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Identification of Factors Influencing the Use of QRIS Using TAM and UTAUT 2 Methods

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Abstract.
Purpose: This research aims to analyze user behavior towards Quick Response Code Indonesian Standard (QRIS) usage, employing the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) and Technology Acceptance Model (TAM) methods.
Methods: Online surveys were conducted among QRIS users, focusing on factors influencing adoption intention and usage behavior in Indonesian society. Sampling was random, with a sample size determined for a 95% confidence level and 5% margin of error. Data analysis employed Confirmatory Factor Analysis (CFA) for validity and reliability testing, followed by Structural Equation Modeling (SEM) to assess model fit.
Result: The research results indicate the validity and reliability of the structural model, with Performance Expectancy was significantly impacted by Effort Expectancy. However, Effort Expectancy insignificantly affects Behavioral Intention and Use Behavior, consistent with previous research. But when Effort Expectancy and Performance are used as mediating variables between Perceived Trust and Behavioral Intention, they have a significant impact on this relationship. Social Influence also insignificantly affects Behavioral Intention and Use Behavior. Facilitating Condition, Perceived Trust, Hedonic Motivation, Price Value, and Habit demonstrate significant impacts on Behavioral Intention and Use Behavior, reaffirming prior findings. Some variables also have a big influence on other variables, such as Perceived Trust has a major impact on Effort Expectancy, and Habit which has a major impact on Behavioral Intention and Use Behavior as a whole. Additionally, Behavioral Intention significantly affects Use Behavior.
Novelty: Effort Expectancy insignificantly affects Behavioral Intention and Use Behavior. However, when Effort Expectancy and Performance are used as mediating variables between Perceived Trust and Behavioral Intention, they have a significant impact on this relationship. Some variables also have a big influence on other variables, such as Perceived Trust has a major impact on Effort Expectancy, and Habit which has a major impact on Behavioral Intention and Use Behavior as a whole. This study contributes to understanding QRIS adoption and usage behavior, offering insights for policymakers and practitioners in the digital payment sector.

Keywords: QRIS, UTAUT2, TAM, Customer behavior, E-money
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INTRODUCTION

Technological advancements, particularly in smartphone usage, have paved the way for Indonesians to engage in digital transactions more easily and efficiently [1]–[6]. These digital transactions encompass various activities, ranging from online purchases of goods and services to bill payments and peer-to-peer money transfers [7], [8]. With the increasing use of smartphones, the public is becoming more accustomed to the convenience offered by digital payments [1]. Consequently, digital transactions have become a crucial aspect of Indonesia's transition towards a digital economy as they are deemed more effective, practical, and economical [3], [9]. The continuous development of information technology infrastructure, coupled with government and industry initiatives to promote digital payment adoption, has helped accelerate the growth of the digital payment ecosystem in Indonesia [10]. Particularly, the Covid-19 pandemic, which began in March 2020, has expedited digitization growth. The government implemented Large-Scale Social Restrictions (PSBB) policies to mitigate the pandemic's impact, leading to increased online transaction usage [11], [12]. The development of digital payment systems, including the use of ATMs, QRIS, EDC, and Internet Banking, has shown growth trends both before and during the Covid-19 pandemic [5], [13]–[15].

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Bank Indonesia's Blueprint for the Indonesian Payment System 2025 states that the increasing demand for financial services aligns with the principles of the fast, efficient, and digital era that currently disrupts all aspects, including payments [16]. Some digital payment technologies implemented in Indonesia include debit and credit cards, virtual accounts, e-money, digital wallets, and the latest addition, QRIS (Quick Response Code Indonesian Standard) [5], [13]–[15]. QRIS was officially launched by Bank Indonesia and the Indonesian Payment System Association (ASPI) in August 2019 through Regulation No.21/18/PADG/2019. By February 2022, the number of merchants using QRIS had reached 15,676,476 [15]. By June 2023, QRIS had been used by 26.7 million merchants and recorded 1.03 billion transactions [17].

The positive response from the public towards the use of digital payments, particularly QRIS, can help drive economic progress for MSMEs in Indonesia [18]–[20]. Additionally, QRIS payments are essential for expanding national non-cash payment acceptance more efficiently and strengthening the interconnectivity of digital ecosystems such as e-commerce, fintech, or banks [10], [21]. Digital payments have significant potential to accelerate the transformation towards a digital economy in Indonesia [22]–[25]. Despite its many positive impacts, QRIS also presents its own challenges, such as digital payment adoption being influenced by factors such as trust, risk perception, social influence, adoption, security, privacy infrastructure, and government policies [5], [13], [14]. Furthermore, user perceptions of usefulness, ease of use, social support, and other factors also play a significant role in users' intentions and behaviors regarding QRIS usage [11], [20], [26].

