

# Development of a Technology Acceptance Model in Analyzing The Behavior of Muslim Traders Towards The Use of Quick Response Codes Indonesian Standard (QRIS)

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## Abstract.

*The development of digital technology has encouraged the transformation of payment systems from cash transactions to non-cash transactions. One of the digital payment innovations in Indonesia is the Quick Response Code Indonesian Standard (QRIS) developed by Bank Indonesia to facilitate standardized digital payment transactions. This study aims to analyze the behavior of Muslim traders toward the use of QRIS by developing the Technology Acceptance Model / TAM introduced by Fred Davis. This research employs a quantitative approach using a survey method conducted among Muslim traders at Pasar Sangkumpul Bonang in Padangsidempuan City. Data were collected through questionnaires distributed to respondents selected using a purposive sampling technique. The collected data were analyzed using statistical analysis to determine the relationship between the variables of perceived usefulness, perceived ease of use, attitude toward technology use, and behavioral intention to use the technology. The results indicate that perceived usefulness and perceived ease of use have a positive influence on traders' attitudes toward using QRIS. These attitudes subsequently influence traders' intentions to use digital payment technology in their trading activities. The findings of this study show that the perceived benefits and ease of use of technology are the main factors influencing the acceptance of QRIS among Muslim traders. This research is expected to contribute to the development of technology acceptance studies in the context of the digital economy and serve as a reference for stakeholders in increasing the adoption of QRIS among business actors.*

**Keywords:** Technology Acceptance Model; QRIS; Muslim traders; digital payment and technology user behavior.

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## I. INTRODUCTION

The development of digital technology has brought significant changes to various aspects of people's lives, including economic and trade transaction systems. Digital transformation in the financial sector has given rise to various cashless payment innovations aimed at improving efficiency, security, and ease of transactions. In Indonesia, one such innovation is the Quick Response Code Indonesian Standard (QRIS), developed by Bank Indonesia as a national standard for QR code-based payments. QRIS allows consumers to make digital payments using various e-wallet applications and mobile banking with just one standardized QR code. The introduction of this system is part of the government's efforts to accelerate the digitalization of the national economy and finance. The implementation of QRIS provides significant opportunities for businesses, including small and medium-sized merchants, to improve transaction efficiency and expand market access. The digital payment system through QRIS is considered capable of reducing dependence on cash, minimizing the risk of loss, and simplifying business transaction recording. However, the level of acceptance and use of digital payment technology by merchants is not always optimal. Some merchants still do not fully understand the benefits of the technology, find it difficult to use, or have doubts about its security and reliability.

In information systems studies, individuals' technology acceptance behavior is often analyzed using the Technology Acceptance Model (TAM) introduced by Fred Davis. This model explains that technology acceptance is influenced by two main factors: perceived usefulness and perceived ease of use. These two variables influence a person's attitude and intention to use a technology. As research progresses, the TAM model is often expanded by adding other variables such as trust, perceived risk, social influence, and religiosity to gain a more comprehensive understanding of technology user behavior. In the context of trade conducted by Muslim merchants, the use of digital payment technology is influenced not only by technical aspects and utility, but also by religious values and Islamic economic principles. Muslim merchants tend to consider the halal aspects of transactions, fairness, transparency, and the usefulness of technology in

supporting economic activities in accordance with Sharia values. Therefore, developing a TAM model that considers the characteristics and values held by Muslim merchants is crucial for a deeper understanding of the factors influencing the acceptance of QRIS technology.

Several previous studies have shown that QRIS adoption by businesses is influenced by factors such as ease of use, perceived benefits, and their digital literacy levels. However, studies specifically analyzing Muslim merchants' behavior toward QRIS adoption using the TAM model development approach are still relatively limited. Most studies focus on technological and economic aspects, while the religious values and social characteristics of merchants have not received comprehensive research. Based on the above description, this study aims to develop a Technology Acceptance Model (TAM) to analyze the behavior of Muslim merchants towards the use of QRIS. The development of this model is expected to provide a more comprehensive understanding of the factors influencing the acceptance of digital payment technology by Muslim merchants and provide theoretical contributions to the development of technology acceptance models in the context of a digital economy based on Islamic values. Furthermore, the results of this study are also expected to serve as a reference for financial institutions, the government, and other stakeholders in formulating more effective strategies to encourage QRIS adoption among business actors, particularly Muslim merchants.

