

The Influence of QRIS Service Costs on Technology Adoption and Micro, Small and Medium-sized Enterprises Performance

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Abstract: *This study aims to analyze the factors that can influence SMEs in adopting QRIS payment system technology and the influence of technology adoption on SMEs' performance. This study uses the UTAUT theory as a fundamental theory in knowing the factor factors of technology adoption in SMEs, which is expanded as a theoretical framework in which fee value is added as a construction of UTAUT. Using SME's performance variable as a dependent variable to determine the impact of adopting a QRIS pay system technology. The study uses a quantitative approach to analyze the adoption technology of QRIS and the performance of SMEs. The analytical tool used is SEM-PLS with SmartPLS as an application to explain the research model. One hundred four respondents were selected through probability sampling. The research results showed that the entire construction of the variables UTAUT (Performance expectancy, effort expected, social influence, facilitating condition) and fee value positively and significantly impacted the adoption of QRIS payment system technology. Moreover, adopting QRIS payment system technology positively and significantly impacts SME performance in Semarang City.*

Introduction

In Indonesia, the Micro, Small, and Medium-sized Enterprises (SMEs) Act is Act No. 20 of 2008. In the Act, an SME is classified as a micro, small, and medium-sized enterprise owned and managed by someone or owned by a small group of people with a certain amount of wealth and income. The continuation of SMEs will significantly impact the strengthening of the Indonesian economy. The potential of a strong national economic base is due to the number of SMEs, mainly SME enterprises. It is dominant and has a high labor absorption to reduce the unemployment rate and improve the incomes of the community (Tarigan et al., 2022).

Performance is the ability of a business to a previously set goal. The indicator used to measure performance is primary performance, which consists of a set of business processes with a definite objective, quantitative and qualitative measurements of results comparable to those objectives, and an analysis of the elements of performance (Tarigan et al., 2022). In a competitive and modern environment, SMEs must improve their market and financial performance (Abdat, 2020). SMEs have a more remarkable ability to adapt when compared to a company, as they have an advantage in a fast and flexible strategic decision-making process (Paul et al., 2017). According to research carried out by Kwabena et al., (2021) the adoption of payment technology positively impacts the performance of SMEs in Ghana. As a sector that plays an important role in the country's economy, SMEs are expected to continue

to innovate and adapt to technological advances to survive and contribute to the growth of the country's economy.

One form of digitalization of the business is the adoption of digital payments. The payment can be via internet banking, mobile banks, e-money, or e-wallet. Digital financial transactions in Indonesia also increased due to the presence of digital wallets. The Bank of Indonesia (BI) report shows that the value of electronic money transactions has grown 42.06 percent year-on-year to Rs360 trillion in the first three months of 2022. BI also estimates that the transaction value will grow 18.03 percent year-on-year by the end of 2022 (GoodStats, 2022). One way to receive payment from e-wallets, merchants, or SMEs is to provide QR codes from each e-wallet operator. The number of payment system service providers that use QR codes made the Indonesian government initiative to standardize the QR code by launching the Quick Response Code Indonesia Standard (QRIS) on August 17, 2019. QRIS was developed by the Indonesian Payment System (SPI) with Bank Indonesia. All payment system service organizers who will use QR payment codes are obliged to implement QRIS. The launch of QRIS is part of the SME digitization program designed by Bank Indonesia to support the development and progress of SMEs and financial inclusion (BI, 2022).

Despite development, the number of QRIS usage by SMEs has just reached 28.75 out of 65.4 million more SMEs in Indonesia (BI, 2022). That means there are still many SMEs that QRIS has not reached. However, not long ago, Bank Indonesia revised the QRIS payment rate for micro-traders. Now, a 0.3% tariff is imposed on transactions above Rs.100,000. This policy comes into effect as soon as 1 September 2023 to allow the industry to set up its system. Merchant Discount Rate (MDR) is a fee that a Payment Service Provider charges to a trader. This adjustment takes effect from 1 July 2023 (Indonesia Baik, 2023). There is a policy set by the Bank of Indonesia regarding MDR that is still new, and there is not much research on the influence of MDR on the adoption of QRIS. SMEs, which were previously not charged QRIS service fees, are now faced with new regulations from the Bank of Indonesia with the presence of the MDR rate. The new policy could have affected SMEs' decision to adopt QRIS services. This study uses the UTAUT theory to determine what affects the adoption of QRIS technology in SMEs.

