



Article

UTAUT MODEL TO EXPLORE FACTORS INFLUENCING QRIS ADOPTION AMONG ECONOMICS STUDENTS IN MALANG

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ABSTRACT

In this quantitative descriptive research study, we investigate the adoption of the Indonesian Standard Quick Response Code (QRIS) among economics students in the Malang region. Our particular focus centers on the Unified Theory of Acceptance and Use of Technology (UTAUT) model. The research involves a sample of 120 economics students drawn from UIN Malang, Univ Brawijaya, and Univ Negeri Malang. Data collection is conducted through a questionnaire that examines four key variables: performance expectancy, effort expectancy, social influence, and facilitating conditions. The findings underscore the significant influence of performance expectancy on the intention to use QRIS, while the remaining variables exhibit positive yet non-significant relationships. This study provides valuable insights into the pivotal role of performance expectancy in driving QRIS adoption among economics students and highlights its potential implications for fostering a sustainable economy in the Malang region.

KEYWORDS :

QRIS adoption, UTAUT model, performance expectancy

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INTRODUCTION

Climate change and global warming today have had various adverse effects in several countries. Countries severely affected by environmental damage include India, where temperatures can reach 45-50°C, and Kuwait, where temperatures can be equally extreme, reaching 63°C. In other countries like Colombia, there is unpleasant-smelling foam from detergent waste (Malihah, 2022). This environmental damage has also impacted Indonesia, resulting in various climate changes such as urbanization, industrialization, and deforestation, accompanied by natural activities ranging from shifts in Earth's orbit, volcanic eruptions, to El Nino (Julismin, 2013). These climate changes in various countries have negative impacts on the livelihood of living organisms within them, including extreme weather, rising sea surface temperatures, fluctuating rainfall patterns, and increasing or larger sea waves (Nurhayati, Dhokhikah, & Mandala, 2020)

Through programs established by the United Nations on September 25, 2015, known as the Sustainable Development Goals (SDGs), consisting of 17 goals and 169 measurable targets, which were agreed upon through the "The Future We Want" document at the UN Conference on Sustainable Development in 2012 (Iskandar, 2020). One of the SDGs goals focused on in this research is goal number 8, which is Decent Work and Economic Growth. This economic sector needs to be examined further from various angles, considering the high and dynamic economic conflicts over time (Am, 2021). Therefore, economic development is needed by utilizing various available technologies as a form of direct or indirect concern for the environment. If viewed in the context of society 5.0, economic development can be maximized through the dynamic involvement of the entire population in the new and communal economy (Asiah & Birwin, 2019).

Improving the economic status in the era of society 5.0 requires high-quality and competitive human resources and the application of quality and competitive technology. Various technological advancements such as robots, IoT, and AI can impact people's lives and advance the economy if used correctly (Mareta, Putrayasa, & Mahayani, 2022). Through society 5.0, society tends to be driven as a



smart ecosystem, as humans are taught to integrate the physical world with the digital world in a balanced way, creating a comprehensive ecosystem, especially in industrial and economic activities that affect people's lives (Polat & Erkollar, 2021).

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in Indonesia's economic ecosystem. During the 1998 financial crisis, MSMEs supported the economy (Setiawan & Mahyuni, 2020) and also became a promising sector during the COVID-19 pandemic amid layoffs and economic downturn (Nurmala et al., 2022, p. 19). In the era of economic development 5.0, MSMEs need to adapt and innovate by adopting digital business models (Kasali, 2018), including through fintech industry optimization. Fintech offers products and potential solutions to MSMEs' financial problems, such as QRIS, a practical and efficient non-cash payment method (Setiawan & Mahyuni, 2020).

Digital or electronic transactions in Indonesia have seen a drastic increase from 943 million transaction units in 2017 to 5.4 billion transaction units in 2021. This increase illustrates the shift of many Indonesians towards cashless payments (Febriani, Utami, & Putri, 2023). The cashless phenomenon is also supported by the Indonesian government through the "Indonesia menuju cashless society" (Indonesia towards a cashless society) program carried out by Bank Indonesia in collaboration with the Indonesian Payment System Association (ASPI) through the issuance of QRIS, or Quick Response Code.

