The Influence of Mobile Banking, Internet Banking, and Automated Teller Machine (ATM) Transactions on Fee Based Income

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1. INTRODUCTION

Bank management in carrying out its activities is also always required to maintain a balance between maintaining liquidity with the need for reasonable profitability and sufficient capital in accordance with its investments. This needs to be done because banks in their business activities, apart from investing funds in productive assets, can also provide commitments for other services that produce fee based income (non-interest income) (Gumilang & Azib, 2019). Non-interest income is a "hedge" against non-interest income by generating fees and sales income independently of market interest rates (Arisanti & Prihatiningsih, 2019). The banking sector is starting to compete to increase profits by relying on several strategies to attract customers using banking services, one of which is by utilizing technological developments such as Mobile Banking, Internet Banking and ATMs (Suardana & Kustina, 2017).

Fee-based income is considered a potential source of income because it can be obtained from both providing credit and other non-credit activities. In addition, fee-based revenue is said to contain relatively little risk because payment fees are received immediately when the transaction occurs or when the fee is charged effectively. Therefore, the Bank must have maximum fee-based income so that the Bank can get maximum profits. The role of technology is very important for banks and customers to make transactions easier. The role of this technology in fee-based income can vary depending on the bank's business strategy, the level of technology adoption by customers, competition in the market, and applicable regulations. In addition, banks must consider customer experience and operational costs associated with this technology in optimizing fee based income.

Currently, almost all banks in Indonesia, both government and private, commercial and sharia banks, have issued Mobile Banking products as electronic services. Mobile Banking is one of the
innovative services offered by banks to help customers carry out banking transactions via cell phone. Banking transactions that are usually carried out manually by customers having to go to the bank directly, can now be done without having to visit the bank, and can be accessed via the Mobile Banking application (Mu'asiroh & Darwanto, 2021). The growth in the number of transactions and nominal transactions via Mobile Banking can be an opportunity for banks to increase Fee-based Income to maintain bank health (Surachim et al., 2021).

Banking services use web-based Internet banking technology to help improve services to customers, extraordinary Internet banking facilities change the way banking companies meet business needs with customers. Internet banking services are profitable for banking companies because there are no transfers involving physical goods involved, banking transactions can be carried out electronically on a web basis which includes checking balances, transferring funds to other accounts, paying bills, and so on (Zuliarni et al., 2013).

Another factor to increase fee based income is by using ATM (automated teller machine) transaction services. The banking technology trend still makes Automated Teller Machine (ATM) facilities the main strategy in providing services to customers. This is done not only to obtain fee based income (bank revenue originating from bank services/non-interest income), but also to expand the network (Gumilang & Azib, 2019).

The results of previous research show that there is a positive and significant influence of Mobile Banking on Fee based income (Pranata & Dewi, 2023), this research method uses quantitative methods, the results of this research use multiple regression analysis with secondary data in the form of the 2017-2021 annual financial report. The population of this study used PT's annual financial report. Bank Negara Indonesia for the 2015-2021 period. The sampling technique uses purposive sampling, the criteria used are financial reports regarding the number of active Mobile Banking users, the number of Mobile Banking, and Fee based income in the last four years, namely 2017-2021. Previous research further shows that Internet Banking has a positive effect on Fee Based Income (Anita & Christine, 2023). The research method is Verifiable and Descriptive with the conclusion that the more customers make transactions via e-banking, the higher the fee based income. The research results show that ATM has a positive and insignificant effect on fee based income (Ansary et al., 2022). The research method used is a quantitative method. The research data consists of primary and secondary data in the form of information on the development and innovation of product features and the number of Internet transactions. Banking PT. Bank NTB Syariah analyzes data using Quantitative analysis techniques consisting of Descriptive Analysis and Inferential Analysis. The inferential statistical analysis used is Structural Equation Modeling (SEM) analysis with the PLS Warp Software approach. However, the results of other research conclude that Internet Banking has no effect on Profitability (Lazuardi et al., 2023) and the research results show that ATMs have a significant influence in the opposite direction on Fee Based Income, the higher the Automated Teller Machine (ATM) transaction value, the higher operational expenses and reduce Fee Based Income (Gumilang & Azib, 2019). However, in this study there are differences in the research time span (2018-2022), company criteria (conventional banking), and number of variables studied. Technology-based financial innovation has had a major impact on the financial industry as a whole over the last few decades (Alubisia, 2018).

