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The Influence of Self Service Technology (SST) on Customer Satisfaction of Digital Services Users at Indonesia Islamic Bank

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ABSTRACT

This research aims to analyze the effect of Self-Service Technology on customer satisfaction of digital service users at Indonesia Islamic Bank especially BSI KCP Kisaran. BSI KCP Kisaran Self-Service Technology consists of Automatic Teller Machine (ATM), internet banking, and mobile banking. This research also analyze how is the influence of these three SST facilities simultaneously on customer satisfaction. This research uses a quantitative approach with multiple linear regression analysis. Research data sources use primary and secondary data. According to the results of data analysis shows that ATM has a significant effect on customer satisfaction. In other side, internet banking and mobile banking also have a significant effect on customer satisfaction. Based on results found that customers still experience high benefits from transaction by ATM, internet banking, and mobile banking. These results indicate that customers are satisfied within BSI KCP Kisaran Self-Service Technology that consists of ATM, internet banking, and mobile banking. This study bring an implication that the optimizing Self-Service Technology would increase the Islamic Bank customer satisfaction.

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Introduction

Banking is now continuing to carry out transformations to adapt in entering the digital era. Starting from transaction services such as payments to submissions such as opening an account through the application. And in 1992 almost every country began to have internet access to facilitate all activities, both social and business. Then in 1998 banks began to introduce online banking services to their customers, fintech began to be recognized by the public. Along with technological developments, one of the independent services in banking began to be created, namely the Self-Service Technology (SST) service (Wahyuni & Harahap, 2022).

The dimensions of SST services are considered to be very much needed by the public or customers to make instant and easy transactions which are usually related to wish fulfillment. The better service provided by SST, the more it will influence customer satisfaction and behavior. Self Service Technology within the scope of banking is an integrated banking service system that allows customers to carry out various banking activities without having to come directly to the bank, either in the form of transactions or seeking related information. SST is specifically designed to meet customer needs both face-to-face (directly) and virtually (indirectly), customer needs met by SST have an impact on customer satisfaction. Because customers will be satisfied if SST runs smoothly, can be completed instantly or easily accessed and also provide more complex services. SST services are growing, where initially there were only services in the form of Automatic Teller Machines (ATMs), Internet Banking and the most recent innovation is the Mobile Banking service which can be accessed via a gadget or smartphone (Hidayat, 2009)

Of the three digital services, it can be measured the level of customer satisfaction in the use of digital services that are carried out independently provided by the bank to facilitate daily transactions. Satisfaction is the customer's perception/impression of performance and expectations. If performance meets customer expectations, customers will feel satisfied. If performance exceeds customer expectations, the customer is very satisfied and happy. Many companies make customer satisfaction their main focus because customers who are satisfied with the performance provided will remain and find it difficult to change their choices. A high sense of satisfaction will lead to an emotional attachment to something, not because of a rational preference. The result is high customer loyalty (Pohan & Jannah, 2022).

The banking industry must continue to apply technological developments in line with developments and also changing times. Various updates continue to be made in order to provide the best service for customers. For example, at Bank Syariah Indonesia (BSI), various strategies have been implemented so that the bank can continue to operate and survive and not be left behind from other industries. One of the banking strategies is to provide SST service options to its customers. In this case introduced in the form of ATM, Internet Banking and Mobile Banking. The existence of these three services may already be familiar to the public. However, not all customers want to use it or in other words still prefer to use services directly or interpersonally with bank officers. This is considered because some customers are still not "literate" of technology or do not understand the ability to use this technology. Based on research from McKinsey&Company (2019) the growth of digital banking users in Indonesia has been increasing rapidly in recent years. Digital banking users in Indonesia are the highest in Asia. The rapid growth of domestic digital banking was caused by smartphone users in Indonesia, which reached 124 million people.

BSI is one of the sharia banks that provides SST facilities for customers. BSI is an Islamic bank resulting from the merger of BUMN subsidiaries in the banking sector, including Bank Syariah Mandiri, BRI Syariah and BNI Syariah. Even though it looks like a merger has just taken place, the existence of BSI bank is very, very good. Its image, judging from the scope of the past year, BSI has received many awards and achievements. Bank Syariah Indonesia won one of the awards, namely the Digital Brand Award 2021 as the Best Digital Banking in the category of Islamic Bank. The purpose of holding this digital brand award is as a form of appreciation and also to see companies build a corporate brand and product image by utilizing technological facilities. This award looks at the level of digital brand index through social media, online and also the web of each company or bank that is registered in the digital branding nomination. However, does BSI bank deserve this award because when viewed from other phenomena, BSI banks are still quite rare to find branch offices, especially in small towns. Based on the 2021 annual report, BSI's total assets as of December 2021 are around Rp. 214.6 trillion, core capital of more than Rp. 22.60 trillion, total Third

Party Funds reached Rp. 210 trillion, and total financing of Rp. 157 trillion. It can be seen from the service network.

