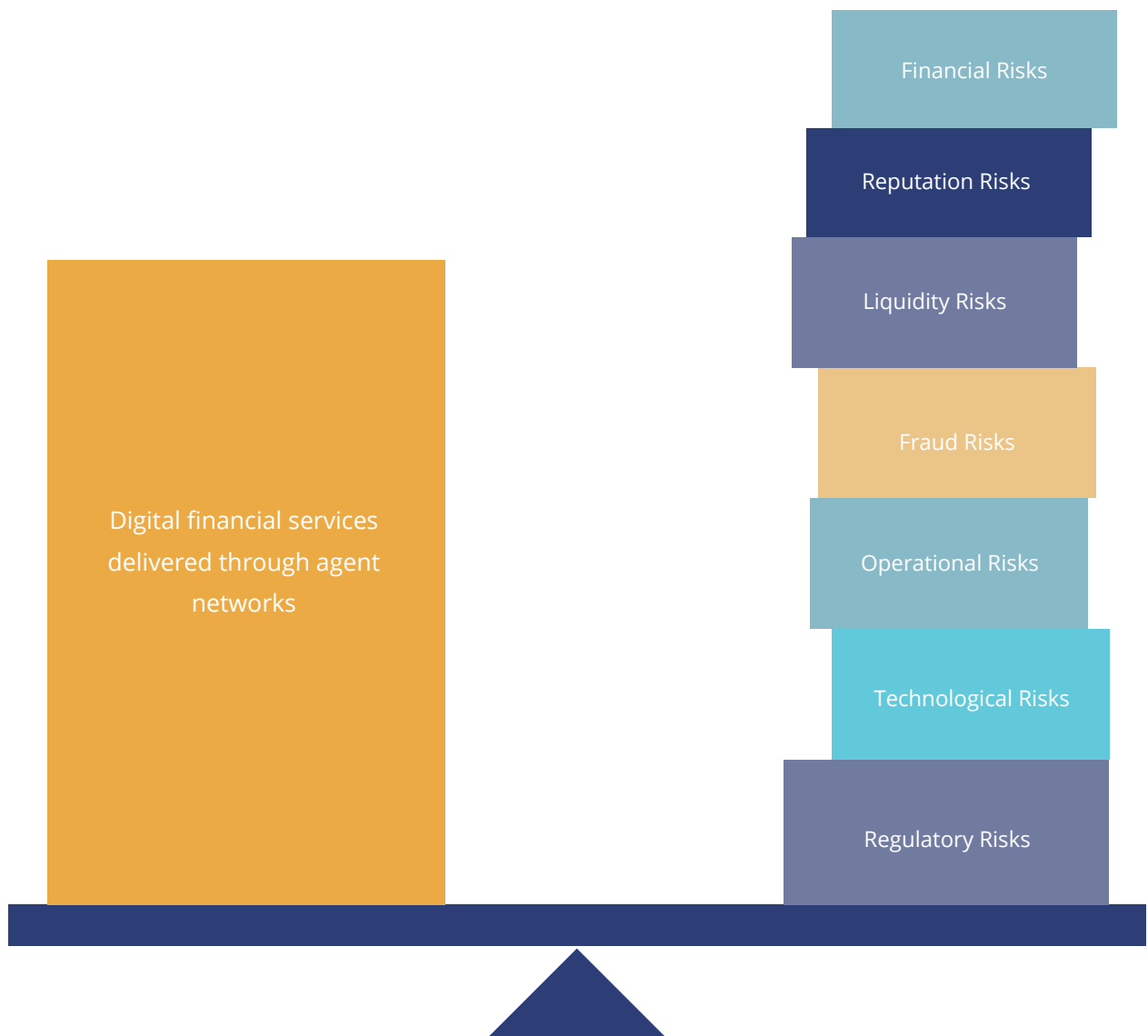# Measuring Risk in Agent Networks

What Risks Are Inherent in Agency Business and How to Track Them

Kevin Genga, Wanjiku Kiarie, and Vera Bersudskaya

Financial Risks

Reputation Risks

Liquidity Risks

Fraud Risks

Operational Risks

Technological Risks

Regulatory Risks

Digital financial services delivered through agent networks

www.helix-institute.com

This paper is part of a series of synthesis papers that summarise data on agent networks. We have collected the data over four and a half years from nine countries in Africa and Asia through the Agent Network Accelerator (ANA) project[1]. *MicroSave's Helix* Institute of Digital Finance implemented the ANA project, with funding from the Bill & Melinda Gates Foundation, the United Nations Capital Development Fund (UNCDF), Financial Sector Deepening – Uganda (FSDU), and Karandaaz Pakistan. This paper synthesises knowledge and data on liquidity management approaches to ANA research markets and beyond.

1. Risk in Digital Financial Services

Digital financial services (DFS) delivered through agent networks continues to gain momentum as a key driver of financial inclusion, with enabling legislation enacted in a growing number of low and middle-income countries. DFS providers, such as banks, telecoms, third-parties, fintechs, and MFIs are excited to deploy digital services. However, they often find it challenging to manage their agent networks in an efficient and effective manner. One of the key challenges is mitigating the amplified risks associated with agents that deliver financial services.

> One of the key challenges is mitigating the amplified risks associated with agents that deliver financial services.

In addition to *MicroSave*, institutions like the IFC, GSMA, CGAP, Accenture, and Smart Campaign have explored the types of risks in DFS that require mitigation. We loosely define risk as the potential for loss or failure to meet business objectives as a result of internal or external events.

Service providers need to know from where risks emanate, and how to mitigate these risks. Most traditional providers understand the risks related to conventional financial services but struggle when it comes to applying their knowledge on these risks to DFS delivered through agents. Some DFS providers lack a culture of risk management altogether. All providers alike seek to make use of technology to increase their reach using this alternative channel, perhaps overlooking the fact that greater reach translates into greater damage if risks are poorly mitigated.

This paper describes the types of risks inherent in agent networks. It is based on a significant amount of quantitative and qualitative research work done over two waves of the ANA surveys in nine countries. Through observations on the agent network operations in these countries, we propose a set of indicators to measure these risks, and benchmark agent networks from Bangladesh, Indonesia, Kenya, Pakistan, Senegal, Tanzania, Uganda, and Zambia. The ANA surveys' findings are supported by data from demand-side studies by FII and offer conclusions that should inspire DFS providers to assess risk-exposure within their agent networks. In turn, regulators need to reflect on these findings, to determine whether they should amend their guidance to providers, or if the provider should take firmer action against errant agents.

---

1. See Appendix A for further detail on the data and countries covered.

2. Measuring Different Types of Agent Network Risks

Measuring risk requires DFS providers to put in place an effective monitoring and support plan to capture and act upon the risk indicators mentioned in this report.

2.1 Regulatory Risk

Regulatory Risk refers to the impact that a change in regulations and law could have on the DFS industry or agency business. Changes in regulations sometimes require adjustments to the approaches to agent network management, affecting cost-structures or key processes. Providers must be flexible enough to meet regulatory demands while keeping pace with the rapidly changing DFS environment. Providers are expected to ensure their agents comply with all regulations including disclosure, know your customer (KYC), anti-money laundering/countering terrorism financing (AML/CTF), and consumer protection/data privacy requirements. Compliance with regulations has proved to be a challenge for providers that manage extensive, deep-reaching networks.

Indicators used in tracking or assessing regulatory risks in ANA and FII survey include:

- The percentage of agents who display tariff sheets to boost consumer protection initiatives;
- The percentage of agents who display their agent ID to advance consumer protection initiatives;
- The percentage of customers who report using agents' SIM and phone to perform a transaction to advance KYC and AML arguments.

