

Utilizing the UTAUT-3 Model to Analyze Millennials' Adoption of QRIS Financial Transaction Technology in Indonesia: The Moderating Role of Experience and Lifestyle

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Abstract: - The purpose of this research is to determine whether Indonesian millennials' experiences and their lifestyle regarding FinTech influences the acceptance of QRIS. This study applies the UTAUT-3 model to examine how the moderating variables may affect millennials' behavioral intentions and use behaviors toward QRIS. Quantitative methods are employed in this study; 200 samples of millennials in Makassar, South Sulawesi, Indonesia, were collected and analyzed using SEM-PLS. The findings show that performance expectancy, effort expectancy, social influence, hedonic motivation, price value, and technology readiness significantly affect behavioral intention ($p < 0.05$). Similarly, facilitating conditions, habit, technology readiness, and security and privacy significantly affect use behavior ($p < 0.05$). However, habit, regulation and policy, and security and privacy did not significantly impact behavioral intention ($p \geq 0.05$).

Key-Words: - QRIS adoption, UTAUT-3, financial technology, millennials, digital payment, behavioral intention, use behavior.

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1 Introduction

A large-scale technological transformation is underway in the way transactions are conducted, particularly among millennials, in the financial services sector. As millennials grew up within this electronic environment, it is natural for them to be inclined to use financial technology (FinTech) in their economic behaviors and preferences. The development of digital banking, mobile payment systems, and personal financial management (PFM) apps marks a shift toward new, technologically based alternatives to traditional finance.

The technological advancements and digital revolution have contributed to the shift away from traditional forms of payment and toward digital payment systems within the context of Industry 4.0. The digital wallets that were developed using these advancements include the ability for users to make payments through the use of Quick Response (QR) codes. A digital innovation in Indonesia, known as the QR Indonesian Standard (QRIS), represents an innovative way to implement digital financial transactions through the standardization of payment systems and facilities, ensuring quick, safe,

efficient, and effective payments. On August 17, 2019, Bank Indonesia and the Indonesian Payment System Association (ASPI) launched QRIS to provide service providers with an easy-to-use payment system or technology to support the integration and facilitation of digital financial services into one of the existing payment systems. Before the launch of QRIS, each digital wallet application provided a different QR code for every transaction, thus requiring consumers to download multiple digital wallet applications to make payments, which made the overall process less than ideal. This has had an impact on the suboptimal socialization of society to make transactions digitally through payment systems, thus making digital adoption of payments low or, in some cases, not optimal as a means of payment.

The shift from conventional payment methods to digital is a result of developments in the digital era and the Industrial Revolution, which led to the creation of digital wallets and payment features using QR codes. These features have proven to be popular among users, with various traders adopting them to implement cashless payment schemes, [1]. However, the difference in the format and

requirements of QR codes, which are available on every digital wallet, initially arises on both the trader and consumer sides; in its growth, QRIS is working to overcome this. QRIS permits consumers to pay with only one application at various merchants using the automatic QR code. This method automatically provides a more practical, fast, and straightforward solution, where consumers can scan only one type of QR code that is compatible with various payment applications.

The love for technology that is a characteristic of the young generation of millennials and Gen Z is also a supporting element in the popularity of QRIS as a secure, reliable, and practical payment system. Bank Indonesia recorded a sharp increase in QRIS usage, with the number of users reaching 45.58 million by December 2023, a 58.5% increase from 28.8 million in 2022. This indicates that QRIS has gained widespread acceptance in the community, particularly among the young generation, who are active and have high mobility.

Although there have been a large number of QRIS adopters in Java and Sumatra, adoption may be similarly high in Sulawesi, Maluku, and Papua. The current number of QRIS users on these three islands is 2.57 million, which is less than half of the estimated 28.46 million people living in these three islands, with 3.93 million of them being millennials, [2]. Education of QRIS advantages, as well as improved access and services in the area, will be key to increasing the number of QRIS users. These efforts may increase the adoption rate of all types of digital FinTech products in Indonesia and create greater financial inclusion and equity for citizens of Indonesia. This may also contribute to an even broader array of positive effects from the digital transformation of the Indonesian financial sector.

The ability of QRIS to enable users to make a cashless transaction by simply making a mobile payment through a single app that can be used at any QRIS merchant will enhance the efficiency of their payment, [3]. This technology has numerous benefits; however, several additional aspects of QRIS should be explored in relation to its adoption by millennials. The primary method of investigation for the factors influencing the acceptance of QRIS was the Unified Theory of Acceptance and Use of Technology 3 (UTAUT-3). The UTAUT-3 was employed as the primary theoretical model for this research to investigate the acceptance of QRIS among millennials in a transparent manner. The UTAUT-3 is a comprehensive and enhanced examination of the technology adoption considerations of personal, social, and environmental related factors, [4].

The UTAUT-3 model serves as an adequate foundation for all other technology acceptance models (TAM and TPB), since it is comprised of the same variables used to measure technology acceptance, such as hedonic motivation, habit, and perceived value, [5]. The UTAUT-3 model also adds the variables that relate to social and psychological aspects of technology acceptance (social influence and group norms) that could affect millennials' decisions regarding QRIS adoption, [6]. Additionally, the UTAUT-3 model uses variables associated with technology acceptance disciplines (experience with technology and skill sets) to help explain how individuals make decisions to adopt QRIS. Finally, the variable of social influence (peers and environment) is an additional factor that may enable a more comprehensive and diverse study of QRIS adoption among millennials, [7]. Understanding how individual preferences and social norms can affect QRIS usage is essential to understanding which variables contribute to QRIS adoption and which hinder it.

The UTAUT-3 method can continually be tested in many different contexts in which technology evolution occurs, and can also continually be tested for its validity. Understanding how well millennials will accept QRIS involves examining both the hedonic (satisfaction) and utilitarian (convenience) aspects of QRIS; i.e., "the fun" and "the convenience", [8]. Furthermore, the performance expectancy aspect of QRIS is crucial, as it represents the degree to which QRIS facilitates transactions and is one of the most significant predictors of whether a technology will be accepted. UTAUT-3 has been used in numerous empirical studies and therefore provides a valid method for measuring and predicting QRIS acceptance among millennials. This helps financial institutions and technology companies arrive at solutions that are meaningful and relevant, promoting high levels of QRIS acceptance and usage, [9].

