



FINANCIAL SERVICES ASSESSMENT

Rural Finance Outreach in Central Malawi: Implications for Opportunity International Bank of Malawi

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Financial Services Assessment project can be found on
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ABOUT THE PROJECT

The *Financial Services Assessment* project is designed to examine the impact of financial services on the lives of poor people across the developing world. This project is funded by the Bill & Melinda Gates Foundation, which is committed to building a deep base of knowledge in the microfinance field. The IRIS Center at the University of Maryland, College Park, together with its partner, Microfinance Opportunities, will assess a diverse range of innovations in financial services. The results of this project will shed light on the design and delivery of appropriate financial products and services for the poor and the potential to scale up successful innovations to reach larger numbers of low-income households.



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REPORT SERIES

This report is part of a series that will be generated by the *Financial Services Assessment* project. The reports are disseminated to a broad audience including microfinance institutions and practitioners, donors, commercial and private-sector partners, policymakers, and researchers.

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ABSTRACT

Using data gathered from a panel of 2,006 households by the IRIS Center at the University of Maryland in 2008 and 2010, we study the outreach of the mobile bank run by the Opportunity International Bank of Malawi (OIBM) in central Malawi. Our analysis shows that the breadth of outreach of OIBM increased in rural Malawi within a short period of its entry into the competitive financial landscape where many financial institutions offered similar products and services. OIBM also attracted more female borrowers compared to other formal institutions, and it was able to service its depositors at lower transaction costs compared to savers with other formal institutions, which was mostly due to reduction in direct costs of travel. However, the uptake of OIBM's services among the poor and those living far from the mobile bank stops was modest. We find that the innovative efforts of OIBM to bring the bank closer to the rural population, offer services with better terms and conditions, and provide adequate information on its services paid off well. In order to sustain its current outreach and grow further, OIBM needs to combine its first mover advantage with a continual improvements in its products, services, delivery mechanisms and information dissemination methods and its worldwide experience in serving women and the poor.

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ACRONYMS

BMGF	Bill & Melinda Gates Foundation
CGAP	Consultative Group to Assist the Poor
FBPAs	Field-Based Promotional Assistants
FINCOOP	Finance Cooperative Ltd.
HFIAP	Household Food Insecurity Access Prevalence
HFIAS	Household Food Insecurity Access Scale
MFI	Microfinance Institutions
MIS	Management Information Systems
MK	Malawi Kwacha
MRFC	Malawi Rural Finance Company
NGO	Non- Governmental Organization
OIBM	Opportunity International Bank in Malawi
PAT	Poverty Assessment Tool
PPP	Purchasing Power Parity
SACCOs	Savings and Credit Cooperatives

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EXECUTIVE SUMMARY

The use of formal financial services in Malawi is found to be limited due to at least four reasons. First, although a majority of the Malawian population lives in rural areas, formal financial institutions are mostly located in urban and semi-urban areas, physically distant from the rural households. Second, rural households face obstacles to opening a formal bank account since most formal institutions have account terms, such as relatively large minimum balances, that set formal financial services out of reach of rural populations. Third, many banks also require formal identification cards such as a passport or other government ID that rural populations may not have and may find prohibitively expensive to procure. Finally, these households lack adequate information regarding access to and use of formal financial services.

In order to relax some of the aforementioned constraints to the access and use of formal finance in rural Malawi, the Bill & Melinda Gates Foundation (BMGF) provided funding in 2007 to Opportunity International Bank in Malawi (OIBM) to purchase a mobile bank to serve unbanked rural areas. The mobile bank is a roving bank capable of providing a full range of financial services. The catchment area for the OIBM's mobile bank included six trading centers along a predetermined route across Lilongwe, Mchinji, and Dedza districts in central Malawi. Of the six trading centers, four did not have prior banking facilities while the other two were previously served by other brick and mortar bank branches. OIBM also developed products suitable for rural clients served by the mobile bank by reducing identification requirements, reducing minimum balance for savings accounts, and waiving collateral requirements for loans. Please see box 1 for detailed information on OIBM and the mobile van. The mobile bank went in operation in August of 2007.

IRIS, in collaboration with OIBM, designed an intense information campaign to disseminate information about OIBM and to increase its outreach. Between April 2008 and December 2010, Field-Based Promotional Assistants (FBPAs) visited villages, made contact with potential clients, and disseminated information about the products and services offered by OIBM. The information campaign was conducted in a randomly selected subset of 56 enumeration areas while households in the remaining enumeration areas received information regarding OIBM's product only via mass media like radio.

This paper, using data gathered from a panel of 2,006 households by the IRIS center at the University of Maryland from 2008 and 2010, examines the impact of the mobile van on financial outreach of OIBM relative to other formal financial institutions, and informal sources. We define outreach in terms of number and types of clients reached by financial institutions, especially the poor, and the costs of serving them. We do not consider cash kept at home and in-kind loans and savings in the analysis.

We address the following issues to draw implications for OIBM:

- Has outreach of OIBM increased relative to that of other formal financial institutions? If so, has it been reflected in breadth, depth and costs of its outreach?
- What factors facilitated the observed trends in breadth, depth and costs of outreach of OIBM relative to informal and other formal providers? More specifically:
 - Did the intense information campaign conducted by OIBM increase its outreach?
 - Did OIBM's products and services incorporate vulnerable populations into its clientele?
 - Did OIBM's mobile bank reduce the transaction costs of access to and use of services?

Analysis of data from sampled households shows the following:

BREADTH OF OUTREACH

- a. *Use of financial products and services was prevalent and increasing.* 35 percent of the households at baseline (705 of 2,006) and 44 percent at end line (889 of 2,006) had at least one savings account or an outstanding loan.
- b. *There were more borrowers than depositors.* At end line, 34 percent of sampled households (688 of 2,006) had at least one outstanding loan while 18 percent of households (363 of 2,006) had at least one savings account.
- c. *A vast majority of the savings accounts were held with formal institutions.* About 87 percent (229 of 264) and 85 percent (404 of 475) of the savings accounts were held with formal institutions at baseline and end line respectively.
- d. *There was an increase in the number of savings accounts, primarily due to OIBM.* The number of savings accounts increased from 264 in 2008 to 475 in 2010, an 80 percent increase. Increase in savings accounts with OIBM alone constitutes approximately 40 percent of the total increase in the number of savings accounts. OIBM's market share of savings accounts increased from 10 percent at baseline (26 of 264) to 23 percent at end line (108 of 475).
- e. *A vast majority of loans were sourced with informal agents.* 82 percent of the outstanding loans (525 of 641) at baseline and 85 percent of the outstanding loans at end line (743 of 864) were sourced with informal agents.
- f. *Households were much more likely to use formal institutions for saving than borrowing.* While more than 85 percent of savings accounts were held with formal institutions, less than 20 percent of loans were sourced from formal institutions.
- g. *The intense information campaign increased the outreach of OIBM.* OIBM administrative data collected from the Management Information Systems (MIS) database shows that approximately two thirds (933 of 1,422) of the new OIBM clients that joined between April 2008 and May 2009 originated from intense information campaign areas. 72 percent of new savers (63 of 88) in the survey sample came from areas covered by the intense information campaign.
- h. *The intense information campaign also had a positive spillover effects on the uptake of financial products offered by other providers.* Approximately 56 percent and 58 percent of new savers with other formal institutions and informal agents belonged to information areas.

DEPTH OF OUTREACH

- i. *OIBM was more successful than other formal institution in attracting female borrowers, but less successful in attracting female depositors.* 67 percent (10 of 15) of new borrowers with OIBM were females while 52 percent of new borrowers (47 of 91) with other formal institutions were

females. On the other hand, 33 percent (29 of 87) and 48 percent (82 of 172) of new savers with OIBM and other formal institutions were females.

