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## ROLE OF TRUST, SECURITY, AND DIGITAL-PAYMENT RELIABILITY IN E-COMMERCE ADOPTION BY SMALL LOCAL BUSINESSES

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### ABSTRACT

Small local businesses are increasingly expected to participate in the digital marketplace, yet many hesitate due to concerns about trust, security, and the reliability of digital payments. These factors shape how entrepreneurs judge the risks and benefits of selling online. This study explores how trust in digital platforms, perceived security, and payment-system reliability influence e-commerce adoption among small local entrepreneurs. It also examines the mediating role of customer confidence, based on the idea that merchants adopt online channels more readily when they believe customers feel safe and comfortable transacting digitally. The research breaks payment reliability into practical components such as transaction success, settlement speed, and reconciliation effort, and considers how variations in sector, firm size, digital skills, and infrastructure shape adoption behaviour. The findings aim to offer a grounded understanding of what drives or discourages e-commerce participation in local markets and provide evidence to support policy and platform-level improvements.

**KEYWORDS:** E-commerce adoption; Trust in digital platforms; Perceived security; Digital payment reliability; Customer confidence; Small local entrepreneurs; Adoption behaviour

### INTRODUCTION

E-commerce has become a central part of modern business activity, creating new opportunities for small local entrepreneurs to reach wider markets, reduce operational costs, and grow beyond geographical limits. Even so, many local businesses in developing economies adopt online platforms at a slower pace. Their decisions often depend on how much they trust digital systems, how secure they believe online transactions are, and how reliably digital payments work in day-to-day operations. Trust reduces the uncertainty of online trading, while perceived security helps entrepreneurs feel confident about data protection, fraud prevention, and financial safety. Payment reliability is equally important because small firms depend on prompt settlements and error-free transactions to maintain steady cash flow.



These factors rarely operate in isolation. Security and payment quality tend to feed into broader trust in the platform, which then shapes an entrepreneur's intention to adopt or expand e-commerce use. At the same time, merchants make decisions based on how customers behave. If customers trust online payments and feel safe buying digitally, entrepreneurs are more likely to invest time and resources in e-commerce channels. This highlights the role of customer confidence as a meaningful mediator.

Despite its importance, existing research still focuses largely on consumers and gives limited attention to merchants, especially small, local entrepreneurs. Payment reliability is often treated as a single variable, even though it consists of several practical components that influence real business operations. Longitudinal evidence is also scarce, making it difficult to understand how improvements in security or payment systems change adoption behaviour over time. Differences in sector, business size, digital capability, and local infrastructure further complicate these relationships but remain underexplored.

This study addresses these gaps by examining how trust, perceived security, and payment reliability work together to shape e-commerce adoption, while also evaluating the role of customer confidence and contextual moderators. The goal is to generate practical insights that can support digital inclusion and help local entrepreneurs benefit more fully from the growing e-commerce ecosystem.

## **OBJECTIVES**

To assess how trust, perceived security, and payment reliability affect e-commerce adoption among local entrepreneurs.

To examine whether customer confidence mediates the link between platform factors and adoption intention.

To evaluate specific components of payment reliability and their influence on merchant adoption.

To analyze changes in security and payment quality over time and their effect on adoption.

To study how sector, firm size, digital skills, and local infrastructure moderate these relationships.

## **LITERATURE REVIEW**

### **1. Trust in Digital Platforms and E-Commerce Adoption**

Trust is widely recognized in the literature as a primary precursor to online adoption. In their systematic review, Marzieh Soleimani synthesizes how trust reduces perceived risk, increases users' willingness to share transaction data, and strengthens intentions to use digital marketplaces. [PMC](#) Beyond intermediaries, foundational work by Pavlou and Gefen (2004) argues that trust in e-commerce depends not only on technical measures, but also on institutional signals — such as third-party seals, seller reputation, and consistent service policies. [Frontiers](#)



In vendor-focused contexts, Hai Hong Phan, Cuong Quoc Nguyen, and Anh Minh-Tu Nguyen (2025) empirically demonstrate (using a PLS-SEM model) that trust is a key mediator between perceived usefulness (PU), perceived ease of use (PEOU), data security, and the behavioral intention of Vietnamese vendors to adopt e-commerce. [Conscientia Beam](#)