The widespread use of QRIS by SME entrepreneurs in Semarang City is the reason for the author's decision; the level of QRIS use among SME entrepreneurs is very high compared to other cities in Central Java. Thus, interest in using QRIS in Semarang City is much higher than in other cities in Central Java. So, SMEs' interest in using QRIS in Central Java is not evenly distributed. The UTAUT model is used to predict the factors that influence the acceptance and adoption of a technology (Venkatesh et al., 2003). Based on the combination of the theory, four main constructions appear: performance expectancy, effort expectancy, social influence, and facilitating condition, plus the construction of fee value that influences the intervening variable of adopting QRIS technology with the variable dependency of SME performance.

Method

This research uses quantitative methods and SEM-PLS analysis tools to identify factors influencing the adoption of QRIS payment system technology. Simple random sampling is a technique for taking random samples, and each unit has the same chance of becoming a research sample. Febriani et al. (2023). The total population obtained is 104 respondents who have SMEs' in Semarang City. This research uses offline and online questionnaires to

disseminate information to UMKM perpetrators in Semarang City.

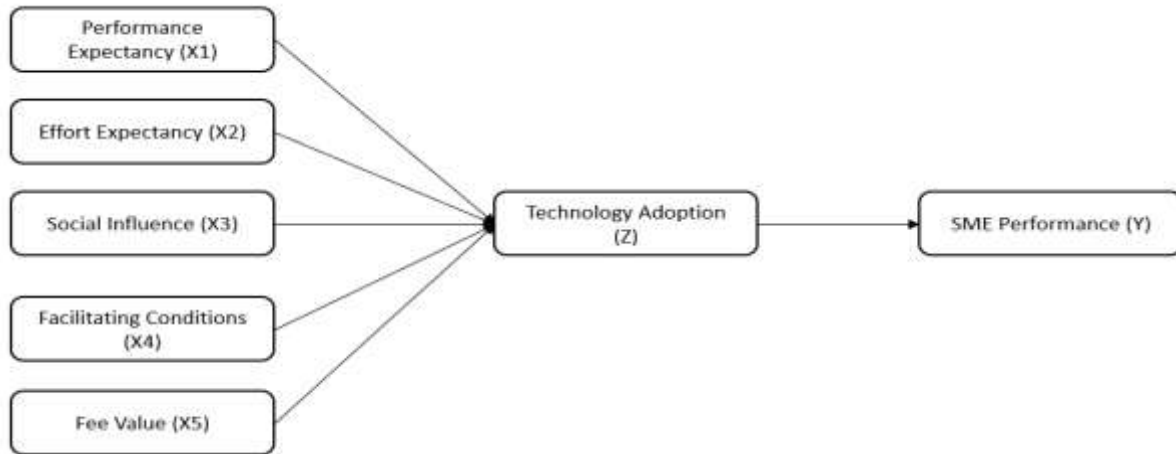


Figure 1. Thinking framework

Sampling in this study uses probability sampling, namely simple random sampling. Where simple random sampling is a technique in sampling that is carried out randomly and each unit has an equal opportunity to become a research sample (Sumargo, 2020). Scenario realism was assessed using a single-item, five-point Likert scale. Participants indicated their level of agreement with the statement "The scenario is realistic" (1 = strongly disagree; 5 = strongly agree). A summary of all scale items for the variables is presented in Table 1

