Do agent networks help to boost savings?

Effects on institutional deposit mobilization and customer saving behaviour

By Sinja Buri, Fabian Reitzug

CONTRIBUTING AUTHORS:
SOREN HEITMANN AND EDUARDO MARINHO

mastercard foundation

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Executive Summary

Savings benefit both the providers of Digital Financial Services (DFS) and their customers. Customers who use DFS accounts to save money can improve their financial resilience, build a buffer against income shocks, and be in a better position to invest and engage in long-term financial planning.

Financial Service Providers (FSP) that have more savers in their portfolio can profit by generating more income and lowering their cost of funds. The claim that agents can drive savings mobilization has been a major incentive for introducing agent networks. Yet, the question of whether agent networks can boost savings has rarely been systematically assessed.

This report showcases IFC research with Baobab Senegal (BSN) and Madagascar (BMG) and findings from a longitudinal study with nine microfinance institutions in Sub-Saharan Africa. The report explores the impact of agent networks on:

- **Changes in Transaction Activity of Customers:** Agent adoption and usage increase the number of transactions and the value of transactions at Financial Service Providers. Customers in Senegal increased the number of monthly transactions by 32% (average monthly values by 21%) and customers in Madagascar by 59% (average monthly values by 62%) after agent adoption. A randomized experiment in Senegal confirms increased customer activity through agents. Over the period of a year, individuals directed to agents made 1.4 more deposits and 1.5 more withdrawals than those directed to branches.

- **Changes in Deposit Mobilization:** Total deposits at FSPs kept increasing with and after the introduction of an agent network. During the three years after agent adoption total deposits doubled for BSN and tripled for BMG.

- **Changes in Savings Behavior of Customers:** The proportion of customers that consistently increase their account balances over time (pursuing a clear savings strategy) or consistently decrease their account balances (un-savings strategy) remained mostly unchanged at about 20% in Senegal and 7% in Madagascar after the introduction of agents. However, the share of inactive customers increased, implying that changes in the size of agent networks only affect the relative share of sporadic and inactive users but not the proportions of active customers with clear savings or un-savings strategies.

The key takeaway from analyses is that agent banking contributes to increased customer activity and **institution-level deposit mobilization** in Madagascar and Senegal.

In Madagascar, **individual-level deposit mobilization** was observed and average per customer balances in the three years after full agent network adoption increased threefold from 50 USD to 150 USD.

In Senegal, balances remained constant with an average value of 100 USD per customer. Since institution-level balances grow after agent roll out but average savings per customer remain flat, balance growth at the aggregate level must be driven by customer growth rather than improved deposit mobilization among existing customers. In both institutions, net deposits at branches are not crowded out, but instead complemented, by net deposits through agents.

Savings mobilization through agent networks is therefore possible for financial service providers, but a number of mechanisms determine if agents succeed at mobilizing savings. Agent banking may increase deposit mobilization through an increase of savings among existing customers and an increase in savings as new customers are added. However, agents may also hamper deposit mobilization. By making transactions more convenient, customers can both deposit and withdraw more easily. Thus, they may find it hard to resist demands from relatives or the temptation to spend money prematurely. How these mechanisms play out varies between different contexts.

In sum, agents cannot be expected to boost savings in every context. Factoring in how culture, products, incentives, pricing and behaviors affect savings can help encourage customers to save.

Providers can realize agent networks' potential for savings mobilization by following good practices. Key recommendations they should observe to maximize value go beyond the introduction of agents. There are various strategies to facilitate savings mobilization.

Knowing your customer base is essential. IFC has developed a method called 'Savings DNA' to help financial institutions identify 'good savers' and to segment customer portfolios based on patterns of financial transaction behavior. Using the 'Savings DNA' framework, institutions can target and communicate with defined customer segments such as good savers or inactive customers through personalized messages that help build trust and encourage good savings behavior. Introducing specific 'savings-enhancing' products such as commitment savings accounts or direct deposits of salaries and social grant transfers into bank accounts also offer opportunities to enhance saving mobilization. FSPs are more likely to succeed through strategies that include a combination of complementing components.

Introduction

Agent banking has played a key role encouraging people to use financial services. Through increased accessibility and convenience, agents have expanded financial inclusion to millions of previously unbanked customers in Sub-Saharan Africa.[1] Agent banking has the potential to significantly enhance the value proposition of financial institutions. With agents located in close proximity, customers can save the time and cost of traveling to a faraway branch; they can avoid long queues and congested branches; and they can benefit from the opportunity to deposit even small amounts of money conveniently and often for free.

Still, launching an agent network is a big investment for a financial service provider. Investments are context specific, but the average investment is at least 2 to 3 million USD. To become financially sustainable, agents need to drive income either directly through fees or indirectly through cross-selling of other services or through deposit mobilization. Deposit mobilization has been influential in decisions about the design and implementation of agent networks. In IFC's longitudinal study with microfinance institutions in Sub-Saharan Africa that introduced agent banking networks, seven out of nine providers stated that higher deposit mobilization was one of their primary objectives for the network before adopting the channel. Over time and after introducing agent networks, the objective of deposit mobilization increased in importance, and all nine providers considered it a goal at the end of the study four years later.[2]

Savings mobilization is particularly important when DFS is provided by a bank or microfinance institution. Mobile Network Operators (MNO) can help to sustain their agent networks through person-to-person transfer fees and by selling airtime, but banks do not have the same options. Banks, however, engage in lending activities where savings mobilization through digital financial services may significantly lower the cost of funds. Funds can be intermediated for significant margins and profit[3] as savings bear less interest expense than borrowing on the financial market domestically or abroad. Hence, deposit mobilization can represent a way for banks to make agent networks viable.

Beyond benefits of intermediation for banks, both MNOs and banks benefit from savings mobilization because regular savers are more predictable, which should reduce the volatility of an FSPs' portfolio. Lastly, maintaining deposits in the system represents opportunities for MNOs to cross-sell products such as insurance, loans or airtime.

Figure 1: Share of adult population that saved money in the past year

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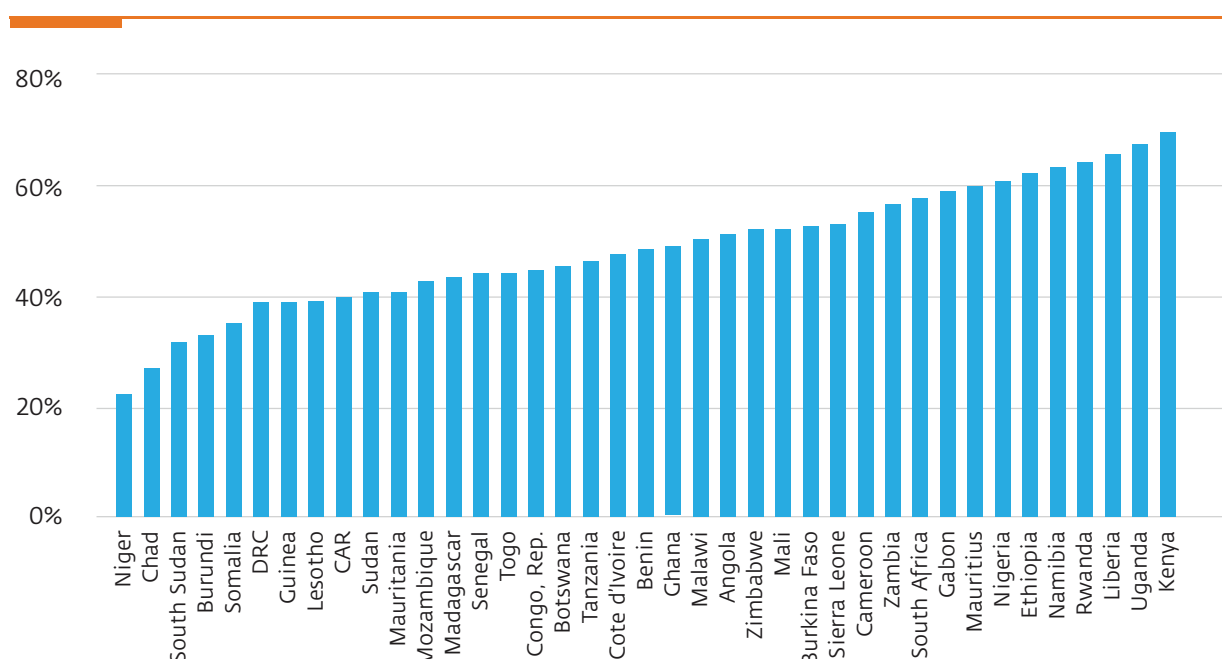
1. Suri and Jack, 2016. The long-run poverty and gender impacts of mobile money
2. IFC, 2018: Aligning Expectations: The Business Case for Digital Financial Services
3. For instance, a bank that would otherwise borrow for 8% and mobilizes 10 million USD in deposits, of which it lends out 8 million paying 1% in interest on deposits, earns 0.56 million as indirect income through lower cost of funds.

Pursuing savings mobilization through agents can be an attractive strategy for several reasons. Saving is less common on the African continent than in developed countries and savings needs are not fully addressed through traditional banks, especially among low income populations. While nearly 80% of respondents in developed countries said they have saved either formally or informally, just 25% of Nigerians, and 45% of Senegalese and Madagascans saved, according to Global Findex database 2017. Only countries such as Kenya (70%) perform at the level of developed countries.

Traditional banking services often do not address the savings needs of low-income populations. Evidence from Kenya suggests that respondents do not trust banks, face issues of service reliability and pay high withdrawal fees.[4] Digital financial services may therefore, be more effective in addressing the needs of low-income savers, helping them to build a buffer against income shocks, enabling future investment, and allowing for long-term financial planning. IFC research in Ivory Coast finds that farmers who save money, either formally or informally, are better able to feed their families.[5] This finding even holds for farmers in the top income quartile.

There are benefits to deposit mobilization through agent banking from both a provider and customer perspective. However, a comprehensive assessment of whether agent networks actually do mobilize savings has rarely been conducted. This report proposes to answer the question and determine which mechanisms are most beneficial.

When BSN and BMG implemented agent banking, they sought to expand access, mobilize deposits, and lower operational costs. In Madagascar, Baobab aimed at mobilizing 5% of deposits through the digital channel. Both subsidiaries used the channel for new innovative products such as nano loans. Financial sustainability of agent networks is an objective in both countries and deposit mobilization is viewed as an opportunity for cross-selling, and access to cheaper sources of funds to support ongoing lending.

IFC assessed the impact of agents on savings in collaboration with BMG and BSN by analyzing financial transaction data from before, during and after agent rollout. An IFC-led randomized experiment in Senegal analyzes the impact of encouraging new customers to use savings accounts with BSN agents using metrics such as account adoption, transaction behavior and activity on these accounts, as well as the impact on savings account balances.

To determine if agent networks successfully boost savings, a comprehensive analysis of all metrics is needed.

Agents make financial transactions easier for customers through increased accessibility and convenience. Unsurprisingly, providers see that the number of transactions is increasing with the roll out of an agent network. However, transaction behavior does not equal savings behavior. Therefore, after presenting evidence below that customer activity is developing positively with the introduction of an agent network, the subsequent section dives deeper into how account balances and hence, deposit mobilization, is affected by agent usage. The last results section then introduces a way to identify and classify customers by their savings strategies and to track how an institution's portfolio savings strategies change over time after the introduction and adoption of agent banking. The discussion section highlights mechanisms through which agents may contribute to increased or reduced savings by individuals and the conclusion summarizes the lessons learned.