- j. *Outreach of OIBM among females was higher among borrowers than depositors.* Among new OIBM savers, 33 percent were females (29 of 87) while 67 percent of the new OIBM borrowers (10 of 15) were females.
- k. *Formal financial institutions attracted fewer farmers relative to informal agents.* 89 percent of new savers with informal agents were farmers, while it was 71 percent and 73 percent for OIBM and other formal institutions respectively. Similarly, 88 percent of new borrowers with informal agents were farmers while the figures for OIBM and other formal institutions was 60 percent and 76 percent respectively.
- l. *New savers and borrowers with OIBM and other formal institutions were relatively more educated and literate compared to new savers and borrowers with informal agents.* Formal institutions often require clients to fill out forms and sign on terms and conditions before opening an account, which may have discouraged the illiterate and the uneducated to approach the institutions for banking services.
- m. *Geographic distance was not a major limiting factor for take up of savings accounts and loans with OIBM and other formal institutions.* Nearly 44 percent and 47 percent of new savers with OIBM and other formal institutions lived farther than seven kilometers from the nearest OIBM mobile van service center, and the pattern is also similar among new borrowers.
- n. *OIBM's roving van attracted residents living near the OIBM mobile bank service centers that were not served by other banks.* About 77 percent (68 of 88) of new borrowers and 67 percent (10 of 15) of new savers with OIBM lived near OIBM service centers with no other banking services.
- o. *Food secure households were relatively more likely to borrow or save with formal institutions.* While 13 percent and 15 percent of new savers with OIBM and other formal institutions were food secure, only 6 percent of new savers with informal agents were food secure. Similarly, 13 percent of new borrowers with OIBM and other formal institutions were food secure while the proportion among new borrowers with informal agents was 5 percent.
- p. *Severely food insecure households were more likely to borrow or save with informal agents.* Among new savers with OIBM and other formal institutions, 25 percent and 27 percent of clients were severely food insecure while figure among new savers with informal agents was 33 percent. The contrast among new borrowers was starker: 20 percent, 33 percent and 49 percent of new borrowers with OIBM, other formal institutions, and informal agents respectively were severely food insecure.
- q. *Individuals who lived above the Purchasing Power Parity (PPP) \$2 per person per day poverty line were more likely to borrow from OIBM and other formal institutions relative to informal sources.* 80 percent and 81 percent of new borrowers with OIBM and other formal institutions lived above the poverty line while the figure among new borrowers with informal agents was 63 percent. On the other hand, 13 percent and 16 percent of new borrowers with OIBM and other formal institutions lived below the median poverty line while 32 percent of new borrowers with informal sources did so.

- r. *The average and median loan sizes of new borrowers with OIBM and other formal institutions were substantially higher compared to new borrowers with informal agents.* Median loan sizes with OIBM and other formal institutions were 41 percent and 21 percent of GDP per capita respectively. In contrast, median loan size from informal sources was 2 percent of GDP per capita. This illustrates the high per unit cost borne by lenders when providing banking services to the poor.
- s. *Average savings deposit with OIBM was less than 20 percent of GDP per capita.* The average savings balance with OIBM, other formal institutions and informal agents was 18 percent, 21 percent and 8 percent respectively of GDP per capita. Benchmarks set by MicroBanking Bulletin states that a ratio below 20 percent of average savings balances to GDP per capita indicates a good depth of outreach. Median savings balances amounts to approximately 3-4 percent of nominal GDP per capita in 2010 for all three types of financial service providers.

COST OF OUTREACH

For savings accounts:

- *The total costs of opening a savings account with formal institutions were five to eight times higher than with informal service providers.* Median costs to open a savings account were 109 Malawi Kwacha (MK) (\$0.73) for new informal savers, 627 MK (\$4.18) for new savers with formal institutions other than OIBM, and 813 MK (\$5.42) for new OIBM savers.¹
- *Transaction costs of opening a savings account with OIBM and formal institutions are primarily due to the direct and opportunity cost of travel.* Travel costs for informal savers are substantially lower than the travel costs for savers with OIBM or other formal financial institutions due to the proximity of borrowers to informal service providers.
- *Total transaction costs to deposit funds were the highest for OIBM accounts, followed by other formal institutions and informal agents.* The costs did not increase monotonically with the distance to the OIBM service center. The high costs to deposit funds could have been responsible for the low frequency of deposits made into OIBM and other formal accounts. At end line, funds were deposited into only 24 percent (136 of 560) of the formal savings accounts in the previous 30 days.
- *Transaction costs to withdraw were higher from formal savings account relative to informal accounts.* Transaction costs of making a withdrawal also did not increase linearly with the distance to the nearest OIBM service center. Withdrawals from savings accounts were even less frequent than deposits. At end line, funds were withdrawn from 16 percent of formal savings accounts (88 of 560) in the previous 30 days of the survey.

For loans:

- *Median transaction costs to apply for a loan from OIBM and formal sources were five to eight times higher than that from informal agents.* This explains

¹ Based on the exchange rate of 150 Malawi Kwacha (MK) = \$1

³ In comparison, 46 percent of households in South Africa had a savings account in 2010 (Kendall et al., 2010).

the predominance of informal loans in rural Malawi and the low outreach of formal institutions.

- *Direct and opportunity cost of travel to apply for a loan from formal sources increases with the distance to the call center, and they constitute the bulk of the total transaction costs.* Travel costs to apply for a loan with informal sources does not increase with the distance to the call centers, further illustration of the advantage of informal over formal loans due to their local origin.

IMPLICATIONS FOR OIBM

The study shows that OIBM has increased its breadth of outreach in rural Malawi relative to other formal financial institutions that were active in the area with similar products and services. OIBM has also attracted more female borrowers than other formal institutions. OIBM was able to service its depositors at a lower transaction costs compared to savers with other formal institutions, and the reduction in costs is driven mostly by reduction in direct costs of travel. However, outreach among the very poor and among those living far from the mobile bank stops was modest. Our analysis suggests that the innovative efforts of OIBM to bring the bank closer to the rural population, offer services with better terms and conditions, and provide more information on its products and services were responsible for the increase in the outreach. The outreach is especially remarkable given the crowded financial landscape composed of many mature formal institutions offering almost similar services into which OIBM made its entry in late 2007. The innovations have provided OIBM with a first mover comparative advantage but sustaining the current outreach and ensuring further growth involves a few implications for OIBM as discussed below:

The intense information campaign was effective in boosting OIBM outreach and any resulting welfare improvements in clients' lives. A significantly high number of new OIBM clients came from areas that received the intense information campaign which indicates that the campaign was able to encourage new clients to bank with OIBM. There was a modest positive spillover effect of the information campaign as indicated by higher levels of uptake of other formal financial providers in intense information campaign areas. Some formal financial providers have begun to mimic OIBM's product features, offer mobile bank delivery mechanism, and visit villages, especially during tobacco harvest season, to attract new savers among tobacco farmers who are generally non-poor and men. Indeed, such developments are beneficial for the rural populations who could receive better services from formal financial institutions who compete for the market share. But, the growing competition also puts OIBM in a position to constantly monitor the situation and be aware of the new developments to position itself ahead of its competitors. This will require constant improvements in product features, and delivery and dissemination strategies.

Reaching beyond the clientele typically served by formal institutions is paramount. The growing competition among formal institutions to attract tobacco farmers who are primarily men opens opportunities for OIBM to attract other clients such as women, the poor and those who live in areas far from the OIBM service center. This may, indeed, require OIBM to engage in some re-engineering of their products in terms of product bundling of savings and loans. The poor and women headed households that were interviewed for the study reported a lack of access to formal loans and expressed their desire to sign up for deposit services only when access to loans are feasible in the near future. Combining the first mover advantage with sustained improvements in products, services, delivery mechanisms and information dissemination methods and its worldwide experience in serving women and the poor could provide OIBM with a competitive edge and opportunity to reach women, poor farmers and the population in unbanked areas. Besides, diversifying by clientele type could serve as a risk diversification strategy for OIBM since tobacco farmers experience frequent and large income

reducing shocks in the area. Such efforts could also result in any potential welfare improvements due to use of financial services by the vulnerable populations such as the poor and women headed households in rural areas.

Linkages with informal systems could help expand OIBM's outreach. Although OIBM managed to increase its market share among formal institutions, the predominance of informal agents in credit markets provides an untapped market for OIBM to increase its outreach. The markets remain segmented between OIBM and informal financial service providers in terms of types of clients served: lower end clientele are served by informal agents and higher end by OIBM and other formal institutions. Besides, OIBM clients do not use its loan services in exclusion to other service providers. Also, while take up of OIBM has been high, the actual use of savings accounts to deposit and withdraw has been very low due primarily to limited access to mobile banks during emergencies. This has led many households to save cash at home instead of at OIBM. It is important for OIBM to develop appropriate deposit mobilization and disbursement methods like satellite banking and point-of-service (POS) facilities that can limit money kept under mattresses. Our interviews with depositors of formal institutions revealed that they could use their ATM cards at a few Agriculture Input Dealer shops to get quick cash during emergencies. OIBM could also develop loan products that can link with informal agents to increase its outreach. Over time, a conscientious effort in this direction could result in a shift from informal agents to OIBM, thus increasing its market share and outreach.

It is important for OIBM to further improve and sustain the uptake and use of its services since only sustained improvements in outreach could ensure financial sustainability for the institution and any potential welfare improvement that could result for the clients from use of financial services.

