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Converting Electronic-Payment Expansion into SME Growth in Libya: Developing and Testing a Digital Trust and Payment-Capability Model

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تحويل التوسع في المدفوعات الإلكترونية إلى نمو للمشروعات الصغيرة والمتوسطة في ليبيا: تطوير واختبار نموذج للثقة الرقمية والقدرة على استخدام المدفوعات

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الملخّص

توسّع نظام المدفوعات الإلكترونية في ليبيا بسرعة خلال عام 2025. ومع ذلك، فإن زيادة عدد أجهزة الدفع وقيمة المعاملات لا تؤدي تلقائيًا إلى نمو المشروعات الصغيرة والمتوسطة. تطوّر هذه الدراسة نموذج الثقة الرقمية والقدرة على استخدام المدفوعات، الذي يوضح كيف يمكن أن يتحول الوصول إلى وسائل الدفع إلى زيادة في المبيعات، وتعزيز القدرة على الصمود، وتحسين السجلات، والوصول إلى التمويل.

تستخدم الدراسة منهجًا منظمًا للأدلة الثانوية، من خلال الجمع بين المؤشرات الرسمية الليبية، والدراسات التي تركز على ليبيا، والتجارب الدولية العامة ذات الصلة. وتُظهر بيانات مصرف ليبيا المركزي أن قيمة المدفوعات ارتفعت من 136مليار دينار ليبي في عام 2024 إلى 389 مليار دينار ليبي في عام 2025، بينما اقترب عدد أجهزة نقاط البيع من الضعف ليصل إلى 150,205جهازًا .ومع ذلك، تفتقر ليبيا إلى بيانات متطابقة على مستوى المنشآت تربط بين استخدام المدفوعات ونمو الأعمال.

اختُبر النموذج من خلال مطابقة الأنماط النظرية وتوافق الأدلة .وتدعم النتائج ثلاثة استنتاجات رئيسية. أولًا، يؤدي توسع البنية التحتية إلى زيادة إمكانية استخدام المدفوعات، لكن الثقة تحدد مدى تكرار الاستخدام واستمراره .ثانيًا، تعمل القدرة على استخدام المدفوعات على تحويل الوصول إلى المعاملات إلى قيمة تجارية. وتشمل هذه القدرة: التسجيل والتهيئة، واستخدام السجلات، والتسوية والمطابقة المحاسبية، والتكامل مع الأنظمة، والاستفادة من البيانات في الحصول على التمويل.

ثالثًا، فإن آثار المدفوعات على النمو مشروطة بعوامل أخرى .فقد وجدت تجربة عشوائية في كينيا زيادة لا تقل عن 50% في الوصول إلى القروض عبر الهاتف المحمول، لكنها لم تجد أثرًا متوسطًا على المبيعات. كما أظهرت بيانات التجار في فرنسا ارتفاعًا بنسبة 8.3%في قيمة مبيعات البطاقات لدى التجار الذين تبنوا الدفع اللاتلامسي أثناء فترات الصدمات.

وتشير هذه النتائج إلى عدم جدوى اتباع استراتيجية تركز على البنية التحتية وحدها .وينبغي لليبيا أن تجمع بين المدفوعات القابلة للتشغيل البيني وبين آليات تسوية النزاعات، والرسوم الشفافة، وتدريب التجار، وأدوات مسك الدفاتر، والإقراض المسؤول.

ويقدّم النموذج المقترح إطارًا قابلًا للاختبار أمام صانعي السياسات، كما يوفر للباحثين تصميمًا عمليًا للاستبيانات والتجارب التجريبية. وينبغي أن تركز الدراسات المستقبلية على ربط معاملات التجار ببيانات طولية تقيس المبيعات، والعمالة، والأرباح، واستمرارية الأعمال.

الكلمات المفتاحية: : ليبيا؛ المشروعات الصغيرة والمتوسطة؛ المدفوعات الإلكترونية؛ الثقة الرقمية؛ القدرة على استخدام المدفوعات؛ الشمول المالي؛ نمو الأعمال؛ التكنولوجيا المالية.

Abstract

Libya's electronic-payment system expanded quickly during 2025. Yet more terminals and transaction value do not automatically create SME growth. This study develops a Digital Trust and Payment-Capability Model. It explains how payment access becomes sales, resilience, records, and finance. The paper uses a structured secondary-evidence design. Official Libyan indicators are combined with Libya-focused studies and public international experiments. Central Bank data show payment value rose from LYD 136 billion in 2024 to LYD 389 billion

in 2025. Point-of-sale terminals almost doubled to 150,205. However, Libya lacks matched firm data linking payments with business growth. The model was tested through theory-pattern matching and evidence congruence. Results support three findings. First, infrastructure expansion raises possible use, but trust determines repeated use. Second, payment capability converts transaction access into business value. This capability includes onboarding, record use, reconciliation, integration, and data-based finance. Third, growth effects are conditional. A Kenyan randomized trial found at least 50 percent more mobile-loan access, but no average sales effect. French merchant data showed 8.3 percent higher card-sales value for contactless adopters during shocks. These results reject an infrastructure-only strategy. Libya should combine interoperable payments with dispute resolution, transparent fees, merchant training, bookkeeping tools, and responsible lending. The proposed model gives policymakers a testable framework. It also provides researchers with a practical survey and pilot design. Future work should link merchant transactions with panel measures of sales, employment, profits, and survival.

Keywords: Libya; SMEs; electronic payments; digital trust; payment capability; financial inclusion; business growth; fintech.