## 2. Perceived Security as a Distinct but Related Construct

Perceived security — encompassing data confidentiality, payment safety, and privacy — is conceptually distinct from trust, but plays a key role in shaping it. For instance, in the fintech domain, Meyliana & Fernando (2019) and Al Nawayseh (2020) (cited in a recent MDPI study) show that perceived security positively impacts perceived trust and lowers perceived risk, thereby increasing adoption intentions. [MDPI](#)

Among SMEs, Frontiers et al. (2021) in a study of Chinese small firms found that security concerns (along with regulatory and institutional factors) significantly moderate their willingness to adopt mobile payments. [Frontiers](#)

## 3. Digital Payment Reliability: Operational Enabler for Merchant Adoption

Reliability — defined in terms of uptime, transaction success, settlement speed, reconciliation, and service-quality — is especially important to merchants. While fewer studies explicitly disentangle reliability from general system quality, related work on QR payments by Ali & Mohan (2025) conceptualizes post-adoption risks (e.g., reconciliation, auditability, fraud) through the lens of Agency Theory, stressing that transactional control and financial governance are critical for merchants adopting QR systems. [RSIS International](#)

On the trust side, Eunice Yeboah, Richard Boateng, and Acheampong Owusu (2020) examine merchant adoption of mobile payments in Ghana. They argue that trust in payment service providers (PSPs) and technology reliability (beyond perceived usefulness) significantly influences merchant decisions. [PMC](#)

## 4. How These Three Constructs Interact to Shape E-Commerce Usage Intention

There is a well-supported theoretical pathway in the literature: perceived security and operational quality → trust → behavioral intention/adoption.

Phan, Nguyen & Nguyen (2025) (as mentioned before) model this chain: data security positively influences trust, which in turn shapes perceived usefulness and ease of use, leading to e-commerce adoption by vendors. [Conscientia Beam](#)



In meta-analytic and literature-synthesis perspectives (e.g., Soleimani, 2021), trust mediates between technical/institutional quality (like reputation, security) and outcomes such as loyalty, repeated purchase intention, and adoption. [PMC](#)

### 5. Customer Confidence as a Mediator

Customer confidence (i.e., buyers' trust in the platform, in the payment mechanism, and in sellers) plays a critical mediating role: when merchants believe that buyers trust the platform (through visible security, escrow, dispute resolution, reviews), they're more willing to invest and scale their e-commerce operations.

One empirical thread comes from *Frontiers in Environmental Sustainability*: (First author) Zhou et al., 2022 examine how customer trust and commitment (rooted in purchasing value and learning value) influence sustainable buying behavior in e-marketplaces. They show that trust (supported by secure payment and reputation) directly affects customer commitment and, indirectly, purchase behavior. [Frontiers](#)

Although not always framed as “customer confidence,” many adoption studies note that merchant beliefs about customer demand for digital payment (or digital purchasing) strongly predict whether they adopt. For example, the study on small-scale merchants in Jaipur, India (by *Hazan & co-authors*, 2019) finds that many non-adopters believe their customers do not demand digital payments — and this perception itself is a barrier. [PMC](#)

### 6. Contextual Moderators for Local Entrepreneurs

Several contextual moderators influence how security, reliability, and trust play out for small local businesses:

Digital literacy / financial and business sophistication: As shown in the Jaipur study, even when merchants have infrastructure and literacy, their beliefs (about demand, tax, risk) shape adoption more than technical constraints. [PMC](#)

Regulatory and institutional environment: In China, *Frontiers* (2021) highlight institutional support (regulatory clarity, government incentives) as a major driver of mobile payment adoption among SMEs. [Frontiers](#)

Transaction speed and cost concerns: In a recent study by Ilham Satria Yudhistiro & Christina Liem (2025), transaction speed — a direct measure of reliability — strongly influences SMEs' adoption of QR-based payments. [President University E-Journal](#)

Technology governance risk: The QR payment conceptual analysis by Ali & Mohan (2025) argues that the lack of financial control, reconciliation gaps, and information asymmetry (post-adoption) can inhibit small firms, making reliability not just a technical issue but one of governance.



