

Innovation in Technology, Financial Literacy, and Security Risk in Cardless Withdrawals: Case Study on Customers Adoption at Bank Syariah Indonesia

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ABSTRACT

Purpose: This study aims to analyze the impact of technological innovation, financial literacy, and security risk on the adoption of cardless withdrawal services among customers of Bank Syariah Indonesia (BSI) in Pekalongan Regency.

Design/methodology: A quantitative research approach was employed, collecting data through a questionnaire distributed via Google Forms. The sample size was determined using the Lemeshow formula, resulting in 97 respondents. Data analysis included classical assumption tests, multiple linear regression, and hypothesis testing.

Findings: The results indicate that technological innovation and security risk positively and significantly influence the adoption of cardless withdrawal services. Customers perceive security as a crucial factor in their decision to use this service. However, financial literacy does not significantly impact adoption, suggesting that customers' financial knowledge does not play a major role in their willingness to utilize this feature.

Practical implications: The findings provide valuable insights for Islamic banks to enhance digital banking adoption by improving technological infrastructure and security features. Additionally, efforts should be made to raise awareness about financial literacy to encourage broader acceptance of innovative banking services.

Originality/Value: This study explores the adoption of cardless withdrawal services within the context of Islamic banking, particularly in a regional setting that has not been extensively studied. It offers a novel contribution by examining the interplay of technological innovation, financial literacy, and security risk in influencing customer behavior.

Keywords: Technological Innovation, Financial Literacy, Security Risk, Customer Adoption, Islamic Banking

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A. INTRODUCTION

The growth of the financial services industry in Indonesia has been rapidly increasing, with banks serving as key financial institutions responsible for collecting funds from the public and distributing them in the form of credit or other banking services (Labetubun et al., 2021). Today, banks play a crucial role in the financial sector, as nearly all economic activities are closely tied to banking services (Muniarty et al., 2020). As a business operating in the financial services sector, strong collaboration between banks and customers is essential. To sustain their business operations effectively, banks must ensure accuracy in their activities to optimize their primary sources of revenue (Yani, 2020).

Advancements in information and communication technology have significantly impacted the economic sector, including banking. The emergence of technology-based financial services has brought substantial changes to the financial industry by offering faster and more accessible services. Technological innovation provides solutions that enable transaction

processing by sharia principles without requiring excessive time or facing accessibility challenges. This innovation has great potential to transform the landscape of Islamic finance (Setiawati et al., 2024). Some perceive technological innovation as a threat to banking, while others see it as an opportunity to enhance Islamic banking services (Khudhori & Hendri, 2021). In Indonesia, Islamic banking has successfully managed technological innovation by launching its latest mobile banking services.

In the last five years, Indonesia has recorded a significant increase in the use of mobile banking, with an average annual growth of 135.3%. The presence of mobile banking has had a major impact on the global banking market and generated substantial profits. This indicates that the effectiveness of Islamic banking is growing, especially in the digital aspect. One of the mobile banking services from Bank Syariah Indonesia is known as BSI Mobile (Sutono & Kassim, 2024). Through the innovation of mobile banking, namely the cardless withdrawal feature. This feature gives customers a way to withdraw cash from ATMs without a physical card and only using a mobile banking application. This step offers a practical solution for customers who want to get their funds quickly and efficiently. At the same time, it reduces reliance on physical ATM cards, which are often susceptible to damage or loss. In Islamic banking, this technology is starting to gain attention as part of efforts to increase competitiveness amid the increasing need for fast, safe, and sharia-compliant banking services.

Financial literacy in sharia banking does not only include understanding banking products and services, but also includes an interpretation of the sharia principles underlying these services (Widiyat, Dian, 2024). Several studies show that low financial literacy could be the main cause obstacles in implementing digital banking services, as customers often lack an understanding of the risks and benefits of the new technology (Zai et al., 2023). Therefore, financial literacy is needed so that customers can understand and utilize the features of mobile banking optimally.

