

Generation Z Adoption of QRIS in Semarang City: Role of Financial Risk Tolerance**Annisa Luthfiah Rachma¹, Pradana Jati Kusuma²**

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211202006285@mhs.dianus.ac.id**ABSTRACT**

This study explores Generation Z's adoption of QRIS in Semarang City using the UTAUT framework. It examines how performance expectancy, effort expectancy, social influence, and facilitating conditions impact financial risk tolerance and intentions to use of digital payment QRIS. According to Bank Indonesia, QRIS has seen significant growth, with 50.50 million users in 2024 and a 226.54% increase in transactions compared to the previous year. Data from 165 respondents aged 18–27, analyzed with SEM-PLS, revealed that all UTAUT variables positively influence financial risk tolerance, which in turn impacts QRIS adoption. Performance expectancy had the strongest effect, while facilitating conditions showed minimal impact, indicating the need for infrastructure improvements. Recommendations include enhancing security, upgrading infrastructure, and educating users to promote QRIS as a reliable digital payment tool in Indonesia.

Keywords: UTAUT, Financial Risk Tolerance, Intention to Use, Generation Z, QRIS.

1. INTRODUCTION

In the digital era, financial technology (fintech) has fundamentally transformed the way people live, work, and conduct transactions. One significant innovation is the QR Code Indonesian Standard (QRIS), developed by Bank Indonesia to facilitate fast, secure, and cashless transactions. In 2024, QRIS achieved remarkable milestones, with the number of users reaching 50.50 million and transaction volumes growing by 226.54% year-on-year (YoY). This growth underscores the substantial role QRIS plays in driving Indonesia's digital economy. However, alongside its convenience, QRIS faces challenges, including risks such as data breaches and fraud, which remain critical barriers to its broader adoption (Kinis, F& Tano va, C, 2022).

This research aims to utilize the Unified Theory of Acceptance and Use of Technology (UTAUT) to explore the factors that affect Generation Z's adoption of QRIS in Semarang City. The UTAUT model, introduced by Venkatesh et al. (2003), seeks to integrate various existing models, including the widely recognized Technology Acceptance Model (TAM) developed by Davis (1989), which is an extension of the Theory of Reasoned Action (TRA). Numerous researchers in social psychology have replicated Davis's original model to demonstrate the connections between a system's ease of use, its perceived usefulness, and actual usage. Venkatesh and Davis (2000) further enhanced this

unified model by incorporating social influence as a factor that can shape user perceptions. The Theory of Planned Behavior (TPB) builds on the limitations of TRA by broadening its applicability to behavior, but E. Jarrett (2016) criticized it for assuming that individuals must be motivated to engage in specific behaviors, which may pose challenges when examining consumer adoption, particularly regarding the uniformity of belief structures among respondents. TRA (Fishbein & Ajzen, 1975) posits that a person's specific behavior is influenced by their intention to perform that behavior. However, Perri et al. (2020) argued that the theory is limited by its correspondence requirement, suggesting that for it to accurately predict behavior, there must be alignment between attitude and intention concerning the action, target, context, time frame, and specificity.

The Motivational Model (MM) (Davis et al., 1992) emphasizes individual motivation without considering the broader social context, making it less comprehensive compared to UTAUT. The TAM & TPB Combination Model (MPTU) (Thompson et al., 1991) focuses on technology acceptance alongside the Theory of Planned Behavior (TPB), which is more behavior-oriented. However, despite integrating TAM and TPB, MPTU remains limited as it does not account for external variables that influence technology usage. Innovation Diffusion Theory (IDT) (Moore & Benbasat, 2001) explains how innovations spread within a population, concentrating on the characteristics of innovations, communication, and individual adoption. This theory prioritizes the diffusion process over individual acceptance, rendering it less effective in elucidating psychological and social factors. Social Cognitive Theory (SCT) (Compeau et al., 1999) highlights the role of social cognition and environmental influences in individual learning and behavior. On the other hand, it is more theoretical and does not directly measure technology acceptance, whereas UTAUT offers a more practical and measurable framework for assessing various factors affecting technology acceptance across different contexts. The combination of UTAUT and Social Cognitive Theory was utilized by Ilias Pappas (2011).

