

## The Impact of Artificial Intelligence Banking and Personal Interaction Quality towards Customer Retention with Customer Satisfaction as an Intervening Variable

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### ABSTRACT

Number of digital banking transactions Indonesia based on *katadata.com* in August 2023 grew by 169,9% throughout the last five years and third-party banking funds in Indonesia increased by 12.3% according to Indonesian Banking Statistics data at 2020-2022. Number of digital transactions at Bank Maybank Indonesia in 2022 increased by 28% and the number of accounts increased by 34%, however the amount of funds raised by Bank Maybank Indonesia decreased by 1.19%. It is alleged that the acquisition of accounts is not followed by customers who retain. This study was conducted to explore the effect of artificial intelligence banking and personal interaction quality on customer retention with customer satisfaction as an intervening variable. The research sample was 215 customer respondents using questionnaires and interviews. The analysis method uses Structural Equation Models Partial Least Square (SEMPLS) based on Smart Partial Least Square (Smart PLS). The results of the study are artificial intelligence banking has a significant effect on customer retention, personal intelligence banking does not have a significant effect on customer retention. When mediated by customer satisfaction, artificial intelligence banking still has a significant effect on customer retention, in this case customer satisfaction is partial mediation. Personal intelligence banking has a significant effect on customer retention through customer satisfaction as an intervening variable, meanwhile customer satisfaction is a full mediation.

**Keywords:** Artificial Intelligence; Personal Interaction Quality; Customer Retention; Customer Satisfaction

### 1. INTRODUCTION

The development of digital banking is a global trend and has changed the banks interact ways with their customers. In Indonesia, digital banking is growing rapidly and bringing significant changes in the banking industry. In the 2022 report, Bank Indonesia noted that digital banking transactions increased by almost 50% year on year. Banking in Indonesia implementing with the start of digital transformation with various innovations, such as mobile banking, internet banking, to artificial intelligence to improve services for

customers followed by the banking industry under the auspices of Bank Indonesia. Artificial intelligence can help banks to more understanding customer needs and customer behavior so they can offer products and services exactly in line with their digital-based needs (Mulyaningsih, et al., 2019). According to Dwivedi, et al., (2019), artificial intelligence is a technology that can understanding, learning, predicting, and responding the environment in a similar way to humans covering a wide range of applications, ranging from chatbots used for services to algorithms used to analyze customer data in real time and provide more personalized and timely services.

The increasing growth in the application of artificial intelligence in the banking sector is followed by increasing the level of digital banking transactions banks in Indonesia, it is known from katadata.com sources that in Agustus 2023 the number of digital banking transactions nationally has grown 169,9% and has an impact on increasing the number of third-party banking funds in Indonesia nationally. Based on data from Indonesian Banking Statistics for 2020-2022, it is known that the amount of third-party banking funds in Indonesia in 2021, increased by 12,3% (year on year), in 2022, increased by 9% (year on year). This phenomenon is not in line with the amount of funds raised by Bank Maybank Indonesia in 2021-2022 which has a downward trend as in the annual report of Bank Maybank Indonesia published in 2021, it is known that the amount of funds raised by Bank Maybank Indonesia in 2021 decreased by 10% (year on year) and the number of accounts decreased from 13,691 to 13,632 (-0.43%) when compared to the number of accounts in 2020, even though as we know in 2020 there was a Covid-19 pandemic, it means that something happened and needs to be analyzed. As one of the efforts to overcome the problems, Bank Maybank Indonesia has made several developments, one of which is by launching the artificial intelligence banking in the form of the 360 Digital Wealth M2U ID App feature in the second half of 2022. This artificial intelligence banking has an online account opening feature so that customers do not need to come to the branch or meet with Maybank Bank marketing to open an account, carry out financial management plans, manage assets and loans, and monitor expenses. All financial activities can be done by customers simply by accessing the M2U ID App application anytime and anywhere. These efforts are considered to have a significant impact with an increase in the value of digital transactions at Bank Maybank Indonesia in 2022 by 28% (year on year) and an increase in the number of accounts in 2022 by 34% compared to 2021 (Bank Maybank Annual Report, 2022).

However, the increase in the number of accounts is not in line with the increase in the amount of funds raised by Bank Maybank Indonesia in 2022 decreased by 1.19% (year on year). Based on this, it can be indicated that there are many account additions that are not followed by retain customers. This is interesting to study, the phenomenon that occurs gap between the increase in the number of accounts that are not in line with the decrease in the amount of funds raised indicates that there are sales that are not accompanied by customer retention. From this phenomenon, it can also be indicated that the addition of accounts is not followed by customers who use services and goods with the customer's future tendency to continue using the same goods or services for a long time or called customer retention (Danesh, 2022). Judging from the phenomenon of the number of accounts increasing but the amount of funds decreasing, this becomes interesting to analyze.

