

Digital Payment Adoption and Customer Retention in Family-Run Restaurants: Evidence from a Mixed-Method Study in Hong Kong

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Abstract

Digital payment systems have become ubiquitous in hospitality settings, yet empirical understanding of their post-adoption effects—particularly on customer retention in family-run restaurants—remains limited. Drawing on technology adoption theory, post-adoption perspectives, and customer loyalty literature, this study examines how perceived convenience, perceived ease of use, trust, and customer satisfaction influence retention intention. A mixed-method design was employed, combining survey data from 156 customers of family-run restaurants in Hong Kong with semi-structured interviews with restaurant owners. Quantitative analysis using multiple regression indicates that customer satisfaction and trust significantly predict retention intention, while perceived convenience exerts a weaker but significant effect. Contrary to traditional technology acceptance assumptions, perceived ease of use does not significantly influence retention intention in this digitally mature context. Qualitative findings reveal that margin anxiety, platform dependency concerns, and intergenerational decision-making shape adoption depth and implementation consistency in family-run enterprises. The study contributes to hospitality and technology adoption literature by repositioning adoption constructs within a post-adoption, retention-focused framework. Managerial implications highlight the importance of trust-building mechanisms, fee transparency, and governance alignment in sustaining the value of digital payment systems for family-run hospitality businesses. This study advances hospitality technology literature by distinguishing adoption drivers from post-adoption retention mechanisms in family-run enterprises.

Keywords: customer retention; digital payments; family-run restaurants; hospitality technology; mixed methods

1. Introduction

1.1 Digital Transformation of Hospitality Payments

Digital transformation has become a defining feature of contemporary hospitality operations, with payment technologies representing one of its most visible and operationally consequential elements. The global shift toward cashless transactions has accelerated dramatically over the past decade, driven by technological innovation, changing consumer preferences, and, more recently, public health considerations. Contactless cards, QR-code payments, and mobile wallets are now routinely embedded within service encounters, particularly in dense urban markets such as Hong Kong, where high smartphone penetration and sophisticated financial infrastructure create fertile ground for digital payment adoption.

These systems are frequently promoted as mechanisms for enhancing operational efficiency, reducing transaction friction, and improving customer experience. For merchants, digital payments offer benefits including reduced cash handling costs, faster transaction processing, and access to transaction data that can inform business decisions. For customers, the appeal lies in convenience, speed, and the elimination of physical currency requirements. However, while adoption has accelerated, especially among large restaurant chains and corporate hospitality groups, the implications of digital payment use for customer retention in family-run restaurants remain underexplored.

1.2 Significance of Family-Run Restaurants in Hong Kong

Family-run restaurants constitute a substantial segment of Hong Kong's hospitality sector and play an important cultural and economic role. These establishments—ranging from decades-old *cha chaan teng* (Hong Kong-style cafes) to small noodle shops and family-owned seafood restaurants—represent more than commercial enterprises; they embody culinary traditions, community connections, and intergenerational knowledge transfer. According to the Hong Kong Census and Statistics Department, small and medium-sized enterprises (SMEs), the majority of which are family-operated, account for over 98% of total business units in the food and beverage sector.

These enterprises are typically characterised by owner-managed governance structures, intergenerational involvement, and a reliance on relational service rather than scale efficiencies. Unlike corporate chains with standardised operating procedures and dedicated IT departments, family-run restaurants make technological decisions through informal processes often influenced by the owner's personal preferences, risk tolerance, and trust in technology providers. At the same time, they operate with narrow margins and limited organisational slack, making technology adoption decisions particularly consequential. For such businesses, digital payment systems represent not only a technological choice but also a strategic and governance decision involving cost exposure, platform dependence, and perceived loss of control.

1.3 The Research Gap

Existing research on digital payment adoption has predominantly focused on intention to adopt or intention to use, offering limited insight into how these technologies influence post-adoption behavioural outcomes such as customer retention. This adoption-centric bias reflects the broader trajectory of technology acceptance research, which has historically prioritised understanding what drives initial acceptance over examining how technology use shapes downstream outcomes. Within hospitality scholarship, studies examining payment technologies have largely concentrated on large organisations or chain operations, where technology implementation follows structured processes and resource constraints are less acute.

This focus leaves several important questions unanswered. How do the attributes of digital payment systems—convenience, ease of use, trust, and the satisfaction they generate—influence whether customers return to family-run restaurants? Do the factors that drive initial adoption retain their explanatory power when the outcome of interest shifts from adoption intention to retention behaviour? How do the distinctive characteristics of family-run enterprises moderate the relationship between technology use and customer outcomes? These questions are particularly salient in digitally mature markets like Hong Kong, where digital payment use has moved beyond early adoption to become mainstream practice.

1.4 Study Objectives and Contributions

This study addresses this gap by examining how digital payment adoption attributes influence customer retention intention in family-run restaurants in Hong Kong. Specifically, it investigates the roles of perceived convenience, perceived ease of use, trust, and customer satisfaction, integrating customer-side perceptions with owner-side contextual insights through a mixed-method approach.