UTAUT identifies four main factors that influence technology acceptance: performance expectancy, effort expectancy, social influence, and supportive conditions. This model is better used because of its ability to explain variations in intention and use of technology more accurately than previous models. This theory supported by Zaineldeen et al. (2020) agree that UTAUT is a comprehensive model with greater explanatory power compared to other theories of technology acceptance and use. Similarly, Yen-Ting Helena Chiu et al. (2010) noted that the four primary factors within UTAUT significantly influence overall usage intention, although perceptions of these factors differ notably between potential users and early adopters. Since its inception, UTAUT has been utilized by researchers such as Héctor San Martín et al. (2012). With a more comprehensive approach, UTAUT can help organizations understand and manage the implementation of new technologies more effectively, especially in the changing context of today's digital era. UTAUT seeks to eliminate redundancy and identify the core factors influencing technology adoption by integrating insights from various theoretical perspectives. (Khan et al., 2024).

The introduction of UTAUT 2 includes three new factors into the original UTAUT model: habits, hedonic motivation, price value, along with user characteristics such as age, gender, and experience acting as moderating variables. This updated version of UTAUT 2 shows an improvement in the percentage of variance accounted for in technology usage, increasing from 40% to 52% (Yee, M. L. S., & Abdullah, M. S., 2021). Hedonic Motivation (HM) refers to the level of pleasure or enjoyment that users derive from engaging with a technology. Price Value (PV) represents the user's mental assessment of the value of the Applications compared to the cost of using them. Habit (H) is defined as the tendency of users to perform actions automatically due to prior learning (Venkatesh et al., 2012).

In shaping a person's readiness to embrace technology. Furthermore, financial risk tolerance, which refers to the capacity to handle risks in monetary choices, is studied as an intermediary variable that influences the intention to use QRIS (Nurhidayah, 2024). Research shows that People who possess greater levels of risk tolerance are more inclined to embrace innovative financial solutions (Cope, 2013).

Generation Z, defined as individuals aged 18–27, includes those born between 1997 and 2010 (Pranata et al., 2024) This generation is a key focus of this research due to their active role as technology users. They are characterized by open-mindedness, a love for new experiences, critical thinking, and an appreciation for diversity. Growing up surrounded by technology, Gen Z has seamlessly adapted to the digital world (Nisa, F. K., et al., 2020). According to the *EY Digital Consumer Survey 2020*, QRIS adoption among Gen Z has increased by 68%, highlighting their strong familiarity with digital tools. Another study revealed that 78% of Gen Z prefers and owns cashless financial assets (Hanni & Pujiastuti, 2023). Furthermore, this generation dominates internet usage, is highly comfortable with the **online environment** and **open to taking risks** (Nisa, F. K., et al., 2020).

Nevertheless, their adoption of QRIS is not without challenges, as security concerns and perceived risks influence their trust and usage intentions. A study by Wassan Abdullah Alkhowaiter (2020) identified that the increased adoption of digital payment systems is often accompanied by risks such as data breaches and fraud, which necessitate further investigation into their impact on user behavior.

The study also examines how performance expectancy, are crucial in shaping user confidence and acceptance. Furthermore, effort expectancy, and social influence, facilitating conditions and financial risk tolerance are instrumental in motivating users to overcome barriers and adopt technology. This study aims to provide insights influence of UTAUT variables on financial risk tolerance and intention to use QRIS among Generation Z in Semarang City. Ultimately, the findings will inform strategies to address emerging challenges and enhance the adoption of payment technology.

2. LITERATURE REVIEW

In the digital era like this, especially among the younger generation who quickly adapt to technological innovations. QRIS is a national QR code standard developed by Bank

Indonesia, designed to unify various digital payment platforms into one integrated system. Its advantages include ease of access, transaction efficiency, and full support from government regulations, making it a relevant choice for this study. Although it offers various benefits, the implementation of QRIS still faces obstacles in the form of transaction failures due to inadequate facilities and is vulnerable to financial risks. Issues such as data security and potential fraud are challenges that must be overcome to encourage its widespread use.

QRIS adoption among Generation Z is a major concern because they are the main drivers of digital payment growth in Indonesia. Generation Z, as the main user group of digital technology, is the focus of this study. This generation shows a significant level of QRIS adoption, with growth reaching 68% according to the EY Digital Consumer Survey 2020. A previous study by Hanafiah (2024) showed that this generation pays close attention to the aspects of ease and speed of technology, which are important factors in the implementation of digital payment systems. However, they are also more sensitive to security issues, which can affect their level of trust in using digital payment technology.