Figure 1. Proportion of agents who display tariff sheets
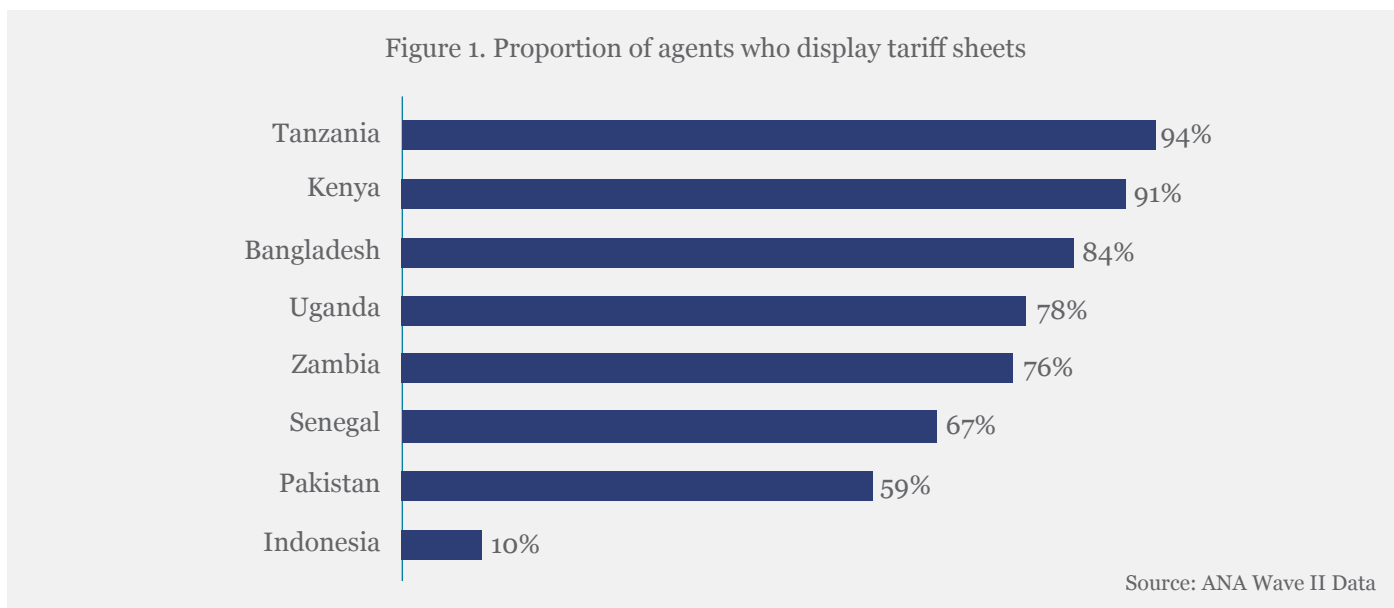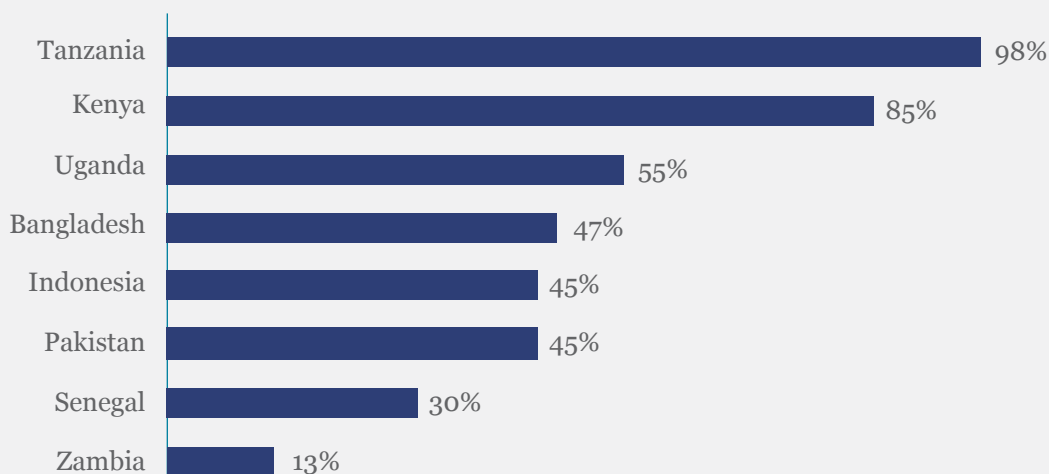
Source: ANA Wave II Data

Figure 1 shows that the majority of agents in all countries, except Indonesia, display tariff sheets. Most countries, except Bangladesh and Indonesia, require agents to display tariff sheets. However, compliance remains uneven despite the simplicity of such a requirement. Influencing factors could include non-delivery of posters and lack of agent training on the importance of transparency to customers. Virtually universal compliance in Tanzania and Kenya are a product of strict enforcement by the regulators and monitoring efforts by the individual providers or their proxies. Despite this not being a requirement in markets like Bangladesh, our surveys established that agents choose to display tariff sheets, as this results in them performing four more transactions on an average compared to fellow agents who do not display the tariff sheets.

Figure 2. Proportion of agents who display their agent ID

Country	Percentage
Tanzania	98%
Kenya	85%
Uganda	55%
Bangladesh	47%
Indonesia	45%
Pakistan	45%
Senegal	30%
Zambia	13%

Source: ANA Wave II Data

Compliance with stipulations related to displaying agent IDs in countries where this is a regulatory requirement (Tanzania and Kenya) is above 85%. In other survey countries, ANA data indicate that 13% to 55% of agency agents display their official agent IDs. Countries where Over-The-Counter (OTC) transactions are prevalent, such as Pakistan, Senegal, Indonesia, Bangladesh, and Zambia, less than half the agents display their IDs as they initiate both cash-in and cash-out transactions. Of greater concern is the way that the remaining agents do display their ID in over the counter-(OTC) dominated markets, such as Bangladesh. Most of the time, the ID is either the same as the agent's registered mobile number, or includes the mobile number, or both. It makes the agents easy targets for fraudsters who can send them phishing and other fraudulent SMS messages.

Figure 3. Proportion of customers who report using agents' SIM and phone to perform transactions

Country	Percentage
Bangladesh	60%
Pakistan	59%
Uganda	17%
Tanzania	5%
Kenya	3%
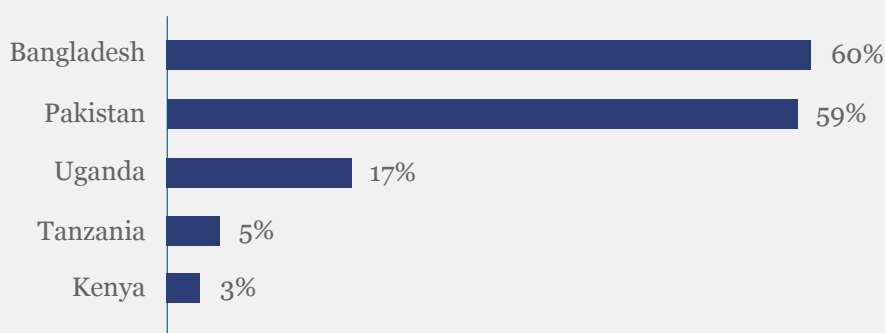
Source: FII Wave IV Data

Bangladesh and Pakistan allow agent-assisted transactions. In East Africa, where legislation prohibits transactions conducted using an agent's phone, the surveys reveal that more customers in Uganda still obtain this service from agents. The prohibition is meant to foster consumer protection: using an agent's phone makes the customer vulnerable to agent abuse and precludes any recourse for a disputed transaction. The prevalence of such transactions is attributed to reasons that include literacy rates, which are significantly lower in Bangladesh, Pakistan, and Uganda relative to Kenya and Tanzania. Another reason is the tendency of the Ugandan populace to seek to avoid inter-network transaction costs.

In an earlier blog, The OTC Trap in 2014, reported that 50–55% of cash-in transactions effected by agents in Uganda were OTC in nature. However, the negative implication of OTC transactions is that they often introduce extra and illegal charges for the client, as well as significant loss of revenue for providers.

2.2 Technological Risk

Technological Risk may arise as a result of loose partnerships between technology companies and financial institutions, where there is a lack of clear definition of acceptable service levels expectations. Technological risks threaten assets and processes vital to the success of an agency business. The importance of technology in delivering DFS cannot be emphasised enough since all offerings ride on systems.

The key indicators to track and assess technology risks include:

- The frequency and severity of downtime at agent outlets;
- The percentage of customers who have experienced downtime while using DFS.