About the Partnership for Financial Inclusion:

The IFC-Mastercard foundation partnership is a $37.4 million joint six-year initiative to expand microfinance and to advance digital financial services in Sub-Saharan Africa. The collaboration pursues an extensive research and learning agenda to develop and test innovative business models for financial inclusion. Results from three innovative engagements are presented in this paper:

- Data Analytics Collaboration with Baobab Africa – multi-year advisory projects with the institution's subsidiaries in Madagascar and Senegal, which included customer and agent-level research using transactional data analytics.

- Randomized Controlled Trial on Banking with Agents in Senegal – randomized controlled trial with Baobab (formerly Microcred) Senegal studying the effects of access to agent banking among individuals who were encouraged to open an account and to subsequently transact at a banking agent or a branch of the institution.

- The MFI longitudinal study – a four-year study to extract and share lessons from nine microfinance institutions in Sub-Saharan Africa (including Baobab Senegal and Madagascar) as they implement agent banking and mobile banking solutions.

4 Dupas et al., 2014. *Challenges in Banking the Rural Poor: Evidence from Kenya's Western Province*
5 IFC, 2016. *Opportunities for Digital Financial Services in the Cocoa Value Chain in Côte d'Ivoire: Insights from New Data*

Savings

Defining savings

Savings is formally defined as deferred consumption involving an active decision to set aside money and leave it untouched for a period of time. Savings is distinct from making a deposit since it requires an intent to store over time the money that is put into an account. Assessing savings mobilization requires suitable metrics for measuring savings.

Figure 2: Model of saving behavior
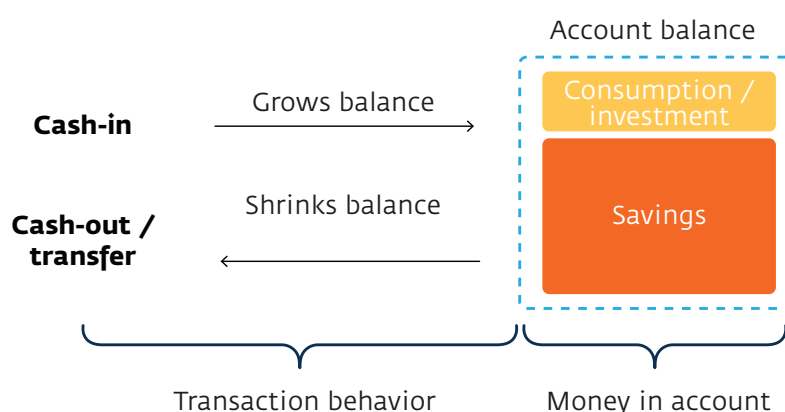
An individual's account balance is the net total of all of her deposits and withdrawals at a given point in time. Determining the share of an account balance that is actual savings (intended to be set aside for a longer period of time) from the share that is temporarily parked in the account (to be withdrawn soon for consumption or investment), is not always immediately obvious (Figure 2).

An institution mobilizes deposits when its account balances grow, but whether this represents savings mobilization, depends on whether customers allocate these funds to savings or other purposes. Given the overlapping nature of savings mobilization and deposit mobilization, we use the concepts interchangeably in this research paper.

Background: Why saving is so difficult for the poor

Across cultures, people understand the benefits of savings and setting aside money for retirement, their businesses, education, health expenditures, and many other purposes. However, saving does not come easy to everyone. Poor planning, lack of self-control and unforeseen expenditures are just some of the reasons why people fall short of putting money aside on a regular basis. Saving is particularly hard for the world's poorest. New research can shed light on their challenges:

- The limited financial resources associated with poverty lead to strong present bias -- when people's time-horizon is short, even accumulating significant savings in a month or year time seems unachievable. For instance, in a savings experiment in rural Kenya[6], only 19% of participants were at least somewhat patient. Because resource scarcity in the present looms large and the future is highly uncertain, low-income individuals may fail to appreciate the important future benefits of savings.

- Evidence also suggests that the burden of poverty contributes to anxiety and stress, making it particularly difficult for the poorest to focus on saving. Field research on Indian farmers[7] shows that in times of deprivation (i.e. shortly before harvest), farmers experienced reduced attention capacity equivalent to losing a full night of sleep. As a result, they may postpone or simply neglect opportunities to save.

FSPs will mobilize more savings when they address tendencies of present bias and offer services that reduce the cognitive costs of making savings decisions.

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6 Dupas et al., 2013. *Why Don't the Poor Save More? Evidence from Health Savings Experiments*
7 Mani et al., 2013. *Poverty Impedes Cognitive Function*

Measuring whether agents help mobilize savings

There are established measures that FSPs can use to understand whether their agents help to mobilize savings. These range from simple monitoring of the number and value of deposits per customer, and the value of account balances across the institution, to using advanced approaches that track customers' savings patterns over time. Each measure has its strengths and shortcomings.

Count, volume and change measures represent three different ways of approaching savings.

Count measures (e.g. transaction number) capture data on transaction frequency and can show how often people save but count measures do not capture the value of their savings.

Volume measures (e.g. sum of withdrawals) provide information on the amounts saved and account balances but are agnostic to consistent savings behavior – for instance, a customer who saves 1 USD every day and a customer who deposits 465 USD and withdraws it the next day, have the same average monthly balance (of 15.5 USD), though their savings behaviors are very different.

Change measures capture how customers vary their behavior over time, which provides a dynamic understanding of customer behavior, but they are imperfect tools for assessing accumulated savings.

Because savings mobilization objectives differ from FSP to FSP, it is important for each institution to choose the most appropriate measures for its purposes. For instance, if the objective is to identify good savers among customers, transaction frequency and volume can be helpful for determining the most active customers. Account balances point to people with the most money in their accounts, while growth trends and change measures provide insight on customers' savings behaviors and strategies.

Most commonly, customer savings are analyzed by reviewing account balances, which leads FSPs to focus on the amount of money in people's accounts rather than on how consistently they save. However, static measures such as account balances only give an incomplete picture of which customers exhibit consistent good savings behavior.

IFC developed a new, innovative approach called **'Savings DNA'** that helps capture the dynamic dimension of savings behavior. The 'Savings DNA' decodes people's savings profiles and their individual savings strategies based on their week-to-week history of transaction activity and fluctuations in their account balances. The framework complements conventional approaches by identifying customers with good savings habits.
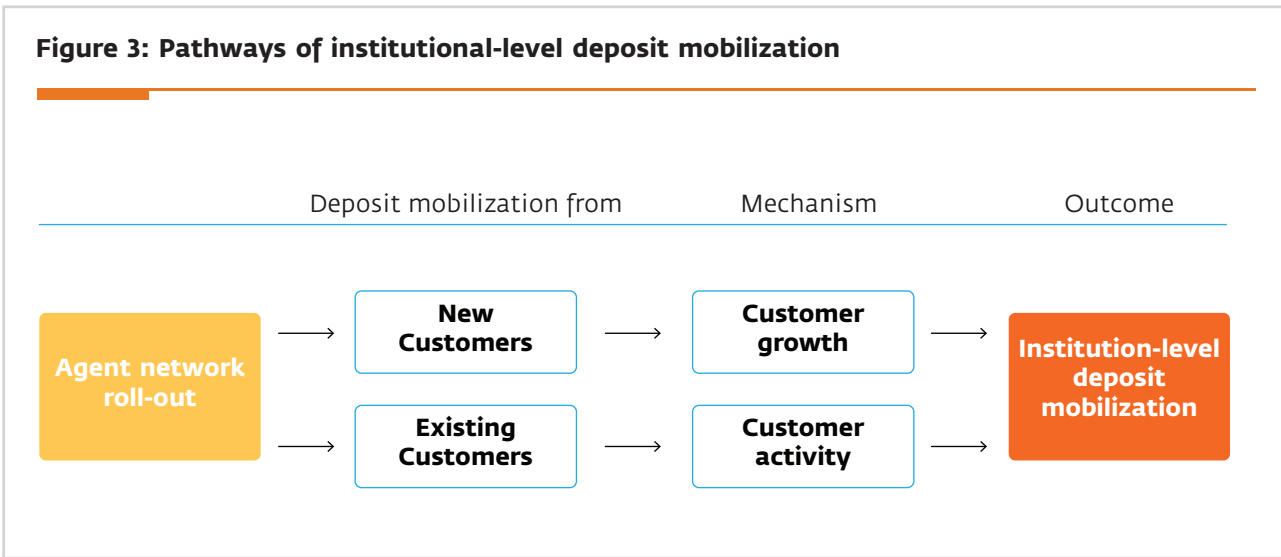
Good regular savers may be overlooked by traditional approaches since their balances can be modest. But because they show consistent and predictable behavior, small savers provide substantial benefits as they reduce volatility in the FSP's portfolio and become more important as they grow their savings over time. With the 'Savings DNA' approach (see section 'Changes of Savings Behavior of Customers'), individuals as well as entire customer portfolios can be studied according to their dominant savings traits, which complement analyses of account balance levels.

For providers, it is important to understand where savings mobilization happens and how. A challenge is that observed product use does not always correspond to intended product use. For instance, a client may put savings into her current account while using money that is in her savings account for consumption purposes. As a result, analyzing only one account type such as a savings account might yield an incomplete picture of savings behavior. When the poor with minimal financial access only have one account used for all purposes, distinguishing savings from current account activities is difficult to assess. And even where people have some level of financial inclusion, they may tend to segment financial needs by provider rather than product, e.g. having a current account with one provider and a savings account with another provider, which makes a holistic view of the customer and segmentation of who is a saver based on account and product type challenging.

Beyond a review of account activity, it is important to understand the mechanisms through which savings mobilization is achieved. An institution that aims at institution-level savings mobilization through agents can achieve this goal in two ways. First, agents can recruit new customers to open savings accounts. And second, agents can encourage existing customers to increase their activity, including their savings activity. Analyzing the mechanisms at play makes clear how agents boost institution-level savings.

Figure 3: Pathways of institutional-level deposit mobilization

Deposit mobilization from	Mechanism	Outcome

Agent network roll-out → New Customers → Customer growth → Institution-level deposit mobilization

Agent network roll-out → Existing Customers → Customer activity → Institution-level deposit mobilization

To summarize, when analyzing customers' savings behavior, FSPs need to establish an objective, such as: mobilizing deposits or increasing the proportion of good savers in their portfolio. Based on the goal, providers can choose appropriate volume, count and change measures in consideration of their respective strengths and limitations. Then, FSPs need to obtain relevant data to assess status and monitor progress towards the set objective. Providers likely already collect the data of interest but the effort of extracting and preparing it in a format that allows regular and easy monitoring should not be underestimated.
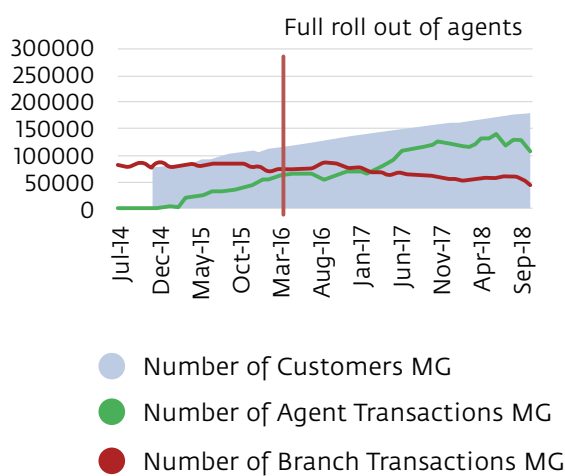
Changes in Transaction Behavior of Customers

BSN launched its agent banking network at the end of 2014 and BMG in early 2015. In Madagascar, the number of active[8] agents grew from 4 to 258 between 2015 and mid-2018, and in Senegal the number of active agents increased from 89 to 349 during the same period. Access to these agents changed service accessibility for customers in both countries and impacted customer activity, transaction volumes, and account balances.