In this study, experience and lifestyle are the main moderating variables. The experience of using FinTech can provide millennials with comfort and confidence in using QRIS. At the same time, lifestyle also plays a role in influencing the individual's preferences in selecting transaction tools that best suit their daily needs. As an illustration, millennials who are accustomed to a dynamic and modern lifestyle are more inclined to like efficient and easy-to-use transaction tools, such as QRIS. On the one hand, the experience of using digital applications or services can both strengthen and weaken the intention to use QRIS, as the perception of ease of use of transaction instruments

can also be viewed from the aspects of comfort, convenience, and benefits. With the help of the UTAUT-3 model, this study aims to investigate how the extent of the evil and vital position of the two aspects can facilitate the encouragement of QRIS acceptance among millennials. To explore this phenomenon, one can use analysis to examine the extent of support between individuals and contexts related to facilitating the acceptance of QRIS. This study aims to support all parties in the financial industry, including policymakers and technology vendors, in developing a practical approach to achieve the digital financial inclusion goals set by the Indonesian government. This will be achieved through the creation of strategies for players utilizing the QRIS payment system. Ultimately, it will be possible to provide most Indonesian citizens with access to the benefits of QRIS. Specifically, the largest segment of the population that is driving the growth of the current digital economy is primarily millennials.

2 Literature Review

2.1 Concept of Digital Financial Transaction Technology and QRIS

With the emergence of QRIS technology via Bank Indonesia, digital financial transaction technology has progressed rapidly as well. QRIS technology enables community members to process transactions using their mobile devices and a scanned QR code, facilitating quick, safe, and easy transactions in a cashless environment. QRIS will be an essential component in the transition to how individuals conduct business today. Therefore, QRIS technology enables consumers to make fast and flexible transactions while maintaining safety. Consumers can utilize QRIS to pay merchants using apps that are available for download at virtually all merchants, thereby eliminating the need to carry cash and use a different app for each transaction.

QRIS provides several positive effects for MSMEs in a business environment context. QRIS facilitates consumer transactions, allowing MSME operators to manage their businesses more efficiently and gain access to more potential clients. QRIS provides MSME operators with an opportunity to offer more services than would be possible if they were required to build new infrastructures to do so at a higher cost, [10], [11]. QRIS also supports financial inclusion in Indonesia, as it enables people who were previously excluded from the formal banking system to become part of it. In addition, increased financial literacy due to

education and training programs on QRIS is an essential form of support for the development of MSMEs in the digital economy, [11].

From a technological perspective, QRIS leverages existing digital ecosystems, such as digital wallets and payment applications, thus simplifying the transaction process. The ease of use and convenience, as well as the high level of trust that consumers have in the system, have encouraged the widespread adoption of QRIS, [12]. QRIS serves not only as a medium of payment. In a sense, QRIS is a medium that offers the public a better understanding of how to make digital transactions (that facilitate the management of finances). [13], QRIS is also expected to develop as part of the government's acceleration program, to create a convenient, socially inclusive digital payment system that strengthens the ecosystem for financial transactions in the digital age.

2.2 Unified Theory of Acceptance and Use of Technology (UTAUT-3)

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a broad conceptual framework developed to identify the factors that influence user acceptance of information technology. The UTAUT was developed by [14] and combines factors from eight different technology acceptance models, including TAM and TPB, [15]. The original UTAUT model consists of four primary components: performance expectancy, effort expectancy, social influence, and facilitating conditions. These components provide insight into how to interpret user intention to use new technology, as well as their actual behavior in using the technology, [16]. For example, performance expectancy with respect to QRIS reflects the extent to which using this technology enhances transaction performance for users.

In 2012, the UTAUT-2 was developed as an extension of the original UTAUT. It included several additional constructs (e.g., hedonic motivation, price value, habit) to provide additional ways the model could be used to describe user behavior across different contexts, [17]. The UTAUT-3 model is the most recent form of the UTAUT and was designed to address some of the shortcomings of the previous versions by adding new dimensions that are more pertinent to this current technological context (i.e., voluntary usage contexts), [18], [19]. When compared to its predecessors, UTAUT-3 places greater emphasis on the role of individual innovation and contextual factors, making it a more applicable model for contemporary settings (e.g., e-learning applications,

mobile apps). For instance, while millennials may adopt the QRIS, the degree to which their hedonic motivation and the frequency of their technology use will significantly affect how quickly they accept the electronic payment method.

The application of UTAUT and its derivatives in research has proven useful in a variety of different fields, including education, health, and digital banking. For instance, it has been shown that performance expectancy and social influence have a significant effect on teachers' intention to adopt technology in their teaching, [20]. In the health sector, UTAUT has been applied in assessing the acceptance of telehealth technology, whereby facilitating conditions and user attitudes are important determinants in how technology is adopted by medical professionals, [21], [22]. This model has also been used in examining the acceptance of mobile banking services. Here, individual factors such as trust and personal attitudes serve to moderate acceptance of this technology, [23].

2.3 The Influence of Experience and Lifestyle Factors on the Adoption of Financial Technology

The role of previous experience and variables concerning lifestyle in relation to the new FinTech applications is a highly relevant issue in the current digital age. The entire nature of an individual's previous experience with regard to technology is capable of having a major effect on the person's attitudes and confidence with regard to any new technology that might subsequently present itself, including FinTech initiatives. Research [24] found it to be evident that the adoption of FinTech is highly influenced by the consumer's belief, and their existing view about existing regulations, which are largely dependent on previous experiences that the user might have had with other types of digital financial services. Positive experiences in relation to the usage of technology undoubtedly have an impact on the individual's intention to adopt new types of technology, as is indicated in research conducted by [25], which made use of the UTAUT model created to analyze technology acceptance among students. The finding results in the conclusion that those individuals who have previously had positive experiences with existing types of financial technology interfaces are more likely to make use of the new and forthcoming services, since they would have more confidence and more comfort in the factual usage of digital technology.