Artificial intelligence technology provides an opportunity to produce services that are more personalized and in accordance with customer profiles that can potentially increase customer satisfaction and customer retention. Research by Ait L, I. et al (2020) in Morocco, shows a significant positive relationship between artificial intelligence banking and customer satisfaction. However, even though digital technology and artificial intelligence have become dominating technological developments, personal interactions from marketing

banks still play an important role in banking services. Many customers still likely the direct services and personal interaction with the bank's marketing. Research by Lompoliuw, et al (2019) explains that personal interaction quality of employees can form a good relationship with customers and create a deeper emotional connection between the company and the customer, then can form customer loyalty to the company called customer retention. Likewise, research by Hapsari, et al (2017) found that personal interaction quality from bank marketing can have a significant impact on customer perceptions of the value they received from their bank, which in turn can affect their satisfaction and retention. Realizing this, Bank Maybank Indonesia throughout 2022 made efforts to improve the personal interaction quality of the bank's marketing by increasing the recruitment of 583 new qualified employees and providing quality skills so that Bank Maybank Indonesia's marketing can create good personal interaction quality and customer satisfaction can be formed so that it has an impact on increasing customer retention. Even if customer conditions can depend on artificial intelligence, it can potentially reduce the quantity of personal interaction from bank marketing which is still in great demand by many customers (Suryanegara & Zen, 2022). But on the other hand, services to customers cannot be fully carried out by artificial intelligence, for that personal interaction quality from bank marketing is also something that cannot be abandoned. This shows that banks must implement artificial intelligence and manage bank personal interaction quality marketing in a balanced and appropriate manner. The findings of research conducted by Al-Araj, et al (2022) show that the need for artificial intelligence and personal interaction marketing banks in Jordan is equally important for customers. But this study also contradicts with previous research by Northey, et al (2022) that personal interaction quality affects customer retention because customers who feel they have a good relationship with the company and feel valued and understood by the company, have the potential to continue using the company's products or services for a long time or called customers retention. Thus, there must be an optimal balance of both based on customer needs and preferences. Looking at the conditions and challenges above, this study seeks to explore more deeply how artificial intelligence banking and personal interaction quality marketing banks can affect customer satisfaction and customer retention so that effective strategies can be known for Bank Maybank Indonesia and other banks in order to provide the best services that have an impact on improving customer satisfaction and customer retention are marked by the increasing number of accounts and the amount of funds raised in the era of banking digitalization. Therefore, this research can be known the impact of artificial intelligence banking and personal interaction quality towards customer retention through customer satisfaction as an intervening variable.

## **2. THEORETICAL FRAMEWORK AND HYPOTHESIS FORMULATION**

Artificial intelligence is a technology that able to understand, learn, predict, and respond to the environment in a similar way to humans. In the context of banking, artificial intelligence is a technology used to improve banking operations and services (Dwivedi, et al., 2019). Artificial intelligence is a branch of computer science that aims to develop systems and machines able to perform tasks that require human intelligence. Artificial intelligence works by using algorithms and mathematical models to enable computers and other systems to study data, recognize patterns, and make intelligent decisions (Eriana & Zein, 2023: 1). Artificial intelligence banking covers a wide range of applications, from chatbots used for services to algorithms used to analyze customer data in real time and provide more personalized and timely services. This technology allows banks to expand their reach and serve customers who were previously difficult to reach. With the ability to process and analyze large amounts of data, artificial intelligence can help banks better understand customer needs and behavior so that they can offer products and services that

better suit their needs (Mulyaningsih, et al., 2019). In addition, relying too much on artificial intelligence can also potentially reduce the quantity of personal interaction from bank marketing which is still in great demand by many customers (Suryanegara & Zen, 2022). According to Kotler & Keller (2021); Draganov, et al (2020) and Biswas, et al (2020), the benefits of artificial intelligence in banks are that customers get information online without the presence of bank officers, customer can open and close accounts online without the presence of bank officers, customer can do e-commerce transactions online without the presence of a bank officer, customer can booked the online investments without the presence of a bank officer and the Bank can find out customer profiles online without the presence of a bank staff. Artificial intelligence has been well implemented measured through four dimensions according to Huang & Rust (2018), there are mechanical, analytical, intuitive and empathic intelligence and the implementation of artificial intelligence at Bank Maybank Indonesia is used in the M2U ID App application, the 360 Digital Wealth feature is used to present customer portfolio information real time and can be accessed through the application personally by the customer by using user id or face recognition based on artificial intelligence, conducting customer financial analysis based on customer financial transaction history stored in big data owned by Bank Maybank Indonesia, artificial intelligence analyze customer financial data personally and provide in the Maybank2U application, providing personalized recommendations for financial planning advice based on the results of portfolio analytics from artificial intelligence big data and customer expenditure data. Research conducted by Mulyaningsih, et al (2019), revealed that customer satisfaction can be obtained from various aspects, one of which is the use of technology and the quality of personal interaction and customer satisfaction is the main factor in increasing customer retention. Research by Ait L, I., et al (2020) in Morocco, shows a significant positive relationship between artificial intelligence banking and customer satisfaction. Therefore, this hypothesis is based on the assumes that improvements in artificial intelligence banking services will meet or even exceed customer expectations, thereby increasing customer satisfaction levels. Based on this description, the following research hypotheses can be drawn:

H1: It is suspected that artificial intelligence banking has a significant effect on customer satisfaction.

