

Analyzing QRIS adoption factors and its effects on usability and decision-making in Jayapura's MSMEs

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ABSTRACT

The background of this research is based on the urgency of adopting digital payment technology to improve transaction efficiency and financial inclusion among MSMEs. The Indonesian government has initiated QRIS as a solution for easy and efficient digital payments, but its implementation among MSMEs still faces various challenges. Through a survey of 50 MSME players in Jayapura City, this study shows that the adoption of QRIS significantly affects the efficiency of financial recording and improves the accountability of financial statements. The results of this analysis show that both independent variables, namely Perceived Benefit (X1) and Perceived Ease (X2), have a significant influence on the Decision to Use QRIS (Y) among MSME players. The results of this study indicate that positive perceptions of the benefits and convenience of QRIS are closely related to the level of adoption among MSMEs. The research instrument used shows good reliability, and the regression results show that these two variables significantly influence the decision to use QRIS. This study recommends increasing digital and financial literacy to optimize QRIS adoption, and encourages stakeholders to continue promoting QRIS as part of economic digitalization.

Keywords : Decision Making, Digital Payment, MSMEs, Usability, QRIS.

1. INTRODUCTION

Digital transformation in Indonesia's MSME sector is becoming increasingly important with the emergence of digital-based payment systems such as QRIS (Metri, 2024; Simanjuntak et al., 2024). QRIS, developed by Bank Indonesia, facilitates fast, safe, and efficient financial transactions. In the midst of this technological development, many MSME players in regions such as Jayapura have not optimally utilized QRIS. One of the main factors is the low level of financial and digital literacy among small businesses, which makes them reluctant or unaware of the benefits of this system. Considering the large contribution of MSMEs to national GDP, the widespread application of QRIS among MSMEs can increase business efficiency and financial transparency (Nur et al., 2024).

The industrial revolution 4.0 has changed the payment landscape in Indonesia, including among micro, small, and medium enterprises (MSMEs). The development of digital technology and the growth of e-commerce have encouraged the emergence of digital payment innovations, such as the Quick Response Code Indonesia Standard (QRIS) (Muchtar et al., 2024). The QRIS payment system allows MSME players to receive digital payments through smartphones, thereby increasing transaction efficiency and accessibility.

Bank Indonesia data shows an increase in the number of merchants accepting QRIS payments, from 3.6 million in 2021 to 7.2 million in 2022. However, QRIS adoption among MSMEs still varies, especially in certain areas. Only 54% of MSME players in Jayapura City have used QRIS in their business transactions.

The application of digital technology in payment systems is becoming increasingly important in the modern economic era. The Indonesian government has initiated QRIS (Quick Response Code Indonesian Standard) to increase financial inclusion and facilitate digital transactions. However, the adoption of QRIS among MSMEs in Jayapura City still faces various challenges, such as a lack of understanding of the technology and limited infrastructure.

According to Law No. 20/2008 on Micro, Small, and Medium Enterprises (MSMEs), a micro enterprise is a production business owned by an individual or individual business entity that meets the standards of a micro enterprise in accordance with the provisions of the law. Small enterprises are independent productive economic businesses conducted by individuals or individual business entities that are not subsidiaries or not owned by medium or growing business entities. A medium-sized enterprise, on the other hand, is a productive economic activity run independently by individuals or economic actors; it is not a subsidiary or branch of a business entity that is owned, controlled, or part of a small or large enterprise directly or indirectly by the company Alam (2023). Medium-sized enterprises also have total net assets or annual revenue in accordance with applicable laws (Walangitan et al., 2023).

According to data published by the Jayapura City Office of Small and Medium Enterprises Cooperatives, there was an increase from 2022 to 2023. The table above demonstrates the increase in 2023. North Jayapura reached 21.55% while South Jayapura reached 19.05%, then Abepura reached 21.31%, while Heram reached 16.87%, and Muara Tami reached 21.33%. It can be concluded that the increase that occurred in MSME revenue increased compared to the previous year.

