



## Financial Inclusion and Banking Performance in Indonesia

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### **Abstract**

**Purpose:** This study was conducted to examine the impact of financial inclusion and banking performance in Indonesia. The study uses 4 financial inclusion indicators, among others: (i) the ratio of third-party funds to gross domestic income, (ii) the ratio of credit to gross domestic income, (iii) the number of ATMS, (iv) the number of branch offices.

**Design/methodology/approach:** The purposive sampling method is used to select the research sample. The descriptive statistical test and hypothesis test is used to analyze the data using e-views program. This research uses the population of data from the National Banking annual report either go public or not during the year 2014 to the year 2018. The study assumed financial inclusion can increase bank performance.

**Findings:** By conducting a regression analysis, researchers found that several indicators of financial inclusion can help improve banking performance using ROA and NIM ratios, as well as some indicators of financial inclusion that do not demonstrate its influence. The results of this study drove banking as one of the formal financial institutions to increase financial inclusion. Banks can earn more profit if financial inclusion increases

**Practical implications:** These findings will be very helpful to government or management to maximize their firm performance using provides services that are able to accommodate the needs of the society, whether it has a small business (SME) and the overall economic development

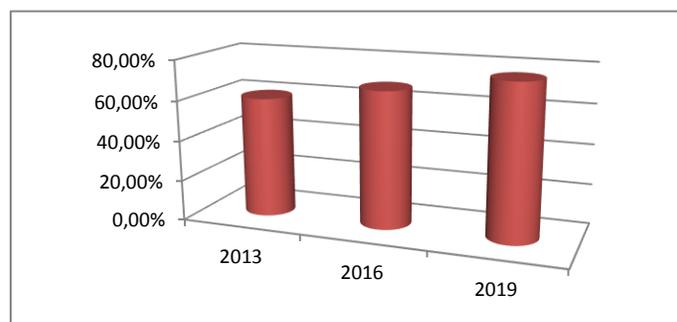
**Originality/value:** This article provides a new insight of some indicators of financial inclusion that do not demonstrate its influence to banking performance.

## 1. Introduction

The economic development of a country cannot be removed from the amount of contributions given by each related sector. One of them is the development of the financial sector. The development of the financial sector has become an important part of economic growth. The Government should also see that the public also participated in the country's economic growth. As for the factors that enable the society to increase productivity is they have access to finance (Banerjee, A.V. & Newman, 1993). Based on Presidential decree No. 82/2016 on the national strategy of inclusive finance, financial inclusion is a condition in which every member of the society has access to a range of quality, timely, seamless, and secured formal financial services at an affordable cost according to their individual needs and capabilities. Financial inclusion is one of the benchmarks for measuring the economic growth of a country. It is no wonder that financial inclusion is the highlight of economic policymakers around the world (Goel & Sharma, 2017). The Bank is an important and integral part of the state's financial and economic system (Levine, R., Loayza, N., 2000). The Bank provides services that are able to accommodate the needs of the society, whether it has a small business (SME) and the overall economic development (Beck, T., Demirguc-Kunt, A., & Levine, 2007). This development is one of the objectives of financial inclusion (King, R.G., & Levine, 1993).

Figure 1

### National Financial Inclusion Survey results



Source: data processed

Based on the data obtained from the survey conducted by the Financial Services Authority, Indonesia's financial inclusion has increased from 2013 to 2019 years. The Financial Services Authority in the national financial inclusion Survey results said there has been an increase in the financial Inclusion index of 8.08% of the financial Inclusion index in 2013 by

59.74% to 67.82% in 2016, and has increased 8.37% to 76.19% in 2019. Nevertheless, the phenomenon that occurs in the Indonesian society is the recipient of financial inclusion is still dominated by a certain layer of society only, such as 68.9% of recipients of financial inclusion are in urban areas, as well as recipients of financial inclusion Dominated by high income and higher education communities. The main problem that is often encountered that makes the wider society has not been able to enjoy formal Keyangan services include the difficulty of reach and public access to the infrastructure of formal financial institutions of the people living in Countryside. The main goal of inclusive finance is 40% of low income groups with limited access to financial services coverage or even without access at all.

To improve financial inclusion, financial institutions such as banks and other financial services companies offer a wide range of services that include individual and SME needs through various policies and facilities (Shihadeh et al., 2018). Financial inclusion is considered to be able to help low economic communities to gain easy access to financial services such as savings, credit and insurance, which in turn can promote economic growth National. The Government advocated that the improvement of financial services not only to encourage economic growth remains also to reduce the income gap in the society (Sarma, M. and Pais, 2008).