2. LITERATURE REVIEW

This research aims to obtain empirical evidence of Mobile Banking, Internet Banking, ATM on Fee Based Income in providing information on the importance of factors that influence Fee Based Income for conventional banking companies on the Indonesia Stock Exchange, which can be useful for shareholders and investors to analyze fundamentals. banking companies in decision making.

3. METHOD

The type of research used is explanatory cross-sectional annual. The objects of this research are Mobile Banking, Internet Banking, and ATM as independent variables. Fee based income as the dependent variable. Research subjects are conventional banks listed on the Indonesia Stock Exchange.
This research is quantitative research with secondary data. Regression analysis is used to understand the strength of relationships between variables.

Causal-comparative research design using secondary data in the form of annual financial reports published on the Indonesia Stock Exchange via the official website www.idx.co.id and via the company’s official website. This type of research method is quantitative as data collection and the data source for this research uses BEI data for the 2018-2022 period which will be tested for classical assumption testing and multiple linear regression analysis.

So the data from the survey that will be conducted using the BEI database is secondary data, namely data obtained by researchers from pre-existing data sources through the media indirectly.

The population of this study uses secondary data taken from the financial reports of companies included in the group of conventional banking companies listed on the Indonesia Stock Exchange in 2018-2022. This data was obtained from the BEI website, namely www.idx.co.id. The research population for conventional banks listed on the Indonesia Stock Exchange for the 2018-2022 period was 46 banks and the sample size was 5 banks, namely Bank Mandiri, Bank Negara Indonesia (BNI), Bank Central Asia (BCA), Bank CIMB Niaga, and Bank Mega.

The sampling decision used in this research uses a purposive sampling technique, namely by directing a population based on the characteristics or characteristics of the sample, with the aim of obtaining a representative sample according to the specified criteria. The sample selection criteria are all conventional banking companies listed on the Indonesia Stock Exchange as the main sector that publish audited financial reports from 2018 to 2022 in Rupiah currency, banking companies that publish financial reports for 2018-2022. The research sample is 5 large banks in Indonesia listed on the IDX.

The data collection analysis technique in this research was carried out using quantitative methods, where research data is in the form of numbers and analysis uses statistics from 2018-2022 BEI data. Therefore, in this research measurements were carried out using two analytical test methods, namely hypothesis testing and multiple linear regression analysis. In this research, hypothesis testing using the Simultaneous Test (f-Test) was carried out to find out whether the dependent variable was jointly influenced by the independent variable and the Partial Test (t-Test) was carried out to find out how far the individual independent variables explained the dependent variable. Multiple linear regression analysis is used to determine the direction of the relationship between the independent variable and the dependent variable, whether each independent variable is positively or negatively related and to predict the value of the dependent variable if the value of the independent variable increases or decreases (Sugiyono., 2019). The multiple linear regression equation can be stated as follows:

\[ Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon \]

Information :
- \( Y \) = Fee Based Income
- \( \alpha \) = constanta
- \( \beta_{1,2,3..} \) = Regression Coefficients
- \( X_1 \) = Mobile Banking
- \( X_2 \) = Internet Banking
- \( X_3 \) = ATM
- \( \epsilon \) = Error

Results and Discussion
The results of this descriptive statistical test research are based on data processing of the Annual Reports of five banking companies from 2018 to 2022, with samples of Bank Mandiri, Bank Central Asia, Bank Negara Indonesia, Bank CIMB Niaga, and Bank Mega. This research uses four independent variables consisting of Mobile Banking, Internet Banking, and ATM, as well as one dependent variable Fee Based Income. Valid sample data during this research amounted to 25 data. Description of research data as follows:

### Table 1. Descriptive Statistical Test

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mobile Banking</strong></td>
<td>25</td>
<td>2.48</td>
<td>15205</td>
<td>1901.1228</td>
<td>3629.481</td>
</tr>
<tr>
<td><strong>Internet Banking</strong></td>
<td>25</td>
<td>0.84</td>
<td>4874</td>
<td>767.648</td>
<td>1448.594</td>
</tr>
<tr>
<td><strong>ATM</strong></td>
<td>25</td>
<td>11</td>
<td>2156</td>
<td>928.23</td>
<td>821.59045</td>
</tr>
<tr>
<td><strong>Fee Based Income</strong></td>
<td>25</td>
<td>1784703</td>
<td>34280703</td>
<td>14048336</td>
<td>10818023</td>
</tr>
</tbody>
</table>