1. Introduction

Electronic payments can reduce waiting, cash handling, and distance costs. They can also create reliable transaction records. These gains matter for small firms. Many SMEs lack audited accounts, formal records, and steady bank relationships. However, payment infrastructure does not guarantee business improvement. A terminal can remain unused. An account can hold only salary transfers. A merchant may accept digital money but still keep no records. Customers may also avoid a service after one failed transfer.

Libya now provides an important setting for this problem. Electronic-payment activity grew sharply during 2025. The Central Bank of Libya reported LYD 389 billion in electronic-payment value. The comparable 2024 value was LYD 136 billion (CBL, 2026). This increase is large, but its business meaning remains uncertain. Aggregate payment data do not identify SME outcomes. Libyan SMEs also operate under conflict legacies, weak finance, and uneven public services. These conditions can reduce confidence and continuity.

Rahman and Di Maio (2020) surveyed 400 Libyan firms. Ninety-seven percent reported direct conflict effects. The same study recorded major limits in finance, electricity, demand, and policy certainty. These barriers can weaken digital returns.

1.1 Research problem and contribution

The identified problem is a conversion failure. Libya is expanding payment access faster than it is measuring productive SME use. The research domain joins financial inclusion, technology adoption, SME capability, and institutional trust. These fields are usually studied separately. This paper connects them through one practical model. The model is called the Digital Trust and Payment-Capability Model. The contribution has three parts. First, it separates payment expansion from repeated business use.

Second, it defines payment capability as an operational business resource. Third, it tests the model with public evidence. The paper asks whether expansion increases productive payment use. It also asks how trust and capability shape this process. A final question concerns business value. Under which conditions can digital payments improve sales, finance, resilience, or survival?

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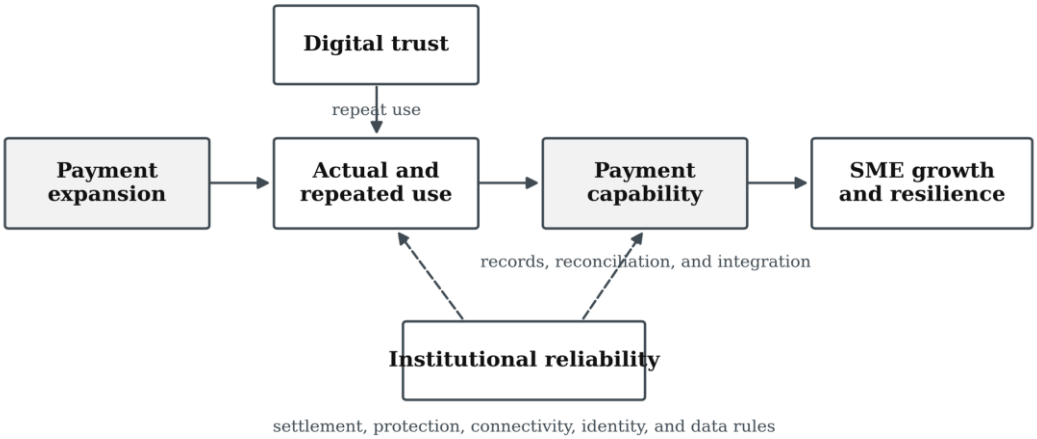

Figure 1 Proposed Digital Trust and Payment-Capability Model.

Table 1 Core constructs and working definitions

Construct	Working definition	Observable signs
Payment expansion	Wider, cheaper, and faster payment access.	Terminals, accounts, value, interoperability
Digital trust	Expected safety, fairness, reliability, and remedy.	Repeat use, complaint confidence, fee clarity
Payment capability	Ability to turn payment tools into business routines.	Reconciliation, records, integration, data use
Productive use	Payment use tied to customers, suppliers, and operations.	Merchant receipts, supplier payments, remote sales
SME growth	Sustained improvement in scale or business strength.	Sales, jobs, profit, survival, credit, lower volatility
Institutional reliability	Stable rules and services around the payment system.	Settlement, connectivity, protection, identity

2. Libya's SME and Payment Context

2.1 A small private sector with large constraints

Libya's private commercial sector is fragmented. Most firms are small and concentrated in trade and services. A 2006 business census counted about 118,000 businesses. Their average size was 2.5 workers (World Bank, 2020). The 2018 Libya Enterprise Survey found that 84 percent of firms had fewer than 20 workers. Only six percent of owners were women. Only eight percent were younger than 34 years (Rahman & Di Maio, 2020).

Finance remains a central concern. State ownership has historically shaped banking priorities and private credit allocation. The World Bank (2020) found limited intermediation with private firms. Small businesses were especially excluded from bank finance. OECD (2016) also linked SME development with legal clarity, institutions, skills, finance, and entrepreneurship support. These conditions affect payment adoption. They also affect whether digital transaction records become usable business evidence.

2.2 Rapid payment expansion

Libya's payment system changed quickly after 2024. LYPay and OnePay expanded instant transfers across participating banks. By January 23, 2025, LYPay reported 1.36 million individual subscribers. It also reported 14,122 merchants (CBL, 2025a). The December report shows a much broader system. Total electronic-payment value reached LYD 389 billion during

2025. This value was about 186 percent above 2024. The change confirms rapid infrastructure and usage expansion (CBL, 2026).

