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Analysis of the Adoption of the Use of the Indonesian Standard Quick Response Code (Qris) Using the Development of the Technology Acceptance Model (Tam) in Msmes in Tarakan City

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ABSTRACT

In Tarakan City the increase in the number of QRIS users was followed by an increase in the number of QRIS merchants but did not reach the desired level. Recorded in the National Merchant Repository (NMRI) as much as 45.76% from the end of 2019 to June 2024. The purpose of this study is to analyze the use of QRIS for MSMEs in Tarakan City through the integration of the Technology Acceptance Model (TAM) model and the addition of other variables. The research findings indicate that Social Influence, Perceived Ease of Use, Perceived Trust, Perceived Value, and Intention to Use have a significant influence on the adoption of QRIS by MSMEs in Tarakan City. Conversely, Attractiveness of Alternatives, Perceived Security, and Perceived Usefulness do not show a significant direct influence on Intention to Use. These findings suggest that social encouragement, ease of use, trust, and perceived value are key factors in driving the acceptance of QRIS, while the attractiveness of alternatives and perceived security play a limited role in this context. This study provides practical implications for MSME actors and Bank Indonesia to enhance socialization, training, and trust in QRIS to achieve more optimal adoption targets
Keywords: QRIS, MSME's, Technology Acceptance Mode Extended, SEM, Tarakan

INTRODUCTION

North Kalimantan's economy in the second quarter of 2024 showed positive growth, driven by the construction sector, large trade, and processing industries, although it moderated due to weaknesses in the mining and fisheries sectors. This growth was further supported by an increase in local government spending, especially in operational expenditures, as well as an increase in regional revenue and transfers from the central government. However, *Regional Original Revenue*, especially from the tax sector, is still not optimal. In the context of MSME development, the classification regulated in *Law No. 20 of 2008* encourages business actors to upgrade. The growth of MSMEs in North Kalimantan is spurred by regional economic growth, increasing purchasing power, and easy access to licensing through the *RBA OSS* system.

On the other hand, the adoption of *QRIS* is still uneven nationally. Provinces with high economic activity, such as West Java, dominate the number of *QRIS* merchants, while North Kalimantan—especially Tarakan City—is still lagging behind, despite accounting for the largest proportion in the province. This low adoption is an important reason to research the potential and challenges of using *QRIS* in Tarakan. The adoption of technology, including *QRIS*, is highly relevant for MSMEs in increasing efficiency and competitiveness through digitalization. This is supported by increasing smartphone penetration and the development of national digital infrastructure, such as 5G services and digital literacy movements. However, the low level of digital literacy in Indonesia,

which is still at 6.84%, shows the importance of more intensive educational efforts so that digital transformation can occur evenly and optimally (Komdigi.go, 2024).

With technological advances and increasingly sophisticated internet infrastructure, people's daily lives are becoming more facilitated—especially in terms of making transactions. As a result, there has been a shift in people's behavior toward non-cash payment methods, as they switch to using digital devices on their mobile phones. In addition to facilitating the transaction process, the use of smartphones is considered more efficient and convenient because of the integrated security system. Technological advances and the development of e-commerce have changed the way MSMEs manage their businesses (Nada et al., 2021).

Currently, a concept and technology known as *cashless* has emerged. The concept of a *cashless society* in Indonesia refers to a situation where financial transactions and payments are carried out without using cash, but through electronic payment instruments such as debit cards, credit cards, digital wallets, and bank transfers. The goal of a *cashless society* is to create an efficient, secure, and transparent financial system. By reducing the use of cash, the costs of producing, distributing, and storing cash can be minimized. According to Abbas (2017), the concept of a *cashless society* is still a process and still requires more focused research on its development in Indonesia. Meanwhile, according to Aminata & Sjarif (2020), the *cashless society* in Indonesia is significantly influenced by debit card transactions, credit card transactions, and electronic money.

According to Faizani & Indriyanti (2021), the context of a *cashless society* can be categorized to include *QRIS* payment methods. To increase the number of new users, *QRIS* must prioritize building positive perceptions in society related to this payment technology. This positive perception includes an understanding of the benefits that can be obtained from using *QRIS* and a belief in its ease of use.