Financial inclusion has several indicators. The Global Partnership For Inclusion Index identifies three main indicators of financial inclusion, among other (i) financial access, (ii) Use of financial services, (iii) product quality and service delivery (GPFI, 2012). The banking industry invests in their resources in order to develop services to meet the needs of the society and to gain a measurable return accomplishment of the bank's own performance (Shihadeh et al., 2018).

Based on the explanation above, the decomposed research question is whether the trend of increasing financial inclusion can affect the national banking performance, both on government owned banks, national private commercial banks and mixed banks. The study uses 4 financial inclusion indicators, among others: (i) the ratio of third-party funds to gross domestic income, (ii) the ratio of credit to gross domestic income, (iii) the number of ATMS, (iv) the number of branch offices. The Return On Asset (ROA) and Net Interest Margin (NIM) are used as indicators of the bank's performance.

## **2. Literature Review and Hypothesis Development**

## 2.1 Third Party Funding Ratio on GDP

Based on presidential Regulation No. 82 year 2016 on national strategy of Inclusive Financial, financial inclusive is a condition where every member of the society has access to a variety of formal financial services that is qualified, Time, smoothly, and safely at an affordable cost according to their individual needs and abilities. The availability and ease of public access to formal financial institutions is one of the factors for tackling poverty and improving productivity (Banerjee, A.V. & Newman, 1993). Financial inclusion is a process that guarantees the ease of access, availability and use of the facilities of formal financial institutions for all walks of life (Sarma, M. and Pais, 2008). Financial inclusion is known as an increase in the quantity, quality and efficiency of financial brokerage institutions that can help improve the level of society life and strengthen the economy (Babajide, A.A., Adegboye, F.B., & Omankhanlen, 2015). Formal financial inclusion begins with the existence of financial transactions in banks or other formal financial services providers with the aim of making and receiving payments as well as for the storage of funds (Anginer et al., 2018).

Public access to formal financial services that are still relatively low due to low income, the complexity of banking operations, high bank administration costs, the location of distant and low Bank branch offices Financial and Banking education (Bank Indonesia, 2014). If viewed from the ratio of third party funds to gross domestic product, it can be seen that the low income society has low access to the formal financial institutions (Bank Indonesia, 2014). In some privately observed banks, they have large third-party funds, the number of branch offices not so much tends to use internet banking to increase market share and increase competitive advantage, so Financial inclusion can increase as well as banking performance (Malhotra, P., & Singh, 2009). From the literature study above, the hypothesis:

**H1a: Third-party funding ratios on gross domestic products affect ROA**

**H1b: Third-party funding ratios on gross domestic products affect NIM**

## 2.2 Credit Ratios on GDP

Still not in fact financial inclusion in the layer of low-income communities caused low public awareness to save and also interest them to apply for credit to formal financial institutions or banks (Bank Indonesia, 2014). The complex of governance and loan filing requirements provided by the bank caused the public to prefer to apply for a loan to informal financial institutions (moneylenders) even with high interest rates. Increased credit growth in

informal financial institutions led to a credit ratio channeled by formal financial institutions to low gross domestic products (Nugroho, 2016). Some SMES and low-income communities residing in developing countries have credit filing rates to low formal financial institutions. The reason for the low level of credit is one of the complicated requirements and the risk of collateral (IMF, 2014). If a formal financial institution such as a bank can accommodate the needs of the public will ease the application of the loan, then the bank will potentially increase the long-term profit (Shihadeh et al., 2018). Based on theoretical studies above, it can be formulated hypothesis:

**H2<sub>a</sub>: Credit ratio of gross domestic product to ROA**

**H2<sub>b</sub>: Credit ratio of gross domestic product to NIM**

### **2.3 Number of ATM's Machine**

Increased financial inclusion means increasing the proportion of economic activity that relies on interest rates, such as money saving and credit activities (Mehrotra, A., & Yetman, 2015). On the other hand, the growth of financial inclusion means the increase of financial transactions within the financial intermediary institutions as well as banks and result in gaps with social groups that have not been able to access and Participate in the existing formal financial institutions so as to be able to inflict moral hazard action that will later be able to harm financial stability (De la Torre. A., Ize, A., & Schmukler, 2011).