Several methods can be utilized to analyze user behavior towards a new technology, such as the Unified Theory of Acceptance and Use of Technology (UTAUT), the Technology Acceptance Model (TAM), and other methods. UTAUT2, a development of UTAUT, is widely used in the scientific literature to analyze the adoption of an innovation [27]. In addition, UTAUT2 can provide an understanding of what factors build a user's intention to accept a new technology [28]–[30]. Gunawan et al. said that TAM can also assess the effectiveness of technology use [4]. Gunawan et al. researched the effect of using QRIS as a payment method using TAM. It was found that social influence and perceived trust influenced perceived usefulness, and perceived usefulness influenced perceived ease of use. Perceived usefulness and perceived trust also influence the intention to use QRIS, which influences the use of the application by users [4]. Cabanillas et al. researched the intention to use a mobile payment system that uses biometric identification on smartphones among European users using UTAUT2. It is known that performance expectation, effort expectation, facilitating conditions, hedonic motivation, and risk influence the intention to use mobile payments [28]. Chand and Kumar evaluated the use of m-payment in Fiji using the UTAUT model, finding that performance expectancy had the greatest influence on the intention to use m-payment [31]. Sharma et al. researched the influencing factors of m-payment adoption among millennials in India using UTAUT2. Facilitating conditions and perceived credibility have a significant influence on the intention to use m-payment, thereby influencing the use of the application [32]. Penney et al. researched the factors that influence user intentions towards electronic money services using UTAUT2 in Ghana. Findings show that users' intention to adopt electronic money services is significantly influenced by performance expectancy, effort expectancy, social influence, price value, and trust [33]. Novianti researched the interest of students in Bali in using e-wallets using UTAUT2. The results of performance expectancy, social influence, facilitating conditions, hedonic motivation, and price value have a significant effect on BI [34].

Therefore, this study aims to analyze user behavior towards QRIS usage using the UTAUT2 and TAM methods. This research will explore the factors influencing users' intention to adopt QRIS usage and factors influencing QRIS usage behavior in Indonesian society.

METHODS

The research begins with the stage of preparing data collection, data processing, validity and reliability testing, and data analysis, and ultimately concludes with drawing conclusions. These steps are visually illustrated in Figure 1.

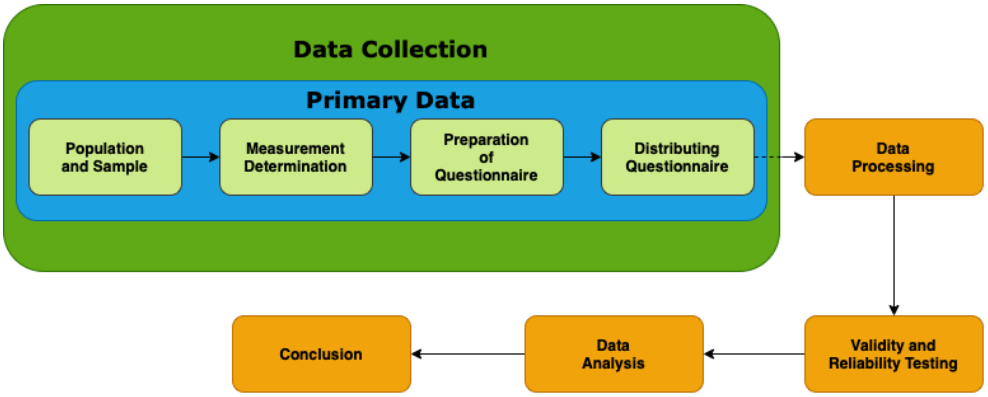

Figure 1. Research stage

Population, sample, and data collection procedures

The population focused on in this study is users of digital payments in Indonesia. The sample was selected using a random sampling method through online surveys. Inclusion criteria include individuals who have used digital payments in their financial transactions. The estimated sample size is based on a 95% confidence level with a 5% margin of error. To determine the required number of respondents from the Indonesian population of 278,690,000 people with a certain confidence level and a certain margin of error, we can use the following formula: (Please add a statement that refers to the equation), and add numbering to each equation you display.

$$n = \frac{Z^2 \times p \times (1-p)}{E^2} \quad (1)$$

In this case, we need to choose the value of Z based on the desired confidence level. For a 95% confidence level, the Z value is approximately 1.96. The value of P can be taken as 0.5 to obtain the maximum sample size if there is no previous information. Meanwhile, E represents the desired margin of error, usually in decimal form (e.g., 0.05 for a 5% margin of error). Based on this, equation (1) is used to obtain the number of respondents based on the population of Indonesia with a confidence level of 95%, and the calculation results as are follows:

$$n = \frac{3.8416 \times 0.25}{0.0025} \quad (2)$$

$$n = \frac{0.9604}{0.0025} \quad (3)$$

$$n = 385.16 \quad (4)$$

Therefore, the required number of respondents from the Indonesian population of 278,690,000 people with a 95% confidence level and a 5% margin of error is approximately 385 people. The survey is conducted online and distributed to the sample through trusted online survey platforms such as Google Forms. Participants provide voluntary consent before completing the survey. The survey will be open for two months to allow for sufficient participation.

Extended unified theory of acceptance and use of technology 2 (UTAUT2)

UTAUT2 is an advanced model designed to analyze and understand the factors influencing the acceptance of computer technology. It is one of the most well-known frameworks in technology acceptance studies [27], [35].

