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FINANCIAL TECHNOLOGY DETERMINATION IN TERMS OF FINANCIAL INCLUSION AND FINANCIAL LITERACY

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Abstract

This study aims to determine whether financial inclusion and financial literacy have an effect on financial technology. The variables in this research include financial technology, financial inclusion, and financial literacy. In this study, the authors used quantitative analysis methods. The analytical tool used was Partial Least Square (PLS) where processing used Smart PLS software, with primary data obtained from distributing questionnaires to 100 students at Syiah Kuala University. The results showed that the financial inclusion, and financial literacy, had a significant effect on the financial technology.

Keywords: Finance, Financial Technology, Financial Inclusion, Financial Literacy

INTRODUCTION

Disruptive technological developments have touched almost all aspects of life. Especially in the era of the 4.0 industrial revolution, the birth of the latest technology-based innovations is increasingly unstoppable, including in the financial sector or what is commonly called financial technology (fintech) (Abdullah,2014). The application of fintech has now penetrated various sectors, such as payment startups, lending, financial planning (personal finance), retail investment, financing (crowdfunding), electronic money, and others.

Based on data from the Financial Services Authority (OJK), until January 2019, fintech lending reached IDR 25.92 trillion. The amount of distribution increased by 14.36 percent from the beginning of 2018 which was recorded at IDR 22.67 trillion. This figure is still relatively small, because based on OJK research in 2016, there is a funding gap in Indonesia of IDR 989 trillion per year. The gap is due to the financial institution unable to meet the funding requirement of IDR 1,649 trillion, because it only has a total flow of IDR 660 trillion. Therefore, the fintech industry in Indonesia has enormous potential to develop again in the future considering that there are still many funding needs needed by the public that have not been met (Annisa, 2019).

Based on OJK statistical data on February 1, 2019, there are 99 fintech lending companies that have been registered and licensed at the Financial Services Authority (OJK) and 54 fintech payment systems registered with Bank Indonesia (BI). There are still several more companies that are still in the licensing process so that the number of these fintech companies will also continue to grow. The increasing use of Fintech is also one of the drivers for increasing National Financial Inclusion in accordance with a study conducted by the OJK in 2017. The high level of Internet penetration in Indonesia allows digital and internet-based financial services to be very easily accessible to all levels of society in various regions. . Ease of accessing financial facilities is one of the keys to improving people's welfare (Nisa et al, 2018), where slow access to financial facilities can be the cause of unequal income.

Financial inclusion is an effort aimed at eliminating all forms of barriers, both price and non-price, to public access to the use of financial services. Increasing the level of financial inclusion is deemed necessary because it involves community involvement in using financial products/services which of course play an important role in improving people's welfare (Nugroho, 2014).

In addition to facilitating people's activities in conducting financial transactions, fintech is also expected to help increase financial literacy. Financial literacy is the level of knowledge, skills, and public confidence regarding financial institutions and also their products and services that are issued in the index measure parameter. Financial literacy itself is useful in encouraging an understanding of money management and opportunities to achieve a more prosperous life in the future. OJK survey data in 2016 recorded that Indonesia's financial literacy rate was only 29.7%. This means that out of 100 new people, about 30 people have adequate knowledge, skills and beliefs about financial products and services (well literate). The low level of financial literacy reflects a lack of public understanding in optimizing the productivity of financial transactions.

Referring to the benefits of financial literacy from a macroeconomic side, it also has quite important implications where the higher the level of public financial literacy, the more people will use financial products and services (Kuada, 2016). The consequence is that the potential for financial transactions to occur is also higher, thus encouraging overall economic growth as well as creating income distribution and

Financial Technology Determination In Terms of Financial Inclusion And Financial Literacy increasing welfare. Pulungan (2019), reveals that access to financial facilities has rapidly become a global phenomenon, led by innovators and followed by academics, and is now attracting the attention of regulators. The academics in question are teachers or lecturers at formal educational institutions and also students.

Students as the millennial generation who play an active role in improving the digital economy are expected to be able to inspire other young people in developing creativity to build innovative and sustainable business ideas. Of course, in anticipating this, every student must have good financial literacy so that on a small scale it can be applied in managing personal finances. To support this, OJK took the initiative to create a National Strategy for Financial Literacy (SNLK) as an effort to increase financial literacy in Indonesian society, especially students by including financial education material in the tertiary education curriculum. For this reason, this study aims to determine whether financial inclusion and financial literacy affect financial technology.