This study contributes to the literature in three ways. First, it extends technology adoption research by repositioning adoption constructs within a post-adoption, retention-focused framework. By shifting analytical attention from initial acceptance to sustained behavioural outcomes, the study responds to calls within information systems research for greater attention to post-adoption phenomena. Second, it enriches hospitality scholarship by examining digital payment effects within family-run restaurant contexts, where governance and socio-emotional considerations shape technology outcomes in ways that differ from corporate settings. Third, it provides empirically grounded managerial insights for family-run hospitality enterprises navigating digital transformation in digitally mature markets, offering practical guidance on how to maximise the retention benefits of digital payment adoption.

1.5 Structure of the Paper

The remainder of this paper is organised as follows. Section 2 reviews relevant literature on digital payments in hospitality, technology acceptance and post-adoption perspectives, trust and satisfaction in service encounters, and family-enterprise governance, culminating in the

development of four research hypotheses. Section 3 describes the mixed-method methodology, including sampling procedures, instrument development, and analytical approaches for both quantitative and qualitative components. Section 4 presents the results of reliability analysis, descriptive statistics, correlation analysis, and multiple regression. Section 5 discusses the findings, integrating quantitative results with qualitative insights to explain the observed patterns. Section 6 concludes with theoretical and managerial implications, acknowledges study limitations, and suggests directions for future research.

2. Literature Review

2.1 Digital Payments in Hospitality: Evolution and Current Landscape

(a) Defining Digital Payment Systems

Digital payment systems encompass electronic and mobile-based mechanisms that facilitate cashless transactions. In contemporary hospitality contexts, these include contactless credit and debit cards (using near-field communication technology), mobile wallets (such as Apple Pay, Google Pay, and Samsung Pay), QR-code-based payments (widely adopted in Asian markets through platforms like Alipay, WeChat Pay, and PayMe), and stored-value cards. These systems share common characteristics: they eliminate physical currency exchange, enable rapid transaction completion, and typically require internet connectivity or terminal infrastructure.

The payment stage occupies a unique position in the service encounter. As the final interaction point before the customer departs, payment experiences can disproportionately influence overall service evaluations. Research in services marketing has long recognised that service endings carry particular weight in memory formation and satisfaction judgement (known as the peak-end rule). A seamless, frictionless payment may enhance an otherwise satisfactory experience, while payment difficulties can undermine positive impressions formed earlier in the encounter.

(b) Adoption Trends in Hong Kong

Hong Kong represents an advanced market for digital payment adoption. The region's high smartphone penetration rate (exceeding 90% among adults), sophisticated banking infrastructure, and tech-savvy population create favourable conditions for cashless transactions. Government initiatives promoting fintech development, combined with competitive pressure from global and local payment providers, have accelerated merchant adoption. The COVID-19 pandemic further catalysed this trend, as hygiene concerns and social distancing measures encouraged both customers and merchants to prefer contactless options.

Despite this macro-level adoption, significant variation exists across restaurant segments. Chain restaurants and international brands have rapidly integrated multiple payment options, often negotiating favourable fee structures through volume agreements. Family-run restaurants, however, have adopted digital payments more unevenly, with decisions influenced by owner attitudes, customer demographics, and perceptions of cost-benefit trade-offs.

(c) Distinctive Considerations for Family-Run Restaurants

Family-run restaurants face distinct constraints in digital payment adoption. First, fee sensitivity is heightened due to narrow operating margins. Transaction fees, typically ranging from 1.5% to 3.5% of transaction value, represent a meaningful cost for small establishments processing high volumes of low-value transactions. Second, limited bargaining power with payment providers precludes the preferential rates available to larger chains, exacerbating cost concerns. Third, reliance on daily cash flow for operational expenses (including paying suppliers and staff) makes even short settlement delays problematic. Fourth, technological literacy varies, with older owners potentially lacking confidence in troubleshooting payment system issues.

These factors complicate assumptions that technology adoption uniformly enhances performance. For family-run restaurants, the decision to adopt digital payments involves weighing operational benefits against tangible costs and perceived risks. Moreover, implementation consistency (how reliably systems function and how confidently staff manage them) affects customer experience and ultimately retention outcomes.

2.2 Technology Acceptance and Post-Adoption Perspectives

(a) The Technology Acceptance Model and Its Extensions

The Technology Acceptance Model (TAM), introduced by Davis (1989), remains one of the most influential frameworks for understanding technology adoption. TAM posits that two primary beliefs drive technology acceptance: perceived usefulness (the degree to which a person believes that using a particular system would enhance their performance) and perceived ease of use (the degree to which a person believes that using a particular system would be free of effort). These beliefs mediate the effects of external variables on attitude toward using, behavioural intention, and ultimately actual system use.

Subsequent extensions, including TAM2 (Venkatesh & Davis, 2000) and the Unified Theory of Acceptance and Use of Technology (UTAUT), incorporated additional determinants including social influence, facilitating conditions, and cognitive instrumental processes. These models have been widely applied across technological contexts, including payment systems research. Studies examining mobile payment adoption consistently identify perceived usefulness, ease of use, and social influence as significant predictors of adoption intention.

