Bulletin of Fintech and Digital Economy (BFDE) Center for Fintech and Banking, Universitas Sebelas Maret
https://jurnal.uns.ac.id/bfde
e-ISSN 2807-6842
p-ISSN 2808-1633

UNS Fintech Center
Bulletin of Fintech and Digital Economy

REVAMPING ANALYSIS OF COMMERCIAL BANK OPERATIONAL MODELS IN INDONESIA: HOW MUCH DOES *THE ELECTRONIC BANKING CHANNEL* DRIVE AFFECT IT?

Hanafi Arie Sunaryo [1]
Faculty of Economics and Business, Universitas Sebelas Maret, Jl. Ir. Sutami 36A, Surakarta, 57126, Indonesia

Keywords:

Electronic Banking, Touch Point, Human Capital Resource, Revamp

Corresponding Author:
Hanafi Arie Sunaryo

E-mail:
Hanafiarisunaryo@student.uns

Abstract
The provision of digitalization of banking services is one of the *improvements* that continues to be sought in order to answer customer needs for services that continue to increase. On the other hand, the role of digitizing banking services that change touch *points* in *delivery customer needs* has the potential to change the operational order that has been employedby the workforce. This study analyzes the effect of *electronic banking* services on the number of banking sector workers in Indonesia in 2017 – 2021. By using multiple regression analysis on data on the Number of *Internet* Banking Channel Transactions, *Phone* Banking Channel, *Mobile Banking Channel,* Number of Electronic Money Circulating and Number of Commercial Bank Branch Offices. The results showed that the variables of *Internet Banking, Phone Banking* and the Amount of Electronic Money in Circulation have a negative influence on changes in the number of commercial bank branches. Policies are needed in regulating the process of revamping branch offices to reduce labor unemployment in the banking sector as a result of *revamps*.

INTRODUCTION

The increase in individual needs is increasing more and more over time. The highest level of need in maslow's hierarchy of needs (1943), is the need for self-actualization, where there is a need for the maximum development of the potential that exists in the individual in the framework of the desire of the actualization of the individual to be valued in its entirety. This is balanced with the ever-evolving globalization that has patterns and order in society.

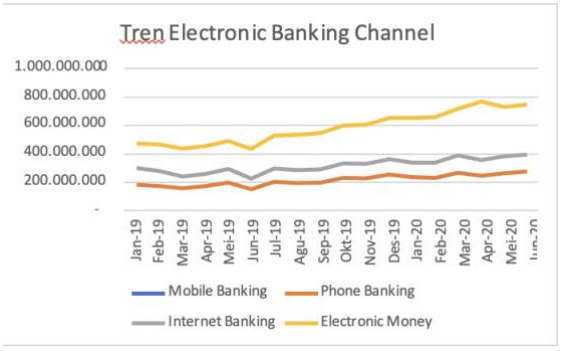
Globalization according to Cohen and Kennedy is a set of transformations that mutually strengthen the world, which includes changes in the concepts

e-ISSN 2807-6842
p-ISSN 2808-1633

of space and time, dependence of markets and economic production in different countries, increased cultural interaction, increasing common problems in the economic sphere, environment, and other prevalent issues. Globalization will eventually have an influence on individual life sectors, both the political sector, the economic sector and the technology sector. With globalization in the field of technology, it will produce many benefits, including the openness in the fieldof information that can be easily accessed by the public. In addition, with globalization in the field of technology, various processes and performances can be carried out more effectively and efficiently.

The application of *electronic* banking technology as well as upgrading *banking* services continues to show a positive trend. With *electronic banking,* the level of customer satisfaction with banking services will ultimately increase customer loyalty. Research conducted by Anindita (2019), the qualityof e-banking services in banking is able to provide its own satisfaction to customers so as to create high loyalty. This is coupled with the existence of *electronic banking* services, transactions carried out by customers can be done more easily, comfortably and safely. The availability of electronic banking services is expected to affect the financial services model produced by banks, where the resulting *electronic banking channeling* is used as a parameter for the performance and profitability of banks. Research conducted by Bagudu & Abdul-hakim (2017) explains the positive and significant influence of mobile banking services has on the financial performance of commercial banks and the price of mobile banking services on the financial performance of commercial banks in Nigeria.