In addition, transaction security in digital banking is also a critical factor that affects the use of services such as cardless withdrawals. The speedy development of banking technology is accompanied by increasing security risks, including the potential for cyberattacks, identity theft, and fraud (Nofiani, 2023). The security of transactions in digital banking has become a major concern for Islamic banks, who must ensure that their systems adhere to strict security standards while maintaining the integrity of sharia principles. Customers' perception of the security of the digital banking system greatly influences their decision to use the service. Distrust of service security is often a major barrier for customers to adopt new technologies, including cardless withdrawals. Another challenge that arises in Islamic banking is how to maintain the security and reliability of technology without violating sharia principles, such as the prohibition against elements of usury and gharar (uncertainty). Islamic banks must ensure that the technological innovations they implement are not only efficient and safe, but also by the sharia values embraced by their customers (Swastika, 2020). This is a major factor in creating customer trust in the digital services offered.

Previous research on technology and innovation in digital banking by Judijanto (2024), highlights that the adoption of technology and innovation in digital banking has had a significant impact on the banking industry. Strong financial literacy also plays a crucial role in minimizing the risk of errors when using banking services (Yasin et al., 2021). This study aligns with the findings of Fatmawati and Hayati (2022), studies show that the utilization of digital services in Islamic banking is positively and significantly impacted by financial literacy. In other words, as financial literacy improves, the utilization of Islamic banking digital services is likely to increase as well. Research conducted by Prayoga (2023), shows that the security of use has a significant effect on BSI Cardless Withdrawal users' decisions.

The differences between this study and previous research are as follows. First, the researcher added the variables of technological innovation and financial literacy, as done by Prayoga (2023). Second, the distinction lies in the population studied—previous research focused on BSI cardless cash withdrawal users in the Jabodetabek area, whereas this study examines BSI cardless cash withdrawal users in Pekalongan Regency. Furthermore, research exploring the factors influencing BSI customers' interest, particularly in Pekalongan Regency, in using cardless cash withdrawal features has not been widely discussed in any existing literature. This study intends to analyze the connection between technological innovation, financial literacy, and risk security to the use of cardless withdrawal features in Islamic banks. By examining how these three factors play a role, it is hoped that this study can provide guidance for Islamic banks in designing innovation strategies that are not only efficient and safe, but also by sharia principles and increase customer financial literacy to support wider adoption of financial technology.

B. LITERATURE REVIEW

1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) explains how individuals adopt and use information technology. It identifies two key factors influencing acceptance: perceived ease of use and perceived usefulness (Davis, 1989). Perceived ease of use refers to how effortless a system is, while perceived usefulness reflects the belief that technology enhances performance. Both factors are strong predictors of technology adoption. Part of the affirmation introduced in the TAM theory can influence a person's interest in using technological innovations (Desita, 2022). According to Davis (1989), Behavioral Intention to Use or interest in use defines the behavioral intention to continue using a technology in the future. An individual's attitude and concern for technology can predict the level of technology use. The perception of the usefulness and convenience of a technology will shape the interests of each individual (Agustina & Musmini, 2022).

2. Mobile Banking

Mobile banking is a breakthrough in the banking industry that provides customers with greater convenience in accessing their accounts. This service allows various financial transactions, such as fund transfers, bill payments, and deposits, to be carried out more efficiently through mobile devices like smartphones and tablets. Besides that Mobile Banking technology requires a match between strategy and customer needs that tend to increase in quality with the use of gadgets (Nur et al., 2023). With mobile banking, banking processes have become faster and more efficient, transforming how customers manage their finances without needing to visit a bank in person (Ho et al., 2020). One of the most notable innovations in mobile banking is the cardless cash withdrawal feature. This service enables customers to withdraw cash directly from ATMs without the need for a physical card. Not only does this feature enhance user convenience, but it also improves banking efficiency (Nur et al., 2024). The presence of this technology reflects the continuous advancements in digital banking, catering to customers' needs for safer and more flexible transactions.

