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Implementation of QRIS for digital transactions at Bengkulu University, analyzed within the UTAUT model

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ABSTRACT

Indonesia is currently undergoing technological progress, as evidenced by the growing number of internet users. This advancement extends to the financial sector, particularly Financial Technology (FinTech). This study seeks to explore the inclinations of Bengkulu University students regarding the acceptance of digital payment methods, specifically focusing on the Quick Response Code Indonesian Standard (QRIS), using the Unified Theory of Acceptance and Use of Technology (UTAUT). Employing a quantitative approach with primary data, the research centers on the population of Bengkulu University students, with a sample size of 88 respondents. Data analysis is conducted using the SPSS program through a multiple analysis method. The findings reveal that Bengkulu University students' behavioral intentions in using QRIS are influenced by work expectations, business expectations, price acceptance, and Personal Innovativeness. However, social influence and facilitating conditions do not significantly affect their behavioral intentions. Further computations show that these six variables collectively contribute to a 54.2% impact on the behavioral intentions of Bengkulu University students in adopting QRIS, while the remaining 45.8% is attributed to factors not explored in this study.

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INTRODUCTION

Technological developments appear to be a solution to various challenges in the current digital era. Technology that is increasingly developing rapidly also does not escape the realm of finance and payment systems (Karim et al., 2020). A digital-based payment system can make it easier for people to meet their diverse needs and can be a solution for living life more effectively and efficiently (Tarantang et al., 2019).

The advances in technology that we are currently experiencing are a sign of rapid technological development (Abu-Taieh et al., 2022). This technological development occurs in various countries, characterized by the existence of facilities and infrastructure that utilize technological sophistication as convenience in diverse systems. In Indonesia, technological advancement is evident through the growing number of internet users among the general public (Gunawan et al., 2023). According to a 2023 report from We Are Social, the frequency of internet users in Indonesia is projected to reach 212.9 million people (https://dataindonesia.id/). This represents a significant portion of the country's population, with 76% of Indonesians, or 212.9 million individuals, having internet access and actively utilizing it. In comparison to 2022, where the number of internet users was forecasted to be 204.7 million, there is an observed increase of 8.7 million users, reflecting a percentage growth of 3% (Kilani et al., 2023).

The result of innovation from the development of technology and information is financial services called Financial Technology or abbreviated to financial innovations (Abu, 2022). According to Sihaloho et al. (2020) accelerating financial inclusion and economic growth in a country will become easier with the presence of fintech (Chopdar, 2022). The highest fintech growth in Indonesia comes from the payments sector (Mulyana & Wijaya, 2018). This is of course supported by Bank Indonesia (BI) by supporting the National Non-Cash Movement (GNNT) (Hanif & Lallie, 2021). This movement is being intensively carried out with the hope of being able to answer the challenges of the digital era with the aim of educating the public that digital transaction methods have many benefits, namely efficient, fast, comfortable, easy and safe (Muzdalifa et al., 2018).

In digital-based systems, many payment models are offered (Aisyah et al., 2022). The payment method using QR (Quick Response) is a payment method that is currently popular. QR codes have accurate data storage and utilization and from a physical perspective they last a long time, this is of course an advantage of QR so that Bank Indonesia created a QR code standard as a form of technological innovation used in payment interaction methods (Sari et al., 2023).

Bank Indonesia on January 1 2020 officially released a standard for using QR codes with the name Quick Response Code Indonesia Standard (QRIS) (Parhamnia, 2022). One of the reasons behind the launch of QRIS is merchants who always provide lots of QR codes from various places that want customers to make non-cash transactions (Mulyana, 2018). Generally, if a payment application is installed on a smartphone and the smartphone has an internet connection, there is a high probability that you can apply QRIS (Ong et al., 2023). The applications in question are e-wallets (from banking and non-banking publishers) which are used as server-based payment instruments that have received permission from Bank Indonesia (Inan, 2022). Currently, merchants who want to use QRIS only need to open an account or create an account with one of the QRIS providers that already has permission from Bank Indonesia (Al-Mamary, 2022). Examples of merchants that can use QRIS are shops, traders, parking lots, airplane tickets, stalls, donations with the QRIS logo or other places that provide QRIS services (Hardiky et al., 2021).