In addition, a modern lifestyle that is flexible to technology tends to influence people to be more

open to digital financial services. This shows that lifestyle can influence financial behavior and technology adoption. The lifestyle promoted by technology innovations and ease of access to technology can also make someone more inclined to check out the various FinTech services available, thus increasing acquisition.

Moreover, a hedonic lifestyle, often associated with consumer behavior, can affect their propensity to use the FinTech service. A hedonic lifestyle is related to consumer behavior, which in turn can produce predisposition in the subjects to use FinTech services to satisfy needs related to consumption. In this case, previous experience of the individuals with technology used and lifestyle creates a complex interaction in the process of adoption of FinTech. Those with previous favorable experiences with previous technologies and who have modern, adaptable lifestyles are likely to be the most favorable to adopt FinTech services, while those entrenched in more traditional lifestyles may experience problems in effecting the transition.

2.4 Hypotheses Development

Figure 1 illustrates the conceptual framework, which shows ten dimensions of independent variables (exogenous constructs): performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit, regulation and policy, technology readiness, and security and privacy. These variables, except for facilitating conditions, affect behavioral intention, which serves as a mediating variable. The dependent variable (endogenous construct) is use behavior, which is directly affected by behavioral intention, as well as facilitating conditions, habit, technology readiness, and security and privacy. Furthermore, experience and lifestyle serve as moderating variables, affecting the dynamic between independent and dependent variables.

The hypotheses for this study are proposed as follows:

- H1 : There is an effect of performance expectancy on behavioral intention.
- H2 : There is an effect of effort expectancy on behavioral intention.
- H3 : There is an effect of social influence on behavioral intention.
- H4 : There is an effect of facilitating conditions on use behavior.
- H5 : There is an effect of hedonic motivation on behavioral intention.
- H6 : There is an effect of price value on behavioral intention.

- H7 : There is an effect of habit on behavioral intention.
H8 : There is an effect of habit on use behavior.
H9 : There is an effect of regulation and policy on behavioral intention.
H10 : There is an effect of technology readiness on behavioral intention.
H11 : There is an effect of technology readiness on use behavior.
H12 : There is an effect of security and privacy on behavioral intention.
H13 : There is an effect of security and privacy on use behavior.
H14 : The effect of effort expectancy on behavioral intention is moderated by experience.
H15 : The effect of social influence on behavioral intention is moderated by experience.
H16 : The effect of facilitating conditions on use behavior is moderated by experience.
H17 : The effect of habit on use behavior is moderated by lifestyle.
H18 : The effect of technology readiness on use behavior is moderated by lifestyle.
H19 : The effect of security and privacy on use behavior is moderated by lifestyle.

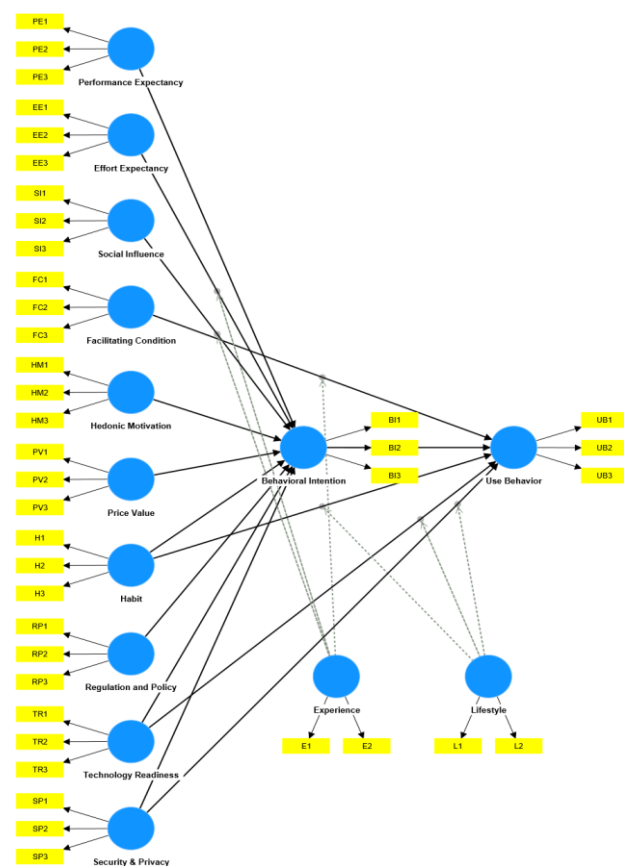


Fig. 1: Conceptual Framework

Source: Created by the authors.

3 Method

This study employs a quantitative approach. The research was conducted in May-June 2024 on millennials who utilize QRIS and live in Makassar, South Sulawesi. The population consists of millennials who use QRIS. The sample of this research was 200 millennials who were selected by accidental sampling. This sampling technique was used because the target population—millennials using QRIS—is spatially dispersed, making it impossible to apply an existing sampling frame. Convenience sampling allows the researcher to obtain potential participants who meet the study's inclusion and exclusion criteria during the research period and are feasible to be sampled. The sampling method employed by the researcher enables access to a pool of eligible subjects (i.e., participants) who meet the research study's inclusion criteria, and allows for the sampling of these subjects from the larger population, given the feasibility of doing so within the research timeframe. The researchers used a similar sampling strategy as previously reported in the literature [26], [27], [28], with sample sizes either comparable to or smaller than those reported here. These studies explored behaviors related to an individual's use and adoption of technology, but were different from the current study. Therefore, this sampling strategy was deemed appropriate for exploratory research, which focuses on establishing a basic understanding of how individuals utilize technology and their feelings about using QRIS, based on the research objective to provide insight into as many users of the QRIS as possible.

Online questionnaires were used for data collection and were developed via *Google Forms*. The questionnaire inquired about the respondent's attitudes and perceptions of the subject, utilizing a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). The data analysis was conducted using Structural Equation Modeling with Partial Least Squares (SEM-PLS). This is because it has been proven helpful in solving complex problems and can handle low to moderate sample sizes, which are common when conducting surveys. The outer model examined the reliability and validity of the measurement model. This includes checking for indicator loadings, composite reliability, and average variance extracted (AVE). The inner model considers the structural relationships between latent variables, which include the assessment of path coefficients, R-squared values, and the significance of direct and indirect effects. The hypotheses were assessed using path coefficients and indirect effects to check the interaction between the variables under study.