Personal interaction quality is related to customer perception of interactions with service providers during service. According to Gerrard & Cunningham (2001) in Gladis (2019) shows that employees who provide services have an important role in making customers satisfied. Employees who interact directly with customers will be a benchmark in the satisfaction received by customers, because the perception of customer satisfaction or dissatisfaction will depend on the service received by customers through these employees. In other words, according to Jamel & Naser (2002) in Safitri (2020), relational quality which refers to interaction quality between employees and customers has an influence on customer satisfaction. Although technological developments such as artificial intelligence have provided new possibilities for personalization and service efficiency, aspects of personal interaction quality of marketing banks are still very relevant and important. In fact, in some cases, personal interaction quality can be a determining factor in satisfaction and customer retention. For example, in complex situations, customers may prefer to interact with humans rather than with machines (Gursoy, et al., 2019). Research by Gursoy, et al (2019) also shows that personal interaction quality from marketing banks can affect customer perceptions of overall service quality. Likewise, research by Hapsari, et al (2017) found that

personal interaction quality from bank marketing can have a significant impact on customer perceptions of the value they receive from their bank, which in turn can affect satisfaction and retention. Therefore, although technology and digitalization play an important role in modern banking, it is important not to overlook the importance of personal interaction quality of bank marketing. Ensuring that customers feel heard, understood, and valued can be a key factor in satisfaction and customer retention. Employees who interact directly with customers will be a benchmark in the satisfaction received by customers, because the perception of customer satisfaction or dissatisfaction will depend on the service received by customers through these employees. In other words, according to Jamel & Naser (2002) in Northey, et al (2022), relational quality which refers to interaction quality between bank marketing and customers has a direct influence on customer satisfaction. Based on the description above, the following research hypothesis can be drawn:

H2: It is suspected that the personal interaction quality of the bank's marketing has a significant effect on customer satisfaction.

The digitalization era involves the application of digital technology including artificial intelligence banking in realizing customer retention. Banks can use artificial intelligence technology to analyze customer behavior and provide services that are more personalized and tailored to their needs. This in turn can increase customer satisfaction and help in retaining them as customers (Nguyen, et al., 2020). Artificial intelligence banking can help banks better understand customer needs and behavior, so that they can offer products and services that are more tailored to their needs that keep customers from moving. (Mulyaningsih, et al., 2019). Based on this description, the following research hypotheses can be drawn:

H3: It is suspected that artificial intelligence banking has a significant effect on customer retention.

Personal interaction quality of the bank's staff also affects the customer retention. Where according to research conducted by Northey, et al (2022) it was found that customers who feel they have a good relationship with the company and feel valued, understood and understood by the company, have the potential to continue using the company's products or services for a long time This is confirmed by research by Lompoliuw, et al (2019) it is known that personal interaction quality from the employees can form a good relationship with customers and create a deeper emotional connection between the company and customers, then can form customer loyalty to the company called customer retention. Based on the description above, the following research hypothesis can be drawn:

H4: It is suspected that the personal interaction quality of the bank's marketing has a significant effect on customer retention.

Customer retention is the future tendency of customers to keep using the same goods or services for a long time according to Ranaweera & Prabhu in Danesh, Nasab & Ling (2012). According to Gerpott, Rams & Schindler in Khan (2012) say that retention is the continuity of business relationships between customers and companies. According to Anderson & Mittal in Bramulya, et al (2016) customer retention is the connection between customer loyalty and profitability. Buttle in Bramulya, et al (2016) said that customer