The basis for changes in deposit mobilization and savings are individual customer transactions. To answer the core question how these were affected by agent networks, the analysis looked at transaction behavior from different viewpoints, tracking the development of agent and branch transactions in terms of number and value of transactions at the institution level as well as the individual customer level.

Institution level transaction activity

At an institution level, the number of agent and branch transactions, and the value of those transactions, show how customer activity changes when active agent networks are introduced.
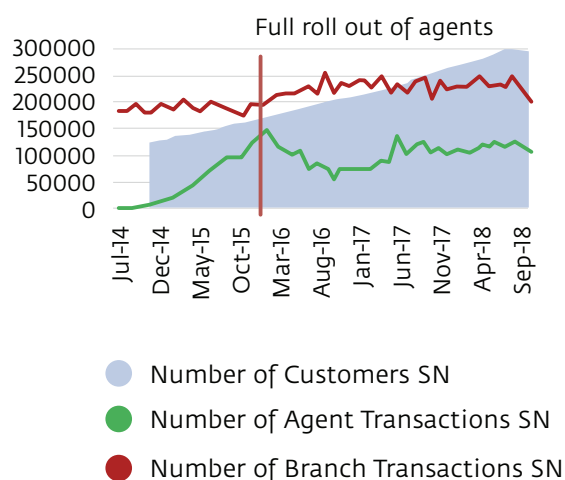
Figure 4: Number of agent & branch transactions in Madagascar

Figure 5: Number of agent & branch transactions in Senegal

Full roll out of agents

- Number of Customers MG
- Number of Agent Transactions MG
- Number of Branch Transactions MG

- Number of Customers SN
- Number of Agent Transactions SN
- Number of Branch Transactions SN

* Full roll out of agents in Madagascar in Mar 2016
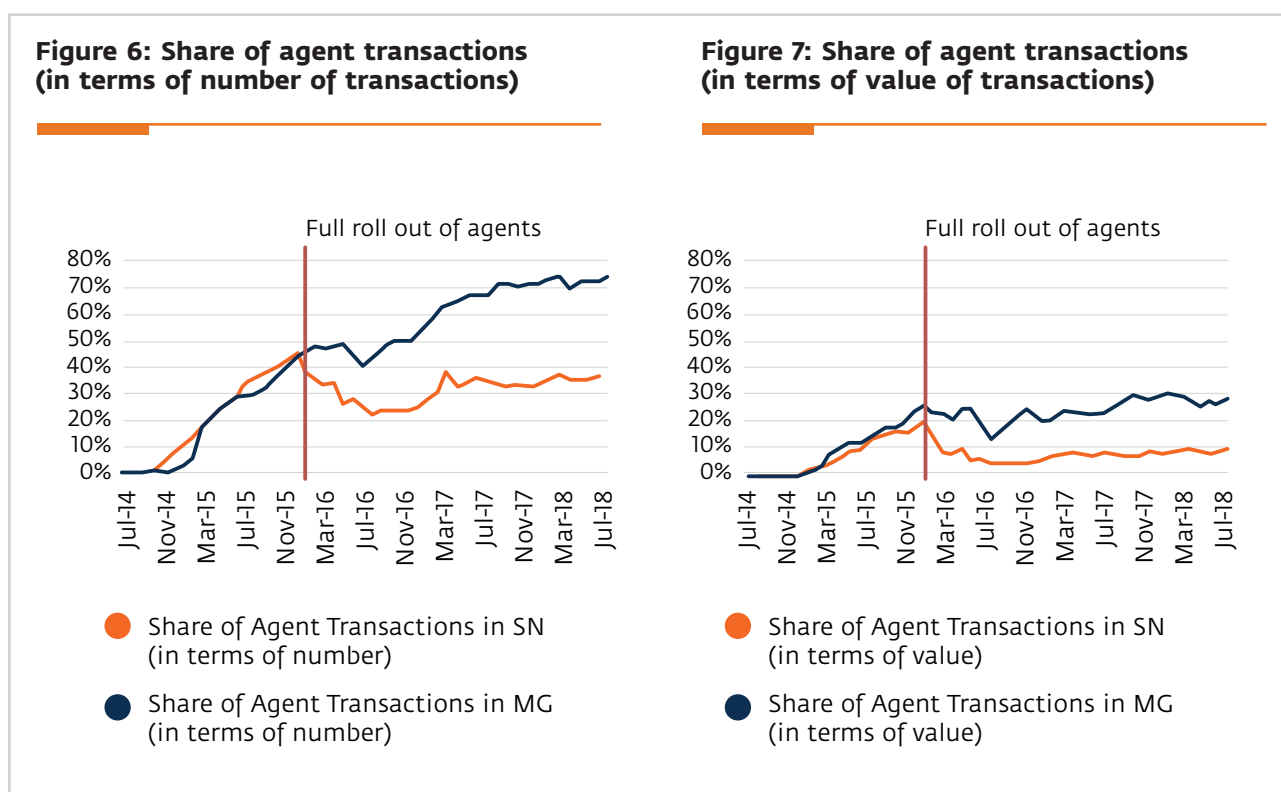** Full roll out of agents in Senegal in Jan 2016*

The **number of agent transactions** grew faster than the number of branch transactions. After initial growth of agent transactions, the number of monthly agent transactions started to stabilize 1 to 1.5 years after the number of active BSN and BMG agents peaked for the first time (defined as "full agent roll out"). The green lines in figure 4 and 5 show that the number of agent transactions grew rapidly with the introduction and roll out of agents in late 2014 (BSN) and 2015 (BMG) as well as during the subsequent year. In Madagascar (figure 4), agent transactions continued to grow after the agent roll out was completed. In Senegal (figure 5), agent transactions grew quickly during the first months of the roll out. Initially, free deposits meant that customers could avoid transaction fees by depositing into someone else's account instead of making a transfer. Amongst other reasons, this led to a substantial growth in agent use. Agent transactions would likely have continued to grow if BSN had not introduced deposit fees for transactions conducted at agents. After a series of deposit fee changes[9], agent transactions started dropping significantly at the beginning of 2016. They rebounded to pre-fee levels a few months later with the introduction of a nano loan product, which required repayments to be made at agents.

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8 *Active agents make at least one transaction per month.*
9 *Period of agent deposit fee changes - BSN introduced deposit fees at agents in three steps. After an unlimited number of free agent deposits per month, the number of free agent deposits per month was limited to 3 in June 2015 and to 2 in February 2016. Fees for all deposits at agents were ultimately introduced in June 2016. See also Figure 14 for a visual depiction of the period of agent deposit fee changes.*

These observations show how agent transactions generally increase quickly during agent roll out and for several months afterwards before their growth slows and stabilizes. Products that increase traffic at agents, such as nano loans that were introduced in both countries, can obviously prolong the growth of agent transactions. At the same time, results show how price-sensitive customers are, and that the pricing of agent transactions needs to be an important consideration when planning for customer activity.

While agent transactions generally increase, the number of branch transactions (red lines in figure 4 and 5) remains mostly constant or decreases. This is clearly the case in Madagascar (figure 4). At the beginning of 2017, two years after the introduction of agents in Madagascar, the number of transactions processed by agents surpassed the number of transactions processed at branches. In Senegal, a similar trend was developing before the introduction of agent deposit fees had an effect in early 2016. The new fee scheme changed the trajectory of transactions at agents and branches. Branch transactions subsequently grew in the months before stabilizing again at a higher level.

Figure 6: Share of agent transactions (in terms of number of transactions)

Figure 7: Share of agent transactions (in terms of value of transactions)

As figure 6 above shows, by February 2017 – less than two years after full rollout - BMG agents accounted for more than 50% of all transactions in Madagascar. And, after three years, BMG agents were handling about 70% of all transactions (blue line).

Senegal's experience was significantly different due to the detrimental impact of deposit fees on agent usage. Nevertheless, three years after full agent rollout in Senegal, agents were handling about 35% of all BSN transactions (orange line).

The value of transactions conducted with agents also grew, though it is considerably lower than the value of transactions conducted at branches. From the time that agents were first introduced until the period that their numbers peak for the first time ("full roll out"), the value of agent transactions quickly grew before stabilizing at a share of 10% in Senegal (orange line in figure 7) and 30% in Madagascar (blue line in figure 7).

Both, 10% and 30% are low shares when compared to the respective fractions of transaction numbers at agents in figure 6. Hence, even though customers are conducting more transactions at agents than at branches, the value of those agent transactions is smaller.

Figure 8: Value of agent and branch transactions in Madagascar

Full roll out of agents

200 000 000
150 000 000
100 000 000
50 000 000
-

Jun-14 Dec-14 Jun-15 Dec-15 Jun-16 Dec-16 Jun-17 Dec-17 Jun-18

● Value of Agent Transactions MG (USD)
● Value of Branch Transactions MG (USD)
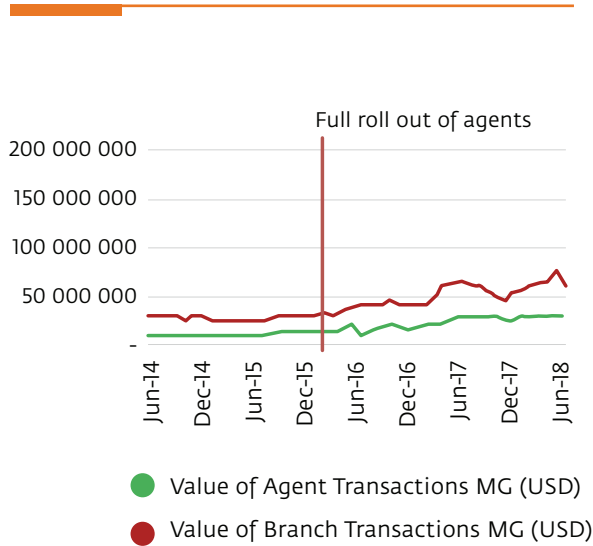
Figure 9: Value of agent and branch transactions in Senegal

Full roll out of agents

200 000 000
150 000 000
100 000 000
50 000 000
-

Jul-14 Jan-15 Jul-15 Jan-16 Jul-16 Jan-17 Jul-17 Jan-18 Jul-18

● Value of Agent Transactions SN (USD)
● Value of Branch Transactions SN (USD)
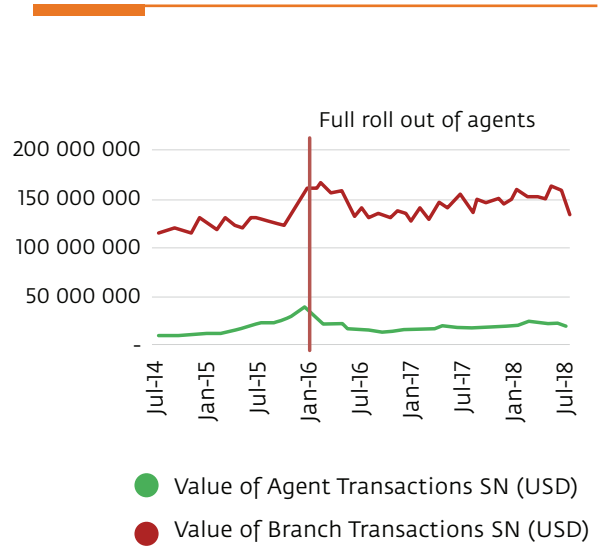
In Senegal, the **overall value transacted at agents** (green line in figure 9) is much lower than at branches (red line in figure 9) whereas the difference is less pronounced in Madagascar (green and red lines in figure 8). The reason for the difference is not entirely clear. It may be driven by the specific country context, different market maturity, or different behaviors of customers and agents in the respective countries.