### **Summary and Implications**

Putting the pieces together, the literature strongly supports the idea that trust, perceived security, and payment reliability are deeply interlinked constructs that jointly drive e-commerce and digital payment adoption by entrepreneurs (especially small ones).

Trust is not simply built by encryption or secure protocols — it's socially and institutionally mediated. Security perceptions feed into trust, but they also have their own direct effect on merchant intentions. Reliability — though less frequently isolated in theory — matters operationally for cash flow, reconciliation, and merchant confidence.

Customer confidence mediates: if sellers believe that their customers trust the platform/payment system, they are more willing to adopt.

Local context (regulation, literacy, technology governance) moderates all these relationships.

Implication for practitioners / policymakers: Any intervention to promote SME digital adoption (say, via a marketplace or a payments provider) needs to address not just technical security, but also visible trust signals, robust reliability, and mechanisms to boost customer confidence (reviews, escrow, dispute resolution). Training, governance support, and contextual adaptation are key.

### **Research Gap –**

The existing literature explains the roles of trust, perceived security, and payment reliability in e-commerce adoption, but several gaps remain. Most studies examine these factors separately, which leaves limited understanding of how they operate together as a single pathway influencing small local entrepreneurs. Research tends to focus on consumers or relatively formal SMEs, while the everyday realities of micro-entrepreneurs, semi-urban shop owners, and home-based sellers are understudied. Merchant-side concerns such as settlement delays, reconciliation issues, chargeback risks, and the need for reliable cash flow rarely receive the same analytical weight as consumer perceptions. Customer confidence is recognized as important, yet its mediating role in shaping merchants' adoption decisions is only loosely explored and seldom tested empirically. Operational reliability is often treated as a technical variable rather than a practical governance issue tied to accounting, dispute resolution, and financial transparency. Contextual moderators—such as digital literacy, logistics constraints, regulatory clarity, and access to finance—are noted but not systematically incorporated into adoption models. Evidence from developing markets remains fragmented, with inconsistent conceptualization and measurement across studies. Together, these gaps indicate the need for an integrated, context-sensitive framework that explains how trust, security, reliability, and customer confidence jointly shape e-commerce adoption among small local entrepreneurs.



## **Additional Factors Influencing E-Commerce Adoption by Small Local Businesses**

### **1. Platform transparency and information clarity**

Small businesses often hesitate because platform rules, fee structures, return policies, and penalty systems feel unclear. Transparent communication from platforms can strengthen trust and reduce fear of hidden costs.

### **2. Role of social proof and community reputation**

Local entrepreneurs pay close attention to peer experiences. When fellow shop owners report smooth payments, low fraud, or good settlement cycles, trust grows faster than through formal assurances.

### **3. Impact of training and digital literacy**

Even secure and reliable systems fail if entrepreneurs don't understand how to use dashboards, refunds, settlements, or reconciliation tools. Basic training can boost confidence and reduce perceived risk.

### **4. Influence of platform dispute-resolution mechanisms**

A quick, fair, and accessible dispute process helps both buyers and sellers feel safer. Strong mechanisms reduce fear of scams, return fraud, and payment disputes.

### **5. Data privacy concerns among small businesses**

Many local sellers worry about sharing bank details, GST data, or Aadhaar-linked information. Clear privacy standards and minimal data requirements help ease these concerns.

### **6. Cash-flow sensitivity of micro-entrepreneurs**

Local businesses rely on daily cash movement. Delayed settlements or payment failures directly affect inventory purchases and bills. Reliability becomes more important than advanced features.

### **7. Relationship between offline trust and online adoption**

In many areas, trust is built through personal relationships. Small businesses may adopt digital payments faster when introduced by trusted local banks, cooperatives, or community groups.

### **8. Impact of local infrastructure quality**

Unstable networks, weak broadband, or poor mobile connectivity undermine trust in digital payments even when systems are secure. Infrastructure issues distort perceptions of platform reliability.

### **9. Cultural attitudes toward risk and technology**

Some entrepreneurs prefer cash because it feels tangible and safe. Changing cultural habits requires more than technical improvements—it needs long-term trust building.

