

Ratnawati, Andalan Tri; Malik, Ahmad

Article

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The Effect of Perceived Ease of Use, Benefits, and Risks on Intention in Using the Quick Response Code Indonesian Standard

Andalan Tri Ratnawati[†], Ahmad Malik

Faculty of Economics and Business, Universitas 17 Agustus 1945 Semarang, Indonesia

ABSTRACT

Purpose: This study aims to determine the effect of perceived ease of use, perceived benefits, and perceived risk of using QRIS among people in the city of Semarang.

Design/methodology/approach: The population used is all users of the QRIS payment system, the sample size is 200 respondents, with the sampling technique using purposive sampling. The data source used is primary data, with data collection methods using questionnaire. The data analysis technique used is Partial Least Square.

Findings: The results of hypothesis testing showed that perceived ease of use had a positive and significant effect on the intention to use QRIS, perceived benefits had a positive and significant effect on the intention to use QRIS, and perceived risk had a negative and significant effect on the intention to use QRIS.

Research limitations/implications: The limitations of the study are the sample and the intention factor used. Future research needs to expand its scope and explore other factors such as the availability of IT infrastructure and the quality of service from vendors.

Originality/value: The study contributes to TAM theory by focusing on the using of the e-money payment system by Quick Response Code Indonesian Standard (QRIS). Other contribution is test and compare the covariance based structural equation modeling (CB-SEM) software i.e. SmartPLS v. 4, AMOS v. 25, and Lisrel Lisrel v12.4.4.

Keywords: Perceived ease of use, Perceived of benefit, Perceived of risk, Intention to use, CB-SEM

I. Introduction

The use of technology is an important element that cannot be separated from human life. Increasingly advanced technology will shift the role of cash to non-cash forms in electronic payment systems that are more effective and efficient. This has an impact on the emergence of new innovations in electronic

payment transactions via e-wallets or digital wallets. The existence of electronic payments with digital wallets will make it easier for the public to make payment transactions at any time (Chandra & Kohardinata, 2021).

Digital wallets that exist today make payments via Quick Response Code (QR Code) more popular, especially in the business world. QR Code is a development of technology that is used as a payment technique in digital wallets. Various merchants are starting to provide digital payment services via QR Code. One standard QR is used, product and service providers (merchants) do not have to have a different

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[†] Corresponding author: Andalan Tri Ratnawati

E-mail: andalan-tri-ratnawati@untagsmg.ac.id

type of QR Code. Problems occur when more and more types of digital wallet applications appear, because merchants must provide several QR codes, according to the number of digital wallet applications available to scan. The type of QR code that is being increasingly provided by sellers or service providers (merchants) results in consumers having difficulty scanning QR codes, considering that each QR code provided by each application has different terms and conditions (Silaen et al., 2021).

As the holder of the National Payment Gateway (GPN) regulation, this requires Bank Indonesia (BI) to have a system that can combine various instruments and payment channels nationally. Bank Indonesia has created a more integrated system by establishing a QR Code payment standard in facilitating digital payment transactions in Indonesia called the Quick Response Indonesia Standard (QRIS). QRIS is a QR code created by regulators together with the Indonesian Payment System Association (ASPI), with the aim of streamlining digital payment systems safely, supporting government productivity, and accelerating digital financial inclusion. QRIS offers a variety of benefits for both merchants and consumers, so that with the many advantages available, it will attract consumers to make QRIS a payment method when making purchases (Pontoh et al., 2022).

The Technology Acceptance Model (TAM) is widely accepted as a theoretical framework that explains users' acceptance and use of technology (Davis, 1985, 1989). TAM has been applied in various contexts to explain behavior toward new digital products and service technologies (Musa et al., 2024). Perceived usefulness was found to be a more significant factor than ease of use in technology acceptance (Noor, 2024). In the field of digital payments, TAM is used to investigate the determining factors for the adoption of financial technology (Dianty & Faturohman, 2023), such as Fintech among small and medium enterprises (Krah et al., 2024), adoption of mobile payment technology (Natakusumah et al., 2023), crypto currency (Islam et al., 2023), acceptance of mobile money transaction services (Kelly & Palaniappan, 2023), blockchain (Kumari

& Devi, 2023), and e-swallow (Tian et al., 2023).

Several studies have explored the factors that influence consumers' interest in adopting QR Code payments. Research by Ozkaya et al. (2015) shows that purpose of use, practical use, awareness, perceived convenience, and current knowledge have a positive relationship with the level of QR Code use. This is reinforced by a study by Rotsios et al. (2022) which concluded that knowledge, understanding, and self-confidence influence consumer behavior using QR Codes. The study by Nandru et al. (2023) confirmed that performance expectations, effort expectations, facilitating conditions, personal innovation, and digital financial literacy are the determining factors for the use of QR Code payments in India. Likewise Liébana-Cabanillas et al. (2015) concluded that attitude, innovativeness, and subjective norms have a positive relationship with the intention to use QR code payment technology in Spain. Tran et al. (2024) found that embedded traceability information resulted in consumers' willingness to pay using a QR Code for food products. Study by Imani and Anggono (2020) proves that habits, facilitating conditions, hedonic motivation, and performance expectancy significantly influence the intention to use QR Codes among the Z Generation in Bandung, Indonesia. Furthermore, (Kosim & Legowo, 2021) prove that business expectations, social influence, perceived trust, perceived risk, perceived regulatory support, promotional benefits, performance expectations, age, and effort expectations have a significant impact on the intention to use QR Codes among corporate customers in Jakarta, Indonesia.

