
Liquidity Friction Pathways and Digital Payment Hesitation among Micro Retailers

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Abstract

Digital payment systems are increasingly presented as instruments of financial inclusion, transaction efficiency, formalisation, and business growth. Their acceptance among micro retailers, however, remains uneven despite rising consumer demand and expanding payment infrastructure. Existing studies commonly explain this hesitation through technological complexity, limited digital literacy, security concerns, transaction charges, and lack of trust. Such explanations are important but incomplete because they often overlook the immediate liquidity requirements of micro retail operations. A retailer may receive a successful digital payment yet remain unable to use the proceeds immediately for purchasing inventory, paying casual workers, settling supplier dues, providing customer refunds, or meeting household withdrawals.

This paper examines digital payment hesitation through the concept of liquidity friction pathways. Liquidity friction refers to any delay, cost, uncertainty, conversion requirement, balance fragmentation, or operational restriction that prevents digitally received money from becoming immediately usable working capital. The study develops a conceptual and scenario-based framework linking settlement delays, cash-out costs, supplier dependence on cash, payment reversals, account restrictions, reconciliation problems, and fragmented digital balances with merchant payment preferences.

Keywords: Liquidity Friction; Digital Payments; Micro Retailers; Working Capital; Merchant Hesitation; Settlement Delay; Cash Conversion; Payment Adoption; Financial Inclusion; Retail Liquidity

1. Introduction

Digital payments have become an important part of contemporary retail commerce. Mobile money, account transfers, payment cards, digital wallets, instant-payment applications, and quick-response codes allow customers to purchase goods without using physical cash. The Global Findex 2025 reported that 42% of adults in low- and middle-income economies made an in-store or online digital merchant payment in 2024, compared with 35% in 2021. This expansion demonstrates growing consumer familiarity with digital transactions, but it does not establish that all merchants experience digital payments as convenient or financially neutral.

Micro retailers operate under conditions that differ substantially from those of large organised businesses. Their daily revenue is frequently used to replenish inventory, pay suppliers, finance transportation, compensate temporary workers, meet shop expenses, and support household consumption. They often maintain limited cash reserves and have restricted access to formal working-capital credit. Consequently, even a brief delay between receiving a payment and gaining unrestricted access to the money may affect the retailer's ability to continue trading. For such businesses, liquidity availability can be more important than the nominal value of the transaction.

The adoption literature generally associates digital payments with convenience, transaction speed, improved records, greater security, customer satisfaction, and access to financial services. Evidence from emerging-market retailers indicates that digital payment adoption can improve economic performance, although the benefits differ according to retailer characteristics, technology combinations, and existing credit practices. A study of 403

unorganised retailers found that digital payment adoption was associated with improved revenue performance, with an estimated average economic-performance increase of 9.6%.

Nevertheless, payment acceptance should not be treated as a simple choice between modern technology and traditional cash. A digital transaction may create several intermediate steps before its value becomes operationally useful. Funds may remain unsettled, be distributed across multiple wallet or bank accounts, require a withdrawal fee, face transaction limits, remain exposed to reversal or chargeback, or be inaccessible during technical outages. The retailer may also receive digitally while being required to pay suppliers in cash. These conditions create liquidity friction even when the payment itself is technically successful.

This paper argues that digital payment hesitation among micro retailers is partly a response to the structure of their working-capital cycle. Hesitation may appear as cash preference, selective acceptance, minimum transaction values, refusal during busy periods, customer requests to use a particular application, delayed confirmation, or immediate cash withdrawal. By examining the pathways through which digital receipts become usable liquidity, the study moves beyond a narrow technology-adoption perspective and provides a more operational explanation of merchant behaviour.

2. Objectives of the Study

2.1 Conceptual Objectives

The conceptual objectives of the study are to:

1. Define liquidity friction in the context of micro-retail payment operations;
2. Distinguish digital payment acceptance from regular and confident digital payment usage;
3. Identify the pathways through which digitally received money becomes restricted, delayed, fragmented, or costly working capital; and

4. Explain digital payment hesitation as an operational response rather than merely a negative attitude towards technology.

2.2 Analytical Objectives

The study seeks to:

1. Construct a Liquidity Friction Pathway Index for micro retailers;
2. Develop a Digital Payment Hesitation Index covering selective acceptance, cash preference, transaction postponement, and immediate cash conversion;
3. Compare low-, moderate-, and high-liquidity-friction scenarios; and
4. Examine whether supplier cash dependence and settlement uncertainty intensify merchant hesitation.