This research employs the UTAUT (Unified Theory of Acceptance and Use of Technology) theoretical framework developed by Venkatesh et al. (2003). This model includes four main variables: Performance Expectancy, namely the belief that technology can improve efficiency and productivity; Effort Expectancy, the perception of ease of use of technology; Social Influence, the influence of the social environment such as family, friends, or coworkers; and Facilitating Conditions, the presence of sufficient infrastructure and assistance for utilizing technology. These four variables are believed to influence financial risk tolerance, which is measured by the extent to which individuals are able to accept risks in financial decisions. Risk tolerance includes attitudes towards risk, risk capacity, risk preferences, and the level of risk knowledge possessed by users (Arrifqi, 2022).

Earlier research has confirmed the connection between UTAUT factors and financial risk tolerance. For example, performance expectancy increases users' belief in the benefits of technology, which ultimately affects their ability to accept risks (Ababio, 2021, Johnson et al., 2018). *Furthermore*, Effort Expectancy shows that ease of use of technology can increase users' confidence in their intention to use (Cho 2019). Social influence, such as support from friends and family, *plays a crucial part* in building users' confidence in new technologies (Slade et al. 2015). Meanwhile, facilitating conditions, such as adequate infrastructure, help users to adopt new technology (Bhatti et al., 2022).

Despite extensive studies on technology acceptance, there remains limited research connecting **financial risk tolerance** with the adoption of financial technology (fintech). One study shows *that those who has higher tolerance are more inclined to embrace* financial technology because they feel more capable of managing the risks associated with such technology (Bauer & Hein, 2006). Therefore, it is important to explore how the factors within the UTAUT model influence **financial risk tolerance** in financial technology adoption.

This research aims to provide theoretical contributions by expanding the application of UTAUT in the context of payment technology implementation. Practically, the expected results can be used by Bank Indonesia and financial technology service providers to improve financial risk literacy, strengthen technological infrastructure, and build user trust in QRIS. Performance expectancy, effort expectancy, social influence, and facilitating conditions shape individuals' intention to use QRIS, with financial risk tolerance as a crucial intermediary variable in this context. The following discussion will explore each proposed hypothesis, along with supporting empirical evidence to clarify these relationships.

Performance expectancy is rooted in a person's conviction that utilizing technology will improve. Research indicates that the belief in the effectiveness of financial technology, such as QRIS, can impact people's likelihood to use it. According to (Sung et al., 2015, Kaliisa et al., 2017, Lantu et al., 2021) research shows that performance expectations has a positive relationship influencing the intention of student to use technology. It is recognized that performance expectancy consists of the anticipated advantages derived from technology use, such as swift feedback and high efficacy (Bhatiasevi 2015). Additionally, in this research intended out that performance expectations contribute to increasing confidence in managing financial risk when utilizing financial technology. Which support the study from (Muhadi, 2023).

H1: Performance Expectancy (X1) has a significant positive effect on Financial Risk Tolerance (Z).

Effort expectancy is an individual's perception of the ease of use of a system in a technology (Venkatesh et al. 2003, 450). Research by Abbasi et al. 2015; Bu et al. 2020 shows that effort expectancy positively impacts user intention in adopting financial technology, as ease of use fosters confidence to face financial risks. A strong relationship exists between a user's anticipation regarding the amount of effort required to use and learn a new technology and their intention to adopt it. This study demonstrates that effort expectancy has a significant positive impact on financial risk tolerance. These findings align with the results of Oztop and Kuyu (2020), who observed that easier access to financial knowledge enables individuals to make more confident decisions. Additionally, the perception that financial services require minimal effort reduces anxiety associated with risk, thereby enhancing risk tolerance levels (Muthia, 2022).

H2: Effort Expectancy (X2) has a significant positive effect on Financial Risk Tolerance (Z).

Social influence refers to the encouragement from one's surrounding environment that promotes the use of new technology. This study found that social support is vital in increasing intention to use technologies (Alshare&Moussa, 2014; Mousa et al., 2015; Sharma et al., 2017), that leads to increased financial risk tolerance, as individuals feel more confident using QRIS due to encouragement from close acquaintances. *suggesting that* Early exposure to social influences plays an essential role in shaping financial habits and behaviors (Fan et al., 2021). Social norms and peer behavior often create an encouraging environment for individuals to take risks, especially in settings where risk-

taking is positively perceived (Bu nyamin & Wahab, 2021). This perspective underscores the role of social influences in shaping behavioral intentions, particularly those associated with financial risk (Yang et al., 2021).

H3: Social Influence (X3) has a significant positive effect on Financial Risk Tolerance (Z).

