10,112 trillion, or 59% of Indonesia's GDP of IDR 16,971 trillion for that year. In the last ten years, every year the national banks have disbursed loans of around IDR 500-600 trillion. At the end of 2022, the amount of credit disbursed by banks had reached IDR 6,317.7 trillion (\pm USD 401.32 billion).

Some of these bank loans are channeled to business sectors that contribute to the emission of greenhouse gases, such as mining and fossil fuel-based energy, forest and land use (FOLU), processing industry, and transportation. At the end of 2021, investment loans disbursed by banks to the agriculture, forestry, and fisheries sectors reached IDR 239.38 trillion; mining and quarrying reached IDR 65.87 trillion; the processing industry reached IDR 238.30 trillion; and electricity and gas procurement reached IDR 131.40 trillion.

Meanwhile, the business field that received the smallest working capital loans was the management of toxic waste and recycling, which received less than 0.08% of the total credit. In Indonesia, the importance of private funding support for achieving the target of reducing greenhouse gas emissions has received serious attention from financial services regulators since 2014. This is in response to the government's fiscal limitations in providing climate change funding.

Recognizing that the transition to sustainable finance is not easy and will change the business processes of financial services institutions, policy formulations are made in the long term. OJK (the Indonesia Financial Services Authority) issued the Sustainable Finance Roadmap in 2015. This roadmap is used as a guide for OJK and the Financial Services Industry (FSI) for the next 5–10 years. One of the important steps in implementing the Sustainable Finance Roadmap was the issuance of OJK Regulation No. 51 of 2017 concerning the implementation of sustainable finance for banks, the non-bank financial industry (NBFI), and capital market players.

OJK Regulation No. 51 of 2017 becomes the umbrella for the implementation of sustainable finance policies for the next 5–10 years. Therefore, it is very important to get support from the financial services industry. This is the meaning of knowing the perception of the financial services industry about whether this policy will be well received or not. Theoretically, a good perception will lead to a good attitude and action as well.

A good understanding of the regulator regarding the perceptions, attitudes, and actions of banks in the initial phase of policy implementation is very important. First, the regulator can predict whether the policy will be implemented as intended, and second, take corrective action if the bank's perceptions, attitudes, and actions do not meet the expectations of the regulator. Previous research conducted by Rahman (2021) related to the policy adoption of green banking in Pakistan shows that there is a significant influence of bank policy, bank daily operations, and bank investment on the adoption of green banking practices. Accordingly, Chen's research (2022) shows bank employees, daily bank operations, and practices related to green banking policy have a significant positive effect on the green financing of banks in Bangladesh. Furthermore, regarding the adoption of green banking in Bangladesh, note that the green banking policy made by the Central Bank of Bangladesh has a positive influence on the level of disclosure of green banking (Bose, 2018).

Research aims and limitations.

This study aims to determine the effectiveness of the implementation of a long-term policy, namely the Sustainable Finance (SF) policy made by the OJK (the Indonesia Financial Services Authority), especially in the initial phase of implementation. In this regard, this study aims to analyze and examine: (i) the influence of the bank's perception of SF policy on the bank's attitude regarding this policy; (ii) the influence of attitudes regarding SF policy on bank actions as expected by the OJK as a policymaker; (iii) the effectiveness of BUKU (bank size classification) in moderating the positive influence of perception on the implementation of SF policy on attitudes related to the implementation of SF policy; (iv) the effectiveness of BUKU (bank size classification) in moderating the positive influence of attitudes towards the implementation of SF policy on actions related to the implementation of SF policy. and (v). Bank's perceptions regarding the determining factors for bank success in implementing SF policy, including aspects of incentives requested by banks.

A good understanding of bank responses at the beginning of a long-term policy such as sustainable finance is crucial for making forecasts on the success rate of implementing this policy and making corrections where necessary. In the case of Indonesia, which plans to implement this policy for all financial service players, the success of banks in applying sustainable finance policies will also serve as an example for other financial service sectors, such as the capital market and non-bank financial institutions. The failure to implement sustainable financial policies could potentially lead to the unachieved targets for climate change and the SDGs financing. At the same time, this would also increase environmental and social risks, which certainly not only may affect individual financial service institutions but also macro-level threats to the stability of the financial system.

SF policies in Indonesia are for banks, capital market players, and non-bank financial institutions, such as insurance, pension funds, and multi-finance companies. However, considering the dominant role of commercial banks in the Indonesian economy, OJK decided commercial banks would become the first to implement this policy. Therefore, this study is only focused on commercial banks. This research also only uses data from the 2016–2020 period as the initial period for implementing sustainable finance policies in Indonesia. In addition, the use of the terms "green banking" and "sustainable banking," as well as "sustainable finance," is a substitute because it refers to a bank that applies the 3P principles, namely profit, people, and planet.

Literature Review

Public policy. Public policy is always linked to government action. The action can be in the form of doing something or not doing something (Dye, 2004) that is related to the interests of the community. Policy can be established both in the form of regulations and in the form of policy statements (Edwards III and Sharkansky, 1986) followed by government programs or actions. Winarno (2016), quoting Dunn (1998), explains that there are 5 (five) policy stages, including agenda preparation, policy formulation, policy adoption, policy implementation, and policy evaluation. As a cycle, the stages will be repeated due to dynamic interactions with external and internal conditions of policymakers.

In policy implementation, policy consistency, how much deviation or modification is made, and the presence of factors that are politically influential in the long run (Mazmanian and Sabatier, 1983) are very important. Meanwhile, Edwards III (1980) put forward four important things that influence policy implementation, namely communication, sources, tendencies or behaviors, and bureaucratic structures. Especially for communication, there are three important things in the policy communication process, namely transmission, consistency, and clarity of the message to be conveyed. In each stage of the policy process, there is also dynamic interaction among stakeholders or actors, such as nation-states, international actors, NGOs, education/think tank institutions, philanthropies, influencers, and rating agencies.