Table 1.1 Number of Services Network in Indonesia Islamic Banks

Service Network	Branch office	Branch office	Cash office	Payment Points	ATM	Service Car
BNI Syariah	68	300	13	55	202	23
BRI Syariah	57	215	10	12	539	25
Mandiri Syariah	129	398	50	114	>200	
Total	254	913	73	181	>941	48

Source: www.bankbsi.com

However, it seems that it is still quite difficult to find SST facilities spread across all regions, for example ATM facilities, which are one of the most frequently used and needed SST facilities by customers, are still difficult to find in small towns. or only one or two units per branch office. for example in KCP Kisaran. Researchers conducted research at Bank BSI KCP Kisaran. Bank BSI KCP Kisaran has a total of 25 employees, each of whom has their own duties. In this study more emphasis on the operational part of the company in accordance with the title in this study in order to facilitate the process of carrying out this research. Based on the initial survey, information was found regarding the number of customers using digital services at Bank BSI KCP Kisaran in the period December 2021-March 2022.

Table 1.2 Range of Number of KCP Bank BSI Customers for the period December 2021-March 2022

	Name	Number of customers			
		Dec 2021	January 2022	February 2022	March 2022
1	Customer	9,572	9,608	9,952	10028
2	Digital Service Users	5,583	5,604	5,629	5,660

Source: Bank BSI KCP Kisaran (2022)

Conducted in-depth research on the SST variable, and showed that ATM is the most widely used and preferred facility compared to the other two SST facilities, namely Internet Banking and Mobile Banking. Internet Banking is a facility that covers all banking transactions efficiently, however in this research ATM is the service most preferred by users/customers. From several studies, it can be seen that customers are interested in the digitalization facilities and SST technology provided and are also considered very important in creating customer satisfaction. Based on the description above, it can be explained that the services provided by banks to customers by utilizing technology greatly influence customer behavior. With this award organized by Infobank (2021), it is hoped that companies operating in the financial sector, especially sharia banking, can be motivated to improve their performance in utilizing increasingly developing technology in the current era of digitalization. As far as researchers know, there are not many studies that discuss the impact of SST on customer behavior. Therefore, researchers will examine whether the SST facilities provided by BSI KCP Kisaran bank are good enough and satisfy their customers both in terms of quantity and technology and service.

Literature Review

Customer Satisfaction

According to Islam, consumer satisfaction is a consumer's expectation of products and services that are in accordance with their wants and needs based on sharia principles. Customers will pay attention to several aspects of the company's performance to get satisfaction, namely in terms of honesty and trustworthiness. As for another understanding of customer satisfaction is an expectation from consumers that can be fulfilled by the performance of a product or service so that it will lead to feelings of satisfaction because their desires have been fulfilled properly. Based on previous research it is said that apart from product quality, customer satisfaction will also appear with the quality of service they get. Apart from that,

customer satisfaction is the emergence of feelings of pleasure or disappointment due to customer expectations when it comes to product quality.

Self-Service Technology

Self-Service Technology or SST is a facility or attribute provided by a bank with the aim of making it easy for customers to serve themselves without having to rely on employees, for example ATMs, Internet Banking and Mobile Banking. Automatic Teller Machine (ATM) is a card that customers can use to carry out banking transactions, including cash withdrawals and/or automatic fund transfers via ATM machines. Meanwhile, mobile banking and internet banking are banking transaction service facilities via the internet network that can be accessed anytime and anywhere independently via smartphone (Armita, Yarmunida, & Sumarni, 2023). Utilization of SST technology is an attractive service for service provider companies and also for users because it improves service operations, increases service efficiency, provides more benefits for customers, and increases service access options. SST is a digital innovation that provides convenience, comfort and speed in financial transactions so that it will provide customer satisfaction when making transactions.

Similar research was also conducted by Wicaksono (2015) with research results showing a significant influence of the self-service technology variable on customer trust, satisfaction and loyalty. The trust variable also has a significant effect on satisfaction, but has no significant positive effect on customer loyalty. Then, other research from Mahrun (2020) shows that the self-service technology variable has seven items and all of them have a positive and significant effect, but the self-service technology with the highest mode value is found in the enjoyment item.

Methodology

Research Approach

This type of research uses a quantitative approach with multiple linear regression methods to determine the direction and how much influence the independent variable has on the dependent variable (Ghozali, 2018). The independent variables in this research include digitalization facilities through self-service technology consisting of ATM, Internet Banking and Mobile Banking, while the dependent variable is customer satisfaction using digital services at Bank Syariah Indonesia KCP Kisaran.

Location and Time of Research

The location of this research was carried out at Bank Syariah Indonesia KCP Kisaran which is on Jl. Imam Bonjol No. 195 Kisaran Timur District, Asahan Regency, North Sumatra, Indonesia. This study uses data from the results of distributing questionnaires to customers of Bank Syariah Indonesia KCP Kisaran. The time of the research was conducted from January 2022 to October 2022.