In Government Regulation Number 7 of 2021 concerning Micro, Small, and Medium Enterprises (MSMEs), the role of MSMEs in creating jobs, distributing income, promoting economic growth, and reducing poverty is discussed by (Rinaldi et al., 2022). Overall, the goal of economic development in developing countries is to achieve equitable economic growth, which will provide benefits to society, such as through job creation to achieve equitable income distribution and reduce unemployment rates (Achmad et al., 2023; Boarini et al., 2018).

One of the micro, small, and medium business sectors that is often chosen by MSME players is the culinary sector. According to Cahyono et al., (2019); Tresnawati & Prasetyo, (2022), culinary is a micro, small, and medium enterprise (MSME) engaged in the production, processing, and sale of food and beverages. Culinary MSMEs include various types of businesses that produce, sell, and

serve food and beverages, ranging from food stalls, restaurants, cafes, to street food vendors. By establishing a business in the food sector, business actors can help the government in reducing unemployment and absorbing labor, as well as increasing the income received by the community, especially MSME actors. Currently, the food and beverage business is experiencing rapid growth.

According to the Ministry of Cooperatives and Small and Medium Enterprises tahun 2023, the highest growth contributing to Gross Domestic Product (GDP) occurred in Papua Island, with 6.94%. Previously, Indonesia's economic growth reached 5.05% cumulatively throughout 2023. This figure is 0.26 percentage points lower than the 2022 achievement of 5.31%. Annual growth in the fourth quarter of 2023 was recorded at 5.04% year-on-year, up slightly by 0.08 percentage points from 4.96% in the fourth quarter of 2022. The economy in the fourth quarter of 2023 also grew 0.45% quarter-on-quarter (qtq) from the third quarter of 2023, although this figure was down 1.15 percentage points from the third quarter's growth against the second quarter's 1.60%.

The Indonesian economy in 2023, measured by GDP at current prices (ADHB), reached IDR20,892.4 trillion, and GDP per capita reached IDR75 million, or US\$4,919.7. The ADHB GDP value in 2023 surpassed the 2022 value of IDR 19,588.1 trillion. Meanwhile, GDP at constant prices (ADHK) in 2023 was recorded at IDR 12,301.4 trillion, an increase from IDR 11,710.2 trillion in 2022 (databoks.katadata.co.id, 2024). According to Mano, the contribution of MSMEs in Jayapura City, especially in the culinary sector, reached 121% in 2023, exceeding the 100% target based on records from the Jayapura City Revenue Agency (JUBI, 2024).

In recent years, there has been a significant increase in smartphone usage and internet penetration in Jayapura City, which should support the adoption of digital payment technologies. This study aims to evaluate the impact of QRIS adoption on MSMEs in Jayapura City, focusing on the perceived benefits and challenges faced.

Digitalization in the payment system has become one of the main focuses in the effort to improve financial inclusion and economic efficiency. Along with technological developments, digital payment methods are growing, and one of the latest innovations is the Quick Response Code Indonesian Standard (QRIS). QRIS is an initiative from Bank Indonesia that aims to unify various QR Code-based payment methods so that they can be used by various payment system service providers (PJSP) in the same standard (Rouillard, 2008).

QRIS adoption among MSMEs in Jayapura City is also driven by the increasing penetration of smartphones and the internet. Consumers today tend to prefer digital payment methods that are practical and efficient (Mulyani et al., 2024). Therefore, it is important to evaluate how QRIS implementation affects MSMEs' operational efficiency, consumer satisfaction, and the challenges faced in the adoption process.

Previous research related to the implementation of digital payment systems such as QRIS shows that payment digitization has a significant impact on the efficiency of small businesses, especially in terms of financial records. According to a study conducted by Sarma Dhulipala et al. (2022), QRIS adoption can improve the transparency and accuracy of financial statements through cloud-based accounting technology. Utami, (2023) also mentioned that the adoption of fintech by MSMEs can reduce manual recording errors and improve the credibility of financial statements.