Intention to use as the level of how strong a person's desire or drive is to carry out certain behaviors (Kurniawan et al., 2022). Intention in using QRIS is the level of how strong a customer's desire is to use QRIS continuously both now and in the future because he feels compelled and performs a behavior to achieve certain goals. Someone's intention in information technology, especially in electronic payments arises because of more attention to the object, where attention will lead to a desire to know, learn, and prove further. There are several factors

that can influence intention in using technology, including perceived ease of use, perceived benefits, and perceived risks (Chandra & Kohardinata, 2021; Reepu & Arora, 2022).

Perceived ease of use is a situation where a person believes that using a certain system does not require effort or in other words the technology can be easily understood and used by users (Ismail, 2016). Ease of use of information technology can be one of the factors that a person pays attention to when utilizing payment information technology, because ease of use will allow users to continue to use it continuously. This means that if someone has confidence that the technology is easy to understand and use, they will be more interested in using the technology (Pontoh et al., 2022).

The next factor that can affect the intention to use information technology is the perceived benefits. Perceived benefits as a belief in expediency, namely at the level of users (users) believe that using technology or a system will improve their performance at work. The increasing benefits of technology will affect someone who is interested in using it. This shows the high benefits that can be felt by someone when using technology, the higher a person's intention to use it (Chandra & Kohardinata, 2021).

The third factor that can affect the intention to use is perceived risk, which is a thought about the risks that a person may experience due to uncertainty and other negative consequences that can be accepted for using a product or service (Reepu & Arora, 2022). Perceived risk has a strong role in reducing consumer interest in taking part in electronic transactions so that risk perception may have a negative influence on consumer interest in using information technology. This shows that the high risk of using technology from electronic payments will reduce consumer interest in using it (Cunrawasih & Fasyni, 2023).

The study of the effect of perceived ease of use, perceived benefits, and perceived risk on the intention to use QRIS in the research will be carried out among people in the city of Semarang. Semarang City was chosen as the object of research for the reason that Semarang City is currently experiencing a fairly rapid

development of information technology, especially regarding electronic payments via QRIS. It is hoped that people who are currently faced with developing payment technology will know more about payment methods through QRIS, besides that the choice of Semarang City is also expected to facilitate the research process considering the location of the researcher is also in Semarang City. Therefore, choosing the people of Semarang City will make it easier for researchers to get the number of samples that have been determined or needed in research, meaning that using samples will provide convenience in conducting research.

Research on the effect of perceived ease of use, perceived benefits, and perceived risk on intention to use has also been carried out by several previous researchers. These studies found perceptions Ease of use has a significant positive effect on interest in using QR Code (Kurniawan et al., 2022; Pontoh et al., 2022). Another studies found that perceived ease of use has a positive but not significant effect on intention to use (Hapsoro & Kismiatun, 2022; Silaen et al., 2021). Research by Narahdita et al. (2020), Sari (2022), and Kurniawan et al. (2022) found that perceived benefits have a positive and significant effect on intention to use. Research by Silaen et al. (2021) found that perceived benefits have a positive but not significant effect on intention to use. Research conducted by Sari (2022), and Kurniawan et al. (2022) who found that perceived risk had a negative and significant effect on intention to use. Research by Pontoh et al. (2022) found that perceived risk has a negative but not significant effect on intention to use. Based on the inconsistency of previous results, the first contribution of this study is to reexamine TAM on the use of QR Codes as payment.

The second contribution, this research contributes to the field of inferential statistics, through CB-SEM testing. Structural Equation Modeling (SEM), consisting of CB-SEM and PLS-SEM, is usually used to explain several statistical relationships simultaneously through visualization and model validation (Dash & Paul, 2021). Some scholars use the PLS-SEM approach

to TAM, even though they use the reflective measurement model (Al-Adwan et al., 2024; Mushi, 2024). Researchers chose PLS-SEM over CB-SEM because it was considered to have more advantages than high efficiency in parameter estimation (Wibowo et al., 2024). However, several scholars stated that this kind of composite or formative measurement model approach allows errors in the estimation of latent factor models (Afthanorhan et al., 2020; Aguirre-Urreta et al., 2024). In fact, for composite-based models, PLS-SEM is worth considering, while for factor-based models CB-SEM must be used (Dash & Paul, 2021). One of the CB-SEM software which being developed is SmartPLS 4.0.9 (Ringle et al., 2022; Sarstedt & Cheah, 2019). Although several studies have compared the use of CB-SEM with PLS-SEM with SmartPLS (Afthanorhan, 2013; El Maalmi et al., 2022; Nam et al., 2018; Purwanto et al., 2020; Rožman et al., 2020). However, none have compared CB-SEM Amos with CB-SEM SmartPLS. Therefore, in this study, SmartPLS calculation results were compared with the well-established CB-SEM i.e. IBM SPSS Amos version 26 (Arbuckle, 2019) and Lisrel version 12.4.4 (Jöreskog et al., 2016).

Based on the descriptions, this research aims to analyze: first, the influence of perceived ease of use, benefits, and risks on the intention to use the Indonesian Standard Quick Response Code (a case study of the community in Semarang City). The second aim is to compare the two CB-SEM software based on various parameters and to provide solutions for research based on factor measurements.

II. Literature Reviews

A. Perceived Ease of Use on Intention Using QRIS

Perceived ease of use indicates how far a person feels confident when using the information technology does not require great effort, and the technology can be easily understood and used and free from problems.