Table 1. Scale Items

Variable	Items
Performance Expectancy (X1)	(PE1) QRIS is very useful in my transaction process. (PE2) QRIS helps my financial transactions be faster. (PE3) For me QRIS has better transaction capabilities than cash. (PE4) QRIS can improve the quality of my service in the financial transaction process. (PE5) The features on QRIS are in line with what I expected
Effort Expectancy (X2)	(EE1) The features on QRIS are easy for me to learn. (EE2) QRIS makes it easier for me to accept QR Code-based payments. (EE3) I think QRIS payments are easy to do. (EE4) I think the features in QRIS are easy to understand. (EE5) I easily mastered using the payment system on QRIS
Social Influence (X3)	(SI1) I recommend people to use QRIS. (SI2) The people closest to me stated that I should use QRIS. (SI3) Many people around me use QRIS. (SI4) People who are important to me think that I should use QRIS.
Facilitating Conditions (X4)	(FC1) I have the necessary resources to use QRIS. (FC2) I have a smartphone and internet to support using QRIS. (FC3) I have enough knowledge to use QRIS. (FC4) I can get help from other people (customer service, relatives and family) when I have difficulty using QRIS.
FEE VALUE (X5)	(FV1) In my opinion, the cost of using QRIS is in accordance with the quality of the service offered. (FV2) In my opinion, the cost of using QRIS is affordable.

Technology Adoption	(FV3) In my opinion, the fees for using QRIS that are currently charged are commensurate with the benefits I get.
	(FV4) I don't mind the fees for using QRIS that are currently being charged.
	(FV5) I can afford to pay the fees for using QRIS that are currently charged
	(AT1) I will use QRIS technology in the future.
	(PE2) I will continue to use QRIS technology for my SME.
SME Performance	(PE3) I carry out daily transactions using QRIS technology.
	(PE4) I will often use QRIS technology in my MSME financial transactions.
	(KU1) I feel that after using QRIS technology there has been an increase in time, cost and energy efficiency
	(KU2) I feel that after using QRIS technology there has been an increase in sales in my business.
	(KU3) I feel that after using QRIS technology there has been an increase in customer satisfaction in my business operations.
	(KU4) I feel that after using QRIS technology there has been an increase in my income.
	(KU5) I feel that after using QRIS technology there has been an increase in the number of company assets, both fixed and non-fixed assets.

Source: author (proceed)

Result and Discussion

Outer Model

The measurement model, or outer model, evaluates a model's reliability and validity. The convergent and discriminant validity tests are the two validity tests used to evaluate model validity. Meanwhile, the model's reliability can be evaluated using the composite reliability test or by looking at Cronbach's Alpha value.

Table 2. Outer Loadings

Variable	Items	Outer Loading	Average Variance Extracted (AVE)
Performance Expectancy	PE 1	0.852	0.689
	PE 2	0.830	
	PE 3	0.797	
	PE 4	0.869	
	PE 5	0.801	
Effort Expectancy	EE 1	0.823	0.735
	EE 2	0.813	
	EE 3	0.916	
	EE 4	0.885	
	EE 5	0.846	
Social Influence	SI 1	0.758	0.673
	SI 2	0.841	
	SI 3	0.806	
	SI 4	0.873	
Facilitating Condition	FC 1	0.809	0.623
	FC 2	0.719	
	FC 3	0.891	
	FC 4	0.726	

Variable	Items	Outer Loading	Average Variance Extracted (AVE)
Fee Value	FV 1	0.756	0.653
	FV 2	0.841	
	FV 3	0.899	
	FV 4	0.762	
	FV 5	0.773	
Technology Adoption	AT 1	0.889	0,701
	AT 2	0.879	
	AT 3	0.800	
	AT 4	0.774	
SME Performance	KU 1	0.828	0.673
	KU 2	0.863	
	KU 3	0.735	
	KU 4	0.830	
	KU 5	0.841	

Source: Primary Data, processed (2024)

Each research indicator shows a factor loading value above 0.70, which indicates that the factors are feasible or valid for further analysis. The Average Variance Extracted (AVE) value can also be used to evaluate convergent validity. All variables in this study have AVE values that exceed 0.5, which indicates that the constructs of this study have good convergent validity (Ghozali & Latan, 2015).

