

Inhibiting Factors of QRIS Adoption among MSMEs in East Jakarta: An Extended UTAUT Perspective

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Abstract—The Quick Response Code Indonesian Standard (QRIS), introduced by Bank Indonesia, aims to standardize QR-based payments and accelerate the digitalization of Micro, Small, and Medium Enterprises (MSMEs). However, its adoption among MSMEs in East Jakarta remains limited. This study aims to identify perceived barriers and examine relationships among factors associated with QRIS adoption by applying the Unified Theory of Acceptance and Use of Technology (UTAUT), extended with perceived risk. A quantitative approach was employed using purposive sampling of 100 MSME respondents. Data were collected through a structured questionnaire (13 items) and analyzed using descriptive statistics and Spearman's rank correlation. The results indicate that social influence is the most prominent perceived barrier, while perceived risk shows a weaker association. Facilitating conditions, effort expectancy, and performance expectancy are generally perceived positively. Effort expectancy is also found to be closely related to other constructs. This study contributes by identifying key perceived barriers and relationships influencing QRIS adoption. The findings suggest that improving digital literacy, strengthening awareness, and enhancing trust in digital transactions are important to support wider adoption among MSMEs.

Index Terms— Digitalization; East Jakarta; MSMEs; QRIS; UTAUT.

THE rapid advancement of financial technology (fintech) has significantly transformed global payment systems, shifting from cash-based transactions toward digital payment ecosystems [1]. In Indonesia, this transformation is actively promoted by the government and Bank Indonesia as part of broader efforts to enhance financial inclusion and strengthen the digital economy [2]. One of the key initiatives supporting this agenda is the Quick Response Code Indonesian Standard (QRIS), launched on January 1, 2020, to standardize and integrate QR-based payments into a unified national system [3].

For Micro, Small, and Medium Enterprises

(MSMEs), QRIS offers the potential to improve transaction efficiency, security, and accessibility. Given that MSMEs contribute more than 60% of Indonesia's GDP and employ approximately 97% of the workforce [4], their participation in digital payment systems is essential for achieving an inclusive digital economy. However, the adoption of QRIS requires not only adequate infrastructure but also behavioral readiness, including digital literacy, trust, and acceptance of technology [5].

Despite its benefits, QRIS adoption among MSMEs remains limited. Although the number of registered QRIS merchants has exceeded 30 million, active usage, particularly among micro and small enterprises, continues to lag behind expectations [6]. In East Jakarta, many MSMEs have not yet integrated QRIS into their daily operations despite operating in a highly active urban environment [7], [8]. This condition reflects a gap between awareness and actual usage, indicating that the availability of technology alone is insufficient to ensure adoption [9].

To further understand these challenges, several previous studies have examined factors influencing QRIS and fintech adoption. Prior research generally highlights the role of digital literacy, perceived risk, and social influence as key determinants of technology adoption. For instance, Santoso (2021) emphasized the importance of digital literacy and training [10], while Hasan et al. (2021) identified perceived risk as a critical factor affecting user trust [11]. Similarly, Pratama and Yuliani (2020) demonstrated the influence of social environments on adoption decisions [12].

However, despite these contributions, previous studies predominantly focus on **positive adoption drivers** and are often conducted using general or national-level data. While recent research, such as Paramita and Cahyadi (2024), confirms the importance of perceived usefulness and ease of use, limited attention has been given to **inhibiting factors that may prevent actual usage**, particularly among micro and small enterprises [13]. In addition, prior studies rarely examine the **interrelationships among behavioral and risk-related factors**, and often lack context-specific analysis at the local level. Therefore, there remains a need for a more focused investigation that not only identifies key barriers but also examines how these

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factors interact within a specific context.

To address this gap, this research employs the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. (2003) [14], extended with perceived risk. The UTAUT model includes four key constructs that influence technology acceptance: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). In the context of financial technology, this model is often extended with Perceived Risk (PR). The inclusion of perceived risk allows for a more comprehensive analysis of user concerns related to security, fraud, and uncertainty in digital financial transactions [15].

This study focuses specifically on inhibiting factors and their relationships in the context of QRIS adoption among MSMEs in East Jakarta. Unlike prior studies that emphasize adoption drivers, this research adopts a barrier-oriented perspective to better understand the factors that may hinder actual usage. The objectives of this study are: (1) to identify the dominant perceived barriers, and (2) to examine the relationships among key constructs within the extended UTAUT framework.

This study contributes to the literature in three ways. First, it provides a barrier-oriented analysis of QRIS adoption, shifting the focus from drivers to factors that inhibit usage. Second, it offers a context-specific perspective by examining MSMEs in East Jakarta, an urban area with high digital potential but uneven adoption. Third, it extends the UTAUT framework by incorporating perceived risk and analyzing the interrelationships among behavioral and risk-related factors. These contributions are expected to support the development of more targeted strategies to improve MSME participation in digital payment systems.

