Bridging the Digital Divide Through Local Wisdom: Determinants of Mobile Banking Adoption Among Subak Jatiluwih Farmers (UTAUT Approach)

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Abstract. This study examines the determinants of mobile banking adoption among farmers of Subak Jatiluwih, Tabanan Regency, Bali, an UNESCO-recognized irrigation institution grounded in the Tri Hita Karana philosophy. Drawing on the Unified Theory of Acceptance and Use of Technology (UTAUT), this study empirically examines the effects of Social Influence (SI), Perceived Risk (PR), and Perceived Enjoyment (PE) on farmers' Behavioral Intention (BI) to adopt mobile banking. A quantitative, explanatory research design was employed, involving 86 respondents selected through purposive sampling from the 631 active members of Subak Jatiluwih, with the sample size determined using Slovin's formula. Data were collected through a structured questionnaire and analyzed using through SmartPLS's Ordinary Least Squares (OLS)-based linear regression function, preceded by validity, reliability, and classical assumption testing. The results indicate that Social Influence exerts the strongest positive effect on Behavioral Intention ($\beta = 0.451$), followed by Perceived Enjoyment ($\beta = 0.402$), whereas Perceived Risk exerts a significant negative effect ($\beta = -0.307$). Collectively, the three predictors explain 58.1% of the variance in Behavioral Intention ($F = 37.859$, $p < 0.001$). These findings affirm that mobile banking adoption among Subak farmers is shaped jointly by social encouragement, risk perception, and user experience, underscoring the need for adoption strategies that integrate social trust-building, digital-security education, and simplified user-experience design. The study contributes to the limited body of literature on technology acceptance within indigenous, collectively governed agrarian communities and offers practical implications for accelerating financial inclusion in similarly structured rural contexts.

Keywords: Mobile Banking Adoption, Perceived Risk, Perceived Enjoyment, Social Influence, Subak Jatiluwih, UTAUT

1 Introduction

Financial inclusion in rural agricultural communities has long been constrained by their historical exclusion from formal banking systems, a gap that mobile banking is now reshaping on a global scale (Khatun et al., 2024; Zhu et al., 2022). As one of the largest agrarian economies in the world, Indonesia presents a particularly instructive setting in which to study this shift: for smallholder farmers, mobile-based financial services carry the potential to alter established patterns of transacting, purchasing agricultural inputs,

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marketing produce, and accumulating savings. This shift carries implications that extend beyond transaction convenience: mobile banking adoption also shapes the extent to which smallholder farmers generate a documented, traceable record of their financial activity, a foundation increasingly recognized as relevant to farm-level financial management and accountability (Sharma et al., 2025; Ramadan et al., 2025). Even so, uptake among rural farmers continues to lag, held back by a web of technological, psychological, social, and contextual obstacles that rarely operate in isolation (Abandu et al., 2025).

Bali exemplifies this contradiction clearly. Although widely known internationally as a tourist destination, the province sustains a considerable agricultural sector, and Tabanan Regency alone ranks third among Bali's regencies in the number of Individual Agricultural Enterprises (BPS, 2023). Within Tabanan lies the Subak system, a centuries-old irrigation institution built on the Tri Hita Karana principle of balance among people, nature, and the divine, recognized by UNESCO as a World Heritage Site since 2012. Subak Jatiluwih, one such community, unites 631 active farmer members through tightly knit collective cooperation. Yet despite this collective foundation, mobile banking uptake there remains minimal, restrained by weak digital and financial literacy, persistent risk perceptions, and a lack of trust in digital financial platforms. It is plausible that the Subak's deeply rooted communal norms and cross-generational customs further condition how social pressure and enjoyment-driven motivation translate into technology adoption - an interaction that existing scholarship, largely centered on urban or non-farming rural groups, has yet to adequately address.