4 Results

4.1 Outer Model

As indicated in Figure 2, the results of the outer loading measurements for the reflective indicators confirm that all the indicators of the research variables meet the requirements for valid measurements because all the outer loading results are greater than 0.7. Therefore, all indicators are categorized into appropriate indicators and are valid for further analysis of research variables.

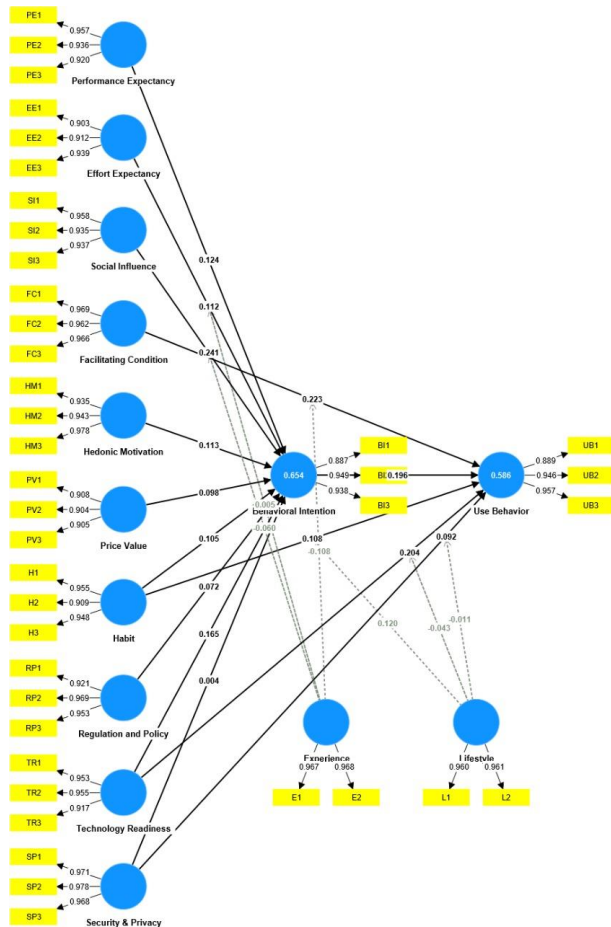


Fig. 2: Outer Model

Source: Created by the authors.

The AVE values for each of the variables set out in Table 1 (Appendix) indicates that all variables with an AVE of greater than 0.5 meet the requirements for discriminant validity. Therefore, each variable is said to have very strong discriminant validity. Table 1 (Appendix) shows that the Cronbach's alpha values for each of the research variables are greater than 0.7, meaning that they contain good reliability. It can be seen from the results that the composite reliability values of ρ_a and ρ_c for all the research variables exceed 0.7. So, they have a high reliability.

4.2 Inner Model (Hypothesis Testing)

Figure 3 displays the inner model, and Table 2 (Appendix) summarizes the results of hypothesis testing.

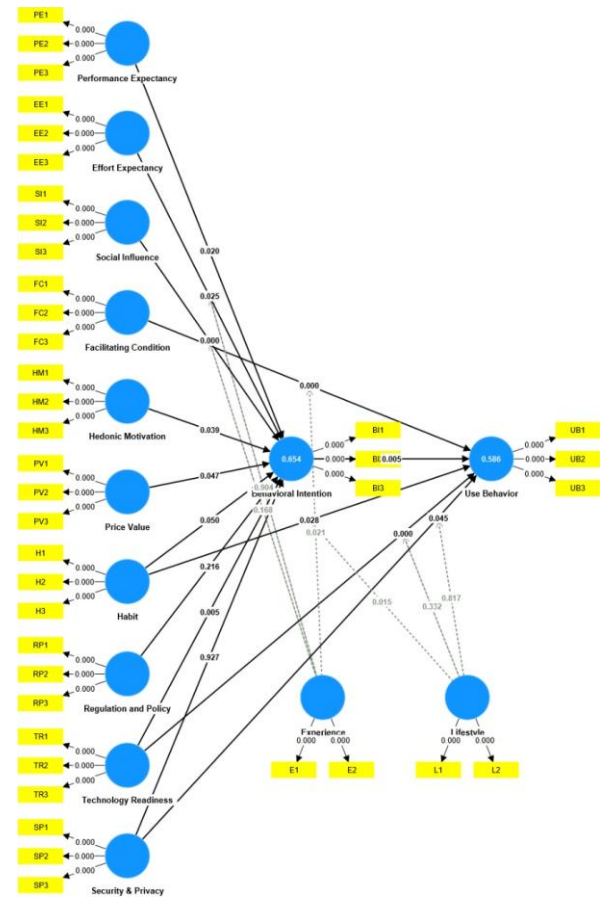


Fig. 3: Inner Model

Source: Created by the authors.

The outcomes of the hypothesis testing can be described as follows:

1. Hypothesis H1
The results show that behavioral intention is greatly affected by performance expectancy, with a t statistic of 2.318 (exceeding the t table value of 1.972) and a p value of 0.020, which is below the 5% alpha level. This indicates that there is a meaningful effect of performance expectancy on behavioral intention, with a positive path coefficient pointing to increased behavioral intention being due to a higher performance expectancy.
2. Hypothesis H2
According to the results, effort expectancy is a significant predictor of behavioral intention, with a t value of 2.248 (greater than 1.972) and a p value of 0.025 (less than 0.05). The positive path coefficient indicates that increases in effort expectancy will lead to increases in behavioral intention.

