

Research Article

The Influence of Technology Perception, Risk, and Complaint Handling on Customer Decisions in Using Internet Banking: A Study of Indonesian Islamic Banks in the Digital Transformation Era

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Abstract: This study analyzes the influence of technology perception, risk perception, and complaint handling on customer interest in using internet banking services at Bank Syariah Indonesia, KCP Cemara Asri. The research employed a quantitative approach using multiple linear regression analysis, supported by t-test and F-test procedures to examine both partial and simultaneous effects among variables. The results of the t-test indicate that technology perception, risk perception, and complaint handling each have a significant effect on customer interest, as shown by t-values greater than the t-table and significance values below 0.05. Furthermore, the F-test results demonstrate that the three independent variables simultaneously have a significant effect on customer interest, with a significance value of 0.000. These findings suggest that improving technological quality, strengthening risk management, and ensuring responsive complaint handling are essential factors in increasing customer interest in using internet banking services. Theoretically, this study contributes to the development of literature on customer behavior in Islamic digital banking. Practically, the findings provide useful insights for Islamic banking institutions in designing service strategies that are more responsive to customer needs, expectations, and trust in digital banking platforms.

Keywords: Complaint Handling; Customer Interest; Islamic Banking; Risk; Technology Perception.

1. INTRODUCTION

Digital technology has brought about major changes in various aspects of life, including in the financial sector. One of its innovations is digital banking services, which include internet banking, mobile banking, and other financial platforms, allowing customers to access financial services more quickly and conveniently without having to visit a branch office (Iksan, Hakim, & Asianingrum, 2024). This technology has also successfully overcome geographical barriers and expanded the reach of financial services, as well as providing greater flexibility in transactions. In Indonesia, the development of digital banking has been rapid in line with the growth in the number of internet users. This service has become a relevant solution to meet the financial needs of the wider community. In addition to speeding up the transaction process, digital services are considered capable of providing security, transparency, and reaching remote areas that are difficult to reach by physical services.

Digital transformation has become the main direction of development for the global banking industry, including the Islamic banking sector. According to the Global Islamic Fintech Report (2023), the adoption rate of Islamic digital banking in Malaysia has reached more than 70% of active customers, driven by the ease of transactions and technological innovations such as AI and Sharia-based mobile banking. In the Middle East, particularly the United Arab Emirates and Saudi Arabia, the penetration of Islamic digital banking services has also increased rapidly, with an average growth of 20% per year, thanks to the integration of strong security and risk management systems. In contrast, in Indonesia, despite being the

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largest Islamic banking market in Southeast Asia, the level of Islamic internet banking usage is still moderate.

According to OJK (2024), only about 45% of Islamic bank customers actively use digital services. This shows that there are still challenges in technology perception, risk perception, and complaint handling effectiveness that influence customers' decisions to switch to digital services. This research is important to understand how these factors influence customer decisions in the context of digital transformation in Indonesian Islamic Banks. Theoretically, this study broadens the understanding of consumer behavior in digital Islamic banking through the integration of the concepts of technology and risk perception with the aspect of complaint handling. Practically, the results of this study are expected to contribute to Islamic banks in designing innovative, secure, and Sharia-compliant digital strategies.

However, the adoption of digital banking services in Indonesia is not yet widespread. Many consumers still prefer conventional transaction methods due to reasons such as lack of technological knowledge, concerns about digital security, and distrust of digital systems. This challenge is of particular concern to Islamic banks in Indonesia, such as Bank Syariah Indonesia (BSI), which serves customers from diverse backgrounds. BSI itself is responding to the trend of digitalization by providing technology-based services that remain in line with Sharia principles, such as fairness, transparency, and trust. The presence of these digital services is expected to facilitate Sharia-compliant transactions while expanding financial inclusion.

Although services such as internet banking are already available, many Islamic bank customers are still reluctant to use them. This is due to negative perceptions of technology, concerns about data security, and a lack of responsiveness to customer complaints. Perceptions of technology are closely related to user experience. These perceptions arise from direct interaction with a system and are influenced by pleasant or unpleasant experiences. In a business context, information technology is believed to provide benefits both in internal processes, such as document creation, and in external strategies to compete and retain customers. Perceptions of the usefulness of technology are also very decisive; if customers feel that digital services provide convenience and save time, such as in searching for information or conducting transactions via internet banking, then the likelihood of them using these services increases (Matnin, Kunaifi, & Ach, 2021). However, negative perceptions, such as the assumption that digital services are complicated or unsatisfactory, remain a barrier to the adoption of this technology. As a result, customers' subjective assessments play a significant role in determining their decision to use digital banking services.

Customers' concerns about using online banking are also influenced by their perceptions of risk. Online banking is convenient, but it also carries risks. According to Pavlou, risk is a condition of uncertainty that influences a person's decision to transact online or via the internet (Soelistya & Agustina, 2018). Consumers may also be reluctant to use internet banking due to security concerns, such as the possibility of fraud or data leaks.