3. Cardless Withdrawal Service Features

Cardless cash withdrawal is a feature in mobile banking that allows customers to withdraw money from ATMs without needing a physical card. This option provides a more convenient way to access cash, eliminating concerns about lost, stolen, or swallowed cards.

While this feature enhances convenience, security remains a key concern for users (Singh & Srivastava, 2020). Cardless withdrawal or cardless cash withdrawal is one of the services in Mobile Banking offered by Bank Syariah Indonesia (BSI), starting July 14, 2021, the cardless cash withdrawal service was launched by Bank Syariah Indonesia after it was officially inaugurated. This service can be accessed through the BSI Mobile application and has been used by several customers, because it can be accessed by anyone who has the BSI Mobile application (Selvi, 2024). In BSI Mobile, customers receive a One-Time Password (OTP) to withdraw cash from an ATM using the cardless feature. After entering their mobile number, the transaction is successfully processed. The OTP is confidential and valid for up to 2 hours. This feature effectively reduces the risk of ATM-related crimes, such as data theft (Marlina et al., 2020).

4. Innovation in Technology

Innovation is the act of giving resources new power and capability to create prosperity. It refers to any product, service, or idea that an individual perceives as new (Adiyanti & Pudjihardjo, 2014). Technological innovation reflects an individual's willingness to try new information systems. The consumer adoption process focuses on mental processes, guiding an individual from first hearing about an innovation to eventually using it (Rahayu, 2018). Users of new products typically go through three stages: awareness, interest, and adoption. Several studies have found a link between consumer innovativeness and the decision to adopt various technologies (Indriastuti & Wicaksono, 2014). Banks currently continue to innovate to improve services for customer convenience. In the 4.0 era, the digital era that makes people dependent on technology and the internet, all activities have become more practical and efficient. The continuous advancement of technology has rapidly transformed the payment landscape, extending beyond cash and ATMs. The introduction of electronic payment systems provides customers with greater flexibility in managing their finances (Nambiar & Bolar, 2023).

5. Financial Literacy

The Organization for Economic Co-operation and Development (OECD) describes financial literacy as the proficiency, motivation, and confidence to use their understanding and knowledge of financial risk, the key to making effective financial decisions and improving financial health. In many developed countries, financial literacy has become part of the national program (Lusardi & Messy, 2023). It is hoped that financial literacy can also contribute to the development of the financial skills of the Indonesian people and prevent society from mismanaging finances (Prasetio et al., 2023). Research on financial literacy in Indonesia is still limited, although, in developed countries, this kind of study has been carried out quite a lot (A. P. G. Susanti & Susanti, 2021). However, limited research has been carried out in developing countries, especially in Indonesia. Therefore, it is important to understand the characteristics of the community, the level of financial literacy, as well as their financial behavior (Wafa & Gafur, 2024).

6. Security Risk

Security risk, as explained by Putri (2021), is the negative impact that must be accepted due to uncertainty in decision-making. According to Susanti & Putra (2023) Security risk refers to protection against security threats and minimizing the exposure of customers' personal information during online transactions. Security risk itself is considered one of the key aspects that influence customer interest in utilizing the cardless withdrawal service feature. An example of security provided by BSI in the BSI Mobile application within the cardless

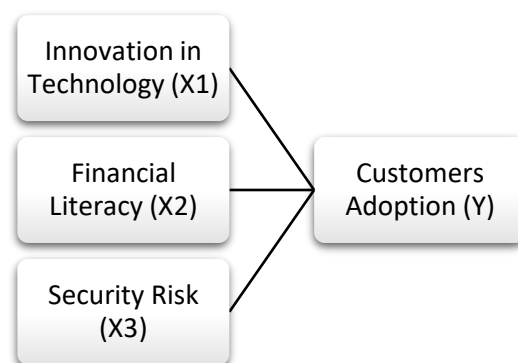
withdrawal service feature is the PIN or password, which acts as an access code. Since the PIN is kept confidential, no one else can access it. Additionally, there is a limit to the number of incorrect PIN attempts to prevent unauthorized access.