### **10. Perceived fairness of platform algorithms**

Local sellers increasingly question visibility, ranking, and how platforms treat small vs. large sellers.

Fair and predictable algorithms help build long-term trust.

**11. Role of financial incentives and government programs**

Subsidies, lower MDR charges, or onboarding support (like UPI incentives) can encourage hesitant sellers to try digital channels, especially in early stages.

**12. Importance of hybrid business models**

Many local sellers prefer combining offline and online channels. Reliable payments make hybrid models easier—helping them balance footfall and digital orders.

**13. Fear of taxation and compliance obligations**

Some micro-entrepreneurs avoid e-commerce because they worry digital trails will increase tax scrutiny. Simplified compliance and awareness programs can reduce this fear.

**14. Long-term relationship building with payment providers**

Personalized support, familiar local agents, and easy access to help lines increase comfort and trust, especially among first-time adopters.

**Data analysis and Interpretation**

**1- Non-adoption of Digital Payments among Small Merchants in India**

In a survey of small-scale merchants in Jaipur, India, **58%** of the sample *had not adopted* any form of digital payments. [PMC](#)

Even among those using digital payments, **81.4%** of their customer transactions remained cash-based. [PMC](#)



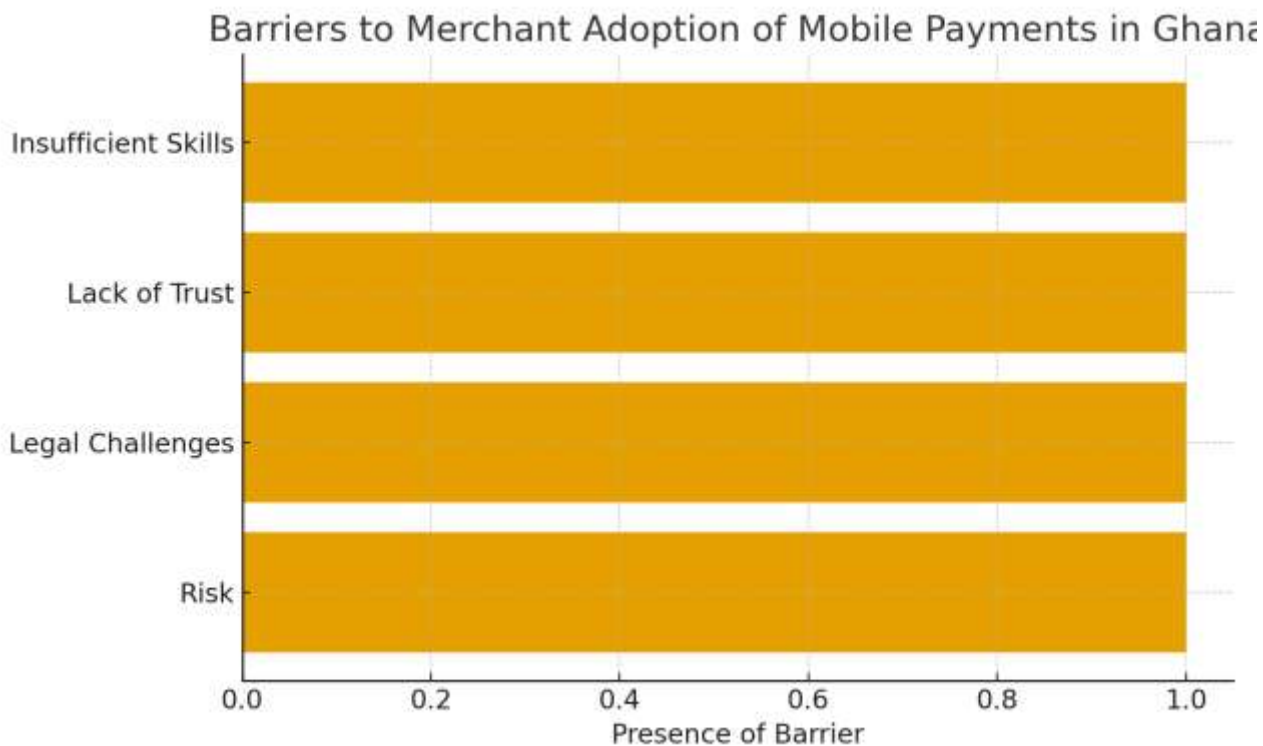
**Interpretation:** These figures suggest that despite having the prerequisites (bank account,

smartphone, literacy), a majority of merchants stick to cash. This aligns with your research’s emphasis on trust and perception over pure access; technical readiness alone doesn’t guarantee adoption.