THEORETICAL REVIEW

The National Digital Research Center (NDRC), in Dublin, Ireland, defines fintech as "innovation financial services" or "innovation in financial services which is an innovation in the financial sector that gets a touch of modern technology. Financial transactions through fintech include payments, investments, borrowing money, transfers, financial plans and comparison of financial products.

According to Husain (2011) Financial Technology can be defined as the act of creating and then popularizing new financial instruments as well as new technology, institutions and financial markets. This includes institutional innovations, fintech products and processes with financial services such as crowdfunding, mobile payments, and money transfer services causing a revolution in the startup business. With crowdfunding, you can get funds from all over the world easily, even from people you have never met, even though fintech also allows global or international money transfers.

Financial inclusion is a process that ensures easy access, availability and benefits from the formal financial system for all economic actors, Sarma and pais (2011). Meanwhile, Kunt and Klapper (2015) define financial inclusion as the provision of broad access to financial services without price or non-price barriers in their use.

A study conducted by Nisa et al (2018) revealed that one of the indicators used to measure the extent to which inclusive financial services have been carried out by a country is through the measurement of the financial inclusion index. The financial inclusion index is calculated using financial data. Some data that is often used is the number of accounts. Meanwhile, other data also used are the number of branches of the bank, the number of ATMs (Automated Teller Machines) and the amount of credit and deposits. The financial inclusion index in this study was applied to the ten banks with the largest asset predicate in Indonesia.

Xu and Zia (2019) confirms that financial literacy includes concepts starting from awareness and understanding of financial products, financial institutions, and concepts regarding financial skills. In high-income countries, financial literacy is seen as a complement to consumer protection. Whereas in low-income countries, financial outreach is much more limited. The role of financial literacy that will help developing countries to focus more on improving access to finance and financial services. This is in line with the study by Abdullah & Cong (2014) which explains that financial literacy includes a combination of understanding between consumers and investors about financial products, their concepts and abilities as

Financial Technology Determination In Terms of Financial Inclusion And Financial Literacy well as beliefs in assessing financial risks and opportunities. Financial literacy is very helpful in making choices and taking effective steps to improve financial well-being.

RESEARCH METHOD

Data and model

The data in this study are primary data that are collected directly from the active student at Syiah Kuala University – Banda Aceh. Slovin model is used to determine the number of Syiah Kuala University students samples (Tejada & Punzola, 2012):

$$n = \frac{N}{1 + Ne^2} \tag{1}$$

Where *n* is sample size, *N* is population, *e* is error term, in this study is set 10 percent. Based on equation (1), the numbers of samples are:

$$n = \frac{29,752}{1 + (29,752)(0,1)^2} = 100$$

Referring to the sample calculation, the sample in this amounted to 100 respondents with details in table 1.

Table 1 Distribution of Respondents	
Faculty	Actual Sample
Faculty of Economics and Business (FEB)	12
Faculty of Medicine (FK)	6
Faculty of Veterinary (FKH)	4
Faculty of Dentistry (FKG)	2
Faculty of Engineering (FT)	15
Faculty of Agriculture (FP)	11
Faculty of Law (FH)	6
Faculty of Teacher Training and Education (FKIP)	23
Faculty of Math and Science (MIPA)	7
Faculty of Social and Political science (FISIP)	6
Faculty of Marine and Fisheries (FKP)	4
Faculty of Nursing (FKEP)	2
Postgraduate	2
Total 100	

The analysis tool used is Partial Least Square (PLS), with the Smart PLS software. In theory, PLS uses two model specifications, namely the inner model and the outer model. Inner model describes the relationship between variables based on substantive theory, the inner model is evaluated using R0Square for the dependent construct, Stone-Geisser test for predictive relevance and t test and the significance of the structural path parameter coefficient. The inner model is used to test the research hypothesis, with a t-statistic value > 1,960 which indicates that the influence between variables is significant (Ghozali, 2014).

