

Network Expansion and Reach: Does Coverage Deliver Reliability?

Background

Network expansion and reach involves extending agents, access points, mobile-payment channels and related infrastructure into underserved communities. Agents register and educate customers, facilitate cash-in and cash-out, and provide the human interface for services (Davidson & Leishman, n.d.).

In Tanzania, agents located close to farming households reduced travel costs and improved convenience, while Kenya's M-PESA network demonstrated how extensive reach can support very high transaction activity (Kalinga, 2023; Buku & Meredith, 2013).

For this brief, system performance and reliability refer to the ability of expanded networks to deliver services consistently, efficiently, securely and at acceptable cost. The evidence indicates that network size alone is insufficient.

Scope of the Synthesis

The evidence covers Ghana, Kenya, Tanzania, Nigeria, India, Indonesia, Sierra Leone, Mozambique and broader multi-country experience. It includes a randomised pilot, case studies, surveys, qualitative research, an operator handbook, a World Bank comparative study, a policy review and a systematic literature review.

The evidence base brings attention to agent recruitment and incentives, agent viability, user trust and demand, technology diffusion, and the institutional conditions required for sustained expansion. Connectivity, infrastructure, liquidity, technical support, agent capability, trust, interoperability, demand and sustainable agent economics all shape whether expanded networks function reliably (Gupta & Singh, 2023; Palaon et al., 2020; David-West et al., 2021).

1. Synthesis of Findings

1.1 Expansion Improves Reach, but Scale Must Follow Demand and Viability

The Ghana pilot used transportation subsidies to encourage agents to travel from existing locations into previously unserved communities, aiming to increase transactions, customers, branches and continued service delivery. Some agents nonetheless opted out because of security, liquidity, network and community buy-in barriers (Mobile Money Agent Network Expansion, n.d.).

The operator handbook cautions that excessive agent density can reduce transactions per agent and undermine profitability, so network growth should be proportional to active users (Davidson & Leishman, n.d.). Density and viability are therefore in tension: the same additional outlet that improves coverage also divides existing transaction volume.

Comparative evidence shows that expansion can be substantial when supported by enabling institutions. Kenya's financial inclusion more than doubled to about 70–75% of adults, Sri Lanka developed highly interoperable payment infrastructure, and Thailand deployed thousands of multifunctional ATMs and deposit machines (Riley & Kulathunga, 2017). Indonesia also recorded rapid growth in branchless agents and customers (Palaon et al., 2020).

1.2 Network Expansion Can Improve Transaction Activity, Convenience and Economic Value

The Ghana intervention measured transaction volume and value, customers, branches, employees, income, profit and working capital as indicators of expansion and productivity, and reports that transportation support enabled agents to reach underserved areas and strengthened outreach, although structural barriers remained (Mobile Money Agent Network Expansion, n.d.).

In Tanzania, agent proximity reduced travel costs and time and facilitated agricultural payments, savings and investment (Kalinga, 2023). M-PESA's expansion was accompanied by more than two million transactions per day, while Nigeria's electronic-payment diffusion analysis forecasts mobile payments to become the most diffused payment technology by transaction volume (Buku & Meredith, 2013; Aduba & Asgari, 2021).

Expansion also creates wider value for micro-enterprises. In Sierra Leone, mobile money reduced uncertainty, increased transactional security and convenience, reduced exposure to cash robbery, and supported entrepreneurs' technological and business capabilities (Arslan et al., 2021).

1.3 Reliability Depends on Infrastructure, Liquidity, Skills and Management

Evidence from India identifies server downtime, software glitches, equipment breakdowns, poor internet connectivity and power interruptions as operational constraints, with connectivity and technical support important to agents' continuity (Gupta & Singh, 2023). In Indonesia, the continuity of branchless banking requires reliable internet and agent systems together with improved agent skills and transaction targets (Palaon et al., 2020).

Liquidity is equally important. Agents need sufficient cash and electronic value to complete cash-in and cash-out transactions, and masteragents can monitor e-value and support agents with liquidity management (Davidson & Leishman, n.d.). The Kenyan evidence likewise identifies network failures and liquidity shortages as constraints on service delivery (Mulwa & Waema, 2015).

Reliability in this cell is therefore a management outcome as much as a technical one: the same access point performs differently depending on whether it is monitored, resupplied and supported.

1.4 Demand, Trust, Interoperability and Policy Determine Whether Expansion Is Sustained

Expansion can fail when supply-side growth is not matched by user demand and confidence. In Nigeria, non-diffusion was associated with weak customer demand, limited ecosystem integration, lack of trust, preference for local savings mechanisms and policy short-termism (David-West et al., 2021). Expanding infrastructure without addressing why users do not adopt or trust services will not automatically produce inclusion.

Comparative evidence shows that regulatory leadership, private-sector innovation, interoperable payment infrastructure and coordinated policy can enable successful diffusion (Riley & Kulathunga, 2017). The systematic review reaches a compatible conclusion: digital payment technologies can expand access and improve efficiency, but adoption and inclusion depend on technological, demographic and institutional conditions (Shahen & Sharaf, 2025).

Table 1. Direction of evidence in this cell

Pathway	Direction of evidence
Agent proximity and convenience of access	Positive
Transportation support and outreach into new communities	Positive (pilot)
Interoperable, shared infrastructure and scale	Positive (comparative)
Connectivity and technical support for continuity	Positive
Agent density beyond active demand	Negative for viability
Expansion without trust and ecosystem integration	Negative
Optimal density relative to agent viability	Not tested

Directions summarise the included studies; the density–viability relationship is discussed but not estimated.