Population and Sample

The population in this study were customers of Bank Syariah Indonesia KCP Kisaran. Based on interviews and initial surveys conducted, according to the Branch Manager or Bank Leader of BSI KCP Kisaran, Mr. Abrar Naim (2022), the number of BSI KCP Kisaran customers as of June 2022 is around 10,028 people. Researchers use the Slovin formula to calculate the minimum sample size for a limited population survey and estimate the proportion of the population. The form of the Slovin formula is:

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

n = sample size/number of respondents

N = Population size

e = Margin of error (presentation tolerance of sampling error accuracy, e = 0.1 (10%))

Based on interviews and also an initial survey in the form of what has been done, according to the Branch Manager or Head of the BSI KCP Kisaran Bank, Mr. Abrar Naim (2022), the number of BSI KCP Kisaran customers as of June 2022 is around 10,028 people. Then the research sample, with the following calculations, the researchers collected 100 respondents. The author uses purposive sampling, namely a sampling technique that takes into account the following criteria: BSI KCP Kisaran customers who use one or all of the ATM/Internet Banking/M-Banking digital services. Data collection techniques used in this study are a) list of questioners and b) interview. The questioners used in this study is measured by a Likert Scale by determining the score as 5) Strongly agree; 4) Agree; 3) Neutral; 2) Dissagree; 1) Strongly disagree (Nurdin, Musyawarah, & Nurfitriani, 2020)

Variable Operational Definitions

The goal is to achieve a measuring instrument that is in accordance with the nature of the variables that have been defined in the concept, so that double understanding does not occur. The variables in this study are ATM (X1), Internet Banking (X2), and Mobile Banking (X3) and Customer Satisfaction (Y).

Data Analysis Technique

Data analysis techniques in quantitative research use statistics. The statistics used for data analysis in this research are descriptive statistics to analyze data by describing or describing the data that has been collected as it is, without intending to make general conclusions or generalizations. To support the results of this study, the data obtained will be analyzed using statistical tools through the SPSS program and using multiple linear regression methods. Data analysis includes validity test, trust test, classic assumption test, and hypothesis testing using multiple linear regression. The purpose of the regression equation in this research is to determine SST facilities in the form of ATM, Internet Banking and Mobile Banking on customer satisfaction at BSI KCP Kisaran. Meanwhile, the multiple linear regression equation model used in this research is as follows

$$Y = a + b1.X1 + b2.X2 + b3.X3 + e$$

Y = Customer Satisfaction

a = Constant

b = Regression coefficient

X1 = ATM variable

X2 = Internet Banking Variable

X3 = Mobile Banking Variable

In the hypothesis test there are t test, F test, and R test. The t test is used to determine the relationship of each independent variable or partially to the dependent variable. The t test aims to determine the effect of the independent variables on the dependent variable partially (Ghozali, 2018). This study uses a two-tailed test so that H0 is rejected if $T_{hit} < T_{table}$ and conversely H0 is accepted if $T_{hit} > T_{table}$. Meanwhile F test is used to determine the relationship of the independent variables simultaneously to the dependent variable with a significance value of 5%.

The F-statistical test formula (simultaneous) is as follows:

$$F_{count} = \frac{R^2/(n-1)}{(1-R^2)/(n-k)}$$

The determination test (R²) aims to measure the model's ability to explain the variance in the dependent variable with a measurement value between zero or one.

Results and Discussion

Result

General description of the company

PT. Bank Syariah Indonesia is a company engaged in the banking industry based on sharia principles. The establishment of Bank Syariah Indonesia was the result of a merger of 3 state-owned banks namely Bank Mandiri Syariah, BNI Syariah and BRI Syariah. Bank Syariah Indonesia was officially established on February 1 2021. History began on July 3, 1969 with the name PT Bank Djasa Arta. The head office is located on Jalan Suniaradja no. 24B, Bandung. On December 19, 2007, this bank was officially acquired by Bank Rakyat Indonesia. On October 16, 2008, after Bank Indonesia granted the business license through letter no. 10/67/Kep.GBI/DPG/2008 this bank officially operated under the name PT Bank BRI Syariah on November 17 2008. Furthermore, in 2009, Bank BRI's sharia business unit officially merged into this company. 9 years later in 2018, this bank was officially listed on the Indonesian Stock Exchange. Two years later in 2020, the plan to merge Bank Syariah Mandiri and BNI Syariah into this company was approved by its shareholders. After obtaining permission from OJK with Number: SR-3/PB.1/2021. Officially on January 27 2021, this bank operates under the name "PT Bank Syariah Indonesia Tbk". This means that this bank merger will unite the advantages of the three Islamic Commercial Banks with the hope of being able to provide more complete services, better capital capabilities and wider coverage. Apart from that, synergistic support with the parent company (Mandiri, BNI, BRI) and the government's full commitment through the Ministry of BUMN will make Indonesian Sharia Commercial Banks able to compete at the global level.

Before the merger of the three banks, PT. Bank Syariah Indonesia KCP Kisaran used to be Bank Mandiri Syariah which has been operating since March 30, 2004. Bank Mandiri is a bank that was established as a result of the merger of four banks, namely Bank Bumi Daya, Bank Dagang Negara, Bank Exim, and Bapindo which experienced a shaky condition due to the monetary crisis in 1998. While Bank Syariah Mandiri was inaugurated on November 1, 1999 by a consolidation team with the aim of developing Islamic banking. Bank Mandiri Syariah is currently able to collaborate business ideals with spiritual values as its operational basis. This is what makes Bank Syariah Mandiri continue to progress and develop to this day and become part of Bank Syariah Indonesia (BSI). Bank Syariah Indonesia's vision is to become the top 10 Global Sharia Banks. While the Mission of Bank Syariah Indonesia is a) Providing access to Islamic financial solutions in Indonesia Serving >20 million customers and being in the top 5 banks based on assets (500+T) and book value of 50T in 2025; b) Become a large bank that provides the best value for shareholders. Top 5 most profitable banks in Indonesia (ROE 18%) and strong valuation (PB>2); c) To be the company of choice and pride for Indonesia's best talents, a company with strong values that empowers society and is committed to developing employees with a performance-based culture.