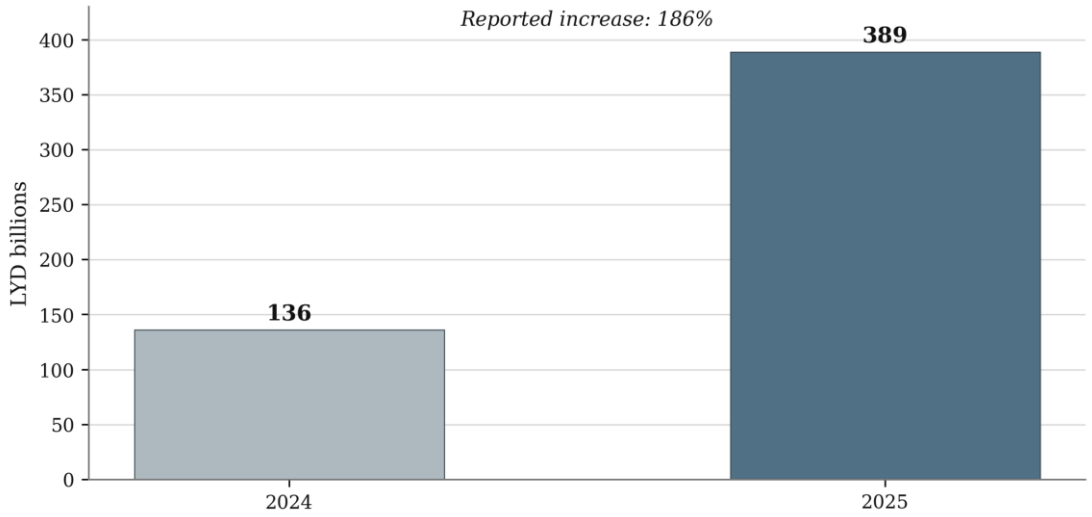

Figure 2 Total electronic-payment transaction value in Libya, 2024 and 2025.

Banking applications handled LYD 272 billion during 2025. Instant transfers handled LYD 74.7 billion. Point-of-sale purchases reached LYD 30.6 billion. These channels grew at different speeds and served different purposes. Application transfers dominate the total. Therefore, aggregate payment value cannot be treated as merchant revenue.

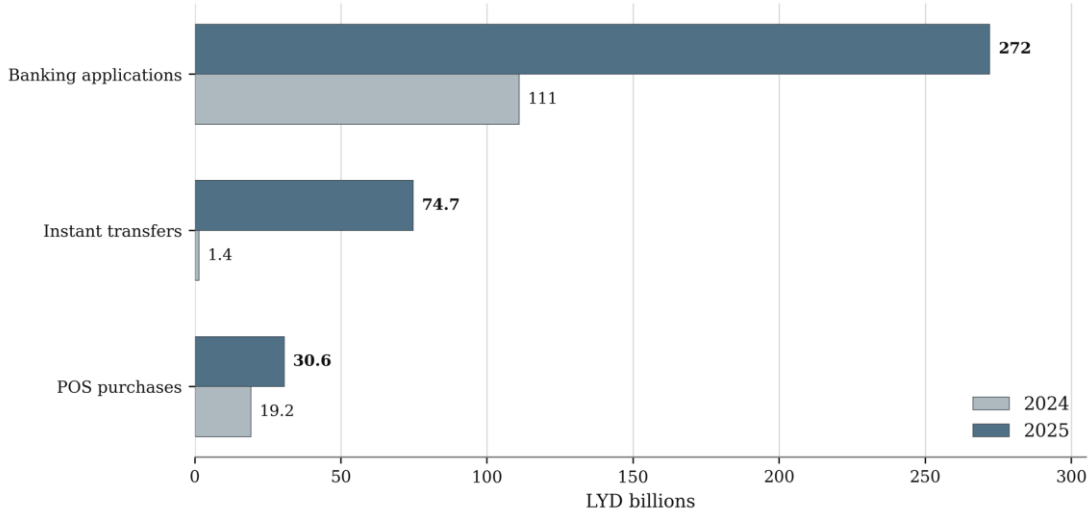

Figure 3 Selected electronic-payment channel values, 2024 and 2025.

The physical acceptance network also expanded. POS terminals rose from 76,356 in 2024 to 150,205 in 2025. This growth removes an access barrier. It does not reveal terminal activity, merchant quality, or customer trust.

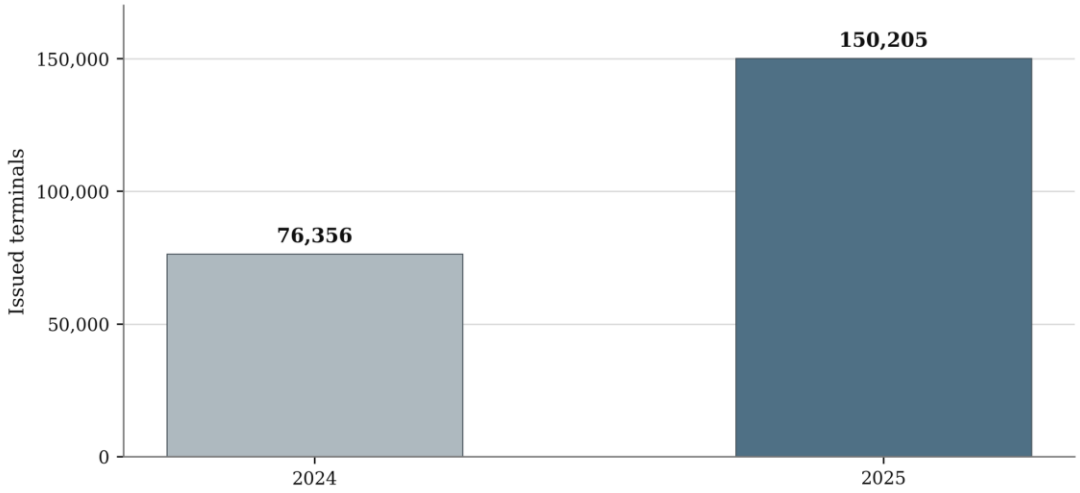

Figure 4 Number of issued POS terminals, 2024 and 2025.