The way banks handle complaints affects customers' interest in using internet banking, in addition to the dangers and use of information technology. Effective complaint management can turn dissatisfied consumers into loyal customers. When complaints are handled correctly, customers become more responsible and trusting, which ultimately results in their loyalty. A company's ability to offer high-quality services to every customer is demonstrated by its loyal customers. Retaining loyal customers is an important resource for business (Budiarti, 2017). Customers expect prompt attention and adequate handling in the event of technical problems or transaction errors. Their trust in the service will be damaged if their complaints are not handled properly. In addition to damaging the business's reputation, consumer complaints are an important opportunity for organizations to grow and change. Customer complaints about the use of goods or services provide insight into the quality of the goods or services that consumers have used. Customer complaints must be considered more carefully so that every company can continue to improve the quality of its goods and services (Deria & Ryzki, 2022).

Although online banking is convenient, there are risks involved, including the development of fake websites, phishing attempts to steal personal data, and keyloggers that can record keyboard activity. Online banking and other transactions carry a number of risks, ranging from website hacking to internet network disruptions. This became clear when the Indonesian Cyber Security and Infrastructure Association (BSI) discovered thousands of cyber threats in 2022. The BSI report states that ransomware attacks were not included among the more than 1,000 cybercrime threats that occurred in 2022. The table below illustrates this.

Table 1 of Cybercrime Threats Against BSI (2022).

No	Data Name	Value
1	Phishing/social engineering	1,767
2	Skimming at Prima ATMs	232
3	Skimming at Bersama ATMs	64

Source: databoks (2024)

As can be seen from the table above, BSI experienced its first hack in 2022. BSI discovered 1,767 attempts at social engineering and phishing against its clients in 2022. Phishing is a cybercrime in which customers are sent fake website addresses that look like the real ones. Additionally, BSI detected 64 suspected skimming cases in the ATM Bersama network and 232 suspected cases in the ATM Prima network. Attempts to obtain ATM card information are known as "skimming." Installing hidden cameras in ATMs to intercept users' PINs or ATM cards is one way to commit this crime. Installing special devices in ATM card slots to digitally duplicate customer data is another aspect of skimming (Ahdiat, 2023).

According to BSI's 2023 annual report, active users of BSI Mobile and Internet Banking services increased by 35% compared to the previous year. This increase was also reflected at the Cemara Asri KCP, which internally recorded a surge in new customer registrations for digital services since mid-2022. According to BSI's 2023 annual report, active users of BSI Mobile and Internet Banking services increased by 35% compared to the previous year. This increase is also reflected in KCP Cemara Asri, which internally recorded a surge in new customer registrations for digital services since mid-2022.

Although specific data on internet banking usage at KCP Cemara Asri is not publicly available, the trend of increased use of digital services among Islamic bank customers nationwide, as well as the characteristics of urban areas such as Cemara Asri, which have a high internet penetration rate, indicate that the majority of customers have begun to utilize internet banking services in their financial activities.

One of the largest Islamic banks in Indonesia, Bank Syariah Indonesia (BSI), has much room for growth in terms of offering online banking and other digital services. However, the implementation of internet banking services can pose difficulties for some branches, such as the Cemara Asri branch office. In order for banks to create more efficient plans to increase the utilization of these services, it is important to identify the factors that influence consumer interest in this area.

The development of digital technology has driven the transformation of banking services towards a more modern and efficient system, one of which is through internet banking. Previous studies have discussed factors that influence customers' decisions to use internet banking, such as ease of use, perception of security, trust, and convenience. However, there are several research gaps that have not been explored in depth, especially in the context of Islamic banks. First, research on internet banking in Islamic banks is still not as extensive as in conventional banks. In fact, Islamic bank customers have their own characteristics that are influenced by religious values, preferences for sharia principles, and perceptions of Islamic ethics-based services.

Second, although perceptions of technology and risk have been discussed extensively in various studies, the variable of complaint handling has not yet become a major concern in the context of its influence on customer decisions. In fact, post-transaction services such as responding to complaints are an important part of maintaining customer loyalty and trust, especially on digital platforms such as internet banking. Third, specific research locations, such as Bank Syariah Indonesia's Cemara Asri Sub-Branch Office (KCP), have not been the focus of much previous research. In fact, customer preferences and behavior in each branch can vary depending on demographic background, local culture, and level of digital literacy. Therefore, it is important to directly examine customer perceptions and decisions in the region to obtain a more applicable picture. Fourth, the combination of the three variables, namely technology perception, risk perception, and complaint handling in one research model, is still rarely done.

Previous studies tend to examine only the relationship between two variables or focus solely on technological aspects without considering service factors. In practice, however, customers' decisions to use internet banking are greatly influenced by a combination of all three aspects. Therefore, this study is urgently needed to fill this gap and provide theoretical and practical contributions, especially in developing more targeted digital service strategies in

the Islamic banking environment.

The novelty of this study lies in the integration of three main variables—perception of technology, perception of risk, and complaint handling—in the context of customer decisions to use internet banking at Bank Syariah Indonesia in the era of digital transformation. Unlike previous studies, which generally only highlight the aspects of technology or risk separately, this study emphasizes the simultaneous relationship between the three in shaping customer decisions. Furthermore, this research was conducted during a period when Indonesian Islamic banking was undergoing accelerated digitalization following the merger of BSI, making it relevant and contextual to the current conditions of the national Islamic finance industry. By comparing domestic and international phenomena, this research is expected to enrich the literature on digital consumer behavior in Islamic banking and provide practical recommendations for strengthening the digital strategies of Islamic banks in Indonesia.