INTRODUCTION

The penetration of formal financial sector in Malawi remains low both in absolute terms and relative to other countries in the region (Figure 1; CGAP, 2010). Data gathered by the IRIS Center also shows low usage of formal financial services in Malawi. In 2008, only about 10 percent of households in central rural Malawi had a savings account with formal financial institutions and households were five times more likely to borrow from informal sources relative to formal sources (Adelman and Nagarajan, 2009).³ The variety of financial products in use was limited with minimal use of insurance products, funds transfer services, forward and futures contracts, derivatives, and options (Meagher, 2010).

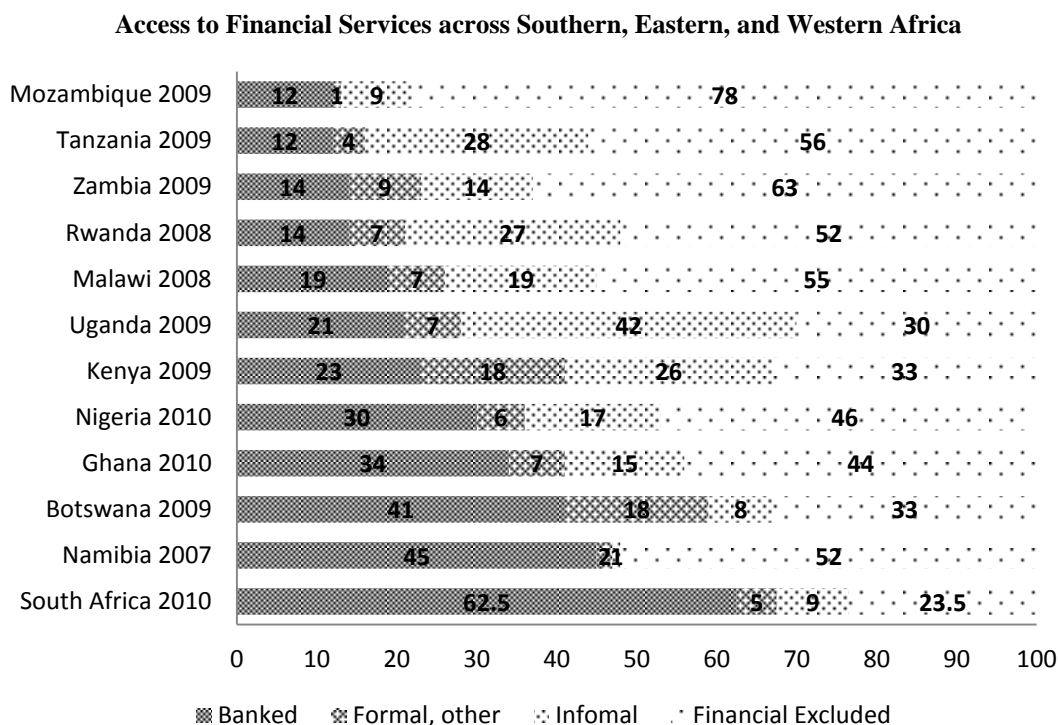


Figure 1: Access to Financial Services across Southern, Eastern, and Western Africa
 Source: FinScope, FinMark Trust, Johannesburg (www.finscope.co.za/new/pages/default.aspx)

The use of formal financial services in Malawi is limited due to at least four reasons. First, although a majority of the Malawian population lives in rural areas, formal financial institutions are mostly located in urban and semi-urban areas, physically distant from the rural households. Second, rural households face obstacles to opening a formal bank account since most formal institutions have account terms, such as account opening fees and large minimum balances that set formal financial services out of reach of rural populations. Third, many banks require formal identification cards such as a passport or other government ID that rural populations may not have and may find prohibitively expensive to procure. Finally, these households lack adequate information regarding access to and use of formal financial services (Meagher, 2010).⁴

³ In comparison, 46 percent of households in South Africa had a savings account in 2010 (Kendall et al., 2010).

⁴ There was misinformation and misunderstanding about financial services due to the low education level of rural residents. It was not uncommon to hear reports that “banks have enough customers and do not want any more” or “the bank’s computer system is full and they cannot take any new customers” even from community leaders (McGuinness, 2008). Also, Focus group discussions conducted in early February 2008 by the IRIS Center among

In order to relax some of the above constraints to access and use of formal finance in rural Malawi, the Bill and Melinda Gates Foundation (BMGF) provided funding in 2007 to Opportunity International Bank in Malawi (OIBM) to purchase a mobile bank to serve unbanked rural areas. The mobile bank is a roving bank that is capable of providing a full range of financial services. The catchment area for the OIBM's mobile bank included six trading centers along a predetermined route across three central districts in Malawi: Lilongwe, Mchinji, and Dedza. Of the six trading centers, three were unbanked while the other three were served by other brick and mortar bank branches. OIBM also developed products suitable for rural clients served by the mobile bank by reducing identification requirements, reducing minimum balance for savings accounts, and waiving collateral requirements for loans. Please see box 1 for more detail on OIBM and mobile van.

The mobile bank went in operation in August of 2007. In order to improve information about OIBM products to increase its outreach, IRIS and OIBM designed an intense information campaign that was conducted by OIBM between April 2008 and December 2010. Field-Based Promotional Assistants (FBPAs) were trained by OIBM to visit villages, make contact with potential clients, and inform them about the products and services offered by OIBM in a randomly selected subset of 56 enumeration areas. The areas not chosen for intense information campaign received information regarding OIBM's product only via mass media like radio (see Nagarajan and Adelman, 2010 for more details).

villagers in the areas serviced by the mobile van found that information was largely spread through word of mouth followed by limited exposure to mass media such as radio.⁴ There was demand for improved access to accurate and specific information on financial services, and many suggested that easy and continuous access to information on terms and conditions of the products and methods to access them would improve take up of financial services (Nagarajan and Adelman, 2010).

Box 1: Opportunity International Bank of Malawi (OIBM)

Opportunity International Bank of Malawi (OIBM) is a commercial bank aiming to provide high value financial services to meet the needs of economically disadvantaged Malawians. OIBM received a full commercial banking license on March 21, 2002, and opened its first branch in Lilongwe on May 23, 2003. It is a savings-led institution with more depositors than borrowers, a 6:1 depositor to borrower ratio as of December, 2010.

OIBM also offers loans, insurance, payment services, and foreign exchange products. Savings products include ordinary savings accounts, business savings accounts, and *Kasupe* accounts designed for those who do not regularly transact with their account. Other options include accounts tailored for parents paying their children's school fees, exporters, short-term savers, and those who want funeral insurance. OIBM's loan products include options for business owners in groups, individual business owners, small medium enterprises (SME), agricultural clients, private schools, employees needing for advances, and corporations. They also offer *Mphamvu* loans for life cycle needs such as births, school fees, weddings, and funerals. Lastly, their insurance products cover marine, burglary, fire, goods in transit, householders, house owners, and travel insurance. Some of the program characteristics, aimed at improving access for poor rural households, included less rigid identification card requirements, lower minimum balances, and increased information exposure via village-level marketing campaigns, among others.

OIBM is headquartered in Lilongwe, the capital and largest urban area of Malawi, located in its Central Region. The growth in clients at OIBM is phenomenal. The number of depositors has increased from 55,769 in December 2006 to 323,206 in December 2010. Over that same time span, the number of borrowers from OIBM has risen from 9,279 with a gross loan portfolio of \$4,910,557 to 51,152 with a gross loan portfolio of \$31,343,731. Additionally, although the average loan of an urban borrower is \$728 compared to rural borrower's mere \$208, OIBM was able to make 31,692 loans in rural Malawi in 2009 compared to 13,583 in urban areas.

Currently, there are four full-service OIBM branches in Lilongwe, two full-service branches in other regional towns and 16 satellite centers that are simply "kiosks" that offer a limited range of OIBM's financial services. In addition, there is a mobile bank that services several villages in Central Malawi. The purchase of the van that functions as a mobile bank was funded by the Bill and Melinda Gates Foundation (BMGF) to provide financial services in rural areas. While OIBM's operations focused on urban centers until mid-2007, the grant from the Gates Foundation allowed outreach to rural Malawians by bringing the bank closer to the clients. The van, unlike the kiosks set up in various villages offers full financial services. Transactions are carried out in real time using the built-in ATM machine. OIBM has set up two routes for the van with the route starting from Lilongwe and go to Dedza, on the border of Mozambique, and to Mchinji, on the border of Zambia. Each route is serviced one to two times per week, and the van makes two stops at six trading centers along the way before arriving at their destination. Four of the six trading centers are un-banked by any formal institution while the other two are serviced by more than three different bank branches. The mobile bank is accessible to rural residents and brings OIBM closer to their home and businesses to open and operate their savings accounts. Loan approvals, however, can only be done in Lilongwe where the head office of OIBM is located.