Perceived ease of use in this case is connoted with the desire of the bank for various reasons to provide many conveniences in using QRIS as a digital payment instrument, such as being able to relate to mobile commerce technology and not requiring a large effort, as well as easy to understand and more efficient use. If someone has confidence in an information technology, feels that the technology is easy to use, then that person will use it.

The results of the research by Ismail (2016) stated that the higher the user's perceived ease of use, the higher the intention to use smartphone. The results of Kurniawan et al. (2022) also show that with a high perceived ease of use a person will have a positive influence on the intention to use e-money. This is reinforced by the research results of (Huang, 2013), Wilson et al. (2021), Kurniawan et al. (2022), Pontoh et al. (2022), and Hikmah et al. (2023) which state that perceived ease of use has a positive effect on intention to use. Based on this description, the hypothesis proposed is:

H1: perceived ease of use has a positive and significant effect on the intention to use QRIS

B. Effect of Perceived Benefit on Intention to Use QRIS

Perceived benefit is a measure of the extent to which a person feels confident and believes that a system or information technology will provide benefits and advantages in improving performance, productivity and effectiveness at work. Perceived benefits in this case are connoted with the bank's desire for various reasons to provide many advantages in using QRIS as a digital payment method, such as more effective and efficient transactions, errors in transactions can be minimized, and there are no difficulties in conversion. Therefore, the higher the benefits that can be felt by someone when using technology, the higher the intention to use it.

The results of the research by Kurniawan et al. (2022) stated that with a higher perception of benefits

from a person, it will have a positive impact on increasing the intention to use e-money. The results of research conducted by Sari (2022) state that the higher the perceived benefits shown by someone, the higher the intention to use e-business. This result is reinforced by the research results of Rachbini (2018), Narahdita et al. (2020), and Chandra and Kohardinata (2021) which stated that perceived benefit has a significant positive effect on intention to use. Based on this description, the hypothesis proposed is:

H2: perceived benefits have a positive and significant effect on the intention to use QRIS.

C. Effect of Perceived Risk on Intentions to Use QRIS

Perceived risk shows a person's views or thoughts on the negative potential caused by uncertainty or unwanted consequences when carrying out online activities or transactions. Perceived risk has a strong role in reducing consumer interest in taking part in electronic transactions so that it is possible that risk perception will have a negative effect on consumer intentions in using information technology products. Perceived risk arises as a form of uncertainty in certain circumstances that a person will consider to make a decision between yes and no. Therefore, the higher the level of perceived risk in using QRIS, the lower the intention to use it.

The results of the research by Reepu and Arora (2022) which state that the higher the perceived risk that is felt by someone, will have a negative impact on the intention to use online banking. The results of research by Sari (2022) also state that with a higher risk perception in using online transactions, it will reduce the customer's intention to use. This is reinforced by the results of research by Song and Liu (2021), Silaen et al. (2021), Yang et al. (2021) Kurniawan et al. (2022), and Cunrawasih and Fasyni (2023) which state that perceptions of risk significant negative effect on intention to use. Based on this description, the hypothesis proposed is:

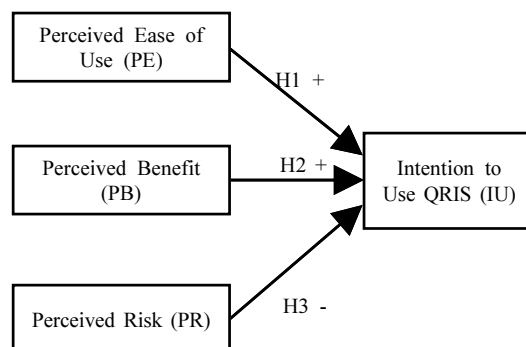


Figure 1. Research conceptual framework

H3: perceived risk has a negative and significant effect on the intention to use QRIS.

Figure 1 illustrates the relationship between variables that model development was based on the theory of Technology Acceptance Model (TAM).

III. Method

A. Samples

The population used in this study is people who make payments via QRIS in the city of Semarang. Considering that the population size is not known with certainty, then the determination of the number of samples that will use G*Power 3 statistical analysis (Faul et al., 2007), obtained a sample of 200 respondents. The sampling technique used in this study is purposive sampling, which is a sampling technique based on chance, that is, anyone who live in Semarang city and familiar with QRIS.

B. Measurement

Perceived ease of use is a feeling of confidence and trust that arises from a person regarding the extent to which using information technology does not require great effort, and the technology can be easily understood and used and free from problems.

The variable indicators consist of: technology that is easy to obtain, technology that is easy to learn, technology that is easy to understand, technology that is easy to operate (Pontoh et. al, 2022; Kurniawan et. al, 2022). Perceived benefit is a measure of the extent to which a person feels confident and believes that a system or information technology or an available application will provide benefits and advantages in improving performance, productivity and effectiveness at work. This variable is measured by: speeding up transactions, increasing efficiency during transactions, increasing effectiveness during transactions, providing a sense of security when making transactions (Sari, 2022; Kurniawan et. al, 2022). Perception of risk is defined as a person's view or thought of the negative potential caused by uncertainty or unwanted consequences that can become a barrier for someone to carry out activities or transactions online. The indicators are: the presence of certain risks, disturbances that cause losses, the level of security that is not guaranteed, thoughts about risk (Kurniawan et.al, 2022; Pontoh et. al , 2022).