To account for this dynamic, the study draws on the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. (2003), which brings together performance expectancy, effort expectancy, social influence, and facilitating conditions as core drivers of technology acceptance. Later refinements of the model have added constructs such as trust, perceived risk, personal innovativeness, and perceived enjoyment, broadening its capacity to capture the affective and psychological texture of adoption across different cultural settings (Hanif & Lallie, 2021; Sebayang et al., 2024; Maziriri et al., 2025). Of these, three constructs anchor the present analysis of farmers' Behavioral Intention toward mobile banking: Social Influence (SI), Perceived Risk (PR), and Perceived Enjoyment (PE). Social Influence, understood as the extent to which an individual perceives that important others endorse the use of a given technology (Venkatesh et al., 2003) - is expected to carry particular weight in a setting like the Subak, where decisions are rarely made independently of the group, echoing its consistent role as a strong predictor of mobile banking adoption across cultural boundaries (Rahman et al., 2024). Perceived Risk, conceived as farmers' subjective apprehension about possible adverse consequences of digital transactions (Sebayang et al., 2024), is expected to depress adoption intention, since limited exposure to digital platforms tends to amplify fears surrounding financial loss or data compromise (Hanif & Lallie, 2021; Maziriri et al., 2025). Perceived Enjoyment, referring to the intrinsic satisfaction a technology offers independent of its functional benefits (Davis et al., 1992), may offset weak extrinsic incentives in a community such as this, thereby sustaining the intention to keep adopting the service (Maziriri et al., 2025). Drawing on the UTAUT framework and the literature reviewed, three directional hypotheses are proposed for empirical testing shown in Figure 1.

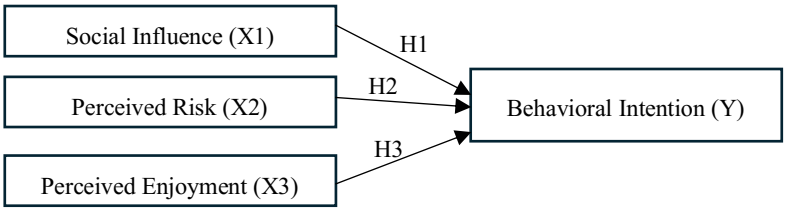


Figure 1. Conceptual Framework

2 Methodology

A quantitative, explanatory research design underpins this study, chosen specifically to test the causal pathways linking three predictor constructs - Social Influence (SI), Perceived Risk (PR), and Perceived Enjoyment (PE) to the criterion variable, farmers' Behavioral Intention (BI) to adopt mobile banking. This design was favored over alternative approaches because of its suitability for empirically confirming theory-driven hypotheses and for producing results that can directly inform evidence-based policy (Hair et al., 2019). The population from which the sample was drawn comprised the entire membership of Subak Jatiluwih UNESCO in Tabanan Regency, Bali, 631 active farmers in total. Applying Slovin's formula to this population yielded a required sample of 86 respondents, selected through purposive sampling based on three eligibility conditions: active status within the Subak Jatiluwih organization, present or past ownership of a formal bank account, and at least some awareness of, or exposure to, mobile banking services. These conditions were imposed to ensure that participants held a sufficient baseline of knowledge and contextual grounding to respond meaningfully to the survey instrument.

The collected data were analyzed using multiple linear regression, computed through SmartPLS's Ordinary Least Squares (OLS)-based linear regression function, to test the partial and simultaneous effects of Social Influence, Perceived Risk, and Perceived Enjoyment on farmers' Behavioral Intention. The instrument was first evaluated for validity (loading factors above 0.70) and reliability (Cronbach's Alpha above 0.70). Classical assumption tests, namely normality (QQ Plot), heteroscedasticity (Breusch-Pagan), and multicollinearity (VIF). Hypotheses were subsequently tested using partial t-tests, a simultaneous F-test, and the coefficient of determination (R^2), all at a 5% significance level ($\alpha = 0.05$), consistent with conventional practice in explanatory quantitative research.

3 Result and Discussion

3.1 Result

As presented in Table 1, all indicators exhibit loading factors above the conventional threshold of 0.70, ranging from 0.836 to 0.925. This finding confirms that every measurement item satisfies the convergent validity criterion recommended in the structural equation modeling literature (Hair et al., 2019; Henseler & Fassott, 2010),

thereby establishing that each item is empirically sound to represent its corresponding latent construct.