There are innovations in financial institution services such as easy access to ATM machines, availability of ATM cards, so that innovation will increase public access to formal financial institutions and increase financial inclusion, so that banking Compete to offer new services and facilities to address customer needs (Frame W.S., & White, 2012). A study assessed the effect of electronic banking services as an innovation tool on bank performance in 23 countries from 2005 to 2013 using ROA and ROE as a banking performance gauge, the result being that there was an influence Positive between the number of ATM machines and the number of branch offices with the bank's performance, while internet banking has the opposite influence (Akhisar, I., Tunay, B., Tunay, 2015). The existence of ATM machines can influence and increase the growth of banks in a number of countries. This is because the existence and ease of access of the public to the existence of ATM machines are considered to have a positive effect in the banking sector (Jagede, 2014). Based on the literature study, it can be formulated hypothesis:

**H3a: ATM machine effect on ROA**

**H3b: The existence of ATM machines affect NIM**

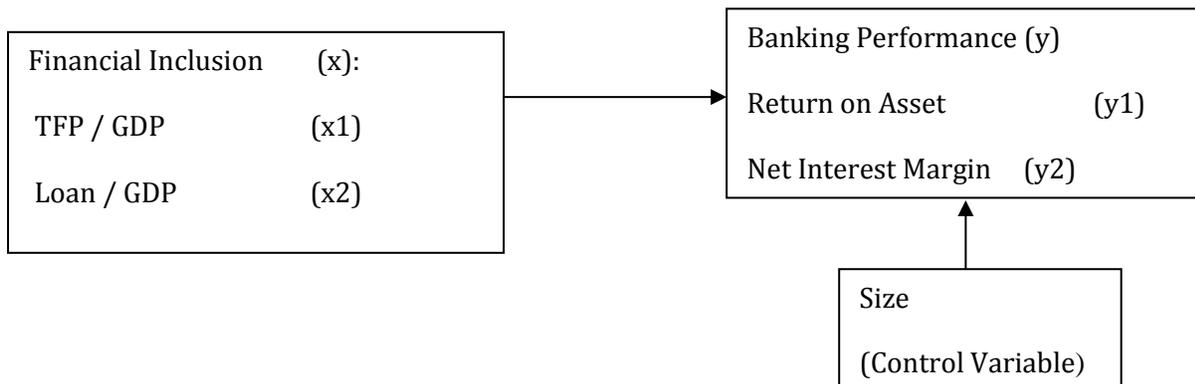
**2.4 Number of Office Branch**

The high innovation made by formal financial institutions in the last few decades does not make the public demand for the branch office to decline. It is assumed that not all communities are able to reach the access of banking services innovations such as internet banking and ATM machines, making the existence of a branch office of formal financial institutions and their services are still very interested in society, so With the high enthusiasm of the society in the presence of branch office services are expected to improve the performance of both short-term and long-term banks (Gutu, 2014). Based on the literature study, it can be formulated hypothesis:

**H4a: The presence of branch offices affect ROA**

**H4b: The presence of branch offices affect NIM**

**Conceptual Framework**



**3. Research Methodology**

This research will test the influence of financial inclusion on banking performance in Indonesia. This research is a quantitative descriptive research that is a study that reveals the small number of influences or relationships between variables expressed in numbers. This research uses secondary data of the form of data panels, namely the collection of research data involving many periods with many samples (Ghozali, I. & Ratmono, 2013).

**Population and Sample**

This research uses the population of data from the National Banking annual report either go public or not during the year 2014 to the year 2018. The sample determination in this

study uses the Purposive sampling method in which researchers use predefined criteria so that the samples are used in accordance with the research objectives (Sekaran, 2013). The sample criteria used are:

- a. Annual report of national banking that has been go public or not.
- b. Financial statements presented in Rupiah currency

**Table 1**

**Sample Criteria**

Criteria Used	Total Company
The appropriate banking company criteria to be researched (5 years)	400
Companies with incomplete annual report data	(100)
Number of samples	300

### **Variable Measurements**

Independent variables in this study are financial inclusion that is provable with: (i) the ratio of third-party funds to gross domestic income, (ii) the ratio of credit to gross domestic income, (iii) the number of ATMS, (iv) the number of branch offices. The asset return (ROA) and Net Interest Margin (NIM) levels are used as dependent variables and the company size is proscribed with the total assets as control variables.