The intention to use QRIS is the level of how strong a customer's desire is to use QRIS continuously both now and in the future because he feels compelled and performs a behavior to achieve certain goals. The indicators include: interest in using, interest in long-term use, transactional interest, interest based on preferential, intensity of use (Kurniawan et.al, 2022; Pontoh et.al , 2022). Methods of data collection using a questionnaire with Likert five scale, with the terms 1 indicating strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 indicating strongly agree.

C. Non-Response Bias Testing

This non-response bias test was conducted by comparing respondents who returned the questionnaire before the return deadline with those who did not return the questionnaire on time. Respondents who answered were represented by questionnaires that arrived earlier (within the specified time limit), while those who did not answer were by questionnaires

that arrived in the last period (after the deadline for returning the questionnaire). The t-test showed insignificant results ($p > 0.05$), indicating no significant difference between the two groups. Therefore it can be stated that the research data is free from this bias.

D. Data Analysis

This study uses the SPSS software package was used to analyze descriptive and inferential statistic. Inferential data analysis used Covariance Based Structural Equation Model (CB-SEM) with the SmartPLS version 4.0.9, than compare with IBM SPSS Amos and Lisrel. The validity test can be seen from the loading factor value for each construct indicator. The criteria for passing the validity test is the loading factor value, if the value is between 0.6-0.7. Discriminant validity test will also be carried out by looking at the Fornell-Larcker Criterion, Cross Loadings, and Heterotrait-Monotrait Ratio (HTMT). Furthermore, to measure the reliability of a construct with a reflective indicator can be done by looking at the value of Cronbach's alpha, composite reliability, and Average Variant Extracted (AVE). The basis used for assessing construct reliability is the value of the Cronbach's alpha and composite reliability must be greater than 0.7, and the AVE value must be greater than 0.5. Hypothesis testing in this study was used to determine the partial effect of the variable's perceived ease of use, perceived benefits, and perceived risk on the intention to use QRIS. Hypothesis testing is done by comparing the calculated t value with the t table. if the t-calculated value is > 1.96 and the p-value is < 0.05 . then the result is to accept the alternative hypothesis. Finally, an Independent-Sample t-test was carried out to compare the average values produced by SmartPLS with Amos/Lisrel as CB-SEM Analysis.

IV. Results

This survey research was conducted from May 2023 to April 2024 by distributing 220 questionnaires to the response targets. Field data collection is carried out with online assisted by Google Forms. Furthermore, as many as 200 answers were used for research. This number is stated to be sufficient in accordance with the CB-SEM (Hair et al., 2010).

A. Respondent Descriptive

This study uses frequency and percentage statistics to describe demographic profiles and the results are summarized in Table 1. Based on the table, more respondents were female with value of 124 (62%) than male value of 76 (46%), aged majority between 26-35 years with value 120 (60%). Based on this data, information can be obtained that the majority of respondents are the millennial generation.

B. Measurement Result

Test the validity of the convergent indicators carried out using SmartPLS, Amos, and Lisrel. Table 2 shows that from the outer loading results the value of each variable indicator is greater than 0.70. From these results it can be concluded that each indicator

used to measure perceived ease of use, perceived benefits, perceived risks, and intention to use QRIS can be said to be valid. This means that each indicator is able to measure the research variable.

The discriminant validity test can be seen in the Table 3. The calculation results show that the root value of AVE on the diagonal is higher than the correlation between the construct and other constructs below it. Other results show that the HTMT value in above the diagonal does not exceed 0.9. This finding indicates that the evaluation of the validity of the indicators used is fulfilled and that the indicators are truly unique in measuring their construct, not other constructs.

Furthermore, the results in Table 4 show Cronbach's alpha and composite reliability values for each variable: perceived ease of use, perceived benefits, perceived risk, and intention to use QRIS are greater than 0.70, and the Average Variant Extracted (AVE) value for perceived ease of use, perceived benefits, perceived risks, and intention to use QRIS is greater than 0.50. These results can be concluded that each research variable's construct can be reliable and has fulfilled the requirements for research.

C. Structural Model Analysis

The second stage of PLS-SEM testing is testing the structural model which consists of the path coefficient for hypothesis testing. The structural

Table 1. Respondent's profile

Demographic	Characteristics	Frequency	Percentage
Gender	Man	76	38%
	Woman	124	62%
Age	Under 21 years	6	3%
	21 years to 25 years	30	15%
	26 years to 30 years	38	19%
	31 years to 35 years	82	41%
	36 years to 40 years	20	10%
	41 years to 45 years	14	7%
	46 years or older	10	5%

Table 2. Validity testing

Construct	Code	Outer Loading		
		SmartPLS	AMOS	Lisrel
Perceived Ease of Use	PE1	0.776	0.836	0.836
	PE2	0.809	0.897	0.897
	PE3	0.795	0.849	0.849
	PE4	0.831	0.831	0.831
Perceived Benefit	PB1	0.908	0.872	0.872
	PB2	0.881	0.849	0.849
	PB3	0.899	0.878	0.878
	PB4	0.876	0.835	0.835
	PB5	0.905	0.897	0.897
Perceived Risk	PR1	0.891	0.685	0.685
	PR2	0.909	0.729	0.729
	PR3	0.902	0.738	0.738
	PR4	0.865	0.754	0.754
Intention to Use QRIS	IU1	0.784	0.695	0.695
	IU2	0.834	0.777	0.777
	IU3	0.858	0.825	0.825
	IU4	0.863	0.842	0.842
	IU5	0.852	0.829	0.829