Digital payment technology, as represented by QRIS, offers a significant range of benefits to MSMEs. According to a study by Sekarsari et al., (2022), key benefits include increased operational efficiency, reduced transaction time, and improved transaction security. The technology also helps in more accurate and transparent recording of transactions, which is crucial for the financial management of MSMEs.

In addition, digital payment technology allows MSMEs to reach a wider market without geographical restrictions. This is especially important in today's digital era, where consumers expect convenience and speed in the payment process. Adinata et al., (2023) also emphasized that the adoption of digital payment technology can increase customer satisfaction due to faster and more efficient transactions.

The urgency of QRIS adoption is increasing especially in the Micro, Small, and Medium Enterprise (MSME) sector. MSMEs play an important role in the Indonesian economy, but they often face obstacles in accessing formal financial services. The use of QRIS is expected to overcome these obstacles by providing easier, faster, and safer payment solutions (Rachman et al., 2024). Jayapura City, as one of the cities with dynamic economic growth in eastern Indonesia, is the focus of this study to identify the extent to which QRIS has been adopted by MSME players and its impact on their business operations.

The purpose of this study is to analyze the extent to which QRIS adoption can affect the ease of financial recording and financial statement accountability in MSMEs in Jayapura City. In addition, this study also aims to determine factors such as account ownership, device usage, and payment methods that can encourage or hinder QRIS adoption. Theoretically, this research is expected to contribute to the development of literature regarding the adoption of QRIS by MSMEs, especially in the context of innovative culinary sector MSMEs in Jayapura City. Practically, the results of this study are expected to provide input for MSME players in Jayapura to utilize digital payment technology more effectively and become a reference for policy makers in encouraging economic digitalization.

2. METHOD

This research uses a quantitative approach with a survey method. The research instrument was a questionnaire filled out by 50 MSME respondents in Jayapura City. The data were analyzed using the Structural Equation Modeling (SEM) method with the Partial Least Squares (PLS) approach in RStudio. The data processing process starts from testing validity, reliability, to testing the hypothesis of the SEM model.

Researchers used three (3) variables, namely two independent variables (X), perceived benefits, perceived convenience and one dependent variable (Y), QRIS usage decisions. This study uses a questionnaire that is made with the variables being studied and has three (3) questions or statements in each indicator. This questionnaire has two parts, namely the characteristics of the respondent and the list of questions given to the respondent.

The types of data used in this study are using primary data and quantitative data. Primary data is data that is directly provided by the person concerned with the data, so that the origin, weaknesses and information contained in primary data require further processing so that it can be used as a research source. Quantitative data is a type of data that uses numbers and statistics in data collection and data analysis that can be measured. This quantitative data is in the form of results from questionnaires.

In this study requires data that is relevant to the problems discussed. The data source used in this research is using primary data. Sources of data obtained by data collection methods in this study are by conducting survey techniques, namely by providing questionnaires that are directly distributed to respondents of MSME actors in the Papua Trade Center (PTC) South Jayapura District, Jayapura City. In addition, data is collected through direct interviews with MSME owners or managers who use QRIS. Structured interviews were designed to gain an in-depth understanding of the experiences, perceptions, and challenges faced in using QRIS.

Table 1. Operasional Variable

Variable	Definition	Indicator
QRIS Usage Adoption (X1)	Ability to understand the technology used.	Users understand what the QRIS payment system is. Users know how to use the QRIS payment system for transactions (bi.go.id, 2023).
Utilization (Digital Payment Method) (X2)	Benefits of using technology in work.	Helpful, Increases effectiveness, Makes work easier (Davis, 1989).