**Table 2**  
**Variable Operational Definitions**

Variable	Operational definition	Measurement	Reference
<b>Independent</b>			
Financial Inclusion Indicator:			
Third-party funding ratios	Ratio of third-party funds to gross domestic product	Third party funding (year T): Gross domestic product (year T)	Statistik Ekonomi dan Keuangan Indonesia - Bank Indonesia
Loan Ratio	Ratio of loan amounts with gross domestic product	Loan (Year T): Gross domestic product (year T)	Statistik Ekonomi dan Keuangan Indonesia - Bank Indonesia
Number of ATMS	Number of ATMS per bank as an indicator of access dimension by the society	Number of ATMS	Sarma&Pais (2008)
Number of branch offices	Number of branch offices of each bank as an indicator of access dimension by society	Number of branch offices	Sarma&Pais (2008)
<b>Dependent</b>			
Banking performance:			
ROA	ROA is the ratio of net profit to total assets that measures the return on total assets.	$ROA = (\text{net profit after tax} / \text{total asset}) \times 100\%$	Brigham & Daves (2007)
NIM	The difference between interest and interest expense as part or proportion of the bank's total asset or earning assets	Interest income-interest expense	Surat Edaran Otoritas Jasa Keuangan Nomor 13/SEOJK.03/2017
<b>Control</b>			
Firm Size	The size of the company depicts a large small company indicated by total assets	LN (Total Asset)	Julizaerma&Zulkarnain (2012)

## Research Design

This research will test the influence of financial inclusion on national banking performance.

Equation of theoretical model is:

- a) Financial inclusion of Return On Asset (ROA)

$$ROA_{it} = \alpha + \beta_1 TPF_{it} + \beta_2 Loan_{it} + \beta_3 ATM_{it} + \beta_4 Branch_{it} + \mu_{it}$$

- b) Financial inclusion of Net Interest Margin (NIM)

$$NIM_{it} = \alpha + \beta_1 TPF_{it} + \beta_2 Loan_{it} + \beta_3 ATM_{it} + \beta_4 Branch_{it} + \mu_{it}$$

Where:

- I : Show the company.
- T : Shows the time sequence (2014-2018).
- $\alpha$  : Important coefficient or constants.
- $\beta$  : Shows the direction and influence of each.
- $\mu$  : Interference factor or cannot be observed.

#### 4. Results And Discussion

##### a. Descriptive statistics

The descriptive results of statistics of national banking performance both proscribed with ROA and NIM regarding the trend of rising financial inclusion in Indonesia are presented in the following table

**Table 3**  
**Descriptive Statistics Of Financial Inclusion And Performance Government-Owned Bank**

Variabel	Obs	Mean	Median	Max	Min	Std.Dev
TPF/GDP	20	3.076812	0.922749	9.64003	0.875446	3.852714
LOAN/GDP	20	3.071765	0.925322	9.615425	0.875395	3.84052
ATM	20	13895.95	17216	24684	1746	8540.478
BRANCH	20	3793.3	2369	10646	64	4037.746
ROA	20	725813.2	726375	737332	706013	8924.192
NIM	20	6.115	5.92	8.51	4.32	1.274509
SIZE	20	5.55E+14	4.63E+14	1.30E+15	3.06E+11	4.83E+14

From the above descriptive statistical results, it can be seen that two dimensions of financial inclusion, i.e. the ratio of third-party funds to gross domestic product, the ratio of credit to gross domestic product showed an average of 3.07 which means 3.07% of Total gross domestic product is the total third party fund placed at the bank. Likewise, the total credit channeled by banking amounted to 3.07% of total gross domestic product. The number of ATMS in four government owned banking has a maximum value of 24,684 and a minimum value of 1,746. It means that the Indonesian STATE bank maximizes the number of its ATM machines so that people easily access. Similarly, the number of branch offices reaching a maximum value of 10,646 and a minimum value of 64 that means that government owned banks are trying to improve financial inclusion by extending the reach of branch offices so that people have easy access of the formal financial institution.

**Table 4**  
**Descriptive Statistics Of Financial Inclusion And Performance Of National Private Commercial Bank**

Variabel	Obs	Mean	Median	Max	Min	Std.Dev
TPF/GDP	215	0.806165	0.803233	0.932988	0.577461	0.058966
LOAN/GDP	215	0.80171	0.798066	0.910237	0.574731	0.059666
ATM	215	1316.028	74	24648	6	4304.688
BRANCH	215	412.1907	47	10646	8	1573.142
ROA	215	1.1136	1.24	4.62	-7.47	1.779117
NIM	215	4.900791	4.77	12	0.24	1.823968
SIZE	215	4.34E+13	9.41E+12	2.67E+14	2.40E+09	6.40E+13

From the above descriptive statistical results, it can be seen that two dimensions of financial inclusion, i.e. the ratio of third-party funds to gross domestic product, the ratio of credit to gross domestic product showed an average of 0.80 which means 0.8% of Total gross domestic product is the total third party fund placed at the bank. Similarly, the total private banking credit is distributed by 0.8% of total gross domestic product. The number of ATMS on national private banking has a maximum value of 24,684 and a minimum value of 6. This means that there is a national private bank in Indonesia that has not fulfilled the dimensions of financial inclusion is one of the dimensions of ease of access. Similarly, the number of branch offices reaching a maximum value of 10,646 and a minimum value of 8 which means that there are a number of private national banks that have not yet optimized the number of branch office services as one dimension of financial inclusion is Access dimension, but on the other hand, the number of ATMS and branch offices in some private national banks indicates the innovation of banking services using technology such as the development of internet banking and mobile banking services.