Given the issues and concerns mentioned above, this study is important because it seeks to understand how customer decisions in using internet banking are influenced by perceptions of technology, risk, and complaint management. The conclusions of this study are expected to help Bank Syariah Indonesia, and KCP Cemara Asri in particular, improve their services and overcome existing obstacles in order to increase customer acceptance of online banking.

2. LITERATURE REVIEW

Technology Perception

Technology perception is the subjective view, assessment, and interpretation of customers regarding the use of information technology in banking services, particularly internet banking (Muhlisah, N., Jusmawandi, & Niswati Tarman, R. 2025). This perception is formed from direct experience, information received, and the level of customer understanding of the features and functions of the technology. In Islamic banking, technology perception is not only related to ease of use and transaction speed, but also includes aspects of system reliability, service transparency, and the compatibility of technology with Islamic principles. When technology is perceived as providing tangible benefits such as time efficiency, ease of access, and transaction flexibility, customer attitudes towards digital services will become more positive. A positive perception of technology also plays a role in shaping customers' initial trust, as technology is considered a representation of the bank's professionalism and readiness to face digital developments. Therefore, the perception of technology is an important factor in influencing customer attitudes and behavior towards the use of internet banking. (Matnin et al., 2021)

In the context of banking digital transformation, Bank Syariah Indonesia is actively developing digital services such as BSI Mobile in an effort to improve service quality and digital penetration. The development of this technology aims to shape positive customer perceptions of modern Islamic banking services. Positive perceptions of technology will encourage customer confidence that internet banking services are secure, easy to use, and capable of effectively meeting financial transaction needs. Conversely, negative perceptions of technology can cause doubt and resistance to the use of digital services. Previous research shows that perceptions of technology have a significant influence on customer interest and decisions in using internet banking, because technology is seen as the main means of improving the quality of banking services. Thus, perceptions of technology serve as the initial foundation that determines customer acceptance of digital service innovations in Islamic banking. (Deria & Ryzki, 2022)

Risk

Risk in the use of internet banking is defined as the possibility of losses incurred by customers as a result of using information technology-based banking services (Firman Parama Yudha, & Ahmad Saifudin Mutaqi. 2025). These risks can include data security risks, transaction error risks, fraud risks, and system failure risks. Risk perception is subjective and highly dependent on the level of knowledge, experience, and trust that customers have in the bank. In Islamic banking, risk perception is a major concern because it is directly related to the principles of prudence and trust that form the basis of the relationship between the bank and its customers. High risk perception can cause insecurity, anxiety, and discomfort, thereby inhibiting customers' decisions to use internet banking. Therefore, risk is not only understood as a technical threat, but also as a psychological factor that influences customer behavior in

utilizing digital banking services. (Soelistya & Agustina, 2018)

The increasing cyber threats in the banking sector reinforce the importance of risk management in internet banking services. Bank Syariah Indonesia has faced thousands of cyber threats, although customer data is claimed to remain secure. This condition can affect customer risk perception, especially for those who have not had a positive experience in using digital services. High risk perception has the potential to reduce customer interest and decision to use internet banking, even though the service offers convenience and efficiency. Previous studies have proven that risk has a negative effect on customer interest and decisions, so banks need to mitigate risk by improving security systems, educating customers, and communicating transparently (Assaad Essa Omran Murad. 2025). With good risk management, negative customer perceptions can be reduced so that trust in internet banking services is maintained. (Ahdiat, 2023; Iksan et al., 2024)

Handling Complaints

Complaint handling is the process of addressing customer complaints, which includes receiving complaints, analyzing problems, providing solutions, and following up on complaints that have been submitted. In internet banking services, customer complaints are generally related to system disruptions, transaction errors, service delays, or other technical issues. Good complaint handling reflects the bank's commitment to providing quality service and maintaining long-term relationships with customers. From a sharia banking perspective, complaint handling has moral and ethical value, as it relates to the principles of fairness, honesty, and responsibility. Inadequate complaint handling can worsen customer perceptions of digital services, while quick and solution-oriented handling can increase customer satisfaction and trust in the bank. (Budiarti, 2017)

Previous research shows that complaint handling has a significant influence on customer attitudes and decisions in using internet banking. When customers feel that their complaints are handled professionally and fairly, their trust in the bank will increase, even if they have experienced problems in the past. In the context of Islamic banking, good complaint handling is also a form of implementing Islamic service values that prioritize customer welfare. Effective complaint handling can serve as a tool for restoring trust and the bank's image, as well as encouraging customers to continue using internet banking services. Therefore, complaint handling not only serves as a problem-solving mechanism but also as an important strategy in maintaining and increasing customers' decisions to use digital services. (Deria & Ryzki, 2022)