2.3 Access is not the same as unique usage

The 2025 figures also report 6.84 million instant-service registrations. Activated cards reached 5.34 million. Banking applications reported 3.79 million subscribers. Electronic wallets numbered about 185,700 (CBL, 2026). These totals may include multiple accounts held by one person. They should not be added as unique users. High registration can coexist with low merchant intensity. Strong evaluation must examine active and repeated business use.

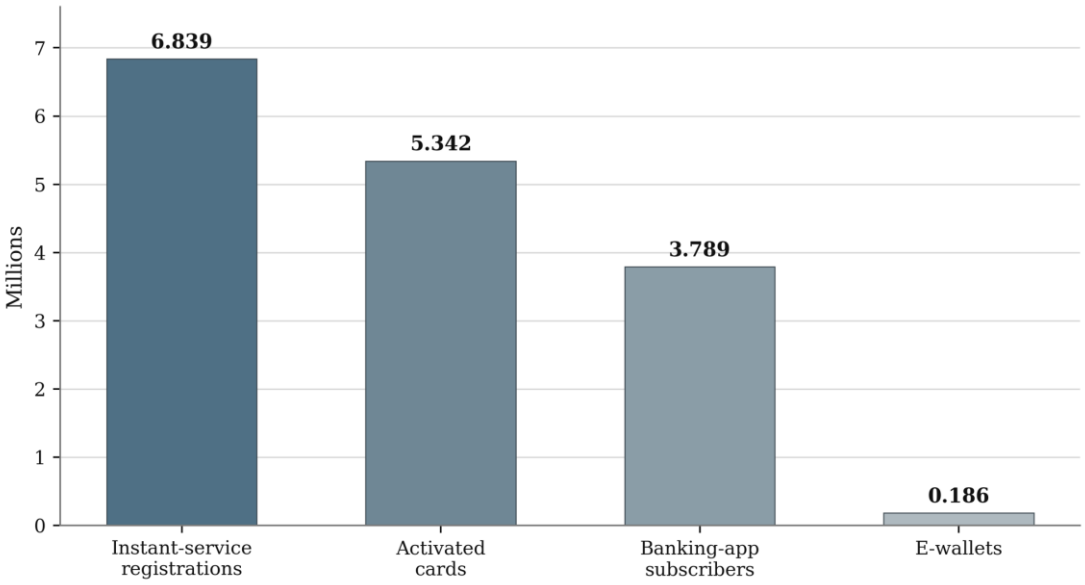

Figure 5 Selected payment access indicators reported for 2025.

2.4 The earlier readiness gap

An IFC baseline showed a different picture before the recent expansion. Financial account ownership stood at 65.7 percent. Online payment was 21 percent, while credit-card ownership was 10.3 percent (IFC, 2021a). The figures are older than the CBL totals. They still show why access, use, and product depth require separate measures.

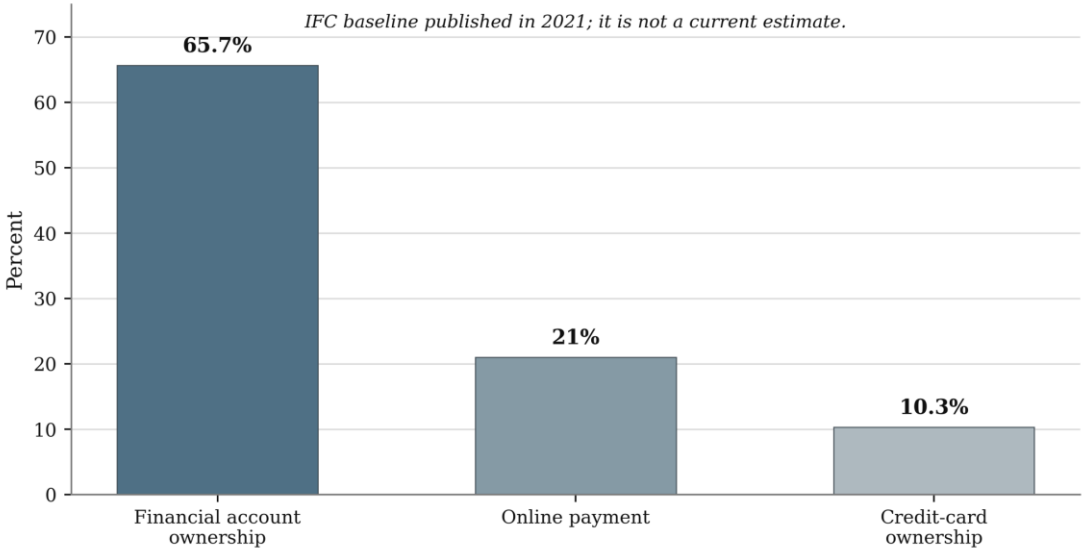

Figure 7. Earlier digital-finance readiness indicators for Libya.

3. Literature Review

3.1 From acceptance to trust

Technology acceptance research begins with usefulness and ease. Davis (1989) showed that both beliefs shape technology use. UTAUT added performance expectations, effort, social influence, and facilitating conditions (Venkatesh et al., 2003). Payment use involves financial exposure. Therefore, usefulness cannot explain adoption alone. Pavlou (2003) integrated trust and perceived risk with technology acceptance. Trust reduces uncertainty during remote transactions.

Gefen et al. (2003) reached a similar conclusion. Trust was as important as established technology beliefs. Libyan evidence supports this focus. Omar and Elmansori (2021) studied 296 customers using structural equation modelling. Their framework linked trustworthiness with intended e-commerce use. The sample concerned services provided by Libyan SMEs. Digital trust in this paper has five parts. They are security, reliability, fairness, transparency, and practical remedy.