There are two distinct approaches to the policy implementation phase, namely the top-down approach (Sabatier and Mazmanian, 1979) and the bottom-up approach (Hanf, Hjern, and Porter, 1978). The top-down approach creates more clarity of direction and consistency of support for policymakers, but it is not easy to convince policy recipients that it will benefit them. This approach often ignores the aspirations and responses of policy recipients. On the contrary, policy proposals may come from people who find there are problems and propose to the government to overcome their problems. A policy that uses a bottom-up approach is easier to accept because those who propose the policy almost certainly evaluate the cost and benefit for them. The weakness of this approach is the difficulty of standardization and full support from policymakers. Realizing this, an approach that combines the two—the top-down and bottom-up approaches—is proposed (Fullan 2007, Matland 1995, O'Toole 2000).

Sustainable Finance and Sustainable Development

Sustainable finance is a new phrase in business, especially in the field of financial services. Therefore, there is no agreement on the definition of sustainable finance. One that is trying to define sustainable finance is the European Commission (EC). On March 8, 2018, the EC, in communication from the Commission Action Plan: Financing Sustainable Growth, among others, stated that 'sustainable finance' generally refers to the process of considering environmental and social aspects in making investment decisions, which leads to increased investment in long-term and sustainable activities. The Indonesia Financial Services Authority (OJK) states that sustainable finance is comprehensive support from the financial services sector to create sustainable economic growth by harmonizing economic, social, and environmental interests.

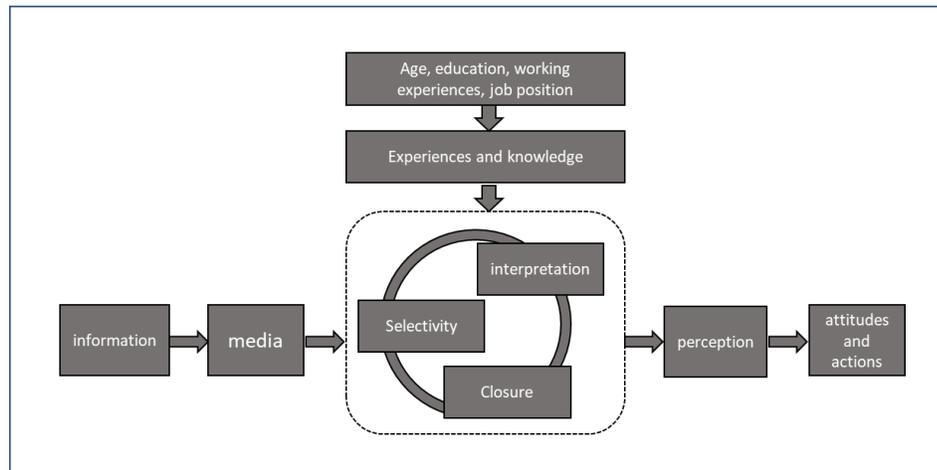
Of the various definitions, sustainable finance refers to the theory of triple bottom lines (3P), which was introduced by John Elkington in 1994 and 2020. John Elkington encouraged the transformation of business systems that previously only focused on financial calculation to a more comprehensive approach to measuring business impact. All business decisions should consider three aspects, namely profit, people, and planet (3P). In the context of a global agreement, sustainable finance is expected to be able to direct funding/investment to meet funding needs to achieve the Paris Climate Accord 2015 and the Sustainable Development Goals (SDGs) 2015. The systematic use of the term "sustainable development" refers to the document "Our Common Future," also known as the Brundtland Report (1987). The document, among other things, mentions that sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs" (Brundtland Report, p. 37)..

Perception

Perception is the process of receiving information on stimuli from the environment and converting it into psychological awareness (Van Denban and Hawkins, 1999). Perception results from processing information previously received by the recipient of the message. This information can be in the form of information that comes from outside or the personal experience of the recipient of the message. This information is not always a fact or even an opinion about fake news (hoaxes), but the recipient of the message judges it as true news. Therefore, perception is subjective. However, the recipient of the message will receive the message according to their perception of the message and who issued it. Perception is formed by the knowledge that the message recipient already has, and the perception of the policy information received gives rise to attitudes.

Knowledge, according to the Oxford Dictionary, means awareness or familiarity gained by experience of a fact or situation. Knowledge can be obtained from anywhere, both from one's own experience and the experience of others. Attitude is a person's response because of the process of forming perceptions. Attitude itself is a part of the affective. Affective is one of the three domains in Bloom's taxonomy. The other two are cognitive and psychomotor (Bloom et al., 1956). Attitude, according to the Oxford Dictionary, is the way in which a person views and evaluates something or someone. Attitudes determine whether people like or dislike things and, therefore, how they behave towards them. When the message is delivered, the recipient of the message is not like a transparent glass that will 100% receive the message because the recipient of the message also has a perception of the message.

Perception is not fixed but changes in line with the additional information and experience that a person receives. Other factors also influence perceptions, such as years of service, gender, age, and residence status (Asngari, 1984). Position and social status also have the potential to influence perceptions. Policy makers have expectations for the response made by the recipient of the message or the party that will implement the policy. However, the response will be influenced by the perception of the recipient of the message in addition to other factors. A perception of what the recipient of the message perceives about the message material is valuable information for predicting the behavior/actions taken by the recipient of the message as well as taking corrective action if necessary so that the message arrives as expected by policymakers and is followed by actions that are also in accordance with what policymakers expect. Figure 2.1 below describes the process of perception formation.

Figure 1: Perception Formation Process

Source: processed from Asngari (1984)

Sustainable Development, Climate Change and Role of Financial Services Authority

The existence of central banks and financial services regulators has an important position in supporting the achievement of the Paris Agreement and SDGs targets. The role of financial regulators has continued to increase, especially after the global agreement on sustainable development and climate change in 2015. The central bank's task in managing transition risk is a part of achieving the goal of monetary policy, namely financial system stability, which is needed to support sustainable economic growth. In response to transition risk, several central banks, such as ECB Banking Supervision, the Bank of England, and the People's Bank of China (PBoC), tried to conduct stress tests on the impact of climate change on financial system stability. Within the microprudential regulators, there is also awareness that transition risk will also affect the performance of individual financial service institutions. The increase in this role is reflected in changes in mandates, both directly and indirectly. (Dikau, S., and Volz, U. 2021). A survey conducted at 18 central banks in Asia and the Pacific shows the important role of central banks in promoting green finance, both in the form of regulation and product development of green loans. Durrani, A., Rosmin, M., & Volz, U. (2020). Indonesia's financial services sector has two regulators/supervisors: Bank Indonesia (the central bank) and Otoritas Jasa Keuangan (the OJK). Bank Indonesia supervises payment systems, monetary management, and macro-prudential supervision. Meanwhile, the OJK takes on a role as the micro-prudential supervisor. It regulates banks, capital markets, and the Non-Bank Financial Industry (IKNB). OJK also has a mandate to educate and protect consumers in the financial services industry.