Based on table 1 above, the results of the Mobile Banking variable with the minimum value are PT Bank Mega Tbk. amounted to 2.48 in 2018 and the maximum value was PT Bank Central Asia Tbk. amounting to 15,205 in 2022. and an average value of 1,901.1228 with a standard deviation value of 3,629.48097. The result of the Internet Banking variable with the minimum value is PT Bank Mega Tbk. amounted to 0.84 in 2018 and the maximum value was PT Bank Central Asia Tbk. amounting to 4,874.00 in 2022. and an average value of 767.6480 with a standard deviation value of 1,448.59402. The ATM variable result with the minimum value is PT Bank Mega Tbk. amounted to 11 in 2018 and the maximum value was PT Bank Central Asia Tbk. amounting to 2,156.00 in 2022. and an average value of 928.2300 with a standard deviation value of 821.59045. The result of the Fee Based Income variable with the minimum value is PT Bank CIMB Niaga Tbk. amounting to 1,784,703 in 2020 and the maximum value is PT Bank Mandiri (Persero) Tbk. amounting to 34,280,703 in 2022. and an average value of 14,048,336.1600 with a standard deviation value of 10,818,023.2145.

Before testing the hypothesis, the classical assumption test was carried out with the normality test, multicollinearity test, autocorrelation test and heteroscedasticity test, obtained with the following results:

The normality test aims to find out whether the data collected is normally distributed or not. The normality test was carried out using the Kolmogorov-Smirnov test. Based on the results of data processing, the Asymp sig value. amounting to 0.101 > 0.05, it can be concluded that the research data is normally distributed and research can be continued.

To determine whether there are symptoms of multicollinearity, one can use the co-linearity effect. Symptoms of multicollinearity can be identified if between the independent variables there is a strong or close to perfect correlation or the Variance Inflation Factor (VIF) value is less than 10 and the Tolerance value is more than 0.1. The calculation results show that the VIF value for each variable is less than 10, while the Tolerance value for each variable is greater than 0.1, so it can be concluded that there are no symptoms of multicollinearity.

The autocorrelation test aims to test whether in the linear regression model there is a correlation between the confounding error in the time period and the confounding error in the previous time period.
The results of the autocorrelation test, the Durbin Watson value of 2.466, is greater than the limit (dU), namely 1.654, so it can be concluded that there are no symptoms of autocorrelation.

The heteroscedasticity test aims to test the occurrence of differences in variance of residual values in a research period. The results of the heteroscedasticity test, in the heteroscedasticity test image, the data points spread above and below around the number 0, thus it can be concluded that there is no heteroscedasticity problem, so the regression model is good and ideal are fulfilled.

Multiple linear regression analysis is used to determine the effect of two or more independent variables (X) on changes in the dependent variable (Y). The results of the calculation can be written in the following multiple regression equation:

\[ Y = 6.451 + 1.119X_1 - 1.717X_2 + 5.059X_3 + s \]

From this equation, a constant (fixed) value of 6.451 is obtained. This means, without Mobile Banking, Internet Banking, and ATM, Fee Based Income has a value of 6.451. Constant value is a fixed value that comes from variables other than Mobile Banking, Internet Banking and ATM. Then, the Mobile Banking regression value of 1.119 indicates that when the Mobile Banking variable is increased one-fold, Fee Based Income will increase by 1.119. Likewise, the Internet Banking regression value has a value of -1.717, indicating that when the Internet Banking variable is increased one-fold, Fee Based Income will decrease by 1.717 and the ATM regression value is 5.059, indicating that when the ATM variable is increased one-fold, then fee based income will increase by 5.059. From the results of the regression coefficient, it appears that ATM has a greater influence than Mobile Banking and Internet Banking.

The R-square test aims to determine the contribution or percentage of the independent variables to the rise and fall of the dependent variable, in this case Mobile Banking, Internet Banking and ATM to Fee Based Income. The calculation results

R-square using the SPSS version 22 application. Based on the calculation results, the R-square value = 0.816 or 81.6%. These results show that the Mobile Banking, Internet Banking and ATM variables together determine the variation or rise and fall of the Fee Based Income variable by 81.6%. Meanwhile, the remaining 18.4% is explained by other variables not involved in this research.