Remedy matters because failures occur. Users need clear refunds, complaints, and proof of settlement.

3.2 From adoption to payment capability

Adoption studies often stop after account opening or stated intention. Business value appears later and requires routines. Zhu and Kraemer (2005) studied 624 retail firms across ten countries. Actual use connected adoption with business value. Back-end integration produced stronger value than basic front-end functions. Technology competence also mattered in developing settings. Dynamic capability theory explains this difference. Firms must combine new tools with skills, processes, and other resources.

Teece et al. (1997) describe capabilities for integration, reconfiguration, and response. These capabilities support adaptation under change. Payment capability applies that logic to daily finance. It includes onboarding, reconciliation, records, integration, and data use.

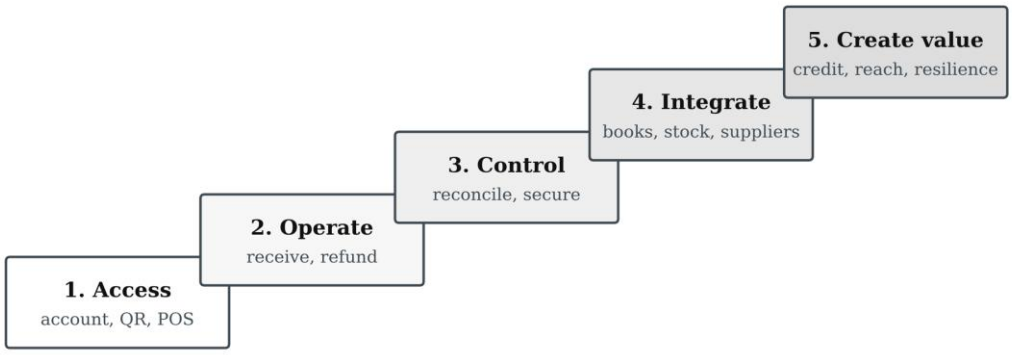

Figure 6 Five levels of SME payment capability.

3.3 How digital payments may create SME value

Payments can affect firms through several channels. Lower cash costs can save time and reduce theft exposure. Remote payment acceptance can widen customer reach. Faster settlement can improve working-capital timing. Digital records can reduce information gaps between firms and lenders. Better records may support credit decisions. Payments can also support resilience during shocks. Contactless channels preserve transactions when physical contact becomes difficult.

These benefits remain conditional. Fees, failed settlement, fraud, weak records, or limited demand can remove expected gains. A payment trail can also raise privacy concerns. Responsible data rules are therefore part of productive inclusion.

Table 2 Selected literature and its role in the model

Source	Setting and design	Main lesson for this paper
Davis (1989)	Technology acceptance studies	Usefulness and ease shape adoption.
Pavlou (2003)	E-commerce acceptance model	Trust and risk affect transaction intention.
Omar & Elmansori (2021)	296 Libyan customers; SEM	Trustworthiness matters in Libyan SME commerce.
Zhu & Kraemer (2005)	624 retailers in ten countries	Actual use and integration create value.
Dalton et al. (2024)	Kenyan SME randomized trial	Usage improved credit, not average sales.
Camara (2021)	94,199 French merchants; matched test	Contactless acceptance supported sales resilience.
Galilea et al. (2026)	Nearly 50,000 firms in 101 economies	Receiving e-payments was linked with less credit constraint.

3.4 The unresolved Libya gap

The literature supports each mechanism, but Libya lacks a linked firm dataset. Official figures describe the payment system. Existing business studies describe constraints, trust, or digital change. They do not link merchant transactions with later growth. This gap prevents a national causal claim. It also justifies a transparent public-evidence test and a later field study.

4. Model Development and Hypotheses

The model treats electronic-payment expansion as an enabling condition. Expansion lowers access barriers and increases possible use. Digital trust shapes whether merchants and customers repeat transactions. Payment capability shapes whether firms use the resulting information. Institutional reliability surrounds both processes. Settlement quality, consumer

protection, connectivity, and data governance can strengthen each relationship. SME growth is the final outcome. It includes sales, jobs, profits, survival, credit access, and lower sales volatility.

Table 3 Hypotheses for the public-evidence test

Code	Hypothesis	Expected evidence
H1	Payment expansion increases active SME payment use.	More access and higher repeated transactions
H2	Digital trust increases repeated payment use.	Reliability and remedy predict continued use
H3	Payment capability increases business integration.	Records, reconciliation, and workflow use
H4	Productive payment use improves SME growth or resilience.	Sales, profit, jobs, survival, or lower volatility
H5	Digital transaction records improve access to finance.	More loans or fewer credit constraints
H6	Institutional reliability strengthens the conversion pathway.	Stronger effects under reliable rules and services

The empirical form can later use a panel model. The main relationship appears below.

$$SME\ Growth = \beta_0 + \beta_1 Expansion + \beta_2 Trust + \beta_3 Capability + \beta_4 Use + \beta_5 Interactions + Controls + \varepsilon$$

A later structural model should test indirect effects. Trust and capability should mediate expansion's effect on firm outcomes.

5. Methodology

5.1 Research design

This paper uses a structured secondary-data and public-evidence design. The method combines descriptive statistics with theory-pattern matching. The design suits a setting with limited linked microdata. It allows model testing without creating fictional firm observations. Four evidence streams were used. The first stream covers official Libyan payment and banking indicators. The second stream covers Libya-focused studies on SMEs, finance, trust, and digital services. The third stream covers public experiments.

The fourth stream covers comparative firm evidence. Each source retained its original design and limits.