retention is a form of loyalty related to behavior (behavioral loyalty) which is measured based on consumer buying behavior indicated by the high frequency of consumers buying a product in this case seen from the amount of customer funds at the bank. Customer retention refers to a company's ability to maintain long-term relationships with their customers, so that they continue to use the company's products and services. In this case, the use of artificial intelligence banking and improving the quality of personal interactions can be an effective strategy to increase customer retention. Customer retention indicators according to Buttle & Burton (2002) and Danesh, et al (2012) are competitiveness, convenience value, making other product purchase decisions within the same bank, losses incurred if moving to another bank, moving to another bank less efficiently and the possibility of moving exists, if another bank has better features. Customer satisfaction is an important aspect because it is considered as the main predictor of customer retention in various sectors including the banking sector (Hapsari, et al., 2017). Customer satisfaction in the banking sector is the overall satisfaction with the bank and how services can meet customer needs and expectations of bank services (Nur Afifah, 2012). If the performance is not in line with expectations, the customer will feel dissatisfied or disappointed. Conversely, if performance meets or even exceeds expectations, then customers will feel satisfied (Maruli, et al., 2022). Customer satisfaction in the banking sector is the overall satisfaction with the bank and how services can meet customer needs and expectations of bank services (Afifah, 2012). Customer satisfaction in this study is defined as an evaluation of the sale of banking services. To understand and improve customer satisfaction, banks must identify using indicators developed by Henning-Thurau, et al (2002); Afifah (2012), Tjiptono (2020) and Fandy (2016), satisfaction in service quality, satisfaction with the benefits of products and services, meeting customer expectations and willingness to recommend. The important role of artificial intelligence in banking, especially in improving transaction efficiency and personalization of services, can contribute greatly to increasing customer satisfaction. Customer retention also involves the application of digital technology including artificial intelligence banking in realizing customer retention (Kong & Rahman, 2020). Banks can use artificial intelligence technology to analyze customer behavior and provide services that are more personalized and tailored to their needs. This can increase customer satisfaction and help in retaining them as customers (Nguyen, et al., 2020). Based on the description above, the following research hypothesis can be drawn:

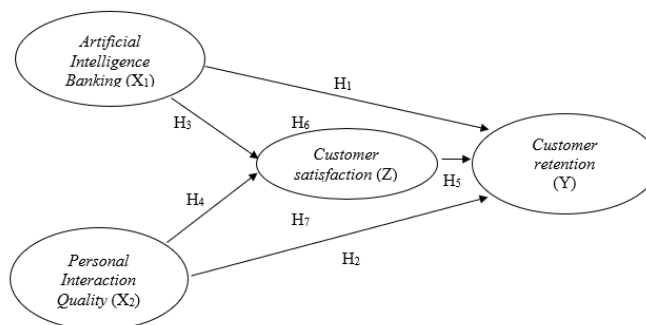
H5: It is suspected that customer satisfaction has a significant effect as a mediating variable between artificial intelligence banking and customer retention.

The results of research by Fitria Sulistiani, Naili Farida and Widiartanto (2016) show that employee communication with customers has a positive and significant effect on customer satisfaction and customer satisfaction has a positive and significant effect on customer retention. Customer satisfaction is defined as the evaluation after an employee's service is perceived by the customer about the extent to which a particular service or product can meet their expectations. This concept is important because it is considered as the main predictor of customer retention in various sectors including the banking sector (Hapsari, et al., 2017). Based on the description above, the following research hypothesis can be drawn:

H6: It is suspected that customer satisfaction has a significant effect as a mediating variable between personal interaction quality and customer retention.

Although technological developments such as artificial intelligence have provided new possibilities for personalization and service efficiency, these aspects of the quality of personal interaction are still very relevant and important. In fact, in some cases, the quality of personal interactions can be a determining factor in satisfaction and customer retention. For example, research by Lompoliuw, et al (2019) found that personal interaction quality of employees can form good relationships with customers, can create customer satisfaction and can form customer loyalty to the company called customer retention. Customer satisfaction has a significant effect on customer retention (Syaqirah & Faizurrahman, 2014). Based on the description above, the following research hypothesis can be drawn:

H7: It is suspected that customer satisfaction has a significant effect as a mediating variable between artificial intelligence banking dan personal interaction quality towards customer retention



**Figure 1: Conceptual Framework**

*Source: Processed by authors (2023)*

### 3. RESEARCH METHOD

This research was conducted to determine the effect of artificial intelligence banking, personal interaction quality of bank marketing on customer satisfaction and customer retention. Therefore, the form of research that will be used in this study is quantitative research. The location of the research was carried out at PT. Bank Maybank Indonesia with research time conducted from October – December 2023. The population is a customer of Bank Maybank Indonesia and sampling using non probability sampling technique does not provide equal opportunities or opportunities for members in the population to be selected as samples (Ghozali, 2018). Next, the number of samples used uses the slovin formula. To prevent samples from being included in research that does not meet the purposive sampling criteria, the level of precision is set at 10%. The sample in this study was taken from 13,576 respondent populations, which are the number of customers of Bank Maybank Indonesia according to data in the 2022 annual report of Bank Maybank Indonesia published in 2022. The number of samples in this study was determined using the Slovin formula. The formula of Slovin is as follows:

$$n = \frac{N^2}{1 + N(e)^2}$$

Based on the calculation of the Slovin formula above from the population of 13,576 respondents, those who have met the minimum sample size or at least as many as 100 respondents. The sample criteria in this study are having been a customer of Bank Maybank Indonesia for at least 1 year, aged at least 18 years, have used artificial intelligence banking for at least the last 6 months and have experienced personal interaction services from Bank

Maybank Indonesia employees directly at least in the last 6 months. And in this study, 235 respondents have been collected and there are 215 respondents who meet the research criteria.