3. Hypothesis H3
According to the results, social influence is a significant predictor of behavioral intention, with a t value of 5.190 (greater than 1.972) and a p value of 0.000 (less than 0.05). The positive path coefficient indicates that increases in social influences will lead to increases in behavioral intention.
4. Hypothesis H4
The findings show that facilitating conditions significantly impact use behavior with a t-statistic of 4.050 (greater than 1.972) and a p-value of 0.000 (less than 0.05). The positive path coefficient indicates that increased facilitating conditions can increase use behavior.
5. Hypothesis H5
The results show that hedonic motivation has a significant impact on behavioral intention with a t-statistic of 2.061 (greater than 1.972) and a p-value of 0.039 (less than 0.05). The positive path coefficient indicates that increased hedonic motivation can increase behavioral intention.
6. Hypothesis H6
The results show that price value has a significant effect on behavioral intention, with a t statistic of 1.990 (which is greater than the critical value of 1.972) and a p value of 0.047 (which is less than 0.05). The positive path coefficient shows that a higher price value will increase behavioral intention.
7. Hypothesis H7
It is indicated by the results that the effect of habit on behavioral intention is not significant at the 5% level, with a t-statistic of 1.961, which is just less than the critical t value of 1.972 ($\alpha = 0.05$), and the p-value is 0.050. The path coefficient is positive, indicating a tendency to be positive, but it is not significant at the 5% level.
8. Hypothesis H8
Habit significantly influences use behavior, as indicated by a t value of 2.196 (greater than 1.972) and a p value of 0.028 (less than 0.05). The positive coefficient of the path indicates that when habits improve, use behavior does improve.
9. Hypothesis H9
The results suggest that regulation and policy do not significantly enhance behavioral intention, as indicated by the t value of 1.238 (less than 1.972) and the p value of 0.216 (greater than 0.05). The positive coefficient of the path suggests a slight positive addition, but better regulation and policy do not produce the desired result of increased behavioral intention.
10. Hypothesis H10
The results reveal that technology readiness has a positive and significant effect on behavioral intention due to a t-statistic of 2.799 (beyond 1.972), a p-value of 0.005 (less than 0.05). Such a positive path coefficient suggests that improved technology readiness positions behavioral intention to increase.
11. Hypothesis H11
The results indicate that technology readiness has a positive and significant effect on use behavior according to a t-statistic of 3.767 (beyond 1.972) and a p-value of 0.000 (less than 0.05). The positive path coefficient indicates that improved technology readiness has a high likelihood of producing an increase in use behavior.
12. Hypothesis H12
The results suggest that security and privacy do not have a significant effect on behavioral intention, as the t-statistic is 0.092 (less than 1.972) and the p-value is 0.972 (greater than 0.05). While the path coefficient indicates that an increase in security and privacy has a positive impact on behavioral intention, this does not necessarily mean that an increase in security and privacy will directly affect behavioral intention.
13. Hypothesis H13
The data shows that there was a statistically significant relationship between the independent variable "security and privacy" and the dependent variable "use behavior," as shown by a t statistic of 2.003 (which is greater than 1.972), and a p value of 0.045 (which is less than 0.05). Therefore, it can be concluded that an increase in security and privacy levels will result in a corresponding increase in usage behavior.
14. Hypothesis H14
The results show that experience does not moderate the effect of effort expectancy on behavioral intention, with a t-statistic of 0.120 (below 1.972) and a p-value of 0.904 (above 0.05). Thus, good experience does not enhance the impact of effort expectancy on behavioral intention.
15. Hypothesis H15
The results indicate that experience fails to moderate the effect of social influence on behavioral intention, with a t-statistic of 1.378 (below 1.972) and a p-value of 0.168 (above 0.05). Thus, good experience does not enhance

the impact of social influence on behavioral intention.

16. Hypothesis H16

The findings indicate that experience is a significant moderator for the relationship between facilitating conditions and use behavior, with a t-statistic of 2.300 (greater than 1.972), a p-value of .021 (less than 0.05), and a path coefficient of $\beta = -0.108$. A negative coefficient demonstrates that the greater an individual's experience using QRIS, the less their use of QRIS will be influenced by facilitating conditions.

17. Hypothesis H17

The hypothesis testing results indicate that lifestyle can moderate the effect of habit on use behavior, with a t statistic of 2.422 (surpassing 1.972) and a p value of 0.015 (below 0.05). Thus, a good lifestyle can enhance the effect of habit on use behavior.

18. Hypothesis H18

The hypothesis testing results indicate that lifestyle fails to moderate the effect of technology readiness on use behavior, with a t-statistic of 0.971 (below 1.972) and a p-value of 0.332 (above 0.05). Thus, a good lifestyle does not enhance the impact of technology readiness on use behavior.

19. Hypothesis H19

It is clear from the results that lifestyle is not a moderator of the impact of security and privacy on usage behavior, with the t-statistic of 0.231 (less than 1.972) and a p-value of 0.817 (more than 0.05). Hence, having a good lifestyle does not help to strengthen the effect of security and privacy on usage behavior.

5 Discussion

5.1 The Influence of Performance Expectancy on Behavioral Intention

Research shows that performance expectancy has a direct relationship with behavioral intention for millennials toward using QRIS financial transactions in Indonesia. Performance expectancy refers to how users perceive that QRIS will help them complete their transaction faster, save money (through discounts), and improve payment accuracy, all of which are key factors in shaping an individual's intent to use, [29]. Research [30] concludes that the better the user understands QRIS and its benefits for their business, the greater the likelihood that they will intend to adopt and use QRIS.

5.2 The Influence of Effort Expectancy on Behavioral Intention

Study results indicate that millennials have demonstrated a positive correlation between effort expectancy and users' behavioral intention; this finding has been substantiated in other studies, such as the study of [31]. The researchers determined that millennials are more likely to utilize technology than previous generations due to their high level of technological knowledge and increased comfort level with technology. A similar conclusion was reached by [32], as they indicated that effort expectancy can influence the user's behavioral intent, specifically if the user believes that they will be able to interact with the technology easily. Finally, the study results of [33] provided support for the relationship between effort expectancy and behavioral intention; however, it was noted that "perceived ease of use" (effort expectancy) is one of the most influential factors on users' behavioral attitudes toward mobile payment systems, especially for younger generations.