**Table 5**  
**Descriptive Statistics Of Financial Inclusion And Performance Of Mixed Banks**

Variabel	Obs	Mean	Median	Max	Min	Std.Dev
TPF/GDP	55	0.813579	0.812748	0.852797	0.775609	0.017977
LOAN/GDP	55	0.813954	0.811141	0.856012	0.77085	0.022001
ATM	55	67.96364	77	114	14	34.07669
BRANCH	55	63.30909	65	171	8	41.76738
ROA	55	1.053091	1.02	5.3	-5.09	1.568584
NIM	55	4.502182	4.37	13.06	1.37	2.052061
SIZE	55	2.57E+13	1.64E+13	9.12E+13	3.89E+12	2.24E+13

From the above descriptive statistical results, it can be seen that two dimensions of financial inclusion, i.e. the ratio of third-party funds to gross domestic product, the ratio of credit to gross domestic product showed an average of 0.81 which means 0.81% of Total gross domestic product is the total third party fund placed in the mixed bank. Likewise, the total credits distributed by the mixed banks amounted to 0.81% of the total gross domestic product. The number of ATMs in a mixed bank has a maximum value of 114 and a minimum value of 14. It means that there is a mixed bank in Indonesia that has not fulfilled the dimensions of financial inclusion is one of the dimensions of ease of access. Similarly, the number of branch offices reaching a maximum value of 171 and a minimum value of 8 which means that there are a number of private national banks that have not yet optimized the number of branch office services as one dimension of financial inclusion of the dimension Access, but on the other hand, the number of ATMs and branch offices in several mixed banks can be caused because not all mixed banks establish branch offices in all provinces and cities in Indonesia. The mixed Bank prefer to set up branch offices and ATMs in downtown or major cities.

**b. The Simultaneous Significance Tests (Test F)**

The F test is intended to know whether the independent variables tested against will have a simultaneous influence on the dependent variables (Ghozali, I. &Ratmono, 2013). In this study, F test will be conducted separately for all three banking categories, namely for state-owned banks, private national banks and mixed banks.

**Table 6**  
**F-Test Model And A Test Of Coefficient Determination (R) in Government-Owned Bank**

Dependen variable	R Squared	Adjusted R Squared	F Statistic	Prob (F-Statistic)
ROA	0.267986	0.006553	1.025065	0.440072
NIM	0.99764	0.996797	1183.632	0.000000

In Government-Owned Banks, the value of Prob (F-Statistic) in the dependent variable of ROA shows the value of  $\alpha > 0.05$  of 0.440072 which means the four variables independent of financial inclusion (the ratio of third-party funds to gross domestic product, the ratio of credit to gross domestic product, the number of ATMs and the number of branch offices)

does not affect ROA variables. In the dependent variable NIM or net interest margin indicates the value of Prob (F-Statistic) is 0.0000 or  $\alpha$  value of  $< 0.05$ , which means that one or four independent variables that are indicators of financial inclusion simultaneously or jointly have affected the variable net interest margin (NIM).

A R-squared-adjusted value for ROA variable of 0.006553 that means 0.65% of ROA's dependent variables are influenced by four independent variables and the rest are influenced by other factors. The adjusted value of R-squared for the NIM variable is 0.9967 which means that 99% of NIM's variables are influenced by four independent variables (the ratio of third-party funds to gross domestic product, the ratio of credit to gross domestic product, the number of ATMs and the number of branch offices) and the remaining 1% is affected by other factors.

**Table 7**  
**F-Test Model And A Test Of Coefficient Determination (R) in National Private Bank**

Dependen variable	R Squared	Adjusted R Squared	F Statistic	Prob (F-Statistic)
ROA	0.037564	0.014539	1.63144	0.153007
NIM	0.926466	0.905771	44.76704	0.00000

In the National private Bank, the Prob (F-Statistic) value of the dependent variable ROA shows the value of  $\alpha > 0.05$  which is 0.153007 which means the independent variable which is the indicator of financial inclusion (the ratio of third party funds to gross domestic product, the ratio of credit to gross domestic product, the number of ATMs and the number of branch offices) simultaneously or jointly does In the dependent variable net interest margin (NIM) The four independent variables of the financial inclusion indicator indicate the value of Prob (F-Statistic) of 0.0000 or the  $\alpha$  value of  $< 0.05$ , which means that one or four independent variables that simultaneously or jointly have affected the variable net interest margin (NIM).