Figure 4. Proportion of agents and customers who report experiencing downtime

Legend: Agents, Customers

Country	Agents	Customers
Bangladesh	57%	23%
Indonesia	50%	18%
Pakistan	33%	18%
Uganda		55%
Kenya	36%	49%
Tanzania	32%	46%

Sources: ANA Wave II Data (agents experiencing downtime weekly); FII Wave IV Data (customers experiencing downtime
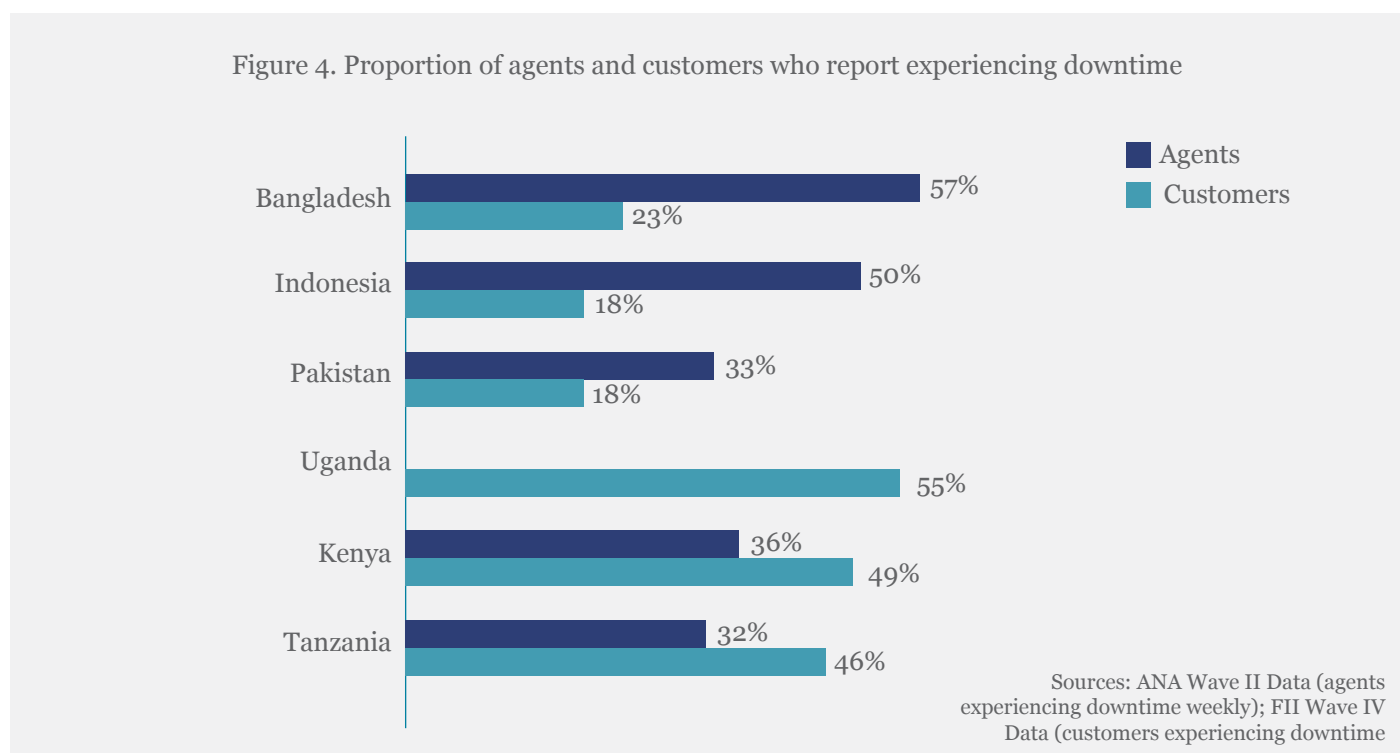
Figure 4 suggests that the exposure to service downtime for customers and agents differs by market type. In countries where customers transact over-the-counter, they are less likely to report experiencing downtime compared to agents who conduct the transactions. However, the pattern is the reverse in wallet markets, where there is a higher use of customer-initiated transactions. Despite fluctuations in downtime, it is clear that most agency businesses continue to struggle with the unreliability of service, which can hamper utilisation. Of greater concern is the insufficient prior warning on impending downtime. In the Tanzania market, of the 32% of agents who reported experiencing downtime, only 23% confirmed receiving prior notifications or warning of expected downtime.

A limitation in regards to service downtime data presented above is that our Wave II Uganda data did not seek answers to this particular question. Thus, only the graphical representation of customer sentiments is displayed from the FII Wave IV data. However, our Wave I data in 2013 had 82% of agents reporting downtime with and only 13% confirming receipt of prior downtime notification.

2.3 Operational Risks

Operational Risks emanate from inadequate or failed internal processes, people, and systems, or from external events. Operational risks within the agent network have serious consequences for both service providers and consumers. Analysing operational risks for DFS operations focusses on three types of process breakpoints. These are technology failure, which arises from increased digitisation; human errors, which cause money to be deposited or be sent to the wrong account; and malfeasance, which implies the risk of unauthorised access to the providers' back-end accounts. These financial losses to providers attributed to operational risks are estimated at $1.00-to-$3.00 per year per consumer.
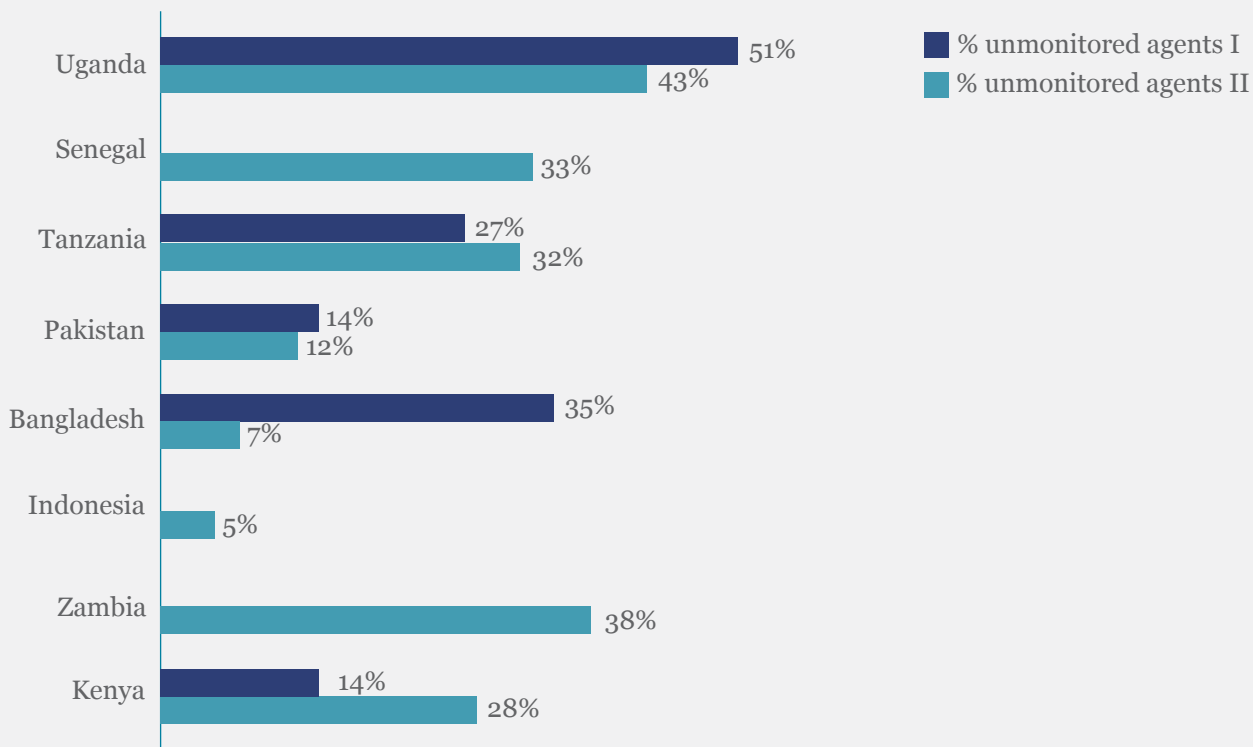
Key indicators to track and assess operational risks within agent networks include:

- The percentage of agents who have not received training;
- The percentage of agents who do not receive support visits;
- The percentage of agents unaware of call centre;
- The percentage of outlets run by operators or handlers;
- The level of educational attainment of agents.