However, these models primarily explain initial adoption intentions to begin using technology. They are less equipped to explain post-adoption phenomena, including continued use, loyalty, and the downstream consequences of technology use for customer-firm relationships. This limitation becomes increasingly important as digital payments move from novel innovation to routine expectation.

(b) Post-Adoption Research: Expectation–Confirmation Theory

Post-adoption research, particularly expectation–confirmation theory (ECT), offers complementary insights. Originally developed in consumer behaviour research, ECT

posits that satisfaction is determined by the extent to which consumers' initial expectations are confirmed through actual experience. Applied to information systems continuance, Bhattacharjee (2001) proposed that users' intention to continue using an information system is determined primarily by their satisfaction with prior use, which in turn is influenced by confirmation of expectations and perceived usefulness.

ECT suggests a fundamental shift in explanatory mechanisms across the adoption–continuance lifecycle. While pre-adoption intentions are driven by anticipatory beliefs (expectations of future performance), continuance decisions are driven by experiential factors (satisfaction derived from actual use). This distinction has important implications for understanding how payment systems affect customer retention. Factors that matter in initial adoption—such as ease of learning to use the system—may recede in importance once use becomes routine, replaced by reliability, trust, and consistent performance.

(c) Digital Maturity and Shifting Salience

The concept of digital maturity adds another layer of complexity. In markets where digital payment use has become widespread, certain attributes may shift from differentiators to baseline expectations. Ease of use provides a relevant example. When payment systems were novel, ease of use distinguished acceptable from unacceptable systems. However, in digitally mature environments where multiple user-friendly options exist, customers may expect ease of use as a given. Under these conditions, ease of use may cease to predict loyalty outcomes, while other factors—such as trust in system security or satisfaction with reliability—become more salient.

This reasoning suggests that technology adoption models developed in early-adopter contexts may not translate directly to mature digital environments, nor to outcomes beyond initial adoption. The present study responds to this limitation by examining post-adoption retention outcomes in Hong Kong's digitally mature market.

2.3 Trust, Satisfaction, and Customer Retention

(a) The Centrality of Customer Retention

Customer retention is a critical outcome in hospitality due to the high costs of customer acquisition and the profitability associated with repeat patronage. Reichheld and Sasser (1990) famously demonstrated that increasing customer retention rates by 5% can increase profits by 25% to 95%, highlighting the economic significance of loyalty. In restaurant contexts, repeat customers not only generate consistent revenue but also contribute positive word-of-mouth, provide feedback, and create the atmosphere of familiarity that distinguishes successful establishments.

Prior research consistently identifies satisfaction and trust as key antecedents of retention and loyalty. The satisfaction–loyalty link, while not always linear, is well established across service industries. Satisfied customers are more likely to purchase, less likely to defect to competitors, and more tolerant of occasional service failures. Trust operates through different mechanisms, reducing perceived risk and uncertainty in future

transactions and creating relational bonds that extend beyond transactional evaluations.

(b) Trust in Technology-Mediated Service Encounters

In technology-mediated service encounters, trust becomes particularly salient due to perceived risks related to security, reliability, and dispute resolution. Customers must trust that payment systems will protect sensitive financial information, that transactions will be processed correctly, and that recourse exists if problems arise. These concerns are heightened in restaurant settings where payment devices may be handled by multiple staff and where transaction environments are often crowded and distracting.

In payment contexts, trust operates at multiple levels. Customers place trust in the merchant (to handle transactions honestly), in the payment system (to function reliably and securely), and in intermediary platforms (to resolve disputes and protect data). These dimensions are interrelated; failure at any level can damage overall trust and reduce retention likelihood.

(c) Trust and Satisfaction in Family-Restaurant Contexts

For family-run restaurants, trust dynamics may differ from corporate settings. Customers often develop personal relationships with owners and regular staff, creating a foundation of interpersonal trust that may extend to technology-mediated interactions. However, owner scepticism about payment systems can affect implementation consistency. If owners express doubt about system reliability or complain about fees in customers' presence, this may inadvertently undermine customer trust. Similarly, technical problems that owners cannot quickly resolve may be attributed to the restaurant rather than the payment provider, damaging satisfaction and retention.

Qualitative evidence from hospitality research suggests that in small establishments, technology failures are often perceived as owner failures, whereas in chain settings, they may be attributed to corporate systems. This attributional difference has important implications for family-run restaurants, where the boundary between business and owner is less distinct.

2.4 Family-Run Enterprises and Technology Governance

(a) Distinguishing Characteristics

Family-run enterprises differ from other SMEs in ways that matter for technology adoption and outcomes. Getz and Carlsen (2005) identify several distinctive features: emphasis on control and autonomy, concern for family identity and reputation, orientation toward intergenerational continuity, and integration of family and business goals. These characteristics shape decision-making processes and implementation approaches.

Technology adoption decisions in family contexts are often shaped by socio-emotional considerations alongside economic rationality. Owners may resist technologies perceived as threatening traditional ways of operating, even when economic benefits are evident. Conversely, they may adopt technologies that enhance family reputation or appeal to younger family members, even when immediate economic returns are uncertain.