Table 1. Convergent Validity

	Behavioral Intention (BI)	Perceived Enjoyment (PE)	Perceived Risk (PR)	Social Influence (SI)
X1.1				0.925
X1.2				0.865
X1.3				0.888
X2.1			0.908	
X2.2			0.836	
X2.3			0.871	
X3.1		0.894		
X3.2		0.898		
X3.3		0.899		
Y1.1	0.913			
Y1.2	0.920			
Y1.3	0.908			

Table 2. Reliability Test Results of the Research Constructs

Variable	Cronbach's Alpha
Behavioral Intention (BI)	0.901
Perceived Enjoyment (PE)	0.879
Perceived Risk (PR)	0.845
Social Influence (SI)	0.873

Table 2 shows that the Cronbach's Alpha values for all constructs exceed 0.70, with Behavioral Intention recording 0.901, Perceived Enjoyment 0.879, Perceived Risk 0.845, and Social Influence 0.873. These results collectively indicate that the research instrument possesses strong internal consistency and reliably captures the intended constructs (Hair et al., 2012, 2019), suggesting that respondents answered in a consistent pattern when evaluating the factors shaping their intention to use mobile banking. In practical terms, farmers were able to clearly distinguish between the encouragement exerted by their social environment, the apprehension associated with digital-transaction risk, and the practical, enjoyable experience of using digital financial services.

As shown in Figure 2, the data points in the QQ plot generally follow the diagonal reference line, with only minor deviations at the distribution tails. This pattern indicates that the residuals approximate a normal distribution closely enough for the regression model to be considered appropriate for analyzing the relationships among the study variables.

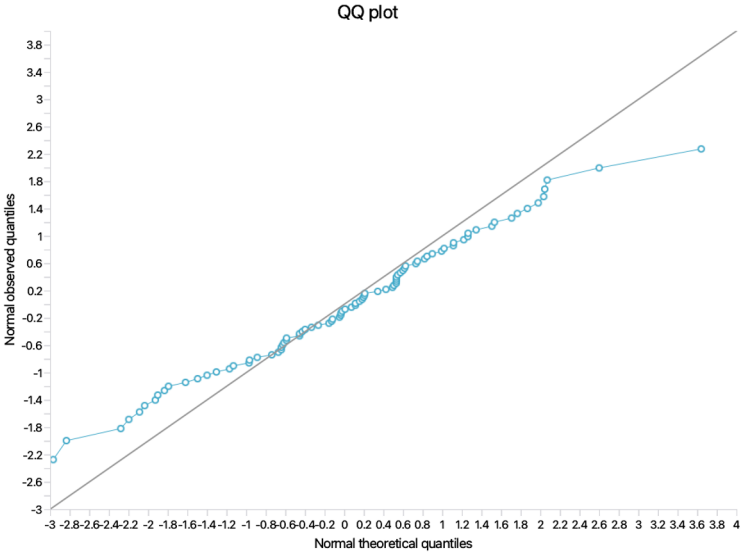


Figure 2. Normality Test (QQ Plot)

Table 3. Breusch-Pagan Heteroscendasticity Test

	Test-Statistic	df	P value
Breusch-Pagan Test	1.184	3	0.757

In Table 3, Breusch-Pagan test yielded a p-value of 0.757, which exceeds the 0.05 threshold, indicating that the regression model does not suffer from heteroscedasticity. This means that the variance of the error term remains stable across observations and does not follow any discernible pattern that could bias the regression estimates. The model can therefore be considered sufficiently stable to explain behavioral intention among respondents with both high and low propensities toward mobile banking adoption.