Figure 5. Proportion of agents who have not received initial training

Source: ANA Data, Waves I and II
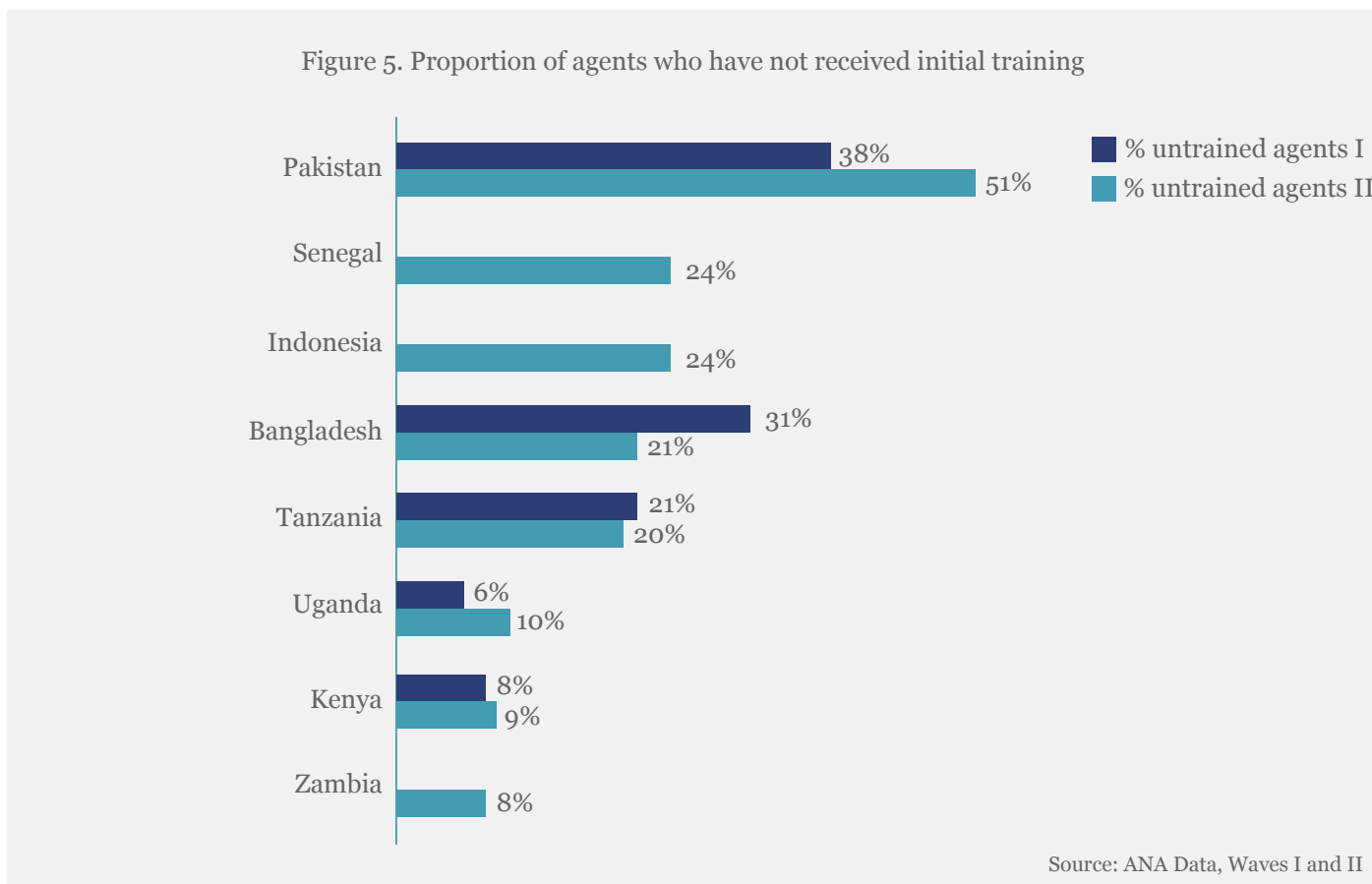
Agents training (Figure 5) and support visits (Figure 6) are important avenues for mitigating operational risks within the network. This is because they offer an opportunity to ensure that agents know how to run their businesses, are aware of rules and regulations, and comply with provider standards and instructions. Generally, OTC-dominated markets trail behind wallet-dominated East Africa when it comes to induction training. While induction training rates are generally higher in East Africa, 8% to 20% untrained agents represent quite a number of agents that serve many customers.
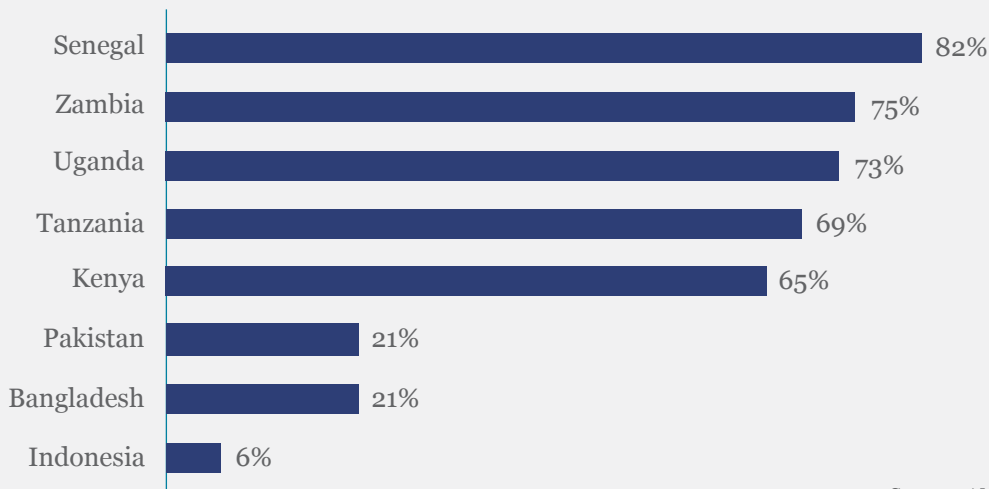
Figure 6. Proportion of agents who never receive support visits

Country	% unmonitored agents I	% unmonitored agents II
Uganda	51%	43%
Senegal		33%
Tanzania	27%	32%
Pakistan	14%	12%
Bangladesh	35%	7%
Indonesia		5%
Zambia		38%
Kenya	14%	28%

Source: ANA Data, Waves I and II

Figures 6 demonstrates that many agents do not receive visits at their agency business locations once they have set up their business. Ensuring that agent operations run in line with the provider and regulatory standards without on-site support and supervision can be a challenge. The operational risks inherent in dispersed agent networks increase if agents are left to fend for themselves.

Figure 7. Proportion of agent outlets run by employees/operators/handlers

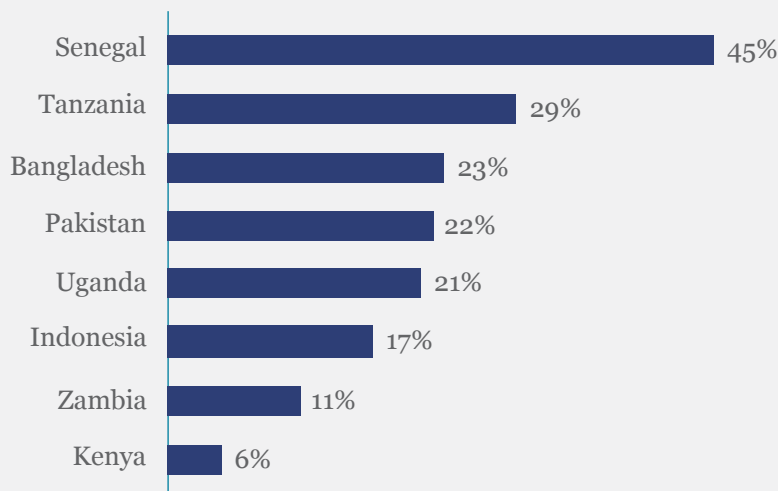| Country	Percentage
Senegal	82%
Zambia	75%
Uganda	73%
Tanzania	69%
Kenya	65%
Pakistan	21%
Bangladesh	21%
Indonesia	6%