Table 3. Fornell-Larcker criterion and HTMT discriminant validity

Variables	PE	PB	PR	IU
Perceived Ease of Use (PE)	0.787	0.740	0.389	0.723
Perceived Benefit (PB)	0.604	0.771	0.598	0.795
Perceived Risk (PR)	-0.325	-0.499	0.785	0.724
Intention to Use QRIS (IU)	0.602	0.679	-0.606	0.791

Table 4. Reliability testing

Construct	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Perceived Ease of Use	0.795	0.867	0.620
Perceived Benefit	0.829	0.879	0.594
Perceived Risk	0.793	0.865	0.616
Intention to Use QRIS	0.849	0.892	0.625

model (inner model) produced in this study can be seen in the Figure 2 for Graphically of SmartPLS, Figure 3 for Amos, and Figure 4 for Lisrel. Its shows that perceived ease of use and perceived benefit have a positive effect on the intention to use QRIS, while a negative influence is found on perceived risk.

Table 5 shows that the results of the analysis show that the R-Square value are 0.313 of SmartPLS and 0.352 for Amos/Lisrel. These results can be interpreted that perceived ease of use, perceived benefits. and

perceived risk can explain the variation in the intention to use the QRIS with moderate category (Chin, 1998). The variation in the intention to use variable is explained by other variables not examined or not included in models, such as trust, level of understanding, service features, subjective norms, security, promotion, and others.

The goodness of fit test uses 10 criteria as shown in Table 6. The overall fit index shows that for both chi-square and p-value criteria, all software does not