In this study, researchers distributed questionnaires to customers of Bank BSI KCP Kisaran who used BSI digital services. Researchers determined a sample of 100 respondents from Bank BSI customers. All respondents have various characteristics that must be grouped together because they have different gender, age and occupation.

Table 2.1 Gender Based on Respondents

		Frequency	Percent	Valid percentage	Cumulative Percent
Legitimate	MAN	44	44.0	44.0	44.0
	WOMAN	56	56.0	56.0	100.0
	Total	100	100.0	100.0	

Source: Primary Data, processed with SPSS 2022

From these data it can be seen that the number of male respondents was 44 respondents (44%), then there were more female respondents, namely 56 respondents (56%).

Table 2.2 Respondents Based on Age

		Frequency	Percent	Valid percentage	Cumulative Percent
Legitimate	18-30 YEARS OLD	59	59.0	59.0	59.0
	31-40 YEARS	31	31.0	31.0	90.0
	41-50 YEARS	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

Source: Primary Data, processed with SPSS 2022

The data shows that the percentage of customers aged 18-30 years is 59 respondents (59%), customers aged 31-40 years are 31 respondents (31%) and customers aged 41-50 years are 10 respondents (10%).

Table 2.3 Respondents by Occupation

		Frequency	Percent	Valid percentage	Cumulative Percent
Legitimate	Student	32	32.0	32.0	32.0
	Self-employed	20	20.0	20.0	52.0
	Employee	31	31.0	31.0	83.0
	civil servant	17	17.0	17.0	100.0
	Total	100	100.0	100.0	

Source: Primary Data, processed with SPSS 2022

The data shows that 32 respondents (32%) are students, 20 respondents (20%) are self-employed, 31 employees (31%) are employees and 17 are civil servants (17%).

Descriptive Statistics

The findings of this study show how the Effect of Self-Service Technology on Customer Satisfaction with Digital Service Users at Bank BSI KCP Kisaran. The findings of this study are based on the information provided to 100 (one hundred) respondents. In general, the following table shows the results of the study.

Table 3.1 Descriptive Statistics

	N	Minimum	Maximum	Means	St. Deviation
ATM	100	23	40	34.87	4,074
Internet banking	100	21	40	33.29	5,800
Mobile_Banking	100	24	40	35.10	4,036

Satisfaction_Customer	100	37	60	52.66	6,571
N valid (by list)	100				

Source: Primary Data, processed with SPSS 2022

From the table above it can be seen that: ATM variable with a minimum value of 23, a maximum value of 40, an average value of 34.87 and a standard deviation of 4.074. Internet Banking variable with a minimum value of 21, a maximum value of 40, an average value of 33.29 and a standard deviation of 5,800. Mobile Banking variable with a minimum value of 24, a maximum value of 40, an average value of 35.10 and a standard deviation of 4.036. Variable Customer Satisfaction with a minimum value of 37, a maximum value of 60, an average value of 52.66 and a standard deviation of 6.571

Validity test

Test the validity of the questionnaire to measure its validity. The Pearson Product Moment correlation was used to verify the validity of the questionnaire by correlating the score of each variable with the overall score. The validity of a variable/statement is determined using IBM SPSS version 20.0. Comparing r table and r count determines the validity of the questionnaire. The value of r table can be seen in table r with $df=n-2$ (n =number of respondents/sample) with a significance level of 5 percent (0.05). In this study, the value of r table with a sample of 100 is as follows: (1) $df=100-2 = 98$; where the value of r table at 5 percent significance = 0.1966; (2) if the results of r count > 0.1966 then the statement is valid, otherwise if r count < 0.1966 then the statement is not valid. Following are the results of the validity test using the IBM SPSS 20.0 program for all statement items for each variable. The results of the validity test of all individual statement items can be seen in the table below:

Test 3.2 Results of the Validity of Self Service Technology Variables

Variable	Goods	r count	r table	Results
ATMs (X1)	X1.1	0.750	0.1966	Legitimate
	X1.2	0.725	0.1966	Legitimate
	X1.3	0.662	0.1966	Legitimate
	X1.4	0.768	0.1966	Legitimate
	X1.5	0.817	0.1966	Legitimate
	X1.6	0.728	0.1966	Legitimate
	X1.7	0.756	0.1966	Legitimate
	X1.8	0.727	0.1966	Legitimate
Internet Banking (X2)	X2.1	0.817	0.1966	Legitimate
	X2.2	0.857	0.1966	Legitimate
	X2.3	0.832	0.1966	Legitimate
	X2.4	0.876	0.1966	Legitimate
	X2.5	0.755	0.1966	Legitimate
	X2.6	0.804	0.1966	Legitimate
	X2.7	0.839	0.1966	Legitimate
	X2.8	0.856	0.1966	Legitimate
	X3.1	0.682	0.1966	Legitimate

