

ENTREPRENEURIAL SELF-EFFICACY AND TRANSACTION FREQUENCY: AN EXTENSION OF THE EXPECTATION- CONFIRMATION MODEL IN MSMEs

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ABSTRACT: This study examines how entrepreneurial self-efficacy (ESE) shapes MSMEs' continuance intention to use QRIS within the Expectation Confirmation Model under increasing digital payment adoption. It advances ECM by demonstrating a boundary condition where transaction frequency fails as a moderator, repositioning satisfaction as the dominant post-adoption mechanism over behavioral intensity. Using survey data from 150 MSMEs in Indonesia and SmartPLS4 analysis, the results show that ESE enhances perceived usefulness, which significantly drives continuance intention through satisfaction, while transaction frequency is insignificant. These findings support habit formation and technology embeddedness perspectives, indicating that repeated use loses explanatory power once usage stabilizes. Continuance decisions are therefore primarily affect-driven rather than behavior-driven. The study implies that policymakers and fintech providers should prioritize system reliability and user satisfaction rather than merely increasing transaction frequency to sustain QRIS adoption.

Keywords: Expectation Confirmation Model; Entrepreneurial Self-efficacy; Continuance intention; Micro, Small, and Medium Enterprises (MSMEs)

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INTRODUCTION

The rapid digitalization of payment systems has become a central instrument for advancing financial inclusion and transactional efficiency in emerging economies (Cao et al., 2018; Oliveira et al., 2016). In Indonesia, this transformation is institutionalized through the Quick Response Code Indonesian Standard (QRIS), which has scaled aggressively across the MSME sector (Bank Indonesia, 2020, 2023). As of 2024, more than 45 million merchants have adopted QRIS, over 90% of whom are micro and small enterprises, generating more than 2.6 billion transactions annually (Bank Indonesia, 2023, 2024). Transaction volumes surged by over 160% year-on-year, exceeding 8.5 billion transactions in 2023, signaling deep penetration into everyday commercial activity (Bank Indonesia, 2024). Beyond diffusion, QRIS enhances financial record quality, reduces transaction time by up to 50%, and lowers operational costs while increasing payment certainty (Zakariya & Arifin, 2025). Yet, this rapid adoption raises a more critical question: whether sustained usage follows initial uptake, particularly among MSMEs operating under resource constraints and high transactional pressure.

Extant literature on digital payment adoption has been dominated by pre-adoption perspectives, primarily relying on the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Basbeth et al., 2024; Ghaisani et al., 2022). While these models explain initial acceptance, they offer limited explanatory power in post-adoption contexts where usage is already embedded in routine practice (Singh, 2020; Tian et al., 2024). This limitation has redirected scholarly attention toward continuance intention, emphasizing user evaluation after actual system experience (Nandru et al., 2024; Shunmugasundaram et al., 2025). The Expectation Confirmation Model (ECM) addresses this gap by positing that confirmation of expectations shapes perceived usefulness and satisfaction, which subsequently determine continuance intention (Bhattacharjee, 2001; Talwar et al., 2020; Tam et al., 2020). Despite its strong predictive validity across digital payment and fintech contexts (Abdul Rahim et al., 2023; Khahar et al., 2025; Mensah et al., 2018; Rahi et al., 2023; Vafaei-Zadeh et al., 2024), ECM remains theoretically incomplete in capturing individual cognitive capabilities that influence post-adoption evaluations. Drawing on social cognitive theory (Bandura, 1997) and entrepreneurial cognition theory (Baron, 1998), entrepreneurial self-efficacy (ESE) represents a critical cognitive mechanism through which MSME actors assess usefulness and derive satisfaction from technology use (see Figure 1 for model).