7. Behavioral Intention to Adopt

Behavioral intention refers to a person's desire to perform a specific action (Faqih, 2022). The intention to adopt financial technology refers to a person's decision to use digital financial services. Fintech adoption is influenced by consumers' perceptions of its functionality and ease of use (Maulana et al., 2023). In this context, the intention to use the feature is defined as the stage where an individual plans to conduct a cash withdrawal transaction at an ATM without using a card. As stated by Davis (1989) about the Technology Acceptance Model (TAM), individuals are more likely to adopt the cardless cash withdrawal service when they perceive it as beneficial and easy to use. The factors influencing behavioral intention in adopting this feature include perceived usefulness, ease of use, and customer trust.

Based on this, the framework proposed in this study is independent variables and dependent variables. Innovation in Technology (X1), Financial Literacy (X2), and Security Risk (X3) are independent variables. Customers' Adoption (Y) is a dependent variable.

Figure 1. Framework model



8. The Effect of Innovation in Technology Related to Use Cardless Withdrawal Features

Banks that successfully adopt technological innovations tend to have higher operational efficiency, lower costs, and better capabilities in serving customers (Rubanov, 2019). Another study conducted by Rahayu (2018), shows that technological innovation has a significant positive effect on the intention to use GoPay. Technological innovation enables banks to automate business processes, improve service quality, and respond more quickly to market changes. This is research supported by King (2018), which found that technological innovation enables banks to create new business models, such as service features designed for customer convenience. Thus, the first hypothesis to be tested is:

H1 : Innovation in Technology has a positive and significant effect related to the use of cardless withdrawal on BSI customers' adoption in Pekalongan Regency.

9. The Effect of Financial Literacy Related to Use of Cardless Withdrawal Features

Strong financial literacy also plays a crucial role in minimizing the risk of errors when using banking services (Yasin et al., 2021). This study aligns with the findings of Fatmawati and Hayati (2022), studies show that the utilization of digital services in Islamic banking is positively and significantly impacted by financial literacy. In other words, as financial literacy

improves, the utilization of digital Islamic banking services is likely to increase as well. On the other hand, a study conducted by Melda (2024), found that financial literacy has a negative and insignificant effect on the use of cardless cash withdrawals. Then the second hypothesis to be tested is:

H2 : Financial literacy has a positive and significant effect related to the use of cardless withdrawal on BSI customers' adoption in Pekalongan Regency.

10. The Effect of Security Risk Related to Use Cardless Withdrawal Features

Security and risk are important factors that affect customers' decisions in using digital banking services. Research shows that low-risk perception and a high level of security can increase customer confidence in cardless withdrawal services (Lestari et al., 2023). Research conducted by Prayoga (2023), shows that the security of use has a significant effect on BSI cardless withdrawal users' decisions.

H3 : Security Risk has a positive and significant effect related to the use of cardless withdrawal on BSI customers' adoption in Pekalongan Regency.

C. METHOD

This study utilizes primary data as the main source, employing a quantitative research method. The population in this study consists of BSI customers in Pekalongan Regency who use the cardless withdrawal feature on the Bank Syariah Indonesia mobile banking application. Since the exact population size is unknown, the Lemeshow formula was used to determine the appropriate sample size (Levy & Lemeshow, 2013). Based on this formula, with a margin of error of 10%, the calculated sample size was 97 respondents were obtained through questionnaire distribution to BSI customers in Pekalongan Regency. The information about the independent variables and question indicators used in this study is listed in Table 1.