	X3.2	0.697	0.1966	Legitimate
	X3.3	0.671	0.1966	Legitimate
	X3.4	0.701	0.1966	Legitimate
	X3.5	0.742	0.1966	Legitimate
Mobile Banking (X3)	X3.6	0.793	0.1966	Legitimate
	X3.7	0.738	0.1966	Legitimate
	X3.8	0.606	0.1966	legitimate
	Y. 1	0.715	0.1966	legitimate
	Y.2	0.822	0.1966	legitimate
	Y.3	0.795	0.1966	legitimate
	Y.4	0.707	0.1966	legitimate
	Y.5	0.861	0.1966	legitimate
	Y.6	0.854	0.1966	legitimate
	Y.7	0.864	0.1966	Legitimate
Customer Satisfaction (Y)	Y. 8	0.857	0.1966	Legitimate
	Y.9	0.675	0.1966	Legitimate
	Y.10	0.633	0.1966	Legitimate
	Y.11	0.718	0.1966	Legitimate
	Y. 12	0.718	0.1966	Legitimate

Source: Primary Data, processed with SPSS 2022

From the table above it can be seen that the value of r count, r table with a significance level of 5% (0.05) so that it can be seen from all valid tests.

Trust test

The reliability test uses a Cronbach Alpha coefficient (α) of 0.6 which indicates high and low reliability. The research variable is said to be reliable if the Cronbach Alpha is more than or equal to 0.6, otherwise if the Cronbach Alpha is less than 0.6 then the research is considered unreliable.

Table 3.3 Reliability Test Results

Variable	Cronbach Alpha	Reliability Limit	Information
ATMs (X1)	0.879	0.6	reliable
Internet Banking (X2)	0.933	0.6	reliable
Mobile Banking (X3)	0.830	0.6	reliable
Customer Satisfaction (Y)	0.941	0.6	reliable

Source: Primary Data, processed with SPSS 2022

From the results of the reliability test above, it can be seen that all statements of variables have variable reliability. This is indicated by the value of Cronbach's Alpha (α) 0.7, so it can be concluded that all variable statements are reliable. The Classic assumption test consist of

A. Normality Test

B. The normality test checks whether the confounding or residual variables in the regression model have a normal distribution. The t test and F test assume normal residual values.

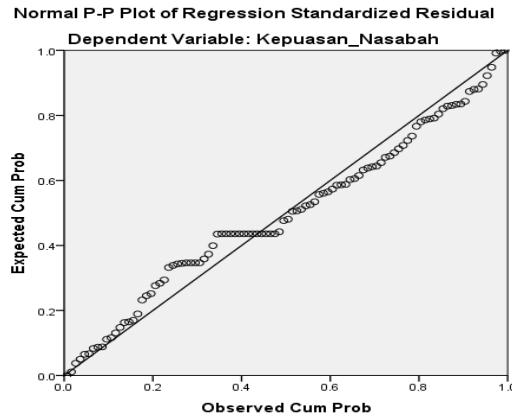


Figure 1. Histogram Graph

Source: Primary Data, processed with SPSS 2022

The picture above explains that the black dots or patterns are scattered between the diagonal lines, so they are normally distributed.

Kolmogrov-Smirnov analysis is then applied, it can be concluded that variable data is regularly distributed if the two-sided significance value is greater than 0.05. Following are the results of Kolmogrove-Smirnov calculations using the SPSS software normality test for all variables.

Table 3.4 One Sample Kolmogorov-Smirnov Test

		Nonstandard residue
N		100
Normal parameters, b	Means	0E-7
	St. Deviation	3.31633063
The Most Extreme Difference	Absolute	.100
	Positive	.063
	Negative	-.100
Kolmogorov-Smirnov Z		.998
Asimp. Sig. (2-tails)		.272

A. Normal test distribution.

B. Calculated from the data.

Source: Primary Data, processed with SPSS 2022

Based on the data above, it is known that the significance value is > 0.05 so that it is normally distributed.

Heteroscedasticity Test

The heteroscedasticity test in the regression model is used to determine whether there is dissimilarity in the residual variation 1 with other observers. The heteroscedasticity test tests the dissimilarity of variance between the residuals of the regression model. The appropriate regression model is homoscedasticity or heteroscedasticity. When sig. 2-tailed $< \alpha=0.05$, then there is heteroscedasticity. When sig. 2-tailed $> \alpha=0.05$, then there is no heteroscedasticity.

Table 3.5 Heteroscedasticity Test

		Coefficients			Q	Sig.
Model	Nonstandard coefficients		Standard Coefficient			
		B	St. Error	Betas		
1	(Constant)	8,286	2,334		3,550	001
	ATM	-.149	0.071	-.262	-2,087	040
	Internet banking	.067	058	.167	1.142	.256
	Mobile_Banking	-.084	.078	-.147	-1,082	.282

A. Dependent Variable: ABRESID

Source: Primary Data, processed with SPSS 2022

From the table above it can be seen that the significance value of each independent variable is greater than 0.05. So it can be concluded that there is no heteroscedasticity in the regression model in this study.