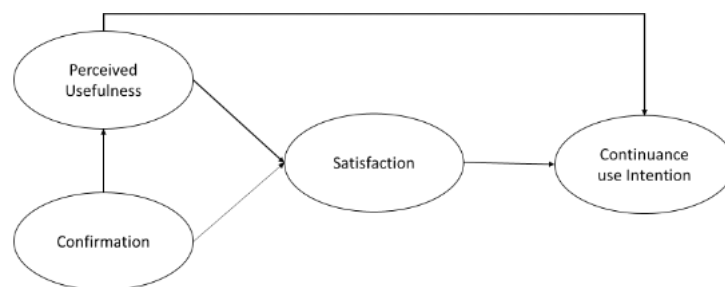


Figure 1. Expectation Confirmation Model
source: (Bhattacharjee, 2001)

At the same time, the satisfaction–continuance relationship in ECM is often treated as linear and context-invariant, an assumption that becomes problematic in high-frequency transaction environments such as transportation hubs, where speed, reliability, and repetitive usage dominate decision-making (Ampadu et al., 2023; Sinha & Singh, 2023). Prior studies have paid limited attention to how transaction frequency conditions this relationship (Cheng, 2021a; Hadji & Degoulet, 2016; Khan et al., 2024; Nandru et al., 2024; Tam et al., 2020). Furthermore, empirical evidence remains largely aggregated at macro or urban levels, overlooking micro-contextual dynamics in specific commercial nodes where operational intensity and user heterogeneity are most pronounced (Soormo et al., 2024; Sultana et al., 2025). This neglect restricts the ability to capture boundary conditions that may alter post-adoption behavior.

This study addresses these gaps by extending ECM through the integration of entrepreneurial self-efficacy as a cognitive antecedent of perceived usefulness and satisfaction,

while introducing transaction frequency as a boundary condition in the satisfaction–continuance relationship. By employing micro-location-based data from MSMEs operating in high-intensity transaction environments and analyzing it using PLS-SEM, this study contributes theoretically by repositioning cognitive capability and usage intensity within post-adoption models, contextually by examining QRIS continuance in dense transactional settings, and methodologically by capturing localized behavioral dynamics often obscured in prior research.

THEORETICAL REVIEW

The Expectation Confirmation Model (ECM) is a widely established framework for explaining post-adoption behaviour in information systems and digital services, particularly where continued use is essential for sustained value (Bhattacharjee, 2001). ECM posits that continuance intention is driven by perceived usefulness and satisfaction, both of which stem from the confirmation of users' expectations after actual system use (Bhattacharjee, 2001). When system performance meets or exceeds expectations, users perceive greater usefulness (Eren, 2021), where perceived usefulness reflects the extent to which a system enhances job performance (Davis, 1989), and satisfaction represents an affective response derived from the comparison between expectations and actual experience (Bhattacharjee, 2001). Continuance intention, therefore, reflects users' decision to persist in using a system following adoption.

Empirical evidence in mobile payment contexts confirms that confirmation and perceived usefulness shape satisfaction, which in turn drives continued usage behaviour (Bhatia et al., 2023; Rahi et al., 2023). Extended ECM applications further demonstrate that confirmation, usefulness, and satisfaction jointly determine long-term engagement, with additional constructs such as trust and perceived risk enhancing explanatory power in fintech environments (Ampadu et al., 2023; Bhatnagar et al., 2024; Sinha & Singh, 2023). Despite its strong predictive validity, ECM remains limited in capturing users' self-efficacy, particularly in QRIS contexts where entrepreneurial capability may influence post-adoption decisions. Incorporating entrepreneurial self-efficacy (ESE) can therefore strengthen ECM by accounting for users' confidence in leveraging digital systems. Moreover, prior research largely focuses on low-intensity usage settings, leaving high-frequency transactional environments underexplored (Bhatia et al., 2023).

Within the Expectation Confirmation Model (ECM), confirmation functions as a foundational mechanism shaping post-adoption evaluations, particularly perceived usefulness and satisfaction. When users' actual experiences meet or exceed their prior expectations, they are more likely to perceive the system as useful in enhancing task performance (Bhattacharjee, 2001). In digital payment contexts, confirmation strengthens users' evaluation of functional benefits, as faster and more reliable transactions increase perceived usefulness (Zulaikha & Faricha, 2025). Empirical extensions of ECM further demonstrate that alignment between system performance and operational needs significantly enhances perceived usefulness (Rahi et al., 2023; Tam et al., 2020). At the same time, confirmation reinforces satisfaction by validating users' initial expectations through actual usage experience (Bhattacharjee, 2001; Yasin et al., 2025), particularly in QR payment systems where reliability and ease of use are critical (Hamzah Muchtar et al., 2024; Yasin et al., 2025).