Source: Stuart, Guy, Michael Ferguson and Monique Cohen (2011); Meagher, Patrick (2010);

This paper, using data gathered from a panel of 2,006 households by the IRIS Center at the University of Maryland in 2008 and 2010, examines the impact of mobile van on financial outreach of OIBM, other formal financial institutions, and informal sources.⁵ We do not have information on cash kept at home and in-kind loans therefore they are excluded from the analysis. We expect the outreach of OIBM to increase faster relative to that of other formal financial institutions because of a reduction in the transaction costs through closer proximity of the mobile bank, better terms and conditions of products and services, and reduction in

⁵ Formal financial institutions other than OIBM include Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. Informal agents include money lenders, landlords, ROSCAs, friends, neighbors, relatives, and local grocery stores among other. Cash kept at home as savings and in-kind loans and savings are not included in the analysis.

information costs through the intense information campaign. We define outreach in terms of number and types of clients reached and the costs of accessing and using financial services.

The next section describes the study methodology and the demographic and socio-economic description of the sampled households. In the following sections, findings on breadth, depth and costs of outreach by OIBM relative to other formal finance institutions and informal financial service providers are discussed to understand the outreach of OIBM. The implications of the study findings to help improve the financial services, especially those provided by OIBM in rural Malawi, are discussed in the concluding section.

STUDY METHODOLOGY

The study was conducted between 2008 and 2010 in rural central Malawi, an area that experienced considerable improvement in access to formal financial services and, more specifically, to deposit services (McGuinness, 2009; Ferguson, 2011). The study is based on a survey of randomly selected households that were considered potential clients of formal financial service providers. The respondents were drawn from three districts in Central Malawi – Mchinji, Dedza and rural Lilongwe where the OIBM mobile bank has operated since August 2007.

The surveys were conducted in two rounds: 2008 for baseline and 2010 for end line. The data were gathered during the months of January to March in both rounds. The baseline data were gathered from 2,459 randomly selected rural households prior to the intense information campaign in the three study districts. A follow-up survey was conducted from January to March of 2010, immediately after the intense information campaign ended in December 2009, and was able to locate and interview 2,006 of the same households that were included in 2008 survey.

The survey respondents satisfied the major criteria often used by most MFIs to identify eligible clients: adults engaged in some income earning activity and those that have lived in the village for at least a year. Most microfinance institutions (MFIs) in Malawi only include adults above 18 years of age that are engaged in some economic activity, and also require proof of residency of over a year and Malawian citizenship.

SURVEY INSTRUMENT

The survey instrument used to gather data for the study was a 30-page structured questionnaire with eleven sections including household demographics, economic activities, poverty status, food security status, physical assets, income, use of financial services, shocks experienced by households, mechanisms used to cope with the shocks, and social capital. The instrument was pretested in the field prior to conducting the survey. It was also translated into Chichewa, the local language.

To assess the poverty status of the study sample, the IRIS research team designed a Poverty Assessment Tool (PAT) for Malawi. The Malawi PAT is based on the methodology originally developed by the IRIS Center to gather household data using a short survey with indicators that have been identified as the best predictors of whether a given set of households is poor or very poor.⁶ The indicators were then developed into a 34-question survey. These questions

⁶ To determine the best indicators of poverty in Malawi, the IRIS team in 2007 used the data gathered for Central Malawi in the 2004-05 Second Integrated Household Survey (IHS-2), based on the World Bank's Living Standards

included information on individual household members (e.g., level of education, health status), characteristics of the household's dwelling (roofing material, source of drinking water), households' possessions (radio, car), and the economic activities of household members (business ownership). The survey collected information to predict the share of respondent households living below three poverty lines: the national poverty line, the \$1/day PPP international poverty line (technically US\$ 1.08 in PPP terms in 1993 prices), and the \$2/day PPP line (US\$ 2.16 in PPP terms in 1993 prices). The national poverty line was computed on the basis of food and non-food consumption, i.e., the cost of a minimal caloric consumption basket plus non-food consumption of those households who have approximately this level of food consumption.

The food security status of the households is examined using food security indices that provide an estimate of household welfare based on food consumption in a month prior to the survey. This data provides an indicator of household welfare during the time of high financial stress of the year when access to and use of financial services are most critical. Our food security measures are a modified version of the USAID Food Insecurity Access Scale (HFIAS) for Measurement of Food Access (Coates, Swindale, and Bilinsky, 2007). The HFIAS provides several types of food security indicators, which we have modified to fit the Malawi context, based on a set of questions about the frequency of food insecurity "domains" in the previous month. Responses to these questions were used to group households according to the Household Food Insecurity Access Prevalence (HFIAP) constructions. The HFIAP categorizes households into four categories: food secure, mildly food insecure, moderately food insecure, and severely food insecure. Moderately and severely food insecure households have problems with adequate food intake (or serious lack of access to quality food). Mildly food insecure households usually have enough food, but may have poor food quality at times.

SELECTED SAMPLE CHARACTERISTICS

The data were gathered from a panel of 2,006 households randomly selected within a 15 kilometer catchment area of each of six call points where OIBM's mobile van stopped on a weekly basis. Key baseline characteristics of the households, disaggregated by the intense information and non-information areas, are presented in Table 1.

Measurement Survey (LSMS). It analyzed the data using multiple statistical methods to identify a set of potential indicators to predict the poverty levels of a population.

Table 1: Baseline Characteristics of Sampled Households in the Panel Sample

	Non- information Areas	Information Areas	Difference (p-value)	Total
Total households	995	1,011	0.00	2,006
Gender of household head				
Female	158	139	-0.02	297
Male	837	872	0.02	1709
Number of tobacco growers	169	136	-0.02**	305
Number of households (by distance to OIBM mobile bank stop)				
Less than 5 km	203	195	-0.01	398
5 – 7 km	173	217	0.04**	390
7 – 12 km	504	451	-0.06***	955
More than 12 km	118	145	0.03*	263
Age of household head (years)	41.66	41.63	0.03	1958
Household size (number)	5.07	5.30	0.24***	2006
Number of dependents	2.85	2.76		
Poverty status				
Above \$2/day	618	632	0.00	1250
\$2/day - National Poverty Line	12	14	0.00	26
National Poverty Line – Median Poverty Line	55	44	-0.01	99
Median Poverty Line - \$1/day	301	317	0.01	618
Below \$1/day	9	4	0.00	13
Food security status				
Secure	77	80	-0.00	157
Mildly Insecure	61	55	-0.01	116
Moderately Insecure	415	415	-0.01	830
Severely Insecure	442	461	0.01	903
<u>Income generating activity</u>				
<i>Agriculture</i>				
Percent of households that grow crops	98.91	98.49		
Number of total crops grown	2.29	2.97		
Number of consumption crops grown	2.58	2.57		
Number of cash crops grown	0.34	0.41		
Agricultural land (acres)	2.56	2.46		
<i>Non-agricultural business</i>				
Percent of households that operate a business	26.01	25.03		

Note: Distance is calculated between the center of the village in which the sampled household is located to the nearest OIBM mobile bank service point. This is to be taken as a distance “as the crow flies,” i.e., the shortest distance. It is possible that the actual distance, owing to transportation infrastructure and geographical features of villages, is different than the shortest distance to the OIBM service centers. Differences between information and non-information areas were tested; *** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level.

MEASURING OUTREACH

Outreach of financial services can be measured along multiple dimensions (Navajas et al., 2000). This paper discusses three major dimensions of outreach that impacts the welfare of households: breadth, depth, and cost that are measured as described below:

- *Breadth of outreach* of financial institutions is measured by the number of deposit accounts and outstanding loans, and number of households engaged in financial intermediation.
- *Depth of outreach* measures the penetration of financial services among the marginalized sections of the society. We analyze the demographic and socio-economic characteristics of new savers and borrowers to understand whether women, small farmers and micro-entrepreneurs, the food insecure, those living under poverty line, and those that live in remote and distant areas were reached.
- *Cost of outreach* measures the cost of accessing financial services by users, which include direct costs to access financial services such as application fees and travel costs, and indirect costs that includes the opportunity cost of traveling to the bank branch to access services.

We interpret the breadth of outreach of financial services through client use of various financial services and not through the volume of supply of financial services gathered from the various service providers. We instead rely on the findings from a qualitative landscape study conducted by our companion research team at MFO in July 2007 and 2010 that gathered information from suppliers in the study area (see McGuinness, 2008 and Ferguson, 2011 for details).

