#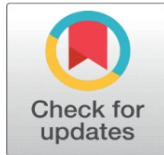 APPLICATION OF THE TAM MODEL AND FINANCIAL LITERACY IN QRIS DIGITAL PAYMENT DECISIONS (STUDY ON SEMARANG STATE POLYTECHNIC STUDENTS)

Edi Wijayanto [1] ✉ , Sri Widiyati [2], Muhammad Rois [3], Tyas Listyani [4], Manarotul Fatati [5]

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ABSTRACT

The rapid evolution of digital technology, especially in the digital economy and payment sector, has driven the widespread adoption of digital payment services utilizing QR Codes. The Quick Response Code Indonesian Standard (QRIS), introduced by Bank Indonesia and the Indonesian Payment System Association (ASPI) on August 17, 2019, serves as the national QR code standard, facilitating QR code-based payments across Indonesia. QRIS presently allows the acceptance of payment applications, whether from banks or non-banks, at various establishments. This study, involving 370 students from a population of 6,128, utilizes the Structural Equation Model (SEM) for analysis, demonstrating a robust fit with a GFI value surpassing 0.917. The findings reveal that TAM variables—perceived ease of use, usefulness, enjoyment, and financial literacy—significantly influence the interest in adopting QRIS for digital payments, supported by probability values below 1%.

Keywords: QRIS, TAM Variables, Financial Literacy

1. INTRODUCTION

Digital growth has developed rapidly until now, including in the economic aspect. One innovation that is developing and being used is a QR code-based digital payment service, commonly known as QRIS. QRIS (Quick Response Code Indonesian Standard) is a national QR code standard to facilitate QR code payments in Indonesia. It was launched by Bank Indonesia and the Indonesian Payment System Association (ASPI) on August 17, 2019, as a national QR code standard. QRIS facilitates the use of various payment applications from organizers, both banks and non-banks, in various places such as shops, traders, stalls, parking lots, tourist

tickets, and donations (merchants) with the QRIS logo. Even though the QRIS providers at merchants differ, users can choose various payment applications according to their preferences.

In October 2022, QRIS transaction volume reached 112 million, showing significant growth of up to 1735% compared to March 2020, which was only 5.08 million. For bulleted lists

Figure 1

Figure 1 Graph of QRIS Transaction Volume Growth March 2020 – September 2022
Source Indonesian Payment Systems Association (ASPI) by Bank Indonesia (BI)

Even though QRIS adoption is increasing, many shops still need to understand or know about QRIS fully. QRIS is an obstacle that must be researched to maximize the implementation of QRIS utilization in the economic sector. According to research Widiyati et al. (2019) the obstacles to the sustainability of financial MSMEs are related to capital resources and also access to financial institutions and financial literacy. According to research Palupi et al. (2022), financial literacy and ease of using QRIS can influence the decision of MSME players to adopt the QRIS payment system. This research is in line with research Akbar (2022), which confirms that the low financial literacy of the Indonesian people causes these obstacles. So, financial literacy is a factor in empowering consumers to use QRIS.

Developments influence payment decisions via digital payment tools in financial technology. The growth of digital payment services can be affected by concerns about the confidentiality and security of personal data and the risk of transaction failure that could lead to fraud Adiatama & Sari (2020). Technology acceptance theory is the research framework, especially the Technology Acceptance Model (TAM). TAM emphasizes that perceptions of ease, usefulness, and comfort influence attitudes toward the use of technology. The combination of financial literacy and TAM becomes an analytical tool to explore the factors that can affect user attitudes and behavior in adopting QRIS.

This research aims to identify the influence of perceived convenience, usefulness, and comfort variables on the decision to use QRIS and evaluate the impact of financial literacy on the decision to use QRIS among Semarang State Polytechnic students. The urgency of this research lies in its contribution to understanding the factors that influence the decision to use payments via QRIS, which can help determine the level of success of QRIS as a digital payment tool. The

results of this research will likely become the basis for the government and other stakeholders to design a more effective socialization and education model to encourage the transition of people's payment decisions from cash payments to QRIS digital payments. By increasing payment decisions via QRIS, it can expected that it can increase transaction security, reduce the risk of fraud, accelerate economic growth, and improve the welfare of society as a whole.

2. RESEARCH METHODS

Quantitative research methods use large amounts of data to test hypotheses using the theoretical basis of QRIS (Quick Response Code Indonesian Standard), TAM (Technology Acceptance Model), and financial literacy. This research was conducted by collecting data through a questionnaire using a 5-point. Likert scale with answer options namely 1) Strongly Disagree (STS), 2) Disagree (ST), 3) Neutral (N), 4) Agree (SJ), 5) Strongly Agree (SS) filled in by respondents on variables including 4 (four) independent variables such as Perceived Convenience (X1), Perceived Usefulness (X2), Perceived Comfort (X3), and Financial Literacy (X4) as well as QRIS digital payment decisions (y) as the dependent variable.