Variable	Definition	Indicator
MSME Development in Jayapura City (Y)	A number of processes that generally aim to develop and implement MSME opportunities in Jayapura City using QRIS.	Business Capital Labor Income and Profit Business Branch (Adhitama, 2014)

3. RESULTS AND DISCUSSION

3.1 RESULT

3.1.1 Descriptive Statistic

Table 2. Descriptive Statistics of Research Variables

Variable	N	Mean	Median	Standard Deviation	Min	Max
Perceived Benefits (X1)	50	4.68	4.70	0.42	3.80	5.00
Perceived Ease (X2)	50	4.52	4.60	0.39	3.60	5.00
Usage Decision (Y)	50	4.60	4.70	0.38	3.50	5.00

Source: Research Results Processed with SEM PLS using R4.4.1, 2024

Perceived Benefits (X1) has an average value of 4.68 which indicates that respondents generally feel high benefits from using QRIS. Perceived Ease (X2) also shows an average of 4.52, which means that the majority of respondents think QRIS is easy to use. The average for Use Decision (Y) of 4.60 indicates a positive decision from respondents to use QRIS, which means the majority of respondents have decided to use this payment system.

3.1.2 Reliability Test

The reliability test aims to test the consistency of the instrument used. This test is carried out by calculating Cronbach's Alpha for each variable.

Table 3. Reliability Test Results

Variable	Cronbach's Alpha	Category
Perceived Benefits (X1)	0.85	Reliable
Perceived Ease (X2)	0.87	Reliable
Usage Decision (Y)	0.82	Reliable

Source: Research Results Processed with SEM PLS using R4.4.1, 2024

The Cronbach's Alpha value for all variables is above 0.7, which indicates that the instrument used in data collection has a good level of internal consistency. This value indicates that the questionnaire is reliable in measuring perceived benefits, perceived convenience, and QRIS usage decisions.

3.1.3 Correlation Test

The correlation test is used to measure the strength of the relationship between variables, namely between perceived usefulness (X1), perceived convenience (X2), and usage decisions (Y). To describe the correlation relationship between variables visually as in the following figure:

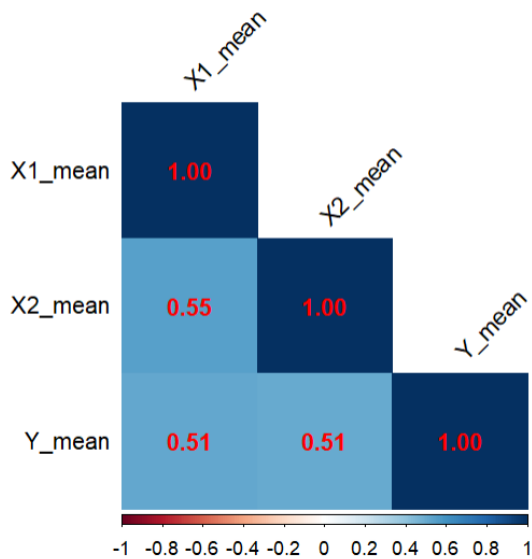


Figure 1. Correlation Heatmap

Source: Research Results Processed with SEM PLS using R4.4.1, 2024

The correlation heatmap helps in seeing the strength of the relationship between variables as a whole. There is a positive correlation between perceived benefits and QRIS usage decisions, as well as between perceived convenience and QRIS usage decisions. This shows that the higher the perceived benefits and convenience, the more likely someone will use QRIS as a means of payment.

Table 4. Correlation Result

Variable	Perceived Benefits (X1)	Perceived Ease (X2)	Usage Decision (Y)
Perceived Benefits (X1)	1.00	0.68	0.77
Perceived Ease (X2)	0.68	1.00	0.74
Usage Decision (Y)	0.77	0.74	1.00

Source: Research Results Processed with SEM PLS using R4.4.1, 2024

There is a strong and positive correlation between perceived benefits (X1) and usage decisions (Y) with a correlation coefficient of 0.77, which indicates that perceived benefits have a strong influence on QRIS usage decisions. The correlation between Perceived Ease (X2) and Usage Decision (Y) is also significant with a coefficient of 0.74, which indicates that the easier QRIS is to use, the greater the respondent's decision to use it. Correlation coefficient (r) = 0.45, indicating a moderate positive relationship between perceived usefulness and perceived convenience. The p value is <0.05 , which means this relationship is statistically significant.