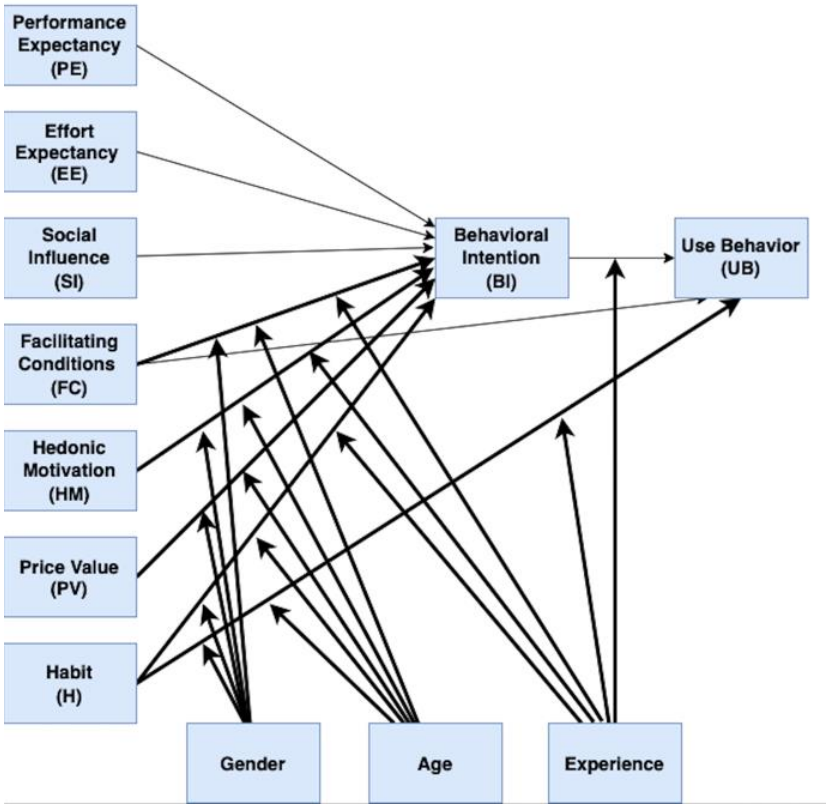

Figure 2. Extended unified theory of acceptance and use of technology 2 (UTAUT2)

UTAUT2 is a development from the Theory Acceptance Model (TAM) initiated by Wallance in 1991. Various theoretical models have been studied and utilized to evaluate technology acceptance across various services [35], [36]. UTAUT2 is a robust and widely used model in the field of technology acceptance and usage [27]. UTAUT2 is influenced by additional variables such as trust, usefulness, learning capability, and attitude [27], [37].

Technology acceptance model (TAM)

The Technology Acceptance Model (TAM) is a theory in psychology used to explain why and how individuals accept and use information technology. This model was first formulated by Fred Davis in 1986 and has become the foundation for many studies and applications in the field of technology acceptance [38], [39].

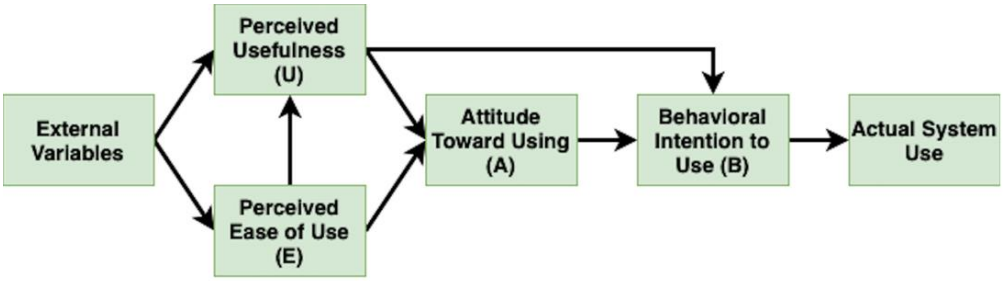

Figure 3. Technology acceptance model (TAM)

TAM is utilized to test end-user acceptance of new information systems [40]. TAM aims to understand why users accept or reject information technology and how system characteristics influence user acceptance [41].

TAM elucidates how attitudes, intentions, and user behavior relationships affect computer user behavior. Perceived Ease of Use assesses users' belief in the ease of implementing a system, affecting system usage.

Perceived Usefulness measures users' belief that using a system will enhance their performance, impacting the level of system usage [41].

Research framework

The theoretical framework utilized in this study aims to analyze the factors influencing the adoption of the QRIS digital payment system by integrating two models, namely TAM and UTAUT2, visually presented in Figure 4.