Source: ANA Wave II Data

Figure 7 illustrates the widespread use of staff or till-operators in African agent outlets, whereas in Asia these businesses are largely operated by owners. The use of till-operators, as opposed to business owners, is in itself a risk. Staff churn is a major concern with low-paid, routine till-operator jobs generally perceived as a stop-gap measure for individuals as they

look for better income-generating opportunities or proceed to colleges for higher studies. High turnover has an impact on training and support mechanisms as well. More till-operators receive training from the owners (if they are trained at all) as opposed to the providers or third party training/monitoring companies appointed by providers. Furthermore, till-operators are not always honest and can become a source of losses for the business. Reliance on staff, as is common in most African markets, creates a risk that requires mitigation

Figure 8. Proportion of agents who have not completed secondary school

Country	Percentage
Senegal	45%
Tanzania	29%
Bangladesh	23%
Pakistan	22%
Uganda	21%
Indonesia	17%
Zambia	11%
Kenya	6%

Source: ANA Wave II Data

Figure 8 shows that overall, with the exception of Senegal, less than one-third of agents in focus countries have not completed secondary education. While education level is not synonymous with competency in conducting agency business, knowledgeable agents perform better. A knowledgeable agent handler will be more compliant in displaying tariff sheets, ensure quick turnaround time with the clients, and be able to answer difficult questions on mobile money.
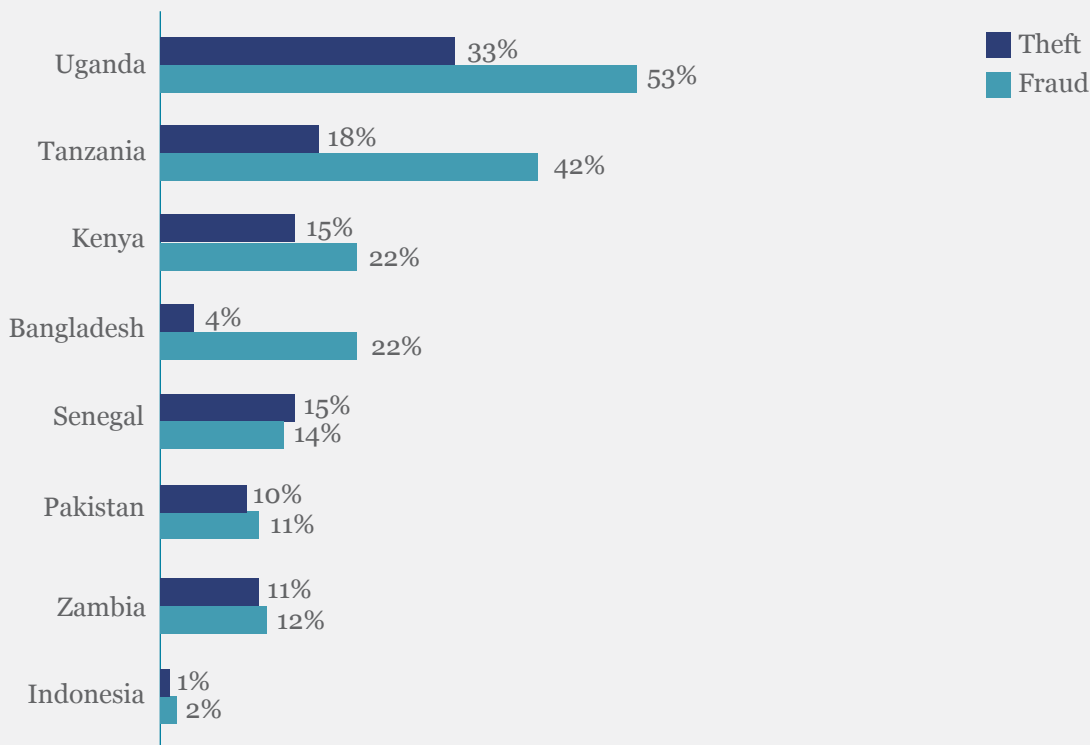
2.4 Fraud Risk

Fraud Risk is often included separately in risk management frameworks owing to customers' sensitivity to fraud and the cost of fraud to the business. Fraud can target the agent, the customers, and the provider. It could be propagated by employees, external fraudsters and by rogue agents. Fraud threatens the perception of a service and has an adverse impact on its uptake and usage.

Key indicators to track and assess fraud risks within agent networks include:

- The percentage of agents who have experienced fraud within the last year;
- The percentage of agents who have experienced theft within the last year;
- The percentage of agents who experience theft by age of the outlet.

Figure 9. Proportion of agents who have experienced theft and fraud

Country	Theft	Fraud
Uganda	33%	53%
Tanzania	18%	42%
Kenya	15%	22%
Bangladesh	4%	22%
Senegal	15%	14%
Pakistan	10%	11%
Zambia	11%	12%
Indonesia	1%	2%

Source: ANA Data, Waves I and II

Figure 9 demonstrates that agents suffer from fraud more commonly than theft. Even in nascent markets, agents experience fraud and theft. Operating a cash-based business makes agents an easy target. Overall, these risks seem more prominent in African markets, with Uganda being the worst affected in terms of frauds at the customer-level, agent network-level, and at the provider-level. Whereas it is reasonable to expect that it should be possible to improve fraud management over time, this is not seen in the more mature markets, with Uganda reporting the highest rates in both waves as shown below.

Earlier *MicroSave* analysis showed that fraud evolves over time as a market matures. Furthermore, better-performing agents (that is, with more than 40 daily transactions) and those who have been in operation for more than three years suffer the most fraud. This is perhaps because of the higher number of transactions they conduct. In OTC markets, such as Bangladesh, our surveys indicate that incidences of phishing and other fraudulent SMS and counterfeit money present the greatest challenges.

Figure 10. Agents' fraud rates between Wave I and Wave II

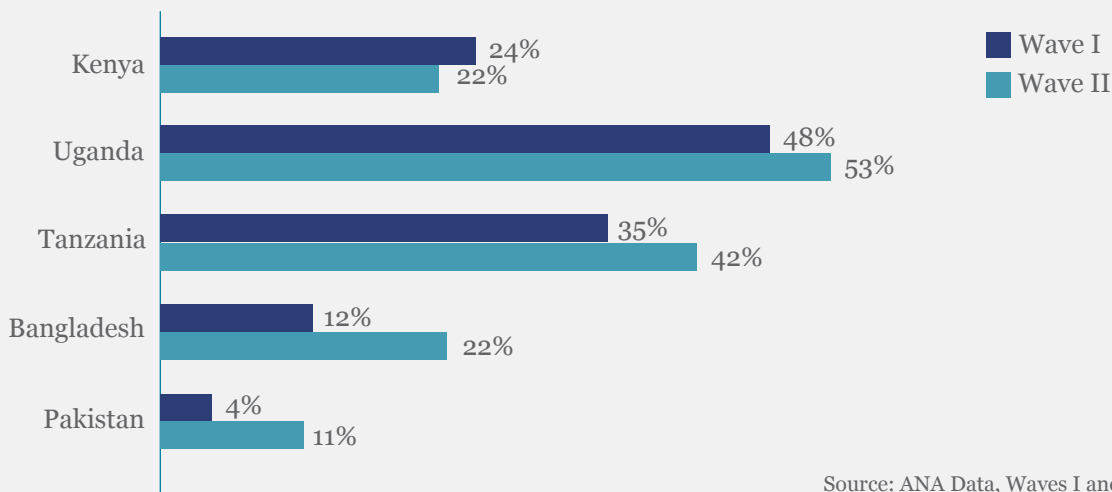| Country	Wave I	Wave II
Kenya	24%	22%
Uganda	48%	53%
Tanzania	35%	42%
Bangladesh	12%	22%
Pakistan	4%	11%

Source: ANA Data, Waves I and II

Figure 10 shows that between the two waves of research, with the exception of Kenya, the incidence of fraud at agents has increased significantly. This is partly arithmetic and reflects the much greater use of mobile money/agent banking over time. However, it also highlights the ongoing need to strengthen risk management, fraud detection, and prevention. The fact that Kenya's fraud incidence has declined partly relates to greater awareness of risk management and fraud prevention mechanisms. These mechanisms include stronger enforcement of KYC, velocity-mapping, data analytics, fraud prevention systems, sharing of intelligence between agents, among others. *MicroSave's Helix* Institute of Digital Finance has recommended a number of remedies that providers can adopt to mitigate fraud at the agent locations.