The OJK began to pay attention to the issue of climate change with the issuance of the SF Roadmap in 2015. The roadmap focuses on increasing awareness and implementation of ESG and encouraging green portfolios. Meanwhile, Bank Indonesia focuses on the transition risk impact on financial system stability. Both BI and OJK also support government policy in electric vehicle development, including its ecosystem, namely the battery industry. BI and OJK are also actively involved in international initiatives, such as the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) and the Sustainable Banking and Finance Network (SBFN).

Realizing that SF policy is a long-term policy, OJK has combined a policy implementation approach, namely the top-down and bottom-up approaches. OJK has employed a bottom-up and top-down approach to SF policy. Because this strategy is a response to the government's commitment to climate change and sustainable development, it is referred to as "top-down." OJK works closely with departments and agencies of the government, including the ministries of finance, environment, and energy, to develop and implement the policies. In the bottom-up strategy, OJK communicates with many financial services associations and commercial banks that have voluntarily agreed to implement the SF. They identify as **the first movers** of sustainable banking.

Sustainable Banking and Finance Network (SBFN) Measurement Framework

In 2017, SBFN introduced the SBN Measurement Frameworks. This framework measures the progress of the implementation process of SF and the impact of various policies taken by SBN member countries. The framework has three pillars: ESG integration, climate risk management, and financing sustainability. Further, three cross-cutting sub-

pillars are strategic alignment, regulatory and industry association alignment, and expectations of financial institution actions, with 11 indicators as mentioned in Table 1.

Table 1: SBN Measurement Frameworks

	Pillar 1: ESG integration	Pillar 2: Climate Risk Management	Pillar 3: Financing Sustainability
Sub pillar 1: strategic alignment	<ul style="list-style-type: none"> National framework Alignment with international goals and standards Alignment with national goals and strategies 		
Sub pillar 2: Regulatory and Industry Association Actions	<ul style="list-style-type: none"> Overall approach and strategy Technical Guidance Supervisory activities and incentives Tracking and aggregate disclosure 		
Sub pillar 3: Expectations of Financial Institution Actions	<ul style="list-style-type: none"> Strategy and governance Organizational structure and capacity Policies and procedures Tracking, reporting and disclosure 		

Source: SBN Global Progress Report 2021, p.12 modified

The results of the analysis using SBFN measurement frameworks will determine whether a country is at a certain stage. There are three stages to implementing SF: preparation, implementation, and maturity. The preparation stage includes commitment and policy formulation. The implementation stage includes the development and advanced implementation. The third stage, namely maturity, includes consolidation and behavior mainstreaming. Each country has a different level of speed depending on how seriously the regulators make and implement policies and how positively financial service institutions respond to these policies. There are external aspects, such as economic, political, and other conditions, that also influence every stage. Table 2.2 below shows a map of SF policy implementation.

Table 2: Sustainable Finance Policy Implementation Map

Stage I: Preparation		Stage II: Implementation		Stage III: Maturing	
Commitment	Formulating	Developing	Advancing	Consolidating	Mainstreaming, behavioral change
External factors: government priority, economic, politic, and other conditions.					

Source: SBN Global Progress Report 2021:12 modified

The results of the SBFN study in 2021 show that 70% of the SBFN members are in stage II, namely implementation. Only three countries have entered the mature stage: China, Colombia, and Indonesia. The real challenge for SF policy lies in the implementation stage. This SBFN research has yet to reveal why Indonesia, China, and Colombia are the fastest in implementing SF policy. Those countries are able to manage the dynamics of interaction between regulators and the financial services industry. Collaboration is very important, especially in the early stages of implementing SF policy.

Adoption of Green Banking Practices and Environmental Performance

According to Rehman (2021), the adoption of green banking practices was significantly influenced by bank policy, daily operations, and investments. The government of Pakistan's initiative to support environmentally friendly businesses, particularly those in the banking sector, was another element that came to light. The concept of socially and environmentally responsible investment (SRI) serves as a guide for this study. SRI is a best practice for financial decisions that consider both corporate and social and environmental goals (also see Sparkes & Cowton, 2004; Schueth, 2003). Companies engage in activities that advance social responsibility, impact investing, shareholder activism, and community investment using SRI (Guay, Doh, & Sinclair, 2004). According to Lemke and Lins (2014), SRI influences how asset managers invest in diversified portfolios. According to research on the application of green finance rules in

China, banks and private firms should disclose their green credit and loans (Yu, C. H., Wu, X., Zhang, D., Chen, S., & Zhao, 2021).

Transition Towards Green Banking

According to several earlier studies, such as Park and Kim (2020), Rauscher et al. (2012), Stein and Walter (2012), and Rogers (2014), a theory of change can be a helpful strategic framework and tool for evaluating the status of green banking and gaps at the sectoral, institutional, and combined levels. It also identifies activities to reduce gaps and barriers, describes the expected outcomes and impacts, and helps to identify collectible data and how to analyze it in the future. According to Park (2020), the inclusion of risks associated with climate change, both in the form of transition risks and physical risks, expands the role of financial services regulators in managing financial system stability and the risk management of each financial service organization. There is a growing understanding of the significance of financial services regulators creating green banking regulations to change the financial industry and increase its contribution to each nation's Nationally Determined Contribution (NDC) (IDRBT, 2013).