The growth trend of Electronic Banking Channel usage in Indonesia during 2019 to mid-2020 continues to show positive results for all channel lines. This is driven by several factors, including the quality of a strong and stable telecommunications network signal and the PPKM policy as an anticipatory step in overcoming the Covid-19 Pandemic which is still outbreak.



e-ISSN 2807-6842
p-ISSN 2808-1633

Increasing loyalty to banking services through *electronic banking channels* will provide benefits for banks. The results of research conducted by Farah (2015) show that internet banking services have a positive influence on profitability and banking efficiency.

But such with Development Use service *electronic banking* will have influence towards Use power work deep Operational Banking. Service *electronic banking* improving the transaction process through the application of technology communication through equipment that can be used to carry out financial transactions and non-financial that was previously done manually through transaction operations in branch offices. From the customer's side, the use of electronic banking will providean benefit Among others, in terms of speed, cost efficiency, comfort and level of safety. With increasingly Increasing Use *electronic banking*, will Impact to Reduced Use power work at Banking deep do process service customer transactions. Reduced levels of labor use are reflected in trends decrease in the number of bank branches, both government commercial banks and commercial banks private. For Century time January 2019 until June 2020, sum office branch bank common (pemerintah and private) is on a downward trend.

Based on this description, it will be a question that whether the use of *electronic banking channels* as a transaction medium will have an influence on revamping or changing the operational model of branch offices through office partnerships. commercial bank branches as a result of the level of labor use in Indonesian banking, regardless of the differences in transaction features offered by each bank without reducing the essence of the customer's perception of thetransaction, in this case electronic banking channel.

THEORY REVIEW I

The level of customer loyalty in using *Electronic Banking Channel* services is shown by the growth in the number of users and nominal banking service transactions using *electronic banking channels*. *Electronic* banking is one of the bank services that allows customers to obtain information, communicate and conduct banking

e-ISSN 2807-6842
p-ISSN 2808-1633

transactions through the network and is not a bank that only provides banking services via the internet (Tampubolon, 2009). Meanwhile, according to Clarke (2009), e-banking is the provision of banking services in the retail and small-scale sectors through electronic channels. The *electronic banking* channels in Indonesia can be divided into several types of *channels*, including:

a. Electronic Money

Electronic *money* is a means of payment that meets the following elements (Bank Indonesia, 2021):

1. Issued on the basis of the value of money deposited in advance by the holder to the issuer
2. The value of money is stored electronically in a medium such as a server or chip
3. Used as a means of payment to merchants who are not issuers of such electronic money
4. The value of electronic money deposited by the holder and managed by the issuer does not constitute a deposit as referred to in the law governing banking.

b. Phone Banking

Phone Banking is a transaction channel offered by banks to customers to be able to transact on account accounts through communication via call or telephone. This channel was initially connected to telep numberson home or fixed line and later developed for mobile numbers. To be able to use this service, customers first register a definitive telephone or mobile phone number that will be used to transact through this channel. Rates layanan phone banking are adjusted by each bank as a phone banking service provider.

c. Internet Banking

Internet Banking is a facility that can be enjoyed by bank customers to conduct banking transactions through the internet network anytime and anywhere (OJK, 2021). Meanwhile, in the circular letter of Bank Indonesia, according to commercial banks, internet banking is a suit a servicethat assists customers in obtaining information and making transactions using the internet as a medium. To be able to use this service, customers first register an internet banking account by visiting the nearest branch office.