In order to understand changes in outreach with the introduction of OIBM in the study area, our analysis focuses primarily on new savers and borrowers with OIBM, other formal institutions and informal agents. New savers and borrowers refer to those households that became clients and availed financial services between April 2008 and April 2010. We also refer to baseline reports, wherever relevant, prepared by the IRIS Center that discussed the outreach among our study sample (Adelman and Nagarajan, 2009; Nagarajan and Adelman, 2010), and that of MFO that examined the financial landscape at the time of baseline survey (McGuinness, 2008) to provide a base to understand changes observed in outreach in the study area.

The surveys were conducted during the pre-harvest season (from January to March) when little money is typically in circulation and households have to rely on cash savings, grain stocks, and loans to make ends meet. In households with school-aged children, cash needs can be particularly high as secondary school fees are due at this time. Thus, households are typically under high financial stress during this period. Also, many households may become food insecure for a short time during this period, which does not mean the households are chronically hungry. The frequency and volume of use of financial services should be interpreted within this context.

BREADTH OF OUTREACH

Malawi has a vibrant and competitive financial landscape. McGuinness (2008) and Ferguson (2011) report that the major formal providers of deposit services in the study area are NBS Bank, National Bank, Standard Bank among commercial banks and one parastatal, Malawi Savings Bank (MSB). On the loan side, the major formal suppliers include microfinance institutions (MFIs), NGOs, savings and credit cooperatives (SACCOs) and parastatals such as MSB and Malawi Rural Finance Company Ltd (MRFC). Only a few institutions provide both savings and loans, including MRFC and SACCOs such as Finance Cooperative Ltd. (FINCOOP) and OIBM. The parastatals, including MSB and MRFC, have a large outreach in the rural areas through their branches due in part to their many years of experience in rural finance while some MFIs and SACCOs also operate at the village level. In addition, informal agents such as friends and relatives, money lenders and informal groups such as Rotating Savings and Credit Associations (ROSCAs) also provide loans and limited amount of deposit services in rural areas.

In this section, we analyze the change in breadth of outreach of OIBM, other formal financial institutions, and informal financial providers between 2008 and 2010. We find the following trends among the 2,006 sampled households:

Use of financial services was prevalent. A significant portion of the sampled households – 35 percent at baseline (705 of 2,006) and 44 percent at end line (889 of 2,006) was engaged in some form of financial activity (Figure 1).

Households often held deposits and loans simultaneously. Of all the households with at least one savings account or an outstanding loan, 13 percent at baseline (91 of 705) and 18 percent at end line (162 of 889) had both a savings account and an outstanding loan (Fig 1).

Borrowing was more common than savings. Number of households with an outstanding loan was about twice as many as the number of households with a savings account.

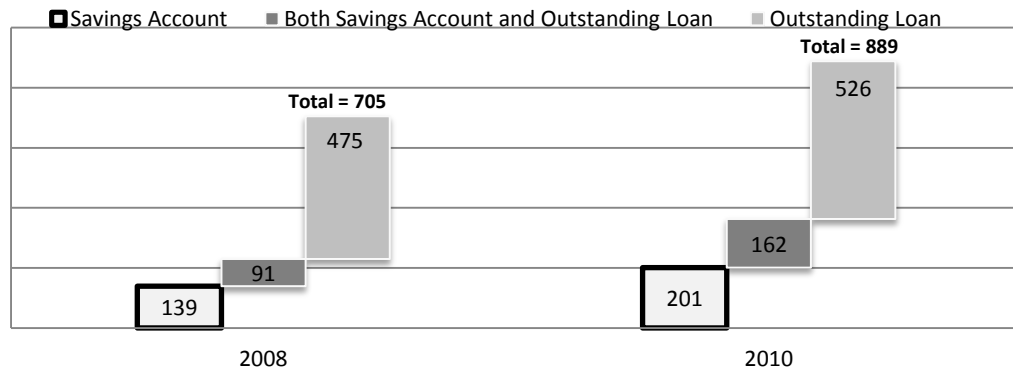


Figure 2: Number of Households with Savings Account and Outstanding Loan

A vast majority of the savings accounts were held with formal institutions. About 87 percent (229 of 264) and 85 percent (404 of 475) of the savings accounts were held with formal institutions at baseline and end line respectively (Figure 2).

There were 176 formal deposit accounts per 1,000 adults in Malawi in 2010 (CGAP, 2010). In contrast, in our sample, there were 43 formal deposit accounts per 1,000 adults, likely because the survey was conducted in rural areas.

There was an increase in the use of savings accounts, primarily due to OIBM. The number of savings accounts increased from 264 to 475, an 80 percent increase (Figure 2). New savings account with OIBM alone constitutes approximately 40 percent of the total increase in the number of savings account.

There was an increase in the market share of OIBM's savings products (Figure 2). Whereas the market share of OIBM was 10 percent at baseline (26 of 264), it was 23 percent at end line (108 of 475). The increase in outreach of OIBM is remarkable in an area served by many competing formal financial institutions offering a variety of financial products.

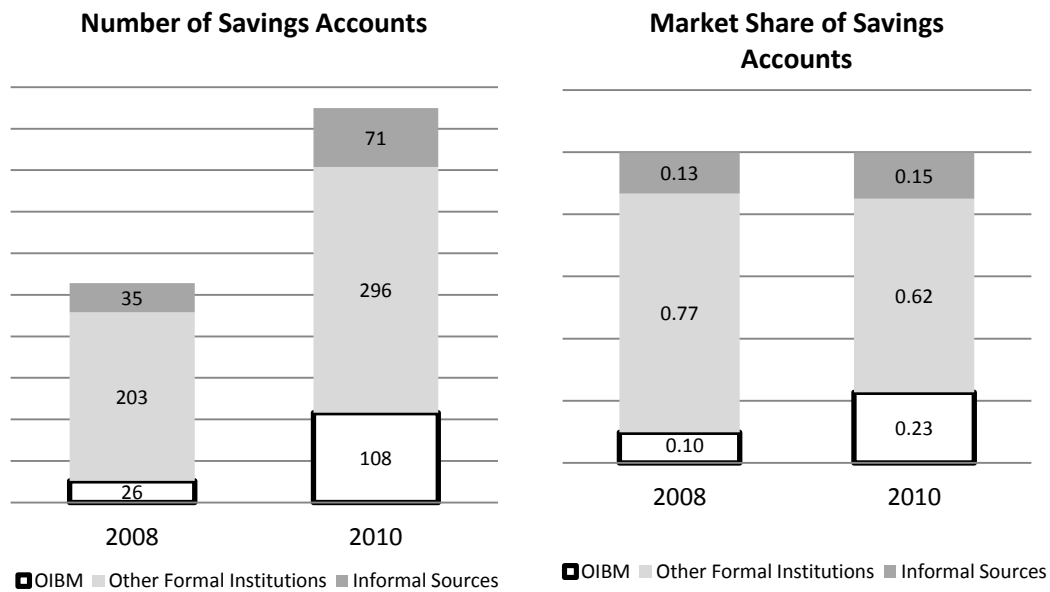


Figure 3: Number of Savings Account and Market Share of Savings Accounts

Findings from the landscape study based on qualitative research conducted by Ferguson (2011) sheds further light on the use of OIBM's savings products. In focus group discussions and individual interviews conducted in 2010, a majority of respondents reported OIBM as the most preferred savings provider. This stands in contrast to McGuinness's (2008) finding at baseline where OIBM did not feature even among the top five most preferred service providers. Furthermore, savers with OIBM reported that the most valued savings feature of OIBM was its proximity to homes and businesses. This suggests that OIBM's innovation to bring banks closer to clients was successful. However, among the most often cited drawbacks of OIBM's innovation was its unavailability for six days a week which left clients with limited access to their savings.

Box 2: OIBM Savings and Mattress Money in Rural Malawi

“I have my own mobile bank” Ms. N’gambe told us in November 2007, pointing to her healthy young goat grazing in her front yard of mud-walled, grass-thatched roof, two room house in a village in Dedza, Central Malawi. But, in 2010, she showed us an OIBM biometric card that she can use at the OIBM’s mobile bank.

Ms. N’gambe is a 42 year old female household head raising 3 children by selling vegetables and fried donuts (mandaz) on the pavement of Dedza market about a four kilometer walk from her house. On average, she made a net profit of about US\$30 in a month. Her husband was a wage labor worker (ganyu) who died in an accident in 2005.