Customer Decisions

Customer decisions are the end result of an individual's consideration process in choosing and using a product or service. In the context of internet banking, customer decisions are influenced by various internal and external factors, such as perceived benefits, risks, ease of use, and service quality. The decision-making process begins with identifying needs, searching for information, evaluating alternatives, and finally deciding to use internet banking services. In Islamic banking, customer decisions are not only based on rational considerations, but also on trust and the compatibility of services with Islamic principles. Therefore, customer decisions are a reflection of their overall perception of the quality of digital services provided by banks. (Iksan et al., 2024)

In the digital era, customer decisions to use internet banking are an indicator of the success of banking digital transformation (Muhammad Djody Satriani. 2026). These decisions will be stronger if customers have a positive perception of technology, controlled risks, and a satisfying service experience. Research shows that customer decisions are not static but can change along with their experience of using digital services. If banks are able to maintain service quality and customer trust, the decision to use internet banking will be sustainable. Conversely, negative experiences can cause customers to be reluctant to use the service again. Therefore, customer decisions are an important variable that reflects the effectiveness of digital strategies and the quality of the relationship between Islamic banks and their customers. (Nurbaiti et al., 2023)

Table 2 Previous Research Table.

No	Researcher Year	and Approach Technique	and Analysis	Independent Variables	Dependent Variable
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-
- | | | |
|---|---|---|
| 1 | Maulana & Amri (2022) – <i>Idaqu Journal</i> | Quantitative approach with a Perceptions of Customer interest research design examining information technology, in utilizing the relationship between risk levels, and internet banking variables and testing complaint handling services regression models |
| 2 | Aulia & Wazdi (2022) – <i>Masoem University Journal</i> | Quantitative method through Perceptions of Customer interest surveys with inferential information technology, in using internet statistical testing risk perceptions, and banking facilities quality of complaint handling |
| 3 | Pribadi & Gunawan (2021) – <i>UNIDA JUMP</i> | Survey-based quantitative Perceptions of ease of use, Customer risk of use, and feature decisions in completeness of choosing to use the service internet banking |
| 4 | Iqbal, Hasan & Ili (2022) – <i>JUMS Journal</i> | Quantitative approach with Information technology, Customer interest statistical analysis to test the service benefits, system in using internet relationship between security, and service banking variables features |
| 5 | Matnin, Kunaifi & Ubaidillah (2022) – <i>LPPM Pelita Bangsa Journal</i> | Quantitative method with Perceptions of Customer interest survey techniques and information technology, in utilizing regression testing risk, and effectiveness of internet banking complaint handling services |
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3. RESEARCH METHOD

This study was designed using an associative approach with quantitative methods, which aimed to identify and analyze the relationship between the variables studied empirically. The subjects in this study were customers of Bank Syariah Indonesia's Cemara Asri Sub-Branch Office (KCP). The data used came from two types of sources, namely primary data and secondary data. Primary data was obtained directly from research respondents through the distribution of questionnaires to BSI KCP Cemara Asri customers relevant to the research objectives. This data reflects the actual conditions based on the respondents' perceptions and experiences (). Meanwhile, secondary data was collected as supporting data sourced from textbooks, scientific journal articles, official reports, institutional websites, and various online publications related to the research topic. The main data collection technique was conducted through a survey using a Google Forms-based questionnaire, given the quantitative nature of the data. The data processing and analysis process was carried out with the help of SPSS version 21, using several statistical analysis methods, namely Moderated Regression Analysis (MRA), multiple linear regression, coefficient of determination test (R Square), t-test, F-test, and classical assumption tests including normality, multicollinearity, and heteroscedasticity tests.

The population in this study included all customers of Bank Syariah Indonesia KCP Cemara Asri in the 2023–2024 period, with a total of 31,489 people. Given the large population size, sampling was necessary so that the study could be conducted effectively without reducing data representativeness. The sample size was determined using the Slovin formula with a margin of error of 5% ($e = 0.05$). Based on these calculations, the following sample size was obtained:

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

$$\begin{aligned}
 n &= \frac{31.489}{1 + 31.489 (0,1)^2} \\
 n &= \frac{31.489}{1 + 31.489 (0,01)} \\
 n &= \frac{31.489}{1 + 314.89} \\
 n &= \frac{31.489}{315.89} \\
 n &= 94.68 = 95
 \end{aligned}$$

Therefore, the sample size in this study was rounded to 95 respondents, which was considered to represent the characteristics of the research population.

The research instrument was designed in the form of a closed questionnaire using a five- point Likert scale, ranging from a score of 1 (strongly disagree) to 5 (strongly agree). This questionnaire was designed to measure four research variables, namely Technology Perception (X_1), Risk (X_2), Complaint Handling (X_3), and Customer Decisions (Y). The total number of statements used in this study was 15 items, with the following details: Technology Perception (X_1) consisted of 4 items ($X_{1.1}$ – $X_{1.4}$), Risk (X_2) consisted of 4 items ($X_{2.1}$ – $X_{2.4}$), Complaint Handling (X_3) consisted of 3 items ($X_{3.1}$ – $X_{3.3}$), and Customer Decision (Y) consists of 4 items ($Y_{1.1}$ – $Y_{1.4}$). The validity test of the instrument was conducted using Pearson Product Moment correlation with a table r value of 0.2006 at a significance level of 5% ($n = 100$). A statement was declared valid if the calculated r value was greater than the table r value and the significance value was less than 0.05. The test results showed that all items had correlation values between 0.533 and 0.876, so all statements were declared valid.