The utilization of QRIS in Indonesia extends beyond specific demographic groups, encompassing active student participation in this payment method (Effendy et al., 2019). Consequently, the present study seeks to assess the level of interest among Bengkulu University students in embracing information technology through QRIS. The investigation aims to determine the alignment of QRIS introduction with its intended goal of becoming a preferred non-cash payment option for Bengkulu University students. Recognizing that students belong to a technologically evolving generation, the research delves into their inclination to adapt to rapid technological advancements.

Various models serve as a foundation for researching technology acceptance, with Venkatesh et al. (2003) proposing the Unified Theory of Acceptance and Use of Technology (UTAUT) as a valuable reference. UTAUT comprises four key constructs—performance expectations, effort expectations, social influence, and facilitating conditions—that significantly

impact interest in utilizing and adopting information systems. Among the plethora of theories on technology acceptance and behavior, UTAUT stands out for incorporating the best characteristics of its predecessors, demonstrating a success rate up to 70% higher in explaining preferences for the intention to use technology compared to earlier models (Pertiwi & Ariyanto, 2017). In an update, researchers introduced two additional variables, namely the perceived value variable (Kim et al., 2008) and the Personal Innovativeness variable (Agarwal & Prasad, 1998; Eastman et al., 1999).

Given the aforementioned background, the researcher contends that conducting behavioral research in information technology remains pertinent. The substantial growth in fintech development, particularly the adoption of QRIS as a novel transaction tool in the business domain, underscores the significance of such investigations. Consequently, the research problem is formulated to explore how work expectations, business expectations, social influence, facilitating conditions, perceived value, and Personal Innovativeness collectively influence the behavioral intention of Bengkulu University students in utilizing QRIS as a transaction method.

The research hypotheses can be summarized as follows: Ha1: Performance Expectations have an effect on the Behavioral Intention to use QRIS among students at Bengkulu University; Ha2: Effort Expectations influence the Behavioral Intention to use QRIS among students at Bengkulu University; Ha3: Social Influence plays a role in the Behavioral Intention to use QRIS among students at Bengkulu University; Ha4: Facilitating Conditions impact the Behavioral Intention to use QRIS among students at Bengkulu University; Ha5: Perceived Value contributes to the Behavioral Intention to use QRIS among students at Bengkulu University; Ha6: Personal Innovativeness affects the Behavioral Intention to use QRIS among students at Bengkulu University; Ha7: There is a collective impact of Performance Expectations, Effort Expectations, Facilitating Conditions, Social Influence, Perceived Value, and Personal Innovativeness on the Behavioral Intention to use QRIS among students at Bengkulu University.

Research on the use of QRIS digital payments among Bengkulu University students is important to understand the adoption of modern financial technology in the academic environment, identify factors that influence QRIS acceptance, and provide strategic insight for universities in facilitating the transition to digital payments. The results of this research can make a significant contribution in supporting efficiency, security and financial inclusion among students.

RESEARCH METHOD

Research type and design

This research adopts a quantitative approach, which involves generating measurable data that can be statistically analyzed to discern patterns, relationships, or trends within a broader population (Alkhowaiter, 2022). Quantitative methods are typically employed in studies focusing on specific populations or samples, with random sampling techniques applied, data collected through research instruments, and statistical analysis conducted to test predetermined hypotheses (Hutchins et al., 2023).

The Operational Definition of Variables:

In this study, the dependent variable, denoted as Y, signifies the behavioral intention related to the utilization of QRIS for transactions. The dependent variable is influenced by or dependent on the independent variable (X6), with researchers measuring it to assess how changes in the independent variable can impact the response (Gravetter & Forzano, 2009). Conversely, the independent variable is a cause or influence on the dependent variable, and in this study, it is represented by the letter X6. Researchers manipulate or alter independent variables to observe their impact on the dependent variable (Creswell, 2013).