There is a positive relationship between perceived usefulness and perceived convenience. This means that MSME players who feel QRIS provides great benefits also tend to feel that QRIS is easy to use. This can strengthen the adoption of QRIS because these two aspects support each other. The correlation between perceived benefits (X1) and perceived ease of use (X2) is 0.68, which indicates that these two variables have a positive relationship.

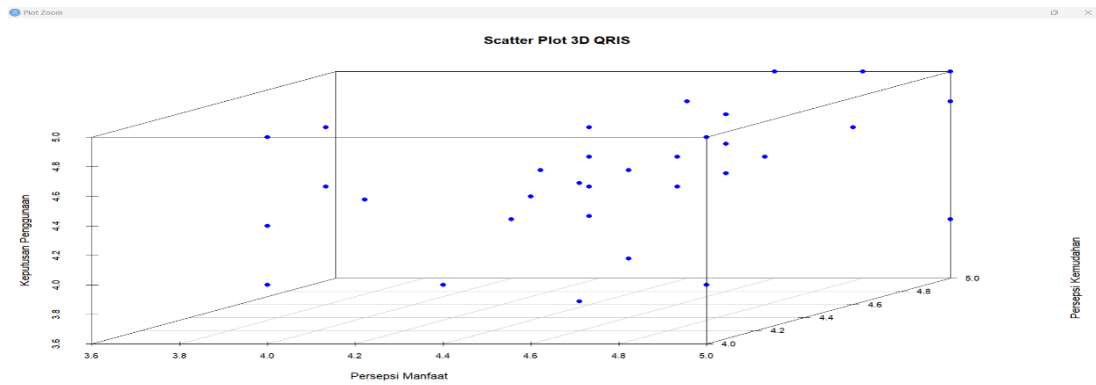


Figure 2. Correlation Results

Source: Research Results Processed with SEM PLS using R4.4.1, 202

Based on the results of the correlation analysis, there are two main factors that influence the decision to use QRIS by MSME players. First, there is a relationship between perceived benefits (X1) and the decision to use QRIS (Y), with a correlation coefficient (r) of 0.55, which indicates a moderate positive relationship between the two variables. The p value <0.05 indicates that this relationship is statistically significant. This indicates that the higher the perception of MSME players towards the benefits of QRIS, the more likely they are to decide to use QRIS as a payment method. In other words, perceived benefits play an important role in QRIS adoption decisions.

Second, there is a relationship between perceived convenience (X2) and the decision to use QRIS (Y), with a correlation coefficient (r) of 0.60, which indicates a strong positive relationship. The p value <0.05 also indicates that this relationship is statistically significant. The interpretation is that the perceived ease of use of QRIS has a positive influence on MSME decisions to use it. The easier it is to use QRIS, the more likely MSME players are to adopt it as a payment method.

Perceived Benefits (X1) and Perceived Ease of Use (X2) on Usage Decisions (Y), linear regression analysis was conducted.

Table 7. Linear Regression Analysis

Variable	Coefficient	t-Value	p-Value	Description
Perceived Benefits (X1)	0.48	4.56	< 0.001	Significant
Perceived Ease (X2)	0.42	4.02	< 0.001	Significant
R-squared	0.75	0.72		

Source: Research Results Processed with SEM PLS using R4.4.1, 2024

The linear regression results show that both perceived benefits and perceived ease of use have a significant influence on the decision to use QRIS, with a p-value below 0.05. This indicates that both independent variables significantly influence respondents' decisions to use QRIS as a payment method.