The projected R-squared value for ROA variables is 0.014539 or 1.4% of ROA dependent variables that are influenced by the four independent variables which are indicators of financial inclusion and the remainder are influenced by other factors. The adjusted value of R-squared for the NIM variable indicates a number 0.905771 which means that 90% of the net interest margin variable is Dipenagruhi by the four independent variables i.e. the ratio of

third-party funds to gross domestic product, the ratio of credit to gross domestic product, the number of ATMs and the number of branch offices and the remaining affected.

**Table 8**  
**F-Test Model And A Test Of Coefficient Determination (R) in Mixed Bank**

Dependen variable	R Squared	Adjusted R Squared	F Statistic	Prob (F-Statistic)
ROA	0.223057	0.143777	2.813536	0.026011
NIM	0.462343	0.40748	8.427229	0.000008

In the mixed bank, the value of Prob (F-Statistic) on the dependent variable ROA and NIM shows the value of  $\alpha < 0.05$ , i.e. for ROA variables of 0.026011 and 0.00008 for NIM variables. This means that the four variables that constitute the financial inclusion indicator are the third party funds ratio variable to the gross domestic product, the ratio of credit to gross domestic product, the number of ATMs and the number of branch offices simultaneously or jointly affects ROA and NIM variables.

An adjusted R-squared value for ROA and NIM variables for mixed banks indicates a figure of 0.143777 or a 14% of ROA Ddan variable of 0.40748 or 40% of NIM variables influenced by third-party funding ratio variables on gross domestic product, the ratio of credit to gross domestic product, the number of ATMs and the number of branch offices and the remainder being influenced by other factors.

## c. Regression Analysis Result

Table 9

## Regression analysis results of variable dependent – Return On Asset

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
<b>Government-Owned Bank (BUMN) - ROA</b>				
TPF/GDP	251177.6	828191.3	0.303285	0.7661
LOAN/GDP	-251215.6	830348.8	-0.302542	0.7667
ATM	0.267766	0.518258	0.516666	0.6135
BRANCH	-0.772462	2.326343	-0.33205	0.7448
SIZE	15383.1	30937.07	0.497239	0.6267
<b>National Private Bank - ROA</b>				
TPF/GDP	-20.38905	16.52178	-1.234071	0.2186
LOAN/GDP	19.15422	16.47456	1.162655	0.2463
ATM	0.000195	0.000101	1.935583	0.0543
BRANCH	-0.000383	0.000262	-1.46133	0.1454
SIZE	0.144467	0.100133	1.442752	0.1506
<b>Mixed Bank - ROA</b>				
TPF/GDP	-75.92648	35.22836	-2.155266	0.0361*
LOAN/GDP	39.91637	36.8558	1.083042	0.2841
ATM	0.004612	0.011597	0.397702	0.6926
BRANCH	0.01301	0.007229	1.799663	0.0781
SIZE	0.743156	0.954004	0.778987	0.4397

**Note :** TPF: Third Party Fund, \*Significant 5%

Based on the results of the above regression test, the state-owned public bank and the National Private Commercial Bank of the four independent variables are third-party funding ratio variables of the gross domestic product, the ratio of credit to gross domestic product, the number of ATMs and Branch offices have no effect on the banking performance variables that are proscribed with the return on asset (ROA) variable. The results of this study did not support the insulation conducted by (Shihadeh et al., 2018) stating that the number of ATMS and branch offices is able to affect the performance of banks that are proscribed with ROA. Different results were indicated by a third-party funding ratio variable to a gross domestic product that showed significant results against ROA as the bank's financial performance gauge indicator. The results of this study are in line with the results of research conducted by (Banerjee, A.V. & Newman, 1993) stating that the availability and ease of public access to

formal financial institutions is one of the factors to tackle Poverty and increase society productivity, so that if people's productivity increases, formal financial institutions are easy to reach, so people do not hesitate to put their funds on the formal financial institutions.