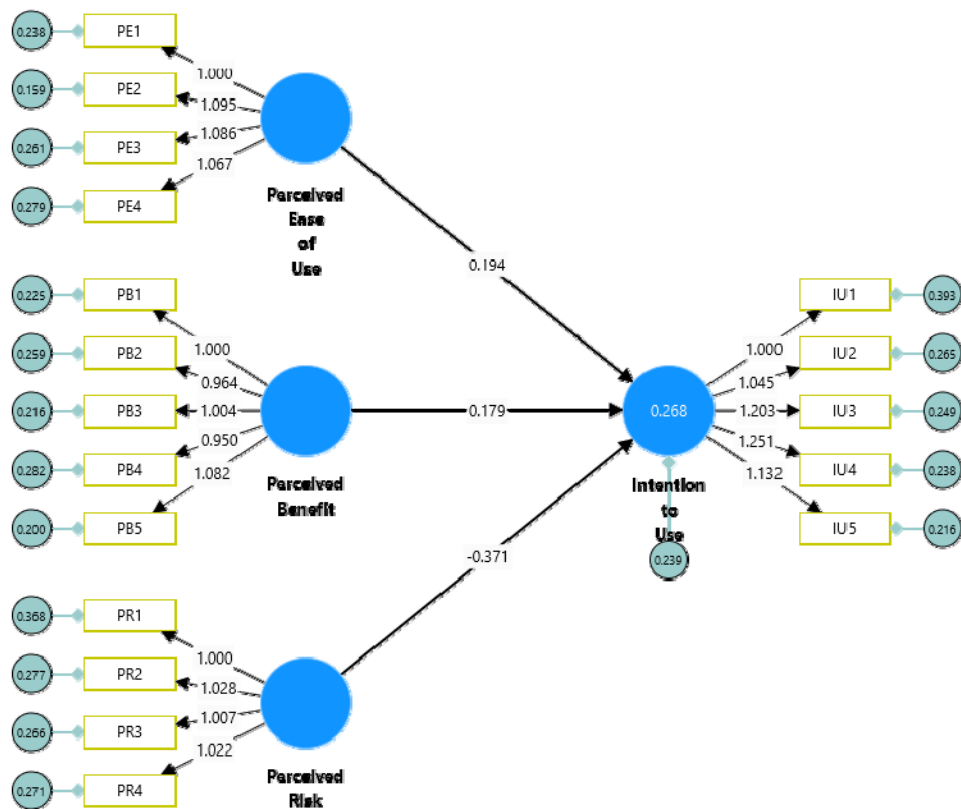


Figure 2. The structural model result of SmartPLS version 4.0.9

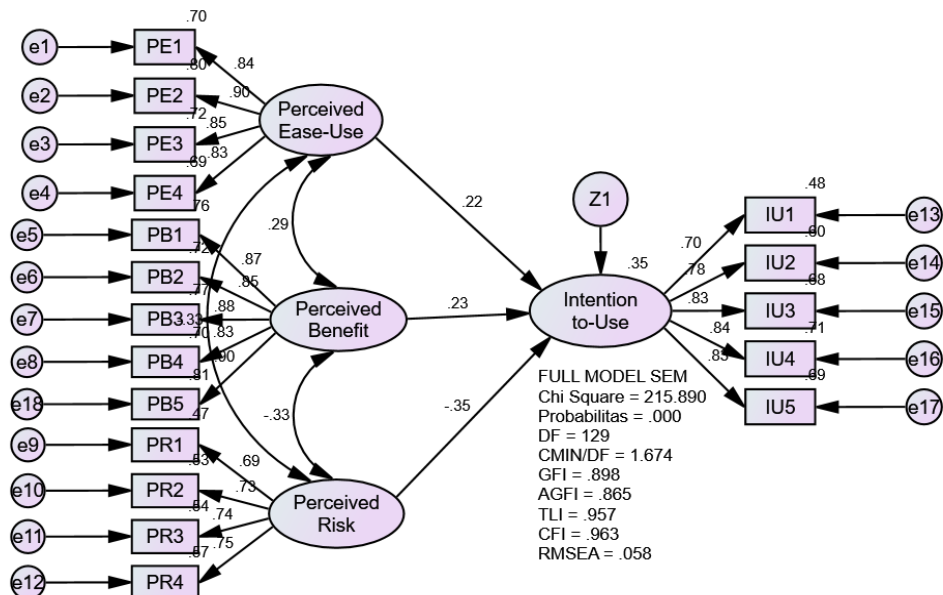
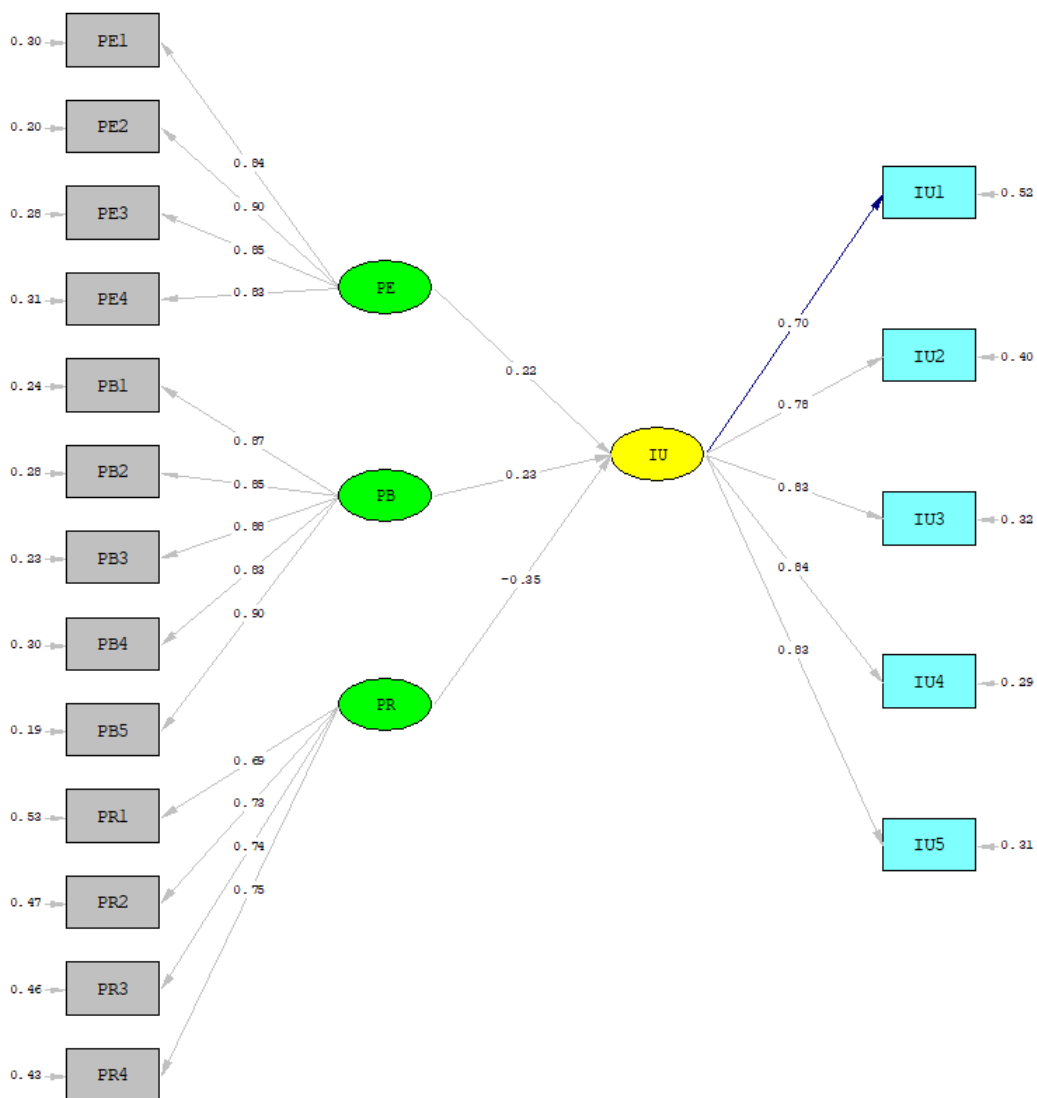


Figure 3. The structural model result of IBM SPSS AMOS version 26



Chi-Square=215.89, df=129, P-value=0.00000, RMSEA=0.058

Figure 4. The structural model result of Lisrel version 12.4.4

meet because the $p\text{-value} < 0.05$. Other results show the suitability of the model with chi-square/degrees of freedom (X^2/df) < 2.0 , the Root Mean Square Error of Approximation (RMSEA) < 0.08 , Goodness of fit (GFI) > 0.8 , adjusted goodness of fit (AGFI) > 0.8 , Parsimonious Goodness of Fit index (PGFI) > 0.5 , Standardized Root Mean Squared Residual (SRMR) $<$

0.10 (exclude SmartPLS), and normed fit index (NFI) > 0.9 , and comparative fit index (CFI) > 0.9 . These values meet the recommended thresholds and thus represent model fit as recommended by (Hair et al., 2014).