**Table 1: Variable Details**

<b>Clasification and variable</b>	<b>Code / Abbreviation</b>	<b>Measurement (indicator)</b>
<u>Dependent Variables</u>		
Customer Retention	CR	1. I am willing to recommend to others 2. Make a buyback decision in the same company or add funds to the same bank 3. I decided not to move 4. I will continue to do business with my bank (Commey & Adom, 2020)
<u>Independents Variables</u>		
Artificial Intelligence Banking	AIB	1. Mechanical Intelligence 2. Analytical Intelligence 3. Intuitive Intelligence 4. Emphatic Intelligence (Huang & Rust, 2018)
Personal Interaction Quality	PIQ	1. Employees are highly competent in services 2. Employees behavior or actions shows they understand what I need 3. When I get a problem, employees are very enthusiastic about finding solutions to the problem 4. The quality of interaction with employee is excellent 5. Employees show genuine care and interest on a personal basis 6. Employees provide courteous and friendly service to customers (Sharma & Patterson, 1999; Brady & Cronin, 2001; Choi & Kim, 2012)
<u>Intervening Variables</u>	CS	
Customer Satisfaction		1. Satisfaction on service quality services 2. Satisfaction on the benefits of products and services 3. Products and services have exceeded customer expectations (Afifah, 2012 & Kotler & Keller, 2021)



Testing the research hypothesis was carried out using the analysis method of Partial Least Square Structural Equation Models (PLS-SEM) based on smart partial least square (SmartPLS) ver 3.2.9. The analytical technique in this study uses pls techniques which are carried out in two stages, the first step is to test the measurement model, with validity tests and reliability tests. validity tests are carried out by: Convergent validity, Discriminant validity and Average Variance Extracted (AVE). Convergent validity with the expected loading factor value of  $> 0.7$  which means very good (Hair, et al., 2019). Discriminant validity using the crossloading value of latent variables must be greater or can also be measured through the value of average variance extracted (AVE) must be above 0,50 (Hair, et al. 2019). Reliability test can be done through composite reliability and cronbach's alpha, a good composite reliability value if it has a  $\geq$  value of 0,7 a good cronbach's alpha value if it has a  $\geq$  value of 0,6 then the questionnaire is considered reliable.

Then the second step is to test the structural model or inner model to describe the relationship between latent variables based on substantive theory. Through the bootstrapping process, the T-statistic test parameter way to test it is to use the model goodness test, with R- Square & F-square criteria. R-square values of 0,35, 0,15 and 0,02 can be concluded that the model is strong, moderate / medium, and weak (Hair, et al., 2019) The f-square criteria according to Cohen (1988) in Hair, et al (2019) are if the f-square value  $> 0.02$  means it has a small or bad impact, if f-square = 0,15 means a moderate or medium impact and if f-square  $> 0.35$  means a good impact. After evaluating the outer model and inner model, hypothesis testing is carried out. Test the hypothesis using the Bootstrap Resampling method developed by Geisser & Stone, the test statistics used are t-tests. Tests are carried out with t-tests, if the alpha 5% statistic T value used is 1,96 then it is concluded to be significant and vice versa. (Hair, et al., 2019). This test is carried out by means of path analysis on the model that has been made. SEM techniques can simultaneously test complex structural models, so that the results of path analysis can be known in one regression analysis. Direct effect analysis with direct influence analysis criteria is by using path coefficients, if the value of the path coefficient is positive, then the influence is unidirectional. Then for the probability value or significance value can be seen from the p-value with the provision that if the p-value  $< 0.05$ , then the impact of exogenous variables to endogenous variables is significant and the hypothesis is accepted and vice versa. Indirect effect analysis is useful for testing the hypothesis of the indirect influence of an influencing variable (exogenous) on the affected variable (endogenous) mediated by an intervening variable. The criterion is seen from the p-value in the SmartPLS bootstrapping results where if the p-value  $< 0.05$  then the significant and indirect influence means that the intervening variable plays a role in mediating the relationship between exogenous variables to endogenous variabel and vice versa. This result can be seen in SmartPLs can be seen in specific indirect effect.

#### 4. RESULTS AND DISCUSSION

The statistics of demographic profile of study respondents show that 54 respondents (25,8%) were in the age range at intervals of 30 years – 35 years. Most respondents 54,2% were female. Most respondents 73,7% lived in Kalimantan. Education level of bachelor degree which amounted to 150 people or 70,1%. Respondent occupation as a private employee were 153 people or 71,8% the allocation rate of saving and investing per month amounted to Rp. 1,000,000 – Rp. 4,999,999 is 100 people or 46.9% of the total respondents, Account balance Rp. 100,000 – Rp. 10,000,000 is 78 people or 36,4%. The most respondents more often use digital banking transactions, namely as many as 175 respondents or 81.8% of the total respondents when compared to transactions via ATM or cash, respondents most like digital banking services, which is as many as 183 people or

86.7% of the total respondents. It means that the most respondents have adapted technology well and prefer digital banking services.