The population in the research were Semarang state polytechnic students, using purposive sampling techniques for 370 respondents from 500 students who were given questionnaires. The statistical data processing process is carried out using SmartPLS software with SEM analysis, which involves testing validity, reliability, normality, and the influence of factors. This data analysis technique allows testing a series of relationships between independent and dependent variables simultaneously. This research also uses the AMOS data processing application for statistical data processing analysis techniques. The Structural Equation Model (SEM) is used to test the effectiveness of experimental variables and allows the testing of several models in answering the research problem formulation.
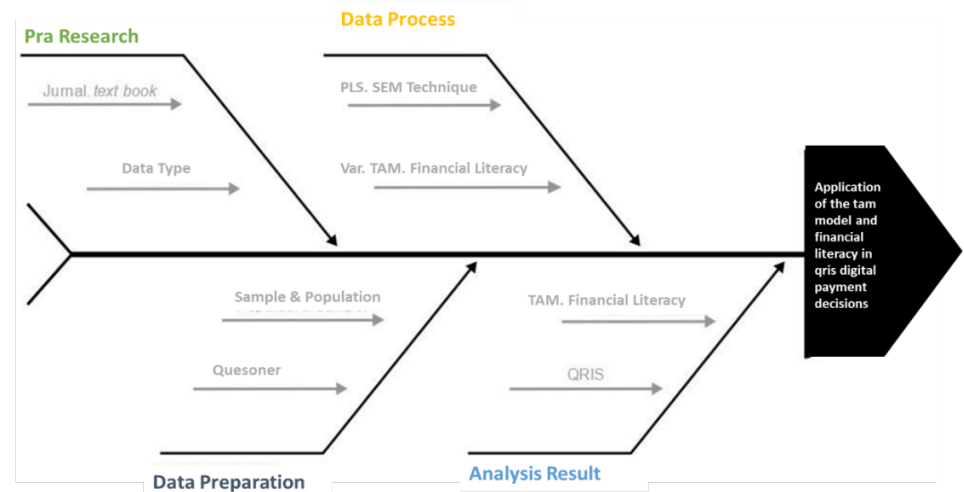
Figure 2

Figure 2 Research Fish Bone

3. RESULTS AND DISCUSSION

Research respondents had varying levels of QRIS knowledge, with 9% knowing it for over three years, 49% for 1-3 years, and 42% for less than one year. As many as 43% of respondents spent less than 100,000 in QRIS purchases, 50% spent 100,000 to 500,000, and 7% spent more than 500,000. 1.35% of respondents

needed to learn how to complete transactions with QRIS, while 98.65% were familiar with it.

Statistical data was processed using AMOS to analyze the Technology Acceptance Model (TAM) application and financial literacy in Semarang State Polytechnic students' interest in using QRIS.

Table 1

Table 1 Validity Test

Indicator		Results	Information	Indicator		Results	Information
Decision	Benefit	0.406	Valid	X32	Comfortable	0.920	Valid
Decision	Comfortable	0.028	Valid	X31	Comfortable	0.891	Valid
Decision	Literacy	0.274	Valid	X41	Literacy	0.895	Valid
X13	Easy	0.897	Valid	X42	Literacy	0.882	Valid
X12	Easy	0.934	Valid	X43	Literacy	0.867	Valid
X11	Easy	0.888	Valid	X44	Literacy	0.890	Valid
X24	Benefit	0.892	Valid	Y21	Decision	0.782	Valid
X23	Benefit	0.846	Valid	Y22	Decision	0.928	Valid
X22	Benefit	0.919	Valid	Y23	Decision	0.789	Valid
X21	Benefit	0.918	Valid	Y24	Decision	0.884	Valid
X34	Comfortable	0.915	Valid	X14	Easy	0.913	Valid
X33	Comfortable	0.901	Valid				

The test results for each indicator show that the Pearson Correlation is positive, so all indicators are declared valid.

Table 2

Table 2 Reliability Test

Variable	Result	Requirement	Information
X1	0.934	> 0.7	Reliable
X2	0.921	> 0.7	Reliable
X3	0.921	> 0.7	Reliable
X4	0.899	> 0.7	Reliable
Z	0.912	> 0.7	Reliable
Y	0.913	> 0.7	Reliable

From the processing results, the Cronbach's Alpha value was obtained, all the values of the variables X, Y and Z were above 0.7 so it could be concluded that all the variables used were declared reliable.

Table 3

Table 3 Model Fit Test

Model	RMR	GFI	AGFI	PGFI
Default model	.067	.933	.901	.672
Saturated model	.000	1.000		
Independence model	.586	.716	.692	.659
Zero model	.602	.000	.000	.000

The GFI value shows more than 0.933, so the data shows a better-fit value. Changes in the independent variable can explain changes in the dependent variable as much as 93.3%, while changes in other variables can explain 6.7%.