2.3 Managerial and Policy Objectives

The practical objectives are to:

1. recommend liquidity-sensitive payment products for micro retailers;
2. Identify measures that payment providers can use to improve active merchant participation;
3. Suggest retailer-level practices for managing digital balances and working capital; and
4. Encourage policymakers to evaluate payment adoption through actual usage and liquidity accessibility rather than registration numbers alone.

3. Review of Literature

3.1 Merchant Adoption and Retail Performance

Digital payment research has historically concentrated more heavily on consumers than merchants. Merchant decisions are different because accepting a payment method may require equipment, account registration, employee training, reconciliation procedures, transaction charges, and changes in cash-management routines. Moghavvemi et al. found that Malaysian merchants were encouraged by convenience, lower processing time, security, and potential fee

reductions, but were discouraged by incompatibility, complexity, investment costs, limited knowledge, and insufficient user participation.

Adhikary et al. demonstrated that adopting digital payment technologies can enhance retailer performance, but the impact is conditional. Different technologies do not contribute equally, and retailers with particular credit arrangements or resource limitations may receive weaker benefits. Their results support the view that digital payment technology is a business resource whose value depends on how it fits with the retailer's existing commercial processes.

Evidence from 5,035 ultra-micro, micro, and small enterprises across 17 Indonesian provinces also shows that digital adoption differs according to owner characteristics, enterprise conditions, infrastructure, and business environment. The study found a positive association between broader digital adoption and enterprise performance and indicated that digital adoption may contribute to improved financial literacy.

3.2 Digital Payments, Liquidity and Working Capital

Digital receipts may improve financial visibility by creating transaction histories that can support accounting, credit assessment, and formal financial access. A randomised controlled trial involving enterprises in Kenya found that greater electronic-payment usage increased access to mobile loans by at least 50%. Although the intervention did not significantly increase average sales or profits, it reduced sales volatility and precautionary investment, particularly among smaller firms. These findings suggest that digital transactions can influence financial resilience even when immediate profitability effects are limited. Digital payments can also support trade-credit relationships. Abdulai, Dary, and Domanban found that 49.6% of the informal Ghanaian firms in their dataset used digital payment platforms. Platform usage increased the probability that firms would participate in the demand and supply of trade credit. The

findings indicate that payment records and transaction convenience can help firms manage commercial relationships beyond direct customer sales.

These benefits, however, depend on the ability to convert digital value into usable working capital. ODI analysis of small enterprises across multiple economies found a strong relationship between transaction costs and electronic-payment usage. In economies where the cost of the primary electronic payment was below 1% of the transaction, small businesses made an average of 71% of their payments electronically. This fell to 38% where costs were between 2% and 5%, and to 19% where costs exceeded 5%.

3.3 Trust, Risk and Payment Hesitation

Technology-acceptance theories explain adoption through perceived usefulness, ease of use, social influence, facilitating conditions, trust, and perceived risk. These variables remain relevant to retailers, but liquidity conditions can shape how merchants evaluate each one. A platform may be technically easy to use yet economically inconvenient when its balance cannot be used for supplier payments or immediate stock replacement.

Merchant hesitation may therefore continue after formal adoption. A retailer may display a payment code but encourage cash, accept digital payments only from regular customers, impose a minimum transaction value, or immediately transfer every digital receipt. These practices reflect partial adoption rather than complete refusal. They also reveal the difference between technical acceptance, meaning that the merchant can receive digital payments, and liquidity acceptance, meaning that the merchant can integrate those receipts into the daily business cycle. The wider economic literature generally associates digital payments with financial inclusion, credit access, growth, and reduced informality. A BIS study covering 101 economies found that digital payment usage was positively associated with per-capita economic growth and greater

access to financial services, although some productivity effects weakened after broader digitalisation and governance variables were considered.