There are several possible explanations for the dichotomy between agent transactions and the higher value of transactions conducted at branches. Customers may feel more comfortable doing larger transactions at branches because they perceive a higher level of privacy. Anecdotal evidence from interviews in Senegal supports this explanation. Another possibility is that agents may be reluctant to handle large transactions because it would empty their float accounts leaving them unable to serve other customers until they rebalance their accounts.

Individual level transaction activity

IFC analyzed changes in monthly transaction value and frequency at an institutional level and an individual customer level by comparing transaction behavior of existing microfinance customers before and after they used agents for the first time.

Figure 10: Number of transactions before and after individual agent adoption in Madagascar

Figure 11: Number of transactions before and after individual agent adoption in Senegal
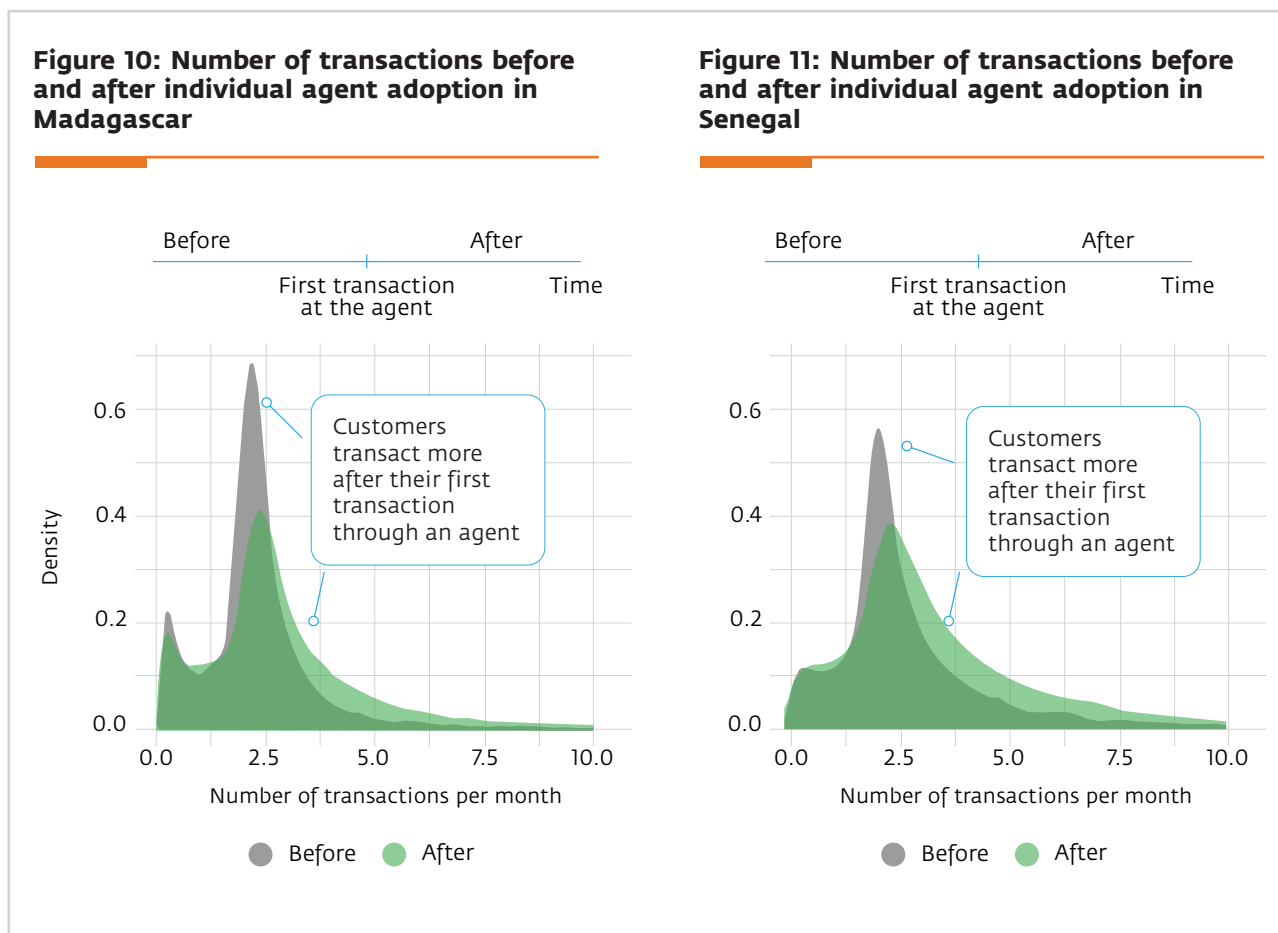
Figure 10 and 11 show the distribution of the total monthly number of transactions made by customers in Madagascar (figure 10) and Senegal (figure 11) before (distribution in grey) and after (distribution in green) they made their first transaction at an agent. The distribution of values after agent adoption (green area in figure 10 and 11) becomes less skewed towards smaller numbers of transactions compared to the distribution before agent adoption (grey area in figure 10 and 11). After agents are used for the first time, customers in both countries increase their transaction frequency.

These increases can be quantified in terms of the relative changes of the number and value of transactions by customers who start to use agents. Customers in Senegal who started to bank with agents increased the number of transactions on average by 32% (median 25%) and the monthly value of transactions by 21% on average (median 12%), demonstrating that the introduction of agents drives general customer activity. Even higher results were observed in Madagascar. Customers in Madagascar who started to bank with agents increased their average number of transactions by 59% (median 25%) and the average value of monthly transactions by 62% (median 7%). Hence, their average value per transaction even increased slightly. These changes in transaction behavior are statistically meaningful increases (at a 5% statistical significance level) for more than 40% of the customers.

The increase in transaction activity due to agents was not just limited to existing microfinance customers, but also impacted new customers. IFC conducted a randomized experiment to track the transaction behavior of new customers in Senegal who previously had no account with Baobab. They were incentivized to open a savings account with Baobab Senegal and to transact at a branch or with one of the network's agents. Over a 12-month period, individuals directed to the agents made 1.4 more deposits and 1.5 more withdrawals than those directed to branches. Both sets of clients made the same number of visits to branches. Therefore, it can be concluded that the increase in activity is entirely attributable to the existence of agents.

The randomized experiment also revealed that people tend to differentiate their use of delivery channels based on the value of the transaction. The customers who participated in the experiment made transactions of roughly 219 USD on average at branches during the 12-month period compared with transactions of around 96.50 USD at agents. After one year, the overall sum of deposits and sum of withdrawals made during that period are 260 USD and 239 USD higher for individuals incentivized to use agents compared to those that were directed to use branches. The takeaway is that new customers incentivized to bank with agents become generally more active customers in terms of transaction frequency and volume.

Key insight: Transaction Activity

Different analytic viewpoints confirm results on an institutional and individual level. Results from a randomized experiment show that individuals become more active customers when encouraged to use agents. Similarly, analyzing individual financial transaction behavior of the entire customer portfolios of Baobab Senegal and Madagascar before and after customers' respective first usage of agents, show that transaction activity grows significantly in terms of frequency and value of transactions with the roll out and usage of agent networks.

Agent adoption and usage seem to drive individual and overall customer activity in terms of number and value of transactions.
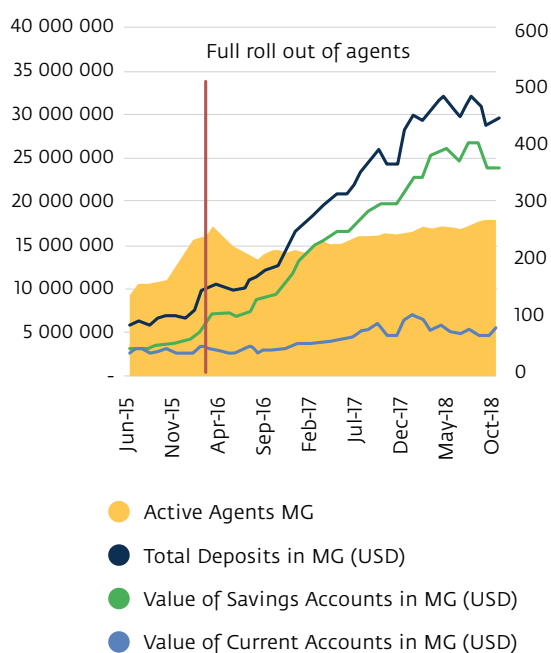
Changes in Deposit Mobilization

IFC found that institution-level deposits continue to increase after the introduction of agents. Net deposits grow both through branches and agents with the expansion of the network, unless hampered by a fee increase, as was the case in Senegal. On the individual level, growth of average savings account balances accelerated, while the overall account balance per customer grew in Madagascar but not in Senegal after full agent roll out.

Agents appear to affect institutional-level deposit mobilization through customer growth in both countries and increase average account balances of customers only in Madagascar where no agent deposit fees exist. The take-away is that agents contribute to an institution's deposit mobilization, but mechanisms vary between countries.
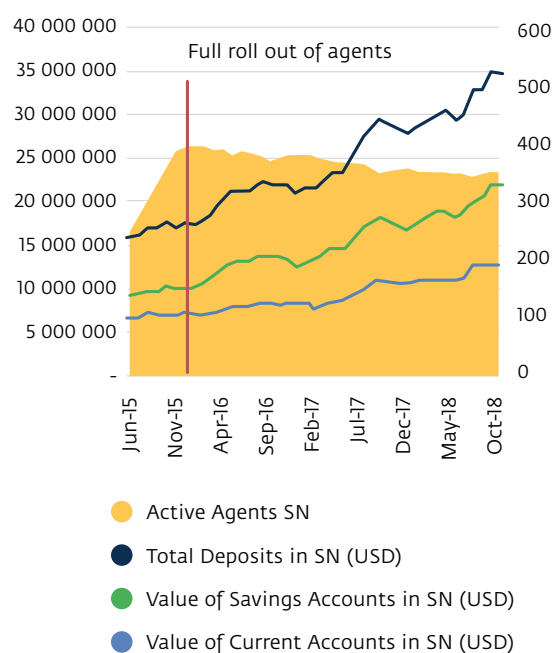
Institution level deposit mobilization

Agents can contribute to institution-level deposit mobilization through two separate mechanisms: by adding new customers or increasing the activity of existing customers. IFC analyzed the importance of these mechanisms by looking at trends in overall balances and customer numbers of Baobab after the full roll out of agent networks.