Table 1. Development of QRIS Merchants in North Kalimantan

Yes	Region	NMR as of End of 2019	NMR During 2020 (Jan – Dec 2020)	NMR During 2021 (Jan – Dec 2021)	NMR During 2022 (Jan – Dec 2022)	NMR During 2023 (Jan – Dec 2023)	NMR During 2024 (Jan – Dec 2024)	Cumulative NMR 2019 – June 2024	Share Prov (As of June 2024)
1	Tarakan City	744	5.721	8.796	12.052	8.668	3.111	39.092	45,76%
2	Nunukan Regency	192	1.645	4.200	6.443	6.289	1.593	20.362	23,83%
3	Bulungan Regency	139	1.389	4.200	3.799	6.465	1.924	17.360	20,32%
4	Malinau Regency	61	641	745	2.097	2.585	461	6.590	7,71%
5	Tana Tidung Regency	39	200	350	712	500	232	2.033	2,38%
Total	Prov. Kaltara	1.175	9.596	17.735	25.103	24.507	7.321	85.437	100,00%

Source: Bank Indonesia – North Kalimantan

Based on Bank Indonesia data, North Kalimantan targeted 43,500 *QRIS* users in 2023, with a focus on increasing transactions and adoption by new users, especially in the *Frontier, Remote, and Disadvantaged* (*3T*) regions. The use of *QRIS* is considered important to prevent the circulation of counterfeit money, increase transaction transparency, and make it easier for banks to collect data

on *MSMEs*. From 2019 to June 2024, the number of *QRIS* merchants continued to increase and reached 85,437 merchants, with a growth of 3,198 merchants from the previous quarter. Tarakan City contributed the highest proportion at 45.76%, followed by *Nunukan* and *Bulungan* Regencies. The number of *QRIS* users in North Kalimantan in the fourth quarter of 2023 reached 82,054 people, an increase of 13.61% compared to the previous quarter, reflecting a growing adoption trend.

The formulation of the problem in this study originates from the phenomenon of digitalization in the industrial era 4.0, especially in the financial sector through the adoption of financial technology (*fintech*) such as *QRIS*. Although *QRIS* has been widely implemented as a digital payment standard in Indonesia, its adoption in Tarakan City has not yet reached the target, with 37,000 users out of a target of 43,500 by 2023. There is a gap between public enthusiasm in using *QRIS* and the readiness of business actors to adopt the technology, which is reflected in the value of the digital readiness index (*INDX*) that remains below optimal standards. Previous research has shown that factors such as ease of use, perceived usability, trust, social influence, and perceived risk influence the intention and adoption of e-wallet technology. Therefore, this study was conducted to analyze the factors that affect the adoption of *QRIS* by *MSMEs* in Tarakan City using the development of the Technology Acceptance Model (*TAM*).

This study aims to comprehensively analyze the factors that affect the intention and also achieve the target set by Bank Indonesia to use *QRIS* in Tarakan City using an expanded *Technology Acceptance Model* (*TAM*) approach. Specifically, the aim of this study is to analyze the simultaneous impact of factors such as usability perception, social influence, alternative appeal, perceived trust, perceived security, and perceived value on the intention to use *QRIS* by applying structural equation modeling. Through various parameters obtained from the existing literature, researchers collect information that has been proven by research to influence the use of *QRIS*, assessing the implications of this study. Using this approach, the researchers seek to identify the factors that contribute to usage satisfaction in the context of *QRIS*, specifically focused on *QRIS* users in Tarakan City.

METHOD

This study uses a quantitative approach with a survey method to examine the factors that affect the adoption of the *Quick Response Code Indonesian Standard* (*QRIS*) by *MSME* actors in Tarakan City. The theoretical model used is the development of the *Technology Acceptance Model* (*TAM*), which is expanded with external variables such as *Perceived Security*, *Perceived Trust*, *Perceived Value*, *Social Influence*, and *Attractiveness of Alternatives*. The data collection technique is carried out through the distribution of online and offline questionnaires to *MSME* actors who have adopted or are considering the use of *QRIS* as a payment method.

The collected data are analyzed using the *Partial Least Square - Structural Equation Modeling* (*PLS-SEM*) method with the help of *SmartPLS* software. This technique was chosen because it is able to test complex relationships between latent variables and accommodate the theoretical model developed. The population in this study consists of all *MSME* actors in Tarakan City, with purposive sampling techniques used to select relevant respondents. The inclusion criteria include business actors who have been established for at least one year and are familiar with *QRIS*. The validity and reliability of the instruments are tested before the main analysis is performed to ensure the quality of the data used in hypothesis testing.