Hypothesis testing is done by comparing the calculated t value with the t -table. Furthermore, the

Table 7 show that the t-statistik calculated value are above 1.96 and the p-value are less than 0.05 or all software. It can be concluded that the hypothesis 1 (perceived ease of use positive influence on intention to use qris, hypothesis 2 (perceived benefit positive influence intention to use QRIS), and hipothesis 3 (perceived risk positive influence intention to Use QRIS) are accepted.

Based on the independent sample test calculation in Table 8, the p-value of the t-test statistic in is $0.872 > 0.05$, meaning there is no significant difference between the average SmartPLS calculation results with Amos and Lisrel for CB-SEM analysis. The comparison results show that the mean difference also shows a

small value so it can be stated that the SmartPLS calculation results are no different from AMOS or Lisrel.

Table 8. Independent sample t-test

Parameter		Value
t-value		0.162
DF		71.580
Sig. (2-tailed)		0.872
Mean Difference		1.4351579
Std. Error Difference		8.8714639
95% Confidence Interval of the Difference	Lower	-16.2515533
	Upper	19.1218691

Table 5. R-Square

Construct	R-Square		
	SmartPLS	AMOS	Lisrel
Intention to Use QRIS	0.313	0.352	0.352

Table 6. Model fit summary

Criteria	SmartPLS	AMOS	Lisrel
Chi-square	260.209	215.890	215.890
P value	0.000	0.000	0.000
ChiSqr/df	1.971	1.674	1.674
RMSEA	0.070	0.058	0.058
GFI	0.879	0.898	0.898
AGFI	0.843	0.865	0.865
PGFI	0.678	0.678	0.678
SRMR	0.147	0.036	0.046
NFI	0.898	0.915	0.915
CFI	0.946	0.963	0.963

Table 7. Path coefficient

Effect	Estimate			T.Statistic			P-Value		
	SmartPLS	AMOS	Lisrel	SmartPLS	AMOS	Lisrel	SmartPLS	AMOS	Lisrel
H1: Perceived Ease of Use on Intention to Use QRIS	0.235	0.218	0.218	3.545	2.890	2.890	0.000	0.004	0.004
H2: Perceived Benefit on Intention to Use QRIS	0.241	0.228	0.228	3.749	3.307	3.307	0.000	0.002	0.002
H3: Perceived Risk on Intention to Use QRIS	-0.296	-0.348	-0.348	3.941	-3.977	-3.977	0.000	0.000	0.000

V. Discussion

A. Effect of Perceived Ease of Use on Intention to Use QRIS

The results of the data analysis performed show that perceived ease of use has a positive and significant effect on the intention to use QRIS. These results mean that with consumer perceptions regarding the use of QRIS which is easier for everyone to understand, learn, and also operate, the intention to use QRIS in Semarang City will be even higher. A person's perceived ease of using QRIS can be a factor that plays an important role in increasing a person's intention to use the QRIS payment system in Semarang City because convenience will make QRIS users more effective and efficient in carrying out their payment activities. This convenience provides a perspective that QRIS is a payment product that in operation requires a little effort that is tailored to the needs of its users. This is also by the TAM (Technology Acceptance Model) theory which states that a person's acceptance of a technology system will affect the intention to use the technology. This ease of use can be used as information for other people to use the QRIS payment system.

These results can also show that the perceived ease of use is getting better as measured by indicators of easy techniques to get, easy technology to learn, easy to understand technology, and easy to operate technology can be a consideration for assessing the level of perceived ease of using the QRIS payment system. The results of the descriptive analysis showed that most of the respondents agreed with the statements submitted. This means that the QRIS payment system is very easy for everyone or every user to use so it can have an impact on increasing someone's intention in Semarang City to use QRIS. These results have supported the results of research by Ismail (2016), Pontoh et al. (2022), and Kurniawan et al. (2022) which states that perceived ease of use has a positive effect on intention to use.

Based on the results of statistical software for CB-SEM, it shows that the results are similar for

the two statistical software, namely Amos and Lisrel, while SmartPLS shows results that are not much different. However, SmartPLS still produces quite a large difference in the SRMR model fit criteria while the other criteria, and others are relatively the same. These results are in line with J. F. J. Hair et al. (2014) that the CB-SEM method is highly dependent on psychometric measurements, requires a large sample of more than 100, meets normality assumptions, and is built as theory-based confirmation (in this study is TAM). CB-SEM is believed to provide more statistically accurate results, therefore the use of PLS-SEM becomes irrelevant if these assumptions are met (Hair et al., 2014; Kline, 2015).

B. Effect of Perceived Benefits on Intentions to Use QRIS

Based on the results of the data analysis conducted, it shows that the second hypothesis can be accepted, meaning that the perceived benefits have a positive and significant effect on the intention to use QRIS. This can be seen from the calculated *t* value which is greater than *t* table and the significant value is less than 0.05. These results mean that with QRIS users' perceptions of the benefits provided by QRIS which can increasingly help performance, save time, increase productivity, and increase effectiveness, the intention to use QRIS in Semarang City will be even higher. The significant results show that the perceived benefits felt by someone when using the QRIS payment system will be one of the factors that play an important role in increasing the intention to use QRIS in the city of Semarang. This indicates that the perception of the benefits that will be felt by users when they benefit from using QRIS, by increasing the performance of these students. Perceived usefulness indicates the extent to which the student believes that using QRIS will improve the performance of each activity or activities he or she does. This is in accordance with the TAM (Technology Acceptance Model) theory which states that a person's acceptance of a technology system will affect the intention to

use the technology. The benefits felt by someone will certainly be a source of information for other people who will use QRIS.