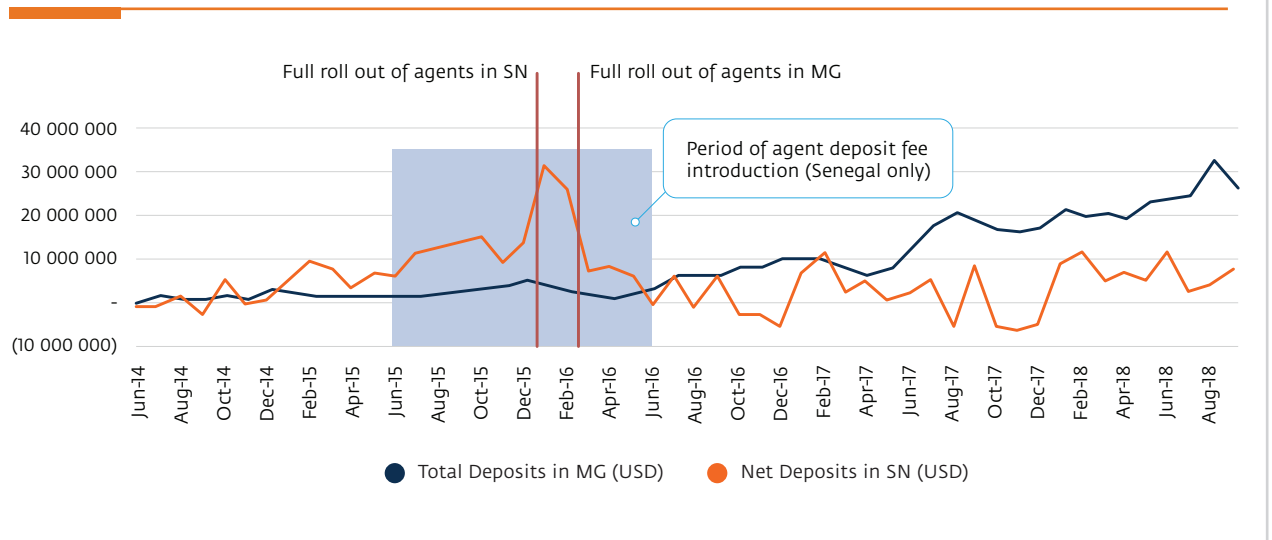### Figure 12: Account balances in Madagascar

Legend:
- Active Agents MG
- Total Deposits in MG (USD)
- Value of Savings Accounts in MG (USD)
- Value of Current Accounts in MG (USD)

Figure 13: Account balances in Senegal

Legend:
- Active Agents SN
- Total Deposits in SN (USD)
- Value of Savings Accounts in SN (USD)
- Value of Current Accounts in SN (USD)

Total deposits experienced sustained growth for Baobab Madagascar and Senegal after the roll out of agents (dark blue lines in figure 12 and 13). They are defined as the sum of the value of savings accounts (green lines) and the value of current accounts (mid blue lines) in each country. Importantly, most of the growth was driven by increased balances in savings accounts (green lines in figure 12 and 13). The share of the value of savings accounts among total deposits was much higher than the share of the value of current accounts. This was particularly pronounced in Madagascar where institution-level deposit mobilization was almost exclusively driven by savings account balance growth (green line in figure 12). In Senegal, differences in usage patterns of the customer base were less pronounced with comparatively more people having high balances in current accounts (mid blue line in figure 13) as well. The overall trend demonstrates that the roll out of agent networks is followed by institution-level deposit mobilization – an important part of which is happening on savings accounts.
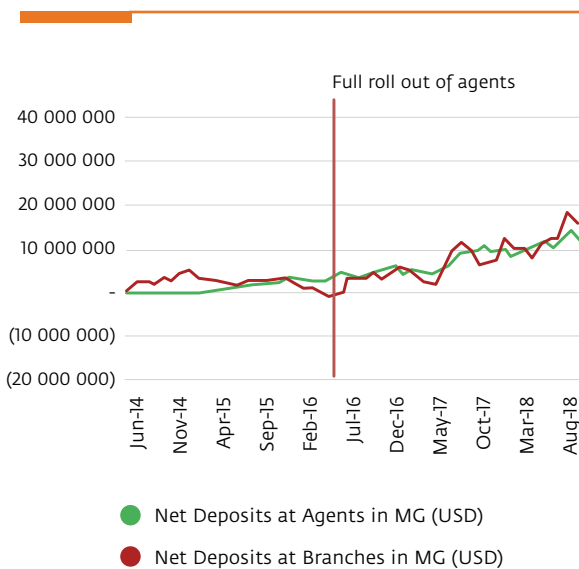
Figure 14: Net deposits in Senegal and Madagascar

Full roll out of agents in SN | Full roll out of agents in MG

Period of agent deposit fee introduction (Senegal only)

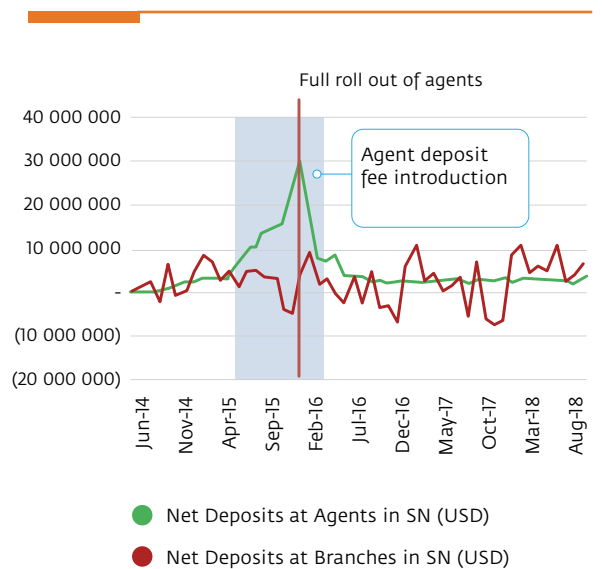Legend: ● Total Deposits in MG (USD) ● Net Deposits in SN (USD)

Net deposits are the net balance of aggregate deposits and aggregate withdrawals on all accounts of an institution. They inform how much money is coming in or is going out of the system net at the end of each month and consequently, on the sources and the development of account balances over time. If agents are helping to mobilize deposits, net deposits should grow with the introduction of agents.

This is the case in Senegal where net deposits increased when agents were rolled out and continued (orange line in figure 14) until the introduction of fees (period of deposit fee changes highlighted in blue). Madagascar by contrast, experienced no visible change during agent roll out but net deposits grew substantially later, after the agent roll out was completed (blue line in figure 14). Country contexts seem to influence both the long-term development of net deposits and also their shorter-term variance. Net deposits in Senegal (orange line) fluctuate much more than net deposits in Madagascar (blue line).

Figure 15: Net deposits through agents and branches in Madagascar

Full roll out of agents

Legend: ● Net Deposits at Agents in MG (USD) ● Net Deposits at Branches in MG (USD)

Figure 16: Net deposits through agents and branches in Senegal

Full roll out of agents

Agent deposit fee introduction

Legend: ● Net Deposits at Agents in SN (USD) ● Net Deposits at Branches in SN (USD)
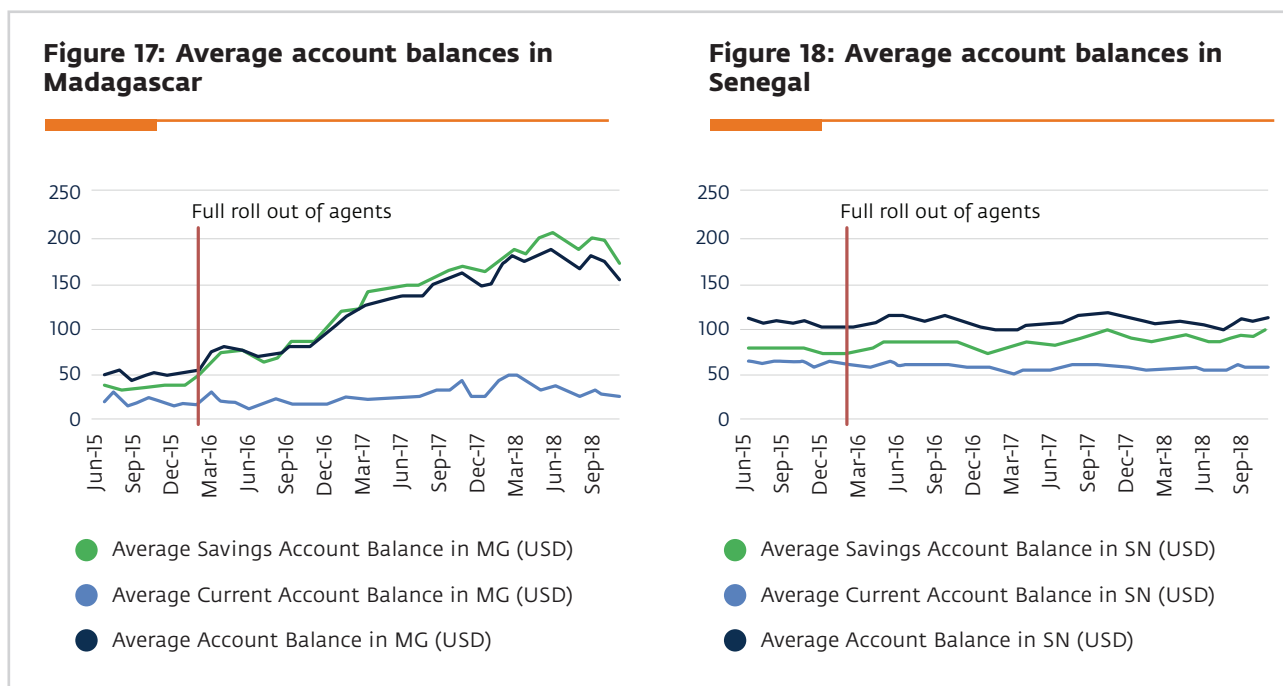
Agents played an important role in overall deposit mobilization in both countries, though the trajectories differed (figure 15 and 16). Apart from the spike of net deposits through agents in Senegal (green line in figure 16), agents and branches each represent roughly 50% of net deposits. This can be seen as **net deposits through agents** (green lines) **and through branches** (red lines) maintain relatively similar levels in both countries. Given that agent transactions represent only 30% and 10% of total transaction volume in Madagascar and Senegal respectively (figure 7), agents handle a disproportionately large share of net deposits. In Senegal, net deposits through agents have much less fluctuation than at branches. Both findings suggest that agents can drive a stable and important inflow of net deposits.

The similar level and parallel trend in the development of net deposits through agents and branches in Madagascar and Senegal indicates that agents do not crowd-out net deposit mobilization through branches, but rather complement it (figure 15 & 16). This aligns with findings from the randomized experiment in Senegal that suggests that customers use agents and branches for different purposes (e.g. for low-value versus high-value transactions) and that customers banking with agents do not use branches less than customers incentivized to bank at branches but that they rather transact at agents in addition to the transactions they do at branches. Results demonstrate from different analytic viewpoints that agents represent an important channel for institution-level deposit mobilization.