## **II. METHODS**

This study uses a quantitative approach with a survey research type that aims to analyze the behavior of Muslim traders towards the use of QRIS through the development of the TAM introduced by Fred Davis. The study was conducted on Muslim traders operating in Sangkumpul Bonang Market, Padangsidempuan City, North Sumatra. The study population was all Muslim traders who have used or have access to the QRIS payment system, while the sample was determined using a purposive sampling technique by considering certain criteria relevant to the research objectives. Data collection was carried out by distributing questionnaires compiled based on variable indicators in the TAM model, such as perceived usefulness, perceived ease of use, and additional variables developed in this study. The data obtained were then analyzed using quantitative statistical analysis techniques through validity tests, reliability tests, and regression analysis to determine the relationships and influences between variables in the research model.

## **III. RESULT AND DISCUSSION**

### **1. Characteristics of Muslim Trader Respondents**

Respondent characteristics are a crucial aspect of research because they provide insight into the background of the subjects being analyzed. In this study, respondents were Muslim traders operating at Sangkumpul Bonang Market in Padangsidempuan City and were familiar with or using the Quick Response Code Indonesian Standard (QRIS) payment system developed by Bank Indonesia. Respondent characteristics were analyzed based on several indicators, including age, education level, length of business, and type of business. The research results show that the majority of traders are in the productive age group between 25 and 50 years old. This indicates that the majority of traders have the potential to adapt quite well to developments in digital technology. In terms of education level, the majority of respondents had a secondary education background, such as high school or equivalent. However, there were also some traders with primary and higher education.

This variation in education level influences traders' ability to understand and utilize digital payment technology. Furthermore, the research also shows that most traders have been operating their businesses for more than five years. This long-standing business experience indicates that traders have a good understanding of the dynamics of trade transactions in traditional markets. However, business experience does not always correlate with acceptance of digital technology. Some traders who have been operating for a long time still show caution in using digital payment systems due to limited understanding of the technology. Thus, the characteristics of the respondents in this study indicate that Muslim traders in traditional markets have diverse social backgrounds. This diversity can influence traders' perceptions, attitudes, and behaviors regarding the adoption of digital payment technologies such as QRIS.

## 2. Traders' Perception of the Benefits of Technology (Perceived Usefulness)

In technology acceptance studies, perceived usefulness is one of the main variables influencing a person's decision to use a technology. This concept is explained in the Technology Acceptance Model (TAM) developed by Fred Davis. Perceived usefulness refers to an individual's belief that using a technology can improve performance or provide benefits in their activities. In the context of QRIS use by Muslim merchants, perceived usefulness relates to the extent to which merchants perceive the benefits of using digital payment systems in their trading activities. The study results show that most merchants have a positive perception of the usefulness of QRIS. Merchants believe that using QRIS can speed up transactions with consumers because payments can be made conveniently by scanning a QR code using a digital payment application. Furthermore, merchants also feel that using QRIS helps improve transaction security. By reducing the use of large amounts of cash, the risk of loss or miscounting money is minimized. Research also shows that some merchants benefit from more organized transaction recording because the digital payment system automatically records transaction history. These findings indicate that the higher the level of usefulness perceived by traders regarding the use of QRIS, the greater the tendency of traders to accept and use this technology in their trading activities.

## 3. Merchants' Perception of Ease of Use

Besides perceived usefulness, another variable that significantly influences technology acceptance is perceived ease of use. This variable refers to the extent to which a person feels that using a technology requires minimal effort and can be done easily. The research results show that most merchants consider QRIS relatively easy to understand and operate. Merchants simply display a QR code provided by the digital payment service provider, and consumers then scan it using their payment app. This process is considered more convenient than conventional payment methods that require cash handling. However, this study also found that some merchants still experience difficulties using QRIS technology, particularly those with limited access to digital devices such as smartphones. Merchants less familiar with digital technology tend to take longer to understand how to use the payment system. Nevertheless, research results generally indicate that QRIS is quite user-friendly among Muslim merchants. This is one factor encouraging merchants to adopt digital payment technology in their trading activities.