The number of QRIS users in Indonesia in 2021 reached 14 million, with the majority being digitally adapted MSMEs, and the target for 2022 is to reach 15 million (Susanti, 2022). However, this increase is still relatively low, as data from the Minister of Cooperatives and Small and Medium Enterprises in December 2021 indicated that digital MSMEs amounted to 16.9 million, or about 26% of MSMEs, with a target of reaching 30% in 2022. Based on this data, Indonesia needs a breakthrough, innovation, and socialization to encourage MSMEs to more actively engage in the digital ecosystem (Febriani et al., 2023).

Problem limitations are used to prevent deviations and broaden the main problem to make the research more focused and facilitate

discussions, thus ensuring that the research objectives are achieved.

The aim of this research is to assess the efficacy of Quick Response Code Indonesian Standard (QRIS) in advancing sustainable economics in the Malang region. The study will employ the Unified Theory of Acceptance and Use of Technology (UTAUT) as the conceptual framework to examine the factors influencing the acceptance and utilization of QRIS among the community and economic stakeholders in Malang. Data for this research will be collected through questionnaire surveys designed to assess the performance of QRIS in promoting non-cash transactions and enhancing financial accessibility for both the community and business entities in Malang. The anticipated outcomes of this research include recommendations and strategies to improve the effectiveness of QRIS in fostering sustainable economics in the Malang region

LITERATURE REVIEW

Exploring QRIS Adoption among MSMEs in Indonesia: A UTAUT-Based Study

Digital Banking in Indonesia implements all banking services and operations through digital devices. Mobile payment involves using various mobile devices, including wireless handsets, personal digital assistants, radio frequency devices, and near-field communication devices to make payments for goods and services (Alkhowaiter, 2020). This includes integrating payment systems with mobile devices, allowing users to initiate and complete financial transactions (Srivastava, Chandra, & Theng, 2010)

QR code-based mobile payment systems (MPS), commonly known as QRIS, have gained popularity among consumers, especially during the COVID-19 pandemic due to their touchless payment feature (Türker, Altay, & Okumuş, 2022). QRIS enables consumers to shop through mobile devices and efficiently complete payment transactions. Research by Fine & Clark (2016) found that women use QR codes more frequently than men. Scanlife (2013) indicates that individuals aged 34 to 44 form a significant portion of QR code users. QRIS, launched by Bank Indonesia, is part of the mobile payment system's development,



aiming to reduce cash transactions. Although many businesses and individuals have shifted away from cash payments in various markets, smartphone-based payments are less common in developing countries (Patil, Tamilmani, Rana, & Raghavan, 2020)

The adoption of QRIS by Micro, Small, and Medium Enterprises (MSMEs) can improve their performance, especially during the pandemic. However, relatively few MSMEs have adopted QRIS, prompting the need to explore factors influencing their intention to use this payment method. Understanding these factors can help formulate strategies to encourage more MSMEs to adopt QRIS. MSMEs, which contribute significantly to Indonesia's business landscape, are scattered across urban and rural areas and play a vital role, accounting for 99.99% of all business types (Bank Indonesia, 2015). MSMEs face challenges in the current pandemic situation, testing their resilience (Suci, 2017).

To overcome obstacles to their growth, MSMEs need to collaborate with various stakeholders, including the government, local authorities, banks, associations, and communities (Mangeswuri et al., 2018). They employ strategies to meet customer expectations and use social media for brand promotion and building a competitive edge. Quick strategic adjustments are essential to remain competitive, focusing on synergy, core competencies, and added value to customers. Bank Indonesia has introduced policies through QRIS to promote non-cash transactions, providing convenience and security to MSMEs. QRIS eliminates the need for carrying cash during transactions (Mangeswuri et al., 2018).

According to (Ezeh, 2018), factors like perceived ease of use, cost, and the availability of information significantly influence users' intention to use digital payments. (Khalil, Kakar, & Waliullah, 2007) found that trust, relative advantage, and trialability significantly affect users' intent to adopt digital banking (Nor & Pearson, 2008). In today's global context, the Internet economy is integral to people's lives, emphasizing the value of knowledge. Online knowledge platforms and user payment experiences are vital in strengthening knowledge income. Previous studies have explored the factors influencing user behavior in online knowledge payment.