**Table 2: Result AVE, Fornell Larcker, Cronbach's Alpha and Composite Reliability**

Variables	AVE	Fornell-Larcker	Cronbach's Alpha	Composite Reliability
Artificial intelligence banking (X <sub>1</sub> )	0,778	0,882	0,959	0,965
Personal Interaction Quality (X <sub>2</sub> )	0,837	0,934	0,971	0,976
Customer Satisfaction (Z)	0,890	0,943	0,938	0,960
Customer Retention (Y)	0,873	0,915	0,935	0,953

Source: Processed by author (2023)

**Table 3: Crossloading**

	Artificial intelligence banking (X <sub>1</sub> )	Personal interaction quality (X <sub>2</sub> )	Customer satisfaction (Z)	Customer retention (Y)
<b>XI.1</b>	0,863	0,664	0,693	0,658
<b>XI.2</b>	0,903	0,695	0,730	0,688
<b>XI.3</b>	0,917	0,690	0,753	0,693
<b>XI.4</b>	0,903	0,635	0,718	0,675
<b>XI.5</b>	0,917	0,672	0,728	0,731
<b>XI.6</b>	0,893	0,686	0,706	0,682
<b>XI.7</b>	0,761	0,547	0,606	0,649
<b>XI.8</b>	0,889	0,673	0,689	0,717
<b>X2.1</b>	0,718	0,931	0,854	0,754
<b>X2.2</b>	0,692	0,943	0,815	0,751
<b>X2.3</b>	0,719	0,917	0,749	0,722
<b>X2.4</b>	0,694	0,952	0,822	0,752
<b>X2.5</b>	0,653	0,939	0,831	0,759
<b>X2.6</b>	0,713	0,923	0,854	0,766
<b>Z.1</b>	0,737	0,832	0,944	0,780
<b>Z.2</b>	0,745	0,836	0,954	0,829
<b>Z.3</b>	0,776	0,822	0,932	0,822
<b>Y.1</b>	0,723	0,762	0,812	0,916
<b>Y.2</b>	0,717	0,747	0,806	0,919
<b>Y.3</b>	0,685	0,717	0,753	0,915
<b>Y.4</b>	0,724	0,713	0,771	0,909

Source: Processed by author (2023)

The result of measurement model, validity tests are carried out by: convergent validity, discriminant validity and average variance extracted (AVE). Convergent validity all of variable were > 0.7 is considered valid (Hair, et al., 2019). Discriminant validity using

the crossloading value of latent variables this study were above 0,50 (Hair, et al., 2019). Composite reliability and cronbach's alpha, has a  $\geq$  value of 0,7 and cronbach's alpha value has a  $\geq$  value of 0,6 then all indicator of this study is considered valid and reliable (Hair, et al., 2019).

**Table 3: Bootstrapping Results (SmartPls 3.2.9)**

	Path Coefficient t	T Statistik	P Value	95% Standar Deviation Path Coefficient		F-Square	Hyphotheses
				Batas Bawah	Batas Atas		
X <sub>1</sub> -Z	0,319	4,785	0,000	0,190	0,446	0,248	Accepted
X <sub>2</sub> -Z	0,642	10,046	0,000	0,511	0,765	1,006	Accepted
X <sub>1</sub> -Y	0,236	2,629	0,009	0,077	0,414	0,085	Accepted
X <sub>2</sub> -Y	0,164	1,512	0,131	- 0,050	0,356	0,025	Reject
Z-Y	0,527	5,144	0,000	0,317	0,716	0,217	Accepted

Source: *SmartPLS 3.2.9, (2023)*

Artificial intelligence banking on customer satisfaction has a path coefficient value of 0.319 and T-statistics of 4.785 (T-table>1.65). and a significance value of 0.000 (p-value<0.05) which shows that artificial intelligence banking has a significant effect on customer satisfaction. The results of this study support previous research conducted by Mulyaningsih, et al (2019), revealing that improvements in artificial intelligence banking services will meet or even exceed customer expectations, thus creating customer satisfaction. So, the third hypothesis is suspect that artificial intelligence banking has a significant effect on customer satisfaction, so the first hypothesis can be **accepted**.

Second hypotheses, personal interaction quality to customer satisfaction has a path coefficient value of 0.642 and T-statistics of 10,046 (T-table>1.65). and a significance value of 0.000 (p-value<0.05) which shows that personal interaction quality has a significant effect on customer satisfaction. This result supported by Suhartanto, et al (2020) found that customers who feel they have a good personal relationship with their bank are more likely to feel satisfied and remain customers. The results of research by Sulistiani, et al (2016) show that trust, commitment, and communication partially have a positive and significant effect on customer satisfaction and customer satisfaction has a positive and significant effect on customer retention. Customer satisfaction is defined as the evaluation after an employee's service is perceived by the customer about the extent to which a particular service or product can meet their expectations. According to the theory of Kotler & Keller (2021), it is known that customer satisfaction is formed when companies can meet or even exceed customer expectations. So that the second hypothesis, which is suspected of personal interaction quality has a significant effect on customer satisfaction, the hypothesis can be **accepted**.