H1: Confirmation has a positive effect on perceived usefulness of QRIS.

H2: Confirmation has a positive effect on satisfaction with QRIS.

Perceived usefulness represents a central cognitive evaluation within ECM, reflecting the extent to which a system enhances user performance and operational efficiency (Bhattacharjee, 2001). When users experience tangible benefits such as reduced transaction costs, improved efficiency, and enhanced business outcomes, they are more likely to develop satisfaction with the system (Ly et al., 2025; Sundjaja et al., 2025). This relationship has been consistently validated in digital payment and fintech contexts, where usefulness acts as a key antecedent of satisfaction and sustained usage (Kar, 2021; Pal et al., 2020; Yasin et al., 2025). However, ECM provides limited insight into individual cognitive capabilities that shape these evaluations. Drawing on social cognitive theory (Bandura, 1997) and entrepreneurial cognition theory (Baron, 1998), entrepreneurial self-efficacy (ESE) reflects individuals' confidence in their ability to utilize digital technologies effectively. Higher self-efficacy enhances technology evaluation, reduces usage anxiety, and strengthens engagement, thereby influencing satisfaction outcomes (Al Khalifah et

al., 2025; Chang et al., 2024; Juita et al., 2026; Kamboj et al., 2025; Tian & Chan, 2024). Entrepreneurial confidence has also been shown to directly reinforce satisfaction and reuse intention (Chung & Lin, 2023; Shiau et al., 2020).

H3: Perceived usefulness has a positive effect on satisfaction with QRIS.

H4: Entrepreneurial self-efficacy has a positive effect on satisfaction with QRIS.

Satisfaction constitutes the most proximal determinant of continuance intention within ECM, as users who experience positive post-adoption evaluations are more likely to sustain their usage behavior (Bhattacharjee, 2001). In digital payment environments, satisfaction derived from system reliability, ease of use, and perceived value significantly enhances continuance intention and habitual usage (Qatawneh et al., 2025; Susanto et al., 2022; Jisham et al., 2024). Meta-analytic evidence further reinforces satisfaction as a central predictor of continuance behavior (Nandy et al., 2025; Schiebler et al., 2025). In addition to its indirect role, perceived usefulness also directly influences continuance intention, as users tend to maintain engagement with systems that effectively support their operational needs (Bhattacharjee, 2001; Wang & Zhou, 2023). Empirical studies confirm that perceived advantages such as speed, convenience, and reliability significantly drive continued usage in mobile and QR payment contexts (Chiu et al., 2021; Wang & Zhou, 2023).

H5: Satisfaction has a positive effect on continuance intention to use QRIS.

H6: Perceived usefulness has a positive effect on continuance intention to use QRIS.

Beyond direct effects, ECM conceptualizes satisfaction as a key mediating mechanism translating cognitive evaluations into sustained usage behavior (Bhattacharjee, 2001). While perceived usefulness reflects rational assessment, satisfaction captures affective evaluation formed through repeated usage experiences. In embedded digital payment contexts, recent evidence indicates that the direct effect of perceived usefulness may weaken once satisfaction is introduced, suggesting a shift toward affective dominance (Hoque et al., 2024; Susanto et al., 2022). Studies in QR and mobile payment environments confirm that satisfaction partially or fully mediates the relationship between usefulness and continuance intention, particularly under high-frequency usage conditions (Zulaikha & Faricha, 2025). For MSMEs operating in transaction-intensive environments, continuance decisions are increasingly driven by consistent and reliable daily experiences rather than isolated cognitive evaluations (Mehra et al., 2026; Salameh & Hayat, 2025). However, residual direct effects may persist in lower-frequency contexts, indicating a potentially partial mediation structure.

H7: Satisfaction positively mediates the relationship between perceived usefulness and continuance intention to use QRIS.