(b) Intergenerational Dynamics

Intergenerational differences in risk tolerance and technological familiarity may further influence adoption depth and outcomes. Younger family members, often more comfortable with digital technologies, may advocate for adoption and manage implementation. Older owners may defer to younger relatives on technology decisions or may resist changes that challenge their authority and expertise. These dynamics can affect not only whether digital payments are adopted but also how consistently they are implemented and promoted.

In some family-run restaurants, intergenerational tension manifests as partial adoption—systems are installed but not actively encouraged, or staff receive minimal training. Such implementation inconsistencies can produce variable customer experiences, undermining the potential retention benefits of digital payment adoption.

(c) Platform Dependency Concerns

A further distinctive consideration involves concerns about platform dependency. When restaurants adopt digital payment systems, they become dependent on payment providers whose interests may not fully align with their own. Fee structures can change, settlement delays can occur, and customer data belongs to platforms rather than restaurants. For family-run enterprises that prize autonomy and self-reliance, this dependency can be deeply uncomfortable.

These concerns are not merely theoretical. Payment platform failures or disputes can strand funds, disrupt cash flow, and damage customer relationships. For restaurants operating with thin margins, such disruptions threaten survival. Understanding how these governance concerns affect implementation and, indirectly, customer outcomes is essential for comprehending digital payment effects in family-run contexts.

2.5 Hypotheses Development

Based on the literature reviewed, this study proposes four hypotheses examining how digital payment attributes influence customer retention intention in family-run restaurants.

(a) Perceived Convenience

Convenience represents the time and effort savings associated with digital payment use relative to cash alternatives. Digital payments eliminate the need for customers to carry sufficient cash, obtain change, or wait for cash handling. In busy restaurant settings, convenience may translate into faster departure, reduced queuing, and smoother service experiences. Prior research suggests that convenience positively influences satisfaction and behavioural intentions. Accordingly:

H₁: Perceived convenience of digital payments positively influences customer retention intention.

(b) Perceived Ease of Use

Ease of use reflects the cognitive effort required to complete digital payment transactions. Systems that are intuitive require minimal steps, and function reliably reduce transaction friction. TAM and its extensions consistently identify ease of use as a determinant of adoption intention. However, as earlier discussions noted, ease of use may function as a baseline expectation in mature digital markets. Nevertheless, consistent with the traditional TAM framework:

H₂: Perceived ease of use of digital payments positively influences customer retention intention.

(c) Trust

Trust encompasses confidence in payment system security, reliability, and fairness. In technology-mediated transactions, trust reduces perceived risk and uncertainty. Customers who trust payment systems are more likely to use them without anxiety and to return to establishments where they have experienced trustworthy transactions. Given the heightened risk perceptions associated with financial transactions:

H₃: Trust in digital payment systems positively influences customer retention intention.

(d) Customer Satisfaction

Satisfaction represents the cumulative evaluation of payment experiences. Drawing on expectation–confirmation theory, satisfaction arises when payment performance meets or exceeds expectations. Satisfied customers are more likely to attribute positive experiences to the restaurant overall and to intend repeat visits. The satisfaction–retention link is among the most robust findings in services research:

H₄: Customer satisfaction positively influences customer retention intention.

3. Methodology

3.1 Research Design

A mixed-method design was adopted to combine explanatory quantitative analysis with contextual qualitative insights. This approach is well suited to examining complex phenomena where measurable relationships interact with organisational and behavioural contexts that quantitative methods alone cannot fully capture. The design follows a convergent parallel structure, with quantitative and qualitative data collected concurrently, analysed separately, and integrated during interpretation.

The rationale for mixed methods in this study is twofold. First, while hypothesised relationships can be tested quantitatively, understanding why these relationships hold—or do not hold—in the distinctive context of family-run restaurants requires qualitative exploration. Second, incorporating owner perspectives alongside customer data enables triangulation, enhancing confidence in findings and revealing discrepancies between customer perceptions and business realities.

3.2 Quantitative Component

3.2.1 Sampling and Data Collection

Survey data were collected from customers who had used digital payments at family-run restaurants in Hong Kong. A purposive sampling strategy was employed, targeting individuals who had dined at family-run establishments within the preceding month and completed payment using digital methods. This criterion ensured that respondents could draw on recent, concrete experiences rather than general impressions.

Data collection occurred over an eight-week period. Surveys were distributed through multiple channels: in-person recruitment outside family-run restaurants (with QR codes linking to the online survey), social media posts targeting Hong Kong dining groups, and referrals from

restaurant owners who agreed to display survey information. This multi-channel approach aimed to maximise sample diversity while maintaining focus on the target population.

A total of 187 responses were received. After screening for completeness, attention checks, and valid restaurant experiences, 156 usable responses were retained for analysis, representing an effective response rate of 83.4%.

3.2.2 Instrument Development

Constructs were measured using established multi-item Likert-scale instruments adapted to the restaurant payment context. All items used seven-point scales anchored at 1 (strongly disagree) and 7 (strongly agree). The adaptation process involved minor wording modifications to ensure relevance to digital payment experiences in restaurants while preserving original meaning.