Multicollinearity Test

The multicollinearity test aims to determine whether the independent variables in the regression model interact with each other. By looking at tolerance values and variance inflation factor (VIF), it can be evaluated whether there is multicollinearity in the regression model or not. Multicollinearity occurs if the tolerance value is less than 0.10 or the VIF value is greater than 10, but not if the tolerance value is greater than 0.10 or the VIF value is less than 10. The multicollinearity test results can be seen as follows:

Table 3.6 Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
1 ATM	.613	1632
1 Internet banking	.451	2,218
1 Mobile_Banking	.527	1897

a. Dependent Variable: Customer_Satisfaction

Source: Primary Data, processed with SPSS 2022

If the VIF value must be < 10 and tolerance > 0.1 , it is said that there are no symptoms of multicollinearity.

Multiple Linear Regression Analysis

The multiple regression equation can be used to determine the magnitude of the influence of the independent variable on the dependent variable. Based on calculations using IBM SPSS Version 20.0 software, the following are the results:

Table 3.7 Results of Multiple Linear Regression Analysis

Model	Nonstandard coefficients		Standard Coefficient	Q	Sig.	
	B	St. Error	Betas			
1	(Constant)	4,830	3,471		1,392	.167
	ATM	.596	.106	.370	5617	.000
	Internet banking	.509	087	.449	5,855	.000
	Mobile_Banking	.288	.115	.177	2,493	014

A. Dependent Variable: Customer_Satisfaction

Source: Primary Data, processed with SPSS 2022

From the table above it can be seen that there is a regression coefficient value. In the Unstandardized Coefficients column there is a constant value of 4.830 and a regression direction coefficient value of X1 of 0.596, X2 of 0.509, and X3 of 0.288.

So that the regression equation can be formed, namely:

$$Y = 4.830 + 0.596X_1 + 0.509X_2 + 0.288X_3 + e$$

From the equation above, the following explanation can be found. The constant of the multiple linear regression equation obtained a result of 4.830. This means that if the variable Customer Satisfaction (Y) is not influenced by ATM (X1), Internet Banking (X2) and Mobile Banking (X3), then the value of Customer Satisfaction (Y) is 4.830. ATM regression coefficient (X1) of 0.596 states that each addition of 1 ATM point (X1) will increase customer satisfaction by 0.596 assuming internet banking (X2) and mobile banking (X3) are constant. Internet Banking (X2) regression coefficient of 0.509 states that each additional 1 Internet Banking point (X2) will increase customer satisfaction by 0.596 assuming ATM (X1) and mobile banking (X3) remain. Mobile Banking regression coefficient (X3) of 0.288 states that each additional 1 point of Mobile Banking (X3) will increase customer satisfaction by 0.596 assuming ATM (X1) and internet banking (X2) are fixed.

Hypothesis testing

T Test (Partial)

Table 3.8 Partial Test Results (t test)

Model	Nonstandard coefficients		Standard Coefficient	Q	Sig.
	B	St. Error	Betas		
(Constant)	4,830	3,471		1,392	.167
1 ATM	.596	.106	.370	5617	.000
Internet banking	.509	.087	.449	5,855	.000
Mobile_Banking	.288	.115	.177	2,493	.014

A. Dependent Variable: Customer_Satisfaction

Source: Primary Data, processed with SPSS 2022

This (partial) t-test aims to determine the partial effect of self-service technology on customer satisfaction. The table above can be used to perform a partial test (t test) for each causative variable (independent) on the influence variable (dependant), so that the results of each of the following variables can be known:

- 1) Based on the table above, the effect of ATM on customer satisfaction is obtained by Tcount from the ATM variable, which is equal to 5.617 with a value of Ttable (df = 100-3-1 = 96; ttable = 1.98498; then (tcount > ttable) with a significant level of 0.001 < 0.05, so that the H01 hypothesis is rejected and the Ha1 hypothesis is accepted. Research shows that ATM has a significant effect on customer satisfaction.
- 2) The effect of internet banking on customer satisfaction based on the table above Tcount obtained from the internet banking variable is equal to 5.855 with a value of Ttable (df = 100-3-1 = 96; ttable = 1.98498; then (tcount > ttable) with a significance level of 0.001 < 0.05, the H02 hypothesis is rejected and the Ha2 hypothesis is accepted. Research shows that internet banking has a significant effect on customer satisfaction
- 3) Based on the table above, the effect of mobile banking on customer satisfaction Tcount is obtained

from the internet banking variable which is equal to 2.493 with a Ttable value ($df = 100 - 3 - 1 = 96$; $t_{table} = 1.98498$; then $(t_{count} > t_{table})$ with a significance level of $0.001 < 0.05$, then hypothesis H03 is rejected and hypothesis Ha3 is accepted. Research shows that internet banking has a significant effect on customer satisfaction.

F Test (Simultaneous)

The F test (model feasibility) is a test carried out to determine the effect of independent variables simultaneously (together) on the dependent variable. Based on this table, a simultaneous test (F test) can be carried out on the independent variable simultaneously on the dependent variable

Table 3.9 F Test Results (simultaneous).