Table 4. Multicollinearity Test

Variabel	VIF
Perceived Enjoyment	1.036
Perceived Risk	1.031
Social Influence	1.068

In Table 4, multicollinearity test further confirms that all Variance Inflation Factor (VIF) values fall well below the conventional threshold of 5, with Perceived Enjoyment recording 1.036, Perceived Risk 1.031, and Social Influence 1.068. These results indicate the absence of problematic collinearity among the independent variables, confirming that each predictor contributes a distinct and non-redundant explanatory

role: Social Influence captures encouragement from the surrounding social environment, Perceived Risk reflects apprehension toward digital risk, and Perceived Enjoyment represents the comfort and positive experience associated with using the application.

Table 5. Regression Coefficients and t-Test Results

Variabel	Unstandardized coefficients	Standardized coefficients	SE	T value	P value	2.5%	97.5%
Perceived Enjoyment	0.433	0.402	0.078	5.527	0.000	0.277	0.589
Perceived Risk	-0.338	-0.307	0.080	4.224	0.000	-0.497	-0.179
Social Influence	0.499	0.451	0.082	6.105	0.000	0.337	0.662
Intercept	3.326	0.000	1.568	2.121	0.037	0.208	6.445

Based on the unstandardized coefficients reported in Table 5, the multiple regression equation for Behavioral Intention (BI) is specified as BI = a + b1(SI) + b2(PR) + b3(PE) + e, which, substituting the estimated coefficients, yields BI = 3.326 + 0.499(SI) − 0.338(PR) + 0.433(PE) + e.

Table 5 presents the results of the partial t-test. All independent variables recorded p-values of 0.000, well below the 0.05 significance threshold, confirming that Social Influence, Perceived Risk, and Perceived Enjoyment each exert a statistically significant partial effect on the Behavioral Intention of Subak Jatiluwih farmers to adopt mobile banking.

Social Influence recorded the highest unstandardized coefficient (B = 0.499; β = 0.451), identifying it as the most dominant determinant of behavioral intention in this study, thereby supporting Hypothesis 1. This result lends strong empirical support to the original UTAUT proposition that social influence is a decisive antecedent of technology acceptance in contexts where collective norms and communal decision-making dominate individual behavior (Venkatesh et al., 2003). The stronger the encouragement from family members, fellow farmers, subak administrators, local business actors, banking representatives, or respected community figures, the greater farmers' intention to adopt mobile banking. This finding is consistent with, and reinforces, prior evidence that social influence is a robust predictor of mobile banking adoption across diverse cultural settings (Rahman et al., 2024).

Perceived Risk exerted a significant negative effect (B = -0.338; β = -0.307), confirming Hypothesis 2. The higher the perceived risk, the lower farmers' intention to adopt mobile banking. This risk perception encompasses apprehension regarding erroneous transfers, loss of account balance, digital fraud, forgotten PINs, difficulty comprehending one-time password (OTP) procedures, and general unease about resolving transaction failures. This finding corroborates earlier studies indicating that perceived risk constitutes a formidable barrier to mobile banking adoption, particularly among users with limited familiarity with digital security mechanisms (Hanif & Lallie, 2021; Sebayang et al., 2024; Maziriri et al., 2025).

Perceived Enjoyment demonstrated a significant positive effect (B = 0.433; β = 0.402), supporting Hypothesis 3. The more farmers perceive mobile banking as

practical, easy to use, comfortable, and experientially positive, the stronger their intention to adopt it. This result reaffirms Davis et al.'s (1992) conceptualization of perceived enjoyment as an intrinsic, hedonic motivator of technology use that operates independently of purely instrumental outcomes, and aligns with recent findings that hedonic experience meaningfully shapes the continued intention to use mobile banking applications (Maziriri et al., 2025).

Table 6. Simultaneous Regression Test (F-Test)

	Sum square	df	Mean square	F	P value
Total	350.430	85	0.000	0.000	0.000
Error	146.925	82	1.792	0.000	0.000
Regression	203.505	3	67.835	37.859	0.000

Table 6 reports an F-value of 37.859 with a p-value of 0.000, confirming that Social Influence, Perceived Risk, and Perceived Enjoyment simultaneously exert a statistically significant effect on Behavioral Intention. This result substantiates the conceptual premise, consistent with the multidimensional structure of the extended UTAUT model, that the intention to adopt mobile banking is not shaped by a single isolated factor but emerges from the joint interplay of social, risk-related, and experiential considerations (Venkatesh et al., 2003; Hanif & Lallie, 2021; Maziriri et al., 2025).