d. Mobile Banking

Mobile Banking or commonly abbreviated as m-Banking, is a banking transaction through *mobile* media either

e-ISSN 2807-6842
p-ISSN 2808-1633

in the form of *an m-Banking* application or a mobile operator's default application (OJK, 2021). According to Riswandi, Budi Agus (2005,83) M-Banking is an innovative service offered by banks that allows users to do banking transactions through smartphones. M-Banking or Mobile Banking can be accessed directly by customers via mobile phone by using the menu that is already available in the SIM Card menu via *SIM Toolkit* . In addition, several banking institutions have begun to develop mobile banking services by launching a banki ng mobile application platform that customers can also use for transactions. Mobile banking services offer customers a choice of transactions that can be accessed via mobile phones which were previously done manually through branch office services.

Electronic *Banking Channel* provides several conveniences to customers ,including the ease of transactions that can be done by customers independently. According to the OJK publication report , the conveniences obtained by customers include:

a. Practical (no need to carry and count cash) and safe (using PIN / secret code);
b. Facilitate non-financial transactions and financial transactions without having to come to a bank branch, but simply use a mobile phone or other electronic device that has internet access.

The types of services offered in this transaction channel include financial transactions, including :

1. Transfer Funds or Move buku Dana
2. Payment
3. Purchase

In addition, customers can also make non-financial transactions through mobile banking, including: balance inquiry, *transaction mutase inquiry* and changes in mobile banking application settings

The relationship between *electronic banking channels* and streamlining policies

(*Revamp*) Commercial Bank Branch Offices

The use of electronic banking in transaction channels, both financial and non-financial, by customers will affect the level of profitability of banking institutions that offer transaction channels through electronic banking. Profitability arises as a result of cost

e-ISSN 2807-6842
p-ISSN 2808-1633

efficiency in the use of technology-based transaction media. Transactions that were previously carried out by customers manually through branch office services that consume more time, costs and effort to be able to carry out a transaction. With the use of electronic banking channels, transactions can be multiplied through a platform system that can be accessed by customers through devices that have been connected and registered for registration of previous elecrtonic banking services. This will certainly affect the efficiency of time, effort and of course the costs incurred to carry out the transactions desired by the customer. This efficiency will increase customer satisfaction which will have an impact on increasing customer loyalty to banking services. The level of loyalty that continues to increase will eventually increase service income (Fee Based Income) which will have a positive impact on the profitability performance of banks.

Research conducted by Nur & Dinda (2021) shows that the use of mobile banking has a positive influence on the level of bank profitability through indicators *return on assets (ROA), return on equity (ROE), and net profit margin (NPM). In addition, research conducted by (Bagudu & Abdul-hakim, 2017) shows that the use of mobile banking has a positivef and significant influence on the financial performance of commercial banks in Nigeria and the price of mobile banking services has a positive influence on the financial performance of commercial banks in Nigeria.*

With the development of the use of electronic banking facilities, nasabah do not need to come to the bank branch office in making the desired transaction. This is due to transaction automation that allows the application of information technology through platforms or systems that can be accessed more efficiently, quickly and securely by customers. The advantage for customers with this service is that the transactions carried out can be carried out faster, easier and more efficiently. As for banking institutions, the existence of electronic banking channels will have several influences, including in terms of transaction operations.

Research conducted by Ojukuku and Sajuyigbe (2012) shows that there is a positive impact on the use of electronic banking channels on the performance of First Bank Plc personnel or employees in Nigeria. This encourages an efficient increase in banking operating costs .

e-ISSN 2807-6842
p-ISSN 2808-1633

Related to the level of performance and profitability of banking whichis the main reference, the level of efficiency will encourage the formulation of organizational policies aimed at increasing capacity and the power of banking institutions (market share). This will certainly affect the use of labor in the banking sector, where the level of profitability will increase when the use of labor is pursued effectively and efficiently. This is supported by operational benefits for banking institutions where automation of transactions that can be done independently by customers more quickly, easily and securely.