(i) Perceived convenience was measured using four items adapted from convenience scales in technology adoption research, focusing on time savings, effort reduction, and flexibility relative to cash.

(ii) Perceived ease of use employed four items from Davis's (1989) TAM scale, assessing clarity, mental effort requirements, and overall ease of completing payments.

(iii) Trust was measured using four items adapted from trust in technology scales, addressing security perceptions, reliability, and confidence in transaction processing.

(iv) Customer satisfaction employed three items from satisfaction scales in services research, assessing overall satisfaction with payment experiences and comparison to expectations.

(v) Retention intention was measured using three items adapted from loyalty intention scales, focusing on likelihood of returning to the same restaurant and preference relative to alternatives.

The instrument was initially developed in English, then translated to traditional Chinese for Hong Kong respondents using a translation–back-translation procedure to ensure conceptual equivalence. A pilot test with 15 respondents assessed clarity, comprehensibility, and completion time, leading to minor wording refinements.

3.2.3 Analytical Approach

Data was analysed using SPSS Version 28. Analysis proceeded in four stages. First, reliability analysis assessed internal consistency using Cronbach's alpha, with thresholds of 0.70 considered acceptable. Second, descriptive statistics summarised central tendency and dispersion for all constructs. Third, Pearson correlation analysis examined bivariate relationships among constructs. Fourth, multiple regression analysis tested hypothesised relationships, with retention intention regressed on convenience, ease of use, trust, and satisfaction. Regression assumptions (linearity, normality, homoscedasticity, and absence of multicollinearity) were assessed prior to interpretation.

3.3 Qualitative Component

3.3.1 Sampling and Data Collection

Semi-structured interviews were conducted with owners and senior operators of family-run restaurants. Purposive sampling sought variation in restaurant type (traditional Hong Kong cafes, noodle shops, seafood restaurants), years in operation, and digital payment adoption status. Recruitment continued until thematic saturation was achieved, resulting in 12 interviews.

Interviews were conducted in Cantonese, the preferred language of participants, at locations convenient to participants (typically their restaurants during off-peak hours). Interview duration ranged from 35 to 70 minutes, averaging 48 minutes. All interviews were audio-recorded with participants' informed consent.

3.3.2 Interview Protocol

The interview protocol explored four domains: (1) motivations for digital payment adoption (or reasons for non-adoption), (2) perceived benefits and risks of digital payments, (3) cost considerations and fee sensitivity, (4) trust in payment providers, and (5) intergenerational dynamics in technology decision-making. Probes encouraged elaboration on how adoption decisions were made, how implementation unfolded, and what effects owners observed on customer behaviour and satisfaction.

3.3.3 Analytical Approach

Interviews were transcribed verbatim and translated into English for analysis while retaining key Cantonese terms where meaning might be lost in translation. Analysis followed thematic analysis procedures: familiarisation through repeated reading, initial coding, theme development, and refinement. Coding was both deductive (informed by literature on technology adoption and family enterprise) and inductive (allowing themes to emerge from participants' accounts). NVivo 12 software supports data organisation and retrieval.

Trustworthiness was enhanced through member checking (returning summaries to selected participants for verification), peer debriefing (discussing emerging interpretations with colleagues), and maintaining an audit trail of analytical decisions.

3.4 Ethical Considerations

Ethical approval was obtained from the university's research ethics committee prior to data collection. All participants received information sheets explaining study purposes, data handling procedures, and their rights. Written informed consent was obtained from all participants. Confidentiality was assured, and identifying information was removed from all data files and reported findings. Participants received no financial compensation but were offered summary findings upon request.

4. Results

4.1 Quantitative Results

4.1.1 Sample Characteristics

The customer sample comprised 156 respondents. Gender distribution was approximately balanced (52% female, 48% male). Age ranged from 18 to 67 years, with a mean of 34.2 years ($SD = 11.4$). The majority (71%) reported using digital payments for restaurant transactions at least weekly, indicating high familiarity. Most frequently

used payment methods were contactless cards (43%), mobile wallets (31%), and QR-code payments (26%).

4.1.2 Reliability Analysis

Internal consistency reliability was assessed using Cronbach's alpha for all multi-item constructs. As shown in Table 1, all constructs exceeded the recommended threshold of 0.70, with values ranging from 0.813 (ease of use) to 0.883 (satisfaction), indicating satisfactory reliability.

Table 1. Reliability Statistics

Construct	Cronbach's alpha
Convenience	0.842
Ease of use	0.813
Trust	0.861
Satisfaction	0.883
Retention intention	0.831

4.1.3 Descriptive Statistics

Table 2 presents descriptive statistics for all constructs. Mean scores ranged from 3.71 (trust) to 3.92 (convenience) on seven-point scales, indicating generally positive perceptions of digital payment experiences. Standard deviations ranged from 0.60 to 0.68, suggesting reasonable variability. The relatively high mean for convenience (3.92) and satisfaction (3.88) indicates that customers generally find digital payments convenient and satisfying, while the slightly lower trust mean (3.71) suggests some residual concern about payment system reliability or security.