5.3 The Influence of Social Influence on Behavioral Intention

The social aspect plays a significant role in how millennials in Indonesia accept QRIS-based financial transaction technology. Social influence is another crucial factor for the adoption of new technologies by banks and other financial service providers. Social influence occurs when the actions or opinions of others cause a change in our own behavior or attitude. Numerous studies have demonstrated that social influence is a significant determinant of a person's intention to adopt financial technology. For example, research [34] found that habitual use of financial technology was positively correlated with Behavioral Intention. In short, those who habitually used financial technology were more likely to continue doing so due to social pressures from their peers and the social norms of their community. Likewise, research [35] found that if a technology had low barriers to entry (perceived ease of use) and high perceived levels of security, there would be higher levels of behavioral intent to use the technology (mobile banking, etc.) based on what a user believed the technology to be based on social media. These findings were similarly supported by those of [36], who reported that social influence is a primary factor in the acceptance of technology in several areas, including financial transactions, which is influenced by a combination of social influence, perceived trust, and awareness.

5.4 The Influence of Facilitating Condition on Use Behavior

Facilitating conditions refer to the means or ways in which an individual can be assisted or provided for to utilize technology efficiently. The "facilitating conditions" as they pertain to QRIS implementation would include, but are not limited to, the availability of technology to users, knowledge about how technology can be used, and a user's perception of the technology being easy to use. Literature has consistently shown that facilitating conditions have a significant impact on users' attitudes towards adopting new technology. Research [37] found that facilitating conditions were a significant predictor of a user's intention to use e-zakat. In addition, research [38] has found that facilitating conditions greatly affect an individual's intention to use mobile applications. They demonstrate that one of the most critical factors for the success of technology adoption is the perceived level of support from facilitating conditions. Previous research [39] stated that facilitating conditions also directly affect a user's behavioral intention as well as their motivation to continue using the technology. Additionally, they said that facilitating conditions are directly responsible for the continued habitual use of the technology.

5.5 The Influence of Hedonic Motivation on Behavioral Intention

This study found that hedonic motivation positively affects the behavioral intention of millennials to use QRIS in Indonesia. Research shows that hedonic motivations (pleasure and enjoyment) positively influence the intention of millennials to use all technology (including financial technology). This shows that, when the technology provides us with a pleasant experience, it will be easily accepted by millennials. This is also in accordance with the conclusion of [40], which states that usability and the enjoyment obtained from the technology of finance can increase the willingness of users to use it.

5.6 The Influence of Price Value on Behavioral Intention

The results of the study show that price value has a positive and significant effect on behavioral intention. This is in accordance with the UTAUT2 model, which mentions that various factors affect behavioral intention. The results from [29], [41], [42] also prove that price value has a very strong positive effect on behavioral intention in adopting technology.

5.7 The Influence of Habit on Behavioral Intention

Research shows that habit is a fundamental element in predicting the intention to embrace new technologies, including digital payment applications. Previous studies support that habit has a significant effect on the behavioral intention to use mobile banking and other payment applications, [43], [44]. This suggests that when individuals have developed a habit of using a specific technology, they are prone to have a greater intention to continue using it. However, in this study, the relationship between habit and behavioral intention (in relation to using QRIS) was statistically insignificant; this result indicates that the impact of habit with respect to millennials in Makassar is generally mild and/or very limited. As a possible implication, it can be inferred that millennials' intentions to use QRIS are influenced significantly by situational or environmental conditions, as opposed to being largely driven by habits that have developed over time. Nevertheless, research by [45] and [46] demonstrates that habit positively influences behavioral intention across various technology contexts.

5.8 The Influence of Habit on Use Behavior

There is evidence that habit has a positive and meaningful effect on use behavior in the millennial generation. Habits in the use of FinTech can affect the comfort and level of trust of users, which causes the frequency and intensity of the use of technology to increase. The millennial generation is known for its excessive relationship with digital technology, which causes a higher habit of using financial applications compared to previous generations. This habit not only reflects the use of technology but also has a positive attitude toward innovations that simplify the use of financial transactions. Thus, it serves as a driver for the adoption of QRIS. This is also in line with the similarity between mobile banking and QRIS, thus strengthening the results of the research that the perception of users is one of the driving factors of the use of QRIS. When millennials think the technology is easy to use and provides benefits, it is not impossible if it is used habitually during use, [47]. This is in line with the findings of this study, which said that prior knowledge and experience in the use of FinTech can maintain good habits in using QRIS.

5.9 The Influence of Regulation and Policy on Behavioral Intention

Though regulations and policies will be important in the development of FinTech, this research indicates that their influence on adoption intention is not significant. Studies have indicated that there are other factors, such as financial literacy and risk perception, which could dominate in the determination of the intention to adopt this technology. Firstly, the regulations and policies imposed by the Financial Services Authority (OJK) and Bank Indonesia aim at securing the financial system and inducing the adoption of FinTech. Further, research [48] indicates that though the regulations are important, the development of FinTech cannot be based exclusively upon regulations; the user perspective and knowledge are also critically important. This is in agreement with [49], who show that human resource quality and technology adoption have significant effects on the quality of financial reports but do not have a direct effect on the degree of intention to adopt technology.

5.10 The Influence of Technology Readiness on Behavioral Intention

This research finds a positive and significant effect of technology readiness on the behavioral intention to use these financial transactions. The technology readiness consists of aspects such as optimism, innovativeness, and uncertainty, which provide a good basis for the acceptance and use of new technology by users. Research [50] states that the technology readiness of the MSMEs in the city of Bandung is very high, which is a signal that there is potential for the use of new technologies such as blockchain and QRIS. Similarly, previous studies [51], [52] state that technology readiness has a positive influence on the behavioral intention to adopt technology. This is also self-reinforced by [53], who developed the Technology Readiness Index (TRI), which measures the propensity of individuals to accept new technology. So, the millennials who are ready to use technology will have more positive behavioral intentions towards accepting QRIS.

5.11 The Influence of Technology Readiness on Use Behavior

The findings from this study indicate a positive and statistically significant correlation between an individual's technology readiness and their behavioral actions in using QRIS. Technology readiness is the measure of an individual's desire to

incorporate new technologies into their daily activities, particularly in the context of this research, QRIS, which enables financial transactions of MSMEs. As such, technology readiness is a critical component of MSME success because of its ability to facilitate financial transaction processes. Research [30] has also demonstrated that both the level of understanding of QRIS and the perceived value/benefit and ease of use of QRIS are positively correlated with MSMEs' intent to utilize QRIS. Therefore, the degree to which QRIS meets the expectations of potential users (including millennials) will significantly influence their technology readiness.