Mechanisms of institution level deposit mobilization

Senegal and Madagascar both experienced institution-level deposit mobilization through agents, but mechanisms varied. BSN experienced customer growth after agent roll out while BMG saw both customer base growth and per-customer deposit growth.

Figure 17: Average account balances in Madagascar

Average Savings Account Balance in MG (USD)

Average Current Account Balance in MG (USD)

Average Account Balance in MG (USD)

Figure 18: Average account balances in Senegal

Average Savings Account Balance in SN (USD)

Average Current Account Balance in SN (USD)

Average Account Balance in SN (USD)

In Madagascar, both total aggregate account balances (total deposits in figure 12) as well as **average account balances of customers** (dark blue line in figure 17) grew after complete agent roll out. The average savings account balance (green line in figure 17) more than tripled from 50 USD to over 150 USD in the year following the roll out while the number of customers increased by about a third during the same time. Thus, for BMG, institution-level deposit growth with an agent network was a result of both an increase in the number of customers and an increase in the value of deposits from all customers.

In Senegal, average account balances remained stable (dark blue line in figure 18) after agent roll out, but average savings account balances (green line in figure 18) increased moderately. That suggests that the growth in savings accounts balances was the result of a shift from current accounts to savings accounts (mid blue line in figure 13 decreases). What's more, the addition of new customers rather than increases in deposits from existing customers appears to have been driving aggregate account balances in Senegal (total deposits in figure 13).

These findings were confirmed from additional analytical perspectives – the randomized experiment in Senegal and an analysis of growth trends of account balances for both BMG and BSN before and after individual customers started using agents.

Figure 19: Growth trend on savings accounts before and after first usage of agents

**Change in Savings Account Balances
1 Year before and after individual agent adoption**
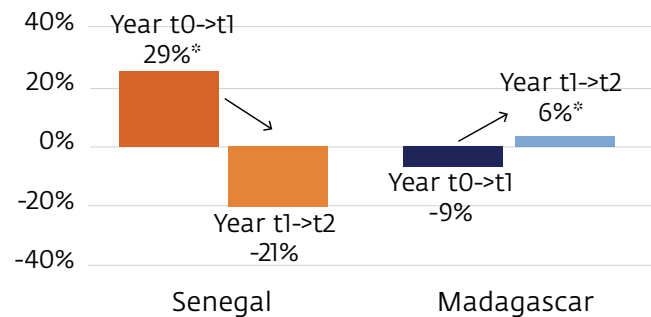
* Are statistically significant changes

Figure 19 shows the relative change **of individual customers' savings account balances** during the year before use of an agent for the first time (year t0-> t1) and the year afterwards (year t1->t2). The date of first agent usage varies of course across customers. So, for each customer, the account balance at the individual time of agent adoption (t1) is compared to her respective account balance 12 months earlier (t0) and 12 months later (t2). A positive relative change indicates that the account balance grew during an observed period. A negative relative change indicates that it decreased. The average change of savings account balances before and after individual agent adoption are depicted in figure 19 for Baobab customers in Senegal (orange shaded bars) as well as in Madagascar (blue shaded bars).

This analysis tests the hypothesis that the availability and usage of an agent network leads customers to save more as it allows them to put money aside conveniently and more frequently through agents close by instead of having to go to a branch further away and without having to deal with long waits at congested branches. Results presented in figure 19 are only based on savings account balances. However, it's important to keep in mind that customers do not always use accounts for their intended purposes. Some customers use savings accounts as transactional accounts. Others use current accounts to save or they use accounts at different financial institutions for different purposes, e.g. saving at one institution and a transactional account at another. Since there is potential ambiguity, the analysis on relative changes of account balances before and after agent adoption was conducted for both savings accounts and current accounts but the following paragraphs only discuss observed changes in savings accounts. Changes on current accounts are not discussed as they show the same trends as the ones found on savings accounts.

If agent adoption had a positive effect on individual savings behavior, one would expect account balances to grow in the year after the agent was first used. That is what occurred in Madagascar. Savings account balances increased by 6% the year after the customer first used an agent (mid blue bar in figure 19), reversing the decline during the year prior to agent adoption (dark blue bar in figure 19).

In Senegal, customer balances on savings accounts decreased 21% on average the year following the first use of agents (light orange bar in figure 19). The magnitude of the decrease is amplified by the fact that account balances in Senegal were increasing significantly during the 12 months before individual customers started to use agents (dark orange bar in figure 19). Assuming agent adoption was affecting relative changes in account balances, instead of encouraging customers to save more, agent adoption in Senegal had the opposite result.

The availability and convenience of agents, which made accounts more accessible to customers, appears to have encouraged those customers to use more the money in their accounts and deplete their balances.

The randomized experiment in Senegal confirms the finding of decreasing account balances. Non-clients were encouraged to open a savings account and either bank at an agent or at a branch. Transaction behavior of participants that opened an account was monitored during the subsequent two years. While new customers who were encouraged to bank with agents had 30% higher balances compared to those who were encouraged to bank with branches, savings account balances for both groups, in fact, decreased over time. Balances are just decreasing on different levels. On average, customers who were encouraged to go to agents had the equivalent of 17 USD in their savings accounts 12 months after opening an account and 7 USD after 24 months. Active customers had 45 USD and 25 USD in their accounts after 12 and 24 months, respectively. This shows that agents do not lead to per-customer balance growth in Senegal.

It should not come as a surprise that agents impact deposit mobilization differently in Senegal and Madagascar. Both markets are at different levels of maturity, are culturally different, and the average customer balance at full agent roll out is twice as high for BSN than for BMG. It is also important to note that the introduction of deposit fees at BSN agents had an impact on deposit mobilization, all of which highlights that the mechanisms that drive institution-level deposit mobilization can vary across contexts.

A caveat to the analyses of the trends before and after agent roll out is causal attribution. While graphs suggest that balances and net deposits are impacted by agents, it is difficult to ascertain the extent to which trends are actually driven by agents. Other country-specific factors, changes in products, marketing and behavior matter as well. The impact of agents and other factors on the observed trends cannot be comprehensively disentangled.

Key insight: Deposit Mobilization

Institution-level balances grow in both Madagascar and Senegal after full agent roll out. Despite different trajectories due to a deposit fee introduction in Senegal, agents become as important as branches in both countries for net deposit mobilization.

Agents complement rather than crowd out deposit mobilization through branches. The mechanisms through which agents work differ: In Senegal, institution-level deposit growth is driven by customer growth while in Madagascar, both customer growth and per-customer deposit growth increase after agent roll out.

Financial Service Providers' total deposits keep increasing with and after the introduction of an agent network.

Changes in Savings Behavior of Customers

Customer transaction activity increased, and deposit mobilization grew during and after the roll out of agent networks in Senegal and Madagascar. However, not all savings measures presented so far yield clear results and there are factors that confound the ability to conclusively substantiate whether agent networks help mobilize savings. These factors include for example institution-specific contexts, such as pricing and deposit fee structures.

An additional question to answer is how customers save generally and how they use their accounts — which customers only use their accounts for short-term transactions activities, and which customers are consistent long-term savers.

IFC developed a method that identifies savers from non-savers based on an analysis of past transaction history.

Characterizing the 'Savings DNA' of individual customers and customer portfolios

By analyzing the transactions of microfinance clients, IFC developed a framework that characterizes the 'Savings DNA' of customers by identifying and categorizing their dominant savings strategies. The framework allows to segment their behaviors by account type over time, and to evaluate the effectiveness of interventions intended to change their savings behaviors.

Every week an individual's transaction history is labelled according to the change in her account balance during that period. The magnitude of account balance changes is not considered in the model. An increase of an individual savings balance over a week is labelled S (= Save), no change or inactivity is labelled O (= Zero) and a balance decrease is labelled U (= Un-Save). Following this logic, the entire transaction history of a customer's account balance development can be described as a sequence of letters (e.g. SSSooSUUS) where every letter stands for the account balance change over one week.

The next step is to divide this 'Savings DNA' (the sequence of letters) into a sequence of 'DNA parts' (such as SS, So, oU, UU, Uo, oO) and to classify customers according to their dominant saving strategy which is determined based on the frequency and combination of their 'DNA parts'.

Detailed descriptions of each customer's savings strategy enable financial institutions to segment their portfolios into groups of customers who behave similarly. An institution can, for example, take six months of transaction histories and group together customers who during that period saved in a similar fashion. Armed with that information, financial institutions can tailor messages and devise incentives that encourage positive savings behavior for a specific segment of customers.

IFC distinguishes 6 different savings strategies: inactive users[10], sporadic users[11], moderate savers[12], intensive savers[13], moderate un-savers[14] and intensive un-savers[15]. Moderate and intensive un-savers are mostly decreasing their account balances, whereas moderate and intensive savers are regularly increasing their account balances. It is desirable for an institution to grow its proportion of these 'good savers' since the higher the proportion of intensive and moderate savers in the portfolio of a FSP, the more consistent and reliable is the deposit mobilization through the respective customer base.

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10   *Inactive Users - are users with no change in their account balances over the last 6 months.*
11   *Sporadic Users - are inactive 80% of the time and have varied two-week letter sequence active periods.*
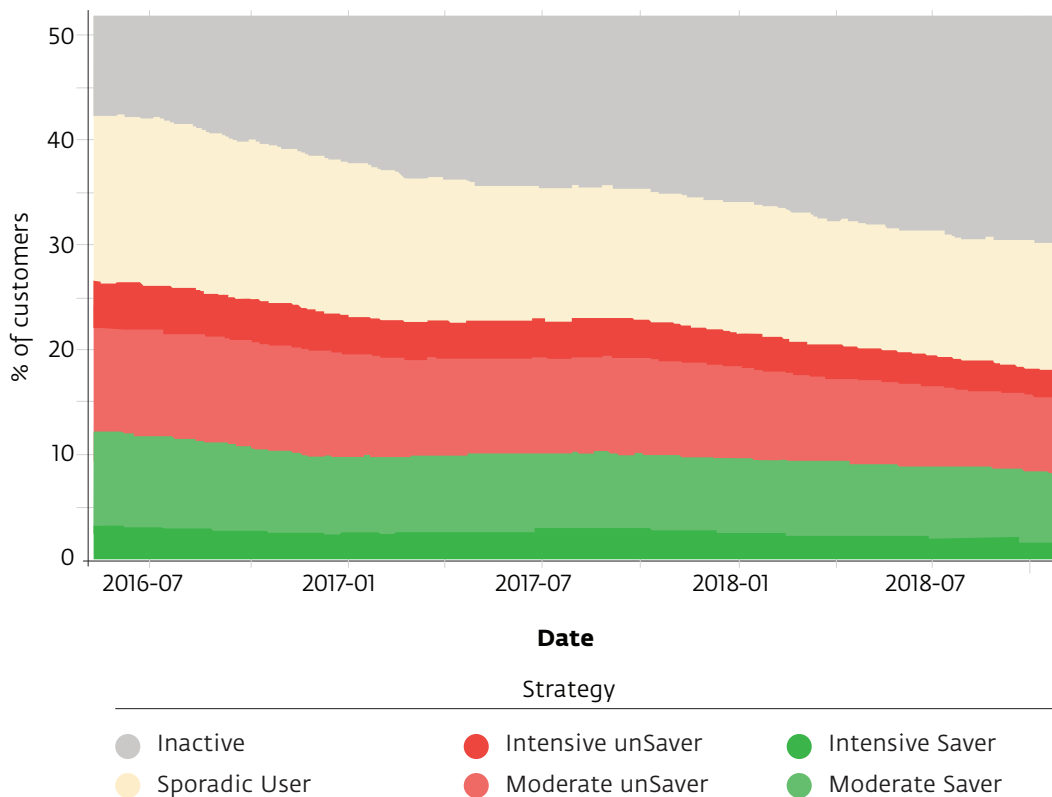12   *Moderate Savers – have the following distribution of two-week letter sequences 40% 00, 15% 0S and S0, 7.5% SU and US, 5% SS, SU and US, 0% UU.*
13   *Intensive Savers – have the following distribution of two-week letter sequences 20% 00, 20% SS, 10% 0S, S0, US, SU, 7.5% U0, 0U and 5% UU.*
14   *Moderate Un-Savers - have the following distribution of two-week letter sequences 40% 00, 15% 0U and U0, 7.5% 0S and S0, 5% UU, SU and US, 0% SS.*
15   *Intensive Un-Savers – have the following distribution of two-week letter sequences 20% 00, 20% UU, 10% 0U, U0, SU, US, 7.5% S0, 0S and 5% SS.*