Table 2. Descriptive Statistics

Variable	Mean	SD
Convenience	3.92	0.62
Ease of use	3.85	0.65
Trust	3.71	0.68
Satisfaction	3.88	0.60
Retention intention	3.76	0.66

4.1.4 Correlation Analysis

Pearson correlation analysis examined bivariate relationships among constructs (Table 3). All correlations were positive and statistically significant at $p < 0.01$. Satisfaction exhibited the strongest correlation with retention intention ($r = 0.63$), followed by trust ($r = 0.51$) and convenience ($r = 0.49$). Ease of use showed the weakest correlation with retention ($r = 0.32$). Correlations among independent variables ranged from 0.44 to 0.59, below thresholds typically indicating multicollinearity concerns (subsequently confirmed by variance inflation factors all below 2.0).

Table 3. Correlation Matrix

Variable	Conv	EOU	Trust	Sat	Ret
Convenience	1				
Ease of use	0.52**	1			
Trust	0.48**	0.46**	1		
Satisfaction	0.57**	0.44**	0.59**	1	
Retention	0.49**	0.32**	0.51**	0.63**	1

Note: $p < 0.01$

4.1.5 Regression Analysis

Multiple regression analysis tested the hypothesised relationships, with retention intention regressed on convenience, ease of use, trust, and satisfaction. Table 4 presents the results.

Table 4. Regression Results

Predictor	β	t	p
Convenience	0.14	2.10	0.037
Ease of use	0.06	0.98	0.329
Trust	0.22	3.35	0.001
Satisfaction	0.49	7.45	<0.001

Model statistics: $R^2 = 0.460$; Adjusted $R^2 = 0.444$; $F = 32.02$ ($p < 0.001$)

The regression model was statistically significant ($F = 32.02$, $p < 0.001$) and explained 46.0% of variance in retention intention (adjusted $R^2 = 0.444$), indicating substantial explanatory power.

Satisfaction emerged as the strongest predictor ($\beta = 0.49$, $p < 0.001$), followed by trust ($\beta = 0.22$, $p = 0.001$). Convenience showed a weaker but significant positive effect ($\beta = 0.14$, $p = 0.037$). Contrary to H2, ease of use did not significantly predict retention intention ($\beta = 0.06$, $p = 0.329$).

These findings indicate that experiential and relational factors—satisfaction and trust—outweigh usability considerations in predicting customer retention, while convenience retains modest explanatory power.

4.2 Qualitative Findings

Qualitative analysis of owner interviews revealed three interconnected themes explaining the quantitative patterns: margin anxiety and cost sensitivity, platform dependency concerns, and intergenerational decision-making dynamics.

4.2.1 Margin Anxiety and Cost Sensitivity

All owner participants expressed acute sensitivity to transaction fees, describing ongoing tension between the perceived necessity of offering digital payments and the financial burden these payments imposed. A third-generation *cha chaan teng* owner explained:

"Every time a customer pays by card or Alipay, I lose 2.5%. On a forty-dollar meal, that's one dollar. Sounds small, but multiply by hundreds of customers daily, thousands monthly—that's real money. Cash costs nothing. People say digital brings more customers, but do those extra customers cover the fees? I'm not so sure."

This margin anxiety influenced implementation decisions. Several owners reported actively guiding customers toward cash payment, when possible, despite having digital systems installed:

"If it's regular, I might say 'cash is fine' when they reach for their phone. Not pushing, just suggesting. With tourists, I don't mention it—they expect digital. But locals? I know them. They understand."

Such practices potentially create inconsistent customer experiences, where digital payment convenience varies based on server discretion or customer perceived status. For customers who prefer digital but encounter

subtle resistance, satisfaction may diminish even when systems function technically.

4.2.2 Platform Dependency and Loss of Control

Beyond fee concerns, owners expressed deeper anxieties about dependency on payment platforms. A noodle shop owner with 25 years in business articulated concerns shared by many:

"With cash, it's finished. Customer pays, money is here, done. With these platforms, they hold my money. Settlement takes days. If something goes wrong—system down, account frozen—what do I do? Call someone? Wait? Meanwhile, suppliers want cash, staff want salaries. I'm at their mercy."

This loss of control perception extended to customer relationships. Several owners noted that when payment problems occurred, customers directed frustration at the restaurant rather than the payment provider:

"Customer scans, nothing happens. They try again, still nothing. They look at me like it's my fault. I didn't build the system, I just rent it. But they don't see that. They see my restaurant, my problem."

These experiences reinforce the importance of trust as identified in quantitative findings. When payment systems fail or cause anxiety, customer trust in both system and restaurant diminishes, reducing retention likelihood.

4.2.3 Intergenerational Decision-Making

Intergenerational dynamics emerged as a significant influence on adoption depth and implementation consistency. In several restaurants, younger family members had advocated for digital payment adoption, sometimes over older owners' reservations:

"My son kept pushing. 'Everybody uses WeChat Pay now, we're losing customers.' I said cash works fine, always has. But he showed me numbers, younger customers asking if we accept this or that. Finally I agreed, but I told him: you manage it. If problems, you fix."