The relationship between satisfaction and continuance intention is not uniform across usage contexts. Transaction frequency reflects usage intensity, operational dependency, and experiential depth in MSME environments (Pandita et al., 2025; Vafaei-Zadeh et al., 2024). High-frequency users develop routinized usage patterns and accumulate richer experiential feedback, strengthening the influence of satisfaction on continuance intention (Devi & Shunmugasundaram, 2025; Liébana-Cabanillas, 2025; Zulaikha & Faricha, 2025). In such settings, satisfaction becomes a pragmatic evaluation of system reliability under operational pressure (Qatawneh et al., 2025; Yu et al., 2026). Conversely, lower-frequency users may remain in an evaluative phase where satisfaction alone is insufficient to sustain usage due to alternative payment options (Leong et al., 2026). This perspective aligns with recent literature emphasizing usage intensity as a boundary condition in post-adoption behavior (Rahi et al., 2023; Zulaikha & Faricha, 2025). The model is presented in Figure 2 as in the following hypothesis.

H8: Transaction frequency positively moderates the relationship between satisfaction and continuance intention to use QRIS, such that the effect is stronger at higher levels of transaction frequency.

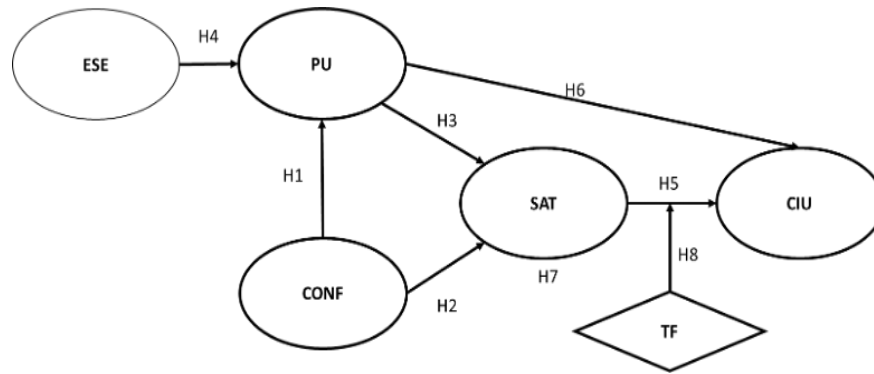


Figure 2. Conceptual Framework
Source: Author's Formulation (2025)

RESEARCH METHOD

This study employed a cross-sectional quantitative survey to examine QRIS continuance intention among MSMEs using the Expectation Confirmation Model (ECM), with MSME owners who had prior QRIS usage as the unit of analysis. A combination of area and purposive sampling was applied, requiring respondents to actively manage transactions, have used QRIS for at least three months, and integrate it into daily payment activities. The minimum sample size calculated using GPower 3.1 was 129 ($\alpha = 0.05$, power = 0.95, effect size = 0.15), and 150 responses were collected, exceeding the recommended threshold for PLS-SEM analysis (Hair et al., 2017). Data were gathered through structured, face-to-face questionnaires from MSMEs located in five high-intensity train station areas in Jakarta, Indonesia (Jatinegara, Tebet, Manggarai, Cikini, and Gondangdia), ensuring contextual relevance, while anonymity, confidentiality, and item randomization were applied to reduce bias. All constructs were measured using validated unidimensional scales on a five-point Likert scale, except transaction frequency (TF), which was categorized into low, medium, and high levels (see Table 1). Confirmation was measured as the extent to which QRIS performance met expectations (Bhattacharjee, 2001; Tam et al., 2020; Yasin et al., 2025), perceived usefulness reflected operational efficiency gains (Bhattacharjee, 2001; Susanto et al., 2022), satisfaction captured overall user evaluation (Tam et al., 2020), and continuance intention measured the likelihood of sustained usage (Bhattacharjee, 2001; Cheng, 2021b; Chiu et al., 2021), while transaction frequency was operationalized as low (<6), medium (6–15), and high (>15) daily transactions.

Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS4, selected for its suitability in prediction-oriented research, theory extension, and complex models involving mediation and moderation, particularly in MSME contexts where sample sizes are moderate and data may deviate from normality (Hair Jr et al., 2021). The analysis followed a two-stage approach comprising measurement and structural model evaluation. The measurement model assessed reliability and validity using outer loadings, Cronbach's alpha, composite reliability (ρ_a and ρ_c), average variance extracted (AVE), and discriminant validity via the heterotrait–monotrait (HTMT) ratio, while variance inflation factor (VIF) was used to examine common method variance. The structural model was evaluated through path coefficients, coefficient of determination (R^2), and effect sizes (f^2), with hypotheses tested using bootstrapping with 5,000 resamples to obtain robust estimates and confidence intervals. The mediating role of satisfaction was assessed using bootstrapped indirect effects to determine partial or full mediation. Transaction frequency was treated as a categorical grouping variable for multi-group analysis (MGA), and permutation-based MGA was applied to compare structural paths between low- and high-frequency users, where significant differences in path coefficients ($p < 0.05$) indicate moderating effects (Hair et al., 2017).

Table 1. Operationalization of variables

Construct	Code	Measurement Items	Source
Confirmation	CONF1	My experience using QRIS was better than what I expected.	(Bhattacharjee, 2001)
	CONF2	The performance of QRIS met my initial expectations.	
	CONF3	Overall, my expectations of QRIS were confirmed through actual use.	
Perceived Usefulness (PU)	PU1	Using QRIS improves the efficiency of my business transactions.	(Bhattacharjee, 2001) (Susanto et al., 2022)
	PU2	QRIS enables faster payment processing in my daily operations.	
	PU3	QRIS enhances the overall effectiveness of my business activities.	
Satisfaction (SAT)	SAT1	I am satisfied with my experience using QRIS in my business.	(Tam et al., 2020)
	SAT2	Using QRIS has been a positive experience for my business operations.	
	SAT3	Overall, I am pleased with the performance of QRIS.	
Continuance Intention (CI)	CIU1	I intend to continue using QRIS in my future business transactions.	(Bhattacharjee, 2001);
	CIU2	QRIS will remain one of my primary payment methods.	
	CIU3	I will frequently use QRIS in my daily business operations.	
Entrepreneurial Self-Efficacy	ESE1	I am confident in my ability to manage daily business operations effectively	(Chen et al., 1998)
	ESE2	I believe I can identify and exploit new business opportunities	
	ESE3	I can solve unexpected problems that arise in my business.	
	ESE4	I am confident in adopting new technologies to improve my business performance.	
	ESE5	I believe I can make effective decisions even in uncertain business situations.	
Transaction Frequency (TF) of using QRIS (category)	TF1	On average, I use 1–5 times daily (Low)	(Cheng, 2021a)
	TF2	QRIS is used 6 –15 times in my daily customer transactions. (Medium)	
	TF3	More than 15 times of my sales transactions in QRIS. (High)	

Source: Adapted Formulation (2025)

RESULT

The responder demographic reveals a somewhat balanced gender ratio among MSME vendors operating in and around urban train stations. As illustrated in Table 2, male vendors constitute 54.67% of the sample, while female vendors account for 45.33%, indicating relatively balanced QRIS adoption across gender. The distribution of transaction frequency, used as the moderating variable, is concentrated in the medium to high usage categories, with 67% of vendors reporting high usage (>15 transactions) and 33% in the medium-to-low range. This pattern supports the relevance of usage intensity in examining how satisfaction translates into continuance intention, providing a suitable empirical context for testing its moderating role in post-adoption behaviour.

Table 2. Respondent profile

Description	Items	f	%
Gender	Male	82	54.67
	Female	68	45.33
Length of time in business (years)	<10	38	25.33
	10–19	51	34.00
	20– 29	41	27.33
	≥30 years:	20	13.33
	F&B	104	69.33
Type of Business	Retail	30	20
	Service	16	10.67
	Micro	113	75.33
Scale of Business	Small	25	16.67
	Medium	12	8
	< 6	20	13.33
Length of QRIS usage (months)	6–12	44	29.33
	13 - 24	61	40.67
	>24	25	16.67
	1–5	13	8.66
QRIS transaction frequency per day	6 –15	36	24
	>15	101	67.22

Source: Survey Descriptive Information (2026)

We initially check whether the outer loadings are higher than 0.708, showing that indicator reliability is established. As shown in Figure 2, all indicators' outer loadings were above 0.708. The study model uses reflective measurements, and the measurement model evaluation includes internal consistency, convergent validity, and discriminant validity. As seen in Figure 2, the outer loadings of variables are greater than 0.7 for validity to be deemed satisfactory.