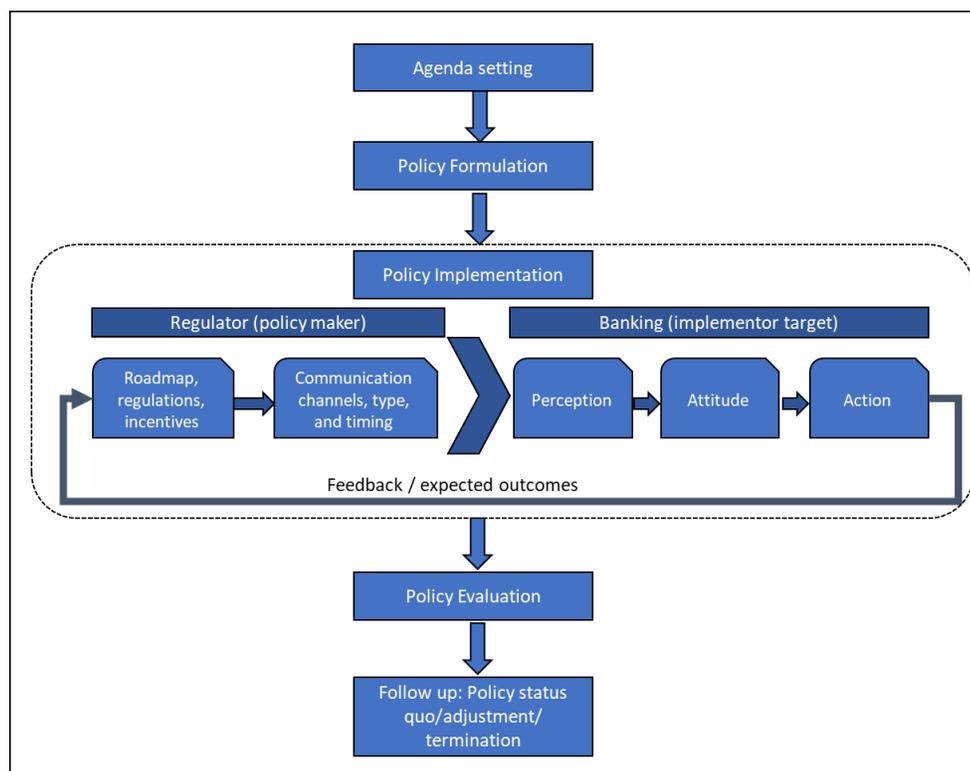
What drives green banking disclosure?

Bose (2018), in his study on general banks in Bangladesh (2007–2014), stated that the issuance of regulations in the form of green banking guidelines positively affects the level of disclosure of green banking. In addition, good corporate governance (GCG) also positively influences the level of green banking disclosure. Bangladesh Bank has required banks since 2011 to include disclosure of activities related to social and environmental responsibility in the bank's soundness rating on the management aspect. The bank's rating assessment includes CAMELS aspects (capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to risk). The report format refers to international standards, such as the Global Reporting Initiative (GRI). Miah (2021), in a study of commercial banks in Oman, stated that bank activities are still limited to internal bank efforts to reduce carbon footprints, such as recycling and reducing paper and energy consumption. Meanwhile, green investment is still limited to discourse, and they want regulations from the central bank, including those related to the obligation to disclose these activities.

Conceptual framework

As explained above, policy implementation is crucial and even determines the success of a policy. Therefore, it is important for regulators and policymakers to understand the policy implementation process, especially public communication. Factors include the clarity of the policy message, media selection, who conveys it, when it is delivered, the noise factor, and the target party that will implement the policy with various characteristics. This last factor will be the focus of this research, to find out the perceptions and attitudes of banks as a type of financial service institution that will be the first to implement SF regulations. If the bank's perception and attitude towards this policy are positive, then there is hope that the bank will do what is required by the regulations and will achieve the SF police objectives. Banks will increase their climate finance portfolio as well as implement ESG. If the assessment reveals something different, the regulator must act right away to make it right. This action will help the bank's perceptions, attitudes, and behaviors match expectations more closely. The following figure is the research conceptual framework.

Next page

Figure 2: Research Conceptual Framework

Source: Author

Research Methodology

Research design

This research can be categorized as applied research because the emphasis is more on practical things in public policymaking. It provides input for policymakers related to the specific problems faced. There are three types of applied research: evaluation, action-oriented research, and social impact assessment (Newman, 2014). This research is evaluation research. This study serves as an assessment. It will indicate whether commercial banks respond to the sustainable finance policy as expected. However, some parts of this research can also be categorized as action research because the policy under study is still in progress, even in its early stages of implementation.

Variable Operational Definitions

This study uses three variables. The independent variable is the level of understanding of commercial bank management about OJK regulation on sustainable finance. The measurement for this variable consists of 11 questions. Measurement for the indicator uses a Likert scale of 1 to 5, where 1 = don't really know, 2 = don't know, 3 = knows enough, 4 = knows, and 5 = really knows. The mediating variable in this study is the attitude of commercial bank management towards sustainable policies in Indonesia. This attitude was measured by 26 questions. The 25 questions were measured using a Likert scale of 1 to 5, with the following answer choices: 1 = strongly disagree, 2 = disagree, 3 = fairly agree, 4 = agree, and 5 = strongly agree. For the 26th question, assessing the OJK incentives that are most valued will determine the success of the implementation of the SF policy. There are nine alternative incentives to choose from on a scale of 1 to 9. Scale 1 is the most important, and scale 9 is the least important. The third variable is the dependent variable. This variable is in the form of actions taken by commercial banks in response to the Sustainable Finance Policy. This action was measured using five questions. Measurement for the respondent action variable uses a dichotomous scale, namely 0 = no answers and 1 = yes answers. To determine the score of the respondent's action variable on the Sustainable Finance Policy, it is calculated using the indexing method, which is stated in the following formulation.:

$$I\text{Respons} = \frac{\sum X_i}{\text{Total } \bar{X}} \times 100\%$$

Where X_i = Scoring for certain question items from respondents' actions on SF policy and Total \bar{X} = Total items of respondents' actions on SF policy.