## 4. Traders' Attitudes towards the Use of QRIS (Attitude Toward Use)

Attitude toward technology use is a psychological factor that influences a person's decision to accept or reject a technology. Within the Technology Acceptance Model, user attitudes are formed through perceptions of the technology's benefits and ease of use. The research results show that the majority of merchants have a positive attitude toward using QRIS in their trading activities. Merchants who have experienced the benefits of QRIS tend to be open to developments in digital payment technology. This positive attitude is also influenced by experience using the technology and support from the social environment. Several merchants stated that the use of QRIS is increasingly necessary because many consumers prefer digital payments over cash. This situation indirectly encourages merchants to adapt their payment systems to continue to meet consumer needs. These findings indicate that merchants' attitudes toward QRIS use are influenced by a combination of technology usage experience, perceived benefits, and the demands of digital transaction system developments in society.

## 5. Merchants' Intentions in Using QRIS (Behavioral Intention)

Behavioral intention is an important indicator of a person's likelihood of continuing to use a technology in the future. Within the TAM framework, intention to use a technology is influenced by the user's attitude toward that technology. The research results show that the majority of merchants have a strong intention to continue using QRIS as a payment method in their trading activities. This is due to the various benefits they have experienced, such as ease of transactions, increased payment security, and increasing consumer preference for digital payment methods. Furthermore, several merchants stated that using QRIS can improve their business image because it's perceived as more modern and technologically advanced. Therefore, QRIS not only offers practical benefits in transaction processing but also increases merchant competitiveness in trading activities. These findings indicate that merchants' intention to use QRIS is influenced by the positive experiences they have had using this digital payment technology.

#### 6. Analysis of Variable Relationships in the TAM Model

Analysis of the relationships between variables in the TAM model shows that perceived usefulness and perceived ease of use significantly influence merchants' attitudes toward using QRIS technology. These attitudes then influence merchants' intentions to use digital payment technology in their trading activities. The research results show that merchants who perceive significant benefits from using QRIS tend to have a more positive attitude toward the technology. Furthermore, merchants who perceive the QRIS system as easy to use are also more likely to adopt the technology. These findings reinforce the TAM theory, which states that perceived usefulness and ease of use are key factors influencing individual technology acceptance. Therefore, the success of QRIS implementation among merchants depends heavily on the system's ability to provide tangible benefits and ease of use to its users. Overall, the results of this study indicate that the TAM model can be used to explain the behavior of Muslim merchants in accepting digital payment technology. This model provides a comprehensive understanding of the factors influencing technology acceptance and can serve as a basis for policy development to encourage the digitalization of payment systems in the trade sector.

#### IV. CONCLUSION

Based on the results of research and discussion regarding the behavior of Muslim merchants towards the use of the Quick Response Code Indonesian Standard (QRIS), it can be concluded that the acceptance of digital payment technology among merchants is influenced by several key factors described in the Technology Acceptance Model (TAM) framework developed by Fred Davis. The variables of perceived usefulness and perceived ease of use have been shown to play a significant role in shaping merchant attitudes towards the use of digital payment technology. Merchants who experience tangible benefits from using QRIS, such as ease of transactions, increased payment security, and efficiency in the trading process, tend to have a more positive attitude towards the technology. Furthermore, perceived ease of use is also a factor driving merchants to adopt QRIS in their trading activities.

The simple and practical payment system makes it easier for merchants to accept digital transactions from consumers. Positive attitudes toward the use of this technology then influence merchants' intention to continue using QRIS as a payment method in their business activities. This demonstrates that the success of QRIS implementation depends not only on the availability of the technology but also on user perceptions of its benefits and ease of use. Overall, this study demonstrates that the development of the TAM model can provide a more comprehensive understanding of Muslim merchants' behavior in accepting digital payment technology. The findings are expected to serve as a reference for various parties, including Bank Indonesia and other relevant institutions, in formulating more effective strategies to increase QRIS adoption among merchants, particularly in traditional markets, thereby accelerating the digitalization of payment systems and increasing the efficiency of community economic activities.

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