I. RESEARCH METHOD

This study employed a quantitative approach using primary data collected through a structured questionnaire survey. The instrument was developed based on the Unified Theory of Acceptance and Use of Technology (UTAUT), which was extended with the Perceived Risk construct to better capture behavioral and psychological barriers to QRIS adoption. Data were collected from 100 MSME owners in East Jakarta using purposive sampling based on specific inclusion criteria. The quantitative results were then analyzed using descriptive and correlation analysis to identify key inhibiting factors and the relationships among them.

A. Research Stages

The research stages outline the sequence of activities carried out by the researcher. The stages for this study are summarized in Figure 1



Fig 1. Flowchart of Research Stages

Based on Figure 1, the research stages can be described as follows:

1. Problem Identification

The researcher identified the main problem: the low level of QRIS usage among MSMEs in East Jakarta. This problem was formulated into the research focus and concrete research questions to be analyzed quantitatively in order to identify the inhibiting factors of QRIS adoption.

2. Literature Review

A literature review was performed to gather theoretical foundations, concepts, and previous empirical findings relevant to digital literacy, MSME digitalization, technology adoption, and inhibiting factors for QRIS use. The literature review informed variable operationalization and indicator selection.

3. Instrument Development

The primary data collection tool was a structured questionnaire. The questionnaire was divided into two parts: the first part collected respondents' demographic information; the second part contained items measuring the inhibiting indicators. Before the main survey, the questionnaire underwent validity and reliability testing to ensure it measured the intended constructs consistently and accurately.

4. Sampling Criteria and Technique

Sampling used a purposive sampling technique:

respondents were selected according to criteria relevant to the research objectives. In this study, the inclusion criteria were MSME actors operating in East Jakarta. The sample size was set at 100 respondents based on considerations of adequacy and relevance to the study. It should be noted that the use of purposive sampling may limit the generalizability of the findings. Therefore, the results of this study are intended to reflect the perceptions of the selected MSME respondents rather than to represent the entire MSME population.

5. Data Collection

Primary data were collected by distributing the questionnaire to 100 eligible MSME respondents. Distribution methods included direct (face-to-face) administration and online dissemination. Secondary data were collected from authoritative sources for literature support.

6. Instrument Validity and Reliability

Validity was assessed using the Pearson Product-Moment correlation to evaluate the relationship between each item score and the total variable score; an item is considered valid if its significance value is below 0.05. Reliability was evaluated using Cronbach’s Alpha to measure internal consistency within each construct. The instrument is considered reliable when Cronbach’s Alpha reaches the acceptable threshold ($\alpha \geq 0.7$). Pilot testing of the instrument was conducted on 30 respondents; subsequent full data collection combined pilot and main samples to reach 100 respondents.

7. Data Analysis

Data analysis was performed using SPSS. The analysis procedures included frequency and percentage distributions for respondent characteristics, as well as mean and standard deviation to determine perception tendencies for each indicator. Spearman’s rank correlation was used to test relationships among indicators and to identify the strength of associations between inhibiting factors. The analytical results were interpreted in relation to prior studies to gain a comprehensive understanding of QRIS adoption barriers among MSMEs in East Jakarta.

8. Drawing Conclusions

Findings from the statistical analysis were synthesized to formulate conclusions and develop recommendations. Suggestions for future research were also compiled to broaden the academic contribution of the study.

B. Research Instrument

The research instrument consisted of a closed-ended questionnaire developed based on the UTAUT framework (Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions) and Perceived Risk. Responses were measured using a five-point Likert scale, where:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. The questionnaire consisted of two parts:

1. Respondent Demographics: items for screening and profiling respondents (gender, age, daily turnover category, business duration, and QRIS usage status).
2. Inhibiting Indicator Statements: 13 items grouped into five main indicators:
 - a. Performance Expectancy (PE) – 3 items
 - b. Effort Expectancy (EE) – 3 items
 - c. Social Influence (SI) – 2 items
 - d. Facilitating Conditions (FC) – 3 items
 - e. Perceived Risk (PR) – 2 items

All items were adapted from validated sources and adjusted for MSME digitalization context.

C. Data Analysis Method

The data analysis in this study was conducted quantitatively using non-parametric techniques with the assistance of SPSS software. Given the use of descriptive and correlation analysis, this study is positioned as an exploratory investigation aimed at identifying perceived barriers and examining associations among variables, rather than testing causal relationships. The analytical process aimed to identify and evaluate the factors that inhibit QRIS adoption among MSMEs in East Jakarta.