RESULT AND DISCUSSION

Test Results *Outer Model* (Measurement Model)

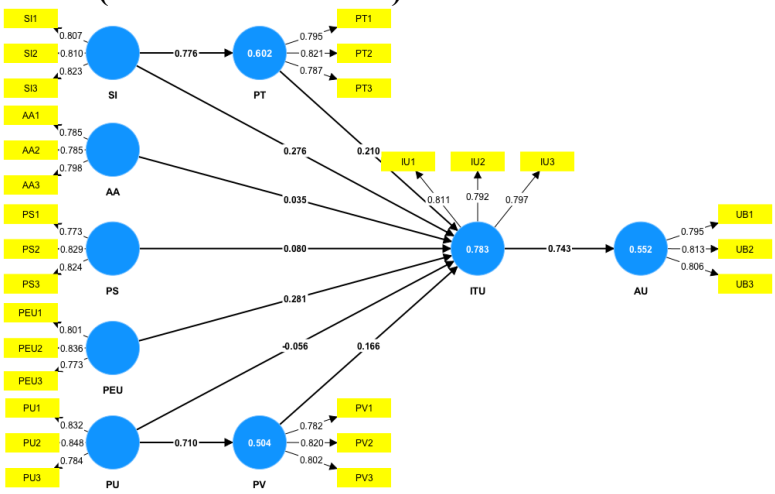

Figure 1. Outer Model Graphics
Source: Data processed by researchers (2025)

Based on the data, there are no indicators that have a value *Loading Factor* <0.60. Because in the trial, the researcher has tested the existing variables, there are no inappropriate variables. *Loading factor* Showing how closely the relationship between the indicator or question and the latent variable is, it can be seen in table 2 that each variable tested in this study has a large value of 0.6 so that the variable can be declared valid. All indicators have a value above 0.7 which means that each indicator is able to explain a latent variable that is validly measured. Thus, all indicators are declared valid and can be used in the next analysis, namely the inner model.

Based on the data showing that all these variables have an AVE value of > 0.5, it can be concluded that the construct or latent variable in this model meets *convergent validity*.

Discriminatory Validity

Table 2. Cross Loadings

	AA	AU	THAT	LITTLE	PS	PT	PU	PV	THE
AA1	**0,785**	0,330	0,330	0,308	0,346	0,343	0,283	0,366	0,289
AA2	**0,785**	0,316	0,343	0,299	0,344	0,332	0,288	0,350	0,318
AA3	**0,798**	0,503	0,541	0,470	0,569	0,553	0,451	0,523	0,566
ITU1	0,468	0,611	**0,811**	0,617	0,655	0,674	0,604	0,664	0,697
THE2	0,414	0,571	**0,792**	0,667	0,579	0,620	0,591	0,591	0,608
THE3	0,414	0,600	**0,797**	0,614	0,629	0,622	0,551	0,643	0,626
PEU1	0,420	0,599	0,639	**0,801**	0,644	0,596	0,609	0,630	0,564
PEU2	0,389	0,597	0,642	**0,836**	0,600	0,626	0,602	0,596	0,612
PEU3	0,341	0,570	0,624	**0,773**	0,564	0,567	0,626	0,553	0,549
PS1	0,406	0,628	0,571	0,572	**0,773**	0,585	0,566	0,618	0,594
PS2	0,488	0,657	0,624	0,626	**0,829**	0,665	0,636	0,673	0,655
PS3	0,468	0,628	0,685	0,621	**0,824**	0,655	0,637	0,624	0,636
PT1	0,456	0,660	0,667	0,640	0,649	**0,795**	0,681	0,656	0,631
PT2	0,434	0,617	0,663	0,559	0,616	**0,821**	0,588	0,606	0,633
PT3	0,427	0,602	0,586	0,586	0,624	**0,787**	0,596	0,597	0,599
PU1	0,363	0,637	0,633	0,623	0,601	0,673	**0,832**	0,589	0,667
PU2	0,381	0,625	0,601	0,624	0,659	0,656	**0,848**	0,591	0,653
PU3	0,377	0,630	0,557	0,632	0,612	0,582	**0,784**	0,570	0,579
PV1	0,393	0,574	0,592	0,542	0,645	0,609	0,532	**0,782**	0,572
PV2	0,438	0,610	0,656	0,599	0,618	0,630	0,567	**0,820**	0,652
PV3	0,476	0,623	0,651	0,630	0,633	0,622	0,605	**0,802**	0,639
SI1	0,421	0,624	0,662	0,586	0,616	0,669	0,635	0,598	**0,807**
SI2	0,438	0,623	0,636	0,537	0,643	0,584	0,606	0,626	**0,810**