**Table 1: Literature Relevant to Digital Payment Adoption and Liquidity
Friction**

Author/Institution	Research Context	Major Finding	Relevance to the Present Study
Davis (1989)	Technology Acceptance Model	Usefulness and ease of use influence technology acceptance.	Provides a foundation for understanding merchant attitudes.
Venkatesh et al. (2003)	Unified technology acceptance	Performance, effort, social influence, and facilitating conditions affect usage.	Explains non-financial influences on payment adoption.
Moghavvemi et al. (2021)	Malaysian merchants	Convenience and security encourage adoption; complexity, incompatibility, cost, and limited knowledge discourage it.	Identifies important merchant-level barriers.
Adhikary et al. (2021)	Emerging-	Digital payment	Links adoption

	market unorganised retailers	adoption improved retailer revenue, but benefits varied across technologies and retailer conditions.	with enterprise performance.
Mishra et al. (2022)	Unorganised retailers	Merchant adoption depends on perceived value, trust, resources, and ecosystem conditions.	Supports a merchant-centred adoption framework.
Dalton et al. (2024)	Kenyan SMEs	Electronic- payment adoption improved mobile- loan access and reduced sales volatility.	Connects transaction records with financing and resilience.
Abdulai et al. (2024)	Informal firms in Ghana	Digital platforms increased participation in trade-credit activities.	Demonstrates the liquidity and credit-network implications of payments.
Affandi et al. (2024)	Indonesian	Digital adoption	Shows that

	micro and small enterprises	was positively associated with business performance and financial literacy.	adoption outcomes depend on enterprise capabilities.
ODI Global Advisory (2024)	Micro and small enterprises across economies	Higher transaction costs were associated with substantially lower electronic-payment usage.	Directly supports the payment-cost and liquidity-friction argument.
World Bank (2025)	Global financial inclusion	Digital merchant payments increased, but significant gaps in account and payment usage remain.	Establishes the continuing importance of merchant acceptance.

The reviewed literature confirms that digital payments can generate substantial commercial benefits. It also shows that adoption is influenced by cost, capability, infrastructure, trust, and business conditions. The specific process through which payment liquidity becomes restricted or delayed, however, remains insufficiently integrated into merchant-adoption models.

4. Research Methodology

4.1 Research Design

The study adopts an integrative conceptual and scenario-based research design. It combines findings from merchant-adoption studies, financial-inclusion

reports, working-capital research, technology-acceptance theory, and digital-payment literature.

The paper does not claim to report a completed survey of human participants. Numerical values used in the analysis demonstrate how the proposed framework can be applied. The model can subsequently be tested through field surveys, payment records, merchant interviews, time-use diaries, settlement histories, and supplier-payment data.

4.2 Conceptualisation of Liquidity Friction Pathways

Five principal liquidity-friction pathways were identified.

4.2.1 Settlement Friction

Settlement friction occurs when a successfully completed transaction does not become available to the merchant immediately. It includes delayed settlement, weekend restrictions, processing holds, failed credits, and unclear transaction status.

4.2.2 Conversion Friction

Conversion friction arises when the merchant must pay a fee, travel to an agent, use an ATM, transfer funds between accounts, or complete an additional procedure to convert a digital balance into cash or another usable form.

4.2.3 Ecosystem-Mismatch Friction

This pathway occurs when customers pay digitally but suppliers, landlords, transporters, casual workers, or household members require cash. The retailer must therefore finance a conversion gap between digital inflows and cash outflows.

4.2.4 Balance-Fragmentation Friction

Micro retailers may receive payments across several wallets, bank accounts, cards, or applications. Although the total balance may be sufficient, no single account may contain enough usable value for a particular payment.

4.2.5 Contingency and Reversal Friction

This pathway includes fear of disputed payments, mistaken transfers, refund obligations, chargebacks, account freezes, fraud investigations, transaction limits, and temporary platform outages.

4.3 Construction of the Analytical Indices

A. Liquidity Friction Pathway Index

The Liquidity Friction Pathway Index was calculated as:

Where:

- **SF** = settlement friction;
- **CF** = conversion friction;
- **EM** = ecosystem mismatch;
- **BF** = balance fragmentation; and
- **RF** = reversal and contingency friction.

Settlement friction and ecosystem mismatch receive the highest weights because immediate inventory replenishment and supplier settlement are central to micro-retail continuity.

B. Digital Payment Hesitation Index

The Digital Payment Hesitation Index was constructed as:

Where:

- **CP** = preference for cash;
- **SA** = selective digital acceptance;
- **IC** = immediate conversion of digital receipts;
- **TA** = transaction avoidance or postponement; and
- **RU** = reluctance during uncertainty or system disruption.

Each variable is measured on a scale from 0 to 100, where higher scores indicate stronger friction or hesitation.