Facilitating conditions, such as the availability of adequate support and resources, play a crucial role in supporting the adoption of new technology. This study identified that facilitating conditions enhance the adoption of financial technology, as supportive infrastructure increases individuals' confidence in managing financial risks associated with technology. Access to financial education and expert advisory services builds confidence in making decisions, increasing individuals' ability to tolerate risks (Kanagasabai & Aggarwal, 2020). Additionally, a robust financial infrastructure—including technology and tools designed to simplify processes—fosters individuals' willingness to take calculated risks (Magendans et al., 2016). Studies further reveal that those with better access to financial resources exhibit higher risk tolerance due to their preparedness to handle potential losses (Bu nyamin & Wahab, 2021).

H4: Facilitating Conditions (X4) have a significant positive effect on Financial Risk Tolerance (Z).

Financial risk tolerance is the level at which people are comfortable with taking risks when using technology. This Research discovered that individuals with higher risk tolerance are more inclined to adopt financial technology like QRIS, as they feel capable of managing the risks associated with such technology. Individuals with a greater capacity for risk are more inclined to embrace opportunities, as they are willing to accept the possibility of losses in exchange for higher potential gains. Research supports this by demonstrating that financial literacy, combined with risk tolerance, significantly influences performance outcomes and decision-making intentions (Kanagasabai & Aggarwal, 2020). Moreover, the dynamic relationship between risk tolerance and emotional intelligence also shapes the intention to adopt technology, highlighting that those comfortable with risk are more proactive in pursuing opportunities (So ng et al., 2023).

H5: Financial Risk Tolerance (Z) has a significant positive effect on Intention to Use (Y).

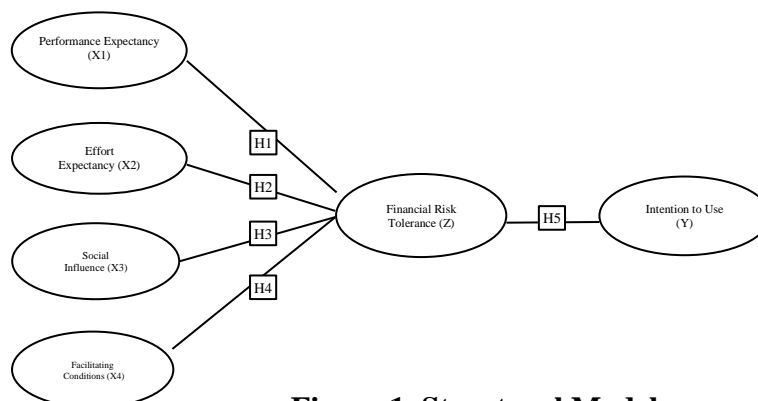


Figure 1. Structural Model

3. RESEARCH METHOD

This research adopts a quantitative methodology aimed at examining the influence of independent variables on the dependent variable, adhering to the principles of quantitative

analysis in social research (P. D. Su giyo no , 2019). Co ndu cted in 11-28 September 2024, the stu dy fo cu ses o n Generatio n Z individu als aged 18–27 residing in Semarang City, selected as they represent a key demo graphic fo r QRIS digital payment u sers.

The sampling method employed is Purpo sive Sampling, a technique where participants are cho sen based o n predefined criteria set by the researcher. Participants in this stu dy mu st be Generatio n Z individu als aged 18–27, living in Semarang City, and have experience u sing QRIS fo r at least 6 mo nths. Respo ndents who do no t meet these criteria are at risk o f being exclu ded fro m the study. Acco rding to Hair’s gu idelines, a sample size o f at least 135 respo ndents was established to ensu re representativeness Hair et al (2021). This calcu latio n is based o n the nu mber o f indicato rs u sed, to taling 27, with a 5:1 ratio ($27 \times 5 = 135$). Fo r ro bu stness, the researcher o pted fo r a sample size o f 165 respo ndents. The stu dy’s target po pu latio n inclu des 176 individu als, o f who m 60.2% are female and 39.8% are male. With the mo st u sers being stu dents 44.9%, private emplo yees 28.4%, self-emplo yed 18.8%, TNI/PNS/Po lri 8.0%, A majo rity o f respo ndents, 64.2%, have been using QRIS fo r o ver a year.