	AA	AU	THAT	LITTLE	PS	PT	PU	PV	THE
SI3	0,440	0,618	0,667	0,621	0,638	0,636	0,641	0,672	**0,823**
AU1	0,399	**0,795**	0,578	0,613	0,608	0,633	0,615	0,597	0,625
AU2	0,396	**0,813**	0,571	0,586	0,649	0,619	0,637	0,593	0,573
AU3	0,433	**0,806**	0,641	0,572	0,641	0,637	0,603	0,626	0,644

Source: Data processed by researchers (2025)

Based on table 2, the test results that have been carried out show that the correlation value of the indicator with the construct is greater than that of other constructs. In addition, *the cross loading* value is in accordance with the requirements, which is above 0.60. Therefore, it can be concluded that this model has good discriminant validity.

Reliability Test

Table 3. Reliability Test

	Cronbach's Alpha	*Composite Reliability*	Recommended values	Information
THE	0.745	0.745	>0.7	Reliable
AA	0.717	0.745	>0.7	Reliable
PS	0.737	0.743	>0.7	Reliable
LITTLE	0.725	0.726	>0.7	Reliable
PU	0.759	0.761	>0.7	Reliable
PT	0.721	0.723	>0.7	Reliable
PV	0.721	0.723	>0.7	Reliable
THAT	0.719	0.720	>0.7	Reliable
AU	0.729	0.730	>0.7	Reliable

Source: Data processed by researchers (2025)

From table 3, it can be seen that the results of the latent variable reliability test in this study have a value of *Cronbach's Alpha* and *Composite reliability* above 0.7. So, in other words, the measuring tool used in this study provides consistent and reliable results to measure concepts that are not directly visible. Value *Cronbach's Alpha* and *Composite Reliability* Above 0.70 it can be concluded that the construction has good reliability according to the standard.

Test Results *Inner Model* (Structural Model)

Table 4. R-Square Results (R^2)

	R-square
PV	0.504
PT	0.602
THAT	0.783
AU	0.552

Source: Data processed by researchers (2025)

Table 4 shows that the R^2*Perceived Value* (PV) has an estimated accuracy of 0.504 (50.4%). This shows that the ability of independent variables in this study is *Perceived Usefulness* (PU) affects the *Perceived Value* (PV) is 50.4%, meaning that the independent variable has a considerable influence on their desire to use *QRIS*.

Then, look at the value of R square on the variable *Perceived Trust* (PT) has an estimated accuracy of 0.602 (60.2%). This shows that the ability of independent variables in this study is *Social Influence* (SI) affects the variable *Perceived Trust* (PT) is 60.2%, meaning that the independent variable has a considerable influence on their desire to use *QRIS*.

Then, on the *Intention to Use* (ITU) has an estimated accuracy of 0.783 (78.3%). This shows that the ability of independent variables in this study is *Social Influence (*SI), *Attractiveness of Alternatives* (AA), *Perceived Security* (PS), *Perceived Ease of Use* (LITTLE), *Perceived Usefulness* (PU), *Perceived Trust* (PT), and *Perceived Value* (PV) is 78.3%, meaning that the independent variable has a considerable influence on their desire to use *QRIS*.

And then, looking at the value of R square on the variable *Current Use* (AU) is 0.552 (55.2%). This explains that the desire of users and the facilities that have been provided, make a considerable factor in influencing the adoption of use *QRIS* in MSMEs themselves by 55.2%

Table 5. Q Square Results

Variable	Q *Square predict*
AU	0.628

Source: Data processed by researchers (2025)

On the results of the analysis Q *Square*, when the value of Q *Square* > 0, then shows that the model already has *predictive relevance* and if Q *Square* < 0, then shows that the model does not have *predictive relevance*. Based on the value of the result Q *Square* generated in table 4.16, the value of Q *Square* variable *Current Use* is 0.628 or 62.8%. So it can be seen that the value of the AU variable has a value *predictive relevance,* which means that the AU can make a significant contribution in forecasting the value of the ITU.