**Table 10**  
**Regression analysis results of variable dependent - Net Interest Margin**

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
<b>Government-Owned Bank (BUMN)- NIM</b>				
TPF/GDP	-7.211742	6.715878	-1.073835	0.3011
LOAN/GDP	7.238855	6.733373	1.075071	0.3005
ATM	-1.11E-05	4.20E-06	-2.63207	0.0197*
BRANCH	6.14E-05	1.89E-05	3.253939	0.0058*
SIZE	5.366846	0.250872	21.39281	0.0000*
<b>National Private Bank - NIM</b>				
TPF/GDP	-7.683039	8.774235	-0.875636	0.3825
LOAN/GDP	9.1344	10.79176	0.846423	0.3985
ATM	-0.000142	0.000179	-0.790559	0.4303
BRANCH	-6.99E-06	0.000382	-0.0183	0.9854
<b>Mixed Bank - NIM</b>				
TPF/GDP	83.39838	38.33832	2.175327	0.0345*
LOAN/GDP	-28.68839	40.10943	-0.715253	0.4778
ATM	-0.007807	0.01262	-0.618633	0.5390
BRANCH	0.030713	0.007867	3.904052	0.0003*
SIZE	-0.967325	1.038223	-0.931712	0.3561

**Note :** TPF: Third Party Fund, \*Significant 5%

Net interest margin is the difference between interest income and interest expense as a proportion of the total asset or productive asset of the Bank (Maudos&Fernández de Guevara, 2004). Net interest margin becomes one indicator to assess the performance and efficiency of the bank. In state-owned banks, the number of ATM variables and the number of branch offices has a significant percentage of the bank's performance, which is proscribed with a variable interest margin. Factors determining the success of financial inclusion one of them is determined by the dimension of Ease of access (Sarma, M. and Pais, 2008). The existence of ATM machines become an alternative for people who are less able to reach the existence of branch offices. Convenience to access the ATM machine as one of the services provided by the Bank, make the society moved to put its funds on a formal financial institution or bank because if it requires financial transactions, the public will be easy to

Reach the existence of ATM machines. The vast number of network branch offices can be one of the successful indicators of financial inclusion. There are some banking services that until now can only be served in the branch office. The existence of branch offices still needed several layers of society that are not too ordinary to access banking services based on technology. Ease of reaching the branch office service can be assessed as one of the increasing interest of people to access and use formal financial services such as banking.

At private national banks, the four independent variables that are indicators of financial inclusion do not demonstrate their impact on the banking performance that is proscribed with the net interest margin. It is not in line with research conducted by Jagede (2014) stating the existence of ATM machines can influence and increase the growth of banks in a number of countries. This is because the existence and ease of public access to the existence of ATM machines are considered to have a positive effect in the banking sector. The banking options for improving innovation-based digital services are becoming an almost absolute choice as a competitive strategy and maintaining positions in the market (Alam, S. S., Khatibi, A., Santhapparaj, A. S., and Talha, 2007). In developing countries, Internet banking is used as one of the most excellent services aimed at increasing the low market share (Malhotra, P., & Singh, 2009). The high number of national private public banks in Indonesia is driving these banks to increase the competitive edge by utilizing ease of access and technology so that it no longer promotes physical services such as ATMs and Branch offices.

In the bank, the variable ratio to the gross domestic product and the number of branch offices indicates a significant influence on the bank's performance, which is proscribed with the net interest margin variable. The results of this study in line with the research conducted by Mehrotra&Yetman (2015) stating that increasing financial inclusion means increasing the proportion of economic activity depending on the interest rate, such as the activity of storing Money and credits. The ease of the case of formal financial institutions is one of the dimensions of financial inclusion. Financial inclusion is a process that guarantees the ease of access, availability and use of the facilities of formal financial institutions for all walks of life (Sarma, M. and Pais, 2008). The existence of branch offices that affect the banking performance clearly illustrates that the public facilities to access formal financial institutions services are not always the form of service-based technology that is a choice of several layers

Society that emphasizes ease and speed of access. The existence of branch office is chosen by several layers of society that are not yet familiar with technology-based banking innovations.

## **5. Conclusion**

Financial inclusion becomes one of the indicators of the success of a country in leveling the growth and economic development, because it can not be denied the society also contributes to the growth and economic development of a country. One of the indicators of society participation can be seen from the equitable reach of the society to access and use the services of formal financial institutions. Financial inclusion in Indonesia that continues to show improvement does not imply an increase in the layer of society that reaches the formal financial institutions because the recipient of financial inclusion services is still dominated by the societal and Highly educated. With increasing financial inclusion means increasing public access to formal financial institutions services so that hopefully will improve banking performance.

The ratio of third-party funding to gross domestic product, domestic credit ratio, number of ATMs and branch offices is an indicator of measuring financial inclusion. By conducting a regression analysis, researchers found that several indicators of financial inclusion could help to improve banking performance as measured using ROA and NIM ratios, although there are some indicators of financial inclusion that are not Show its influence. The results of this study drove banking as one of the formal financial institutions to increase financial inclusion. Banks can earn more profit if financial inclusion increases. This effort reflects the economic development and stability of a country as well as the nation's efforts to reduce poverty and increase society productivity through access to formal financial services. The study was limited to only a few dimensions of financial inclusion considering the varying dimensions of financial inclusion and use by different countries. Researchers expect for subsequent research to conduct financial inclusion research and cross-country bank performance to be able to provide additional insight to the literature of financial inclusion.