Instrument validity was tested using the Pearson Product-Moment correlation, where each item was considered valid if its significance value (p) < 0.05. Reliability testing employed Cronbach’s Alpha, with $\alpha \geq 0.7$ indicating satisfactory internal consistency. Pilot test results confirmed that all 13 items were valid and reliable ($\alpha = 0.908$).

Descriptive analysis was used to describe respondents’ perceptions by calculating the mean, standard deviation, and frequency for each construct. This analysis helped identify which factors were most dominantly perceived as barriers to QRIS adoption.

To further examine relationships between constructs, the Spearman’s rank correlation test was applied, as the data were ordinal and did not meet parametric assumptions. This test measured the strength and significance of correlations among the five constructs—Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, and Perceived Risk—to determine which factors were most closely interrelated in influencing QRIS adoption decisions.

II. RESULTS AND DISCUSSION

A. Respondent Characteristics

The study involved 100 MSME respondents in East Jakarta. Table 1 summarizes the distribution of respondents by gender, age, business type, category, years of operation, and QRIS usage status.

Table 1. Respondent Characteristics

Characteristic	Distribution	Key Point
Gender	Male (54%), Female (46%)	Balanced between male

Characteristic	Distribution	Key Point
Age	<25 (29%), 25–40 (46%), >40 (25%)	and female Dominated by productive age (25–40)
Business Type	Culinary 42%, Retail 33%, Services 25%	Culinary most common
Business Category	Micro 55%, Small 33%, Medium 12%	Mostly micro businesses
Years of Operation	<1 yr (15%), 1–3 yrs (49%), 4–6 yrs (28%), >6 yrs (8%)	Majority in growth stage (1–3 yrs)
QRIS Usage status	Not aware 9%, Aware-not using 39%, Used-stopped 27%, Active 25%	Most aware but not yet using

The data indicate a balanced gender composition, with 54% male and 46% female respondents, showing that participation in MSME activities in East Jakarta is relatively equal. Most respondents are aged 25–40 years—the productive and technology-adaptive age group most likely to adopt digital payment systems. The majority operate in the culinary sector (42%), reflecting the dominance of food-related microbusinesses in East Jakarta.

In terms of business category, 55% of respondents are micro-scale enterprises, 33% small, and 12% medium-sized. This distribution represents the national trend where microbusinesses dominate the MSME landscape. Most respondents (49%) have operated their business for 1–3 years, indicating they are in a growth and adaptation stage toward digitalization.

Regarding QRIS adoption, while 39% of respondents are aware of QRIS but have not used it, and 27% have stopped using it, only 25% remain active users. This finding highlights a gap between awareness and actual usage, emphasizing the importance of identifying the inhibiting factors of QRIS adoption among MSMEs.

B. Instrument Validity and Reliability

Before conducting the main analysis, the validity and reliability of the questionnaire were tested to ensure that each item accurately and consistently measured the intended constructs. The instrument consisted of 13 items grouped into five main constructs: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), and Perceived Risk (PR).

1. Validity Test

Instrument validity was assessed using the Pearson Product-Moment correlation to determine the relationship between each item score and the total construct score. An item is considered valid when the correlation coefficient (r) exceeds the critical value of 0.1966 ($\alpha = 0.05$; $df = 98$).

Table 2. Instrument Validity Test Results

NO	Item	r hitung	r tabel (df=98, $\alpha=0,05$)	Keterangan
1	P1	0,598	0,1966	Valid
2	P2	0,870	0,1966	Valid

NO	Item	r hitung	r tabel (df=98, $\alpha=0,05$)	Keterangan
3	P3	0,735	0,1966	Valid
4	P4	0,730	0,1966	Valid
5	P5	0,732	0,1966	Valid
6	P6	0,482	0,1966	Valid
7	P7	0,424	0,1966	Valid
8	P8	0,757	0,1966	Valid
9	P9	0,496	0,1966	Valid
10	P10	0,620	0,1966	Valid
11	P11	0,662	0,1966	Valid
12	P12	0,620	0,1966	Valid
13	P13	0,684	0,1966	Valid

All 13 items obtained $r_{\text{calculated}} > r_{\text{table}}$, indicating that each item is valid and accurately measures the intended construct.

2. Reliability Test

Table 3. Reliability Test Results

Reliability Statistics	Cronbach's Alpha	N of Items
	0.887	13

The reliability test using Cronbach's Alpha produced a coefficient value of 0.887, exceeding the minimum standard of 0.7. This result indicates that the instrument demonstrates high internal consistency, meaning that the 13 questionnaire items are reliable and consistently measure the constructs related to QRIS adoption among MSMEs in East Jakarta.

C. Descriptive Analysis of Inhibiting Factors

Descriptive statistical analysis was conducted to identify MSME perceptions regarding the five constructs affecting QRIS adoption: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), and Perceived Risk (PR).