Artificial intelligence banking on customer retention has a path coefficient value of 0.236 and T-statistics of 2,629 (T-table>1.65) and p- value or significance value of 0.009 (p-value<0.05) at 95% confidence interval, the influence of artificial intelligence banking on customer retention can affect a maximum of 41.4%, although the existence of artificial intelligence banking variables in increasing customer retention has a moderate influence seen from the f-square value of 0.085 means greater than the f-square medium influence criterion according to Hair, et al (2019) of 0.15. The results of this study support previous research conducted by Masitoh, et al (2023), where the results of the study obtained that

there is a significant influence of artificial intelligence banking services on customer satisfaction both simultaneously and partially. Another study by Mulyaningsih, et al (2019), obtained research results that artificial intelligence banking can help banks to better understand customer needs and behavior, so banks can offer products and services that are more in line with their needs and customer retention can be formed. Therefore, the third hypothesis is suspected that artificial intelligence banking has a significant effect on customer retention, so the hypothesis can be **accepted**.

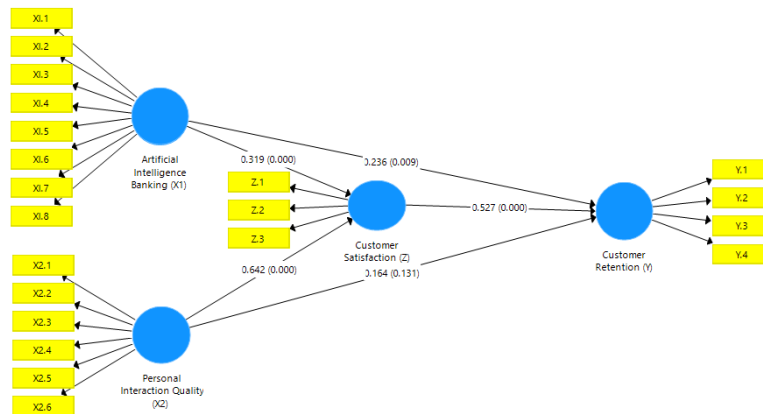
Fourth hypotheses, *personal interaction quality towards customer retention* has a path coefficient value of 0.164 and T-Statistics of 1,512(T-table<1.65). And the significance value of 0.131 (p-value>0.05) which shows that personal interaction quality does not have a significant effect on customer retention. Interesting findings can be seen from the results of this study, technological developments can change customer habits, where customers are proven to be customers who retain enough with services in artificial intelligence banking even without personal interaction services. Several previous studies and theories have said that personal interaction quality has a significant effect on customer retention, such as research conducted by Tirtawati (2021), obtained research results that contradict the results of this study, namely personal interaction quality has a positive effect on customer satisfaction and has a positive influence on customer retention in the company. This result not support Northey, et al (2022) that personal interaction quality affects customer retention because customers who feel they have a good relationship with the company and feel valued, and understood by the company, have the potential to continue using the company's products or services for a long time or called customers who retain. However, research conducted by Hadi & Prakosa (2022) supports research where research results are obtained that personal interaction quality has no effect on customer retention. Based on the results of testing the fourth hypothesis, it shows that personal interaction quality has a significant effect on customer retention with a p-value of 0.131 and a path coefficient value of 0.164 which indicates that the relationship between the two is negative or insignificant. Then the T-statistic results is known to be 1.512 (T-table<1.65) this shows the hypothesis is **rejected**.

Fifth hypotheses, *customer satisfaction with customer retention* has a path coefficient value of 0.527 and T-statistics of 5,144 (T-table>1.65) and p-value or significance value of 0.000 (p-value<0.05) which shows that customer satisfaction has a significant effect on customer retention. The results of this study support previous research conducted by Jamel & Naser (2002) in Northey, et al (2022), relational quality which refers to interaction quality between employees and customers has a direct influence on customer satisfaction. Employees who interact directly with customers will be a benchmark in the satisfaction received by customers, because the perception of customer satisfaction or dissatisfaction will depend on the service received by customers through these employees. This study also reinforces the theory of Northey, et al (2022) that personal interaction quality affects customer satisfaction because customers who feel they have a good relationship with the company and feel valued, and understood by the company, have the potential to continue using the company's products or services for a long time or are called customers who retain (Commeay & Adam, 2020). The results of this study support previous research conducted by Setiadi (2016) where the results of research obtained that personal interaction quality has a positive and significant influence on the quality of relationships with customers. The quality of the relationship has a positive and significant influence on customer satisfaction. Service quality has a positive and significant influence on customer satisfaction. Another study conducted by Suhartanto, et al (2020) found that customers who feel they have a good personal relationship with their bank are more likely to feel satisfied and remain customers. The results of research by Sulistiani, et al (2016) show that trust,

commitment, and communication partially have a positive and significant effect on customer satisfaction and customer satisfaction has a positive and significant effect on customer retention. Customer satisfaction is defined as the evaluation after an employee's service is perceived by the customer about the extent to which a particular service or product can meet their expectations. This concept is important because it is considered as the main predictor of customer retention in various sectors including the banking sector (Hapsari, et al., 2017). Therefore, the fourth hypothesis is **accepted**.