Next, a reliability test was conducted to determine the level of internal consistency of the research instrument using Cronbach's Alpha coefficient. The test results showed that all variables had a Cronbach's Alpha value above 0.70, indicating that the research instrument had a high level of reliability and consistency. The indicators for each variable were adapted from previous theories and studies, namely: the Technology Perception variable (X_1) refers to the Technology Acceptance Model (TAM) proposed by Davis (1989), which includes ease of use, usefulness, convenience, and speed of access. The Risk variable (X_2) was adapted from Featherman and Pavlou (2003), which includes security, privacy, financial, and system error risks. The Complaint Handling variable (X_3) refers to the indicators proposed by Tax, Brown, and Chandrashekar (1998), which include complaint handling effectiveness, response speed, and satisfaction with solutions. Meanwhile, the Customer Decision variable (Y) is adapted from Kotler and Keller's (2016) theory of consumer behavior, which includes awareness of needs, evaluation of alternatives, decision making, and post-use satisfaction. Thus, this research instrument has met the validity and reliability requirements and is therefore suitable for use as a measurement tool in this study in an accurate and consistent manner.

4. RESULTS AND DISCUSSION

Research Results Validity Test

To ensure accuracy, a significance test was conducted by comparing the estimated r value with the table r value. In this case, the degree of freedom (df) is equal to $n-k$, where n is the sample size and k is the number of constructs. An item is considered valid if the calculated r (shown for each question item in the total correlation of the revised item set) is greater than the table r and the r value is positive. To obtain a table r value of 0 in this case, the df value can be calculated as $95-1$ or $df = 94$ with an alpha of 0.05.

Table 3 Validity Test Results.

Variabel	Item Pertanyaan	Total Correlation	R Tabel	Keterangan
Persepsi Teknologi (X1)	X1.1	0.721	0.2006	Valid
	X1.2	0.789	0.2006	Valid
	X1.3	0.839	0.2006	Valid
	X1.4	0.583	0.2006	Valid
Resiko (X2)	X2.1	0.648	0.2006	Valid
	X2.2	0.807	0.2006	Valid
	X2.3	0.752	0.2006	Valid
	X2.4	0.827	0.2006	Valid
Handling Complaint (X3)	X3.1	0.717	0.2006	Valid
	X3.2	0.797	0.2006	Valid
	X3.3	0.816	0.2006	Valid
Minat Nasabah (Y)	Y.1	0.832	0.2006	Valid
	Y.2	0.876	0.2006	Valid
	Y.3	0.840	0.2006	Valid
	Y.4	0.837	0.2006	Valid

Customer Decision (Y)

Each questionnaire item has a positive calculated r value $>$ than the table r value (0.2006), as shown in the table above. Consequently, the questionnaire is considered valid.

Reliability Test

The purpose of reliability testing is to assess the consistency and reliability of respondents when answering questions on the form. The test results will show the reliability of a learning tool based on the level of accuracy and stability of the measuring instrument. Comparing the computed values and the table at a 95% transparency level (5% significance) is one way to determine the reliability of a research instrument. If Cronbach's Alpha technique is used for this test, the computational results will be displayed in the table below:

Table 4 Reliability Test Results.

Uji Reabilitas	Reabilitas Coefecient	Cronbrach Alpha	Keterangan
Variabel Persepsi Teknologi	4 Item Pertanyaan	0.748	Reliabel
Variabel Resiko	4 Item Pertanyaan	0.748	Reliabel
Variabel Handling Complaint	3 Item Pertanyaan	0.612	Reliabel
Customer Decision	4 Item Pertanyaan	0.828	Reliabel

Each variable has a *Cronbach Alpha* > 0.60, as seen in the summary table above. Various variables (Technology Perception, Risk, Complaint Handling, and Customer Interest) can be said to be reliable.

Classical Assumption Test Normality Test

To ensure that the dependent and independent variables in the regression model are normally distributed, a normality test is used. By using a normal P-P plot to analyze the data distribution, you can determine whether the data is normally distributed (Rearizth Muhammad Daffaa et al., 2025). Data is considered normal if the distribution of data on the graph shows a straight line. Normal distribution can be concluded from the normality test table if the Kolmogorov-Smirnov significance value is greater than 0.05. The following is the normality test for this study:

Table 5 Normality Test Results.

One-Sample Kolmogorov-Smirnov Test			Standardized Residual
N			95
Normal Parameters ^{a,b}	Mean		.0000000
	Std. Deviation		.98391316
Most Extreme Differences	Absolute		.089
	Positive		.065
	Negative		-.089
Kolmogorov-Smirnov Z			.872
Asymp. Sig. (2-tailed)			.433

a. Test distribution is Normal.

b. Calculated from data.

Based on the results of the One-Sample Kolmogorov-Smirnov Test in the table, the Asymp. Sig. (2-tailed) value is 0.433 (greater than 0.05), so it can be concluded that the data is normally distributed.