4.4 Scenario Design and Interpretation

Three scenarios were developed:

- 1. Low-friction environment:** near-instant settlement, low transaction costs, interoperable accounts, digitally enabled suppliers, and reliable dispute procedures.
- 2. Moderate-friction environment:** occasional settlement delays, partial supplier acceptance, several payment applications, and periodic cash-out requirements.
- 3. High-friction environment:** delayed or uncertain settlement, high cash dependency, costly conversion, fragmented balances, and frequent fear of reversal or account restriction.

5. Analysis

5.1 Identification of Liquidity Friction Pathways

The first pathway begins with settlement timing. A retailer selling rapidly moving goods may need to purchase replacement inventory on the same day. When customer payments remain unsettled until the next business day, the enterprise may face stock shortages despite having completed profitable sales. Settlement delay therefore creates a temporary separation between accounting revenue and usable cash.

The second pathway concerns cash conversion. A digital payment may be inexpensive for the customer but costly for the merchant when withdrawal charges, transfer charges, transport expenses, agent commissions, or minimum-balance rules are considered. Small-value transactions are particularly sensitive because fixed conversion costs represent a larger proportion of the retailer's profit margin.

The third pathway is supplier-payment mismatch. Digital payment acceptance is easier when suppliers also receive the same form of payment. Where wholesalers demand cash, the retailer must continuously convert digital customer receipts. A business receiving 60% of sales digitally but paying 80%

of its suppliers in cash may face greater liquidity pressure than a business with a lower digital-sales share but fully digital suppliers.

The fourth pathway is balance fragmentation. A merchant may have sufficient total funds but insufficient immediately usable funds because money is distributed across several applications. Fragmentation increases reconciliation work and may require repeated transfers before a single commercial payment can be completed.

The fifth pathway involves uncertainty and contingency reserves. Merchants may maintain extra cash because digital payments can be reversed, disputed, delayed, incorrectly addressed, or temporarily inaccessible. The greater the uncertainty, the more cash the retailer retains as insurance, reducing the perceived advantage of accepting digital payments.

5.2 Scenario-Based Results

Table 2: Liquidity Friction and Digital Payment Hesitation Scenarios

Analytical Indicator	Low Friction	Moderate Friction	High Friction
Liquidity Friction Pathway Index	21	49	82
Average Settlement Period	0.2 day	1.3 days	3.1 days
Digital Receipts Usable on Same Day	92%	68%	41%
Supplier Cash-	18	51	84



Dependency Index			
Conversion- Cost Index	12	43	73
Balance- Fragmentation Index	16	47	78
Reversal and Contingency- Risk Index	23	52	86
Digital Payment Hesitation Index	24	54	87
Estimated Share of Sales Accepted Digitally	76%	49%	24%
Immediate Cash- Withdrawal Tendency	14%	52%	88%
Estimated Working- Capital Continuity	91%	69%	42%

Note: The figures are illustrative scenario values and do not represent results from a completed field survey.

The table demonstrates a strong positive relationship between liquidity friction and payment hesitation. When settlement is rapid and digital receipts can be used throughout the supply chain, retailers can accept a greater share of sales digitally. Their need for immediate withdrawal is also limited.

Under moderate friction, digital acceptance continues, but it becomes selective. Retailers may accept digital payments during periods of sufficient cash availability but prefer cash when inventory must be replenished or supplier obligations are approaching.

Under high friction, digital payment hesitation becomes substantially stronger. The retailer may technically possess the required payment facility but discourage its use. Hesitation is particularly high when delayed settlement, supplier cash dependence, conversion charges, and reversal uncertainty occur simultaneously.

5.3 Mediation and Threshold Effects

The model suggests that supplier-payment structure mediates the relationship between digital receipt and merchant hesitation. Settlement delay may create little difficulty when suppliers accept direct transfers. The same delay can become severe when suppliers require immediate cash.

A threshold effect also appears. Low levels of friction can be absorbed through existing cash reserves. Moderate friction requires more active balance management and occasional conversion. Once friction exceeds the retailer's reserve capacity, hesitation increases sharply because every additional digital sale may reduce the cash available for the next inventory cycle.

Merchant hesitation therefore depends not only on transaction cost but also on the timing, location, convertibility, and usability of value. A nominally zero-

fee payment can still create significant friction when it settles late or cannot be transferred to the retailer's principal suppliers.

