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DIGITALIZATION OF BANKING AND FINANCIAL PERFORMANCE OF BANKING COMPANIES

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ABSTRACT
This study aims to identify the impact of bank digitization on the financial performance of companies in the Indonesian banking sector. The study uses his three-year (2018-2020) panel data of banking companies listed on the Indonesia Stock Exchange, covering 40 banks and 120 observations. Data were analyzed using panel data regression with a fixed effects model. The analysis tool used in this study is Eviews version 10. The results of this study show that the application of banking digitalization in the form of digital technology adaptation in banking firms has a negative impact on financial performance as measured by return on investment. These results highlight that the use of digital technology failed to improve the financial performance of Indonesian banks. As factual information, the study serves as the basis for decisions regarding the application of digital technology in banking companies. Investors are especially careful when investing in companies that use digital technology.

INTRODUCTION

The Covid-19 pandemic has added to the challenges facing businesses around the world. Involvement in the service sector makes banking companies vulnerable to the impact of government steps to deal with Covid-19, such as B. Lockdown Policy, Large-Scale Social Restrictions (PSBB) and Quarantine.

However, these policies have accelerated the trend of digitization, as digital solutions are increasingly needed so that people can continue their economic and social activities remotely via online channels – for example for work, study, communication, trading, or entertainment (UNCTAD, 2021).

Hootsuite data for 2021 Indonesia has 202.6 million internet users and 345.3 million cell phone connections. With the increasing use of the Internet, digital economic and financial transactions in Indonesia are also increasing rapidly with the spread and popularity of online shopping, the expansion and convenience of digital payment systems, and the acceleration of digital banking. Based on data from Bank Indonesia, the value of digital banking transactions increased by 45.64% (YoY) to IDR 39,841.4 trillion in 2021, and is expected to continue to increase in the coming year.

This pandemic period has also changed customer behavior in business life. Traditional in-person events are being replaced by online or digital events. This change in behavior is both a challenge and an opportunity for banking companies to continue to innovate in the digital world. Businesses that cannot keep up with the changes in this economic era can experience stagnation and even fall behind. The Research Institute for International Data Corporation Indonesia (IDC) predicts that 33 percent of global companies could go bankrupt if they do not adopt technology and digitize immediately.

Based on Financial Services Regulation (POJK) No. 12/POJK.03/2018, Banking technology innovation starts with the fundamental banking system (CBS) which is the core of the banking system. In 2018, the

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Government of Indonesia through the Financial Services Authority (OJK) issued OJK Regulation No. 12/POJK.03/2018 to introduce digital banking services to commercial banks on 8 August 2018.

Jumingan (2014) defines financial performance to represent the financial condition of a company during a certain period of time, including the collection and distribution of funds. Financial performance can be measured by solvency, liquidity and profitability indicators. ROA (Return on Assets) is part of profitability. ROA measures management's ability to generate profits from its assets.

Several studies have analyzed the impact of digitalization on company performance. Study of Sklyar et al. (2019), Imamah & Ayu Safira (2021), Bellakhal et al. (2020), and Martín-Peña et al. (2020) stated that digitalization had a positive impact on financial performance. The results of these studies are not in accordance with research Zhou et al. (2021), who in his research explained that digitalization alone cannot improve the performance of banking companies. Study of Angela (2019) found that banking digitization in the form of online banking had a negative and significant impact on return on equity (ROE). Tyas & Purwanti (2020) get the same research conclusion that the many implementations of internet banking have a negative impact on the financial performance of Islamic banking companies.

Signaling theory was introduced by Michael Spence in his 1973 study Job Market Signaling. Spence (1973) explains that the receiver of the information signal makes a decision based on the information received from the information provider. Such information may be in the form of descriptions, notes, descriptions or reports of past, present or future conditions. Brigham & Houston (2019) states that Signaling theory explains that signaling is a management activity that shows investors management's view of the company's prospects in the future. This information is provided by the company in giving signals to investors about company management, to determine the company's future opportunities, to distinguish quality companies from companies that are not good.

The Indonesian Institute of Accountants (2007) defines company efficiency as a company's ability to manage and control its financial resources. Fahmi (2011) defines financial performance as a description of a company's economic status, using financial analysis tools to explain the advantages of a company's financial condition that reflects the performance of a certain period. Jumingan (2014) explained that financial performance is a condition of a company's financial position over a certain time, both from the perspective of pooling funds and fundraising, with a measure of solvency, liquidity and profitability.

Digitization, or digital business transformation, is an approach to developing new business models through the integration of products, services, processes and people based on emerging digital technologies (Scheer, 2019). In the banking sector itself, digitization can be seen through the company's internal business processes and also in terms of service to its customers. Guidelines for the Financial Services Authority in the Implementation of Digital Branches for Commercial Banks define digital banking services as banking services or activities using electronic or digital bank devices and/or prospective customers and/or digital media. or independently for bank customers.