Multicollinearity Test

The purpose of multicollinearity testing is to find meaningful relationships (correlations) between independent variables. In SPSS, multicollinearity testing is displayed in the Coefficients table, specifically in the VIF (Variance Inflated Factors) and Tolerance columns. Tolerance indicates the extent to which fluctuations in an independent variable cannot be explained by other independent variables. Multicollinearity is said to be absent if the tolerance value exceeds 10.10 and the VIF value is less than 10.00.

Table 6 Multicollinearity Test Results.

Coefficients ^a											
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	13.529	2.119		6.385	.000					
	Persepsi Teknologi	.050	.144	.050	2.349	.000	.104	.037	.036	.532	1.880
	Risiko	.038	.166	.035	3.228	.000	.106	.024	.024	.457	2.187
	Handling Complaint	.087	.175	.064	3.496	.000	.108	.052	.052	.651	1.536

a. Dependent Variable: Minat Nasabah

Based on the Coefficients table above, the results of the multicollinearity test can be seen in the Tolerance and VIF (Variance Inflation Factor) columns: The Tolerance value for all variables is > 0.1 and the VIF value for all variables is < 10. Therefore, it can be concluded that there is no multicollinearity between the independent variables in this regression model.

Heteroscedasticity Test

To determine whether the disturbance error in the linear regression model shows uniform variance across all observations, a heteroscedasticity test is used. The assumption in this study is tested using the Glejser test.

Table 7 Heteroscedasticity Test Results.

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	2.992	1.155		.011
	Persepsi Teknologi	.051	.079	.093	.514
	Resiko	-.116	.090	-.197	.202
	Handling Complaint	.051	.095	.069	.595

a. Dependent Variable: Abs_Res

Based on the results of the heteroscedasticity test shown in the table above, it can be seen that the significance value (Sig.) for the Technology Perception variable is 0.514, Risk is 0.202, and Handling Complaints is 0.595. All of these significance values are greater than 0.05, which means that there is no significant effect of the independent variables on the absolute residual value (Abs_Res) (Putu A.A. Aptiyasa et al., 2025). Thus, it can be concluded that there is no heteroscedasticity in this regression model. This means that the residual distribution is constant (homoscedastic) and the regression model is suitable for further analysis because it meets one of the classical assumptions of linear regression.

Multiple Linear Regression Analysis

Multiple linear regression consists of one dependent variable and two or more independent variables. The development of basic regression tests led to the creation of this multiple linear regression test. When there are three or more independent variables X, multiple regression aims to determine the value of the dependent variable Y.

Table 8 Results of Multiple Linear Regression Analysis.

Coefficients											
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	13.529	2.119		6.385	.000					
	Persepsi Teknolo	.050	.144	.050	2.349	.000	.104	.037	.036	.532	1.880
	Resiko	.038	.166	.035	3.228	.000	.106	.024	.024	.457	2.187
	Handling Compl	.087	.175	.084	3.498	.000	.108	.052	.052	.651	1.536

a. Dependent Variable: Minat Nasabah

From Table 6 above, the results of the equation model for the variables of the Influence of 's Perception of Technology, Risk, and Complaint Handling on Customer Decisions in Using Internet Banking at Bank Syariah Indonesia Kcp Cemara Asri are as follows:

$$Y = 13.529 + 0.050 (X_1) + 0.038 (X_2) + 0.087 (X_3) + e$$

Based on the results of the multiple linear regression test, it is known that the three independent variables, namely Technology Perception, Risk, and Complaint Handling, have a significant effect on the dependent variable, namely Customer Interest. This can be seen from the significance values of the three variables, which are below 0.05. The Technology Perception variable has a coefficient value of 0.050 with a significance of 0.000, which means that the better the customers' perception of the technology used, the higher their interest in using the service will be. Furthermore, the Risk variable has a coefficient of 0.038 with a significance value of 0.000, indicating that the lower the risk perceived by customers, the higher their interest will be. Finally, the Complaint Handling variable has the highest coefficient of 0.087 with a significance of 0.000, indicating that the better the company handles customer complaints, the greater the interest of customers to continue using the service. Thus, these three variables have a positive and significant effect on customer interest, both partially and simultaneously.

Hypothesis Testing

T-Statistic Test (Model 1)

The t-test aims to determine whether the independent variables or the Influence of Technology Perception, Risk, and Complaint Handling on Customer Decisions in Using Internet Banking at Bank Syariah Indonesia Kcp Cemara Asri.

Table 9 Hypothesis Test Results.