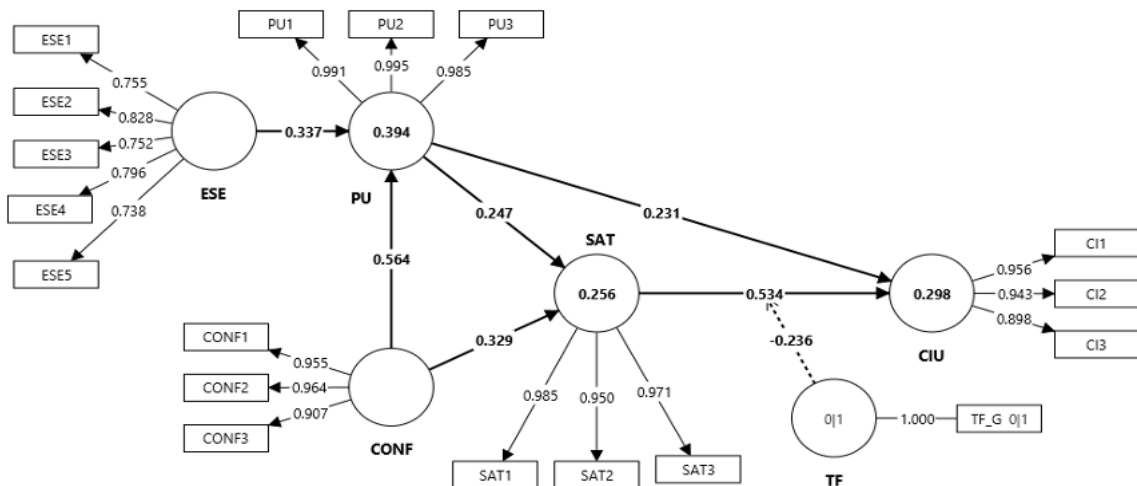


Figure 2. Research model

Table 3 shows that Cronbach's alpha, composite reliability rho_a, and rho_c values are all greater than 0.7, and AVE values are greater than 0.5. Therefore, internal consistency and convergent validity were established (Hair et al., 2011; Hair et al., 2014).

Table 3. Construct validity and reliability

Constructs	Cronbach's alpha	CR (rho_a)	CR (rho_c)	AVE
CIU	0.925	0.936	0.953	0.870
CONF	0.937	0.947	0.960	0.888
ESE	0.841	0.876	0.882	0.600
PU	0.990	0.991	0.994	0.981
SAT	0.967	0.974	0.979	0.939

Source: SmartPLS 4 Adapted Output (2026)

After confirming the convergent validity, the study proceeded to examine the discriminant validity of the constructs as in Table 4. Discriminant validity occurs when a construct is established empirically to be distinct from other constructs. The HTMT criterion was employed, and all values are below 0.9, indicating discriminant validity for the measurement model (see Table 4).

Table 4. HTMT ratio and VIF

Path	(HTMT) ratio	VIF
CONF → PU	0.548	1.010
CONF → SAT	0.480	1.391
ESE → PU	0.276	1.010
PU → CIU	0.429	1.265
PU → SAT	0.428	1.391
SAT → CIU	0.489	2.607
TF → CIU	0.247	1.112
TF x SAT → CIU	0.355	2.999

Source: SmartPLS 4 Adapted Output (2026)

The structural model evaluation examines the relationships among constructs, focusing on collinearity (VIF), path coefficients (β), and explanatory power (R^2) (Chin et al., 2010; Hair Jr et al., 2014). All VIF values were below the conservative threshold of 3, indicating no collinearity or common method bias concerns (Kock & Dow, 2025). The R^2 values for perceived usefulness (0.394), continuance intention (0.298), and satisfaction (0.256) indicate moderate explanatory power (Hair et al., 2014). Path coefficient analysis shows that satisfaction has the strongest effect on continuance intention ($\beta = 0.534$), followed by perceived usefulness ($\beta = 0.231$). Hypothesis testing was conducted using SmartPLS4 with bootstrapping (10,000 subsamples) and one-tailed tests at a 5% significance level to assess the statistical significance of the relationships as all evident in Table 5.