The continued effect of the use of electronic banking channels is a consequence of the organization's need for efficient use of budgets. By doing efficiency, it will increaseinstitutional income. One of the realizations of this efficiency is the streamlining or transfer of bank branch offices in response to the increasing trend of using electronic banking channels in the community. This Revamping policy will have a positive influence on banking institutions, both in terms of operational and business performance.

Looking at the results that have been collected from previous studies, finally this study established two hypotheses, namely:

H1 a : Internet Banking Variables affect the Number of Commercial Bank Branch Offices

H1b : Phone Banking Variables affect the Number of Commercial Bank Branch Offices

H1c : Mobile Banking Variables affect the Number of Commercial Bank Branch Offices

H1d : Variabel Electronic Money Supply affect the number of commercial bank branches

RESEARCH METHODS

Data Types And Sources

This study analyzes the influence of electronic banking channels on changes in branch office operational models through the number of commercial bank branch offices in Indonesia for the period 2019 to 2021. The data source used in this study is secondary data. Sucender data is data collected by researchers from existing sources (Hasan & Iqbal, 2002). Secondary Data used is monthly (monthly) from data on the number of electronic banking channel transactions

e-ISSN 2807-6842
p-ISSN 2808-1633

(phone banking, internet banking , mobile banking and electronic money) and data on the number of branch branches of commercial banks (government and private) during the period 2019:1 to 2021:6.The type of data used in this study is quantitative data obtained from the publications of Bank Indonesia (www.bi.go.id) and the Financial Services Authority (www.ojk.go.id).

Dependent Variables

Dependent Variability in this study is the quantity or number of commercial bank branch offices (Government and Private) based on their Regions or Operating Areas in Indonesia. This data is monthly data on the number of commercial bank branch offices in Indonesia. This data source is obtained from the Indonesian Banking Statistics Data of the Keuanga Services Authority n (www.ojk.go.id)

Independent Variables

a. Variable Number of Internet Banking Channel Transactions

This data is monthly data from banking transactions through the internet banking channel. This data source is obtained from Bank Indonesia Delivery Channel Transaction Data (www.bi.go.id)

b. Variable Number of Phone Banking Channel Transactions

This data is monthly data from banking transactions through the phone banking channel. This data source is obtained from Bank Indonesia Delivery Channel Transaction Data (www.bi.go.id)

c. Variable Number of Mobile Bnaing Channel Transactions

This data is monthly data from banking transactions through mobile banking channels. Data Source ini obtained from Bank Indonesia Delivery Channel Transaction Data (www.bi.go.id)

d.Variable Amount of Electronic Money in Circulation

This data is monthly data from the Number of Electronic Money Circulating in the Instrument Instrument. This data source is obtained from Bank Indonesia Electronic Money Data (www.bi.go.id)

Analysis Methods

The data analysis technique used in this study is a multiple linear regression test using cross-section data and processed using the Eviews 10

e-ISSN 2807-6842
p-ISSN 2808-1633

program. Regression analysis is a statistical technique that is useful for examining and modeling relationships between variables. Multiple regression is often used to address regression analysis problems that result in the relationship of two or more free variables. The model of the multiple linear regression equation of the study in as follows :

$Y = \alpha + \beta 1$ IBt + β2 $PBt + \beta 3\ MBt + \beta 4\ Emoneyt +$

Keterangan :

Y =*Revamp* Number of Commercial Bank Branch Offices (Government and Private)

A = Constants

β = Regression Coefficient

β1 *IB* t= Number of *Internet* Banking Channel Transactions

β2 *PB t*= Number of Phone *Banking* Channel Transactions

β3 *MBt*=Number of *Mobile Banking* Channel Transactions

β4*Emoney*t= Amount of *Electronic Money* in Circulation

εt = error ter

ANALYSIS AND DISCUSSION

Regression Linear

In this study using the multiple linear regression method. Multiple linear regression is useful for determining the influence of independent variables on dependent variables (Purnomo, 2017).