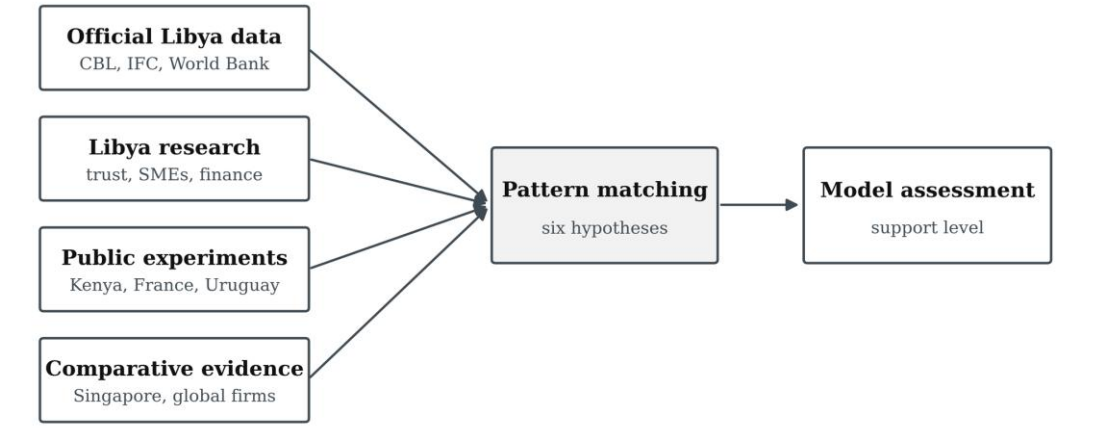

Figure 7 Design used to test the proposed model with public evidence.

5.2 Source selection

Sources were selected for direct relevance, clear methods, and accessible results. Official and peer-reviewed sources received priority. The review covered foundational theory and evidence available through August 2026. It did not claim exhaustive systematic coverage. Libya evidence was required for context and construct relevance. External experiments were required for causal or quasi-causal mechanisms. Studies without clear samples or outcome definitions were not used for core effect claims. News commentary was also excluded.

Table 4 Public evidence used in the practical test

Evidence	Design	Outcome used	Transfer limit
CBL 2024–2025	Administrative totals	Value, POS, accounts	No SME outcome link
Omar & Elmansori	Libyan SEM survey	Trust and intention	Customer intentions
Dalton et al.	Randomized encouragement	Loans, sales, profits, volatility	Kenyan firms
Camara	Matched difference-in-differences	Card sales and customers	French shock setting
Brockmeyer & Sáenz	Policy quasi-experiment	Card use and tax compliance	Uruguayan tax system
Agarwal et al.	Technology introduction	Business creation	Singapore industries
Galilea et al.	Cross-country firm analysis	Credit constraints	Association, not Libya causality
IFC Bangladesh	Merchant field study	Use and perceived value	Early platform stage

5.3 Coding and test rule

Each hypothesis received an evidence congruence score. A score of zero meant no direct support. A score of one meant partial, observational, or mixed support. A score of two meant strong and repeated support. Causal studies received more weight for growth claims. Libya-specific sources received more weight for context and trust. The final score reflects judgment, not statistical estimation. It supports comparison but does not produce confidence intervals.

Contradictory evidence reduced the score. Null findings were retained because they test the model's boundary conditions.

5.4 Variables for a later Libya test

Table 5 Recommended variables and measurement sources

Variable	Example measure	Preferred source
Expansion	Distance, fee, settlement speed, channel access	CBL and provider records
Trust	Security, reliability, fee fairness, remedy confidence	Merchant and customer survey
Capability	Reconciliation, bookkeeping, integration, data use	Owner survey and audit
Active use	Merchant receipts, frequency, digital share	Anonymized transactions
Growth	Sales, profit, workers, survival, volatility	Panel survey and tax records
Finance	Applications, approvals, limits, cost	Banks and credit registry
Controls	Sector, city, size, age, owner profile, shocks	Baseline survey

5.5 Validity, ethics, and limitations

Triangulation improves construct validity. Official totals, local studies, and experiments examine different parts of the same pathway. External validity remains limited. Foreign experiments cannot prove identical effects for Libyan merchants. Aggregate CBL statistics may include salaries, transfers, withdrawals, and personal activity. They do not isolate SME receipts. The study used no personal records. All analysis relied on public, aggregated, or published information.

A future linked study will require consent, data minimization, secure processing, and independent ethical review.

6. Public Experiments and Practical Evidence

6.1 Kenya: a randomized SME payment trial

Dalton et al. (2024) conducted a randomized encouragement trial with Kenyan SMEs. The intervention reduced information and adoption barriers. The trial increased electronic-payment usage among selected firms. Outcomes were measured sixteen months after the intervention. Mobile-loan access increased by at least 50 percent. The number and amount of loans both increased. The authors linked this result with lower information asymmetry. Digital transactions created useful signals for mobile lenders.

Average sales and profits did not increase. However, sales volatility and precautionary investment declined, especially among smaller firms. This mixed result is important. It supports finance and resilience channels, but rejects automatic short-term sales growth.

6.2 France: contactless payments during a shock

Camara (2021) examined 94,199 French merchants. The study used matched difference-in-differences around pandemic restrictions. Contactless merchants recorded 8.3 percent higher card-sales value. Their transaction count rose by 10.2 percent. Effects were stronger for small firms, new firms, and low-value merchants. New customer activity also increased. The setting differs from Libya. Still, it shows how payment capability can support continuity during sudden disruption.

6.3 Uruguay: incentives increased use, not tax compliance

Brockmeyer and Sáenz Somarriba (2022) studied Uruguay's financial inclusion reform. Consumers received tax rebates for card payments. Card transaction counts increased immediately by about 50 percent. Firms used existing card machines more intensively. The reform produced no tax compliance effect. Limited adoption and a small electronic share helped explain the result. This evidence warns against broad policy claims. More digital transactions do not automatically create every expected public benefit.