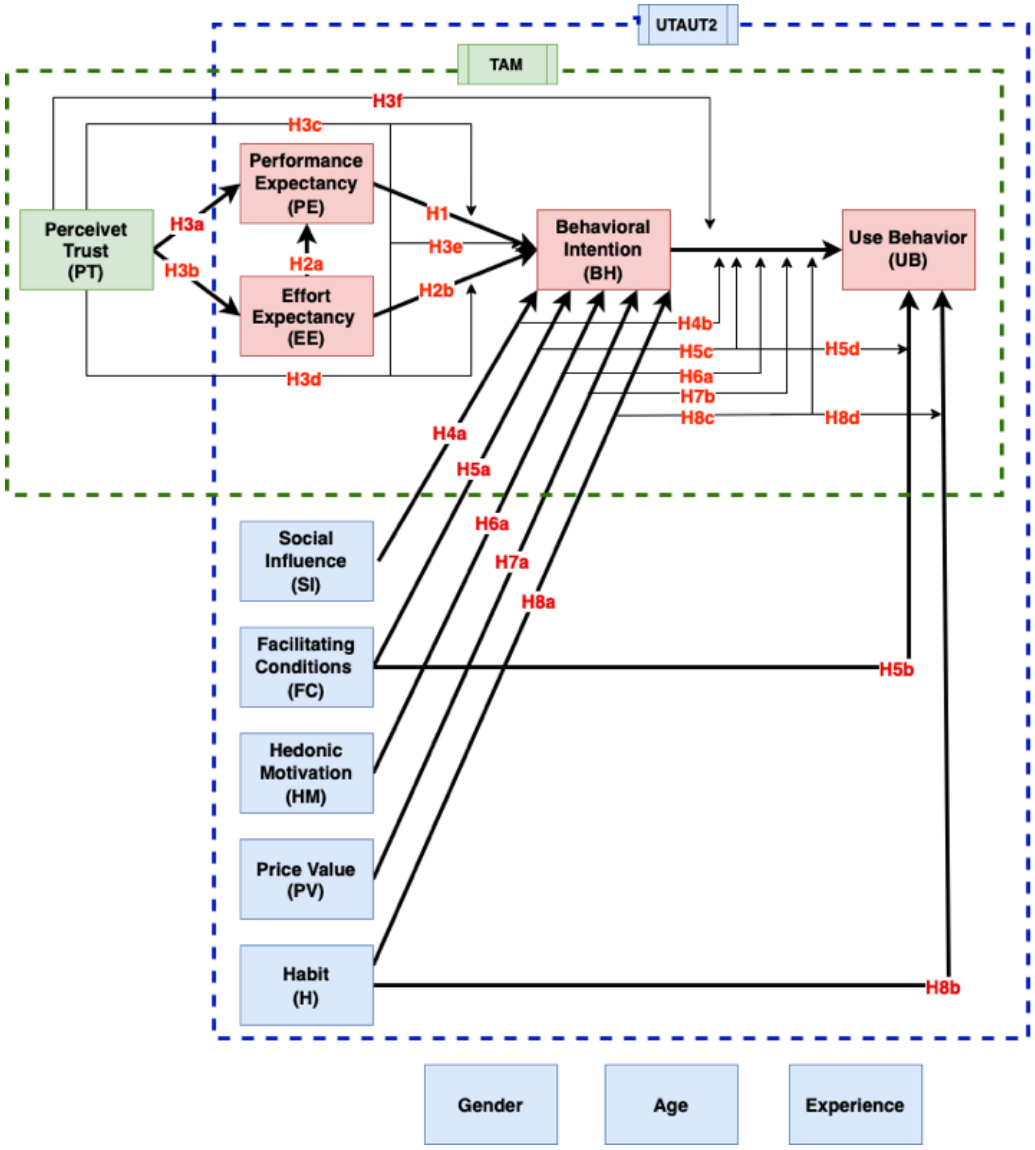

Figure 4. Theoretical research framework

The theoretical framework description is outlined as follows: Perceived Trust (PT) has a direct impact on Performance Expectancy (PE) and Effort Expectancy (EE). Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Condition (FC), Price Value (PV), Hedonic Motivation (HM), and Habit (H) have a direct impact on Behavioral Intention (BH). Then, Behavioral Intention (BH) has influences on Use Behavior (UB). Facilitating Condition (FC) and Habit (H) also have a direct impact on Use Behavior (UB). Based on Figure 4, we posit hypotheses that can be seen in Table 1.

Table 1. Hypotheses list

Hypotheses	Path Connection	Description
H1a	PE -> BH	Performance Expectancy has a significant impact on Behavioral Intention
H1b	PE -> BH -> UB	Performance Expectancy has an indirect significant impact on Use Behavior through Behavioral Intention
H2a	EE -> PE	Effort Expectancy has a significant impact on Performance Expectancy
H2b	EE -> BH	Effort Expectancy has a significant impact on Behavioral Intention
H2c	EE -> BH -> UB	Effort Expectancy has an indirect significant impact on Use Behavior through Behavioral Intention
H3a	PT -> PE	Perceived Trust has a significant impact on Performance Expectancy
H3b	PT -> EE	Perceived Trust has a significant impact on Effort Expectancy
H3c	PT -> PE -> BH	Perceived Trust has an indirect significant impact on Behavioral Intention through Performance Expectancy
H3d	PT -> EE -> BH	Perceived Trust has an indirect significant impact on Behavioral Intention through Effort Expectancy
H3e	PT -> (PE+EE) -> BH	Perceived Trust has an indirect significant impact on Behavioral Intention through Performance Expectancy and Effort Expectancy
H3f	PT -> (PE+EE) -> BH -> UB	Perceived Trust has an indirect significant impact on Use Behavior through Performance Expectancy, Effort Expectancy, and Behavioral Intention
H4a	SI -> BH	Social Influence has a significant impact on Behavioral Intention
H4b	SI -> BH -> UB	Social Influence has an indirect significant impact on Use Behavior through Behavioral Intention
H5a	FC -> BH	Facilitating Condition has a significant impact on Behavioral Intention
H5b	FC -> UB	Facilitating Condition has a significant impact on Use Behavior
H5c	FC -> BH -> UB	Facilitating Condition has an indirect significant impact on Use Behavior through Behavioral Intention
H5d	FC -> UB + FC -> BH -> UB	Facilitating Condition has a significant impact on Use Behavior
H6a	HM -> BH	Hedonic Motivation has a significant impact on Behavioral Intention
H6b	HM -> BH -> UB	Hedonic Motivation has an indirect significant impact on Use Behavior through Behavioral Intention
H7a	PV -> BH	Price Value has a significant impact on Behavioral Intention
H7b	PV -> BH -> UB	Price Value has an indirect significant impact on Use Behavior through Behavioral Intention
H8a	H -> BH	Habit has a significant impact on Behavioral Intention
H8b	H -> UB	Habit has a significant impact on Use Behavior
H8c	H -> BH -> UB	Habit has an indirect significant impact on Use Behavior through Behavioral Intention
H8d	H -> UB + H -> BH -> UB	Habit has a significant impact on Use Behavior
H9	BH -> UB	Behavioral Intention has a significant impact on Use Behavior

Data processing

After the data collection is complete, the next step is data processing. Firstly, the domicile and occupation data of each respondent will be normalized to ensure consistency in format and representation. This normalization is important so that the data can be easily compared and analyzed accurately. Next, the data from respondents who have never used QRIS in the payment process will be removed from the dataset. This step is taken to ensure that the processed data only comes from respondents relevant to the research objective. This process will ensure that the generated analysis results are representative and reliable. Once these steps are completed, the processed data will be ready to proceed to the next stage of analysis.