Source	SS	Df	MS	Number of Obs	=	30
				F(4, 25)	=	15.99
Type	41847.5307	4	10461.8827	Prob > F	=	0.0000
Residual	16355.4359	25	654.217438	R-squared	=	0.7190
				Adj R-squared	=	0.6740
Total	58202.9667	29	2006.99885	Root MSE	=	25.578

Y	Coef.	Std. Err.	t	P>|t|	Beta
XI	-8.26e-08	5.25E-07	-0.16	0.876	-.0530001
X2	-.0001138	.0000739	-1.54	0.136	-.1928877
X3	2.34e-07	2.88e-07	0.81	0.424	.4289486
X4	-5.36e-07	1.58e-07	-3.39	0.002	-1.241609
_Cons	3786.373	33.13585	114.27	0.000	.

Based on the multiple linear regression table above, the following explanation is obtained:

1. *Number of Obs* = 30 , meaning the number of samples or observations is 30 samples
2. *F(4, 25)* means the F test on DF 4 and 25. DF 4 means the number of variables tested – 1, i.e. 5- 1=4 variables. 25 is the number of observations – the number of variables, i.e. 30-5=25.
3. *Test value F* 0.000. If the > value is 0.05 then Test F receives H1 at a significance level of 5% or which means that all independent variables simultaneously have a significant influence on the dependent variables.
4. *R-Squared is the Coefficient of Multiple Determination, meaning how much simultaneously all independent variables can explain*

e-ISSN 2807-6842
p-ISSN 2808-1633

the dependent variable. Above its value of 0.7190 which means all independent variables can explain the variable dependent by 71.90%. Then the rest, namely 100%-71.90%=28.1%, is influenced by other variables outside the regression model.

5. *Root MSE is a standart error* of *estimate*, it is said that the regression model is good to be used as a forecasting model if the *Root MSE* < *Standart deviation of the dependent variable (Y)*.
6. In column t is the partial t test value. It is said to be significant at the level of 5% if in the right column it is *P>[t]* or also called *p value / significance* < 0.05.
7. In the *Coef* column is the *Unstandardized Kvalue of the Beta oefficient*. The value of this beta coefficient is used as the value in the ***regression equation***. Based on the above results, the regression equation created is: Y = 3786.373 – 8.26 X1 - 0.0001 X2 + 2.34 X3 – 5.36 X4 e. Where Y is the dependent variable, 1.875 is the constant, X1 is the independent variable to- 1, X2 the 2nd independent variable, X3 the 3rd independent variable and e is error. Or it can be proxied as follows :

Y = Revamp Branch Office = 3786,373 – 8.26 Internet Banking – 0.0001 phone banking + 2.34 Mobile Banking – 5.36 Electronic Money

From this equation, the influence of independent variables on the revamp of commercial bank branches can be interpreted as follows:

a) If Internet Banking, Phone Banking, Mobile Banking, andElectronic Money are worth 0, then the value of the number of commercial bank branch offices is 3786,373. This means, if there are no Internet Banking , Phone Banking, Mobile Banking, and Electronic Money transactions, it can be said that in the period January 2019 June 2021 the number of commercial bank branch offices (government and private) amounted to 3786
b) The Internet Banking variable has a negative coefficient value of 8.26, meaning that every 1% increase in transactions through Internet Banking will cause a decrease in the number of commercial bank branches by 8.26 with a note that other variables are considered constant.

e-ISSN 2807-6842
p-ISSN 2808-1633

c) The Phone Banking variable has a negative coefficient value of 0.0001 meaning that if every 1% transaction through phone banking will cause a decrease in the number of commercial bank branches by 0.0001 with the note that other variables are considered constant.

d) The Mobile Banking variable has a positive coefficient of 2.34, meaning that every 1% increase in transactions through mobile banking will increase the number of commercial bank branches by 2.34 assuming other variables are considered constant.

e) The Electronic Money variable has a negative coefficient value of – 5.36 meaning that every 1% increase in electronic money circulating in the community will cause a decrease in the number of commercial bank branches by 5.36 with a variable note others are considered constant.