Hypothesis Test

Table 1. Hypothesis Test

Variable	*Original Sample*	*T-statistics*	P values	Information
SI > PT	0.776	20.948	0.000	Accepted
THE >	0.276	5.799	0.000	Accepted
AA > THAT	0.035	1.039	0.299	Rejected
P.S. > THAT	0.080	1.281	0.200	Rejected
LITTLE > THAT	0.281	5.472	0.000	Accepted
THAT > PU	0.056	1.063	0.288	Rejected
PU > PV	0.710	16.179	0.000	Accepted
PT > ITU	0.210	3.760	0.000	Accepted
PV > THAT	0.166	3.343	0.001	Accepted
THAT > AU	0.743	17.587	0.000	Accepted

Source: Data processed by researchers (2025)

Based on the results of hypothesis testing, it was found that most of the variables in the model had a positive and significant influence on the intention and use of QRIS by MSME actors in Tarakan City. Social Influence has been proven to have a positive influence on Perceived Trust and Intention to Use, as well as Perceived Ease of Use, Perceived Trust, Perceived Value, and Intention to Use, each of which contribute positively to increasing the use of QRIS. In addition, Perceived Usefulness also has a positive effect on Perceived Value. However, there are three hypotheses that are rejected because they are not statistically significant, namely the effect of Attractiveness of Alternatives, Perceived Security, and Perceived Usefulness on Intention to Use. These results show that social factors, ease of use, trust, and perceived value are the main drivers in QRIS adoption, while alternative attractiveness and security perception have not been the dominant considerations for users.

Discussion of Hypothesis Test Results

Influence Social Influence towards Perceived Trust

Hypothesis tests show a significant influence between *Social Influence* against *Perceived Trust* in use *QRIS* in Tarakan City (P=0.000, less than 0.5). Based on the findings, it can be indicated that social encouragement from the surrounding environment (family, friends, business partners, and local communities), plays an important role in forming trust in MSME actors towards the use of *QRIS*. Based on the results of informal interviews with several MSME actors in one of the markets in Tarakan City, most of them admitted that they started using *QRIS* After seeing, their peers successfully applied it, mainly because of the recommendations from the community of traders who

were already familiar with the use of *QRIS*. This phenomenon is reinforced by the Prokal.co (2023) report, which states that the socialization carried out by Bank Indonesia in North Kalimantan, including Tarakan, involves local communities to increase the adoption of the use of *QRIS,* demonstrating the effectiveness of a social influence-based approach/*Social Influence*

Furthermore, the trust formed from *Social Influence* driven by positive experiences shared by early adopters. AntaraNews (2023), explained that his belief in the use of *QRIS* increased after seeing his business associates get faster and safer transactions, especially during the holiday season when the number of customers soars. This confirms that *Social Influence* Not only does it serve as an initial driver, but it also strengthens the perception of the reliability of digital payment systems. This research is in line with the findings of Alalwan et al., (2016), which emphasized that social encouragement can be the main cause in building trust in financial technology, especially in areas with a growing level of digital literacy such as Tarakan City.

However, challenges remain, especially for the 3T (Frontier, Remote, and Disadvantaged) regions in North Kalimantan, as mentioned in the Bank Indonesia report (2024). In these areas, a lack of access to information and limited social networks can hinder social influence. Therefore, efforts made to increase trust through direct assistance by the authorities, such as those carried out by TP-PKKKota North Kalimantan (Newstara, 2023), are crucial to expand the adoption of the use of *QRIS*. Thus, *Social Influence* is one of the key factors that can be leveraged to increase trust, especially if it continues to be supported by educational programs that engage local communities.

Influence Social Influence towards Intention to Use

This hypothesis test showed a significant influence between *Social Influence* towards *Intention to Use* in use *QRIS* in Tarakan City (P = 0.000, less than 0.05). Based on the findings, it can be said that social pressure or encouragement of the surrounding environment (other MSME actors or promotions on social media), can encourage the intention to adopt the use of *QRIS.* Based on the results of observations in the field conducted by the Kaltara Diskominfo (2024), it is explained that many MSME actors in Tarakan are starting to be interested in using *QRIS* After seeing other traders, especially in the culinary and food sectors who get an increase in transactions during the holidays. This makes social influence a strong trigger in shaping technology adoption behavior

Furthermore, an interview conducted with MSME actors in Tarakan City conducted by Prokal.co (2023) stated that the encouragement from the local business community supported by Bank Indonesia's training made him confident that he would try to use *QRIS*. These findings are supported by previous research conducted by Zachariah et al., (2023) revealing that positive opinions of the social environment significantly influence the intent of the adoption of use *E-wallet*, especially among the younger generation and MSME actors who are relevant to Tarakan City.

However, this influence can be limited, especially in areas with low access to technology. The Bank Indonesia – North Kalimantan report (2024) notes that in several remote areas in North Kalimantan, the lack of internet connectivity can hinder the dissemination of information about *QRIS*. Therefore, the strategy of increasing usage intention needs to involve the expansion of digital infrastructure and also continuous education. Therefore, *Social Influence* proven to be a significant factor that can be used by users to achieve usage adoption targets *QRIS* in Tarakan City.