Banking digitalization facilitates access to information, communication, registration, account opening, banking and account closing for prospective customers or bank customers, including obtaining information and other transactions outside of banking products, including financial advice, investments, electronic transactions in business systems (e-commerce) and for the needs of other bank customers.

Based on the explanation above, the research hypothesis is:

H_1: Banking digitization affects the company's financial performance.

METHODS

The type of research used in this study can be classified as empirical research and is quantitative in nature. The variable tested in this study is the impact of digitalization on the financial performance of the banking sector. The data processing tool used in this research is Eviews 10 software.

Operational Definitions and Variable Measurements

The dependent variable used in this research is financial performance. Financial efficiency is the performance or results achieved by management in managing and controlling resources. In this study, researchers used ROA as an indicator to measure a company's financial performance. This ratio measures a company's return on additional investment across all assets. The ROA value can reflect the ability of the invested investment to achieve the expected return (Fahmi, 2011). The ROA formula can be calculated by dividing net profit after tax by total assets multiplied by one hundred percent (Brigham & Houston, 2019).

$$\text{ROA} = \frac{\text{Net Profit After Tax}}{\text{Total assets}} \text{ X } 100\%$$

This study uses an independent variable, namely banking digitalization. Digitization, or digital business transformation, is an approach to developing new business models through the integration of products, services, processes and people based on emerging digital technologies (Scheer, 2019). Digitalization in this study is measured using a combination of digital technology. Based on OECD (2017), Zhou et al. (2021) and Forcadell (2020), the use of digital technology is measured by the following items: internet banking, mobile banking, cloud computing, data management (big data analysis), artificial intelligence (artificial intelligence), blockchain, QR payment (Quick Response), and electronic money (e-money). Each item is measured using a nominal scale, a value of 0 indicates that the bank does not use this digital technology and 1 indicates that the bank uses this digital technology. Therefore, a score of 8 indicates that the bank has implemented all of these digital technologies, indicating the highest level of digitization, while a value of 0 indicates that the bank has not adopted any of these digital technologies, indicating the lowest level of digitization. The formula used to measure the banking digitization index is:

$$\textit{indeks Digital Banking} = \frac{\sum Xyi}{ni}$$

Information:

∑Xyi = Number of items applied

ni = Number of items (8 items based on the application of digital technology)

Research data

The secondary data used in this study comes from the banking company's annual report for 2018-2020 and the company's official website. Research information was also obtained from several other online sources, which were then confirmed through annual reports and the company's website. The sample used is a banking company listed on the Indonesia Stock Exchange. The sample collection method uses purposive sampling. The criteria for selecting companies are 1) banking companies that publish annual reports on the official IDX website, company official website and other official websites for the 2018-2020 period. 2) Banking companies implementing digital banking services in 2018-2020. Based on the existing criteria, then the sample obtained in this study is 40 companies with 120 companies being observed. Table 1. describes the number of samples in the year of research observation.

Table 1. Research sample

Information	Total
Banking companies listed on the IDX from 2018 to 2020	45
Companies that do not meet the criteria	(5)
Total Sample	40

Data analysis technique

The panel data regressor model is used to estimate the digitization of banking operations on company financial performance. At first, the researcher presented statistics describing the distribution of information. The classical assumption test was not carried out in this study, because research that uses panel data requires identification of certain parameters without making strict assumptions or fulfilling all the assumptions of

classical linear regression, such as ordinary least squares (Ajija et al, 2011). Regression models can be estimated using panel data with three approaches, namely general effects models, fixed effects models, and random effects models. To select the best model for estimating panel data, model tests were carried out in the form of the Chow test and the Hausman test. Based on the results of Chow's and Hausman's tests, it was decided that the most appropriate regression model for the research data was the fixed effect model and no LM test was needed. The panel data regression model for this study is as follows:

$$Yit = \alpha + \beta 1X1it + \varepsilon it$$

Information:

Y =*Return on assets*
α = Constant
β1 = independent variable coefficient
X1 =Banking digitization
ε =*Term error*
i = Number of samples as much40 companies
t = Research time as much3 years

RESULTS

Descriptive statistics

Descriptive statistics using empirical analysis samples can be seen in Table 2. Statistical results that describe the company's financial performance using ROA show a minimum value of -4.61, a maximum value of 13.58, a standard deviation of 2.29172 and a mean (average) 1, 1892. This indicates that in general the sample companies are able to make profits with a total ownership level of 1.1892, which means that the total balance is 1.1892 times net profit or 118.92%. The standard deviation value is greater than the mean 2.29172 > 1.1892, indicating that there is a large variation between the maximum and minimum values during the observation period.