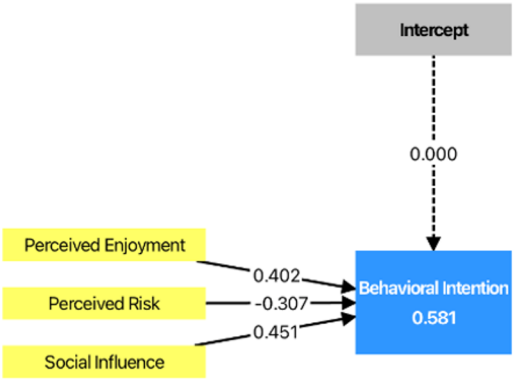


Figure 3. Regression Model of Determinants of Behavioral Intention

Farmers are more inclined to adopt mobile banking when they simultaneously receive social encouragement, experience a practical and enjoyable use process, and hold a low perception of risk. Strategies to promote mobile banking adoption should therefore integrate social approaches, risk-education initiatives, and simplification of the user experience in a mutually reinforcing manner rather than treating them as independent levers. Figure 3 indicates an R-square value of 0.581, meaning that 58.1% of the variance in Behavioral Intention is explained jointly by Social Influence, Perceived Risk, and Perceived Enjoyment, while the remaining 41.9% is attributable to factors outside the scope of the present model.

This R-square value can be regarded as reasonably robust within the domain of behavioral research, given that technology-adoption intention in rural communities is typically shaped by a wide array of interacting factors.

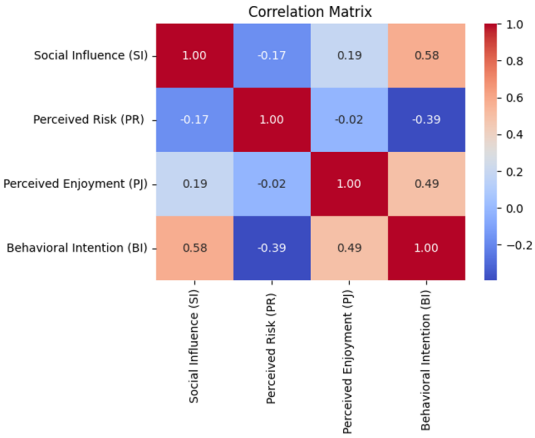


Figure 4. Correlation Matrix Among Variables

Figure 4 shows that Social Influence correlates positively with Behavioral Intention at r = 0.58. Perceived Enjoyment also correlates positively with Behavioral Intention at r = 0.49, whereas Perceived Risk correlates negatively at r = -0.39. This correlational pattern is consistent with the regression results: Social Influence and Perceived Enjoyment strengthen the intention to adopt mobile banking, whereas Perceived Risk diminishes it. The strongest correlation is observed between Social Influence and Behavioral Intention, reaffirming the pivotal role of the Subak Jatiluwih social context in shaping the acceptance of digital financial services. In communities characterized by dense social structures and strong collective values, technology-use decisions are frequently guided by the experiences of trusted peers an observation consistent with the communal decision-making dynamics long emphasized in the UTAUT literature (Venkatesh et al., 2003).