Influence Attractiveness of Alternatives towards Intention to Use

This hypothesis test showed that there was no significant influence between *Attractiveness of Alternatives* towards *Intention to Use* in use *QRIS* in Tarakan City (P = 0.299, more than 0.05). Based on these findings, it indicates that the attractiveness of alternative payments such as cash or other digital wallets is not strong enough to influence the intention of MSME actors in adopting the use of *QRIS*. Based on the results of an interview conducted by AntaraNews (2023) at one of the markets

in Tarakan City, it was stated that most of them chose to use *QRIS* due to the ease of integration with the applications they already use, although there are other alternatives such as Gopay or OVO also available.

Further, lack of influence *Attractiveness of Alternatives* which is influenced by the habits of local customers who are used to using *QRIS*. The results of an interview conducted with one of the MSME actors in the agribusiness sector conducted by the Kaltara Diskominfo (2024), explained that its customers use it more often *QRIS* compared to using other methods because of trust in the system guaranteed by the government. The findings are in line with previous research conducted by Amoroso and Magnier-Watanabe (2012), which explained that the appeal of alternatives tends to be weak if the main technology is widely accepted by the user community as happened in Tarakan City.

However, a potential shift could occur if other alternatives offer more attractive incentives such as exclusive discounts and lower transaction fees. The Bank Indonesia report (2024) notes that in some regions, competition between payment service providers is starting to emerge, which can affect preferences in the future. Therefore, even if the results are insignificant, stakeholders are expected to continue to monitor alternative developments to ensure *QRIS* remain competitive in the Takan City area.

Influence Perceived Security towards Intention to Use

This hypothesis test showed that there was no significant influence between *Perceived Security* towards *Intention to Use* in use *QRIS* in Tarakan City (P = 0.200, more than 0.05). Based on these findings, it can be concluded that the perception of safety is theoretically important, not the main determining factor in shaping intentions in use *QRIS* among MSMEs. Based on the results of interviews conducted with MSME actors in one of the markets in Tarakan City, it was stated that most of them were more focused on ease of use than concerns about safety because *QRIS* supported by Bank Indonesia which provides a sense of institutional security. This is reinforced by a report from Prokal.co (2023), stating that socialization about safety *QRIS* by the authorities has not reduced the sense of fraud concern among MSME actors.

Furthermore, there are challenges in the field related to the perception of security felt by MSME actors. AntaraNews (2023), explained that there are MSME actors who have doubted the issue of data leakage on other digital platforms, even though it does not directly lead to *QRIS*. However, these concerns are not strong enough to stop adoption, which suggests that safety factors serve more as a support than a primary driver. This is consistent with previous research that states that in certain contexts, the perception of security becomes relevant only when there is a real incident, not just a perception (Amorosi & Magnier-Watanabe, 2012).

However, even though it is not significant, increasing digital literacy still needs to be done to strengthen the perception of security. The Komdigi.go report (2024) explains that the level of digital literacy in Indonesia, especially North Kalimantan, is still low (6.84%) which can be a long-term obstacle. Therefore, Bank Indonesia and local governments need to educate MSME actors about safety protocols *QRIS* to ensure sustainable prosperity in Tarakan City.

Influence Perceived Ease of Use towards Intention to Use

This hypothesis test shows a significant effect between *Perceived Ease of Use* towards *Intention to Use* in use *QRIS* in Tarakan City (P = 0.000, less than 0.05). Based on these findings, it emphasizes the ease of use *QRIS* is the main factor that encourages the intention of MSME actors to use it. Based on the results of an interview by one of the MSME actors in the Tarakan City market, many stated that the registration and use process *QRIS* relatively simple, especially during the short settlement organized by the Cooperatives and MSMEs Office in Tarakan City. This is supported by

the report of the Kaltra Diskominfo (2024), which states that the training increases traders' trust in technology, especially among those who are initially unfamiliar with digital payments.

Further, this convenience seems to be reinforced by the design *QRIS* which is intuitive. Based on the results of a confession from one of the culinary MSME actors quoted from AntaraNews (2023), explained that he did not have difficulties in integrating *QRIS* with his mobile phone, even with limited technological knowledge. This is in line with the findings made by Alalwan et al., (2016), who explained that the perception of ease of use greatly affects the adoption of digital payments, especially if the system is designed for ordinary users such as the majority of MSME actors in Tarakan City. The high smartphone penetration rate (88.39%) in statistic data, 2024) also supports accessibility that allows for wider adoption.