Table 5. Hypothesis testing of the direct effect

H	Path	β	t-value	p-value	CIBC 5%	CIBC 95%	Decision
H1	CONF → PU	0.564	8.531	0.000	0.448	0.664	Supported
H2	CONF → SAT	0.329	3.235	0.001	0.163	0.495	Supported
H3	PU → SAT	0.247	2.606	0.005	0.092	0.405	Supported
H4	ESE → PU	0.337	5.371	0.000	0.223	0.425	Supported
H5	SAT → CIU	0.534	3.309	0.000	0.244	0.756	Supported
H6	PU → CIU	0.231	2.770	0.003	0.097	0.373	Supported

Source: Adapted SmartPLS4 Output, 2026

As shown in Table 5, all hypothesized relationships are significant, with p-values below 0.05 and bias-corrected confidence intervals (5%–95%) excluding zero, supporting H1–H6. Furthermore, mediation analysis compares the direct effect of perceived usefulness on continuance intention (PU → CIU) and its indirect effect through satisfaction (PU → SAT → CIU). The direct effect is significant ($\beta = 0.231$; $p = 0.003$), while the indirect effect is also significant ($\beta = 0.132$; $p = 0.027$) with confidence intervals excluding zero (Tables 5–6). Since the indirect effect is smaller than the direct effect, this indicates partial mediation as in Table 6. Thus, satisfaction significantly mediates the relationship between perceived usefulness and continuance intention, supporting H7.

Table 6. Hypothesis testing of the specific indirect effect

H	Path	β	t-value	p-value	CIBC 5%	CIBC 95%	Decision
H7	PU → SAT → CIU	0.132	1.929	0.027	0.039	0.263	Supported

Source: SmartPLS4 report, 2026

The moderating effect evaluation

A multi-group analysis (MGA), a feature in SmartPLS4, is used to assess the moderating influence of TF. To use the MGA bootstrap procedure, the group is separated into two groups: the HiTrans group represent entrepreneurs who experience high-level transactions, and the LoTrans group represents entrepreneurs who utilize QRIS in medium to low-level transactions as in the Table 7.

Table 7. Result of Bootstrapping MGA

Path	β (HiTrans)	β (LoTrans)	Differences (HighTrans- LowTrans)	<i>t</i> -value	<i>p</i> -value
SAT → CIU	0.231	0.441	-0,21	0.783	0.217

Source: MGA Bootstrapping Report, 2026

As can be seen from Table 7, the difference between the path coefficient in high transaction (0.231) and the path coefficient in low transaction is (-0,21) and the *p*-value (0.217). The *p*-value is not significant, indicating that transaction frequency does not moderate the relationship between satisfaction and continuance intention in using the QRIS payment system, thus H8 is not supported.

DISCUSSION

This study extends the post-adoption Expectation Confirmation Model (ECM) by integrating entrepreneurial self-efficacy as a key cognitive antecedent, thereby bridging entrepreneurship psychology and information systems continuance literature. Entrepreneurs with higher self-efficacy are more likely to perceive digital technologies as useful due to stronger confidence in leveraging them for operational efficiency and business performance. Perceived usefulness, in turn, remains a critical cognitive driver that shapes both satisfaction and continuance intention, reaffirming its relevance beyond the initial adoption stage (Bhattacharjee, 2001; Tam et al., 2020). However, satisfaction emerges as the most dominant predictor of continuance intention, consistent with ECM's positioning of satisfaction as the central affective outcome of post-adoption evaluation (Bhattacharjee, 2001; Tam et al., 2020). This aligns with fintech research showing that in contexts where system performance directly affects economic outcomes, satisfaction becomes highly salient (Mensah et al., 2018; Wang & Zhou, 2023), while perceived usefulness retains a complementary role (Liebana-Cabanillas et al., 2020).