While she kept some cash at home in a pot for buying food and for emergency purposes, she also borrowed from her neighbors to pay school fees on time. She also lent out money to her neighbors in need so they will reciprocate the favor. Until August 2008, she did not hold any savings with formal or informal external agents for lack of funds and high transactions cost. She also saw her neighbors paying a fee to save with commercial banks that also charged for inactive and small accounts, and did not provide any loans.

In August 2008, she became an OIBM client after she repeatedly saw the big red vehicle parked at the entrance of the post office twice a week and heard from other market vendors that it’s a safe bank that also makes small group loans to people like her. The OIBM mobile van stops about a half kilometer from her market stall. Since then, she had joined a club of 8 women to take three loans from OIBM.

While she kept some savings at OIBM last year, she reported a very small amount as current balance at the OIBM mobile bank. Indeed, the savings appeared to be the remaining loan amount that was deposited into her savings account for withdrawals. She still holds some cash at home for emergencies, which was stolen a few times and was once eaten by termites, but no more savings in goats. She still lends small amounts to her neighbors in case of emergency in anticipation of reciprocation.

The weekly visit of the mobile bank tends to have limited her ability to save more, especially for emergencies and for getting education loans for her son. She experienced difficulty in using her OIBM biometric card at an ATM of NBS - the commercial bank branch near the market with whom OIBM shares the ATM platform. With a longer grace period for loans, she thinks she could save more, although it is likely that she may only delay withdrawal of her entire loan amount deposited in her account. She also reported that it was difficult for her to know her balance without a physical passbook. Her biometric card could only be read at the mobile bank. When one of the members of her club defaulted, she had to withdraw her savings at OIBM to pay for the group so they can be eligible for future loans. The incident reduced her confidence in parking her savings at OIBM. She is, however, willing to save more if she can access individual loans so she is not liable for defaulting members. She has grown her business to date and may, in the future shift some money kept at home to savings kept at OIBM and integrate the savings into her activities with more frequent mobile bank visits and access to individual loans.

There was an increase in the number of borrowers (Figure 1). About 28 percent of households (566 of 2,006) reported at least one outstanding loan at baseline and the proportion increased to 34 percent (688 of 2,006) at end line.

A majority of loans was sourced from informal agents (Figure 3). In contrast to savings accounts, most of the outstanding loans were held with informal agents. In particular, 82 percent of outstanding number of loans at baseline (525 of 641) and 85 percent at end line (743 of 874) were sourced from informal agents such as money lenders, friends, neighbors, relatives, and local grocery stores

The predominance of informal sources of credit in rural areas is likely due to the low transaction costs of borrowing from informal agents. We will analyze the transaction costs of

savings and borrowing in more detail later in the paper. It is culturally acceptable to borrow from friends and family than from moneylenders and banks. In a 2009 Gallup poll, when asked where they would go to obtain a loan to start a business, only 20% of respondents in sub-Saharan Africa chose the banks or microfinance institutions. The rest said they would rely on family, friends, community groups, church groups, moneylenders, or employers for the funds. In our sample, there were 24.76 formal loans per 1,000 adults while nationally, the figure was 47.39 (CGAP, 2010). The differences are likely due to the concentration of our survey in rural areas.

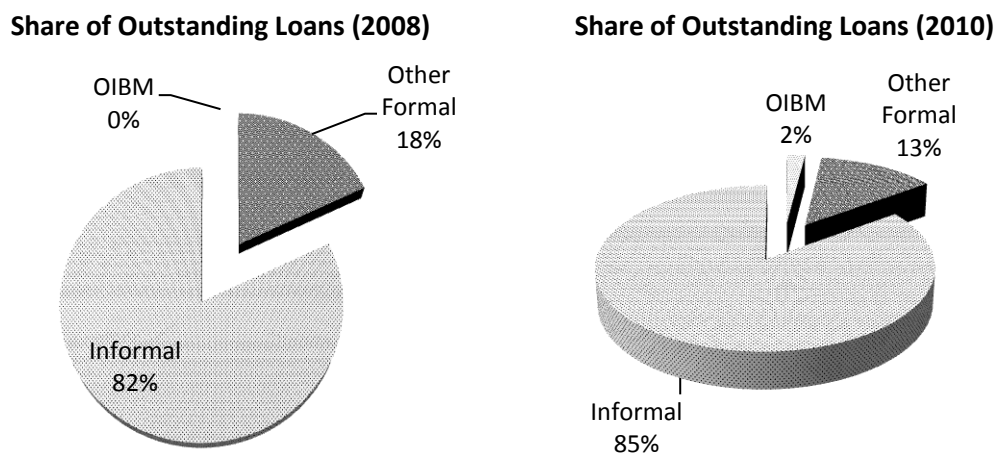


Figure 4: Share of Outstanding Loans (by type of lender)

Households were much more likely to use formal institutions for saving than borrowing. While more than 85 percent of savings accounts were held with formal institutions, less than 20 percent of loans were sourced from formal institutions. This observation is consistent with the national data for Malawi where the number of formal deposit accounts per 1,000 adults is about four times higher than the number of loans (CGAP, 2010).

Households that opened new savings accounts between 2008 and 2010 often did so with more than one institution (Table 2). Of the 83 households that opened a savings account with OIBM, 15 also had a savings account with other formal financial institutions, and one household also saved with informal agents. Similarly, of the 143 households that opened a savings account with formal financial institutions, six also saved with informal agents.

In our sample, 11% of households (211 of 2,006) had a savings account with formal institutions, and 13% (261 of 2,006) had any form of savings account. These figures are comparable to the findings of a Gallup poll conducted in 2009 where 11% of respondents in Malawi reported to have a bank account.

Table 2: Households with New Savings Accounts

	New OIBM Savings Account	New Savings Account with Other Formal Institutions	New Informal Savings Account	Total
OIBM	67	15	1	83
Other Formal Institutions	15	122	6	143
Informal Agents	1	6	52	59

Note: Formal institutions other than OIBM include Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. Informal agents include saving with ROSCAs, friends, neighbors, and relatives.

Box 3: No One Stop for Financial Services Yet!

Our interviews with many OIBM mobile bank members, specifically small and microenterprise owners, show that they simultaneously maintain savings accounts with commercial bank branches in Dedza to manage their cash flows on non-mobile bank days. While many were banking with those organizations before OIBM came to Dedza, they preferred to open an account with OIBM to primarily access loans. Many reported that OIBM is the only bank in that area that provides small loans with flexible and affordable terms and conditions.

New borrowers tended to be more exclusive in their choice of financial institutions (Table 3). None of the 15 households that had a new outstanding loan with OIBM had an outstanding loan with other formal institutions or informal agents. Similarly, of the 85 new households that had an outstanding loan with formal financial institutions other than OIBM, only seven also had one from informal sources. The exclusivity is perhaps most apparent among households that had new loans from informal agents. Among 389 such households, only 7 had additional loan from formal institutions and none had a loan from OIBM. This suggests that the features of loan products offered by OIBM, other formal institutions, and informal agents are suitable to specific types of households.

Table 3: Households with New Outstanding Loans

	New Loan with OIBM	New Loan with Other Formal Institutions	New Loan with Informal Agents	Total
OIBM	15	0	0	15
Other Formal Institutions	0	78	7	85
Informal Agents	0	7	382	389

Note: Formal institutions other than OIBM include Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. Informal agents include saving with ROSCAs, friends, neighbors, and relatives.

*Significantly higher proportion of households in intense information campaign areas joined OIBM relative to non information areas.*⁷ Administrative data collected from the MIS database of OIBM shows that, of the 1,422 new OIBM clients that joined between April 2008 to May 2009, approximately two thirds (933) originated from intense information campaign areas. The average take up was much higher in information campaign areas relative to non-information campaign areas (67 vs. 35 new clients per month, respectively).⁸ About 6.3 percent of total households in information campaign areas joined OIBM versus 3.3 percent in non-information campaign areas. The average number of new clients per enumeration area (EA) cluster in information campaign areas (15.6) was about twice that of new clients in non-information campaign areas (8.3).

Among 88 new savers with OIBM in our survey sample, 72 percent came from areas covered by the intense information campaign (Figure 4).⁹ In terms of the total sample, 5.9 percent of 1,011 sampled households in information clusters adopted savings with OIBM. In

⁷ See Nagarajan and Adelman (2010) for more details.

⁸ There were no base line data available on new client uptake in the study areas.

⁹ This represents about 8% of the total number of new clients (933) registered in the treatment areas due to intense marketing campaign; the 27% of OIBM users in our end line database from control areas represent 6% of the total new registrations (489) in control areas.

comparison, only 2.3 percent of 995 sampled households in clusters with no information campaigns adopted savings with OIBM and this difference is statistically significant.