Population and Data Collection Methods (Sample):

The population under investigation in this study comprises Bengkulu University students, and samples are selected based on groups of students who have utilized QRIS. A sample, representing a subset of subjects drawn from the population, is determined following Roscoe's theory. According to this theory, when employing multivariate analysis, the minimum sample size should be 10 times the number of variables under consideration. If the research will perform analysis with multivariate (correlation or multiple regression for example), then the number of sample members at least 10 times the number of variables studied (Sugiyono, 2010). There are 6 independent variables and 1 dependent variable. Then the number of sample members 7 X 10 = 70.

Types of Data, Data Sources, and Data Collection Methods:
Two types of data, primary and secondary, are incorporated in this research (Cobelli et al., 2023). Primary data, collected directly from the primary source or through specially designed instruments, is gathered through a questionnaire administered to Bengkulu University students. Secondary data, previously collected for unrelated purposes, is also sourced from internal or external outlets. The questionnaire, distributed via Google Form, serves as the data collection tool for both primary and secondary data. Completed questionnaires obtained from Bengkulu University students will be subsequently analyzed by the researchers.

Data Analysis Method :
The analytical approach employed in this research involves multiple regression analysis. The collected data will undergo validity and reliability tests, followed by classical assumption tests, including normality and multicollinearity assessments. Subsequently, multiple regression analysis using the SPSS program will be conducted. The analysis includes tests such as the Coefficient of Determination (R2), F test (simultaneous), and t test (partial) to assess the combined impact of multiple independent variables on a single dependent variable measured on an interval scale. The multiple linear regression equation is expressed as $Y = a + b1X1 + b2X2 + b3X3 + b4X4 + b5X5 + e$, where Y represents the dependent variable, a denotes the constant, and X1, X2, X3, X4, X5 represent the independent variables, with e representing the error term.

RESULTS AND DISCUSSIONS

Instrument Test and Classic Assumption Test

During this study, all items underwent validity testing, with each item yielding a significance level below 0.05, indicating the validity of the distributed questionnaires. Subsequently, a reliability test using the Cronbach's alpha method was conducted, resulting in high reliability coefficients for all variables-commerce expectations (0.887), work expectations (0.884), social influence (0.901), facilitating conditions (0.879), perceived value (0.872), personal innovativeness (0.876), and behavior intention (0.882). These coefficients signify the reliability of the collected data, with values exceeding 0.60, demonstrating a high level of instrument dependency. Additionally, classical assumption tests were computed.
Examinations, such as assessments for normality and multicollinearity, were carried out, and the findings suggest that this research aligns with the assumptions of normality and multicollinearity. Consequently, it is reasonable to assume a normal distribution of the data.

Table 1. Normality Test Result

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		88
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.09694383
Most Extreme Differences	Absolute	.088
	Positive	.083
	Negative	-.088
Test Statistic		.088
Asymp. Sig. (2-tailed)		.091[c]

a. Test distribution is Normal.
b. Calculated from data.

Table 2. Test Multicollinearity

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.194	1.368		1.604	.113		
	EK	-.157	.079	-.202	-1.971	.041	.499	2.005
	EU	.458	.123	.413	3.737	.000	.430	2.324
	PS	.025	.075	.034	.337	.737	.504	1.984
	KM	-.008	.129	-.007	-.060	.952	.384	2.606
	PV	.257	.105	.295	2.448	.017	.363	2.754
	PI	.282	.112	.288	2.516	.014	.400	2.498

a. Dependent Variable: BI

Multiple Linear Regression Analysis Techniques

Various techniques for analyzing multiple linear regression have been applied in this study. The computed coefficient of determination stands at 54.2%, indicating that the combined impact of the variables—namely work expectations, business expectations, social influence, facilitating conditions, perceived value, and personal innovativeness—contributes to influencing the behavioral intention to use QRIS as a transaction tool by 54.2%. The remaining 45.8% is attributed to factors that were not investigated in the scope of this specific study.