6.4 Singapore and global credit evidence

Agarwal et al. (2025) studied a major mobile-payment introduction in Singapore. Business-to-consumer sectors received the strongest exposure. Those sectors saw 18.3 percent more business creation than business-to-business sectors. Small firms drove much of the effect. Galilea et al. (2026) examined nearly 50,000 firms across 101 economies. Receiving electronic

payments predicted fewer credit constraints. Fully constrained status was about three percentage points less likely. The association was strongest among small and young firms.
The global study was not a Libya experiment. Its pattern still supports the transaction-record channel.

6.5 Bangladesh: early merchant usage

IFC studied merchant payments on Bangladesh's bKash platform. The study found low monthly use among surveyed businesses. Only 14 percent of microenterprises used the service monthly. The comparable SME share was 25 percent (IFC, 2021b). Active merchants still saw business value. Ninety percent wanted to increase platform use. This case separates access from intensity. Store type and transaction frequency shaped practical usage.

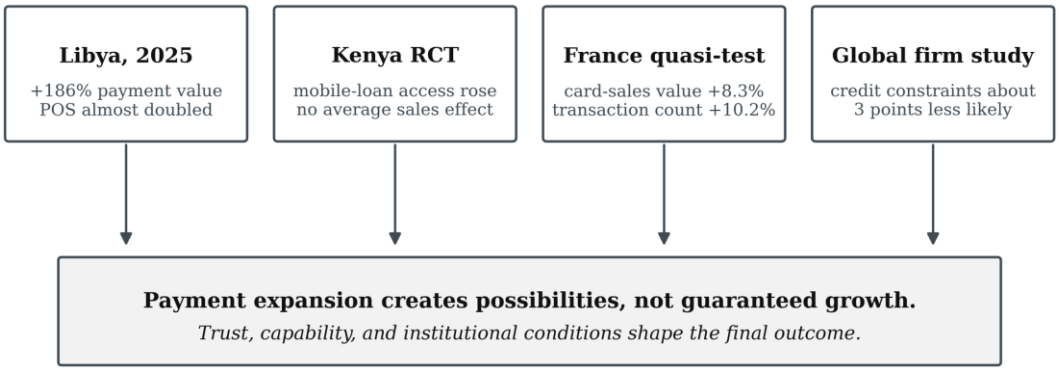

Figure 8 Key public findings and their shared interpretation.

7. Results

7.1 Descriptive result

The first result concerns expansion. Libya recorded exceptional payment growth during 2025. Total value, POS coverage, instant services, cards, and mobile applications all expanded. H1 therefore receives strong support. However, the statistics measure system scale. They do not measure active SME use or firm growth.

7.2 Trust and capability results

Libyan adoption research supports trust as a relevant construct. Wider theory also links trust with transaction intention. H2 therefore receives moderate-to-strong support. Direct evidence on repeated Libyan merchant use remains limited. Post-adoption research strongly supports capability. The public experiments also show that information and routines shape business outcomes. H3 receives strong support. The model should treat capability as more than basic digital literacy.

7.3 Growth and finance results

H4 receives conditional support. France and Singapore show positive business effects, but the Kenyan sales result was null. The combined evidence suggests several outcome paths. Growth may appear through customers, credit, resilience, or lower volatility. H5 receives strong support. Kenya provides causal evidence, while global firm evidence shows a matching credit pattern. H6 receives partial support. Institutional conditions clearly matter, but their Libya interaction has not been estimated.

Table 6 Hypothesis test results

Hypothesis	Score	Result	Reason
H1: Expansion → use	2.0	Strong	Large Libya access and transaction growth
H2: Trust → repeated use	1.6	Supported	Libyan SEM and established trust models
H3: Capability → integration	1.7	Strong	Post-adoption evidence and experimental mechanisms
H4: Use → growth	1.3	Conditional	Positive and null business outcomes
H5: Records → finance	1.8	Strong	Kenya causal result and global firm pattern

H6: Institutions strengthen path	1.4	Partial	Clear logic but no Libya interaction estimate

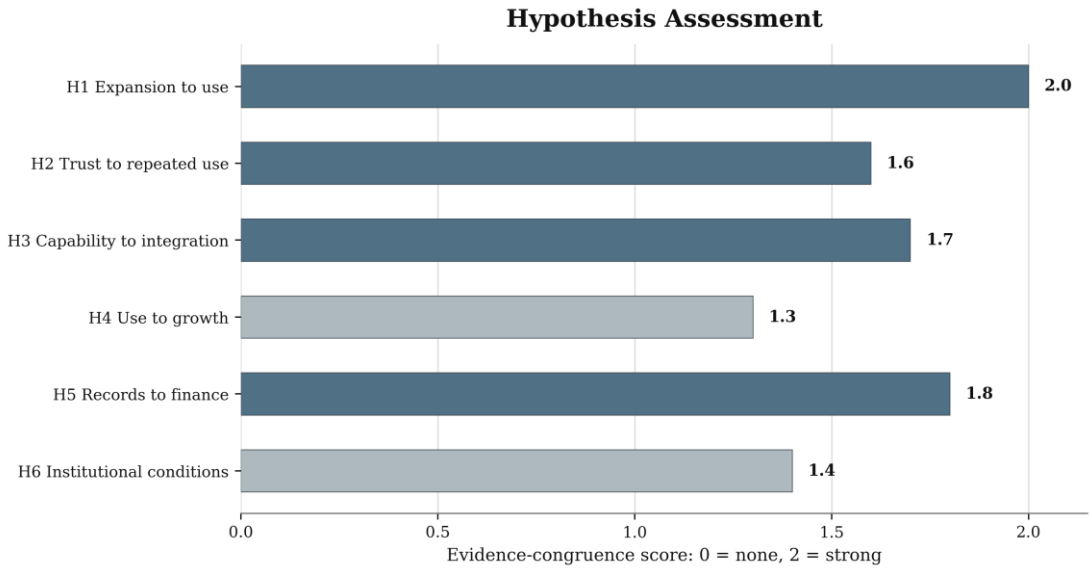

Figure 9 Evidence congruence scores for the six hypotheses.