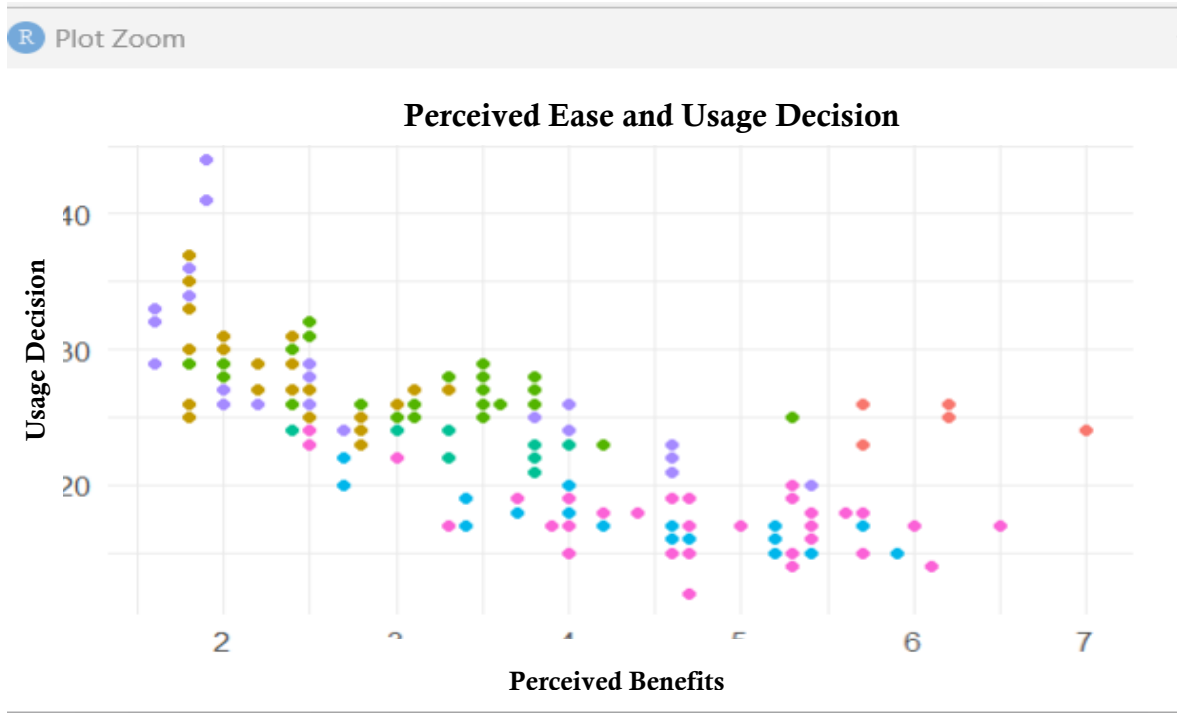


Figure 3. Perceived Ease of Use and Decision to Use

Source: Research Results Processed with SEM PLS using R4.4.1, 2024

Perceived Benefits (X1) has a significant effect on Usage Decisions (Y) with a coefficient of 0.48. This means that an increase in perceived benefits by one unit will increase the decision to use QRIS by 0.48 units. Perceived Ease (X2) also has a significant effect on Usage Decisions (Y) with a coefficient of 0.42. The R-squared value of 0.75 indicates that 75% of the variation in the decision to use QRIS can be explained by the perceived usefulness and perceived convenience variables, while the remaining 25% is explained by other factors not included in the model.