3.2 Discussion

The regression results indicate that Social Influence exerts the strongest effect on Behavioral Intention (β = 0.451), followed by Perceived Enjoyment (β = 0.402), while Perceived Risk exerts a significant negative effect (β = -0.307), with all three predictors jointly explaining 58.1% of the variance in adoption intention ($F = 37.859$, $p < 0.001$). This pattern lends strong empirical support to the UTAUT proposition that technology acceptance is rarely a purely individual, rational calculation, but is filtered through the social and experiential context in which a technology is encountered (Venkatesh et al., 2003), and it is consistent with prior evidence identifying social influence as a robust predictor of mobile banking adoption across diverse cultural settings (Rahman et al., 2024). The dominance of Social Influence is best understood in light of how the subak functions as a socio-economic institution built on collective governance: decisions in

Jatiluwih are rarely made in isolation but are shaped by the visible example of neighbors, fellow farmers, subak administrators, and local entrepreneurs who have already adopted digital payment tools such as QRIS at entrance-ticket counters, restaurants, food stalls, and produce stands along the tourism corridor. This dynamic resonates with the Tri Hita Karana philosophy underlying the subak system, in which harmony between the individual and the surrounding social environment fundamentally governs collective behavior, including the acceptance of new technology - suggesting that adoption strategies anchored in respected community figures are likely to be more effective than approaches targeting individual farmers in isolation. The positive effect of Perceived Enjoyment further reflects the diversified livelihood structure of the community: farmers who combine paddy cultivation with running small shops, selling produce, or engaging in tourism-related trade have already encountered digital payment through these non-farm ventures, so that mobile banking is perceived as a familiar and practical extension of an experience already associated with convenience, consistent with Davis et al.'s (1992) conceptualization of perceived enjoyment as an intrinsic, hedonic motivator, and with broader evidence that fintech adoption among agrarian populations tracks the breadth of household income-generating activities (Sharma et al., 2025; Ramadan et al., 2025).

At the same time, the significant negative effect of Perceived Risk indicates that psychological and technical barriers persist despite this otherwise favorable social climate, and the VIF results confirming no problematic overlap between constructs suggest that this risk perception operates as a genuinely distinct barrier rather than a proxy for weak social support. Concerns about erroneous transfers, loss of account balance, digital fraud, forgotten PINs, and difficulty understanding OTP procedures continue to suppress adoption intention - concerns that are unsurprising given the limited digital-security exposure of an older, agrarian population, and that corroborate earlier findings identifying perceived risk as a formidable barrier to mobile banking adoption among users with limited familiarity with digital security mechanisms (Hanif & Lallie, 2021; Sebayang et al., 2024; Maziriri et al., 2025). Read together, these findings substantiate the conceptual premise, consistent with the multidimensional structure of the extended UTAUT model, that mobile banking adoption intention emerges from the joint interplay of social encouragement, risk perception, and user experience rather than from any single isolated factor (Venkatesh et al., 2003; Hanif & Lallie, 2021; Maziriri et al., 2025) - a conclusion echoed in the broader literature on mobile banking adoption among rural and agrarian populations elsewhere (Khatun et al., 2024; Zhu et al., 2022; Abandu et al., 2025). For Subak Jatiluwih specifically, closing the digital financial gap is therefore not merely a matter of extending technological access, but a multidimensional undertaking that must simultaneously strengthen social trust networks, mitigate perceived risk through digital-security education, and enhance user experience through simple, practical application design - an integrated approach that aligns with the broader global agenda of promoting inclusive and sustainable financial systems articulated in the Sustainable Development Goals (United Nations, 2015).

4 Conclusion

The findings of this study shows that Social Influence as the most dominant determinant, followed by Perceived Enjoyment, while Perceived Risk exerted a significant negative effect. These results carry practical implications: closing the digital financial gap in indigenous agrarian communities requires strategies that cultivate social trust networks, deliver accessible digital-security education, and craft user experiences that fit naturally within local ways of working - an approach in step with the wider global push toward inclusive and sustainable development (United Nations, 2015). Because the study draws on a relatively small sample confined to a single site, its conclusions cannot be generalized without caution; future research should examine multiple subak communities and use another UTAUT indicators. Bridging this divide is ultimately a socially embedded process in which local wisdom and financial technology can be thoughtfully reconciled. Beyond adoption itself, these findings point to a further opportunity: as mobile banking becomes more embedded in daily farming activity, it may lay informal groundwork for improved financial record-keeping and accountability among smallholder and cooperative farming communities, a direction future research grounded in accounting and financial-management perspectives could usefully pursue.

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