Table 3. Heterotrait-Monotrait Values

Variables	PE	EE	SI	FC	FV	AT	KU
PE							
EE	0.809						
SI	0.703	0.517					
FC	0.647	0.757	0.633				
FV	0.725	0.550	0.605	0.511			
AT	0.783	0.685	0.822	0.740	0.685		
KU	0.653	0.625	0.668	0.529	0.651	0.748	

Source: Primary Data, processed (2024)

The Heterotrait-Monotrait value for each variable relationship is > 0.90. Thus, it can be concluded that all variable constructs used in this research model have good discriminant validity.

Table 4. Output Cronbach's Alpha

Variable	Cronbach's Alpha Value	Information
Performance Expectancy	0.887	High Reliability
Effort Expectancy	0.909	Perfect Reliability
Social Influence	0.838	High Reliability
Facilitating Condition	0.797	High Reliability
Fee Value	0.866	High Reliability
Technology Adoption	0.856	High Reliability
SME Performance	0.879	High Reliability

Source: Primary Data, processed 2024

The output results of Cronbach's alpha values for the variables Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Condition (FC), Fee Value (FV), Technology Adoption (AT), and SMEs Performance (KU) have met Reliability test requirements with composite reliability value > 0.7 . Almost all variables have a high level of reliability; only the Effort Expectancy (EE) variable has a perfect level of reliability.

Inner Model

Table 4. R-Square Test Value

Variable	R-Squared Adjusted
Technology Adoption	0.714
SME Performance	0.437

Source: Primary Data, processed 2024

The Adjusted R-squared results for the Technology Adoption variable have a 0.714 (substantial) value. This shows that the adoption variable using the QRIS payment system is explained by the variables Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, and Fee Value of 71.4%. Then, the R-squared adjusted results for the SME performance variable have a 0.437 (moderate) value. This shows that the Technology Adoption variable explains the Performance variable using the QRIS payment system at 43.7%.

Table 6. Q-Square Test Value

Variable	Q-Square Adjusted
Technology Adoption	0.489
SME Performance	0.278

Source: Primary Data, processed 2024

The Q-Square value is calculated using a blindfolding procedure, where its function is to measure how well the path model can estimate the original data values. The Q-Square value, the Technology Adoption (AT) variable using the QRIS payment system, is 0.489, and the SME Performance Variable (KU) is 0.278. This value is sufficient to complete the Q-square test requirements, namely $Q^2 > 0.000$, which shows that the model can predict the data well.

Table 7. Hypothesis Testing Output

Kode	Patch	Patch Coefficient (β)	T-statistics	P-Values	Information	
					B	t-test
H1	PE \rightarrow AT	0.315	2.738	0.003	significant	accepted
H2	EE \rightarrow AT	0.175	1.680	0.047	significant	accepted
H3	SI \rightarrow AT	0.272	3.598	0.000	significant	accepted
H4	FC \rightarrow AT	0.123	1.965	0.025	significant	accepted
H5	FV \rightarrow AT	0.119	1.755	0.040	significant	accepted
H6	AT \rightarrow KU	0.665	10.412	0.000	significant	accepted

Source: Primary Data, processed 2024

If the result has a significance value below 5% or 0.050 and the t-statistic value is higher than 1.65, the results have a positive and significant influence. From the data above, the factor that most influences technology adoption is the performance expectancy variable, with a patch coefficient value of 0.315. On the other hand, the factor with the lowest influence on technology adoption is the variable fee value with a patch coefficient value of 0.119.

Conclusion

This research found that all constructs in the UTAUT theory have a positive and significant influence on the adoption of QRIS payment system technology, and the influence of the adoption of QRIS payment system technology has a positive and significant influence on the performance of SMEs. From these results, knowledge was obtained about the factors that influence the adoption of QRIS payment system technology in SMEs and the influence of technology adoption on the performance of SMEs in Semarang City. Adopting the QRIS payment system has been proven to help the transaction activities of MSMEs become better business activities so that they can improve their business performance. This research uses the Utaut 1 theory, and the latest is the Utaut 2 theory. So that future researchers can use the Utaut 2 theory or other technology adoption theories. To find out what factors can influence technology adoption and its influence on the performance of MSMEs.

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