Source of Data

This research utilizes primary data collected through a survey of all commercial banks (107 banks) operating in Indonesia. The survey was conducted in 2019, marking the first year of implementing the 2017 OJK regulation on sustainable finance. Its purpose was to assess the perceptions, attitudes, and actions of commercial banks regarding these OJK regulations. The survey targeted the management of commercial banks as respondents. According to the OJK regulation, commercial banks are categorized into four groups based on their business scale (determined by the size of the bank's capital), namely BUKU 1–4. BUKU 1 represents the smallest commercial banks, while BUKU 4 denotes the largest. For the purposes of this research, we simplified these categories into two groups: small-scale (BUKU 1 and 2) and large-scale (BUKU 3 and 4). This classification aligns with the OJK regulations, which stipulate that large-scale banks are required to implement the OJK regulations one year earlier than their small-scale counterparts.

Data analysis method

The data analysis method employed consists of the following components: (i) Instrument testing, which is a prerequisite for assessing latent variables (unobserved); (ii) Validity testing, which aims to determine whether the measurement indicators for the variables are valid (i.e., whether they measure what they are intended to measure). Validity testing is conducted using the Kaiser-Meyer-Olkin (KMO) test and Anti-Image Correlation, with decision-making based on established criteria (Hair et al., 2014). A KMO value of ≥ 0.5 indicates that the overall measurement indicators for a variable are valid, and vice versa. Additionally, if the anti-image correlation is ≥ 0.5 , the individual measurement indicators for a variable are considered valid, and vice versa; (iii) Reliability testing, which aims to assess the consistency of responses from participants. An indicator is deemed reliable if repeated measurements yield consistent results (i.e., the answers do not change). Reliability testing is performed using Cronbach's alpha, with the following criteria: if the value of Cronbach's alpha is < 0.6 , the variable is considered unreliable, and vice versa.

Descriptive and Inferential Statistics

Descriptive and Inferential Statistics. A descriptive statistical analysis was conducted to provide an overview of the characteristics of the variables utilized in the study. The analytical tools employed were categorized into two types: frequency distribution, which summarized the research variables associated with the demographic profiles of respondents, such as gender, age, and education level; and measures of central tendency, which analyzed respondents' perceptions related to the unobserved variables (i.e., perceptual variables).

Inferential Statistics: (i) One-Sample Testing aims to evaluate the perceptions associated with each indicator of the variables utilized in this research, specifically focusing on the perceptions and attitudes of respondents regarding the implementation of sustainable finance policies; (ii) Independent Samples Testing seeks to determine whether there are differences in perceptions related to each indicator of the examined variables, particularly concerning the perceptions and attitudes of respondents towards the implementation of sustainable finance policies in small-scale commercial banks (BUKU 1–2) compared to large-scale commercial banks (BUKU 3–4).

Structural Equation Model - Partial Least Square (SEM-PLS)

Structural Equation Modeling-Partial Least Squares (SEM-PLS) is a statistical analysis technique that integrates regression analysis and tests the canonical correlation between variables without relying on strict assumptions. In contrast, Ordinary Least Squares (OLS) requires the fulfillment of normality assumptions. Additionally, SEM-PLS is suitable for analyzing models with small sample sizes. In this study, SEM-PLS is employed to examine the influence of perceptions regarding the implementation of sustainable finance policies on attitudes toward these policies, as well as the impact on actions taken as a result of the implementation of sustainable finance policies. SEM-PLS is particularly appropriate in this context because the normality assumption is unlikely to be met due to the heterogeneous characteristics of the samples used. The stages of processing with SEM-PLS are as follows: (i) Develop a SEM-PLS model based on previous theories and empirical studies; (ii) Evaluate the SEM-PLS model using the following tests:

a. Collinearity, which assesses the absence of relationships among independent variables in the model; b. Coefficient of Determination (R^2), which explains the extent to which the variation in the independent variable can be accounted for by the dependent variable (Gozali, 2008); and c. Hypothesis testing, which evaluates the effect of each independent variable on the dependent variable..

Use of NVivo for deepening critical success factors and incentive schemes

To further explore the critical success factors and the necessity for incentives for banks, focus group discussions (FGDs) and in-depth interviews were conducted with banks and institutions involved in the implementation of sustainable finance (SF) policies. The analysis tool utilized for this study is NVivo, a qualitative data processing application developed by QSR International. NVivo is specifically designed for processing qualitative data, accommodating both text-based and multimedia information, regardless of the scale of the data. In addition to the survey data, this study also incorporates audio recordings from the FGDs and in-depth interviews. The results from the written surveys were subsequently integrated with the findings from the FGDs and in-depth interviews.

Descriptive Analysis of Commercial Bank Sustainability Reports

This analysis aims to evaluate the responses of commercial banks in meeting their obligations as mandated by the OJK. Specifically, the obligation involves submitting a sustainability report annually to both the OJK and the public, which is made accessible on each bank's website. The analysis will assess the number of banks submitting reports based on their size (categorized as small or large banks) and the quality of these sustainability reports, as determined by adherence to reporting standards and the potential use of alternative reporting standards.

Research Results and Discussion

Statistics Respondent Profile

The survey was distributed to all commercial banks operating in Indonesia. Out of 107 commercial banks, 54 completed and returned the survey. Among the responses, 9 samples (16.7%) were from small-scale banks (BUKU 1), while 27 samples (50%) were obtained from BUKU 2 banks. Additionally, 16 samples (29.6%) came from large-scale banks (BUKU 3), and the remaining 2 samples (3.7%) were from (BUKU 4).

The analysis of respondents by gender revealed that male respondents were more prevalent than female respondents, with 75.93% identifying as male and 24.07% as female. Regarding respondents' positions, a minimum of one level below the director level was required. Among the total of 54 respondents, 83.3% held positions one level below the director, while the remaining 6.7% occupied director-level positions.

The age profile of respondents indicates that the majority are between 41 and 50 years old (44.4%), followed by those aged 30 to 40 years (27.8%), and those aged 51 to 60 years (24.1%). The smallest groups consist of respondents younger than 30 years and those older than 60 years, each comprising 1.9%.

The profile of respondents by education level indicates that holders of a bachelor's degree constitute the largest group, accounting for 59.3%. The remaining respondents possess a master's degree, representing 40.7%, as illustrated in Figure 4.6.