These results also show a better perception of benefits as measured by indicators of speeding up transactions. facilitating transactions. increasing efficiency during transactions. increasing effectiveness during transactions. and providing a sense of security when making transactions. The results of the descriptive analysis show that most of the respondents agreed to the statements submitted. This means that the perception that QRIS users have of the benefits they receive is high. so that it has an impact on increasing the intention to use QRIS as a payment system. These results have supported the research results of Sari (2022), Rachbini (2018), Narahdita (2020), Chandra & Kohardinata (2021), and Kurniawan et al. (2022) which state that perceived benefits have a significant positive effect on intention to use.

C. Effect of Perceived Risk on Intention to Use QRIS

Based on the results of the data analysis conducted, shows that the third hypothesis can be accepted. It is meaning that perceived risk has a negative and significant effect on the intention to use QRIS. This can be seen from the calculated t value which is greater than the t table and the significant value is less than 0.05. These results mean that with the QRIS user's perception of the smaller the risk of disruption and the lower the disturbance of security when using QRIS. the intention to use QRIS in Semarang City will be even higher. These results indicate that the perceived risk experienced by a person when using the QRIS payment system will be one of the factors that play an important role in increasing the intention to use QRIS for the payment system in Semarang City. The negative value of the effect of perceived risk indicates that with a low risk experienced by someone in using QRIS. then someone intends to use QRIS. This indicates that the higher the uncertainty and unwanted consequences that arise,

the higher the perception of risk. If the perceived risk is low, it can attract students' intention to use QRIS. This also applies vice versa, if the perceived risk that one will receive is high in using QRIS, then a person generally tends to avoid it. Therefore, the perception of risk can influence the customer's intention to use QRIS.

These results also show that the lower the perception of risk as measured by indicators such as the existence of certain risks. disturbances that cause losses. the level of security that is not guaranteed, and thoughts about risk can be considered to assess the level of risk that will be felt by a QRIS user. The results of the descriptive analysis show that most of the respondents disagreed or strongly disagreed with the statements made. This shows that the risk experienced by users when using the payment system through QRIS is very low so it has a positive influence on the intention to use QRIS in Semarang City. These results have supported the research of Chuling & Liu (2021), Silaen et al. (2021), Reepu & Arora (2022), (2022), and Cunrawasih & Fasyni (2023) which states that perceived risk has a significant negative effect on the intention to use.

VI. Conclusions

This study contributes academically to developing a model of intention to use QRIS using the Technology Acceptance Model (TAM). Based on the results of the analysis in the previous chapter regarding the influence of perceived ease of use, perceived benefits, and perceived risks on the intention to use QRIS among people in the city of Semarang, the conclusions drawn are as follows: Consumer perceptions regarding the use of QRIS which are easier for everyone to understand, learn, and also operate, the intention to use QRIS in Semarang City will be higher. QRIS user perceptions of the benefits provided by QRIS can increasingly help performance, save time, increase productivity, and increase effectiveness, so the intention

to use QRIS in Semarang City will be even higher. QRIS users' perception of the smaller risk of disruption and the lower the disturbance of security when using QRIS, the higher the intention to use QRIS in Semarang City.

Secondly, CB-SEM with SmartPLS software provide more statistically accurate results like Amos and Lisrel. SmartPLS provides CB-SEM results calculated using other leading software i.e. SPSS Amos and Lisrel for confirmatory and structural testing. SmartPLS supports graphical modeling and estimation of CB-SEM models using a maximum likelihood (ML) approach. The results such as hypothesis testing and fit model are consistent with those.

VII. Implication

Based on the conclusions, the suggestions given by the researcher are as follows : first, QRIS service providers must be able to improve the perception of ease of use, especially about understanding and ease of operation because they still receive disapproving responses, so it needs to be improved. For example, by providing an information link on the QRIS service in each internet banking, it simplifies the QRIS verification process, so that users more easily understand and also operate QRIS when paying. Second, QRIS service providers must be able to increase the perceived benefits of using QRIS, especially regarding efficiency and effectiveness in using QRIS. This can be done by providing a direct QRIS button, and each merchant ensures a smooth payment process via QRIS so that it will be fast in providing payment transaction services. Finally, QRIS service providers must be able to minimize perceived risks in using QRIS. This can be done by providing security guarantees for consumers who make a payment system through QRIS, daring to guarantee faster refunds if an error occurs during payment, thus providing a sense of comfort for QRIS users.

Furthermore, the scholar can use SmartPLS as

a clear alternative to SPSS Amos and Lisrel. The requirements for assuming normality of distribution, sample size above 100, and reflective indicators remain requirements so that the CB-SEM goal of testing theory can be achieved.

VIII. Limitations and Recommendations

Based on the empirical studies that have been carried out, several research limitations can be used as a basis for further research. A limitation of the study is that the sample used in this research is limited to one area only. Future research needs to expand its scope to obtain more comprehensive results. Another limitation is the intention factor used in TAM theory. Therefore, future studies are recommended to explore other factors such as the availability of IT infrastructure and the quality of service from vendors.

Conflicts of Interest

The author declares no conflict of interest.

Author Contributions

Andalan Tri Ratnawati: Conceptualisation, Methodology, Analysis, Original draft preparation, Review and editing, Supervision.

Ahmad Malik: Conceptualisation, Investigation, Analysis, Original draft preparation, Visualization, Project administration.

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