Figure 20: Savings strategies over time - Senegal

Strategy

- ⬤ Inactive
- ⬤ Intensive unSaver
- ⬤ Intensive Saver
- ⬤ Sporadic User
- ⬤ Moderate unSaver
- ⬤ Moderate Saver

Figure 21: Savings strategies over time - Madagascar

Strategy

- ⬤ Inactive
- ⬤ Intensive unSaver
- ⬤ Intensive Saver
- ⬤ Sporadic User
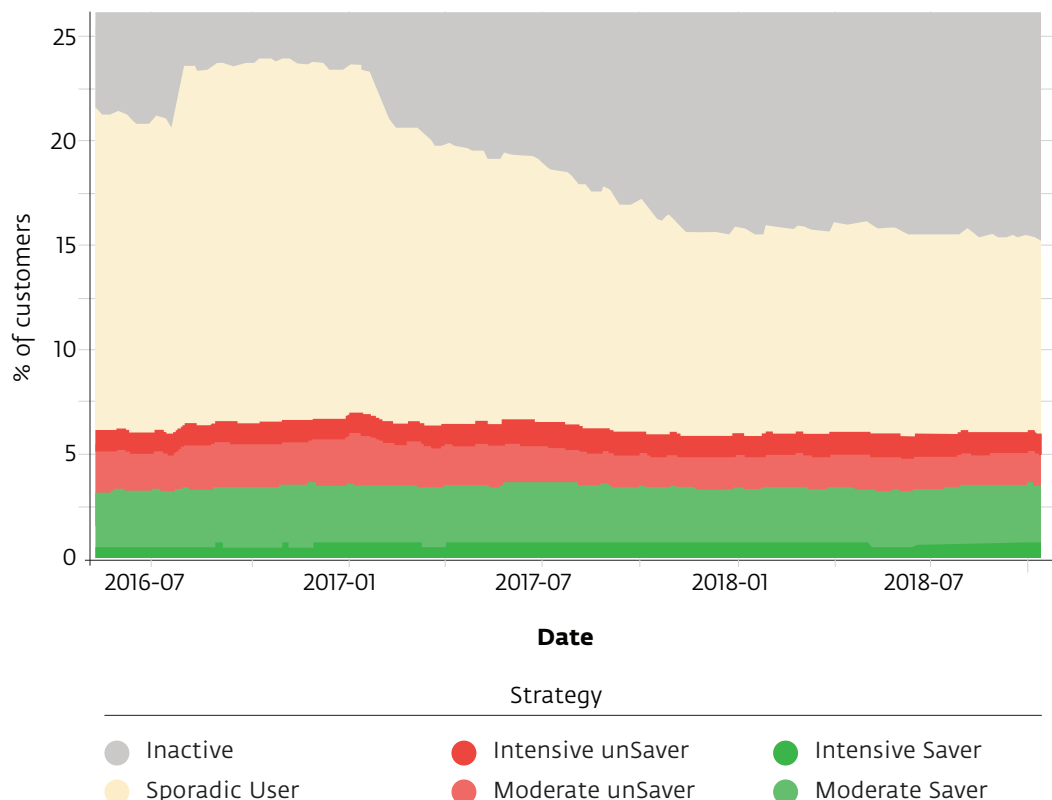- ⬤ Moderate unSaver
- ⬤ Moderate Saver

Figure 20 and 21 present the shares of the six savings segments at BSN and BMG at different points in time. Although customer numbers in both countries increase significantly after the introduction of agents, the relative distributions of active un-savers and active savers in Senegal and Madagascar (red & green shaded segments in figures 20 and 21) remain mostly stable, suggesting that active saving or and unsaving microfinance customers are unaffected by the introduction of agents.

The only segments registering changes are inactive (grey segments) and sporadic users (light yellow segments in figure 20 and figure 21). As the share of inactive customers (grey segments) is increasing at BSN (from 57% to 70% in two years) as well as at BMG (from 81% to 85% in two years), the proportion of sporadic users (light yellow segments) is decreasing.

In both countries, inactive customers are the segment with the lowest average account balances, followed by sporadic users who have the second lowest account balances. These results hold for both current and savings accounts. Actively transacting segments (such as savers and un-savers) also have higher account balances.

The observed increase of inactive customers during the two years after agent networks started rolling out may be a reflection of the strong growth in total customers during the same time period. New customers sign up for accounts but do not necessarily use them either because it's the first time for them to have a formal bank account and they need more guidance; incentive structures may not be appropriate; or other barriers may hinder active usage of accounts. Inactivity among existing and new customers can have different reasons.

Key insight: Savings Behavior

A new model helps to describe the 'Savings DNA' of individual customers as well as entire customer portfolios at financial institutions at different points in time, describing their predominant saving strategies based on their transaction behavior in the past.

The proportion of active customers with different savings strategies remains relatively stable and unchanged after the roll out and implementation of agent networks. However, the proportion of sporadic users is decreasing slightly over time in Senegal and more prominently in Madagascar after the introduction of agents. With over 50%, the majority of microfinance customers are inactive users. The second largest portfolio of customers are sporadic users (10-15%).

Sporadic users do not seem to become more active after agent roll out since the proportion of active savings segments remains unchanged and the proportion of inactive customers increases over time.

In Madagascar, a temporary larger agent network is reflected in a temporary increase of sporadic users and corresponding temporary decrease of inactive users.

The proportions of customers with clear savings or un-savings strategies remain mostly unchanged after the introduction of agents whereas the share of inactive customers is increasing. This implies that changes in the size of agent networks only affect the relative share of sporadic and inactive users.

Discussion

Can agent networks boost savings?

The answer to the question if agent networks boost savings for FSPs and their customers is a qualified 'yes'. In Madagascar institutional-level deposits grew through both increased activity of existing customers and through the addition of new customers. In Senegal, agents appear to have driven customer growth but not net deposits of existing customers.

A second lesson is that deposit mobilization on different channels goes hand-in-hand. In Madagascar, agents and branches mobilized more net deposits after the introduction of agents and in Senegal the trend is flat, but parallel as well. Thus, it seems that agents do not crowd out branch transactions, they complement them. This result is also confirmed in the randomized experiment where customers who were encouraged to use accounts with agents were more active at agents than branch-incentivized customers, while continuing to be active at branches as well.

The analysis of savings strategies reveals that the proportion of moderate and intensive savers remained stable in the portfolio while the inactive users appear to have increased and sporadic users decreased. Importantly, this is not in contradiction with the observed increase in customer activity. Since customer numbers grow, there are more moderate and intensive savers over time in absolute terms who can generate more activity, even if their relative share is constant.

So, while there is clear evidence that agents drive institutional-level deposits and customer activity, their impact on savings per customer is more muted than FSPs may have initially anticipated.

Did we make the right assumptions about customers?

The basic idea was that an institution's geographical convenience would make it easier to access services and save money. But did we make the right assumptions?

- **Mechanisms how agent networks can affect savings**

  One assumption was that because of the closer proximity of agents, new customers would be attracted by the convenience and safety of a formal institution making them shift their money from informal savings solutions to their new formal bank accounts. - *Customer numbers increased considerably for BMG and BSN after the roll out of agents, but average account balances only increased in Madagascar. In Senegal they remained stable.*

Another assumption was that existing customers would conduct more transactions since they would no longer be spending as much time and money visiting a faraway branch. - *Existing microfinance customers did increase transaction activity after starting to use agents. They increased the number of monthly transactions in Senegal by 32% (average monthly values by 21%) and in Madagascar by 59% (average monthly values by 62%) after agent adoption.*

An increase in transaction activity in combination with a common pricing structure that makes deposits free and takes a fee for withdrawals was assumed to incentivize all customers to deposit more than what they withdraw and to thereby increase savings inflows for the institution. - *Net deposits increased in Madagascar confirming the assumption.*

One assumption was also that changes in the pricing of agent transactions would influence transaction and savings behavior of customers. - *Customers show high price-sensitivity. The number of agent transactions dropped dramatically after the introduction of fees for deposits at agents in Senegal. Unlike in Madagascar, net deposits also did not grow over time. They fluctuate around zero.*

Digital financial services and agent banking in particular were assumed, would more effectively address the savings needs of specific customer demographics. – *This is the case, DFS and agent banking make it easier for existing and new customers to receive domestic remittances and direct deposits from friends and relatives. In Senegal, the number of agent transactions grew fast after the introduction of agents partly driven by a large number of direct deposits. This only changed with introduction of deposit fees at agents.*

It was further assumed that customers with seasonally fluctuating incomes, such as farmers, would benefit from DFS. - *An IFC study in Ivory Coast found that 90% of cocoa farmers surveyed managed to put savings aside at maximum once per year, which is when they sell their crops.*[16] *The majority (53%) of farmers recognized DFS as a safe option to store money. Saving through DFS thus enabled them to better budget their incomes and save money for the off season. Given the benefits of the digital ecosystem and incentives to not cash out deposits, DFS may trigger mechanisms that increase individual savings balances.*

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16   *IFC, 2016. Opportunities for Digital Financial Services in the Cocoa Value Chain in Côte d'Ivoire: Insights from New Data*

- **Underestimated mechanisms how agent networks affect savings**

  Certain behavioral responses to the introduction of agents have been underestimated. For example, the reduction in the cost of transactions (in terms of transport costs and waiting time) has increased the frequency of both, cash-in and cash-out transactions, which has led to more activity but not necessarily to more savings per individual customer. It should be noted that customers actively use the convenience of agent networks to satisfy short term transaction needs but not necessarily to save money in the medium or longer term. In those cases, agent networks may hinder deposit mobilization.

  Agent networks can alter the way customers mentally account for money they save with a financial institution in a variety of ways. When existing customers get the opportunity to use an agent network, money which previously was accessible only through branches, suddenly becomes more easily accessible through agents, hence, customers may be tempted to spend DFS savings to cover daily needs. Introducing agents can devalue the usefulness of accounts of an institution for longer term saving.