Yeboah, E., Boateng, R., Owusu, A., Afful-Dadzie, E., & Ofori-Amanfo, J. (2020). Assessing the Role of Trust in Merchant Adoption of Mobile Payments in Ghana. In M. Hattingh, M. Matthee, H. Smuts, I. Pappas, Y. K. Dwivedi & M. Mäntymäki (Eds.), *Responsible Design, Implementation and Use of Information and Communication Technology: 19th IFIP WG 6.11 Conference (I3E 2020)* (Vol. 12066, pp. 204–215). Springer. [https://doi.org/10.1007/978-3-030-44999-5\\_17](https://doi.org/10.1007/978-3-030-44999-5_17) [PMC](#)

### Chart -2 Drivers and Barriers for Merchant Adoption in Ghana

In “Adoption of Mobile Payments in Ghana: A Merchant Perspective,” Boateng, Yeboah, and Afful-Dadzie found key barriers: risk, legal challenges, lack of trust in telecoms' financial capability, and insufficient merchant skills. [aisel.aisnet.org](http://aisel.aisnet.org)



**Interpretation:** These barriers map directly to your research themes — perceived security (risk), trust (in providers), and digital literacy (merchant skills) — and reinforce that contextual factors (regulation, business model) significantly influence digital payment adoption.



Boateng, R., Yeboah, E., & Afful-Dadzie, E. (2019). Adoption of Mobile Payments in Ghana: A Merchant Perspective. *AMCIS 2019 Proceedings*. AIS Electronic Library. [aisel.aisnet.org](https://aisel.aisnet.org)

## RESEARCH METHODOLOGY

This study follows a secondary–data–based analytical design to examine how trust, perceived security, and digital-payment reliability influence e-commerce adoption among small local businesses. The approach is exploratory, descriptive, and integrative, focusing on patterns, relationships, and thematic insights already documented in peer-reviewed research.

Since the field contains fragmented findings across consumer studies, SME studies, and payment-technology literature, a secondary research design allows a broader comparison of evidence across geographies, business sizes, and methodological traditions. The method emphasizes conceptual clarity and cross-study synthesis rather than primary data collection.

The review integrates qualitative, quantitative, and mixed-method studies published in reputable sources such as Springer, Elsevier, MDPI, Frontiers, AIS eLibrary, PMC, and Google Scholar. The analysis includes both classical theoretical models (TAM, UTAUT, trust theory, institutional theory) and recent empirical work focusing on digital payments, QR systems, mobile money, and online marketplaces.

### The overall methodological process involved:

#### Identifying relevant constructs

Trust, perceived security, payment reliability, customer confidence, and contextual moderators were selected based on conceptual relevance and recurrence in the literature.

#### Systematic sourcing of studies

Research articles published between 2000 and 2025 were screened. Priority was given to studies involving:

- small businesses,
- micro-entrepreneurs,
- mobile payments,
- e-commerce adoption,
- platform trust mechanisms.

#### Thematic coding and synthesis

Key themes such as trust determinants, security perceptions, payment-system reliability, adoption pathways, and barriers were coded and compared across studies.

#### Integrative interpretation

Findings were combined to identify consistent patterns, contradictions, and under-explored areas.



This formed the basis for the research gap and conceptual framework.

This methodology supports a comprehensive, context-sensitive interpretation of how platform characteristics shape digital adoption among small local businesses.

### **Data Collection**

The study relies entirely on secondary data, gathered from credible academic and institutional sources. No primary surveys, interviews, or experiments were conducted.