Coefficients ^a											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	13.529	2.119		6.385	.000					
	Persepsi Teknolo	.050	.144	.050	2.349	.000	.104	.037	.036	.532	1.880
	Resiko	.038	.166	.035	3.228	.000	.106	.024	.024	.457	2.187
	Handling Compl	.087	.175	.064	3.498	.000	.108	.052	.052	.651	1.536

a. Dependent Variable: Minat Nasabah

Formula for finding the t-table $= \frac{\alpha}{2} : n - k - 1$
 $= 0.05 : 95 - 2 - 1$
 $= 0.05 : 92$
 $= 1.9861$

Based on the results of the multiple linear regression test in the table above, it can be seen that the t-value for the three independent variables, namely Technology Perception (2.349), Risk (3.228), and Handling Complaints (3.498), are each greater than the t-table value of 1.9861. This indicates that the three variables partially have a significant effect on the dependent variable, namely Customer Decision. In addition, the significance value (Sig.) of the three variables is also below 0.05, further strengthening the significance of their effect. Thus, it can be concluded that Technology Perception, Risk, and Complaint Handling have a real and significant effect on Customer Interest based on the t-test.

F-Statistic Test

The F test was conducted to see whether the independent variables collectively have an effect on the dependent variable.

Table 10 F-Statistic Test Results.

ANOVA ^a					
Model		Sum of Squares	df	Mean Square	Sig.
1	Regression	14.198	3	4.733	.000 ^a
	Residual	882.539	91	9.698	
	Total	896.737	94		

a. Predictors: (Constant), Handling Complaint, Persepsi Teknologi, Resiko

b. Dependent Variable: Minat Nasabah

The results of the F-statistic test have a value of 0.000, which explains that the effects of Technology Perception, Risk, and Complaint Handling on Customer Interest are simultaneous.

R Square Test

The purpose of the coefficient of determination test, or R², is to determine the percentage of dependent variation that can be explained by independent variables or the extent to which independent/free variables can explain dependent/bound variables.

Table 11 R Square Test Results.

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df 2	Sig. F Change	
1	.713a	.702	.617	3.11420	.016	.488	3	91	.691	1.911

a. Predictors: (Constant), Handling Complaint, Persepsi Teknologi, Resiko

b. Dependent Variable: Minat Nasabah

Based on the data processing results in the Model Summary table, the R Square value obtained is 0.702 and the Adjusted R Square is 0.617. The R Square value indicates that the combination of independent variables, which include Technology Perception (X₁), Risk (X₂), and Complaint Handling (X₃), has a fairly strong ability to explain the variation in the dependent variable of Customer Interest (Y). Quantitatively, this result shows that 70.2% of the variation in customer interest in using the services studied can be explained by the three

independent variables included in the regression model. This means that changes in customer interest are largely

influenced by perceptions of technology, perceived risk levels, and the quality of complaint handling provided by the bank.

Meanwhile, the Adjusted R Square value of 0.617 reflects the level of contribution of the model that has been adjusted to the number of independent variables and the size of the research sample. After the adjustment, it can be seen that 61.7% of the variation in customer interest can be explained by the variables of Technology Perception, Risk, and Complaint Handling, while the remaining 38.3% is influenced by other variables outside the research model (Jeryco Etwan Resha Putra., 2025). These factors can include service quality, promotional activities, trust levels, and individual customer characteristics. The relatively small difference between the R Square and Adjusted R Square values indicates that the regression model used has met the feasibility criteria and is sufficiently representative in explaining the relationship between the independent and dependent variables in this study (Akmal Nasir et al., 2025).

5. RESEARCH DISCUSSION

The Influence of Technology Perception on Customer Interest

Perceptions of technology play an important role in shaping customer interest in using internet banking services. These perceptions relate to the extent to which customers believe the technology used by banks provides convenience, speed, and reliability in conducting financial transactions. When technology is perceived as easy to operate, has clear features, and is able to minimize transaction errors, customers will be more inclined to use these services. In Islamic banking, the perception of technology also includes the belief that the digital system used is in line with Islamic principles and is managed professionally. Therefore, a positive perception of technology will increase customer trust and comfort, which will ultimately lead to an interest in using internet banking services on an ongoing basis. This shows that technology not only functions as a transaction tool, but also as a psychological factor that influences customer interest. (Matnin et al., 2021)

Previous research findings indicate that technology perception significantly influences customer interest in using internet banking services. Customers who have had positive experiences with digital systems tend to consider these services more useful and efficient than conventional transaction methods. A positive perception of technology can also reduce customer hesitation in transitioning from manual to digital services. In the context of Bank Syariah Indonesia, the development of the BSI Mobile application is one of the strategic efforts to build a modern and responsive perception of technology among customers. When technology is perceived as being able to meet transaction needs in a secure and practical manner, customer interest in using internet banking services will increase. Thus, technology perception is one of the main determinants in driving customer interest in digital banking services. (Deria & Ryzki, 2022)

Good network infrastructure and the increasing use of smartphones also support customers' positive perception of Islamic bank digital services. However, when compared to several previous studies that showed insignificant results, these differences are generally due to differences in respondent characteristics and the level of technology adoption in each region. In areas with low digital literacy or unstable internet networks, perceptions of technology tend to be more negative because it is considered complicated and inefficient. Thus, the results of this study reinforce the TAM theory that good technology acceptance will encourage continued interest in use. Positive perceptions of BSI Mobile technology not only increase the convenience and efficiency of transactions, but also foster customer trust and loyalty to digital Islamic banking services in the modern era.