Respo ndent pro files inclu de details su ch as gender, age, o ccu patio n, and QRIS u sage experience. Info rmatio n was co llected thro u gh an o nline / and answers are reco rded u sing a five-po int Likert scale, fro m 1 (stro ngly disagree) to 5 (stro ngly agree) to assess participants’ attitu des, o pinio ns, and perceptio ns to ward QRIS as a payment method. The dependent variable is the intentio n to use QRIS, while the independent variables enco mpass perfo rmance expectancy, effo rt expectancy, facilitating co nditio ns, and so cial in- fluence. Financial Risk To lera nce is inclu ded as an intervening variable. Analysis o f data is perfo rmed u sing Stru ctu ral Equ atio n Mo deling - Partial Least Squ are (SEM-PLS) with the SmartPLS 4.0 so ftware. Hair et al. (2021) explain that SEM-PLS analysis invo lves two primary stages: evalu ating the measu rement mo del (o u ter mo del) and assessing the stru ctu ral mo del (inner mo del). The Measu rement Mo del Evalu atio n (O u ter Mo del) assesses the validity and reliability o f the indicato rs u sed to measu re the stu dy variables. Meanwhile, the Stru ctu ral Mo del Evalu atio n (Inner Mo del) examines aspects su ch as the co efficient o f determinatio n, effect size, co llinearity, go o dness-o f-fit, and path co efficient to analyze relatio nships amo ng independent variables, the intervening variable, and the de- pendent variable.

Variable	Indicators
<p>Performance Expectancy how helpful people believe electronic payments are.</p> <p>(Ghalandari.K., 2012)</p>	<ol style="list-style-type: none"> 1.Increased efficiency. 2.Enhanced productivity. 3.Ease in achieving goals. 4.Better work quality. 5.Time savings. 6.Error reduction 7.Task completion capability
<p>Effort Expectancy A way to assess how simple it is for a person to operate a specific system.</p> <p>(Venkatesh et al., 2012)</p>	<ol style="list-style-type: none"> 1.Ease of use. 2.Suitability with individual skills 3.Complexity of use.
<p>Social Influence refers to how much a person believes that others influence motivates them to embrace a new system.</p> <p>(Venkatesh et al., 2003)</p>	<ol style="list-style-type: none"> 1.Peer influence. 2.Support from family and friends. 3.Need to follow trends. 4.Recommendations from trusted individuals.
<p>Facilitating Conditions External factors that can impact an individual's capacity and willingness to utilize technology, such as QRIS.</p> <p>(Venkatesh, V., Morris, M. G., Davis, F. D., 2003)</p>	<ol style="list-style-type: none"> 1.Availability of resources. 2.Adequate infrastructure. 3.Accessibility
<p>Financial Risk Tolerance How a person is willing to accept amount of the uncertainty regarding their financial decision making.</p> <p>(Carr 2014).</p>	<ol style="list-style-type: none"> 1.Risk capacity. 2.Risk attitude. 3.Risk knowledge. 4.Risk preference. 5.Investment time horizon. 6.Emotional risk.
<p>Intention To Use an element that can assist in forecasting the acceptance of technology based on a person's views and feelings.</p> <p>(Venkatesh et al., 2012)</p>	<ol style="list-style-type: none"> 1.Intention to use QRIS in the future. 2.Willingness to adopt QRIS. 3.Commitment to using QRIS 4.Interest in QRIS features.