Based on years of service, respondents with a service period of more than 2 years comprised 72.2% of the total, followed by those with a service period of 1 to 2 years at 18.5%. The lowest percentage was observed among respondents with a service period of less than 1 year, accounting for 9.3%.

Testing the Validity and Reliability of Variable Instruments

Testing Instrument variable Perception of the Implementation of Sustainable Finance Policy

The validity test results for this variable, which comprises 11 measurement indicators, were conducted using the Kaiser-Meyer-Olkin (KMO) measure and anti-image correlation. The test yielded a KMO value of 0.774, indicating that one measurement indicator of the variable of Perception of the Implementation of SF Policy valid. The validity assessment for each individual indicator produced an anti-image correlation value greater than 0.5 for all 11 measurement indicators, confirming that all indicators used to measure the variable perception of the Implementation of SF Policy individually valid. Meanwhile, reliability testing produced a Cronbach's alpha value of 0.874, which exceeds the threshold of 0.6, indicating that the 11 measurement indicators of the variable Perception of the Implementation of SF Policy are reliable. Therefore, all 11 measurement indicators of the variable Perception of the Implementation of SF Policy are both valid and reliable, and will be utilized in testing the research hypothesis.

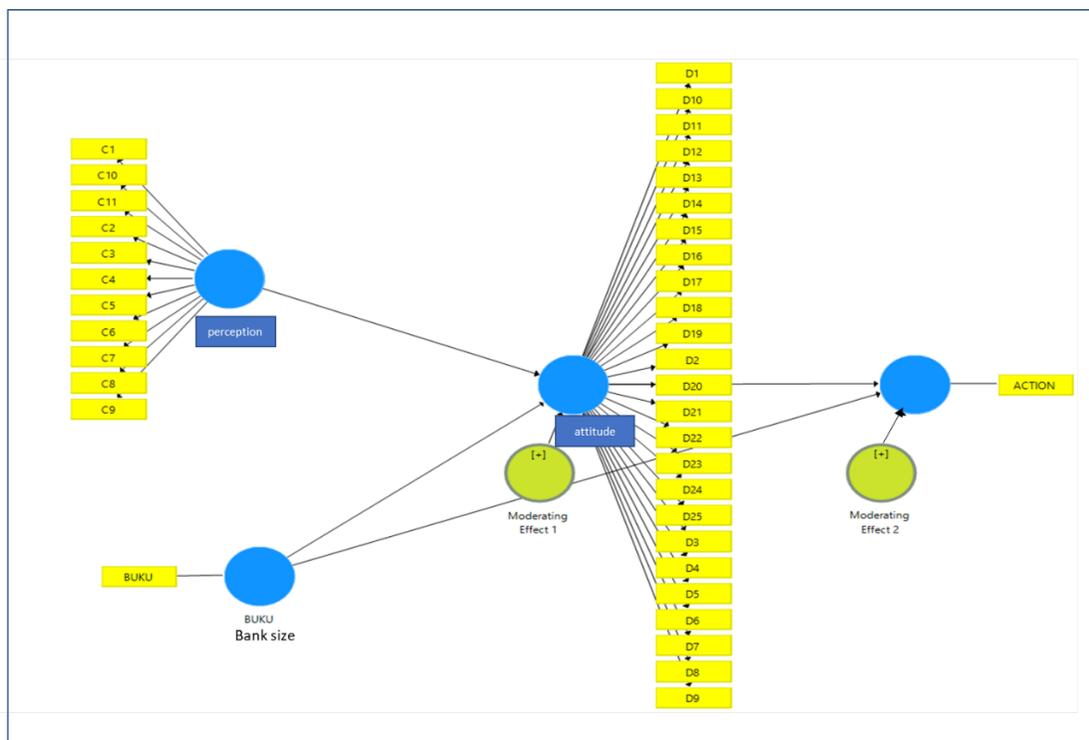
Testing the Instrument Variable Attitude towards the Implementation of Sustainable Finance Policy

The validity test results for this variable, which comprises 25 measurement indicators, were conducted using the Kaiser-Meyer-Olkin (KMO) test and anti-image correlation. The results indicated a KMO value of 0.792, which is greater than 0.5, and an anti-image correlation value exceeding 0.5. This suggests that the 25 measurement indicators of the attitude variable towards the implementation of the SF policy are valid. Furthermore, reliability testing, as indicated by a Cronbach's alpha value of 0.878, exceeds the acceptable threshold of 0.6, confirming that all 25 measurement indicators of this variable are reliable. Since the 25 indicators are both valid and reliable, they can be utilized in testing the research hypothesis.

Hypothesis Testing with SEM-PLS

The SEM-PLS model is employed to assess and evaluate the impact of perceptions, attitudes, and actions on the implementation of the SF Policy, moderated by bank categories: BUKU 1.2 for small-scale commercial banks and BUKU 3.4 for large-scale commercial banks. The proposed model is illustrated in Figure 3, and the stages of hypothesis testing will be explained as follows:

Figure 3: SEM-PLS Research Model



Source: processed data

In this study, we evaluated the relationship between constructs by examining collinearity and the coefficient of determination. We assessed multicollinearity among the independent variables in the model using the Variance Inflation Factor (VIF). The results indicate that the VIF values for both the perception and attitude variables are less than 10, suggesting that the assumption of multicollinearity in the SEM-PLS model is satisfied. The results for the SEM-PLS model fit are presented in Table 3.

Next page

Table 3: Coefficient Determination

Model SIM-PLS	R-square	Adjusted R ²
perception	0.301	0.259
Attitude	0.231	0.185

Source: processed data

For the model assessing the perception of the implementation of the SF policy, the adjusted R-squared coefficient is 0.259. This indicates that the behavior or variation of the independent variable—specifically, the perception of the implementation of the SF policy and the moderation of BUKU banks (BUKU 1-2 and BUKU 3-4)—can explain 25.9% of the behavior or variation in the dependent variable, which is attitudes towards the implementation of the SF policy. The remaining 74.1% represents variation attributed to other independent variables not included in the model.