Savings behavior is also impacted by cultural norms as IFC's ethnographic study[17] on perceptions of DFS use demonstrates. This may drive but can also inhibit saving. Exposure to "the 'European system' of saving a bit of money somewhere", as one interviewee put it, can motivate savings habits through DFS. However, the ability to make instantaneous transfers has an impact on savings as well. A 23-year old DFS user in Senegal tells the story of getting frequent requests from relatives to send money, requests that he cannot turn down. With DFS, he says, "you can't save anymore because you also want your family to have a good life"[18]. The implication is that in certain cultural settings, DFS can have a detrimental effect on saving, which financial service providers need to counter by offering new savings-enabling products.

Academic Insight: The importance of 'mental accounting' for savings

Behavioral economics studies how social, psychological and cultural factors impact people's real-world economic decisions. 2017 Nobel Prize winner Richard Thaler developed the idea of mental accounting to describe how people think about savings[19].

He proposed that we divide our income into different imaginary buckets -- 'current assets' which includes hand cash and current accounts are most tempting to be consumed while 'current wealth' such a savings, stocks bonds and 'future income' will less likely be spent. Thaler's key insight is that how much people save depends partially on the 'mental accounting' of their income. This has leads to a powerful prediction: If FSPs succeed in shifting customers income into less tempting mental accounts, they could mobilize more savings. However, DFS accounts -- which are easily accessible and often used for covering current expenditures and transfers -- are currently in the low savings propensity bucket.

FSPs may mobilize more savings if they introduce elements that make DFS better mental accounts for savings, such as clearly differentiating savings and current accounts or introducing locked or commitment savings features.

17 IFC, 2017. *A Sense of Inclusion: An Ethnographic Study of the Perceptions and Attitudes to Digital Financial Services in Sub-Saharan Africa*
18 de Bruijn, Butter, and Abdou Salam, 2017. *An ethnographic study on mobile money attitudes, perceptions, and usages in Cameroon, Congo DRC, Senegal, and Zambia*
19 Thaler, 1999. *Mental accounting matters*

Lessons learned on how to drive deposit mobilization

IFC research has identified four factors that affect the extent to which agent networks help increase deposit and savings mobilization of DFS providers:

Incentive structures drive people's decisions about savings. Convenience and accessibility of agents led to rapid uptake of agent banking. Within one year of introduction, agents were handling 40% of all transactions in Senegal and Madagascar. At the same time, free deposits meant that customers could avoid transaction fees by depositing into someone else's account instead of making a transfer. This led to a substantial growth in agent use. In an attempt to close the loophole, Baobab Senegal introduced a deposit fee. However, as a consequence of regulating the undesirable behavior, Baobab Senegal saw a large drop in transaction numbers. This explains at least part of the divergence between Senegal and Madagascar (see Figure 4 and 5) as the latter country did not experience the introduction of the fees. Hence, understanding how convenience and pricing affect agent banking behavior is important to create the incentives that drive deposit mobilization.

Products can have a significant impact on the use of agent channels. For example, when Baobab introduced a nano loan that must be repaid exclusively at agents there was an increase in net cash transactions. The experience with nano loans demonstrated that designing specific products for the agent channel could attract new customers as well as drive transaction traffic and deposit mobilization at agents.

Culture can help to drive or inhibit savings behavior. As we saw with the 23-year old Senegalese customer who felt obliged to help relatives in need of quick cash, cultural pressures can be detrimental to saving. FSPs can address those pressures by offering savings-enabling products.

Consumer behavior: Understanding how customers use products, think about savings and do their own mental accounting can provide important insights for the design and promotion of new savings products. For instance, users in Senegal hold more money in their current accounts than BMG customers. This implies that understanding why they do not use their savings accounts as much as BMG customers and thinking about ways to promote savings account use can have beneficial effects. Relatedly, mental accounting (see box above) is a model to better describe actual savings behavior. Drawing on academic insights can enable to design products that are better suited to address barriers to savings and reduce the mismatch between intended and actual usage.

Beyond agents - how DFS providers can mobilize deposits and savings

IFCs data analytics work combined with the randomized control trial shows that agents can increase savings, but they cannot be expected to automatically do so in every context.

Factoring in how culture, products, incentives and behavior patterns affect savings can help to make savings mobilization happen. Beyond introducing agents, providers can apply two additional strategies to mobilize savings.

Customer segmentation and targeting: IFC's 'Savings DNA' data offers an opportunity to use historical savings behavior patterns to target groups of customers with tailored messages and incentives that encourage positive future savings behavior. For instance, if moderately active savers can be converted into intensive savers through SMS messaging, that can represent an effective strategy for savings mobilization. In addition, different messages may be suited to improve savings behavior of different customer segments and could be tested based on the 'Savings DNA' classification of the customer base. Other promising approaches of applying the 'Savings DNA' include trying to reactivate customers who have recently become less active savers or motivating active savers to continue on this trajectory.

Savings-enhancing products: Products that reduce the temptation to spend money prematurely can be an effective way of spurring customer savings. Lock savings accounts for example, impede customers from accessing money until the account reaches a predetermined maturity. Some lock accounts, such as M-Shwari's, let customers determine the maturity date and set a savings goal. Lock savings can be an effective strategy as demonstrated with a health savings experiment[20]. Providing a physical lock box improved savings by 66%. Softer commitments where people set a target and receive SMS feedback on whether they are on track may work as well.

Clearly differentiating current and savings accounts through functionalities or design features can improve the product's mental accounting function. If people do not see the difference between the accounts and can easily access their savings, they are less likely to succeed in saving even with the best intentions.

Another effective method of encouraging savings is to use defaults. When inflows are defaulted into savings accounts, customers keep more money there. A recent experiment in Afghanistan showed that employees who had part of their salary defaulted into a mobile money account were 40 percentage points more likely to save.[21] While effective, the use of defaults is constrained by the availability of income (such as salary payments) that can be defaulted into a savings account for example.

Targeting customers with tailored messages and offering new products represent strategies that can complement savings mobilization through agents. Savings mobilization is more likely to be achieved through a strategy that includes a combination of different components complementing each other.

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20   Dupas, 2013. *Why Don't the Poor Save More? Evidence from Health Savings Experiments*
21   Blumenstock, 2018. *Why Do Defaults Affect Behavior? Experimental Evidence from Afghanistan*

Conclusion

Banking agents increase customer activity and institution-level deposit mobilization in Senegal and Madagascar but a variety of factors ranging from transaction fees to cultural context affect outcomes.

It is important to manage expectations about what an agent network can and cannot deliver. The research findings imply that agent networks can support a financial institution in mobilizing savings, but they caution not to expect an automatic effect. This suggests that there is a need for specific targeted interventions or the design of adapted incentive structures to drive savings mobilization if this is an operational goal.

By developing a greater understanding of who the savers and un-savers are in their portfolios, and why they behave the way they do, institutions can tailor interventions and incentives to encourage specific groups of customers to save money and bolster deposit mobilization. The introduction of commitment savings products (e.g. M-Shwari lock savings account) may encourage savings by counteracting the shift in mental accounting that agent networks can have. Engaging customers through personalized and targeted messages can build trust and regular savings habits. Digitizing bulk payments that customers receive, such as salary payments or social grant transfers[22] can benefit savings when proportions of these payments are defaulted into savings accounts. Thus, FSPs may succeed in mobilizing savings when they explore how to build savings-enabling features into and on top of existing services.

Some institutions may have overestimated the contribution that agent banking alone can make to savings mobilization. An agent network is ideally part of a comprehensive strategy that reinforces positive effects through the delivery channel by also adapting product offering and marketing messages to customer needs and country contexts. Applying innovative methods such as customer segmentation using the 'Savings DNA' to better understand and incentivize 'good' savings behavior holds promise for finding powerful approaches to improve savings mobilization in the future.

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22   For more information on digitizing grant transfers see IFC, 2018: Granting access: leveraging social payments to expand digital financial Inclusion in Côte d'Ivoire

References

Blumenstock, Joshua; Callen, Michael; Ghani, Tarek. 2018. "Why Do Defaults Affect Behavior? Experimental Evidence from Afghanistan." American Economic Review; 108 (10): 2868-2901.

Buri, Sinja; Cull, Robert; Gine, Xavier; Harten, Sven; Heitmann, Soren. 2018. "Banking with Agents: Experimental Evidence from Senegal." Policy Research Working Paper; No. 8417. World Bank: Washington, DC.

Buri, Sinja; Cull, Robert; Giné, Xavier; Harten, Sven; Heitmann, Soren. 2018. "The Pros and Cons of Agent Banking: Evidence from Senegal." Finance & PSD Impact; No. 48. World Bank: Washington, DC.

de Bruijn, Butter; Salam, Abdou. 2017. "An ethnographic study on mobile money attitudes, perceptions, and usages in Cameroon, Congo DRC, Senegal, and Zambia."

Demirgüç-Kunt, Asli; Klapper, Leora; Singer, Dorothe; Ansar, Saniya; Hess, Jake. 2018. "The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution." World Bank: Washington, DC.

Dupas, Pascaline; Green, Sarah; Keats, Anthony; Robinson, Jonathan. 2014. "Challenges in Banking the Rural Poor: Evidence from Kenya's Western Province." NBER Chapters in: African Successes, Volume III: Modernization and Development: 63-101; National Bureau of Economic Research.

Dupas, Pascaline; Robinson, Jonathan. 2013. "Why Don't the Poor Save More? Evidence from Health Savings Experiments." American Economic Review; 103 (4): 1138-71.

Global Findex Database, 2017. https://globalfindex.worldbank.org/

IFC, 2018. "Aligning Expectations: The Business Case for Digital Financial Services."

IFC, 2018. "Granting Access: Leveraging Social payments to Expand Digital Financial Inclusion in Côte d'Ivoire."

IFC, 2017. "A Sense of Inclusion: An Ethnographic Study of the Perceptions and Attitudes to Digital Financial Services in Sub-Saharan Africa.

IFC, 2017. "Breaking Free of the Branch Microfinance and Alternative Delivery Channels in Sub-Saharan Africa."

IFC, 2016. "Opportunities for Digital Financial Services in the Cocoa Value Chain in Côte d'Ivoire: Insights from New Data."

Mani; Anandi; Mullainathan, Sendhil; Shafir, Eldar; Zhao, Jiaying. 2013. "Poverty Impedes Cognitive Function." Science. 341 (6149): 976-980.

McKinsey, 2017. "Mobile financial services in Africa: Winning the battle for the customer."

Suri, Teevnet; Jack, William. 2016. "The long-run poverty and gender impacts of mobile money." Science. 354 (6317): 1288-1292.

Thaler, Richard. 1999. "Mental accounting matters. Journal of Behavioral Decision Making." Behavioral Decision Making. 12 (3): 183-206.

AUTHORS

Sinja Buri is a data operations analyst in the applied research and learning team of the Partnership for Financial Inclusion, based in Dakar, Senegal. Her research projects focus on understanding how different customer segments take-up and use digital financial services in Sub-Saharan Africa as well as the resulting business implications for financial service providers.

Fabian Reitzug is a research consultant supporting the applied research and learning agenda of the Partnership for Financial Inclusion. His research focuses on the impacts of gender and culture on the take-up and usage of digital financial services in Sub-Saharan Africa.

CONTRIBUTING AUTHORS

Soren Heitmann leads the applied research and learning program for the Partnership for Financial Inclusion. Eduardo Marinho, a data science consultant, also contributed to this report and the underlying analyses.