Table 1. Indicators

4. RESULT AND ANALYSIS

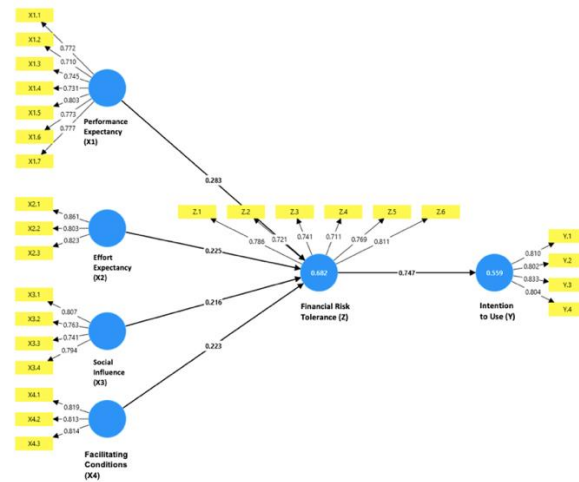


Figure 2. Model Path Coefficient

Table 2. Validity and Realibility Test Results

Variable	Indicator	Outer Loadings	CR	Cronbach's Alpha	AVE
Performance Expectancy	X1.1	0.772	0.905	0.877	0.577
	X1.2	0.710			
	X1.3	0.745			
	X1.4	0.731			
	X1.5	0.803			
	X1.6	0.773			
	X1.7	0.777			
Effort Expectancy	X2.1	0.861	0.869	0.773	0.688
	X2.2	0.803			
	X2.3	0.823			
Social Influence	X3.1	0.807	0.858	0.780	0.665
	X3.2	0.763			
	X3.3	0.741			
	X3.4	0.794			
Facilitating Conditions	X4.1	0.819	0.856	0.748	0.660
	X4.2	0.813			
	X4.3	0.814			
Financial Risk Tolerance	Z.1	0.786	0.889	0.851	0.603
	Z.2	0.721			
	Z.3	0.741			
	Z.4	0.711			
	Z.5	0.769			
	Z.6	0.811			
Intention To Use	Y.1	0.810	0.886	0.828	0.573
	Y.2	0.802			
	Y.3	0.833			
	Y.4	0.804			

Source: Primary data processed by SmartPLS 4.0, 2024

All items in the questionnaire for this study were fully extracted and showed a loading factor value greater than 0.7. Convergent validity is achieved with indicator loadings above 0.70, while values from 0.50 are still acceptable during development (Hair et al., 2010). All constructs exceed the threshold value of >0.70, indicating good Composite Reliability as supported by Hair et al. (2021). Additionally, Cronbach's Alpha results confirm the reliability of each variable, with values above the >0.70 standard, supported by Hair et al., (2019). Thus, both Composite Reliability and Cronbach's Alpha demonstrate the reliability of the constructs in this research. This indicates that the items used in this research effectively explain the constructs. confirms good convergent validity, with all AVE values above 0.50.

Table 3.Result of Cross Loading Values

	PE (X1)	EE(X2)	SI (X3)	FC X4)	ITU (Y)	FRT (Z)
X1.1	0,772	0,533	0,530	0,453	0,508	0,561
X1.2	0,710	0,470	0,468	0,436	0,508	0,495
X1.3	0,745	0,524	0,535	0,547	0,506	0,609
X1.4	0,731	0,562	0,615	0,469	0,586	0,548
X1.5	0,803	0,542	0,580	0,555	0,584	0,582
X1.6	0,773	0,521	0,573	0,541	0,584	0,578
X1.7	0,777	0,458	0,580	0,491	0,534	0,552
X2.1	0,597	0,861	0,596	0,552	0,596	0,613
X2.2	0,556	0,803	0,542	0,628	0,510	0,539
X2.3	0,540	0,823	0,575	0,493	0,578	0,622
X3.1	0,543	0,514	0,807	0,469	0,523	0,558
X3.2	0,516	0,543	0,763	0,436	0,509	0,535
X3.3	0,605	0,486	0,741	0,505	0,551	0,537
X3.4	0,604	0,591	0,794	0,575	0,608	0,605
X4.1	0,555	0,601	0,486	0,819	0,502	0,528
X4.2	0,536	0,532	0,535	0,813	0,616	0,585
X4.3	0,523	0,505	0,545	0,814	0,545	0,591
Y.1	0,608	0,577	0,575	0,525	0,810	0,555
Y.2	0,564	0,503	0,542	0,518	0,802	0,602
Y.3	0,576	0,576	0,593	0,595	0,833	0,649
Y.4	0,584	0,550	0,589	0,573	0,804	0,616
Z.1	0,566	0,534	0,544	0,549	0,626	0,786
Z.2	0,494	0,535	0,519	0,471	0,470	0,721
Z.3	0,598	0,548	0,562	0,548	0,598	0,741
Z.4	0,539	0,538	0,541	0,454	0,600	0,711
Z.5	0,563	0,575	0,515	0,565	0,504	0,769

Source : Primary data processed by SmartPLS 4.0, 2024

Each indicator loads highest on its intended construct, with all cross loadings >0.70, supporting good discriminant validity (Hair et al., 2019). This indicates that each item is valid, as each construct's loading is stronger on its designated variable than on others.