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3185633	3	1061878	93,626	.000b
	Remainder	1088,807	96	11,342		
	Total	4274440	99			

a. Dependent Variable: Customer_Satisfaction

b. Predictors: (Constant), Mobile_Banking, ATM, Internet_Banking

Source: Primary Data, processed with SPSS 2022

The results of the analysis of the simultaneous influence of ATM variables (X1), Internet Banking (X2), Mobile Banking (X3) on Customer Satisfaction (Y) obtained Fcount of 93.626 with a significance probability of $0.004 < 0.05$. With $df_1 = (k-1) = 3$, $df_2 = (nk) = 100 - 4 = 96$, $F_{table} 2.70$, then $F_{count} > F_{table}$ or $93.626 > 2.70$, then hypothesis H04 is rejected and hypothesis Ha4 is accepted. The results of the analysis show that simultaneously (together) there is a significant influence between the ATM variables (X1), Internet Banking (X2), and Mobile Banking (X3) which simultaneously affect the Customer Satisfaction variable (Y) so that the regression model can be used to predict the effect of the three variables together.

Determination Test (R2)

The determination test (R2) aims to measure the model's ability to explain the variance in the dependent variable with a measurement value between zero or one. Values that are close to zero or small mean that the independent variable cannot explain the dependent variable as a whole (limited). Vice versa, if the value is close to one or large then the independent variable is able to explain more than the dependent variable.

Table 3.10 Determination Test Results (R2)

Model Summary ^b				
Model	R	R square	Customized R Square	St. Estimation Error
1	.863a	.745	.737	3,368

A. Predictors: (Constant), Mobile_Banking, ATM, Internet_Banking

B. Dependent variable: Customer Satisfaction

Source: Primary Data, processed with SPSS 2022

The adjusted coefficient of determination or R Square obtained from calculating the regression estimate is 0.745, which means that only 74.5 percent of the variation resulting from all independent variables is able

to explain the dependent variable, while the remaining 25.5 percent is explained by other variables not examined in this study. this research.

Discussion

The Influence of ATM Facilities on Customer Satisfaction at Bank Syariah Indonesia KCP Kisaran

The results of the study show that ATM has a significant effect on customer satisfaction. These results indicate that customers still experience high benefits from owning an ATM machine. The existence of an ATM is considered to make it very easy for customers to make transactions (starting from withdrawing money, transferring, and so on). So that the existence of ATMs that can increase customer satisfaction needs to be considered for KCP Kisaran to provide ATMs around the Kisaran area. The findings of this study are in line with Arnita, Yarmunida, & Sumarni (2023), Rochmah & Ernawati (2022), and Zulmaizar & Rahman (2019) which states that ATMs have a significant effect on customer satisfaction

The Influence of Internet Banking on Customer Satisfaction at Bank Syariah Indonesia KCP Kisaran

Research shows that internet banking has a significant effect on customer satisfaction. The results of the study show that Internet Banking has a significant effect on customer satisfaction. These results indicate that customers still experience high benefits from having Internet banking. Because internet banking is very necessary in digital transactions and also if you want to access mobile banking, you must have or be registered with internet banking first. The findings of this study are in line with Rochmah & Ernawati (2022), Khumaini, et al (2022) Syamtoro (2020) which states that internet banking has a significant effect on customer satisfaction

The Influence of Mobile Banking on Customer Satisfaction at Bank Syariah Indonesia KCP Kisaran

Research shows that mobile banking has a significant effect on customer satisfaction. The results of the study show that Mobile Banking has a significant effect on customer satisfaction. These results indicate that customers use mobile banking services more often because this service is the most instant and can be accessed quickly and easily, customers really experience high benefits from having mobile banking, because they have services and facilities that are considered complete to carry out various digital transactions without must come directly to the bank and can be accessed anywhere and anytime. The findings of this study are in line with Agustina & Krisnaningsih (2023), Sari, et al (2022), and Harahap (2020) which states that mobile banking has a significant effect on customer satisfaction

From the statement above, it can be concluded that the three Self-Service Technology facilities all have a positive and significant effect on customer satisfaction. This means that with the SST facility, customers will be helped in carrying out all activities related to banking transactions regardless of time and place. The research results which show that the three Self-Service Technology facilities all have a positive and significant effect on customer satisfaction are also supported by respondents aged 18-30 years who are the millennial generation and generation Z or usually called the digital generation so that the presence of Self-Service Technology facilities makes it easier for them in matters of banking activities and feel satisfied with the services provided by sharia banks. This is in line with research by Wicaksono (2015) and also research conducted by Dharmawan (2018). The research results also show that self-service technology has a significant effect on customer satisfaction

Conclusion

This study aims to assess the effect of self-service technology on customer satisfaction using digital services at Bank Syariah Indonesia KC Kisaran. The problem formulation and data analysis in the previous chapter resulted in the following conclusion: ATM facilities have a positive and significant effect on customer satisfaction. It means that the better the service from ATM facilities provided to customers, the higher the level of satisfaction. Internet Banking facilities have a positive and significant effect on customer satisfaction. This means that the better the service from Internet Banking facilities provided to customers, the higher the level of customer satisfaction. Mobile Banking facilities have a positive and significant effect on customer satisfaction, meaning that the better the service from Mobile Banking facilities provided to customers, the higher the level of customer satisfaction. The three ATM, Internet Banking and Mobile Banking facilities have a positive and significant effect on customer satisfaction, meaning that the better the services of the three SST facilities provided to customers, the higher the level of customer satisfaction. Recommendations for future researchers to add other more complete variables related to digital banking services, especially self-service technology in order to increase knowledge and more accurate results

Author's Contribution

All authors have contributed to the final manuscript. The contributions of each author are as follows, Febry Nabila Syahrani drafting key conceptual ideas, collecting data, and drafting manuscripts. Aqwa Nasser Daulay and Nurbaiti provided excellent guidance also provided critical revisions of articles.