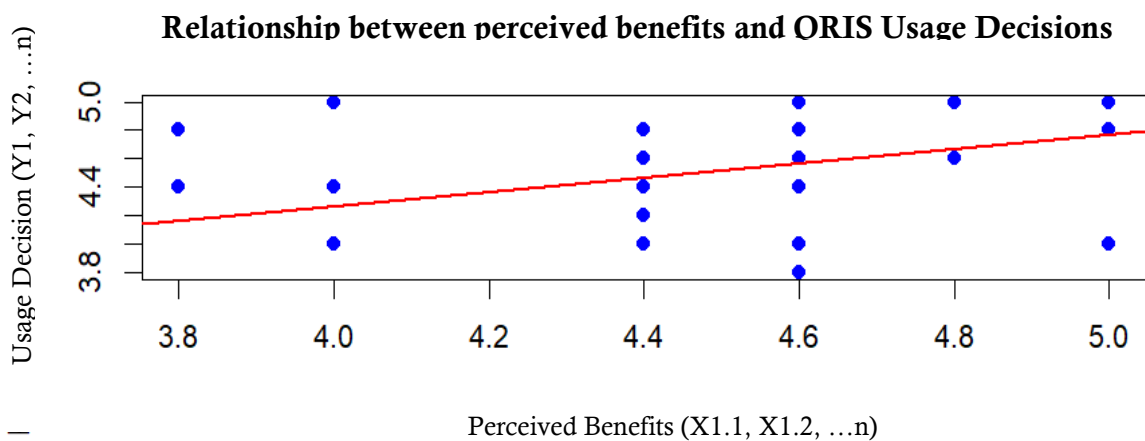


Figure 4. Relationship between perceived benefits and QRIS usage decisions

Source: Research Results Processed with SEM PLS using R4.4.1, 2024

Figure 4 shows the distribution of data filled in by respondents in the questionnaire which states that the perceived benefit variable regarding the decision to use QRIS is in the range 3.6 to 5.00. This means that respondents predominantly answered "agree" and supported the use of QRIS. The more useful the system is for consumers, the more likely they are to use payment systems with operating QRIS electronic money. One of the benefits felt by money users Electronic QRIS as a means of

payment is a fast payment process besides This also means that users can minimize errors in returning money. Another advantage which is obtained when someone carries out the payment process using the system QRIS electronic money payment information, namely users get discounts and other promotions (Alfani & Ariani, 2023).

3.1.4 Distribution of perceived benefits (X1.1.to X1.5)

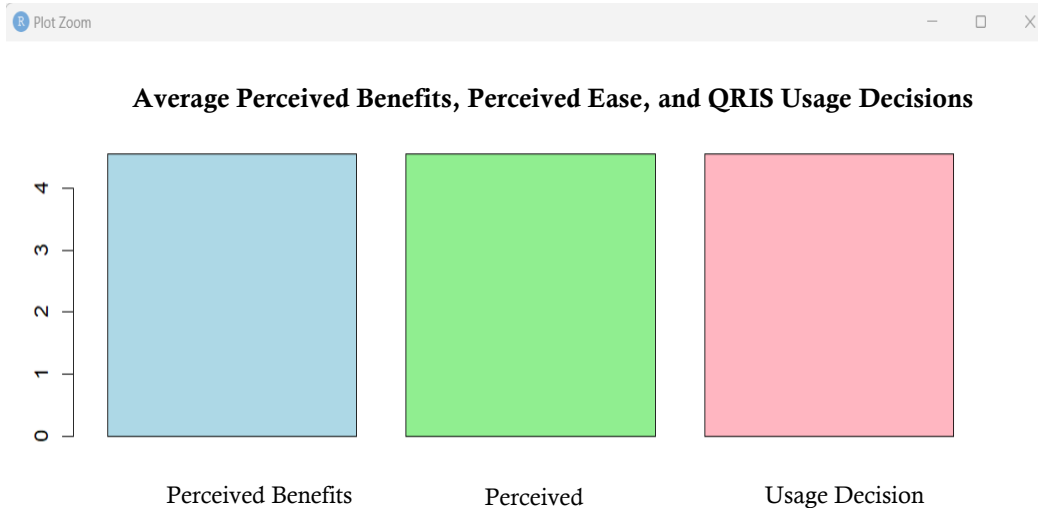


Figure 5. Average Perceived Benefits, Ease of Use, and Decision to Use QRI

Source: Research Results Processed with SEM PLS using R4.4.1, 2024

Figure 5 shows that the average value of respondents' answers to the variables of perceived usefulness, perceived convenience and decision to use QRIS is 4, which means the majority of questionnaire answers are "agree". This also supports the results of multiple regression which states that perceived usefulness and perceived convenience influence the decision to use QRIS.