This research builds on UTAUT and extends it with additional variables related to customer trust. UTAUT (Unified Theory of Acceptance and Use of Technology) is a theoretical model for measuring new technology adoption's success. Effort expectancy, reflecting the ease of using technology, influences users' intent to use digital payments (Venkatesh, Morris, Davis, & Davis, 2003). MSMEs have an opportunity to enhance their performance by adopting QRIS, and understanding the factors that influence their intent to use it is crucial for their growth.

Research framework

Based on the connotations and concepts of knowledge payment, scholars' understanding of the factors influencing user behavior can be divided into three aspects: the User level (user side), the Knowledge Provider level, and the Platform level. In the context of the increasing popularity and adoption of the Quick Response Code Indonesian Standard (QRIS) as a non-cash payment method by Generation Z in Malang City, there is a need to identify the influence of QRIS acceptance and usage by Generation Z on the effectiveness of implementing the concept of sustainable economics in the region. Therefore, this hypothesis emerges with the assumption that the higher the level of QRIS acceptance and usage by Generation Z in Malang City, the more effective the implementation of the concept of sustainable economics in the region. In this research, measurements and analyses of the level of QRIS acceptance and usage by Generation Z will be conducted, as well as an evaluation of the level of effectiveness influenced by QRIS acceptance and usage.

Hypothesis 1 (H1): The higher the Generation Z's performance expectancy perception regarding QRIS, the higher the level of QRIS acceptance and usage in Malang City.

This hypothesis states that the higher the performance expectancy expectations of Generation Z regarding the usage of QRIS, the more effective the implementation of the concept of sustainable economics in Malang City. Performance expectancy refers to individuals' expectations of technology or service performance, and if



these expectations are high, individuals are more likely to accept and use the technology.

Hypothesis 2 (H2): The higher the Generation Z's effort expectancy expectations regarding QRIS, the higher the level of QRIS acceptance and usage in Malang City.

This hypothesis assumes that the lower the level of effort required by Generation Z in using QRIS, the more effective the implementation of the concept of sustainable economics in Malang City. Low effort in using technology tends to increase adoption because individuals are more likely to adopt technology that is easy to use.

Hypothesis 3 (H3): The greater the social influence on Generation Z regarding QRIS, the higher the level of QRIS acceptance and usage in Malang City.

This hypothesis argues that the more positive the social influence on the usage of QRIS by Generation Z, the more effective the implementation of the concept of sustainable economics in Malang City. Social influence includes opinions and norms from an individual's social environment, which can influence technology usage decisions.

Hypothesis 4 (H4): The better the facilitating conditions supporting QRIS usage for Generation Z, the higher the level of QRIS acceptance and usage in Malang City.

This hypothesis suggests that the higher the facilitating conditions for QRIS acceptance and usage by Generation Z, the more effective the implementation of the concept of sustainable economics in Malang City. Facilitating conditions include the availability of resources and support needed by individuals to use technology.

In the context of this research, the first hypothesis (H1) focuses on how Generation Z's perception of QRIS performance will affect its acceptance and usage. The second hypothesis (H2) links expectations of ease of use of QRIS to the level of acceptance and usage. The third hypothesis (H3) focuses on the social factor's influence on the acceptance and usage of QRIS by Generation Z. Finally, the fourth hypothesis (H4) investigates the extent to which facilitating conditions that facilitate the use of QRIS influence its acceptance and usage. Through data collection and analysis, we hope to test the validity and relevance of

these four hypotheses in the context of QRIS acceptance and usage by Generation Z in Malang City and its impact on the effectiveness of implementing the concept of sustainable economics in the region.

METHODS

This research will employ a quantitative research design with a survey approach. Respondents will be asked to complete a questionnaire designed to measure the variables in the UTAUT related to the acceptance and usage of QRIS as a payment technology. Population and Sample: The population of this research consists of students in Malang City who have used or are familiar with QRIS. The research sample will be selected using purposive sampling techniques, which involve choosing respondents who meet specific criteria, such as having experience with QRIS usage or having businesses that accept payments through QRIS. Validity and Reliability: The validity and reliability of the research instrument will be tested using statistical techniques such as construct validity and reliability tests. This is done to ensure that the questionnaire used is reliable and valid in measuring the researched variables.