Table 3. Coefficient of Determination Test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757[a]	.574	.542	1.137

a. Predictors: (Constant), EK, PS, EU, PI, KM, PV

F Test (Simultaneous)

Furthermore, the F test (Simultaneous) was conducted to evaluate the overall influence of all variables (X) on the dependent variable (Y). The recorded F-count, which amounted to 18.171, surpassed the F-table value of 2.30 at a 0.05 significance level. Given that the F-count exceeds the F-table value, the acceptance of Ha7 is warranted. This acceptance implies that business expectations, work expectations, social influence, facilitating conditions, perceived value, and personal innovativeness collectively exert a simultaneous impact on the behavioral intention to use QRIS among students at Bengkulu University.

Table 4. F Test Results

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	140.905	6	23.484	18.171	.000[b]

	Residual	104.686	81	1.292
	Total	245.591	87	

a. Dependent Variable: BI

b. Predictors: (Constant), EK, PS, EU, PI, KM, PV

Table 5. T test results (hypothesis testing)

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.194	1.368		1.604	.113
	EK	-.157	.079	-.202	-1.971	.041
	EU	.458	.123	.413	3.737	.000
	PS	.025	.075	.034	.337	.737
	KM	-.008	.129	-.007	-.060	.952
	PV	.257	.105	.295	2.448	.017
	PI	.282	.112	.288	2.516	.014

a. Dependent Variable: BI

Based on the information provided in Table 5, the findings can be succinctly summarized as follows: (a) The Sig value of 0.41 for variable X1 indicates the acceptance of Ha1 and the rejection of H01. (b) Variable X2 (business expectations) with a Sig value of 0.000 implies a significant influence on the behavioral intention to use QRIS, leading to the acceptance of Ha12 and the rejection of H02. (c) The Sig value of 0.737 for variable X3 suggests the acceptance of H03 and the rejection of Ha3. (d) Variable X4 (facilitating conditions) with a Sig value of 0.952 results in the acceptance of H04 and the rejection of Ha4. € The Sig value of 0.17 for variable X5 (perceived value) indicates the acceptance of Ha5 and the rejection of H05. (f) Variable X6 (Personal Innovativeness) with a Sig value of 0.14 leads to the acceptance of Ha6 and the rejection of H06.

The derived regression equation is expressed as 2.194 - 0.157X1 + 0.458X2 + 0.25X3 - 0.008X4 + 0.257X5 + 0.282X6. The interpretation includes: (a) The constant value of 2.194 signifies that when all independent variables are at 0, the dependent variable (behavioral intention) stands at 2.194. (b) The regression coefficient for X1 (work expectations) is -0.157, suggesting that higher business expectations correlate with lower QRIS usage. (c) The regression coefficient for X2 (business expectations) is 0.458, indicating that increased business expectations are associated with greater QRIS usage. (d) The regression coefficient for X3 (social influence) is 0.25, showing that higher social influence corresponds to increased QRIS usage. (e) The regression coefficient for X4 (facilitating conditions) is -0.008, implying that higher facilitating conditions are linked to reduced QRIS usage. (f) The regression coefficient for X5 (perceived value) is 0.257, illustrating that heightened perceived value correlates with increased QRIS usage. (g) The regression coefficient for X6 (Personal Innovativeness) is 0.282, suggesting that greater Personal Innovativeness is associated with increased QRIS usage.

CONCLUSION

The research results indicate that work expectations, business expectations, perceived value, and personal innovativeness significantly influence the behavioral intention to use QRIS among Bengkulu University students. However, social influence and facilitating conditions do not exhibit a significant impact on the behavioral intention to use QRIS among these students. The coefficient of determination analysis reveals that all variables collectively contribute to 54.2% of the behavioral intention to use QRIS among Bengkulu University students. The remaining 45.8% encompasses factors not explored in this study. The research has limitations due to its focus on Bengkulu University students, and future studies should consider more diverse samples from various universities and demographic groups to enhance the generalizability of findings. The hope is that this research will stimulate further exploration of financial technology, particularly in Indonesia, where research on such topics remains relatively limited. This research still uses a limited sample so it is not able to reveal all the aspirations of Bengkulu University students in research using QRIS. It is recommended that further research use a larger sample.

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