B. Test Classical Assumptions

1. Normality Test

The normality test serves to determine the data collected as normally distributed or taken from the normal population. The normality statistics test that can be used include: Chi square, Kolmogrov Smirnov, Lilliefors wilk, Jarque fallow, (Basuki and Yuliadi 2017).

In this test using Skewnes Kurtosis As for the results in the normality test as follows :

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	joint adj chi2(2)	Prob>chi2
res	30	0.1871	0.3679	2.79	0.2480

Based on these results, it is explained that the residual value at probability is 0.2480, which means > 0.05. It can be concluded that based on the Skewnes Kurtosis test , the data is normally distributed.

2. Heteroskedasticity Test

From the test results, from the results above, it can be seen in the prob value of chi2 > of 0.4488 which means it is greater than 0.005. So the H 1 hypothesis is rejected and the data is free from the symptoms of heteroskedasity or the data is homokedasity.

3. Multikolinieritas test

Based on the test results in the table above, the calculation of the variance inflation factor (VIF) value shows that this test has a VIF value of > 10, it can be concluded that there are symptoms of multicholinearity between free variables in the regression model.

C. **The Partial Hypothesis**

This test was conducted to test whether independent variables (Internet

e-ISSN 2807-6842
p-ISSN 2808-1633

Banking, Phone Banking, Mobile Banking and Electronic Money) partially affected the dependent variables Number of Commercial Bank Branch Offices, as can be seen from the results of the t test. The test criteria if the probability value < 0.05 can be concluded that Ha is accepted. Based on the results of the t test can be seen in the linear regression table above, it is explained as follows:

1. Effect of Internet Banking Channel on Revamp of Commercial Bank Branch Offices Based on the results of partial testing the effect of Internet Banking Channel Transactions on the Number of Commercial Bank Branch Offices in the table above has coefficient – 8.26 and probability of 0.876 > 0.05 means that Internet Banking has a negative and insignificant effect on the number of commercial bank branches.

2. Effect of Phone Banking Channel on Revamp of Commercial Bank Branch Offices Based on the table above, the Phone Banking variable has a coefficient value of -0.0001 and a probability value of 0.136 > 0.05, which means that Phone Banking has a negative effect and insignificant to the Number of Commercial Bank Branch Offices.

3. The Effect of Mobile Banking Channel on Revamp of Commercial Bank Branch Offices The test results of Mobile Banking variables showed a probability figure of 0.424 > 0.05 and the resulting coefficient value was 2.34. This shows that mobile banking has a positive and insignificant effect on the number of commercial bank branches .

4. Effect of Electronic Money on Revamp of Commercial Bank Branch Offices The last variable of Electronic Money in the test results of the Electronic Money variable showed a probability figure of 0.002 < 0.05 and a probability figure of 0.002 0.05 and a value The resulting coefficient is -5.36. This shows that Electronic Money has a negative and significant effect on the number of Commercial Bank Branch Offices

CONCLUSION

Based on the multiple linear regression table above, the data series regression results obtained an F-statistical value of 15.99 with a pro reliability value of0.00 < 0.05. Because the probability is much smaller than 0.05 so it can be concluded that Ho is rejected and H1 is accepted, which means that there is a simultaneous influence of Internet Banking, Phone

e-ISSN 2807-6842
p-ISSN 2808-1633

Banking, Mobile Banking and Electronic Money on the Number of Commercial Bank Branch Offices. Meanwhile, the Coefficient of determination (Adjusted R 2), based on the table above, shows that the adjusted R2 is 0.719. In this case it means 71.9% The number of Kanto Branches of Commercial Banks can be explained by the variables Internet Banking, Phone Banking, Mobile Banking and Electronic Money, (100 % - 71.9%) while for 28.1% it was explained by other variables that were notincluded in the study.