## Bibliography

- Akhisar, I., Tunay, B., Tunay, N. (2015). The Effects of Innovation on Bank Performance: The Case of Electronic Banking Services. *Procedia - Social and Behavioral Science*, 195, 369–375.
- Alam, S. S., Khatibi, A., Santhapparaj, A. S., and Talha, M. (2007). Development and prospects of internet banking Bangladesh. *Competitive Review: An International Business Journal*, 17(1), 56–66.
- Anginer, D., Demirguc-Kunt, A., Huizinga, H., & Ma, K. (2018). Corporate governance of banks and financial stability. *Journal of Financial Economics*, 130(2), 327–346.  
<https://doi.org/10.1016/j.jfineco.2018.06.011>
- Babajide, A.A., Adegboye, F.B., & Omankhanlen, A. E. (2015). Financial Inclusion and Economic Growth in Nigeria. *International Journal of Economics and Financial Issues*, 5(3), 629–637.
- Banerjee, A.V. & Newman, A. . (1993). Occupational choice and the process of development. *The Journal of Political Economy*, 101(2), 274–298.
- Bank Indonesia . 2014. Booklet Keuangan Inklusif
- Beck, T., Demirguc-Kunt, A., & levine, R. (2007). Finance, inequality and the poor. *Journal of Economic Growth*, 12(1), 27–49.
- C.A., J. (2014). Effects of Automated Teller Machine on the Performance of Nigerian Banks. *American Journal of Applied Mathematics and Statistics*, 2(1), 40–46.  
<https://doi.org/10.12691/ajams-2-1-7>
- De la Torre. A., Ize, A., & Schmukler, S. . (2011). Financial Development in Latin America and The Carribean : The road ahead. *The World Bank*.
- Frame W.S., & White, L. . (2012). Technological Change, Financial Innovation, and Diffusion in Banking. In *Oxford handbook of banking*. Oxford University Press.
- Ghozali, I. & Ratmono, D. (2013). *Analisis Multivariat dan Ekonometrika, Teori, Konsep dan*

*Aplikasi dengan Eviews 8*. Badan Penerbit Universitas Diponegoro.

Goel, S., & Sharma, R. (2017). Developing a Financial Inclusion Index for India. *Procedia Computer Science*, 122, 949–956. <https://doi.org/10.1016/j.procs.2017.11.459>

GPFI. (2012). *G20 Financial Inclusion Indicators*. [www.gpfi.org](http://www.gpfi.org)

Gutu, L. M. (2014). The impact of internet technology on the Romanian banks performance. *12th International Academic Conference, September*, 495–501.

IMF. (2014). *Access to Finance for Small and Medium- Sized Enterprises in the MENAP and CCA Regions Factors Constraining SME Access to Finance*. 76–82.  
<https://www.imf.org/external/pubs/ft/reo/2014/mcd/eng/pdf/a3.pdf>

King, R.G., & Levine, R. (1993). Financial intermediation and economic development. In *financial intermediation in the construction of europe*.

Levine, R., Loayza, N., & B. T. (2000). Financial Intermediation and growth: causality and causes. *Journal of Monetary Economics*, 46, 31–77.

Malhotra, P., & Singh, B. (2009). The Impact of Internet Banking on Bank performance and Risk: The Indian Experience. *Eurasian Journal of Business and Economics*, 2(4), 43–62.

Maudos, J., & Fernández de Guevara, J. (2004). Factors explaining the interest margin in the banking sectors of the European Union. *Journal of Banking and Finance*, 28(9), 2259–2281. <https://doi.org/10.1016/j.jbankfin.2003.09.004>

Mehrotra, A., & Yetman, J. (2015). *Financial Inclusion-Issues For Central Banks*. Departemen for Business Innovation and Skills.

Nugroho, F. (2016). *Urgensi Mempercepat Akses Keuangan di Daerah*. Berita Online Koran Sindo. [www.nasional.sindonews.com](http://www.nasional.sindonews.com)

Sarma, M. and Pais, J. (2008). *financial inclusion and development: a cross country analysis*.

Sekaran, u. (2013). *Research Methods for Business: A Skill Building Approach*. Elex Media Komputindo.

Shihadeh, F. H., Hannon, A. (M. T. ., Guan, J., Haq, I. ul, & Wang, X. (2018). *Does Financial Inclusion Improve the Banks' Performance? Evidence from Jordan*. 117–138.  
<https://doi.org/10.1108/s0196-382120170000034005>