For the attitudes towards the implementation of the SF Policy model, the adjusted R-squared coefficient value is 0.185. This indicates that the behavior or variation of the independent variable—namely, attitudes towards the implementation of the SF Policy and the moderation of BUKU banks (BUKU 1-2 and BUKU 3-4)—can explain 18.5% of the behavior or variation of the dependent variable, which is the actions taken in the implementation of the SF Policy. The remaining 81.5% represents the variation attributed to other independent variables not included in the model.

Hypothesis test

From Table 4 below, the following can be inferred regarding the implementation of the SF Policy: (i) With an estimated coefficient of 0.497 and a p-value of 0.001 (which is less than 0.05), perception has a positive and significant effect on attitude (H1 is accepted); (ii) With an estimated coefficient of 0.367 and a p-value of 0.053 (which is less than 0.10), attitude has a positive and significant effect on action (H2 is accepted); (iii) With an estimated coefficient of -0.027 and a p-value of 0.442 (which is greater than 0.05), BUKU banks moderate negatively, although not significantly, the relationship between perception and attitude regarding the implementation of Attitudes (H3 rejected) related to the Implementation of SF Policy (H3 is rejected); and (iv) With an estimated coefficient of 0.085 and a p-value of 0.386 (which is greater than 0.05), it can be concluded that BUKU banks moderate positively, although not significantly, the relationship between attitude and action related to the implementation of the SF Policy (H4 is rejected).

Table 4: Coefficient Determination of Sustainable Finance Policy Implementation

	hypothesis	Coefficient	p-Value	Decision
H1	Perception of the implementation of SF policy has a positive effect on attitudes related to the implementation of SF policy	0.497	0.001	Hypothesis Supported
H2	attitudes towards the implementation of SF policy have a positive effect on actions related to the implementation of SF policy	0.367	0,053*	Hypothesis Supported

H3	BUKU (bank size classification) moderates the positive influence of perception on the implementation of SF policy on attitudes related to the implementation of SF policy	-0.027	0,442	Hypothesis Not Supported
H4	BUKU (bank size classification) moderates the positive influence of attitudes towards implementation of SF policy on actions related to implementation of SF policy	0.085	0,386	Hypothesis Not Supported

*=alpha 10%

Source: processed data, 2022

Results of NVIVO Data Processing related to Incentives Requested by Banks and perceptions of the critical success factors for commercial banks in implementing SF policy

A survey of bank incentives in implementing Sustainable Finance (SF) indicated that enhancing the quality of bankers is crucial for a better understanding of the principles of SF and its application in product development and bank risk management. As a relatively new concept, banks face challenges in developing their own human resources programs that focus on SF. Furthermore, training and educational institutions offer few programs related to SF. Consequently, the availability of personnel in the labor market with SF competencies remains limited. This issue is also connected to the scarcity of SF study programs in higher education institutions.

The following are the top five incentives requested by banks: Human Resources (HR) training, public education, Non-Performing Loan (NPL) easing, in-house advocacy, and risk-weighted asset (RWA) relaxation. The request for RWA easing is likely related to the perception that green investments are riskier, along with the availability of alternative investment options that are more attractive in terms of both returns and risk management. Table 5 presents 13 nodes that appear in the coding of the banks' SF incentive survey document.

Table 5: Number of Coding Nodes of Sustainable Finance Bank Incentive Survey

Rank	Incentives scheme
1	Human capital capacity building
2	Public education
3	NPL easing
4	In-house advocacy
5	RWA relaxation
6	Legal Lending Limit easing
7	Loan provision Reduction
8	Environmental factors
9	Information system
10	Government Guarantee Scheme
11	Green bank Publicity
12	Regulation Support
13	Green bond as High-Quality Liquid Asset

Source: NVivo, processed 2022

Results of NVIVO Data Processing Perception Survey of Success Factors in the implementation of Sustainable Finance

The results of NVivo data processing indicate that the support of the bank's top management is the primary factor determining the successful implementation of the Sustainable Finance (SF) policy by banks. This is evident from the Management Role which is the largest contributor in the hierarchical structure. This finding is understandable, as SF is a new initiative that will alter the bank's business processes; therefore, support from top management is essential. Only top management has the authority to redefine the bank's vision and mission and to determine the strategic steps that must be taken. Additionally, top management is responsible for allocating resources, including human capital and budgetary funds, to implement the bank's SF program.

The second and third most significant factors are enhancing the quality of human resources and providing regulatory support. These two elements are interconnected, as the primary incentive a bank requires is effective training. This suggests that the bank currently lacks the necessary infrastructure to bolster human resources in the area of sustainable finance (SF). Another important factor is the establishment of a green target portfolio. Setting targets for a green portfolio will provide the bank with a clear business focus, along with various implications, particularly concerning risk management. Additionally, several other factors emerged from the survey, as illustrated in Table 6 below.

Table 6: Number of Coding Nodes of Success Factor Bank to implement Sustainable Finance Policy

Rank	Critical Factors
1	Top Management Support
2	Human Resources Development
3	Support from Financial Regulatory Body
4	Green financing portfolio
5	ESG
6	Social and environmental factors
7	Green credit scoring
8	MSME financing portfolio
9	Green banking publication
10	Green banking product innovation

Source: NVIVO, processed 2022

Results of Descriptive Analysis of Bank Actions in Implementing Sustainable Finance Policy

OJK regulation on Sustainable Finance (SF) requires Financial Service Institutions (including banks), issuers, and public companies to implement SF principles, prepare a Sustainable Finance Action Plan, publish Sustainability Reports (SR), and allocate a portion of their corporate Social and Environmental Responsibility funds to support SF programs. In this research, the Sustainability Report was selected as the measurement tool because the data is publicly accessible.

Large-scale commercial banks (BUKU 3 and 4) are the first financial service institutions required to publish their sustainability reports, one year after the issuance of the Sustainable Finance (SF) regulation. The following year, small-scale commercial banks (BUKU 1 and 2) are obligated to publish their sustainability reports. The contents of these reports detail the actions taken to implement SF principles, such as Environmental, Social, and Governance (ESG) criteria and green portfolios. Notably, both large and small banks began reporting their sustainability reports (SR) prior to the deadlines set by the regulator, the Financial Services Authority (OJK). The obligations for large banks commenced in 2019, while small banks began in 2020; however, some institutions published their SR as early as 2017, as illustrated in Tables 7 and 8 below.