Validity and reliability testing

Analysis through Structural Equation Modeling (SEM) follows a two-step process. Initially, the Stage involves the evaluation of variables utilizing the Confirmatory Factor Analysis (CFA) technique and scrutinizing the overall structure of the SEM model [42], [43]. The validity of convergence within the model is confirmed by the Average Variance Extracted (AVE) score, which should exceed 0.5. AVE signifies the average proportion of variance elucidated by a construct across its indicator variables relative to the total variance of these indicators [44].

Assessment of consistency entails ensuring that factor loading values surpass 0.6, suggesting that items with factor loading values below 0.6 (<0.600) should be considered for removal. Moreover, reliability

evaluation is conducted to gauge the consistency of respondents' responses in surveys or other research instruments [45]. In this research, reliability assessment adopts an internal consistency model utilizing Cronbach's Alpha and Composite Reliability (CR) scores, where a recommended threshold of 0.7 is considered desirable. Alpha coefficients falling below this threshold generally indicate inadequate internal consistency reliability. It's noteworthy that the alpha coefficient tends to rise with an increase in the number of scale items, potentially leading to artificially inflated values if redundant scale items are included [46], [47].

Data analysis

Descriptive statistics help researchers to explain data and test correlations between variables, while inferential statistics allow researchers to test cause-and-effect relationships. Data analysis also enables hypothesis testing within the research framework by measuring the Goodness of Fit of the structural model. The quality assessment of the model is based on its ability to predict endogenous constructions. The Goodness of Fit is evaluated using coefficients such as determination (R2), cross-validated redundancy (Q2), and path significance or P-values (β) [48]. In this study, an R-square value of 0.67 represents a good model, 0.33 is a moderate model, and 0.19 is a weak model [49], [50]. Each endogenous variable should have an R2 value of at least 0.1. Furthermore, Q-Square is a predictive relevance metric that assesses a model's viability by concentrating on the accuracy of parameter estimation and model observation values, or whether a model has predictive relevance or not. If the Q-Square score is greater than zero, it indicates relevant predictions, and values below zero indicate modeling inaccuracies [51], [52]. Lastly, path significance is examined by ensuring that P-Values are below 0.05 and t-statistics more than 1.96 to accept model adequacy [49], [50], [53].

RESULTS AND DISCUSSIONS

Google Form was used to distribute the questionnaire, and 391 participants provided insights based on the response rate. The respondent profile can be seen in Table 2.

Table 2. Respondents profile

Aspects	Categories	Total	Percentage
Gender	Male	210	53,7 %
	Female	181	46,3 %
Age	17-25	201	51,4 %
	26-35	146	37,3 %
	36-45	36	9,2 %
	>46	8	2 %
Domicile	Kalimantan	140	35,8 %
	Java	101	25,9 %
	Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi)	53	13,6 %
	Sumatra	34	8,7 %
	Sulawesi	25	6,4 %
	Bali	16	4,1 %
	Southeast Nusa	9	2,3 %
	Papua	5	1,3 %
	Riau Island	4	1 %
	Maluku	4	1 %
Education	Bachelor’s degree	235	60,1 %
	Master’s degree	65	16,6 %
	Senior High School	55	14,1 %
	Diploma Degree	18	4,6 %
	PhD	18	4,6 %
Job	Student	163	41,7 %
	Teacher or Lecturer	63	16,1 %
	Private Sector Employee	49	12,5 %
	Medical Personnel	28	7,2 %
	Government Employees	23	5,9 %
	Businessman	16	4,1 %
	Merchant	15	3,8 %
	Army or Police	10	2,6 %
	Bank Employees	9	2,3 %
	Farmers or Breeders	6	1,5 %
	BUMN Employees	5	1,3 %
	Housewife	4	1 %

Examining the respondents' demographic composition reveals an equitable gender distribution, with males making up 53.7% and women 46.3% of the sample as a whole. Remarkably, more than 85% of responders are younger than 36, and they are primarily from Kalimantan and Java. A closer look finds that the respondent pool is diverse in terms of occupation, mostly professionals from the public and commercial sectors as well as educators, healthcare providers, and students.

The analysis will be carried out in 2 stages, namely instrument testing and model testing. Instrument testing is taken to evaluate the reliability and validity of each instrument. The Average Variance Extracted (AVE), a crucial statistic for assessing validity, provides information on the variance of the construct in relation to the average variance of all indicators. A construct is considered valid if its AVE is greater than 0.5. Then the consistency of a construct will be tested using loading factors, where constructs that have a loading factor less than 0.6 will be eliminated.