Sixth hypotheses, artificial intelligence banking on customer retention through customer satisfaction has a path coefficient value of 0.168 and T-statistic 4.217 ( $T\text{-table} > 1.96$ ) and p-value or significance value of 0.000 ( $p\text{-value} < 0.05$ ) which shows customer satisfaction has a significant effect as an intervening variable between artificial intelligence banking on customer retention with partial mediation effect. The results of this study support previous research conducted by Mulyaningsih, et al (2019), revealing that improvements in artificial intelligence banking services will meet or even exceed customer expectations, thus creating customer satisfaction. So that the third hypothesis, which is suspected of artificial intelligence banking has a significant effect on customer satisfaction, the hypothesis is accepted. The results of research by Sulistiani, et al (2016) show that trust, commitment, and communication partially have a positive and significant effect on customer satisfaction and customer satisfaction has a positive and significant effect on customer retention. Customer satisfaction is defined as the evaluation after an employee's service is perceived by the customer about the extent to which a particular service or product can meet their expectations. This concept is important because it is considered the main predictor of customer retention in various sectors including the banking sector (Hapsari, et al., 2017) and in line with the theory of Kotler & Keller (2021), it is known that customer satisfaction is formed when companies can meet or even exceed customer expectations. For this reason, it is important to ensure that the performance of artificial intelligence banking can meet or even exceed customer expectations so that customer satisfaction will be realized and have an impact on customer retention. Therefore, the sixth hypothesis can be **accepted**.

Seventh hypotheses, customer satisfaction with customer retention has a path coefficient value of 0.339 and T-statistic 4.121 ( $T\text{-table} > 1.96$ ) and a significance value of 0.000 ( $p\text{-value} < 0.05$ ) which shows customer satisfaction has a significant effect as an intervening variable between personal interaction quality and customer retention with mediation effects full mediation. The results of research by Sulistiani, et al (2016) show that trust and communication partially have a positive and significant effect on customer satisfaction and customer satisfaction has a positive and significant effect on customer retention. Customer satisfaction is defined as the evaluation after an employee's service is perceived by the customer about the extent to which a particular service or product can meet their expectations. This concept is important because it is considered as the main predictor of customer retention in various sectors including the banking sector (Hapsari, et al., 2017). Based on the opinion of Kotler & Keller (2021), customer satisfaction is formed when companies can meet or even exceed customer expectations and make customers retain therefore the seventh hypothesis can be **accepted**.



**Figure 2: Output Bootstrapping SmartPLS (2023)**  
 Source: Output SmartPLS (2023)

## 5. CONCLUSIONS, IMPLICATIONS, SUGGESTIONS AND LIMITATIONS OF THE RESEARCH

The findings of this study are interesting, because they contradict previous theories and studies known that personal interaction quality has a significant effect on customer retention. But the findings of this study, exhibit that personal interaction quality no longer affect to customer retention directly. This illustrates that the current condition of customers has adapted technological developments very well. Based on the results of data analysis and discussion previously explained, it can be concluded that the variable artificial intelligence banking has a significant effect on customer retention at Bank Maybank Indonesia directly and mediated by customer satisfaction, in this case customer satisfaction is partial mediation. The variable of personal interaction quality does not affect customer retention at Bank Maybank Indonesia and if mediated by customer satisfaction, personal interaction quality affects customer retention at Bank Maybank Indonesia in this case customer satisfaction is full mediation. Research implications of this study is expected that the research objects is Bank Maybank Indonesia or the other banks can make the investment strategy decisions, focusing on increasing customer satisfaction from the personal interaction quality from Bank Maybank Indonesia service officers because increasing personal interaction quality can have a greater impact of 49,3% than the upper limit of the mediation effect of customer satisfaction in artificial intelligence banking of 24,6% means that it will be more effective and efficient if more investment is made in improving personal interaction quality with digital and services upgrade skill training for the employees which is give a greater impact on customer satisfaction and customer retention. The more satisfied customers are with personal interaction quality services, it will contribute 49,3% to customer retention and also maintainance the performance of artificial intelligence banking can reach or even exceed customer expectations so customer satisfaction will be realized and have a positive impact on customer retention. The limitations found in this study may be a source for future research. The limitations of the research found in this study are as follows: although the number of samples is sufficient, it can be added that weighing SEM-PLS will be much more accurate with a larger sample (example more than 500 respondents). Further research can explore other variables that can affect customer retention such as customer experience and customer focus so it can provide better research findings and be useful for many parties.

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