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Declaration of Competing Interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Reference

- Abrar Naim, B. M. (2022, June 14). BSI KCP Kisaran.
- Agustina, D., & Krisnaningsih, D. (2023). Pengaruh Penggunaan BSI Mobile Terhadap Kepuasan Nasabah Di BSI Cabang Jenggolo. *Jurnal Tabarru' : Islamic Banking and Finance*, Volume 6 Nomor 1.
- Arnita, N., Yarmunida, M., & Sumarni, Y. (2023). Pengaruh Self Service Technology (SST) Terhadap Kepuasan Nasabah Pengguna Layanan Digital (Studi Kasus Bank Syariah Indonesia). *Jurnal Tabarru' : Islamic Banking and Finance*, Volume 6 Nomor 1.
- Dharmawan, SA. (2018). The Effect of Banking Digitalization Through Self-Priority. *Economics*, 572–578.
- Ghozali, I. (2018). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25*. Semarang: Badan Penerbit Universitas Diponegoro.

- Harahap, Z. (2020). Pengaruh Pelayanan M-Banking Terhadap Kepuasan Nasabah Pada Bank Syariah Mandiri Kota Prabumulih. *ISLAMIC BANKING: Jurnal Pemikiran dan Pengembangan Perbankan Syariah*, Volume 6 Nomor 1.
- Hidayat, R. (2009). The Influence of Service Quality, Product Quality and Customer Value on Bank Mandiri Customer Satisfaction and Loyalty. *Journal of Management and Entrepreneurship*, Volume 11 Nomor 1, Page 59–72.
- InfoBank. (2021). *Digital Award Magazine*, . pp. 45-47.
- Khumaini, S., Fahrudin, & Samsuri. (2022). Pengaruh Fasilitas Layanan Internet Banking Dan Mobile Banking Terhadap Kepuasan Nasabah Bank Syariah Indonesia Kantor Cabang Tangerang. *Al Maal : Journal of Islamic Economics and Banking*, Vol 3 No 2.
- McKinsey&Company. (2019). *Digital banking in Indonesia: Building loyalty and generating growth*. Jakarta: McKinsey&Company.
- Nurdin, Musyawah, I., & Nurfitriani. (2020). The Effect of Mobile Banking Services on Customer Satisfaction (Studies on Islamic Banking Students at IAIN Palu). *Journal of Islamic Banking and Finance*, Volume 2 Nomor 1 Page 87–104.
- Pohan, I., & Jannah, N. (2022). Analisis Implementasi Produk Pembiayaan Murabahah di Regional Financing Operation PT. Bank Syariah Indonesia Tbk, Medan. *Journal of Computer Science, Economics and Management (JIKEM)*, Volume 2, Nomor 1, Page 1111–16.
- Rochmah, S., & Ernawati, F. (2022). Pengaruh Layanan Automatic Teller Machine (ATM), Internet Banking, dan Mobile Banking terhadap Tingkat Kepuasan Nasabah (Studi pada Bank Muamalat Indonesia Kantor Cabang Pembantu Pati). *JURNAL INFOKAM*, Vol. XVIII, No. 1.
- Sari, A., Afrida, Y., & Mardiah, N. (2022). Pengaruh Kualitas Layanan Mobile Banking Terhadap Kepuasan Nasabah Bank Syariah Indonesia (Studi Kasus: ASN UIN Imam Bonjol Padang). *Al-Masraf : Jurnal Lembaga Keuangan dan Perbankan*, Volume 7, Nomor 1.
- Syamtoro, B. (2020). Pengaruh Internet Banking Terhadap Kepuasan Nasabah Pada PT. Bank Bri Syariah Kebayoran Baru. *Jurnal Ilmiah Wahana Pendidikan*, Vol. 6, No.4.
- Wahyuni, S., & Harahap, M. (2022). Effectiveness of Implementation of Financial Technology (Fintech) and Fundraising Strategies in Optimizing ZISWAF Collection (Zakat, Infaq, Alms, Waqf). Volume 6.
- Wicaksono, B. (2015). The Effect of Self-Service Technology on Trust, Customer Satisfaction, and Customer Loyalty. *Journal of Business Administration*, Volume 25 Nomor 2.
- Zulmaizar, M., & Rahman, A. (2019). Pengaruh Kualitas Pelayanan Automatic Teller Machine (ATM) Terhadap Kepuasan Nasabah Bank Mandiri Kantor Cabang Pembantu (KCP) Polewali Mandar Kecamatan Wonomulyo. *J-ALIF Jurnal Penelitian Hukum Ekonomi Syariah dan Sosial Budaya Islam*, Vol. 4, No. 1.

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