Reliability testing follows, in which constructs get evaluated using metrics such as Cronbach Alpha and Composite Reliability. A variable will be considered reliable if the Cronbach Alpha and Composite Reliable values are greater than 0.7. Constructs that don't fit with these criteria are going to be eliminated. The SmartPLS tool was utilized to assist in the application of the Structural Equation Model (SEM) for evaluation. Table 3 displays the outcomes of the evaluation.

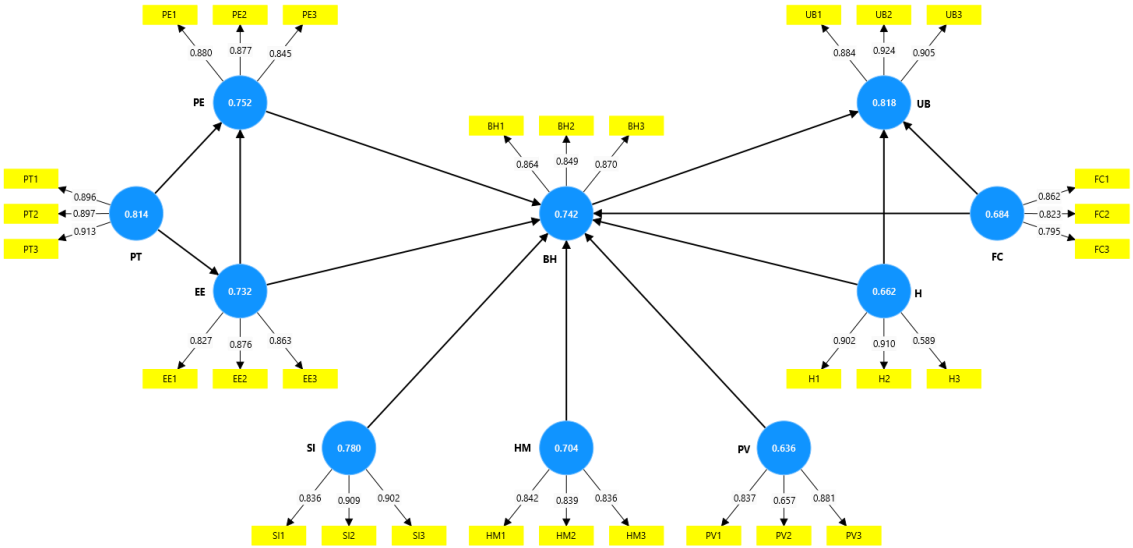

Figure 5. Validity and reliability testing on structural model

Figure 5 shows the loading factors and AVE values from validity and reliability testing on the structural model. The blue circles show the variables used in this study, and the blue boxes show the questions for each variable. The numbers in the blue circle show the AVE value of each variable, and the numbers in the yellow box show the loading factors for each question.

Table 3. Validity test result

Variables	Constructs	Loadings	AVE
Performance Expectancy (PE)	PE1	0.880	0.752
	PE2	0.877	
	PE3	0.845	
Effort Expectancy (EE)	EE1	0.827	0.732
	EE2	0.876	
	EE3	0.863	
Social Influence (SI)	SI1	0.836	0.780
	SI2	0.909	
	SI3	0.902	
Facilitating Conditions (FC)	FC1	0.862	0.684
	FC2	0.823	
	FC3	0.795	
Perceived Trust (PT)	PT1	0.896	0.814
	PT2	0.897	
	PT3	0.913	
Hedonic Motivation (HM)	HM1	0.842	0.704
	HM2	0.839	
	HM3	0.836	
Price Value (PV)	PV1	0.837	0.636
	PV2	0.657	
	PV3	0,881	
Habit (H)	H1	0.902	0.662
	H2	0.910	
	H3	0.589	
Behavioral Intention (BH)	BH1	0.864	0.742
	BH2	0.849	
	BH3	0.870	
Use Behavioral (UB)	UB1	0.884	0.818
	UB2	0.924	
	UB3	0.905	

With reference to Table 3, it is evident that every variable passes the validity test because each of their AVE values is greater than 0.5, which indicates that the variable is valid. Nevertheless, a close examination of the loading factors reveals that one construct, H3, values at 0.589, which is less than the expected loading factor value of above 0.6. As a result, H3 will not be included in any further analysis phases.

Table 4. Reliability test result

Variables	Cronbach Alpha	Composite Reliability
Performance Expectancy (PE)	0.835	0.835
Effort Expectancy (EE)	0.816	0.816
Social Influence (SI)	0.859	0.868
Facilitating Conditions (FC)	0.769	0.774
Perceived Trust (PT)	0.886	0.888
Hedonic Motivation (HM)	0.790	0.792
Price Value (PV)	0.716	0.774
Habit (H)	0.748	0.852
Behavioral Intention (BH)	0.826	0.828
Use Behavioral (UB)	0.888	0.889

When it comes to the reliability test, all the variables show reliability because their Cronbach Alpha and Composite Reliability values are more than 0.7, which confirms the reliability of the data. The Reliability Test is shown in Table 4.

Model testing comes next in the analysis. Nodes are used to describe variables. Arrows connecting nodes show how variables relate to one another. Figure 6 shows the model testing result. R-square will be used to evaluate the structural model, and hypothesis testing will be used to determine the significance of a variable association. The dependent variable's degree of influence from other factors can be determined using the R-square method. R-Square, Adjusted R-Square, and Q-Square values are shown in Table 5.