Further analysis confirms that satisfaction partially mediates the relationship between perceived usefulness and continuance intention, supporting ECM's core proposition that cognitive evaluations translate into sustained usage through affective responses (Bhattacharjee, 2001; Chiu et al., 2021; Tam et al., 2020). This indicates that usefulness must be reinforced through satisfying user experiences, particularly in MSME contexts where operational reliability is critical.

Contrary to expectations, transaction frequency does not moderate the relationship between satisfaction and continuance intention, suggesting that satisfaction alone is sufficient to sustain usage regardless of behavioral intensity. This finding can be explained through habit formation theory, where repeated use in stable contexts becomes automatic and less dependent on cognitive evaluation or situational cues (Verplanken & Aarts, 1999; Wood & Neal, 2007). In the context of QRIS adoption among MSMEs, usage behavior transitions from deliberate decision-making to habitual routines, reducing the relevance of transaction frequency. This is further supported by technology embeddedness theory, which posits that once digital systems are deeply integrated into everyday practices, they are enacted as taken-for-granted infrastructures rather than consciously evaluated tools (Jones & Karsten, 2008; Orlikowski, 2000). In high-intensity environments such as transportation hubs, QRIS operates as an operational necessity, limiting the moderating role of transaction frequency and reinforcing satisfaction as the primary determinant of continuance intention (Cheng, 2021b; Nguyen & Dao, 2024).

Theoretically, this study contributes by embedding entrepreneurial cognition into ECM, positioning entrepreneurial self-efficacy as a micro-foundation of post-adoption behavior, and by demonstrating the erosion of behavioral boundary conditions under routinised digital embeddedness. The findings suggest that as digital payment systems mature, affective satisfaction increasingly dominates continuance decisions, while usage intensity loses explanatory power,

offering a dynamic refinement of ECM in embedded digital environments. Managerially, the results emphasize that sustaining QRIS usage among MSMEs depends less on increasing transaction frequency and more on ensuring consistent system reliability, seamless performance, and high-quality user support. In operationally demanding contexts, even minor system disruptions may weaken confirmation and satisfaction, underscoring the need for robust, MSME-centric service design.

CONCLUSION AND FURTHER STUDY

This study examines the determinants of QRIS continuance intention among MSMEs in high-frequency urban environments using the Expectation Confirmation Model (ECM). The findings confirm that entrepreneurial self-efficacy strengthens perceived usefulness, while confirmation significantly enhances both perceived usefulness and satisfaction, reinforcing the role of experiential validation in post-adoption behavior. Perceived usefulness and satisfaction both drive continuance intention, with satisfaction emerging as the dominant predictor, indicating that sustained QRIS usage is shaped more by consistent positive experiences than by functional evaluation alone. The mediating role of satisfaction further demonstrates the complementary cognitive–affective mechanism underlying continuance decisions. The non-significant moderating effect of transaction frequency suggests that once QRIS becomes embedded in routine operations, continuance behavior is primarily driven by affective satisfaction rather than usage intensity. These findings extend ECM by integrating entrepreneurial cognition and by revealing the diminishing role of behavioral boundary conditions in routinised digital environments. Managerially, the results highlight that sustaining QRIS adoption requires prioritizing system reliability, seamless performance, and MSME-oriented support, rather than merely increasing transaction volume.

This study is subject to several limitations. The use of self-reported, single-source data introduces potential common method bias, while the focus on MSMEs within selected urban train stations limits generalizability to broader or less digitally intensive contexts. In addition, the cross-sectional design restricts the ability to capture dynamic post-adoption processes over time. Future research should employ multi-source and longitudinal designs to better examine causal relationships and evolving user evaluations, as well as expand to diverse geographic and institutional settings to assess contextual variability in ECM mechanisms. Further studies may also explore additional boundary conditions, such as technological trust or institutional support, to deepen understanding of digital payment continuance in emerging economies.

ETHICAL DISCLOSURE

All participants provided written informed consent before participation. They were informed about the study's purpose, their voluntary participation, the right to withdraw at any time, and the confidentiality of their responses

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

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