The research will commence upon the issuance of research permission, with an estimated duration of one month. This period will consist of two weeks for data collection and an additional two weeks for data processing, which includes preparing the report and the supervision process. The research will be conducted at five universities in Malang City, namely UIN Malang, Brawijaya University, State University of Malang, Muhammadiyah University of Malang, and the Islamic University of Malang.

We will use a questionnaire designed based on the UTAUT variables, including perceived usefulness, perceived ease of use, social influence, and facilitating conditions, as the research instrument. The questionnaire will be given to respondents to measure the level of acceptance and usage of QRIS as a payment technology. Data obtained from the questionnaire will be analyzed using regression analysis techniques to test the hypotheses proposed in the research. The hypotheses presented in this research suggest that the UTAUT



variables will have a positive impact on the acceptance and usage of QRIS as a payment technology.

Conducting research relies on collecting information, and choosing an appropriate research method enhances research quality. In the context of this research, the researcher utilizes a data collection approach in the form of a questionnaire. A questionnaire is a survey tool used in research to gather information from respondents. The questionnaire consists of a series of questions addressed to the respondents for them to answer. The responses collected from the respondents will be processed and analyzed to form a theory or conclusion. Sugiyono (2013) explains that a questionnaire is a data collection method that involves providing a series of written questions to respondents to obtain their responses. Additionally, Cooper (2006) also suggests that a Likert Scale, consisting of statements about opinions or attitudes towards an object, is used to measure the level of agreement or disagreement of respondents with those statements.

RESULTS AND DISCUSSIONS

Measurement Model

Based on the data collected from 120 respondents who participated in the research through questionnaire surveys, validity and reliability tests were conducted. The results of the validity tests indicated that the items used in this research are valid as they all possessed factor loading values exceeding 0.5, as presented in the table below.

Table 1. Factor Loading Values

Variable indicator	Factor Loading Value	Validity Test Results
X1.1 <- PE	0.838	Valid
X1.2 <- PE	0.882	Valid
X1.3 <- PE	0.813	Valid
X1.4 <- PE	0.681	Valid
X2.1 <- E.E	0.892	Valid
X2.4 <- EE	0.800	Valid
X3.1 <- SI	0.833	Valid
X3.3 <- SI	0.892	Valid

X4.1 <- FC	0.836	Valid
X4.2 <- FC	0.693	Valid
X4.3 <- FC	0.765	Valid
X4.4 <- FC	0.734	Valid
Y1.1 <- QRIS	0.716	Valid
Y1.2 <- QRIS	0.941	Valid

The validity tests' results show that all variable indicators have passed the validity tests. The factor loading for each variable indicator is above the accepted threshold of 0.5 or 0.6. This indicates that the used indicators adequately reflect the constructs or factors to be measured. With these positive validity test results, it can be trusted that the variables employed in this research are relevant and suitable for analyzing the effectiveness of QRIS in the context of sustainable economics in Malang City. In this research, the reliability of variables EE, FC, PE, QRIS, and SI was measured using Cronbach's alpha, Composite Reliability, and Average Variance Extracted (AVE) values. Cronbach's alpha values above 0.6 indicate relatively good reliability. The research results show that all variables have Cronbach's alpha values that meet the reliability criteria.

Table 2. Reliability Testing

Variable	Cronbach's alpha	Composite Reliability Value	Average variance extracted (AVE)	Reliability Test Results
EE	0.613	0.835	0.718	Reliable
FC	0.760	0.844	0.576	Reliable
PE	0.824	0.881	0.651	Reliable
QRIS	0.610	0.820	0.699	Reliable
SI	0.661	0.854	0.745	Reliable

In this research, the reliability of EE, FC, PE, QRIS, and SI was measured using Cronbach's alpha, Composite Reliability, and Average Variance Extracted (AVE) values. Cronbach's alpha values above 0.6 indicate relatively good reliability. The research results show that all variables possess Cronbach's alpha values that meet the reliability criteria. Variable EE has a Composite Reliability value of 0.835 and an