2.5 Liquidity Risk

Liquidity Risk is also referred to as solvency risk. Insufficient liquidity (lack of either e-float or cash) affects the agent's ability to transact and earn commissions. However, the greatest threat associated with agent illiquidity is the inability of customers to access their funds at a moment's notice, rather than the actual safety of those deposits. Customer trust in the service hinges on their ability to transact with their funds seamlessly and is undermined when agents cannot perform requested transactions.

Key indicators to assess or track liquidity risks at the agent outlet include:

• The percentage of customers who have faced e-float or cash outage at agent locations;

• The number of transactions denied because of lack of float.

Figure 11. Proportion of customers who have encountered agents without float/cash

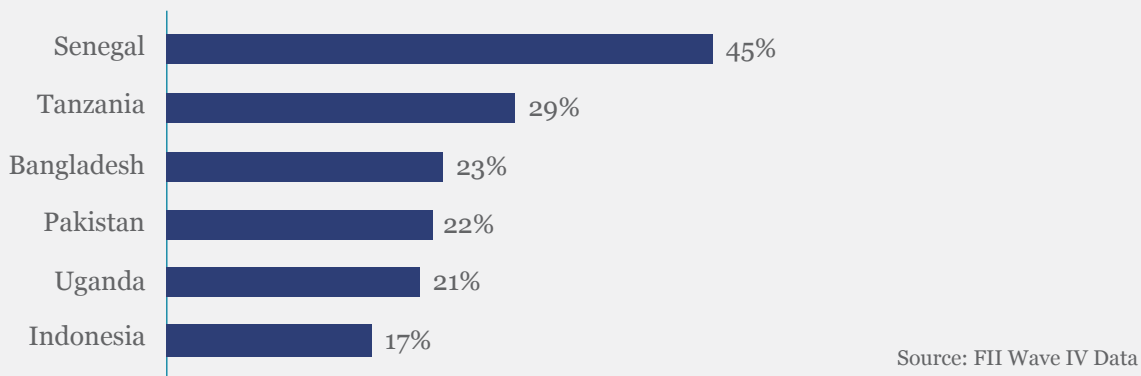| Country	Percentage
Senegal	45%
Tanzania	29%
Bangladesh	23%
Pakistan	22%
Uganda	21%
Indonesia	17%

Source: FII Wave IV Data

Figure 11 shows more than four in ten customers have faced denial of transactions in East Africa due to lack of agent liquidity. There are several reasons for this. Firstly is the limited delivery of cash or float, particularly in Kenya, which has strict controls over the movement of cash. In contrast, almost all agents in Bangladesh and Pakistan receive on-demand rebalancing services and liquidity delivery. Secondly, many agents in East Africa are non-exclusive, which means that they provide services to many providers. In most cases, absent agent level interoperability, this implies that the agents need to retain two or more e-floats – and so have to spread their limited capital across these.

There are several innovative ways to manage liquidity that are over and above the physical delivery of cash and e-float. All start with great information management. These include:

• Improving options for agent rebalancing through using local sources of cash – 'super agents';

• Sharing commissions with agent network managers – 'master agents';

• Informal mechanisms of liquidity management between agents;

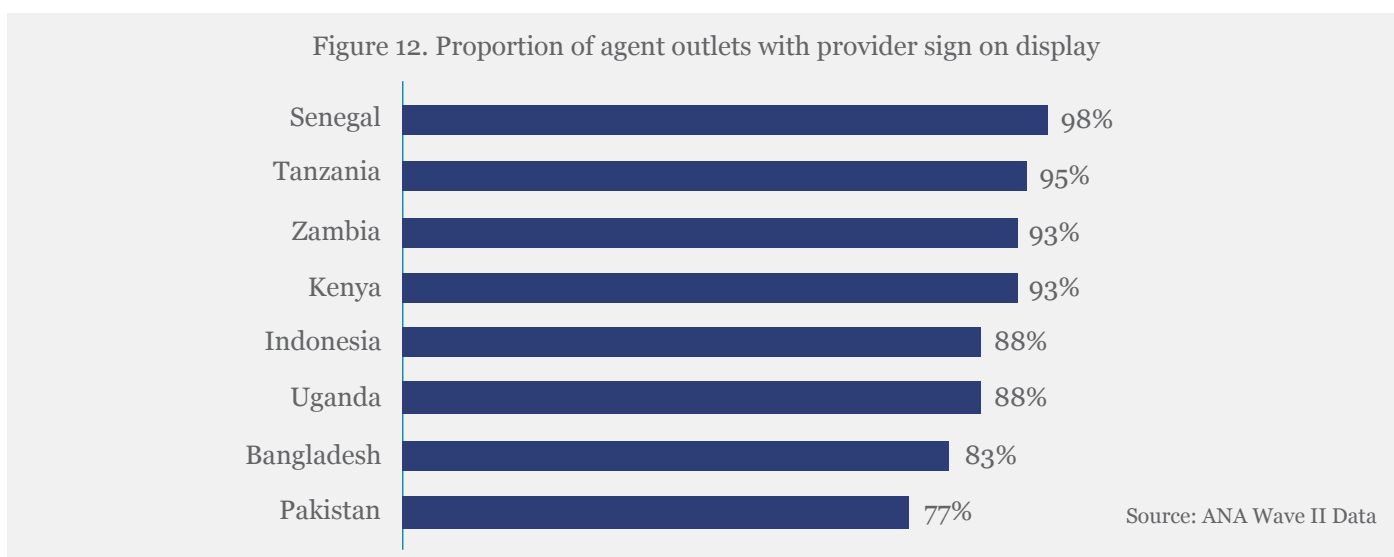• Improving the ecosystem for agents to spend and advance float.

We explore these mechanisms in greater depth in the paper 'Fitting the Pieces of the Liquidity Management Puzzle'.

2.6 Reputational Risks

Reputational Risks refer to the possible loss of the organisation's reputational capital, which lead to, among others, lost revenue, increased operating, capital or regulatory costs, or destruction of shareholder value. Reputation is a company's most valuable asset, and it can be adversely affected even if the company is ultimately not found culpable. Partnerships in a DFS arrangement always face reputational risk because of limited provider control over the value added by their partners. Too often partners undermine a provider's brand, because of poor reliability and quality of service.

The key indicators to assess reputational risks in agent networks include:

• The percentage of agents who display provider colours and/or provider sign;

• The percentage of customers who report being overcharged by an agent for performing transactions;

• The percentage of customers who are satisfied with provider's agent-related complaint resolution mechanisms.

Figure 12. Proportion of agent outlets with provider sign on display

Country	Percentage
Senegal	98%
Tanzania	95%
Zambia	93%
Kenya	93%
Indonesia	88%
Uganda	88%
Bangladesh	83%
Pakistan	77%

Source: ANA Wave II Data

Most DFS providers strive to deliver a consistent customer experience across different markets. Figure 12 demonstrates providers' requirement that all agent businesses display a provider sign at their outlets. In Africa, standardised branding often includes painting the outlet in addition to displaying signs; whereas in Asia, owing to the high rates of non-dedication, signage is preferred.

Figure 13. Proportion of customers who reported agent overcharging

Country	Percentage
Uganda	24%
Kenya	13%
Tanzania	11%
Pakistan	5%
Bangladesh	3%
Indonesia	2%
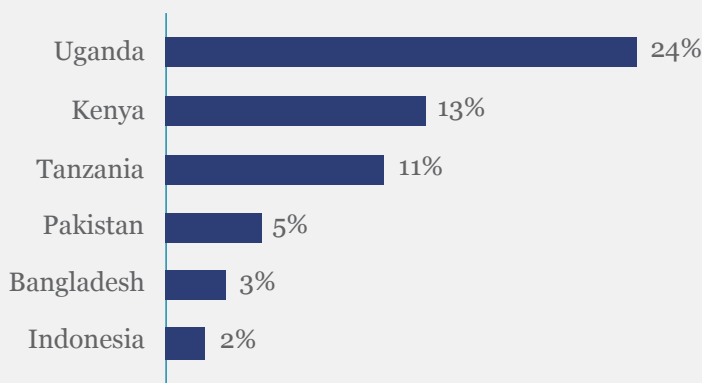
Source: FII Wave IV Data

Agents who impose surcharges on DFS users can have an impact on customer satisfaction. A notable proportion of customers, particularly in Uganda, report being overcharged by an agent while conducting transactions. The practice is common in both urban and rural areas. In the case of Uganda, informal charges are common due to a large number of OTC transactions caused by high inter-network charges between the two dominant mobile money providers. Such informal charges also exist due to the presence of a rural or refugee population, which is semi-literate and requires agent assistance.