Table 4

Table 4 Normality Test *(Assessment of Normality (Group number 1))*						
Variable	min	max	skew	c.r.	kurtosis	c.r.2
Y14	1.000	5.000	.157	1.231	-.294	-1.154
X14	1.000	5.000	.020	.160	-.268	-1.051
Y24	1.000	5.000	-.175	-1.374	-.365	-1.431
Y23	1.000	5.000	-.235	-1.983	-.375	-1.472
Y22	1.000	5.000	-.154	-1.208	-4.91	-1.929
Y21	1.000	5.000	-.149	-1.170	-.122	-.481
Y13	1.000	5.000	.075	0.592	-.607	-2.385
Y12	1.000	5.000	.105	.824	-.313	-1.230
Y11	1.000	5.000	-.150	-1.18	-.423	-1.660
X44	1.000	5.000	.299	2.350	-.330	-1.295
X43	1.000	5.000	-.045	-.352	-.540	-2.120
X42	1.000	5.000	.096	.751	-.408	-1.602
X41	1.000	5.000	-.152	-1.191	-.407	-1.599
X31	1.000	5.000	.074	.582	-.510	-2.002
X32	1.000	5.000	.099	.776	-.365	-1.435
X33	1.000	5.000	.117	.917	-.379	-1.488
X34	1.000	5.000	.069	.544	-.417	-1.638
X21	1.000	5.000	.014	.107	-.289	-1.136
X22	1.000	5.000	.050	.392	-.575	-2.259
X23	1.000	5.000	.064	.503	-.160	-.629
X24	1.000	5.000	.104	.820	-.146	-.572
X11	1.000	5.000	-.002	-.015	-.439	-1.724
X12	1.000	5.000	.168	1.318	-.552	-2.167
X13	1.000	5.000	.212	1.663	-.302	-1.184
Multivariate					8.961	2.440

The table above shows that none of the critical ratio (C.R.) values are outside -2,580 to 2,580, so it shows that the data is univariately normally distributed. Meanwhile, the Multivariate Value is 2440, so it can also be concluded that the Data is Normally Distributed Multivariate.

Table 5

Table 5 Multicollinearity Test			
		Collinearity Statistics	
Model		Tolerance	VIF
1	(Constant)		
	X11	0.455	2.765
	X21	0.564	3.122
	X31	0.446	2.765
	X41	0.455	2.654

All Tolerance values for each variable are more significant than 0.10, and all VIF values for each variable are smaller than 10.00. So, based on the decision taken in the multicollinearity test, it can be concluded that there are no symptoms of multicollinearity in the regression model.

Table 6

Table 6 Heteroscedasticity Test					
	Unstandardized Coefficients		**Standardized Coefficients**		
Model	**B**	**Std. Error**	**Beta**	**T**	**Sig.**
1 (Constant)	0.55	0.224	2.45	0.016	1
X13	-0.003	0.035	-0.071	0.943	
X24	-0.019	0.039	-0.499	0.619	
X33	0.016	0.039	0.404	0.687	
X43	0.018	0.04	0.454	0.765	

The significance value of the four variables is less than 0.05, so by the basis for decision-making in the Glejser test, it can be concluded that symptoms of heteroscedasticity occur in the regression model.

Table 7

Table 7 Autocorrelation Test					
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
1	.894a	.800	.798	1.45875	1.933

The Durbin Watson distribution value (1.933) is greater than the upper limit table value (du), namely 1.765, and smaller than 4-du (4-2.235 = 1.765) or more briefly du < d < 4-du, so it can be concluded that Ho is accepted and rejecting H1, which means there are no problems or symptoms of autocorrelation.

Table 8

Table 8 Structural Equation Modelling (SEM) AMOS Test					
	Estimate	**S.E.**	**C.R.**	**P**	**Label**
Decision Benefit	.293	.204	1.437	.***	par_24
Decision Comfortable	.005	.153	.030	.***	par_25
Decision Literacy	.180	.143	1.262	.***	par_26
Decision Easy	.160	.131	1.223	.***	par_28

Based on the processing results with the AMOS program, the regression weight results obtained, as in the table, show that all variables have a significant effect.

The research results show a significant influence of three independent variables on QRIS digital payment decisions. Perceived convenience has a positive coefficient of 0.160 with a significance of 0.000, perceived usefulness has a positive coefficient of 0.293 with a significance of 0.000, and perceived comfort has a positive coefficient of 0.005 with a significance of 0.000. Apart from that, financial literacy also plays a significant role, with a positive coefficient of 0.180 and a significance of 0.000. By rejecting the null hypothesis (H0) and accepting the alternative hypothesis (H1) for these three variables, it can be concluded that perceived convenience, usefulness, and financial literacy significantly influence QRIS digital payment decisions.

The results of this research are in line with Iskandar et al. (2022), Syafitri (2020), Davis (1985), Handayani & Abdillah (2019), Santoso (2010), Latifiana (2017), Luckandi (2019), Mulasiwi & Julialevi (2020), Ong & Nuryasman (2022), Saleh (2020), and Sihaloho et al. (2020) but contrary to research Handayani & Abdillah (2019), and Tresnawati (2019)

4. CONCLUSION

This research shows that perceived ease of use, usefulness, enjoyment, and financial literacy influence QRIS digital payment decisions. It would be best to conduct further research on the MSME customer community.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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