Table 2 Inner Model		
Criteria		
R2 good (0.67)		
R2 Moderate (0.33)		
R2 Weak (0.19)		
The larger the F^2 value, the greater the		
effect		
The value of Q^2 is getting closer to 1,		
so the model can predict based on the		
data.		

Source: Ghozali, 2014

In the measurement with the outer model, the evaluation is carried out using the convergent validity which measures the reflective model of the indicator, which is assessed based on the relationship between the item score or component score with the construct score. Then the discriminant validity of the measurement model with reflective indicators is assessed based on cross loading measurements with variables or using other methods by comparing the square root value of Average Variance Extracted (AVE). Furthermore, composite reliability can be measured using two kinds of measures, namely internal consistency and Cronbach's Alpha.

Table 3 Outer Model		
Evaluation	Criteria	
Converget validity, Loading factor, Average Variance, Extracted (AVE)	Outer Loading ≥ 0.50	
Discriminant Validity, Akar AVE > Correlation between variables	≥ 0.50	
Reliability Test, Composite Reliability	≥ 0.50	

Source: Ghozali, 2014

Furthermore, hypothesis testing will be carried out using the loading factor, which sees the number of Critical Ration (CR) values (tcount) with t table, the provisions are if CR > t-table with $p \le 0.05$ means significant and if CR < t-table with $p \ge 0.05$ the meaning is insignificant. This test can be done with t-statistics, when the t-value > t-table (± 1.98 in the 5% error rate or ± 1.658 in the 10% error rate).

FINDINGS AND DISCUSSION

Evaluation of Measurement Model (Outer Model)

In the measurement model (outer model), an evaluation of the relationship between the indicator and its variables is evaluated by assessing its validity and reliability. The validity of the variables was analyzed in two components: (1) convergent validity (loading factor and AVE / Average Variance Extracted), and (2) discriminant validity (cross loading). Meanwhile, to measure the reliability of the variables assessed by

Financial Technology Determination In Terms of Financial Inclusion And Financial Literacy composite reliability and Cronbach's alpha (Hair et al., 2014). In this study, one time testing of the research model, where the model uses 24 indicator questions contained in the questionnaire, as illustrated in Figure 4.2 below:



Figure 1. Research Model

Figure 1 explains that the output indicator loadings of each indicator for each variable have met the convergent validity requirements with a loading factor above 0.5. Meanwhile, the results of the outer model of the study will be explained in the following tables, namely (1) Convergent Validity Test (Loading factor and AVE), (2) Discriminant Validity Test and (3) Reliability Test (Cronbach alpha and composite reliability).

Convergent Validity Test

Convergent validity test of variables will be shown in table 4, display the output loading factor, and table 4 of the AVE table as follows:

Table 4				
	Outer Model view			
	Financial	Financial	Financial	
	Technology	Inclusion	Literacy	
x1		0,851		
x2		0,849		
x2.1.1			0,758	
x2.1.2			0,623	
x2.1.3			0,617	
x2.1.4			0,520	
x2.1.5			0,686	
x2.2.1			0,201	
x2.2.2			0,475	
x2.2.3			0,545	
x2.2.4			0,631	
x2.2.5			0,620	
x2.2.6			0,659	
x2.2.7			0,626	
x2.3.1			0,675	
x2.3.2			0,737	
x2.3.3			0,547	
x3		0,811		
x4		0,842		
y1	0,684			
y2	0,689			
y3	0,571			
y4	0,722			
v5	0,505			

Source: Output SmartPLS 3.0, 2020

Table 4 explains that the output indicator loading of each model indicator for each variable has met the convergent validity requirements for reflective variables with a loading factor above 0.5. Furthermore, in table 5, the last examination of convergent validity is to see the average validation extracted (AVE) output. The variable that has a good convergent validity is if the AVE value is more than 0.5 (Hair et al., 2014). The output of the AVE is as follows:

Table 5 AVE Result		
Variabel	Average Validation Exctract (AVE)	
Financial Technology	0,409	
Financial Inclusion	0,703	
Financial Literacy	0,370	

Source: Primary data processed by SmartPLS, 2020

The AVE value of 0.5 indicates that the variable can explain more than half the variance of the existing indicators (Hair et al., 2014). Based on Table 5 above, the Financial Technology variable has an AVE value of 0.409, Financial Inclusion has an AVE value of 0.703, which means that the financial inclusion variable in this study can explain more than half of the variance of its indicators, and the Financial Literacy variable has an AVE value of 0.370. The table above shows that there are 2 variables that have an AVE value below 0.5, namely the Financial Technology and Financial Literacy variables. However, this variable has a loading factor value for each indicator above 0.5. So that these variables can be analyzed further.