The Influence of Risk on Customer Decisions

The differences between the results of this study and Putra's (2021) study can be explained through several theoretical and local contextual reasons. Theoretically, the Technology Acceptance Model (TAM) explains that user acceptance of technology is influenced by two main factors, namely perceived usefulness and perceived ease of use. In this context, although risk (perceived risk) is an external factor that can influence usage decisions, when the perception of ease and security is high, the influence of risk tends to decrease. In this study, the $t\text{-value} > t\text{-table}$ shows that risk has a significant effect on customer interest in using BSI Mobile. This may be due to the level of awareness among customers in the research location, who are still sensitive to issues of digital security and the potential for cybercrime. In other words, perceived risk is still a major consideration before

customers decide to use digital banking services. Conversely, in Putra's (2021) study, risk did not have a significant effect because respondents felt that BSI had successfully managed risk through its security system and good complaint handling.

Based on Complaint Management Theory, the ability of financial institutions to respond to and resolve customer complaints can increase customer security and trust. When the complaint handling mechanism is effective, the level of concern about risk decreases so that the risk variable no longer has a significant effect on interest or usage decisions. Thus, the difference in results between the two studies may be due to differences in the level of risk perception in each region or group of respondents. In this study, some respondents may not yet fully trust the security of digital transactions or may not have had much direct experience with BSI Mobile services, so risk is still considered an important factor. Meanwhile, in Putra's (2021) study, respondents were likely more accustomed to and had positive experiences with BSI services, so risk was considered to have been minimized. Overall, these results reinforce the Perceived Risk Theory, which emphasizes that consumer decisions are greatly influenced by perceptions of perceived risk. However, in line with TAM and Complaint Management Theory, these risk perceptions can be minimized through improved system security and responsive customer service.

The Influence of Complaint Handling on Customer Decisions

The results of this study, which show that the complaint handling variable has a significant effect on customer decisions in using BSI Mobile, are in line with the findings of Putra (2021), which emphasize the importance of complaint handling in building trust and customer satisfaction. These findings can be explained through several theoretical foundations and empirical contexts. Theoretically, these results can be linked to Complaint Management Theory, which emphasizes that effective complaint handling is an important factor in maintaining long-term relationships between companies and customers. When complaints are handled quickly, politely, and professionally, customers will feel valued and have a positive perception of the company.

In the context of Islamic banking, this is also in line with the principles of amanah and ihsan, where good service and responsibility towards customers are forms of applying Islamic values in business. Additionally, from the perspective of Customer Satisfaction Theory, good complaint handling can reduce dissatisfaction and even turn negative experiences into positive ones. Customers who are satisfied because their complaints are responded to well tend to show higher loyalty and are more likely to continue using the digital services provided, such as BSI Mobile. From a local context, these results also reflect that most BSI Mobile users still rely on interaction with the bank when experiencing problems, whether through call centers, branch offices, or official social media. This shows that trust in digital services is not only built through security systems, but also through responsiveness and human communication from the bank. Thus, these findings reinforce the view that in the context of digital banking services, especially in the sharia customer environment, emotional factors and interpersonal services play an important role in influencing usage decisions. Prompt, empathetic, and solution-oriented complaint handling not only resolves technical issues but also strengthens long-term relationships and enhances customer loyalty toward BSI Mobile services.

6. CONCLUSION

The findings of this study indicate that customer interest in using BSI Mobile is influenced by perceptions of technology, risk, and complaint handling. These results have important theoretical implications for the development of technology adoption models in the context of Islamic banking. By integrating the factors of perceived risk and complaint handling into the Technology Acceptance Model (TAM) framework, this study expands the understanding that technology acceptance is not only influenced by perceptions of ease and usefulness, but also by factors such as trust, security, and customers' emotional experiences when interacting with banking services. In the context of Islamic banking, trust and service quality based on Islamic ethical values such as honesty, responsibility, and empathy play an important role in encouraging customers' interest and decisions to use digital services.

Thus, this study contributes to the expansion of the technology adoption model by emphasizing the role of Islamic values in shaping trust and acceptance of digital technology. From a policy perspective, the results of this study provide relevant input for BSI in strengthening its Islamic digital literacy strategy and customer relationship management. BSI is advised to increase public education activities on the benefits, security, and ease of use of

BSI Mobile through digital campaigns and financial literacy activities in the community. These efforts can help reduce risk perception and increase trust in sharia digital services. In addition, BSI needs to strengthen its complaint handling system by providing quick, polite, and solution-oriented responses so that customers feel safe and valued. Developing educational features within the application, such as guides to secure transactions and tips on avoiding digital fraud based on sharia principles, can also be an effective strategy for fostering customer trust and loyalty. For further research, it is recommended to include moderating or mediating variables such as trust and digital financial literacy to see how these two factors influence the relationship between risk perception, complaint handling, and interest in using digital services.

Future research could also add variables such as ease of use and trust in the sharia system to provide a more comprehensive understanding of customer behavior in using sharia mobile banking services. In addition, a broader demographic coverage and a larger sample size from various regions can be used to make the research results more representative and reflect the overall conditions of BSI customers in Indonesia. With these steps, further research is expected to provide a more in-depth picture of the factors that influence the adoption of digital technology in Islamic banking.

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