In Bangladesh, most agents do charge additional "unauthorised fees", but these are considered normal (and possibly even acceptable) by customers who require agent assistance as they conduct OTC transactions. It is important to note that the data in these reports are likely to be understated or incomplete where the display of official tariff rates is limited, such as Indonesia and Pakistan (Figure 1).

Figure 14. Proportion of customers satisfied with resolution of their agent-related complaints

Country	Percentage
Uganda	71%
Bangladesh	66%
Tanzania	56%
Kenya	55%
Pakistan	6%

Source: FII Wave IV Data (satisfactory resolution of agent committing fraud, overcharging, and not having enough float to conduct transactions)

With the exception of Pakistan, the majority of customers report being satisfied with the resolution of their agent-related complaints. The case of Pakistan is unique. Our survey in 2017 found out that approximately 93% of the agents are aware of support options, such as the call centres but there is no consensus as to the satisfaction with the support services. In addition, the same market has approximately 80% of its agents receiving visits from the provider's staff or a representative. While there is room for improvement, providers seem to be aware of the importance to safeguard and build their reputation through adequate customer complaint resolution mechanisms.
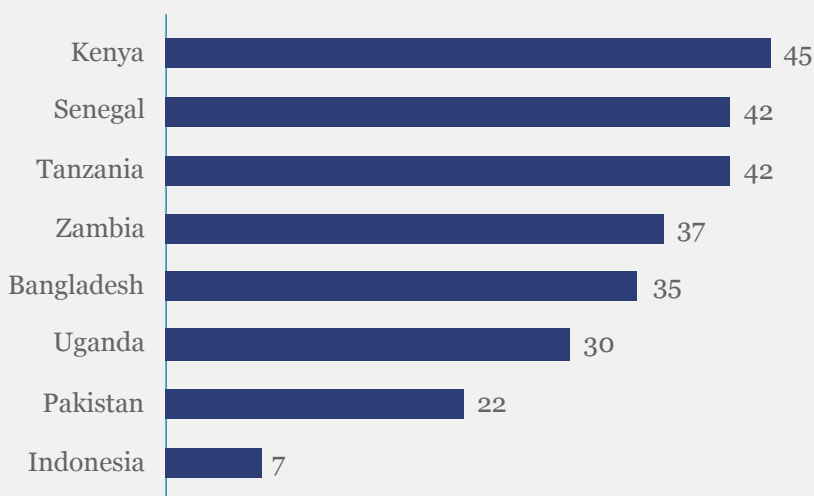
2.7 Financial Risks

Financial Risks refer to the uncertainties surrounding the sustainability of the agency business. DFS provider shareholders or investors stand to lose money by investing in an unviable deployment that cannot get off the ground due to the insufficient value proposition for the agent (and customer), which makes the network unsustainable.

Key indicators to assess or track financial risk in the agent network

• The average transaction volumes at the agent location;

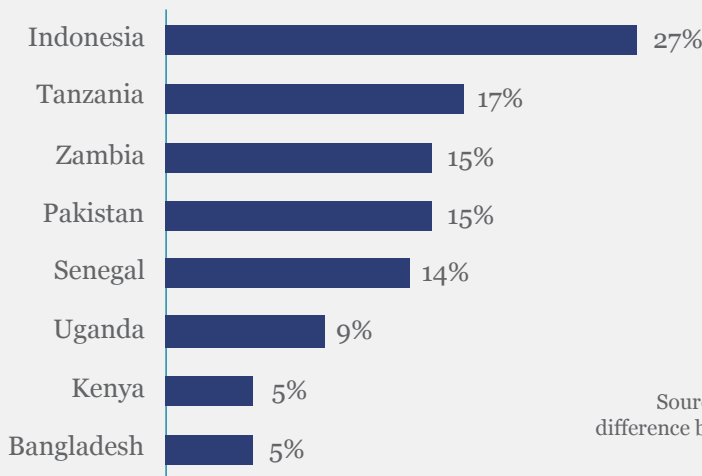• The percentage of unprofitable agent businesses in the network.

Figure 15. Average number of daily transactions at the outlet

Country	
Kenya	45
Senegal	42
Tanzania	42
Zambia	37
Bangladesh	35
Uganda	30
Pakistan	22
Indonesia	7

Source: ANA Wave II Data

As providers aim for increased reach and distribution of financial services, agents, who invest their own capital in providers' e-float, aim to earn a return on this investment. Agent remuneration is generally commission-based. Thus their revenues depend on both volumes and values of transactions. Many providers struggle to strike the right balance between the size of the agent network and customer base, which results in quite a range (7 to 45) in the average number of daily transactions conducted by agents. In striking the balance, providers need to be cognisant that agency location (that is, whether in a rural or urban area) directly influences average daily transactions. Providers need to go further and analyse the proportion of active agents to active customers on their platform.

Figure 16. Proportion of agents whose businesses are not profitable

Country	
Indonesia	27%
Tanzania	17%
Zambia	15%
Pakistan	15%
Senegal	14%
Uganda	9%
Kenya	5%
Bangladesh	5%

Source: ANA Wave II Data (profits calculated as the difference between self-reported outlet-level revenues and costs agents attributed to their DFS business)

Agents who operate DFS business at a loss are unlikely to continue investing in their business and will eventually turn dormant, wasting provider resources spent on their recruitment, training, and support. Providers might monitor underperforming agents, and depending on the drivers of underperformance can either stimulate their activity or discontinue serving them entirely.

In the case of Indonesia, our 2017 ANA surveys point out that a lack of transparency is partly to blame for the low profitability. In this market, most providers do not issue official tariff sheets for display at the agent location and transaction charges are left to the agent and customer to negotiate. As a result, more customers opt to visit agent outlets who display tariff sheets. This results in cases where agents who display their tariff sheet performing, on average, two more daily transactions than those who do not – thus being more profitable. However, the overall agent profitability depends on transaction numbers, as agents in Pakistan have come to realise, owing to the low uptake levels in the market. Providers are advised to consider incentivising agents to educate customers about DFS products and services and help increase uptake.

3. Way Forward for agency banking stakeholders

Successful deployments depend on having reliable, sustainable, appropriate agent networks to distribute the DFS services. Most providers face a myriad of challenges as they work to establish sustainable agent networks. Risk is a challenge that cannot be ignored owing to the stakeholders and partnerships involved in operating an agency business.

To mitigate risks, providers and master agents should actively offer appropriate training, support, and either offer monitoring visits or phone call-support, or both, to the agents. Providers may consider outsourcing the services to a third-party as has been the case with M-Pesa, which has contracted Top Image to train and monitor their agents, or using sophisticated platforms that allow close tracking of agent behaviour and outlets.

Providers and master agents should consistently monitor a range of indicators as derived from the ANA research (see table below). Some of these measures need to be monitored through site visits, others through research, and still others through systems. However, providing high-quality, reliable financial services is key to driving trust and continuing usage.

Table 1.Types of risks and their indicators

Risks	Indicators
Regulatory	• Percentage of agents displaying tariff sheets and ID • Percentage of agent-assisted transaction
Technological	• Frequency and severity of downtime at agents' outlet • Percentage of customers who experience downtime while using DFS
Operational	• Percentage of agents who have not received training • Percentage of agents who do not receive support visits • Percentage of agents unaware of call centre • Percentage of outlets run by operators or handlers • Level of agents' educational attainment
Fraud	• Percentage of agents who have experienced fraud within the last year • Percentage of agents who have experienced theft within the last year • Percentage of agents who experience theft by age of the outlet
Liquidity	• Percentage of customers who have faced e-float or cash outage at agents' location
Reputation	• Percentage of agents who display provider colours and/or provider sign • Percentage of customers who report being overcharged by an agent for performing transactions • Percentage of customers who are satisfied with provider's agent-related complaint resolution mechanisms
Financial	• Average transaction volumes at the agent location • Percentage of unprofitable agent businesses in the network

Appendix A: Agent Network Accelerator (ANA) Studies

The Agent Network Accelerator (ANA) project is managed by *MicroSave*, with funding from the Bill & Melinda Gates Foundation, the United Nations Capital Development Fund (UNCDF), Financial Sector Deepening – Uganda (FSDU), and Karandaaz Pakistan. It is the largest research project on agent networks in the world that aims to increase the global understanding of how to build and manage sustainable cash-in/cash-out (CICO) networks in poor communities and identify factors that drive their success or failure. The research is designed to distil the most salient aspects of strategic operations in agent network management for the DFS industry, including agent network structure, agent operations, agent viability, liquidity management, quality of provider-support, and agent compliance.