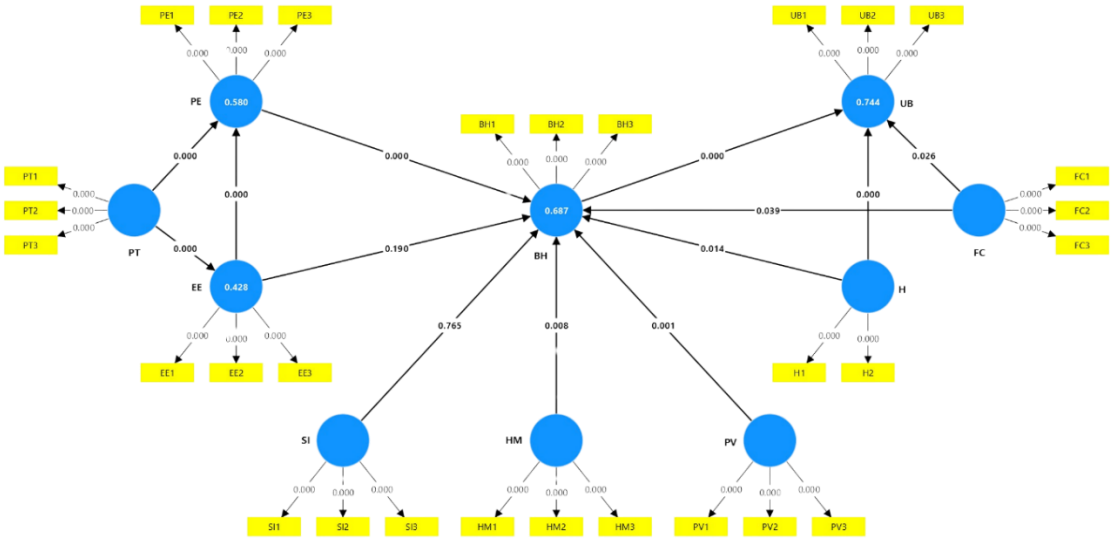

Figure 6. Model testing result

Table 5. R-square, R-square adjusted, and Q-Square values

Variable	R-square	R-square adjusted	Q-square
BH	0.682	0.676	0.667
EE	0.428	0.426	0.422
PE	0.580	0.578	0.450
UB	0.746	0.744	0.735

Based on Table 5, the R-square EE result is 0.428, and the PE result is 0.580, which means these variables have moderate significance from their variables association. The R-square BH result is 0.682, and the UB result is 0.746, which means their variables have good significance from their variables association. All of the endogenous variables have good predictive relevance as they have a Q-square of more than 0.

Table 6 shows the hypotheses testing results. P-values less than 0.05 and T-statistics greater than 1.96 will be used to evaluate the significance of variable correlations. There are 5 hypotheses that were not accepted: H2b, H3a, H3d, H4a, and H4b, with their T-statistics less than 1.96 and P-values greater than 0.05.

Table 6. Hypotheses testing

Hypotheses	Original sample (O)	Standard deviation (STDEV)	T-statistics (|O/STDEV|)	P-values	Note
H1a	0.310	0.054	5.752	0.000	Accepted
H1b	0.054	0.016	3.440	0.001	Accepted
H2a	0.466	0.051	9.079	0.000	Accepted
H2b	0.081	0.061	1.311	0.190	Not Accepted
H2c	0.014	0.012	1.159	0.246	Not Accepted
H3a	0.370	0.050	7.368	0.000	Accepted
H3b	0.654	0.038	17.146	0.000	Accepted
H3c	0.115	0.029	3.975	0.000	Accepted
H3d	0.053	0.042	1.260	0.208	Not Accepted
H3e	0.262	0.044	5.891	0.000	Accepted
H3f	0.046	0.015	3.149	0.002	Accepted
H4a	-0.013	0.043	0.299	0.765	Not Accepted
H4b	-0.002	0.008	0.292	0.770	Not Accepted
H5a	0.106	0.052	2.063	0.039	Accepted
H5b	0.094	0.042	2.224	0.026	Accepted
H5c	0.019	0.009	1.965	0.049	Accepted
H5d	0.112	0.041	2.724	0.006	Accepted
H6a	0.149	0.056	2.650	0.008	Accepted
H6b	0.026	0.012	2.144	0.032	Accepted
H7a	0.222	0.069	3.192	0.001	Accepted
H7b	0.039	0.017	2.267	0.023	Accepted
H8a	0.146	0.059	2.459	0.014	Accepted
H8b	0.674	0.041	16.620	0.000	Accepted
H8c	0.026	0.013	2.020	0.043	Accepted
H8d	0.700	0.038	18.259	0.000	Accepted
H9	0.175	0.045	3.857	0.000	Accepted

Performance Expectancy will be influenced by Effort Expectancy, with T-statistics of 9.079 more than 1.96, showing that Effort Expectancy has a major impact on Performance Expectancy. When consumers find digital payment technology easy to use, evaluations of the system's performance increase as well. This is in line with findings from several other studies [33], [54] who conducted studies in Ghana and Hungary. Studies [54] further demonstrate that Effort Expectancy has a major impact on Performance Expectancy. But Effort Expectancy has an insignificant impact on Behavioral Intention and Use Behavior as its T-statistic is less than 1.96 and its P-value is more than 0.05. This is in line with research [34], [55], [56] who conducted studies in Indonesia and Pakistan regarding mobile payments. A different thing was stated in research [57], which examined mobile payments in Korea for Chinese tourists, showing that Effort Expectancy had a significant impact on Behavioral Intention.