This delegation created what one owner described as "two restaurants"—digital payments available but not truly integrated into operations. When younger family members were absent, other staff reverted to cash-focused practices, creating inconsistency that observant customers noticed:

"Customers sometimes say 'your son showed me how to pay by phone last week, but today your wife said cash only.' Makes us look disorganised. Professional? Not really."

These intergenerational dynamics help explain why ease of use did not predict retention in quantitative analysis. Inconsistently implemented systems—where availability and staff competence vary—prevent ease of use from translating into reliable positive experiences.

4.2.4 Trust-Building as Differentiator

Despite challenges, some owners described successfully integrating digital payments in ways that enhanced customer relationships. Common to these accounts was proactive trust-building:

"I explain to customers: if any problem with payment, tell me immediately. I'll sort it, even if means free meal while we wait. Takes five minutes to build trust, seconds to lose it. So far, works."

Such approaches acknowledge the trust imperative identified quantitatively. By taking ownership of payment experiences—even those caused by platform failures—these owners transformed potential trust-damaging events into trust-strengthening opportunities.

5. Discussion

5.1 Interpreting the Main Findings

The findings demonstrate that customer satisfaction and trust are the primary drivers of retention intention in family-run restaurants using digital payment systems, explaining substantially more variance than convenience or ease of use. While convenience remains relevant, its influence is secondary, and perceived ease of use does not significantly predict retention intention in this context.

This pattern suggests a fundamental shift in how payment attributes function across the adoption–retention lifecycle. In initial adoption, ease of use helps overcome resistance and encourages trial. However, once digital payment use becomes routine—particularly in mature markets where multiple user-friendly options exist—ease of use recedes to a baseline expectation. Customers take usability for granted and evaluate payment experiences based on whether systems perform reliably (satisfaction) and whether they feel confident in transaction security and dispute resolution (trust).

The non-significance of ease of use challenges direct application of adoption-centric models to retention outcomes, supporting post-adoption perspectives that emphasise experiential factors over anticipatory beliefs. This finding aligns with Bhattacharjee's (2001) expectation–confirmation framework, which distinguishes pre-adoption expectations from post-adoption satisfaction in determining continuance.

5.2 The Enduring Importance of Satisfaction

Satisfaction's dominant role ($\beta = 0.49$) confirms its centrality in retention research while extending this understanding to technology-mediated restaurant encounters. Notably, satisfaction with payment experience influences overall restaurant retention beyond what satisfaction with food or service might explain. This suggests that in contemporary hospitality, payment functions as more than transaction completion—it contributes to overall service evaluation.

For family-run restaurants, this finding carries weight. When payment systems function reliably and customers feel satisfied with the payment experience, this satisfaction appears to generalise to the restaurant overall, increasing likelihood of return. Conversely, payment dissatisfaction—whether due to system failures, confusing interfaces, or fee opacity—may undermine otherwise positive dining experiences.

5.3 Trust as Strategic Asset

Trust's significant effect ($\beta = 0.22$) underscores its importance in technology-mediated encounters. In payment contexts, trust operates through multiple mechanisms: confidence that transactions will process correctly, assurance that financial data remains secure, and belief that problems will be resolved fairly.

Qualitative findings reveal that trust deficits originate not only from technical failures but also from owner attitudes and communication. When owners' express scepticism about payment systems or complain about fees within customers' hearing, they inadvertently undermine trust. Conversely, owners who proactively address payment concerns and demonstrate commitment to resolution build trust that transcends individual transactions.

This suggests an important modification to technology-centric views of trust. While system characteristics (security features, reliability statistics) matter, how owners communicate about and respond to payment issues may matter more in family-run contexts where owner–customer relationships are direct and personal.

5.4 The Baseline Expectation Phenomenon

The non-significance of ease of use invites consideration of how attribute salience evolves with market maturity. In Hong Kong's digitally advanced environment, multiple user-friendly payment options exist across most restaurant segments. Customers encounter intuitive interfaces, rapid processing, and minimal learning requirements regardless of which restaurant they visit. Under these conditions, ease of use ceases to differentiate.

This baseline expectation phenomenon has implications for technology adoption research. Models developed when technologies were novel may require recalibration for mature digital environments. Attributes that once adopted may become "hygiene factors"—necessary but insufficient for loyalty—while other attributes gain prominence.

5.5 Family-Enterprise Governance as Moderator

Qualitative findings illuminate how family-enterprise characteristics moderate relationships between payment attributes and retention outcomes. Intergenerational dynamics produce implementation inconsistencies that prevent ease of use from translating into reliable positive experiences. Margin anxiety leads to subtle discouragement of digital payment use, undermining convenience benefits. Platform dependency concerns heighten trust sensitivity, making trust-building both more important and more difficult.

These moderating effects suggest that technology outcomes in family-run enterprises cannot be fully understood without considering governance context. Digital payment systems do not operate in isolation; they interact with owner attitudes, decision processes, and implementation practices shaped by family dynamics.

5.6 Integrating Quantitative and Qualitative Insights

Integration of quantitative and qualitative findings reveals both alignment and complementarity. Quantitative results identify *what* matters (satisfaction, trust, convenience) and *what does not* (ease of use) for retention. Qualitative findings explain why these patterns are held in family-run contexts.