However, challenges remain in regions with unstable internet connectivity. Based on the Bank Indonesia Report (2024), it is stated that in several remote areas in North Kalimantan, network disruption is the main obstacle. Therefore, the improvement of digital infrastructure, such as the planned 5G network (Tempo.co, 2024), can strengthen the perception of the power of use in the future. *Perceived Ease of Use* is the main driver that needs to be continuously supported through adequate education and infrastructure.

Influence Perceived Usefulness towards Intention to Use

This hypothesis test showed that there was no significant influence between *Perceived Usefulness* towards *Intention to Use* in use *QRIS* in Tarakan City (P = 0.288, more than 0.05). Based on these findings, many MSME actors recognize the benefits of *QRIS*, such as transaction speed and efficiency. This perception is not strong enough to directly affect the intention of use. Based on interviews conducted with MSME actors in one of the markets in Tarakan City, most of them stated that they were more interested in ease of use than long-term benefits. Especially on their focus on completing daily transactions, (Prokal.co, 2023).

Furthermore, the lack of influence that allows for increasing business literacy is still limited among MSME actors. Based on a report from the Kaltara Diskominfo (2024), it is explained that one of the MSME actors has not fully understood how *QRIS* can increase long-term profits even though it disrupts efficiency in its daily operations. These findings are in contrast to previous research by Alalwan et al., (2024) which found that *Perceived Usefulness* significantly affect the adoption intention, especially if the benefits clearly look like an increase in income. For Tarakan itself, the focus on practicality seems to override the perception of more strategic usability.

However, a more in-depth business education is needed to help utilize the use of *QRIS*, such as automated transaction reports that can help with the financial planning of a business. The Bank Indonesia report (2024) suggests additional training to increase MSME actors' understanding of the added value of using *QRIS*. Therefore, although it is not significant at this time, *Perceived Usefulness* has the potential to be an important factor if supported by more intensive education in Tarakan City.

Influence Perceived Usefulness towards Perceived Value

This hypothesis test shows a significant influence between *Perceived Usefulness* towards *Perceived Value* in use *QRIS* in Tarakan City (P = 0.000, less than 0.05). Based on these findings, it shows that the perception of usefulness *QRIS* such as transaction speed and operational efficiency, contribute greatly to shaping the value felt by MSME actors. This is supported by a report from AntaraNews (2023), which noted that 37,429 users *QRIS* in Tarakan City in 2024 will show appreciation for the practical benefits of adopting its use.

Further, the perceived value seems to be reinforced by real experience in the field. The results of an interview with Newstara (2023) with one of the MSME actors stated that *QRIS* increases its productivity as it reduces customer wait time which in turn increases satisfaction and loyalty. These

findings are in line with previous research by Zachriah et al., (2024), which found that the perception of usability *E-wallet* Philippine fi significantly affects perceived value, especially in the context of small businesses. The city of Tarakan itself is considered increasingly relevant with the high penetration of smartphones that make it easier to access this digital payment technology.

However, challenges arise from a lack of a deep understanding of the long-term benefits. The Bank Indonesia report (2024) notes that some MSME actors are still looking at *QRIS* as a simple transaction tool, not as a business strategy. Therefore, training will focus on added value, such as transaction data analysis, can strengthen this perception. In conclusion, *Perceived Usefulness* is a powerful driver for *Perceived Value*, which needs to be supported by continuous education to maximize adoption in Tarakan City.

Influence Perceived Trust towards Intention to Use

This hypothesis test shows a significant influence between *Perceived Trust* towards *Intention to Use* in use *QRIS* in Tarakan City (P = 0.000, less than 0.05). Based on the findings, it shows that trust in security, reliability, and integration *QRIS* is an important factor in forming the intention of use among MSME actors. Based on the results of interviews with MSME actors in Tarakan City, many feel confident in using *QRIS* because it is supported by Bank Indonesia, which provides institutional guarantees for this system. Strengthened by the Prokal.co report (2023), which states that socialization about reliability *QRIS* increase merchant confidence, especially after incidents of fraud with other payment methods.

Further, this trust is supported by positive customer experiences. One of the MSME actors interviewed by AntaraNews (2023), explained that his customers feel safe when using *QRIS* Because their data is protected, which in turn encourages continued use of it. These findings are in line with previous research conducted by Wu et al., (2020), which found that trust in digital payment systems in Taiwan significantly affects adoption, especially if supported by the reputation of service providers. As for Tarakan itself, Bank Indonesia's role as an advocate is key in building this trust.