5.12 The Influence of Security and Privacy on Behavioral Intention

Research suggests that concerns about security and privacy have been cited as one reason why people may or may not adopt new technologies; however, it appears that concerns regarding safety and privacy are not significant factors in influencing millennials' intentions to use QRIS. Many users of QRIS did not seem to be overly concerned about security and privacy issues associated with making financial transactions. In fact, a research study indicated that nearly a quarter (24%) of smartphone users reported paying very little attention to issues related to security and privacy, suggesting a disconnect between how safe users perceive a situation to be and their intended behavioral actions, [54]. This suggests that the millennials are inclined to accept a wider scope of digital financial solutions. They also seem to favor convenience over the avoidance of the dangers of security and privacy, [55]. This would suggest that the millennials are somewhat affected in their decisions by such things as the perceived usefulness and ease of use of QRIS, as opposed to their fears with respect to the security and privacy issues.

5.13 The Influence of Security and Privacy on Use Behavior

Research indicates that a high perception of security and privacy can enhance users' intentions to adopt digital payment technologies, specifically QRIS. This supports the findings of [56] that increased awareness of security and privacy can improve behavioral intentions to use digital payment transactions. Furthermore, previous research [57] emphasizes that perceptions of information privacy and security have a positive effect on consumer trust in using cryptocurrency-based payment systems, which can also be applied in the context of QRIS. Although previous studies have shown other

patterns of importance, this current study has indicated that security and privacy are not significant predictors of users' behavioral intentions (H12) but, instead, are significantly related to users' behavior (H13). Therefore, although millennials may not consider security or privacy as an issue when deciding to initially utilize QRIS, it is likely to be considered once they begin to use QRIS for transactions. It appears that users' decision to begin using QRIS is primarily based upon convenience, practicality, and the influence of others at first; however, after users experience the system, they will then continue to utilize the system as long as they perceive that it is secure and private and, therefore, trustworthy. This provides evidence of support for the Bank Indonesia's regulation that emphasizes safe transaction practices and user data protection in order to foster users' confidence in QRIS.

5.14 The Influence of Effort Expectancy on Behavioral Intention Moderated by Experience

There is evidence to reveal that experience does not moderate the influence of effort expectancy on behavioral intention. Earlier research confirms that effort expectancy positively affects behavioral intention [58], meaning that easier technology use increases the likelihood of adoption. However, in the context of millennials, experience appears not to function as a notable moderator in this relationship. In contrast, research [59] suggests that experience moderates the relationship between effort expectancy and behavioral intention, but in a different context, namely the adoption of e-books. Likewise, a previous study [60] showed that experience has a positive and significant moderating effect on effort expectancy of the intention to use e-learning. Therefore, the different results obtained suggest that experience does not always moderate the effort expectancy variable, especially in the case of digitally fluent millennials, due to their adaptability, the intuitiveness of the technology, and the contextual difference with respect to the previous studies.

5.15 The Influence of Social Influence on Behavioral Intention Moderated by Experience

The apparent moderating effect of experience on the relationship between social influence and behavioral intention seems to be limited. Social influence is an important factor in technology adoption. This is particularly pertinent for the younger generation

known as the millennials, who are particularly impacted by their social environments, relationships, and peer behavior. Research suggests that the effect of social networks on the intentions to adopt technology, even for systems of financial transactions such as QRIS, is prevalent amongst this demographic, [61], [62]. The behavior of the individuals in this cohort often depends on the value of the opinions and approach of their peer group in relation to their behavioral intention to engage with financial technologies. The effect of such social influences is, nevertheless, not always uniformly strong across individuals, since experience will govern the way social phenomena are interpreted and acted upon. Experience relating to the use of financial technologies can be subject to considerable variability between individuals, and this will have an effect on perceptions and intentions. Some research has shown that the more trained the individuals in the particular technology, the more confident and willing they are to adopt new systems, [63]. Others have indicated that experience was of no real moderating influence on the effect of social factors on behavioral intention, [64]. This tends to show that social influence is a key factor in intentions, yet experience may not magnify or minimize this effect. It may rather act imputably as a background force with consequences for the manner in which social clues are received and processed.

5.16 The Influence of Facilitating Conditions on Use Behavior Moderated by Experience

These findings reveal that experience has a significant moderating effect on the association between facilitating conditions and use behavior in millennials' acceptance of QRIS for their financial transactions, with the negative coefficient showing that as users increase in experience, the facilitation conditions positively affecting use behavior will decrease. This is indicative that experienced users are not dependent upon the same level of outside support (i.e., technical assistance or system infrastructure) to utilize QRIS, due to the user's growing level of familiarity and confidence in utilizing QRIS. While many previous studies have found an association between technology users' perceived facilitating conditions (i.e., the degree to which users believe their employer provides necessary technical support for them to do their job) and their likelihood to use technology at work [65], [66], this study's results are contrary to those findings and instead suggest that as users become more technologically proficient and/or financially

savvy, they rely on fewer internal facilitating conditions as they develop more confidence in their own technological capabilities (i.e., self-efficacy). These findings are consistent with theoretical expectations from the UTAUT-2/3 model, where the influence of facilitating conditions decreases as users gain experience and confidence in their technological abilities.

5.17 The Influence of Habit on Use Behavior Moderated by Lifestyle

The findings suggest that lifestyle substantially moderates the relationship between habit and use behavior in millennials' adoption of QRIS financial transaction technology in Indonesia. Millennials are known for their lifestyles that are heavily influenced by technological developments and a preference for fast and efficient services. The habit of using digital payment technology can be reinforced or weakened by their evolving lifestyle, particularly in terms of accessibility, convenience, and alignment with the latest digital trends, [67], [68], [69].

Erratic lifestyle moderation is of the essence in strengthening the effect of habit on QRIS use behavior. Millennials with lifestyles conducive to technology tend to be more regular in using QRIS as part of their daily habits. For instance, time efficiency and ease of transaction stimulate digital payments. When their lifestyles lend support to the adoption of digital technology, QRIS becomes a habitual accessory to their financial activities, and accordingly, they become more thoroughly engaged in the technology, [70], [71].