2. Cross-Cutting Trends and Insights

Key cross-cutting trends and insights include:

- Proximity matters: customers are more likely to use services when agents are close, but oversupply weakens agent economics (Davidson & Leishman, n.d.; Kalinga, 2023).
- Expansion must be paired with operational capacity: connectivity, electricity, functional devices, liquidity and technical support determine whether access points actually deliver services (Gupta & Singh, 2023; Palaon et al., 2020).
- Agent incentives should reward quality and active service rather than recruitment, since incentives linked to transactions and liquidity discourage inactive or poorly performing agents (Davidson & Leishman, n.d.).
- Trust and security are part of reliability: fear of fraud and weak confidence can suppress diffusion even where infrastructure exists (David-West et al., 2021; Arslan et al., 2021).
- Interoperability and enabling regulation support scale, with successful cases combining infrastructure investment and coordination among regulators, providers and other actors (Riley & Kulathunga, 2017).
- Network expansion generates broader economic value through convenience, lower travel costs, business growth, savings and reduced exposure to cash-related risks (Kalinga, 2023; Arslan et al., 2021).

3. What Works

- Strategic expansion into underserved locations using proximity, demand and cost considerations (Mobile

Money Agent Network Expansion, n.d.; Davidson & Leishman, n.d.).

- b. Using existing distribution networks and capable intermediaries while maintaining recruitment, training and monitoring systems (Davidson & Leishman, n.d.).
- c. Combining expansion with reliable connectivity, electricity, functional equipment, liquidity and technical support (Gupta & Singh, 2023; Palaon et al., 2020).
- d. Linking agent incentives to active transactions, customer service and liquidity rather than to recruitment alone (Davidson & Leishman, n.d.).
- e. Supporting expansion with trust-building, user education, interoperability and enabling regulation (David-West et al., 2021; Riley & Kulathunga, 2017).
- f. Masteragent arrangements that monitor e-value and assist agents with liquidity management (Davidson & Leishman, n.d.).

4. What Doesn't Work

- a. Rapid expansion without sufficient demand, which can oversaturate markets and weaken agent profitability and continuity (Davidson & Leishman, n.d.).
- b. Expanding access points without addressing network, electricity, equipment or liquidity constraints, which leaves services unreliable (Gupta & Singh, 2023; Mulwa & Waema, 2015).
- c. Focusing on short-term commercial returns where inclusion requires longer incubation, which undermines operational sustainability (David-West et al., 2021).
- d. Recruitment incentives that reward the number of agents rather than active, liquid and service-ready agents (Davidson & Leishman, n.d.).
- e. Technology-led expansion without trust, user demand and ecosystem integration, which does not guarantee diffusion (David-West et al., 2021; Shahan & Sharaf, 2025).

5. Challenges

- a. Market crowding and weak agent economics, where coverage grows faster than transactions per agent (Davidson & Leishman, n.d.).
- b. Poor connectivity and electricity, and server, software and device failures (Gupta & Singh, 2023).
- c. Inadequate cash and e-float, and weak agent skills and monitoring (Palaon et al., 2020; Mulwa & Waema, 2015).
- d. Security and fraud concerns, low user trust and weak demand (David-West et al., 2021; Arslan et al., 2021).

- e. Limited ecosystem integration and interoperability, and high or poorly structured charges.
- f. Burdensome recruitment requirements and short-term policy or investment horizons (David-West et al., 2021).
- g. In Ghana specifically, security, liquidity, network access and community buy-in as practical barriers to reaching new communities (Mobile Money Agent Network Expansion, n.d.).

6. Areas for Further Research

- a. The optimal relationship between agent density, active users and agent viability, which is discussed across the evidence but never estimated.
- b. The causal effects of expansion incentives on sustained service rather than on initial outreach (Mobile Money Agent Network Expansion, n.d.).
- c. How connectivity, liquidity, technical support, trust and interoperability jointly affect transaction completion and continuity.
- d. Measurement of demand, trust, agent satisfaction and business continuity alongside transaction volumes (David-West et al., 2021; Palaon et al., 2020).
- e. Diffusion studies that distinguish transaction volume from the actual number of users adopting a technology (Aduba & Asgari, 2021).
- f. Whether the Ghana pilot's outreach gains persist once transportation support is withdrawn.

7. Conclusion

The evidence confirms that network expansion and reach can extend financial services into underserved areas and increase convenience, transaction activity and economic opportunity. System performance and reliability, however, depend on more than geographical coverage.

Effective networks require sufficient demand, viable agents, liquidity, reliable infrastructure, technical capability, trust, interoperability and supportive policy. The strongest evidence therefore supports a quality-oriented expansion strategy: expand where there is unmet demand, maintain viable agent economics, invest in the infrastructure that keeps services functioning, and monitor active use, transaction completion, downtime, liquidity, customer trust and agent continuity alongside network size (Davidson & Leishman, n.d.; Riley & Kulathunga, 2017; Shahan & Sharaf, 2025).

The practical implication for programme design is that coverage targets should be paired with viability and reliability targets. A network judged only on the number of access points can expand and deteriorate at the same time.

About this Evidence Brief

This evidence brief is a cell-wise summary of studies of the cell "Network expansion and reach → System performance and reliability" from ICED's Evidence and Gap Map of the Retail Finance Distribution Initiative.

For the full map, visit www.iced-eval.org/evidence-and-gap-maps

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