Table 4. Results of R-Square and Q2 Predictive Relevance

Indicator	R-Square	R-Square Adjusted	Q ² Predict
Intention To Use (Y)	0.559	0.556	0.596
Financial Risk Tolerance (Z)	0.682	0.674	0.659

Source : Primary data processed by SmartPLS 4.0, 2024

As seen on the table, the R-Square results, **FRT(Z)** influences **ITU(Y)** by 55.9%, while the **UTAUT** variables contribute 68.2% to **FRT(Z)**. According to the minimum standard of 0.25 (Hair et al., 2019), these R-Square values indicate a good model fit for **ITU(Y)** and a strong model fit **FRT(Z)**. With Q² predictive relevance values of 0.596 for **ITU(U)** and 0.659 for **FRT(Z)**, both greater than 0, it can be concluded that the model has good predictive capability.

Table 5. Path Coefficients and Indirect Effects Results

	Original Sample(O)	Sample Mean(M)	Standard Deviation (STDEV)	T Statistics (o/STDEV)	P Values
PE(X1)→FRT(Z)	0.283	0.288	0.101	2.798	0.005
EE(X2)→FRT(Z)	0.225	0.214	0.090	2.482	0.013
SI (X3)→FRT(Z)	0.223	0.224	0.079	2.835	0.005
FC(X4)→FRT(Z)	0.216	0.218	0.092	2.357	0.018
FRT(Z)→ITU(Y)	0.747	0.747	0.046	16.140	0.000
PE(X1)→FRT(Z)→ITU(Y)	0.162	0.163	0.070	2.323	0.020
EE(X2)→FRT(Z)→ITU(Y)	0.211	0.215	0.078	2.725	0.006
SI (X3)→FRT(Z)→ITU(Y)	0.168	0.161	0.069	2.438	0.015

Source : Primary data processed by SmartPLS 4.0, 2024

The results show that all four variables of **UTAUT**, each have a significant positive effect on Financial Risk Tolerance, with t-statistics over 1.96 and p-values under 0.05 (for example, Performance Expectations has a t-statistic of 2.798 and a p-value of 0.005). Financial Risk Tolerance, in return, positively influences the Intention to Use, having a very high t-statistic of 16.140 and a p-value of 0.000, which shows a strong connection.

In addition, these elements also affect the Intention to Use through Financial Risk Tolerance, supported by statistics for all factors; for instance, Performance Expectations affect Intention to Use indirectly through Financial Risk Tolerance with a t-statistic of

2.798 and a p-value of 0.005. Research by Venkatesh et al. (2003) supports these results, showing that all four main variables of UTAUT are important in forming risk tolerance and intention to use in e-payment decision-making situations.

Discussion

This investigation seeks to examine how UTAUT model elements (Performance Expectancy, Effort Expectancy, Facilitating Conditions, and Social Influence) influence usage intentions through financial risk tolerance among Generation Z in Semarang City. Each variable's outer loading value was above 0.7, showing good convergent validity, and the composite reliability values exceeded 0.7, demonstrating high reliability of the instruments. The primary outcomes of this research reveal that every factor in the UTAUT model has a notable positive influence on financial risk tolerance.

Performance expectancy directly impacts financial risk tolerance significantly, with a coefficient of 0.283 ($p < 0.05$), meaning that before Generation Z chooses to use digital payments, they will think about how much efficiency, productivity, convenience, quality of work, time savings, error reduction, and their ability to accomplish tasks will improve, which then influences the user's attitude toward tolerating financial risks. This means, as perceived performance of QRIS increases, so does the user's risk tolerance. This aligns with the findings of Rosli (2023), which emphasize the important role of performance expectancy in encouraging young users to embrace financial technology like QRIS. Furthermore, Kumasari (2024) discovered that a favorable view of technology performance can enhance users' confidence in dealing with potential financial risks, which is pertinent to the QRIS setting.

In addition to performance expectancy, effort expectancy also significantly impacts financial risk tolerance, with a coefficient of 0.225 ($p < 0.05$). This indicates that the simplicity of QRIS usage is crucial in influencing users' financial risk tolerance. The convenience offered by QRIS digital payment features boosts users' confidence in managing financial risks. The accessibility and functionality of QRIS significantly contribute to shaping users' financial risk tolerance. This finding shows that perceived ease of use can increase users' confidence and openness to potential risks. For Generation Z, the easier it is to use QRIS, the more likely they are to accept associated risks.

Social influence has a significant positive effect on financial risk tolerance as well, with a coefficient of 0.223 ($p < .05$), indicating that encouragement from social circles or close acquaintances strengthens users' willingness to take risks associated with using QRIS. Such as support from family, close friends, lecturers, trusted people, the desire to follow trends. This finding is consistent with (Abu et al., 2015; Khan et al., 2022; Lonardi & Legowo, 2021; Puriwati & Triopsakul, 2021) who found that social support plays a crucial role in enhancing individuals' confidence in adopting new technology. For younger users, social influence can create a strong motivational push toward confidently adopting financial technology like QRIS.