Table I. Question variables and indicators

Lable	Question Variables and Indicators	Reference
Innovation in Technology		
X1.1	I'm interested in the cardless cash withdrawal feature on BSI Mobile	(Rahayu, 2018)
X1.2	I find the cardless cash withdrawal feature useful and convenient for transaction	
X1.3	I am satisfied with the technological innovations applied to the cardless withdrawal feature	
Financial Literacy		
X2.1	I understand the functions and benefits of the cardless withdrawal feature on BSI Mobile	(Tegar, 2024)
X2.2	I feel that my financial literacy influences my use of the cardless withdrawal feature	
Security Risk		
X3.1	I do not worry about using the cardless withdrawal feature on BSI Mobile because the process and data accuracy are guaranted to be secure and confidential	(Prayoga, 2023)
X3.2	I have never experienced security issues when using the cardless withdrawal feature	

X3.3	I feel safe using the cardless withdrawal feature on BSI Mobile as it is equipped with an OTP code and PIN	(Faqih, 2022)
Intention to Adopt		
Y.1	I find the cardless withdrawal feature useful and convenient for performing financial transactions	
Y.2	I do not have difficulty understanding how to use the cardless withdrawal feature	
Y.3	I trust that the bank, as the service provider, is reliable and trustworthy in ensuring the security of my transactions	

Source: data processed, 2025

The researchers collected data and information related to the study using a questionnaire distributed via Google Forms, an accessible and efficient tool for gathering primary data from a broad sample. Respondents could access the form using their mobile phones. Additionally, the researchers utilized Microsoft Excel 2021 for data analysis and employed IBM SPSS Statistics 27.0 for further statistical processing. The data analysis technique uses classical assumption tests, multiple linear regression test, and hypothesis test which includes T test, F test and determination coefficient test.

D. RESULT AND DISCUSSION

1. Validity test

The table 2 below shows that each statement item relating to each variable has shown that the calculated value has exceeded the value listed in the table of 0.1663. Thus, the validity test of the instrument on each item of statement in the questionnaire has been confirmed to be valid.

Table 2. Validity Test Results

Variable	Question	Value Recalculate	Value rtabel	Information
Innovation in Technology (X1)	X1.1	0,618	0,1663	Valid
	X1.2	0,687		Valid
	X1.3	0,587		Valid
Financial Literacy (X2)	X2.1	0,789	0,1663	Valid
	X2.2	0,645		Valid
Security Risk (X3)	X3.1	0,628	0,1663	Valid
	X3.2	0,750		Valid
	X3.3	0,746		Valid
Customers adoption (Y)	Y.1	0,737	0,1663	Valid
	Y.2	0,849		Valid
	Y.3	0,704		Valid

(Source: Data processed with IBM SPSS Statistic 27)

2. Reliability test

The table 3 below shows that each statement item in each variable has shown a Cronbach Alpha value of > 0.60 , meaning that in this reliability test, the research instrument has been declared reliable. Thus, this research instrument is feasible to be processed and passed on to the next process, namely in the data analysis process because all statement items have met the valid and reliable instrument test.

Table 3. Reliability Test Results

Variable	Total Question Item	Cronbach's Alpha	Information
Innovation in Technology (X1)	3 Questions	0,745	Reliable
Financial Literacy (X2)	2 Questions	0,771	Reliable
Security Risk (X3)	3 Questions	0,755	Reliable
Customers adoption (Y)	3 Questions	0.845	Reliable

(Source: Data processed with IBM SPSS Statistic 27)

3. Classical assumption test

The classical assumption test results indicate that this study is free from classical assumption issues. The normality test using the Kolmogorov-Smirnov method shows an asymp sig (2-tailed) value of 0,200 > 0.1, indicating that the data is normally distributed. The multicollinearity test shows a Tolerance value > 0.10 and a VIF value < 10, confirming the absence of multicollinearity in this study. The heteroscedasticity test, conducted using the Glejser test, reveals that all variables have a significance value > 0.1, indicating that heteroscedasticity is not present.