7.4 Overall model judgment

The evidence supports the model's sequence. Expansion creates access, while trust supports continued participation. Capability then converts payment activity into records, integration, finance, and resilience. Business growth remains a conditional endpoint. The evidence therefore rejects a direct expansion-equals-growth assumption. It supports an indirect and institution-dependent pathway.

8. Discussion

8.1 Why expansion alone is insufficient

The main finding is simple. Libya has solved part of the access problem, but not the measurement problem. A higher transaction value can reflect transfers between personal accounts. It can also reflect salary and government payment flows. POS growth is closer to merchant acceptance. Yet installed terminals may still show low activity or uneven geographic use. The correct policy target is productive merchant use. That target requires active receipts, repeat customers, and operational integration.

8.2 Trust as operating infrastructure

Trust should not be treated as a marketing message. It is a set of observable service conditions. Reliable settlement is one condition. Clear fees, usable complaints, refunds, and fraud response are others. Libya's conflict and liquidity history can weaken confidence in banks. Rahman and Di Maio (2020) describe this connection. Trust can improve when users receive proof, fast remedy, and consistent treatment. Public dashboards can also show system reliability.

8.3 Capability as the missing conversion mechanism

A merchant may know how to receive a payment but still lack payment capability. Reconciliation is often the missing step. Firms must match receipts with invoices, customers, stock, and bank balances. These routines create usable records. Small firms also need clear tax and bookkeeping guidance. Otherwise, digital traces may increase fear instead of value. Capability support should therefore combine payment training with simple business controls. It should use sector-specific examples.

8.4 Finance opportunity and data risk

The strongest growth-related evidence concerns finance. Digital receipts can reveal cash flow when formal statements are missing. Banks can use these data to improve screening. Merchants

can use them to demonstrate repayment capacity. This opportunity creates new risks. Opaque scoring can exclude firms or misuse personal and commercial data. Libya needs consent rules, purpose limits, correction rights, and human review. Credit models should be tested for unequal outcomes.

9. Policy and Managerial Implications

9.1 A conversion strategy for Libya

The Central Bank launched the National Financial Inclusion Strategy for 2025–2029. It also announced digital identity and transfer projects. These initiatives provide a strong policy base (CBL, 2025b). The next step should focus on merchant value. The CBL also reduced electronic-payment commission fees to 0.5 percent during 2025. Lower fees can improve merchant acceptance. Price action should be paired with clear settlement standards. Providers also need sustainable service incentives (CBL, 2025c).

Table 7 Recommended trust and capability package

Area	Recommended action	Success measure
Reliability	Publish settlement time and failure rates.	Fewer failed or delayed payments
Remedy	Create one complaint and refund standard.	Resolution time and repeat use
Fees	Show total merchant cost before activation.	Lower disputes and dormant terminals
Capability	Offer reconciliation and bookkeeping clinics.	More matched digital receipts
Integration	Provide simple invoice and stock connections.	More supplier and remote payments
Finance	Pilot consent-based cash-flow lending.	Approvals, cost, and repayment quality
Inclusion	Target women, youth, and smaller cities.	Active merchant gaps by group
Data safety	Require purpose limits and correction rights.	Complaints, model errors, and appeals

9.2 A practical Libya pilot

A field pilot should compare infrastructure alone with trust and capability support. A delayed-start design can preserve fairness. An illustrative pilot could enroll 240 SMEs across matched city and sector groups. Final size needs formal power analysis. One group would receive standard payment onboarding. A second group would also receive trust and remedy support. A third group would receive trust support plus capability training. Training would cover records, reconciliation, and cash-flow use.

The study should run for twelve months. Anonymized monthly transactions should be linked with quarterly business surveys. Primary outcomes should include digital receipt share, sales, profit, workers, volatility, survival, and credit access. The design follows the encouragement logic used by Dalton et al. (2024). It adds trust and capability treatment arms.

9.3 What banks and payment providers should do

Banks should stop measuring success through registrations alone. They should report active merchants and meaningful transaction intensity. Providers should identify the first failed-use point. Common causes may include settlement delay, staff confusion, or weak connectivity. Merchant dashboards should show receipts, fees, refunds, and settlement status. Simple exports should support bookkeeping. Customer support should use Arabic and accessible channels. Smaller firms need rapid answers during payment disputes.

Lenders should test small cash-flow products carefully. Approval gains should not come with hidden fees or weak appeal rights.

10. Conclusion

Libya's electronic-payment expansion is real and substantial. The 2025 administrative figures show a major change in payment scale. However, growth does not follow automatically from infrastructure. Productive use requires digital trust and payment capability. The public-evidence test supports this conclusion. It also shows that business outcomes differ across settings and time. Kenyan firms gained credit and stability without average sales growth. French merchants gained sales resilience during a shock.

These findings make the model more realistic. They replace a simple technology story with a conditional business pathway. Libya should now measure active merchant use, firm integration, finance, and growth. Aggregate value remains useful but incomplete. The strongest policy combines reliable systems with fair remedies, clear prices, and practical merchant training. The next research step is a linked panel or randomized pilot. That study can test the model directly within Libya.

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