Based on the table of multiple linear regression test results, both Internet Banking Variables, phone banking and Electronic Money in circulation have a negative and insignificant influence. This indicates that every additional transaction through electronic banking channels, both Internet Banking , Phone Banking and the increase in the amount of electronic money in circulation will affect the decrease in the number of branch offices. commercial banks. This supports the results of research conducted by T. Manik (2019) which states that the use of electronic money has a positive and significant influence on the cashless society. In addition, the results of this study also support the results of research conducted by Ojukuku and Sajuyigbe (2012) showing that there is a positive impact of the use of electronic banking channels on the performance of personnel or employees of First Bank Plc in Nigeria. The existence of positive performance will encourage the effectiveness of the resulting policies. In addition, these results also support the results of research conducted by Atiku, Genty & Akinlabi (2011) which stated that electronic banking services adopted by banking has a direct influence on reducing the number of employees and the rate of early retirement in Nigeria.

On the other hand, the Mobile Banking variable has a positive but not significant influence on the number of commercial bank branches. The hypothesis proposed in this study is that the use of Mobila Banking Channel has a negative influence on the number of commercial bank branches , therefore this result has not supported the hipthesis that The use of Mobila Banking Channel will negatively affect the number of commercial bank branches . With these results, suggestions that can be submitted to support the revamp (change) of branch office operations include*:*

e-ISSN 2807-6842
p-ISSN 2808-1633

1. For banks as banking service providers, it is necessary to review the existence of several policies that support the revamp process, including:
   a) There needs to be a review of the policy of switching manpower from frontline staff to marketing staff. The increase in transactions through several electronic banking channels can affect the number of commercial bank branches. This will certainly affect the use of banking sector labor which has a direct impact on the labor sector. There needs to be an innovation policy in the transition of manpower in the banking sector in order to overcome this operational revamp. These policies include a transition from frontline staff to business or marketing staff. Thus, the decrease in the number of branch offices will not have much effect on the number of labor use. In addition, the transition of frontline staff to marketing or business staff will have an influence on banking performance and profitability.
   b) The improvement of transaction features on the *Mobile Banking Channel* platform will have an impact on increasing the use of transactions through these channels. This will have a positive impact on customers and banks. For customers, the increase in features in mobile banking will further increase the number of transactions, which in turn will increase customer loyalty. For banks, upgrading mobile banking features will increase bank efficiency and profitability.
2. For the Moneter Authority, there is a need for a regulatory policy in the transition of banking operations. This is related to the transfer or closure of bank branches in response to an increase in customer transactions through *electronic banking channels*

e-ISSN 2807-6842
p-ISSN 2808-1633

References

Bead, Tumpal. "Analysis of the effect of electronic money digitization transactions on cashless society and electronic money infrastructure as a dissolving variable." *Indonesian Journal of Accounting and Finance* 2.2 (2019): 27-40.

Muchlis, Muchlis, Budi Wahono, and Arini Fitria Mustapita. "The Effect of Electronic Money (E-Money), Electronic Banking (E-Banking), and Brachless Banking on Banking Profitability for the 2016-2019 Period ." *Scientific Journal of Management Research* 10.07 (2021).

Side dish, Tommi. "Customer preferred channel attributes in multi-channel electronic banking." *International Journal of Retail & Distribution Management* (2007).

Akinyele, S. T., and K. Olorunleke. "Technology and service quality in the banking industry: An empirical study of various factors in electronic banking services." *International Business Management* 4.4 (2010): 209-221.

Margaretha, Farah. "The impact of electronic banking on Indonesia's banking performance." *Journal of Finance and Banking* 19.3 (2015): 514-524 .