The F statistical test (Simultaneous) is used to prove whether Mobile Banking, Internet Banking and ATM together have a significant effect on Fee Based Income, the results of the F test calculation are presented in the following table:

Table 2. F Test Results

<table>
<thead>
<tr>
<th>ANOVAa</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regression</td>
<td>0.000</td>
<td>3</td>
<td>0.000</td>
<td>31.106</td>
<td>.000</td>
</tr>
<tr>
<td>1</td>
<td>Residual</td>
<td>0.000</td>
<td>21</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>0.000</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Fee based Income
b. Predictors: (Constant), ATM, Mobile Banking, Internet Banking

From the calculation results in Table 2, a significance value of 0.000 < 0.05 or calculated F is obtained

\[ F = 31.106 > F \text{ table} = 3.098. \]

Thus, Mobile Banking, Internet Banking and ATM together have a positive and significant effect on Fee Based Income. This means that hypothesis 1 (H1) which states that there is an influence between Mobile Banking, Internet Banking and ATM on fee based income, is accepted.
The t (partial) statistical test is used to test whether the originally determined hypothesis is accepted or rejected, done by comparing tcount with ttable, presented in the following table:

**Table 3. T Test Results**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>6.451E-008</td>
<td>.000</td>
<td>.000</td>
<td>.007</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>1.119E-006</td>
<td>.000</td>
<td>.579</td>
<td>2.415</td>
</tr>
<tr>
<td>Internet Banking</td>
<td>-1.717E-007</td>
<td>.000</td>
<td>-.301</td>
<td>-1.237</td>
</tr>
<tr>
<td>ATM</td>
<td>5.059E-006</td>
<td>.000</td>
<td>.767</td>
<td>7.626</td>
</tr>
</tbody>
</table>

Based on table 3 above, the results of the t test using the SPSS version 22 application. To find out the significance of the relationship between the Mobile Banking, Internet Banking and ATM variables with Fee Based Income, it can be done in two ways, namely by comparing the sig. 0.05 and \( \alpha = 0.05 \) or the calculated t-value and t-table value for sample 25 at \( \alpha = 0.05 \) is 2.079. The summary results of hypothesis testing are as follows:

**Table 4. Research Model Hypothesis Testing**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Statement</th>
<th>Results</th>
<th>Positive/Negative</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Mobile Banking, Internet Banking and ATMs affect fees Based Income</td>
<td>Fhitung &gt; Ftable 31.106 &gt; 3.098 Nilai Sig &lt; 0.05 0.000 &lt; 0.05</td>
<td>Positive</td>
<td>Hypothesis accepted</td>
</tr>
<tr>
<td>H2</td>
<td>Mobile Banking affects Fee Based Income</td>
<td>t hitung &gt; t tabel 2.415 &gt; 2.079 Nilai Sig &lt; 0.05 0.025 &gt; 0.05</td>
<td>Positive</td>
<td>Hypothesis accepted</td>
</tr>
<tr>
<td>H3</td>
<td>Internet Banking affects fees Based Income</td>
<td>t hitung &gt; t tabel -1.237 &lt; 2.079 Nilai Sig &lt; 0.05 0.230 &gt; 0.05</td>
<td>Negative</td>
<td>Hypothesis rejected</td>
</tr>
<tr>
<td>H4</td>
<td>ATM affects Fee Based Income</td>
<td>t hitung &gt; t tabel 7.626 &gt; 2.079 Nilai Sig &lt; 0.05 0.000 &lt; 0.05</td>
<td>Positive</td>
<td>Hypothesis accepted</td>
</tr>
</tbody>
</table>

4. DISCUSSION

**The Influence of Mobile Banking, Internet Banking and ATM Transactions on Fee Based Income**

The results of this research show that Mobile Banking, Internet Banking and ATM have an effect on Fee Based Income, with an indication of the Fcount > Ftable value (31.106 > 3.098) and a significance value of 0.00 < 0.05. This finding is in line with and confirms the results of previous research conducted by Gumilang & Azib (2019) and Suratman & Manurung (2021) which proves that H1 is acceptable. Mobile Banking, Internet Banking, and ATMs influence Fee Based Income. Fee Based Income refers to the income generated by banking companies from the fees charged for the services they offer, including operational costs and other costs. The use of technology such as Mobile Banking, Internet Banking, and...
ATMs has impacted how banks interact with customers and how they generate revenue from fees and commissions. Increasing the volume of Mobile Banking, Internet Banking and ATM transactions such as fund transfers, bill payments and account openings can increase Fee Based Income (Gumilang & Azib, 2019).