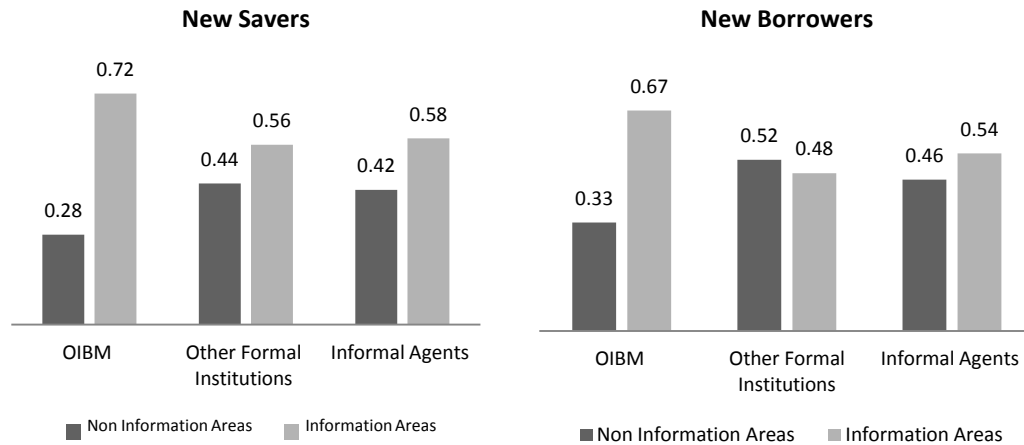


Figure 5: Proportion of New Savers and Borrowers from Information and Non Information Areas

The intense information campaign also had a modest positive spillover effect in attracting depositors to other financial providers. Approximately 56 percent and 58 percent of new savers with formal and informal financial agents respectively belonged to information areas (Figure 4). This trend suggests that OIBM’s information campaign had a positive spillover effect in the take up of savings accounts because under normal circumstances, we would expect similar take up for other institutions in both intense information campaign and non information campaign areas.

Ferguson (2011) finds that OIBM’s innovation of the mobile van spurred other institutions to design their own innovations to increase rural outreach. Our interviews with 192 key informants in the study area show that many formal financial institutions also began to visit the study areas and provide information after OIBM started its intense information campaign, especially during harvest season, to attract new depositors. While the savings accounts reported here were directly held by households, anecdotal evidence and our survey data suggests that many households held external savings in formal accounts of friends and relatives.¹⁰

There was no marked difference in the type of savings account opened by new savers with OIBM and other formal institutions (Table 4).

¹⁰ For example while there were 267 households with formal savings at end line, there were 26 households (in size equal to approximately 10% of formal savers) not included as formal savers that kept savings in the account belonging to a relative or friend. Lack of IDs and inadequate minimal balances to open an account were cited as reasons for the behavior by many of these indirect savers.

Table 4: Proportion of New Savers by Type of Savings Accounts

	New OIBM Savers	New Formal Savers	New Informal Savers
Current Account	0.03	0.05	0.05
Fixed Deposit	0.01	0.00	0.00
Compulsory Savings For Loan	0.10	0.23	0.06
Savings Account	0.85	0.70	0.30
Safekeeping with friends/relatives	0.00	0.02	0.59
Total	88	185	64

Note: New OIBM savers or borrowers refer to the new savers or borrowers with OIBM. New formal savers or borrowers refer to the new savers or borrowers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal savers or borrowers refer to the new savers or borrowers with informal agents like ROSCAs, friends, relatives, neighbors.

Our analysis shows that OIBM's mobile bank could compete well with other formal financial service providers and increase the breadth of outreach substantially in its area of operation. The intense information campaign is found to have considerably boosted the breadth of outreach indicating the effectiveness of personal and intense marketing efforts and demand for information on financial services to help make financial decisions by the rural populations.

DEPTH OF OUTREACH

Depth of outreach refers to the penetration of the financial sector among the vulnerable and marginalized sections of the society (Beck et al., 2007). In this paper, we examine the demographic and socio-economic characteristics of new savers and borrowers served by OIBM, other formal institutions, and informal agents. Our objective is to understand the outreach of financial institutions among women, small farmers and micro-entrepreneurs, the food insecure, those living under the poverty line, and those that live in remote and distant areas.

OIBM was more successful than other formal institutions in attracting female borrowers but less successful in attracting female depositors (Figure 5). About 67 percent (10 of 15) of new borrowers with OIBM were females while 52 percent (47 of 91) of new borrowers with other formal institutions were females. On the other hand, 33 percent (29 of 87) and 48 percent (82 of 172) of new savers with OIBM and other formal institutions were females.

OIBM attracted relatively more female borrowers than depositors (Table 7). Among those who opened a new savings account with OIBM, 33 percent were female while 67 percent of the new OIBM borrowers were females.

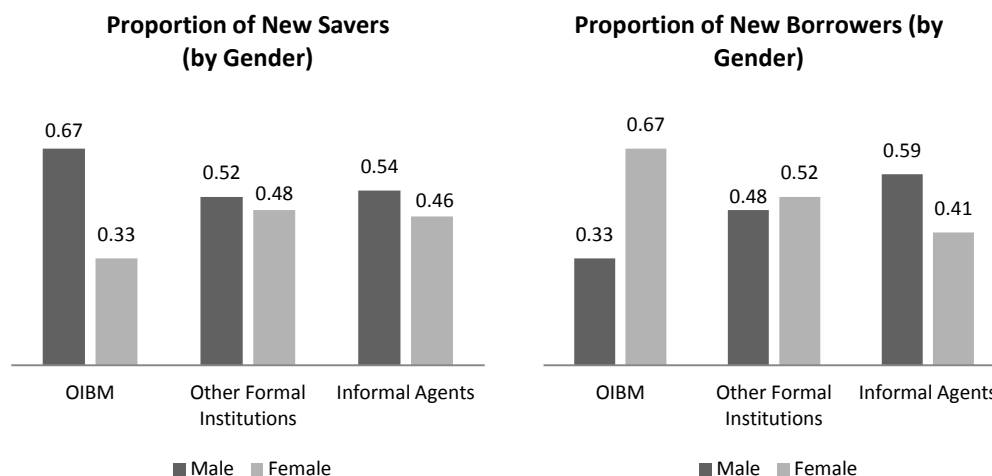


Figure 6: Gender of New Savers and Borrowers

Formal financial institutions, relative to informal agents, attracted fewer farmers but more households with a business or salaried employee (Table 5). While 89 percent of new savers with informal agents were farmers, it was 71 percent and 73 percent, respectively, for OIBM and other formal institutions. Similarly, 88 percent of new savers with informal agents were farmers while the figures for OIBM and other formal institutions was 60 percent and 76 percent respectively. This indicates the suitability of loan and savings products offered by informal agents, relative to formal institutions, to farmers whose incomes are highly seasonal and subject to high levels of external shocks such as price volatility and weather fluctuations.

Table 5: Proportion of New Savers and Borrowers by Occupation

		Farming	Household Business	Salaried Occupation	Wage Labor	Total
New Savers						
	OIBM	0.71	0.07	0.15	0.00	87
	Other Formal Institutions	0.73	0.08	0.13	0.00	172
	Informal Agents	0.89	0.02	0.03	0.00	63
New Borrowers						
	OIBM	0.60	0.13	0.27	0.00	15
	Other Formal Institutions	0.76	0.05	0.12	0.01	91
	Informal Agents	0.88	0.04	0.04	0.02	464

Note: New OIBM savers or borrowers refer to the new savers or borrowers with OIBM. New formal savers or borrowers refer to the new savers or borrowers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal savers or borrowers refer to the new savers or borrowers with informal agents like ROSCAs, friends, relatives, neighbors.

New savers and borrowers with OIBM and other formal institutions were relatively more educated and literate compared to new savers and borrowers with informal agents (Figure 6). This is a reflection of a hurdle that the rural population faces in accessing formal financial services. Formal institutions often require clients to fill out forms and sign on terms and

conditions before opening an account, which may discourage the illiterate and the uneducated to approach the institutions for banking services. However, it should be noted that education is correlated to a number of variables like occupation, income, and assets and it is possible that the use of financial services is driven by these variables and not education alone.