Table 7: Commercial Banks submitting Sustainability Reports (SR)

	2017*	2018	2019**	2020***
Small Scale Commercial Bank: BUKU 1	5	5	5	9
Small Scale Commercial Bank: BUKU 2	40	43	42	47
Large Scale Commercial Bank: BUKU 3	28	27	29	30
Large Scale Commercial Bank: BUKU 4	7	7	7	7
TOTAL	80	82	83	93

*) OJK SF regulation issued

***) Mandatory for large scale commercial bank for the first time to issue Sustainability Report

****) Mandatory for small scale commercial bank for the first time to issue Sustainability Report

Source: Processed data

Table 8: Percentage of Banks Submitting Sustainability Reports compared to the Number of Banks in each BUKU

	2017	2018	2019	2020
Small Scale Commercial Bank: BUKU 1	41,7%	41,7%	41,7%	75,0%
Small Scale Commercial Bank: BUKU 2	69,0%	74,1%	72,4%	81,0%
Large Scale Commercial Bank: BUKU 3	93,3%	90,0%	96,7%	100,0%
Large Scale Commercial Bank: BUKU 4	100%	100%	100%	100%

Source: Processed data

In 2017, when POJK No. 51 of 2017 was issued by the OJK, there were 80 banks that made sustainability reports, both submitted separately and as part of the published annual report. To find out the level of depth/quality of SR, we took a sample of 20 banks that had reported SR. Those samples consist of 10 small-scale banks and 10 large-scale banks. From the table 4.7 below, we found most banks adjust their missions and strategies to be in line with SF policy. However, most of the banks that submitted SRs did not make any changes to their vision in line with SF.

Next page

Table 9: Quality of the Bank's Sustainability Report

NO	BANK SIZE	SUSTAINABILITY REPORT (SR)				
		VISION	MISSION	STRATEGY	YEAR	SR STANDARD
1	LARGE	0	1	1	2019	OJK,GRI,SASB,SUSBA
2	LARGE	0	1	1	2019	OJK,GRI
3	LARGE	0	1	1	2019	OJK,GRI,SUSBA
4	LARGE	1	1	1	2019	OJK,GRI
5	LARGE	1	1	1	2019	OJK,GRI,SASB,SUSBA
6	LARGE	0	0	1	2019	OJK,GRI
7	LARGE	1	1	1	2019	OJK,GRI,SASB,SUSBA
8	LARGE	0	1	1	2019	OJK,GRI
9	LARGE	1	1	1	2019	OJK,GRI
10	LARGE	0	0	1	2019	OJK,GRI,SUSBA
11	SMALL	0	0	1	2019	OJK,GRI
12	SMALL	0	0	1	2020	OJK
13	SMALL	0	1	1	2020	OJK,GRI
14	SMALL	0	0	1	2020	OJK,GRI
15	SMALL	0	0	1	2020	OJK,GRI
16	SMALL	0	0	1	2020	OJK,GRI,UNSDGS,UNGC
17	SMALL	1	1	1	2020	OJK
18	SMALL	1	1	1	2020	OJK,GRI
19	SMALL	0	0	1	2020	OJK,GRI
20	SMALL	0	0	1	2020	OJK,GRI

Source: Processed data

Another interesting aspect is that, in addition to adhering to OJK regulations, the reports submitted by banks also reference various other reporting standards, including the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), the Sustainable Banking Assessment (SUSBA), the United Nations Sustainable Development Goals (UNSDGs), and the United Nations Global Compact (UNGC). While these standards are generally voluntary, the Sustainability Report is mandatory. From the analysis of the Sustainability Report mentioned above, it can be concluded that both large-scale and small-scale commercial banks strive to meet the obligation of submitting Sustainability Reports. Furthermore, for their own benefit, the reports submitted also align with other sustainability reporting standards.

Conclusions

The following are the conclusions drawn from this research:

1. The Sustainable Finance (SF) policy initiated by the Financial Services Authority (OJK) addresses the challenges of meeting funding requirements for climate change mitigation and adaptation efforts. It also aligns with a sustainable national development strategy that seeks to balance economic growth with equitable development and the transition to a low-carbon economy. Recognizing that the shift to sustainable finance is complex and will transform the business processes of financial services institutions, the policy is designed with a long-term perspective.
2. The OJK, in implementing the SF policy, has chosen an approach that integrates both top-down and bottom-up strategies. This decision is based on the recognition that SF policies are long-term initiatives. Effective communication is essential during the policy implementation phase. Therefore, the OJK has established communication channels even during the formulation of the SF roadmap and regulations. Strong communication

promotes a sense of ownership and reduces the potential for misunderstandings. At the beginning of implementation, a comprehensive communication policy can inform regulators about the likelihood of successfully achieving the established objectives.

3. The results of data processing from surveys, focus group discussions (FGDs), and in-depth interviews with the bank yield the following information:
 - a) The perception of the implementation of the SF policy positively influences attitudes toward its execution.
 - b) Attitudes toward the implementation of the SF policy positively influence actions associated with its execution.
 - c) The OJK's decision to differentiate the implementation timeline for SF regulations based on bank size did not exhibit a moderating effect on perceptions of attitudes or on attitudes towards banks' actions in implementing OJK regulations related to SF.
 - d) Based on this research, several factors must be considered for the successful implementation of the SF policy. These include the support of the bank's top management, the strengthening of the bank's human resources capacity, and the provision of appropriate incentives. Specifically, the relaxation of regulations related to Non-Performing Loans (NPL) and Risk-Weighted Asset (RWA) assessments from the OJK, along with government support, are crucial to ensuring the effective implementation of the SF policy.
4. Positive perceptions and attitudes have led to affirmative actions. The proactive measures taken by banks, as evidenced by the publication of Sustainability Reports (SRs) ahead of the deadlines established by the regulator, as well as their voluntary adherence to widely recognized reporting standards, suggest that the objectives of the Sustainable Finance (SF) policy are likely to be met. Despite these encouraging indicators, challenges remain in persuading banks to align their vision, mission, and strategies with the SF policy.

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