The Effect of Mobile Banking Transactions on Fee Based Income

Based on the research results, it shows that Mobile Banking has an effect on Fee Based Income, with an indication of tcount > ttable (2.415 > 2.079) and a significance value of 0.025 > 0.05. These findings are in line with and confirm the results of previous research conducted by Ansyary et al. (2022), Pranata & Dewi (2023) and Surachim et al. (2021) which proves that H2 is acceptable, Mobile Banking has an effect on Fee Based Income. Mobile Banking allows customers to carry out various types of transactions, such as fund transfers, bill payments, and purchasing financial investment products via applications/Apps on smartphones. The more these transactions are carried out via the Mobile Banking platform, the more potential Fee Based Income income received from transaction fees and commissions received by the bank (Ansyary et al., 2022), (Pranata & Dewi, 2023), (Surachim et al., 2021).

The Effect of Internet Banking Transactions on Fee Based Income

Based on the research results, it shows that Internet Banking has no effect on Fee Based Income, with an indication of tcount > ttable (-1.237 < 2.079) and a significance value of 0.230 > 0.05. This finding is not in line with the results of previous research conducted by Ansyary et al. (2022), Pranata & Dewi (2023) Surachim et al (2021) which proves that H3 is rejected, Internet Banking has no effect on Fee Based Income. Web-based services in Internet Banking provide services such as electronic checking accounts, domestic and international financial transactions, or access to financial analysis. Internet banking can be a source of Fee Based Income through web-based income which is usually used by business entities (Ansyary et al., 2022). Previously, Internet Banking was also used by individual customers, due to the digitalization era, banks began to launch Mobile Banking products that were more user friendly. Therefore, individual Internet Banking users migrate to Mobile Banking.

The Effect of Automated Teller Machine (ATM) Transactions on Fee Based Income

Based on the research results, it shows that ATM has an effect on Fee Based Income, with an indication of tcount > ttable (7.626 > 2.079) and a significance value of 0.000 < 0.05. This finding is not in line with the results of previous research conducted by Gumilang & Azib (2019) which proves that H4 is acceptable, ATM has an effect on Fee Based Income. ATM banking facilities that function for financial transactions, these service fees can contribute to the bank’s fee-based income. By expanding the ATM network or partnering with other ATM providers, banks can increase Fee Based Income through transaction fees (Gumilang & Azib, 2019).

5. CONCLUSION

Based on the discussion above, Mobile Banking, Internet Banking and ATM transactions together have an effect on Fee Based Income, this indicates that when customers use Mobile Banking, Internet Banking and ATM, the bank’s Fee Based Income can increase. There is a positive influence of Mobile Banking on Fee based income, this indicates that the number of transactions in mobile banking by customers can influence the bank’s Fee based income. There is no influence of internet banking on Fee Based Income, this indicates that internet banking transactions do not increase the bank’s Fee Based Income. There is a positive influence of ATMs on Fee Based Income, this indicates that the more customers who make transactions using ATMs, the more the Bank’s Fee Based Income will increase. The limitations of the research lie in collecting data from the research sample, among the 43 research samples there were only 5 companies that met the sample criteria. For further research, it is necessary to expand the research by selecting variables that influence the Fee Based Income that is studied, because only a few large banks include detailed Mobile Banking, Internet Banking and ATM transaction data in their Annual Report.

The limitations of this research lie in collecting data from the research sample. Among the 43 research samples, there were only 5 companies that met the sample criteria. This research sample was
only from banks registered on the IDX so that BPD banks could not be included in the criteria even though the Annual Report contained variables that were examined. The research taking period is recommended to be more than five years so that the results can better explain the influence of each variable as well as adding other variables related to the bank's Fee Based Income such as third party funds collected by the bank and foreign exchange transactions.

This research can also be considered by investors in fundamental analysis when choosing a company to invest in, especially by considering the characteristics of technological services and facilities, because these aspects have an impact and are related to revenue. With the hope that investors can achieve profits (Gain) by considering aspects of service facilities within a bank which can influence the increase in income at the banking company.

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