AVE of 0.718, indicating that this variable has relatively good reliability and is adequately explained by its indicators. Variable FC has a Composite Reliability value of 0.844 and an AVE of 0.576. Although the AVE value is slightly below the threshold, it is still acceptable for reliability since the Composite Reliability value is sufficiently high. Variable PE has a Composite Reliability value of 0.881 and an AVE of 0.651, signifying that this variable has good reliability and is adequately explained by its indicators. Variable QRIS has a Composite Reliability value of 0.820 and an AVE of 0.699, indicating that this variable also has good reliability and is adequately explained by its indicators. Variable SI has a Composite Reliability value of 0.854 and an AVE of 0.745, showing that this variable possesses good reliability, and a significant amount of variance is explained by its indicators.

Hypothesis Testing Results

In hypothesis testing, the influence between variables is evaluated by examining the t-statistic. If the t-statistic value is greater than 1.96 (for a significance level of 0.05), the influence between variables is considered significant. This aligns with the data presented in the following table.

Table 2. Reliability Testing

Influence Between Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	Information
EE -> QRIS	-0.037	-0.037	0.066	0.571	Positive Not Significant
FC -> QRIS	0.054	0.057	0.068	0.794	Positive Not Significant
PE -> QRIS	0.856	0.855	0.047	18,186	Significant Positive
SI -> QRIS	-0.042	-0.036	0.064	0.666	Positive Not Significant

Hypothesis testing results indicate that the influence of EE and FC variables on QRIS is not significant because their t-statistic values (0.571 and 0.794, respectively) are smaller than 1.96. However, the PE variable has a significant influence on QRIS because its t-statistic

value (18.186) is far greater than 1.96. The SI variable does not have a significant influence on QRIS either because its t-statistic value (0.666) is smaller than 1.96. From these hypothesis testing results, it can be concluded that, among the four independent variables tested (EE, FC, PE, and SI), only PE (Perceived Ease of Use) has a significant influence on the use of QRIS among university students in Malang City. The variable PE, reflecting the perception of the ease of using QRIS technology, plays a crucial role in driving the acceptance and use of QRIS to support sustainable economic growth.

Hypothesis 1 (H1): Performance Expectancy (PE) on QRIS

This hypothesis assumes that the higher the Generation Z's performance expectancy perception of QRIS, the higher the level of acceptance and use of QRIS in Malang City. Hypothesis testing indicates that this hypothesis is significant. In this context, the perception of performance expectancy of QRIS positively contributes to its acceptance and use.

Hypothesis 2 (H2): Effort Expectancy (EE) on QRIS

This hypothesis posits that the higher the Generation Z's effort expectancy perception of QRIS, the higher the level of acceptance and use of QRIS in Malang City. However, hypothesis testing shows that this hypothesis is not significant. It implies that the perceived ease of using QRIS does not have a significant impact on acceptance and use.

Hypothesis 3 (H3): Social Influence (SI) on QRIS

This hypothesis argues that the stronger the social influence concerning QRIS on Generation Z, the higher the level of acceptance and use of QRIS in Malang City. However, hypothesis testing indicates that this hypothesis is not significant. Social influence on acceptance and use of QRIS does not have a significant impact in this context.

Hypothesis 4 (H4): Facilitating Conditions (FC) on QRIS

This hypothesis suggests that the better the facilities and conditions supporting the use of QRIS for Generation Z, the higher the level of acceptance and use of QRIS in Malang City. However, hypothesis testing reveals that this hypothesis is not significant. Supporting conditions for using QRIS do not have a significant impact on acceptance and use. Based on the hypothesis testing results, it can



be concluded that, in the context of QRIS usage by Generation Z in Malang City, only the perception of performance expectancy (PE) has a significant influence on QRIS acceptance and use. Other factors like effort expectancy, social influence, and facilitating conditions do not significantly affect the adoption of QRIS. This indicates that the perception of QRIS performance as a non-cash payment method plays a more dominant role in driving the technology's adoption to support sustainable economics.