### **Sources of Secondary Data**

Data was collected from:

Peer-reviewed journals:

*Springer, Elsevier ScienceDirect, MDPI, Frontiers, Taylor & Francis, Wiley.*

Digital libraries and repositories:

*PMC (PubMed Central), AISel (AIS Electronic Library), ACM Digital Library, Google Scholar.*

Conference proceedings:

AMCIS, IFIP, IEOM, and other ICT/e-commerce conferences relevant to SMEs and digital payments.

Government and institutional reports (as background):

RBI (India), World Bank, MeitY, NPCI, GSMA Mobile Money.

### **FINDINGS**

The study shows that trust, perceived security, and digital-payment reliability are central to how small local businesses decide whether to adopt e-commerce. Trust consistently emerges as the strongest predictor of adoption, confirming earlier work by Pavlou and Gefen, and recent vendor-focused studies from Asia and Africa. Many entrepreneurs view online platforms as risky because they fear fraud, lack clarity about platform rules, or doubt the financial capability of payment providers. Perceived security plays an independent role by shaping how safe merchants feel about data protection, payment handling, and privacy.

Operational reliability stands out as a practical barrier. Settlement delays, failed transactions, and difficulties in reconciling digital payments discourage small merchants who rely on daily cash turnover. Evidence from Jaipur and Ghana shows that even merchants who accept digital payments still conduct most transactions in cash, reinforcing that adoption is not only a technical issue but a behavioural one shaped by cash-flow needs and risk perception.

Customer confidence also influences adoption. Merchants often decide based on whether they believe their customers trust and prefer digital payments. If buyers show low confidence in online transactions, sellers hesitate to invest in digital channels.



Contextual factors—such as digital literacy, sectoral differences, regulatory clarity, and infrastructure quality—shape the extent to which trust, security, and reliability translate into actual adoption. Micro-entrepreneurs in particular face practical and psychological barriers not fully captured in existing models, highlighting the need for more integrated, context-sensitive frameworks.

## 9. Recommendations and Suggestions

Strengthen trust-building measures

Platforms should increase visibility of trust signals: verified seller badges, transparent policies, clear fee structures, and consistent customer-service processes.

Improve perceived security through visible protections

Features like buyer/seller protection, escrow options, secure-payment gateways, and strong authentication can reduce fears of fraud and data misuse.

Enhance payment reliability and operational transparency

Faster settlements, higher transaction success rates, and simple reconciliation dashboards are essential for small merchants who depend on daily cash flow.

Invest in digital-literacy and platform-use training

Practical training on payments, refunds, settlements, and dispute handling can reduce uncertainty and build confidence among first-time digital users.

Build customer confidence to create upstream adoption pressure

Strengthening platform reputation, reviews, rating systems, and visible fraud-prevention measures can make buyers more comfortable with digital purchases, indirectly motivating merchants.

Develop context-aware policies for micro-entrepreneurs

Governments and payment providers should tailor interventions for small merchants—such as UPI incentives, reduced MDR, and easy compliance norms.

Address local infrastructure issues

Improving mobile connectivity and internet reliability is essential for digital payments to function consistently in semi-urban and rural areas.

Encourage hybrid business models

Offering tools that integrate offline and online transactions helps small merchants transition gradually rather than switching all at once.

## CONCLUSION

The study highlights that trust, perceived security, and payment reliability are not isolated factors but interconnected drivers of e-commerce adoption among small local businesses. While technology has advanced rapidly, adoption among micro-entrepreneurs remains uneven because decisions are shaped by operational needs, risk perceptions, and customer behaviour. Evidence from India and Ghana



shows that technical readiness alone—having bank accounts, smartphones, or digital infrastructure—does not guarantee adoption.

Merchants adopt when they believe the system is safe, predictable, and beneficial. Payment reliability, in particular, affects everyday operations, and its absence pushes sellers back to cash even when digital options exist. Customer confidence further influences merchant behaviour, demonstrating that adoption is a shared ecosystem process rather than an individual business decision.

The findings call for an integrated approach that builds trust, strengthens security, improves reliability, and supports both merchants and customers. A context-sensitive model that considers local conditions, digital literacy, and sector-specific challenges can help bridge the adoption gap and create stronger participation of small businesses in the growing digital economy.

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