Interesting findings in this research are that even Effort Expectancy also has an insignificant impact on Behavioral Intention Use Behavior, when Effort Expectancy and Performance are used as mediating variables between Perceived Trust and Behavioral Intention, they have a significant impact on this relationship.

Social Influence, with P-values 0.765 more than 0.05 and T-statistics 0.299 less than 1.96 for BH and 0.770 more than 0.05 and 0.292 less than 1.96 for UB, SI has an insignificant impact on either variable. This demonstrates social impact, in which environmental influences, such as those from family, friends, and others, have no effect on Behavioral Intention and Use Behavior toward QRIS. This is in line with previous findings [58] that studied the use of OVO as payment in the Tokopedia app.

Apart from the five hypotheses that were not accepted, other hypotheses were proven to have a significant impact on the existing dependent variable. Performance Expectancy has a significant impact on Behavioral Intention and Use Behavior. This shows that as the user's assessment of Performance Expectancy increases, Behavioral Intention and Use Behavior towards QRIS will increase. This is in line with previous findings [33], [34], [55], [57]–[59] On the other side, [56] who researches the use of Bank Central Asia Mobile Banking in Indonesia states that Performance Expectancy has an insignificant impact on Behavioral Intention.

Facilitating Condition has a significant impact on Behavioral Intention and overall Use Behavior with P-values of 0.039 less than 0.05 and T-statistics of 2.063 greater than 1.96 for Behavioral Intention and 0.006 less than 0.05, and 2.724 greater than 1.96 for Use Behavior. This is in line with previous findings [34],

[55], [57], [59]. In contrast to what is claimed in these studies [33], [58] which state that Facilitating Condition have an insignificant impact on Behavioral Intention.

Perceived Trust has a significant impact on Behavioral Intention and overall Use Behavior through Performance Expectancy and Effort Expectancy with P-values of 0.000 less than 0.05 and T-statistics of 5.891 greater than 1.96 for Behavioral Intention and 0.002 less than 0.05 and 3.149 greater than 1.96 for overall Use Behavior. This is in line with previous studies [33], [58] that state Perceived Trust has a significant impact on Behavioral Intention.

Hedonic Motivation has a significant impact on Behavioral Intention and overall Use Behavior with P-values of 0.008 less than 0.05 and T-statistics of 2.650 greater than 1.96 for Behavioral Intention and 0.032 less than 0.05 and 2.144 greater than 1.96 for overall Use Behavior. This is in line with previous studies [55], [56] that state Hedonic Motivation has a significant impact on Behavioral Intention. Different from [33], [34], [57], [58]which studied mobile payments and stated Hedonic Motivation has an insignificant impact on Behavioral Intention.

Price Value has a significant impact on Behavioral Intention and overall Use Behavior with P-values of 0.001 less than 0.05 and T-statistics of 3.192 greater than 1.96 for Behavioral Intention and 0.023 less than 0.05 and 2.267 greater than 1.96 for overall Use Behavior. This is in line with previous studies [33], [57], [58] that state Price Value has a significant impact on Behavioral Intention. In contrast to what is claimed in these studies [34], [55], [56] which state that Price Value has an insignificant impact on Behavioral Intention.

Habit has a significant impact on Behavioral Intention and overall Use Behavior with P-values of 0.014 less than 0.05 and T-statistics of 2.459 greater than 1.96 for Behavioral Intention and 0.00 less than 0.05 and 18.259 greater than 1.96 for overall Use Behavior. This is in line with previous studies [33], [34], [55], [58] that state Habit has a significant impact on Behavioral Intention. On the other side, [57] which examined mobile payments in Korea for Chinese tourists, states that Habit has an insignificant impact on Behavioral Intention.

Behavioral Intention has a significant impact on Use Behavior with P-values of 0.000 less than 0.05 and T-statistics of 3.857 greater than 1.96. This is in line with previous studies [33], [58] that state Behavioral Intention has a significant impact on Use Behavior.

In addition, the following hypotheses, H3b, H8b, and H8d, have a highly notable impact on the dependent variable. Numerous connections have a significant impact on the dependent variable. Effort Expectancy is significantly impacted by Perceived Trust, as evidenced by T-statistics of 17.146. Habit also significantly affects Use Behavior directly, as evidenced by T-statistics of 16.620. As Habit significantly affects Use Behavior directly, Habit also affects Use Behavior as a whole. This is in line with previous findings [56] that showed in the use of Bank Central Asia Mobile Banking in Indonesia, the habit has the highest effect on Behavioral Intention.

CONCLUSION

This study has been successfully carried out and has obtained several findings. Facilitating Condition, Perceived Trust, Hedonic Motivation, Price Value, and Habit exhibit significant impacts on Behavioral Intention and Use Behavior. This is proven by their p-values less than 0.05 and t-statistics higher than 1.96. This indicates that this factor is important in increasing the intention to use QRIS, thereby encouraging users to tend to use QRIS as a payment method. Apart from that, Habit is the most influential factor compared to other factors. This is shown by the t-statistic value of Habit, which is much greater than the other factors. This indicates that it is very important to make users familiar with new technology in order to increase their intention and use of QRIS. Other factors, such as Social Influence and Effort Expectancy have no effect on users' intentions to use QRIS. This means that the ease of using the application and the influence of people around, such as friends and family, are not influential factors in increasing users' intentions to use QRIS.

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