Table 4. Summary of Classical Assumption Test Results

Test Type	Statistical Test	Value	Information
Normality Test	Kolmogorov-Smirnov	0,200	Normal distributed data
Multicollinearity Test	X1	Tol. 0,732; VIF	No Multicollinearity
	X2	1,367	
	X3	Tol. 0,540; VIF	
		1,853	
Heteroscedasticity Test	Glejser	Tol. 0,525; VIF	There is no indication of Heteroscedasticity
		1,905	
		X1 0,422	
		X2 0,311	
		X3 0,593	

(Source: Data processed with IBM SPSS Statistic 27)

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Table 5. Summary of Multiple Linear Regression Analysis Results

Model	Coefficient	t-call	Sig.
	s		

(Constant)	1,531	1,557	0,118
Innovation in Technology (X1)	0,279	3,590	0,000
Financial Literacy (X2)	0,142	1,297	0,198
Security Risk (X3)	0,524	5,589	0,000
F-call	: 45.548		
F Sig.	: 0,000		
R ² Adj	: 0,594		

(Source: Data processed with IBM SPSS Statistics 27)

Based on Table 5, the T-test results can be analyzed by comparing the t-calculated value with the t-table value. According to the researcher's calculations, the obtained t-table value is 1.661 (referencing the t-table distribution). Given that the innovation in technology variable (X1) has a significance value of $0.000 < 0.1$ and a value of tcount $3.590 > ttable 1.661$, it may be said that H1 is accepted. This indicates that the factors of innovation in technology and customers adoption have a partially significant relationship. The significance value of the financial literacy variable (X2) is $0.198 > 0.1$ with a value tcount $1,297 < ttable 1.661$, it may be said that H2 is rejected. This indicates that the customers adoption variable and the financial literacy variable do not have a partially significant relationship. The significance value of the risk safety variable (X3) is $0.000 < 0.1$ with a value tcount $5.589 > 1.661$, it may be said that H3 is accepted. This indicates that the factors of security risk and customers adoption have a partially significant relationship.

The analysis shows that F-calculated is 45.548, which is greater than the F-table value of 2.14, with a significance level of $0.000 < 0.10$. This indicates that the independent variables (technological innovation, financial literacy, and security risk) collectively have a positive and significant influence on the dependent variable (customer adoption). Additionally, the R-value of 0.594 suggests that 59.4% of the variation in customer adoption of the cardless withdrawal feature can be explained by the combination of independent variables in this study. Meanwhile, the remaining 40.6% is influenced by other factors outside this research model.

Based on the questionnaire results, the researcher concludes that the majority of mobile banking users who are aware of the cardless cash withdrawal feature in Pekalongan Regency are women. In addition, research shows that 50% of mobile banking users are students. Furthermore, 11.3% of mobile banking users are under 20 years old, 68.9% are between 21-30 years old, 9.4% are between 31-40 years old, 7.5% are between 41-50 years old, and 2.8% are over 50 years old. This indicates that the 31-40 age group dominates the use of cardless cash withdrawals.

A total of 55.2% of mobile banking users have completed Senior High School. The majority of mobile banking users' monthly expenditures fall within the Rp 1,000,000 - 5,000,000 range. The frequency of mobile banking usage per week ranges from 1 to 5 times. The following is a discussion of the answer to the research hypothesis.

4. The Effect of Innovation in Technology Related to Use Cardless Withdrawal Features

Based on the hypothesis test, the calculation value for the technological innovation variable was obtained at 3.590. Where this means that the tcount is higher than the ttable or tcount $3.590 > ttable 1.661$ and with a significance value of 0.000. The significance value is less than 0.000 ($0.000 < 0.1$). So H1 can be accepted and H0 is rejected, meaning that the technological innovation variable (X1) has a positive and significant influence on the variable of interest in using (Y) cardless withdrawal service features on BSI customer adoption in

Pekalongan Regency. This also explains that if technological innovation is getting better, the interest in using the cardless withdrawals.

The results of this study corroborate the Technology Acceptance Model (TAM) Theory by Davis (1989), which states that ease of use is a key factor influencing a person's desire to adopt new technology. When a technology is user-friendly, easy to understand, widely accessible, and does not cause confusion, it fosters a positive perception of convenience among users. These perceptions can significantly influence the acceptance and use of technology. The more the technology is considered easy to use and understand, the higher a person's interest in using the technology will be.