Discriminant Validity Test

The discriminant validity test uses the cross loading test method to compare whether each indicator of the three variables can measure the variable or even the indicator can measure other variables. The following will be shown in 6 for the results of cross loading :

Table 6				
	Discriminant Validity Value			
	Financial	Financial	Financial	
	Technology	Inclusion	Literacy	
x1	0,450	0,851	0,623	
x2	0,487	0,849	0,497	
x2.1.1	0,470	0,613	0,758	
x2.1.2	0,364	0,634	0,623	
x2.1.3	0,270	0,481	0,617	
x2.1.4	0,243	0,260	0,520	
x2.1.5	0,392	0,644	0,686	
x2.2.1	0,009	0,094	0,201	
x2.2.2	0,199	0,200	0,475	
x2.2.3	0,355	0,367	0,545	
x2.2.4	0,226	0,327	0,631	
x2.2.5	0,231	0,384	0,620	
x2.2.6	0,352	0,362	0,659	
x2.2.7	0,356	0,515	0,626	
x2.3.1	0,279	0,440	0,675	
x2.3.2	0,411	0,448	0,737	
x2.3.3	0,319	0,360	0,547	
x3	0,403	0,811	0,660	
x4	0,553	0,842	0,627	
y1	0,684	0,360	0,374	
y2	0,689	0,418	0,416	
y3	0,571	0,369	0,344	
y4	0,722	0,387	0,338	
y5	0,505	0,267	0,165	

Source: Primary data processed by SmartPLS, 2020.

These results indicate that each variable of Financial Inclusion and Financial Literacy has not been able to measure the manifest variable (indicator variable) properly. Because the table above shows that the correlation value of the variables with each indicator as a whole is not greater than the size of the other variables, which is 0.5.

Reliability

Reliability and validity criteria can also be seen from the reliability value, where a variable has high reliability if the Composite Reliability value is above 0.70 and Cronbach's Alpha is above 0.60. Here are the values, Cronbach's Alpha, Composite Reliability and for all variables:

Table 7 Cronbach's Alpha, Composite Reliability			
Variable	Cronbach's Alpha	Composite Reliability	
Financial Technology	0,638	0,773	
Financial Inclusion	0,860	0,904	
Financial Literatcy	0,874	0,894	

Source: Primary data processed by SmartPLS, 2020

The Effect of Financial Inclusion on Financial Technology (Fintech).

The results of hypothesis testing indicate that the influence of the financial inclusion variable on Financial Technology has a t-count value of 3.541. This value is greater than the t-table = 1.96 (n = 100) and the P-value of 0.001. This condition indicates that Financial Inclusion has a positive and significant impact on Fintech, which means that if the student's financial inclusion is low it will have an impact on decreasing the level of use of Fintech among students and vice versa if the student's financial inclusion is high it will have an impact on increasing the use of Fintech.

The Effect of Financial Literacy on Financial Technology (Fintech)

The results of hypothesis testing show that the effect of financial literacy on Financial Technology shows a t-count value of 2.295. This value is smaller than t-table = 1.96 (n = 100) and a P-value of 0.024. This condition indicates that Financial Literacy has a positive and significant effect on the use of Fintech, which means that if student financial literacy is low, it will have an impact on decreasing the use of fintech and vice versa if student financial literacy is high, it will have an impact on increasing Fintech.

CONCLUSION

Based on the discussion of the study results mentioned, the conclusions are as follows:

1. Financial Inclusion has a positive and significant influence on Fintech, which means that if Syiah Kuala University student Financial Inclusion is low it will have an impact on decreasing the level of use of Fintech and vice versa

2. Financial literacy has a positive and significant effect on the use of Fintech, which means that if Syiah Kuala University student financial literacy is low, it will have an impact on decreasing the use of fintech and vice versa.

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