Overall, Effort Expectancy appears to be closely associated with other constructs, indicating its potential importance in understanding MSMEs' perceptions of QRIS adoption.

Table 4 Descriptive Statistics Results

Construct	N	Minimum	Maximum	Mean	Std. Deviation
Effort Expectancy (EE)	100	1.33	5.00	3.5000	0.81856
Social Influence (SI)	100	1.50	4.00	2.5200	0.80378
Facilitating Conditions (FC)	100	2.00	4.33	3.5700	0.54288
Performance Expectancy	100	2.00	4.33	3.1233	0.66271

(PE) Perceived Risk (PR)	100	1.50	4.50	2.8300	0.73930
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The results show that Facilitating Conditions (M = 3.57, SD = 0.54) has the highest mean value, indicating that MSMEs perceive supporting facilities—such as internet connectivity, smartphone ownership, and technical assistance—as sufficient.

Effort Expectancy (M = 3.50, SD = 0.82) also scored high, meaning that QRIS is generally considered easy to use and understand.

In contrast, Social Influence (M = 2.52, SD = 0.80) recorded the lowest mean, indicating that peer, community, or customer encouragement remains weak—making it the main inhibiting factor.

Performance Expectancy (M = 3.12, SD = 0.66) shows that MSME owners recognize QRIS’s benefits in improving business efficiency, but not yet as a strong advantage.

Meanwhile, Perceived Risk (M = 2.83, SD = 0.74) reflects moderate concerns about transaction security and potential losses.

Overall, these results suggest that technical readiness and ease of use are perceived as relatively less problematic compared to social and behavioral aspects. Instead, social encouragement and trust in digital transactions appear to remain important considerations in understanding QRIS adoption among MSMEs in East Jakarta.

D. Correlation Analysis

To examine the strength and direction of relationships among the five constructs—Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), and Perceived Risk (PR)—the Spearman’s rank correlation test was conducted. This non-parametric test was chosen because the data were ordinal and did not meet parametric assumptions.

The results of the correlation analysis are presented in Table 5 below.

Table 5. Spearman’s Rank Correlation Results

Variable	EE	SI	FC	PE	PR
Effort Expectancy (EE)	1.000	0.780	0.645	0.658	0.685
Social Influence (SI)	0.780	1.000	0.507	0.658	0.654
Facilitating Conditions (FC)	0.645	0.507	1.000	0.548	0.583
Performance Expectancy (PE)	0.658	0.658	0.548	1.000	0.583
Perceived Risk (PR)	0.685	0.654	0.583	0.583	1.000

The results indicate that all relationships between constructs are positive and statistically significant (p < 0.01), suggesting that the variables are associated with one another. The strongest relationship was observed between Effort Expectancy (EE) and Social Influence

(SI) (ρ = 0.780), indicating a strong association between perceived ease of use and social factors.

A strong positive relationship also exists between Effort Expectancy (EE) and Perceived Risk (PR) (ρ = 0.685), suggesting that these constructs are closely related in the context of QRIS adoption.

Performance Expectancy (PE) is also positively associated with Social Influence (SI) (ρ = 0.658), indicating that perceptions of usefulness are linked with social interactions.

The lowest but still significant correlation occurs between Social Influence (SI) and Facilitating Conditions (FC) (ρ = 0.507), suggesting that infrastructure readiness is less strongly associated with social factors compared to other relationships.

Overall, the findings suggest that Effort Expectancy is strongly associated with multiple constructs, highlighting its close relationship with both social and risk-related factors in understanding MSMEs’ perceptions of QRIS adoption.

III. CONCLUSION

The findings of this study indicate that the perceived inhibiting factors of QRIS adoption among MSMEs vary across different constructs. Overall, facilitating conditions and performance-related factors are perceived as relatively adequate, while social influence appears to be the most prominent barrier, reflecting limited encouragement from surrounding environments such as peers, customers, and business networks. Perceived risk is also identified as a concern, although to a lesser extent. These findings suggest that beyond technical readiness, social and behavioral aspects remain important in understanding MSMEs’ adoption of QRIS.

The correlation analysis further shows that the constructs are significantly associated with one another. In particular, effort expectancy demonstrates strong associations with social influence and perceived risk, indicating its close relationship with both social and psychological aspects of adoption. These results highlight that perceptions of ease of use are closely linked with other factors in shaping MSMEs’ views toward QRIS, rather than acting as an independent determinant.

This study has several limitations. First, the use of purposive sampling limits the generalizability of the findings to the broader MSME population. Second, the analysis is exploratory in nature and based on descriptive and correlation methods, which identify associations rather than causal relationships. Third, the data rely on self-reported perceptions, which may be subject to respondent bias. Future research is encouraged to employ larger and more representative samples, incorporate additional variables such as trust and policy support, and apply more advanced analytical approaches to better understand long-term adoption behavior.

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