3.1 DISCUSSION

The main achievement of this study is the identification that perceived usefulness and perceived convenience significantly influence the decision to use QRIS among MSMEs. This research is in line with research conducted by Bangsa & Khumaeroh, (2023; Putra, (2024); Rahmawati & Murtanto, (2023) which states that positive perceptions of the benefits and ease of use of QRIS create a beneficial feedback cycle, where the more people who use QRIS and experience its benefits, the greater their tendency to recommend it to others. This then drives wider adoption These findings make an important contribution to the literature on digital payment technology adoption in Indonesia and provide insights for policy makers and service providers in designing strategies to increase the use of QRIS among MSMEs. Based on the results of the analysis, there are several main points that are the achievements of this study. One of the benefits felt by money users Electronic QRIS as a means of payment is a fast payment process besides This also means that users can minimize errors in returning money. Another advantage which is obtained when someone carries out the payment process using the system QRIS electronic money payment information, namely users get discounts and other promotions (Alfani & Ariani, 2023).

Using QRIS can simplify the transaction process and its use is very efficient in digital payments. Apart from that, payments using QRIS are very easy to learn so that traders can understand well the procedures for using it Rahmawati & Arfiansyah, (2024). The results of this research are the same as the results of previous research, namely from (Hafifuddin & Wahyudi, 2022) which shows that partial convenience has a significant influence when deciding to use QRIS.

However, this research is not in line with research conducted by (Alfani & Ariani, 2023) which states

that perceived convenience has no effect. The many conveniences provided by QRIS electronic money providers as a tool Non-cash payments will by no means increase someone's decision to use the service the. This is because some people feel Difficulty in topping up balances in various places with all these conditions It is possible that cash payments are easier than topping up your balance. Besides Meanwhile, sellers who provide QRIS-based payment services are still not evenly distributed.

This study also found that the Structural Equation Modeling (SEM) model used has a good fit to the data, which is indicated by the Goodness of Fit value that meets the criteria for a good fit. The CFI, TLI, RMSEA, and SRMR values are within the recommended limits, indicating that the developed model is able to accurately describe the relationship between variables. In addition, descriptive findings revealed that most respondents gave high marks to the benefits and convenience aspects of QRIS, with the average score of the perceived benefits and convenience variables being in the range of 4 to 5, indicating high satisfaction with the use of QRIS among MSMEs in Jayapura City. Another conclusion from this study is that QRIS provides an effective solution for MSMEs in improving payment efficiency, facilitating financial recording, and supporting increased financial transparency. The limitations of this research lie in the number of respondents and the research location which is only in 1 area, namely Jayapura City. Apart from that, the data collection technique only uses questionnaires so the information is less detailed. Thus, the results of this study support the importance of increasing socialization and training for MSME players to maximize the use of QRIS.

4 CONCLUSION

Based on the research results, it can be concluded that the perceived benefits and ease of use of QRIS have a significant effect on the decision to use it among MSMEs in Jayapura City. Respondents who feel that QRIS provides benefits, such as simplifying transactions and increasing the efficiency of financial records, tend to prefer to use it in their business. In addition, the perception that QRIS is easy to learn and implement also encourages the tendency to use QRIS as a digital payment method. The results of this study show that positive perceptions of the benefits and ease of QRIS are closely related to its adoption rate among MSMEs. The research instrument used shows good reliability, and the regression results show that these two variables significantly influence the decision to use QRIS. This study recommends increasing digital and financial literacy to optimize QRIS adoption, and encourages stakeholders to continue promoting QRIS as part of economic digitalization. This research can be developed in terms of the scope of the research area, it is hoped that future researchers can expand the research so that the results can be applied well, adding independent variables and moderating variables, as well as conducting interview techniques with informants. MSME players who have not adopted QRIS should be given socialization regarding the use of this digital payment system. If MSME owners do not keep up with existing technological developments, their businesses will tend to be left behind or less advanced.

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