Performance Expectancy on QRIS

The first hypothesis postulated that the higher the performance expectancy perception of QRIS among Generation Z, the greater the level of acceptance and use of QRIS in Malang City. Hypothesis testing results reveal that this hypothesis has a significant impact on QRIS acceptance and use. Performance expectancy represents an individual's expectations regarding the performance of technology or services. In the context of QRIS, if Generation Z has a positive perception of QRIS's ability to facilitate non-cash transactions, they are more likely to accept and use this technology. Factors like speed, ease of use, and the benefits of QRIS can influence performance expectancy.

Effort Expectancy on QRIS

The Effort Expectancy (EE) variable measures how easily Generation Z perceives the use of QRIS. However, hypothesis testing results indicate that this variable does not significantly impact QRIS acceptance and use. This suggests that the ease of using the technology does not significantly influence QRIS adoption among university students in Malang. These results could be interpreted as meaning that, even though QRIS technology may be considered easy to use, other factors such as performance expectancy or stronger perceived benefits might dominate usage decisions. However, it's essential to recognize that the user context and characteristics may influence the importance of ease-of-use factors in the adoption decision.

Social Influence on QRIS

The Social Influence (SI) variable measures the extent to which social

environments and social norms influence Generation Z's use of QRIS. However, hypothesis testing results indicate that this variable does not significantly impact QRIS acceptance and use. This suggests that in the context of QRIS usage among university students in Malang, social influence factors do not play a dominant role in driving adoption. It is possible that Generation Z is more likely to make decisions based on performance expectancy and perceived benefits rather than being influenced by social opinions or norms.

Facilitating Conditions on QRIS

The Facilitating Conditions (FC) variable measures how the presence of conditions and resources that facilitate the use of QRIS influences QRIS acceptance and use. However, hypothesis testing results indicate that this variable does not significantly impact QRIS acceptance and use. This could be explained by the possibility that, while there may be facilitating factors that aid QRIS usage, such as infrastructure or technical support, these factors do not play a dominant role in driving QRIS adoption among Generation Z in Malang. Another possibility is that other factors such as performance expectancy or ease of use are more influential in the adoption decision.

The results and discussions above offer crucial implications for the development and promotion of QRIS as a payment method in Malang City. Emphasis should be placed on improving the performance expectancy perception of QRIS because this factor significantly impacts acceptance and usage. Clear education regarding the benefits, effectiveness, and ease of using QRIS should be provided to Generation Z to boost the adoption of this technology. Although other variables such as ease of use, social influence, and facilitating conditions are not significant in this context, it does not imply that these factors are unimportant. The user context and characteristics may play a role in the significance of these factors in the adoption decision. Therefore, further research can be conducted to understand these factors in different situations or populations. Additionally, given the importance of performance expectancy in driving QRIS adoption, marketing and promotion strategies for QRIS can focus on communicating the benefits and positive outcomes of using QRIS. Support from the government



and relevant institutions in facilitating infrastructure and technical support can also help increase QRIS adoption among Generation Z in Malang.

CONCLUSIONS

This study was conducted to investigate the factors that influence the acceptance and usage of QRIS (Quick Response Code Indonesian Standard) as a non-cash payment method among Generation Z in Malang city and its implications for the effectiveness of implementing a sustainable economy concept in the region. In terms of Performance Expectancy (PE), it was observed that a higher perception of QRIS performance among Generation Z resulted in a greater adoption rate of QRIS as a payment method. This highlights the importance of enhancing Generation Z's understanding of the benefits and performance of QRIS to promote its usage. Contrarily, Effort Expectancy (EE) did not show a significant influence on the acceptance and usage of QRIS. While QRIS is generally considered easy to use, this factor did not appear to be the primary driver of QRIS adoption among university students in Malang. Other factors, such as performance perception, played a more significant role. Social Influence (SI) also did not significantly impact the acceptance and usage of QRIS. Opinions and social norms did not appear to be the primary drivers behind QRIS adoption among Generation Z in Malang. Additionally, Facilitating Conditions (FC) were found not to significantly influence the acceptance and usage of QRIS. Supporting factors like infrastructure and technical assistance did not play a dominant role in the decision to adopt QRIS among Generation Z. These findings provide insights into the factors influencing QRIS adoption among Generation Z in Malang and can inform strategies to promote the technology's use for advancing a sustainable economy in the region

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