Satisfaction's dominance makes sense given implementation inconsistencies revealed qualitatively. When payment experiences vary) sometimes seamless, sometimes problematic (customers' cumulative satisfaction

reflects whether positive experiences outweigh negative ones. Trust's importance aligns with owner accounts of platform dependency concerns and the need for proactive trust-building. Convenience's modest but significant effect reflects that despite owner ambivalence; digital payments do offer genuine convenience advantages that some customers value.

Ease of use's non-significance becomes comprehensible through qualitative accounts of inconsistent implementation. Even inherently easy-to-use systems cannot produce retention benefits if staff cannot reliably assist customers or if systems are intermittently unavailable.

6. Implications, Limitations, and Conclusion

6.1 Theoretical Implications

This study advances technology adoption and hospitality literature in several ways. First, it extends technology adoption theory by demonstrating that adoption-centric models do not simply transfer to post-adoption retention outcomes. The non-significance of ease of use challenges assumptions that attributes driving initial acceptance continue to predict downstream loyalty. Future research should distinguish more carefully between adoption and post-adoption phases, developing phase-specific theoretical models.

Second, the study enriches hospitality scholarship by examining digital payment effects within family-run restaurant contexts. Findings reveal that family-enterprise characteristics—intergenerational dynamics, margin sensitivity, autonomy concerns—moderate technology–outcome relationships. Hospitality technology research should attend more systematically to ownership and governance contexts rather than assuming uniform effects across enterprise types.

Third, the study contributes to trust research by highlighting how owner communication and behaviour shape technology trust in small enterprises. In family-run contexts, trust in technology is inseparable from trust in owners, suggesting integration of interpersonal and institutional trust perspectives.

6.2 Managerial Implications

For family-run restaurant owners, findings offer several actionable insights. First, payment reliability and consistency deserve priority over pursuing the latest payment innovations. A limited set of well-implemented, consistently available payment options produces better retention outcomes than multiple options implemented inconsistently.

Second, owners should recognise their role in shaping customer trust through communication. Expressing scepticism about payment systems within customer hearing undermines trust; conversely, demonstrating commitment to resolving payment issues builds trust that protects against occasional failures.

Third, fee transparency with customers may reduce friction. Rather than absorbing fees silently while resenting them, owners might explain modest surcharges or cash discounts transparently, allowing customers to choose. Research suggests transparent pricing builds trust even when costs increase.

Fourth, intergenerational dynamics require explicit management. When younger family members manage digital payments, ensuring consistent training and clear protocols for all staff—including older owners—prevents the "two restaurants" problem that confuses customers.

6.3 Limitations

Several limitations qualify this study's findings. First, the cross-sectional design captures relationships at a single time point, precluding causal inference. Longitudinal research tracking payment experiences and retention over time would strengthen causal claims.

Second, the study focuses on a single urban market (Hong Kong) with distinctive characteristics—high digital maturity, dense population, sophisticated payment infrastructure. Findings may not generalise to less digitally developed markets or rural contexts where digital payment adoption remains nascent.

Third, customer data rely on self-reported retention intentions rather than observed behaviour. While intention reliably predicts behaviour in many contexts, actual retention patterns could differ.

Fourth, the sample, while adequate for regression analysis, may not capture full diversity of family-run restaurant customers. Younger, more digitally native customers may be overrepresented.

Fifth, qualitative insights, while rich, derive from 12 owner interviews. Additional interviews or observational methods could reveal further nuance.

6.4 Future Research Directions

These limitations suggest several future research directions. Comparative studies across markets with varying digital maturity would test whether ease of use becomes significant in less mature contexts. Longitudinal research tracking restaurants through digital payment adoption and subsequent customer retention would provide stronger evidence of causal relationships.

Research comparing family-run and non-family hospitality enterprises would isolate family-enterprise effects. Do intergenerational dynamics moderate technology outcomes uniquely, or do similar patterns appear in other SME contexts?

Experimental designs manipulating payment experiences (e.g., varying fee transparency, response to failures) could test causal mechanisms underlying trust and satisfaction effects.

Finally, research examining actual retention behaviour through transaction data would complement self-report findings, providing behavioural validation of the relationships identified.

6.5 Conclusion

Digital payment systems have become integral to hospitality operations, yet their effects on customer retention in family-run restaurants have received limited empirical attention. This mixed-method study in Hong Kong demonstrates that satisfaction and trust drive retention intention, while ease of use—contrary to adoption-centric expectations—does not significantly predict retention in this digitally mature context. Convenience exerts a modest but significant effect.

Qualitative findings reveal that family-enterprise characteristics—margin anxiety, platform dependency concerns, intergenerational dynamics—shape implementation consistency and moderate payment–retention relationships. These insights extend technology adoption theory, enrich hospitality scholarships, and offer practical guidance for family-run restaurant owners navigating digital transformation.

The study concludes that digital payment systems influence customer retention primarily through experiential and relational mechanisms rather than usability attributes. For family-run restaurants, context-sensitive implementation and governance alignment are essential for sustaining digital payment value and converting technology adoption into lasting customer relationships.

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