The banking digitization variable as measured by the index describes how much digital technology the company has. The Bank's Digitization Index ranges from 0 to 1, with an average of 0.4479 and a standard deviation of 0.23065. This value indicates that the average sample company implements at least three forms of bank digitization.

Table 2. Descriptive statistics

Variable	N	Minimum	Maximum	Means	std. Deviation
ROA	120	-4.61	13.58	1.1892	2.29172
Banking Digitization	120	0.00	1.00	0.4479	0.23065

Source: Processed data, 2022

Table 3. Fixed Effect Model Regression

Variables	coefficient	std. Error	t-Statistics	Prob.
C	2.483467	0.505657	4.911364	0.0000
DB	-2.889600	1.111027	-2.600838	0.0111
R-squared	0.878102			
F-statistics	14.22706			
F-Statistics Prob	0.000000			

Source: Processed data, 2022

Hypothesis test

The results of data processing performed using Eviews 10 software, the results of the Fixed Effects Model (FEM) test are shown in Table 3. The data analysis model used to test the research hypothesis is a simple linear regression model. Simple linear regression can be used to identify the effect of the independent variable (banking digitization) on the dependent variable (company financial performance). The results of testing the hypothesis as a whole can be seen in Table 4.

Table 4. Results of the Significance F test and Hypothesis Test

Variable	Coefficient	t-count	Sig.	Results
DB	-2.8896	-2.6008	0.0111	H1 Accepted
R Square				0.878102
adjustedR2				0.816381
F			0.000	14,227

Source: Secondary data processed, 2022

As shown in Table 4, the calculated F value is 14.22706 > 3.920 (F table) and a significance of 0.000 <; 0.05 means the usage model is feasible and reasonable (proper). Based on Table 4, it is known that the R squared value is 0.878102. This value indicates that 87% of bank digitization variables can explain the relationship between the dependent variable, namely. company's financial performance, and 13% is influenced by variables that are not included in the variables of this study. Based on the results of the t test in table 4, it can be seen that the significance value is 0.0111. This value illustrates that the significance value is less than 0.05. Therefore, the impact of digitalization on banking and financial performance (ROA) is very significant. The results of testing the hypothesis of bank digitization on company financial performance show a negative regression coefficient of -2.8896. The significance level for testing the hypothesis is 0.0111 and the coefficient is negative indicating that the digitalization variable in the banking industry has a negative effect on company income. Thus, it can be concluded that this study accepts Hypothesis 1.

DISCUSSION

Based on the test results described above, it was found that banking digitalization affects financial results, measured by the ROA key figure. The results of this study support the signaling theory, the implications of signaling theory are based on how entities send signals to users of financial statements. Good results are reflected in the financial statements, which are a sign that the company is doing well. Digitalization is a way for banking organizations to improve operational efficiency, service and sustainability. However, based on the results of this study, digital business transformation in practice in banking companies does not show good results.

The implementation of digital transformation in banking companies shows that there will be a decrease in the value of ROA which can give a bad signal. Although the application of digitalization aims to provide company effectiveness, it does not necessarily have a positive impact, because there needs to be good planning from the company so as not to spend too much on digitalization. Therefore, investors must be careful when investing in companies that are undergoing digital transformation. Companies that implement more digital technology indicate that the company is also spending a lot of money and is not necessarily able to increase the value of ROA. The more digital technology is applied, the lower the ROA value.

The findings in this study are in line with research conducted by Tyas & Purwanti (2020), Sudaryanti et al. (2018), and Angela (2019) revealed that banking digitization has a negative effect on the company's financial performance. The results of this study are in line with Tyas & Purwant (2020), Sudaryanti et al. (2018) and Angella (2019), according to him, digitalization of the banking sector has a negative impact on corporate results. Furthermore, in line with research Zhou et al. (2021), according to him digitalization alone cannot improve company performance. A study by Scott et al. (2017) further explains that most digital technology implementations achieve very weak, even negative results in terms of profitability in the first years of implementation.

CONCLUSION

Based on the results of the analysis of the data, the hypothesis presented in this study regarding the impact of digitization of the banking sector on company financial performance was confirmed by empirical investigations of banking companies listed on the Indonesia Stock Exchange in 2018-2020. Banking digitization has an impact on financial results as measured by ROA. Therefore, this conclusion makes it clear that the more companies adopt or adopt digital technology, the lower the financial performance (ROA). Prospective researchers are advised to increase the number of observations outside of banking to get more samples which

can later help maximize the results of further research. Future researchers are encouraged to use other data besides the annual report. Future researchers are encouraged to add digitization indicators in line with the latest developments in digital technology. It is hoped that further research can add more variables.

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