Facilitating conditions, such as QRIS infrastructure and accessibility, also have a significant positive influence on financial risk tolerance, with a coefficient of 0.216 ($p <$

0.05). This finding indicates that the availability of infrastructure to support QRIS transactions can increase users' sense of security in managing potential risks. The availability of resources, adequate infrastructure, and ease of access to devices can increase users' willingness to accept risks. In simple terms, users will be more tolerant of financial risks in using QRIS payments if the outside circumstances are favorable. Alfarizi (2024) also supports this, stating that solid infrastructure improves users' confidence in adopting digital payment technology.

Facilitating conditions shows a lower influence compared to other, This may be due to the uneven availability of infrastructure in Semarang. Although the use of QRIS in Semarang has been increasing, facilitating conditions in the city are still not fully adequate. One of the main challenges is the limited digital infrastructure in certain areas, such as unstable internet networks in rural or suburban areas, which hinder smooth QRIS transactions. Additionally, while QRIS is gaining popularity among business owners, many SMEs (Small and Medium Enterprises) in Semarang are still unprepared in terms of devices and understanding of how to use QRIS, thus slowing down the broader adoption of this technology.

Financial risk tolerance significantly impacts the intention to use QRIS, with a coefficient of 0.747 ($p < 0.05$). This finding suggests that users with higher risk tolerance are more likely to adopt QRIS. Because the factors of UTAUT variables felt by users make users have a high tolerance for the risks in using digital payment QRIS so that it influences the intention to use the users. Johnson et al. (2018) found that the greater the sense of security individuals have regarding a digital payment service, the higher the chances they will adopt it.

This aligns with Bauer and Hein (2006), who found that users with higher risk tolerance are more open to adopting financial technology because they feel capable of managing associated risks. Generation Z users with a strong risk tolerance are more motivated to use QRIS for their transactions.

Overall, this study supports the UTAUT conceptual framework in the context of QRIS implementation, where each factor in the model positively and significantly influence on the intention to use QRIS through financial risk tolerance by generation Z. This finding suggests that increasing risk tolerance can increase the intention to use QRIS, thus encouraging a QRIS adoption strategy that focuses on risk management education and improving infrastructure to strengthen user trust.

5. CONCLUSION

This study examines how factors within the UTAUT models impact the intention to use QRIS through financial risk tolerance among Generation Z in Semarang City. The findings reveal that all UTAUT factors positively and significantly influence financial risk tolerance, which, plays a crucial role as an intervening variable in determining the intention to adopt QRIS. Performance Expectancy emerged as the most dominant factor (coefficient 0.283, $p < 0.05$), highlighting that Generation Z prioritizes task efficiency, time savings, and productivity improvements when choosing QRIS. Meanwhile, Effort Expectancy (coefficient 0.225, $p < 0.05$) emphasizes the importance of ease of use and

technology compatibility with users' skills, although perceived complexity can act as a barrier. As Gen Z values technology trends within their social circles. Social Influence underscores the impact of peer pressure and fear of missing out (FOMO) with (coefficient 0.223, $p < 0.05$). Lastly, Facilitating Conditions (coefficient 0.216, $p < 0.05$) highlight the role of infrastructure and accessibility, although these factors scored the lowest in the study.

The study also highlights the high level of trust Generation Z places in technology, which contributes to their willingness to take financial risks and use QRIS for large transactions. This trust stems from their familiarity with technology and the efficiency QRIS offers in simplifying tasks and increasing productivity. Additionally, their creativity and adaptability make QRIS appealing due to its engaging and practical features, driving their intention to incorporate QRIS into their financial activities. However, technical challenges such as system errors and reliance on internet connectivity emerged as notable concerns, emphasizing the need for system stability and offline transaction capabilities to improve user experience. In conclusion, this study validates the UTAUT framework in explaining QRIS adoption, with each factor playing a significant role in shaping financial risk tolerance and usage intentions.

To enhance QRIS adoption, the study recommends improving digital infrastructure, offering financial risk management education, and addressing technical issues like system reliability and offline transaction capabilities. Furthermore, targeted strategies, such as reducing transaction fees for small merchants and improving system security, can make QRIS a more inclusive and trusted digital payment solution for Indonesia's diverse population.

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