This findings are in line with previous studies conducted by King (2018), which show that technological innovation enables banks to create new business models. . Research shows that this technological innovation can increase efficiency and convenience for customers.

5. The Effect of Financial Literacy Related to Use Cardless Withdrawal Features

Based on the hypothesis test, the results of the calculation value for the financial literacy variable were obtained of 1.297. Where this means that the tcount is lower than the ttable or tcount $1.297 < ttable$ 1.661 and with a significance value of 0.186. The significance value is greater than 0.1 ($0.186 > 0.1$). So H2 can be rejected and H0 is accepted, meaning that the financial literacy variable (X2) has a negative and insignificant influence on the variable of interest in using (Y) cardless withdrawal service features on BSI customer adoption in Pekalongan Regency.

These findings do not align with those of Fatmawati and Hayati (2022), where financial literacy does not have a positive and significant impact on the use of cardless cash withdrawals. On the other hand, this study is consistent with the research conducted by Melda (2024), which found that financial literacy has a negative and insignificant effect on the use of cardless cash withdrawals.

6. The Effect of Security Risk on Related to Use Cardless Withdrawal Features

Based on the hypothesis test, the result of the calculation value for the risk safety variable was 5.589 . Where this means that the tcount is higher than the ttable or tcount $5.589 > ttable$ 1.661 and with a significance value of 0.000. The significance value is less than 0.1 ($0.000 < 0.1$). So H3 can be accepted and H0 is rejected, meaning that the risk security variable (X3) has a positive and significant influence on the variable of interest in using (Y) cardless withdrawal service features on BSI customer interest in Pekalongan Regency. This also explains that if the risk security is better, the interest in using the cardless withdrawal on the interest of BSI customers in Pekalongan Regency.

Security risk in the context of TAM refers to transaction security regarding the use and availability of a service. In this study, users felt safe using this service. The majority of users did not experience any issues when making transactions, with only 5.7% reporting difficulties. The challenges faced by users were due to external factors beyond the cardless cash withdrawal service itself, such as an unstable mobile network.

These findings are in line with previous research conducted by Prayoga (2023), that the safety of use has a significant effect on the decision of BSI cardless Withdrawal users. This shows that the higher the level of security in transactions using cardless Withdrawal BSI, the user will decide to continue using cardless Withdrawal BSI in cash withdrawal transactions through ATM machines. That there is an effect of an increase in the number of users in transactions on BSI's cardless withdrawal which shows that the use of cardless has felt safe. So

that this is made a choice by the BSI user community in making safer transactions by deciding to use BSI cardless withdrawal. Research conducted by Lestari (2023), shows that low risk perception and high level of security can increase customer confidence in cardless withdrawal services.

E. CONCLUSION

Based on the data analysis and previous discussions, several conclusions can be drawn from this study. Firstly, the researcher successfully proved that two out of three independent variables—technological innovation and risk security—have a positive and significant influence on BSI customers adoption intention to use the cardless cash withdrawal service in Pekalongan Regency. In contrast, the financial literacy variable has a negative and significant effect on BSI customers' adoption intention to use the cardless cash withdrawal service in Pekalongan Regency. Secondly, technological innovation has a positive influence on BSI customers' adoption intention to use the cardless cash withdrawal service in Pekalongan Regency. This means that the more technological innovations implemented in BSI Mobile, the greater the individual's adoption intention to use this service feature. Risk security also has a positive influence on BSI customers adoption intention to use the cardless cash withdrawal service in Pekalongan Regency. This indicates that the more security enhancements are made to BSI Mobile, the greater the individual's adoption intention to use this service feature. Suggestions for future research on topics related to cardless withdrawal issues include adding other independent variables beyond this study, such as promotion, loyalty, perceived benefits, and others that may have a greater impact compared to the independent variables in this research. Additionally, it is recommended to select a research object with a broader scope, such as a residency or province, to enhance representativeness.

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