However, challenges remain in areas with low digital literacy. The Kondigi.go report (2024), notes that only 6.84% of the Indonesian population is digitally literate, which can affect the perception of trust. Therefore, direct assistance and educational campaigns, such as those carried out by TP-PKK (Newstara, 2023) need to be improved. *Perceived Trust* is the main driver of use intentions that can be strengthened through continuous socialization in Tarakan City.

Influence Perceived Value towards Intention to Use

This hypothesis test shows a significant influence between *Perceived Value* towards *Intention to Use* in Tarakan City (P = 0.000, less than 0.05). Based on these findings, there are benefits or perceived value from using *QRIS*, such as efficiency and customer satisfaction that encourage the intention of MSME actors to adopt it. Based on the results of interviews with MSME actors in the culinary sector, it is explained that many state that *QRIS* provides added value by speeding up the checkout process., which improves the customer's shopping experience. This is supported by the Kaltara Diskominfo report (2024), which notes that there is an increase in customer satisfaction as the main factor in the adoption of the use *QRIS* in Tarakan City.

Furthermore, the perceived value seems to be strengthened by comparisons with other payment methods. According to the results of the AntaraNews interview (2023), it is stated that *QRIS* more valuable than cash because it reduces the risk of losing money and makes it easier to record transactions. These findings are in line with previous research conducted by Widowati et al., (2022), which found that high value perception significantly affects adoption intentions *QRIS* among Indonesian MSMEs, especially if the benefits are clearly felt. As for Tarakan itself, it is considered increasingly relevant to the increase in economic activity, as reported by Bank Indonesia (2024).

However, challenges arise from a lack of awareness of the long-term value offered by *QRIS* itself. According to Prokal.co (2023), it is noted that some MSMEs are still looking at *QRIS* as an ordinary transaction tool not as their business investment. Therefore, training that highlights strategic value, such as customer analytics, can strengthen intent to use. Conclusion *Perceived Value* is a strong driver that needs to be supported by education to maximize adoption in Tarakan City.

Influence Intention to Use towards Current Use

This hypothesis test shows a significant influence between *Intention to Use* towards *Current Use* in use *QRIS* in Tarakan City (P = 0.000, less than 0.05). Based on these findings, the strong intention to use *QRIS* by MSME actors leads to real use in daily transaction activities. Based on an interview with one of the MSME actors in Tarakan City, many stated that after deciding to try using *QRIS* local governments help by providing training as done by the local Cooperative Office. This is reinforced by a report made by AntaraNews (2023), noting an increase in the use of *QRIS* to 37,429 in 2024.

Further, real users are supported by positive experiences paca adoption of use *QRIS*. The Newstara report (2023), explained that after seeing an efficient increase, one of the MSME actors routinely uses *QRIS* to almost all transactions. This is in line with Widowati et al., (2022), who found that strong intentions are highly correlated with actual use *QRIS* among MSMEs in Indonesia, especially if supported by adequate infrastructure. For Tarakan City itself, the smartphone penetration rate is high (88.39% according to Statista, 2024).

Thus, the constraints will remain in areas with limited connectivity. Bank Indonesia's report (2024) on the record of network disruptions in several remote areas hinders actual use. Therefore, the expansion of digital infrastructure, such as 5G planning, can strengthen the relationship between intent and use. Therefore, *Intention to Use* is a strong predictor for *Current Use*, which can be maximized with technology and education support for the Tarakan City area.

CONCLUSION

This study aims to determine the factors that affect the intention and use of *QRIS* by *MSME* actors in Tarakan City. The results show that the factors of *Social Influence*, *Perceived Ease of Use*, *Perceived Trust*, and *Perceived Value* have a positive and significant influence on *Intention to Use*, which in turn also has a significant effect on *Actual Use*. *Social Influence* also significantly affects *Perceived Trust*, and *Perceived Usefulness* affects *Perceived Value*. Meanwhile, the variables *Attractiveness of Alternatives*, *Perceived Security*, and *Perceived Usefulness* did not have a significant effect on the intention to use *QRIS*. These findings indicate the importance of trust, perceptions of convenience, social influence, and perceived value in driving *QRIS* adoption. Practical advice is aimed at *MSME* actors to continuously use *QRIS* as the primary means of payment and to share positive experiences with business partners. From a theoretical perspective, this research is expected to serve as a reference in the development of *fintech* studies, as well as to encourage future researchers to expand both research objects and methods.

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