5.18 The Influence of Technology Readiness on Use Behavior Moderated by Lifestyle

Attitudes toward using technology represent what an individual's "readiness" for using new technology represents (i.e., aspects of technology include, but may be limited to, dimensions of innovation, optimism, insecurity, and discomfort), [72], [73]. Research also shows that people with high levels of technology readiness generally embrace the idea of adopting new technologies, [73], [74]; however, in the current study, lifestyle fails to act as a moderator of the relationship between technology readiness and the use of QRIS. The lifestyle of millennials, which is often influenced by social and cultural aspects and includes digital habits, preferences for quick and efficient transactions, and a desire to use technologies that facilitate daily life, does not appear to support or undermine the relationship between technology readiness and QRIS usage

behavior, [52]. Although trust in technology and positive experiences can enhance the intention to continue using technology, lifestyle does not play a moderating role in this case. This means that technology readiness directly influences QRIS usage behavior, without moderation from lifestyle factors. Thus, the impact of technology readiness on QRIS usage behavior among millennials is driven more by internal factors of readiness itself, rather than by the digital lifestyle adopted, [52].

5.19 The Influence of Security and Privacy on Use Behavior Moderated by Lifestyle

The adoption of QRIS financial transaction technology among Indonesian millennials is greatly influenced by concerns about security and privacy. These factors are critical in influencing user behavior, being directly related to the concepts of trust and usability of digital financial services. While millennials show a general preference for living digitally, the current study indicates the opposite, as lifestyle failed as a moderating factor in the relationship between security and privacy and technology usage behavior. Security and privacy will remain the predominant user considerations in the acceptance of financial technology, including QRIS technology, as concerns over issues of data violations and unauthorized usage would inhibit the use of such technology, [75]. The complexity of the technology and security features has previously been shown, in the literature, to be important indicators for the propensity of acceptance in financial technology, affecting users in respect of their perceptions of trust and willingness to use the new usage of technology, [57], [76]. Although millennials show a general preference for living digitally, lifestyle does not moderate the influences of security and privacy on the QRIS usage behavior, since users tend to be more greatly influenced directly by their perceptions of security and privacy without a mediating lifestyle aspect to the phenomenon, [77], [78].

6 Conclusion

The hypothesis testing results indicate that out of the 19 hypotheses, the majority show a meaningful influence of the independent variables on the dependent variables. The analysis reveals that performance expectancy, effort expectancy, social influence, hedonic motivation, price value, and technology readiness substantially impact behavioral intention. Additionally, facilitating

conditions, habit, technology readiness, and security and privacy also have a substantial impact on use behavior. However, habit, regulation, and policy, as well as security and privacy, did not show a significant effect on behavioral intention. Moderation testing indicates that experience and lifestyle do not always significantly moderate the relationships between these variables; only experience can moderate the effect of facilitating conditions on use behavior, and lifestyle moderates the effect of habit on use behavior.

These findings are insightful as to which millennial behaviors influence QRIS adoption; however, since this study used an accidental sampling method and had a smaller-than-ideal number of participants (N=200), the results may have limited generalization. Therefore, these results should be viewed with some degree of skepticism, because they are based on the perceptions of those who were available to and chose to participate in the study at the time it was conducted. To increase QRIS adoption among Indonesian millennials, improving user experience and infrastructure is essential. Educational campaigns via social media and influencer collaborations can enhance social influence. Integrating entertainment features and offering competitive pricing add user value, while supportive policies and stronger security boost trust. Positioning QRIS as a modern, practical lifestyle choice can further drive adoption.

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APPENDIX

Table 1. Reliability

Constructs	Cronbach's alpha	Composite reliability		AVE
		rho a	rho c	
Behavioral Intention (BI)	0.915	0.917	0.946	0.855
Effort Expectancy (EE)	0.907	0.907	0.942	0.843
Experience (E)	0.932	0.932	0.967	0.936
Facilitating Condition (FC)	0.964	0.965	0.976	0.933
Habit (H)	0.931	0.934	0.956	0.879
Hedonic Motivation (HM)	0.948	0.948	0.967	0.906
Lifestyle (L)	0.917	0.917	0.960	0.923
Performance Expectancy (PE)	0.931	0.934	0.956	0.879
Price Value (PV)	0.891	0.913	0.932	0.820
Regulation and Policy (RP)	0.944	0.949	0.964	0.899
Security and Privacy (SP)	0.971	0.971	0.981	0.945
Social Influence (SI)	0.939	0.940	0.961	0.891
Technology Readiness (TR)	0.936	0.943	0.959	0.887
Use Behavior (UB)	0.923	0.927	0.951	0.867

Source: Authors' data.

Table 2. Hypothesis Testing Results

Hypotheses	Effects	Original Sample	T Statistic	P Value	Decision
H1	PE → BI	0.124	2.318	0.020	Significant
H2	EE → BI	0.112	2.248	0.025	Significant
H3	SI → BI	0.241	5.190	0.000	Significant
H4	FC → UB	0.223	4.050	0.000	Significant
H5	HM → BI	0.113	2.061	0.039	Significant
H6	PV → BI	0.098	1.990	0.047	Significant
H7	H → BI	0.105	1.961	0.050	Not Significant
H8	H → UB	0.108	2.196	0.028	Significant
H9	RP → BI	0.072	1.238	0.216	Not Significant
H10	TR → BI	0.165	2.799	0.005	Significant
H11	TR → UB	0.204	3.767	0.000	Significant
H12	SP → BI	0.004	0.092	0.927	Not Significant
H13	SP → UB	0.092	2.003	0.045	Significant
H14	EE*E → BI	0.005	0.120	0.904	Not Significant
H15	SI*E → BI	-0.060	1.378	0.168	Not Significant
H16	FC*E → UB	-0.108	2.300	0.021	Significant
H17	H*L → UB	0.120	2.422	0.015	Significant
H18	TR*L → UB	-0.043	0.971	0.332	Not Significant
H19	SP*L → UB	-0.011	0.231	0.817	Not Significant

Source: Authors' data.