6. Discussion

6.1 Hesitation as a Working-Capital Response

The findings challenge the assumption that merchants hesitate because they are resistant to change. Some resistance may reflect low confidence or limited technological knowledge, but a substantial part may be economically rational. Cash offers immediate finality, universal local acceptance, and direct visibility. Digital money may provide superior records and security but remain less useful when the surrounding commercial network continues to operate in cash.

Digital payment hesitation is therefore better understood as a spectrum. At one end, the merchant refuses all digital transactions. At the other, the merchant actively promotes digital payment and retains funds within the digital ecosystem. Between these positions are merchants who display payment facilities but use them selectively, request cash for small purchases, accept payments only through particular platforms, or immediately withdraw all receipts.

The distinction between registration and meaningful use is important. Payment providers may count a merchant as digitally enabled after an account or code is issued. However, active adoption requires repeated transactions, confidence in settlement, supplier usability, and the willingness to retain value digitally.

6.2 Implications for Retailers and Payment Providers

Micro retailers should maintain a simple daily liquidity record separating:

- Physical cash;
- Settled digital funds;
- Unsettled digital payments;
- Restricted or disputed balances;

- Supplier payments due; and
- Household withdrawals.

Such separation can prevent digital sales from being mistaken for immediately available working capital. Retailers should also assess which suppliers accept digital transfers and direct customer payments towards payment channels that can be used further within the supply chain.

Payment providers should focus on liquidity usability, not merely transaction initiation. Merchant products should offer instant or clearly timed settlement, low-cost transfers, simple transaction histories, rapid error correction, and compatibility with commonly used supplier-payment channels.

Providers should avoid complex fee structures. A merchant should be able to understand the total cost of receiving, retaining, transferring, and withdrawing a payment. Transaction charges that appear small in percentage terms may absorb a significant part of the profit earned on low-value retail goods.

Liquidity dashboards could provide merchants with separate information on available, pending, disputed, and restricted balances. Payment confirmation should also remain accessible during weak internet connectivity so that retailers are not required to rely solely on customer screenshots.

6.3 Policy and Ecosystem Implications

Policies designed to increase digital payment acceptance should address both sides of the retail transaction. Encouraging retailers to receive digitally will have limited effect when wholesalers, distributors, public services, transporters, and landlords remain cash-dependent.

Interoperability is particularly important. A merchant should not need to maintain several isolated pools of money because customers and suppliers use different platforms. Common payment standards and low-cost transfers can reduce balance fragmentation and improve the circulation of digital liquidity.

Consumer and merchant protection mechanisms must also provide timely resolution. Unexplained account restrictions, unclear reversals, delayed refunds, and inaccessible support can have a disproportionate impact on retailers with limited reserves. Complaint resolution should therefore be linked to transaction urgency and enterprise size.

Payment-adoption programmes should measure:

1. Transaction frequency;
2. Active merchant retention;
3. Average settlement time;
4. Cost of converting or transferring balances;
5. Proportion of suppliers accepting digital payments;
6. Frequency of payment disputes;
7. Inactive or dormant merchant accounts; and
8. The share of digital funds retained instead of immediately withdrawn.

A payment system becomes genuinely inclusive when digital value can circulate through the retailer's entire commercial network rather than stopping at the point of customer payment.

7. Conclusion

This paper examined digital payment hesitation among micro retailers through the concept of liquidity friction pathways. It argued that a digital payment is not fully useful merely because the transaction has been successfully completed. For a micro retailer, the value must also be available at the correct time, in the correct account, at an affordable cost, and in a form that can be used for inventory, suppliers, workers, shop expenses, and household needs.

Five principal pathways were identified: settlement friction, conversion friction, ecosystem mismatch, balance fragmentation, and reversal or contingency friction. Individually, each pathway may create a manageable

inconvenience. When several occur together, they can interrupt the retailer's working-capital cycle and substantially increase payment hesitation.

The scenario analysis demonstrated that hesitation rises sharply as same-day liquidity declines and supplier cash dependence increases. Under high-friction conditions, retailers may display digital-payment facilities while continuing to prefer cash. Such behaviour should not automatically be interpreted as technological backwardness. It may represent an attempt to protect stock continuity and immediate payment capacity.

Digital payment adoption can create meaningful benefits. It may improve transaction records, reduce sales volatility, facilitate credit access, support trade credit, improve security, and increase commercial reach. These benefits, however, depend on the integration of payment technology with the retailer's operating environment.

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