MicroSave's Helix Institute of Digital Finance launched the project in 2013. Since then, The *Helix* has conducted over 38,700 agent interviews in 11 countries, providing assessments to over 40 leading agent networks around the world.

We carried out quantitative assessments in countries where the population of active agents exceeded 10,000 according to recent and reliable data. Where networks were nascent, the team carried out qualitative strategic assessments, interviewing providers, agents, and other DFS stakeholders (See Table A).

Table A. Study type and sample size, by country and year of data collection

Country	Year				
	2013	2014	2015	2016	2017
Bangladesh		Quantitative (2841)*		Quantitative (2309)*	
Benin			Qualitative		
India[1]			Quantitative (4437)*		Quantitative (3199)*
Indonesia		Qualitative			Quantitative (1383)*
Kenya	Quantitative (3220)*	Quantitative (4126)*			
Nigeria		Qualitative		Qualitative	
Pakistan		Quantitative (3151)*			Quantitative (2563)*
Senegal			Quantitative (1639)*		
Tanzania	Quantitative (2052)		Quantitative (2066)		
Uganda	Quantitative (2028)		Quantitative (2288)		
Zambia			Quantitative (1350)*		

*Includes booster sample for key providers. Outside Tanzania and Uganda, core random samples were 'boosted' with additional interviews for specific providers in order to obtain statistically relevant sample size.

---

1. Second wave India data was being finalised at the time of paper writing. Because the Indian market underwent a dramatic transition following the demonetization of INR 500 and INR 1,000 denomination banknotes, papers do not present data from 2015 as it has lost relevance.

While *MicroSave*'s *Helix* Institute of Digital Finance directly conducted the qualitative agent network strategic assessments, The *Helix* managed the quantitative studies with data collection outsourced to local data collection and management firms.

Between 2013 and mid-2015, data collection, quality control, data cleaning and analysis were outsourced to the local survey firms. The *Helix* provided the survey teams with the core ANA questionnaire which was administered using Computer Assisted Personal Interviewing (CAPI)[2]. From September 2015, the survey was streamlined to reduce the number of questions and in-house most of data quality control, data cleaning procedures, as well as all data analysis.

Across all countries, we designed the ANA surveys to be nationally representative at the country, rural/urban, and provider levels. The study methodology varied slightly from country to country depending on the agent population data available and which The *Helix* and the local survey firms were able to obtain. In Kenya, Tanzania, and Uganda, we used agent censuses conducted by BrandFusion as sample frames for the studies. In other countries, The *Helix* compiled publicly available data on agent locations and solicited agent lists from the countries' leading providers.

The sampling strategy in all countries was two-stage stratified cluster random sampling, with administrative units being stratified by region and rural/urban classification[3], then drawn at random. Agents are subsequently sampled from the randomly chosen administrative units in proportion to the agent population. In markets where agents serve multiple providers, agents were interviewed about their operations for a provider, randomly selected from the list of all providers for whom the agent has conducted at least one transaction in the preceding 30 days.

Each study was analysed to produce publicly available country reports[4], which contain essential information about the performance of agents and providers who manage them. Leading DFS providers also received confidential reports with business intelligence comparing their network to competitors. In addition to country and provider reports, *MicroSave*'s *Helix* Institute of Digital Finance has synthesised ANA data to enhance industry understanding of best-practices and benchmarks for building and managing agent networks across the globe in blogs as well as the following publications[5]:

- Designing Successful Distribution Strategies for Digital Money helps providers understand their goals for building an agent network. It subsequently helps them think through the model of building an agent network that best fits their needs.

- Successful Agent Networks builds on the understanding that networks are the channel providers used to deliver distinct value propositions to different customer target groups. It lays out a comprehensive analytical framework for analysing agent network success along several key dimensions.

- Agents Count: The True Size of Agent Networks in Leading Digital Finance Countries lays out a framework for understanding agent network size, drawing the distinction between agent tills and agent outlets. It also discusses agent activity rates and calculates customer to agent outlet ratios, providing updated benchmarks for the industry.

---

2. ANA questionnaires were adjusted to capture market specificities, while preserving the core of the survey.

3. National census rural and urban classifications were used in Pakistan and Indonesia. In Africa, larger and densely populated regional, provincial and district centres are classified as "urban" whereas sub-districts or locations outside major districts are classified as "rural". Similarly, in [4]Bangladesh, Thana and Village Headquarters are classified as "rural" with eight divisional headquarters and districts classified as "urban".

4. Tanzania Country Report based on 2015 data remained unpublished due to the Tanzanian government's restrictions on conducting nationally representative surveys.

5. *MicroSave*'s *Helix* Institute of Digital Finance has also authored the following landmark pieces on DFS product and business model evolution:

- Finclusion to Fintech: Fintech Product Development for Low-Income Markets This paper is designed to help fintech innovators understand the unique money management strategies used by low-income people in the developing world. It summarises insights from 15 years of financial inclusion research and suggests how cutting-edge technological innovation in the fintech industry could better serve developing world markets.
- Redesigning Big Data for Digital Finance This paper proposes important strategies that digital finance providers (mobile network operators [MNOs], banks and third parties) should adopt to manage the influx of fintech (technology firms) players into the developing world. It argues that to compete or collaborate with fintech players, providers need to augment their customer data.
- OTC: A Digital Stepping Stone or a Dead-end Path? discusses the pros and cons of Over the Counter (OTC) transactions and argues that they should be seen as a stepping stone to mobile money account adoption and use.

This compilation of papers draws on the rich ANA data, with the exception of India, to benchmark agent training and support, liquidity management strategies, as well as risk levels across agent networks. The compilation also takes into account the framework presented in the [Successful Agent Networks](#) paper. Each paper uses a distinct analytical approach:

- **Benchmarking Agent Support** classifies 27 leading providers into three groups, according to the providers' agent network management approach: direct, indirect, or hybrid. It further analyses trends between Wave I data collection (conducted 2013–2014)[6] and Wave II data collection (conducted 2015–2017). Slight variations in data collection approaches across markets as well as differences in levels of market maturity constitute the methodological limitations of this analytic approach. Nonetheless, we believe that the data offers interesting, even if indicative, evidence on the levels of training and support each agent network management models can achieve as well as the effectiveness of agent training and support.

- **Fitting Pieces of the Liquidity Management Puzzle** relies primarily on the latest wave of data collection for each country and country-level analysis, supplementing it with trend-related data as well as provider-level nuance.

- **Measuring Risks in Agent Networks** draws on both supply-side (ANA) and demand-side (Financial Inclusion Insights, FII) data to propose indicators for different types of risks. Both datasets are analysed at the country-level to offer country-wide benchmarks for providers to use.

Appendix B: Relationship Between Provider Support and Agent Performance Metrics

	Initial Training	Refresher	Support Visits
Branding (provider sign and/or colours)	Indirect Waves I & II Hybrid Wave I	Indirect Waves I & II Hybrid Wave II	Indirect Wave I Hybrid Wave I
Professionalism (business hours, call centre number)	Direct Wave II Indirect Waves I & II	Indirect Waves I & II Hybrid Wave II	Hybrid Wave II
Compliance (tariff sheet & agent ID)	Indirect Waves I & II	Direct Wave II Indirect Waves I & II Hybrid Wave II	
Transactions denied due to lack of liquidity	Hybrid Wave II		
Transactions volume		Indirect Wave I Hybrid Wave II	
Profit satisfaction / Retention		Hybrid Wave I	Hybrid Waves I & II

Information in the table is based on statistical tests of groups who receive vs. do not receive various support services (induction, refresher training and support visits) from the provider. Tests were conducted for each of the 27 leading providers in ANA research countries. Results were examined by agent network management model and presented in the table if the bulk of providers belonging to a particular model showed statistically significant differences.

---

6. Note that we have included the 2014 Kenya data collection, carried out in December 2014, in Wave II.