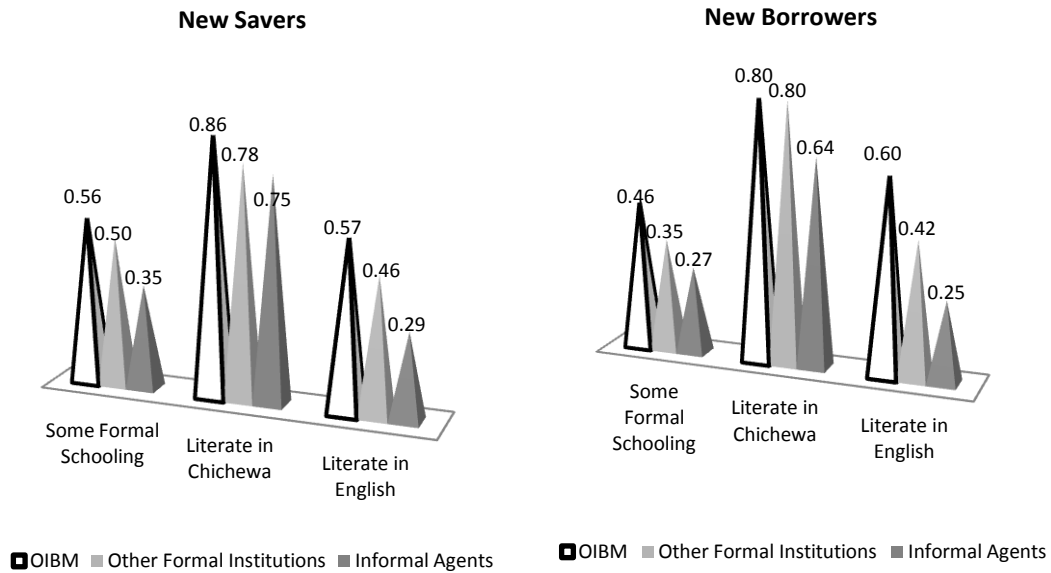


Figure 7: Educational Attainment and Literacy Status of New Savers and Borrowers

A relatively higher fraction of new savers and borrowers with OIBM lived within 5 kilometer radius of the call centers and a relatively lower proportion lived more than 12 kilometers from the call centers (Figure 7). One possible reason for the lower take up of OIBM’s services by those living far from the call centers is the availability of the services only on a weekly basis.

Take up of savings accounts and loans with OIBM and other formal institutions did not decrease linearly with the distance to the nearest call center (Figure 7). While 17 percent and 20 percent of new savers with OIBM and other formal institutions lived 5 to 7 kilometers from the nearest call center, the proportion of new savers who lived 7 to 12 kilometers from the nearest call center are 41 percent and 38 percent respectively and the trend is similar among new borrowers. One explanation for this finding is simply that the proportion of the total population living at a distance of 7 to 12 kilometers from the call centers is high. Indeed, we find that about 46 percent of households in our sample lived at a distance of 7 to 12 kilometers from the nearest call center.

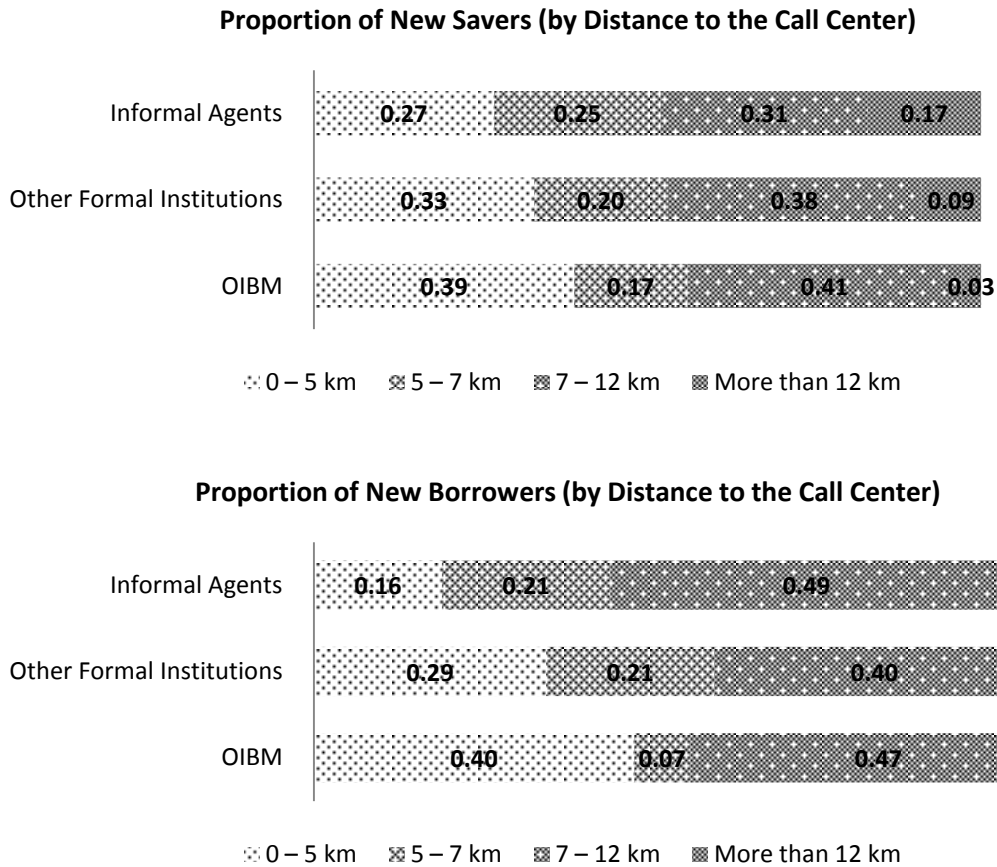


Figure 8: Distance of New Savers and Borrowers from the Nearest OIBM Mobile Bank Service

Take up of OIBM was higher in areas with no prior banking facilities (Table 6). 77 percent of new savers with OIBM (68 of 88) lived near call centers with no prior banking services, while 71 percent of new savers with other formal institutions (125 of 177) lived in the area. Similarly, 67 percent of new borrowers with OIBM (10 of 15) and 54 percent of new borrowers with other formal institutions (50 of 92) lived close to call centers with no prior banking facilities. This suggests that OIBM’s innovation of roving van was particularly relevant to those living near the call centers with no prior banking facilities.

Table 6: New Savers and Borrowers by Call Centers

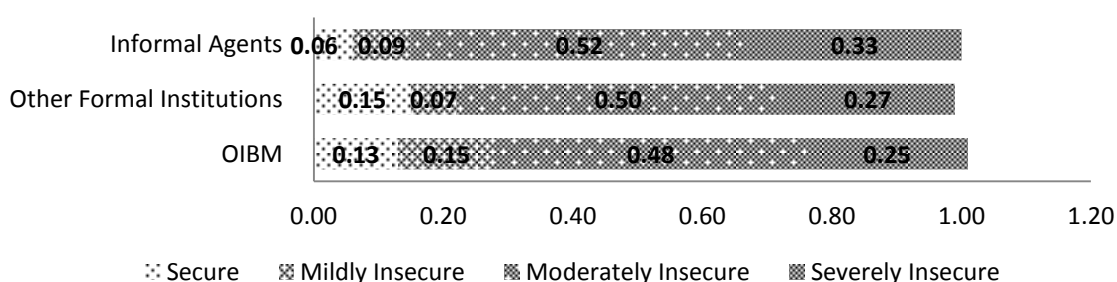
	Call Centers with Prior Banking Facilities (Mchinji and Dedza)	Call Centers with no Prior Banking Facilities (Chimbiya, Kamwendo, Nkhoma, and Nsundwe)	Total
New Savers			
OIBM	0.23	0.77	88
Other Formal Institutions	0.29	0.71	177
Informal Agents	0.34	0.66	64
New Borrowers			
OIBM	0.33	0.67	15
Other Formal Institutions	0.46	0.54	92
Informal Agents	0.32	0.68	473

Note: New OIBM savers/borrowers are new savers/borrowers with OIBM. New formal savers/borrowers are new savers/borrowers with other formal institutions including Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal savers/borrowers are new savers/borrowers with informal agents like ROSCAs, friends, relatives, neighbors.

Food secure households were relatively more likely to borrow and save with formal institutions (Figure 8). While 13 percent and 15 percent of new savers with OIBM and other formal institutions were food secure, only 6 percent of new savers with informal agents were food secure. Similarly, 13 percent of new borrowers with OIBM and other formal institutions were food secure while the proportion among new borrowers with informal agents was 5 percent

Severely food insecure households are more likely to borrow and save with informal agents (Figure 8). Among new savers with OIBM and other formal institutions, 25 percent and 27 percent of clients are severely food insecure. The figure among new savers with informal agents is 33 percent. The contrast among new borrowers is starker: 20 percent, 33 percent and 49 percent of new borrowers with OIBM, other formal institutions, and informal agents are severely food insecure.

Proportion of New Savers (By Food Security Status)



Proportion of New Borrowers (by Food Security Status)

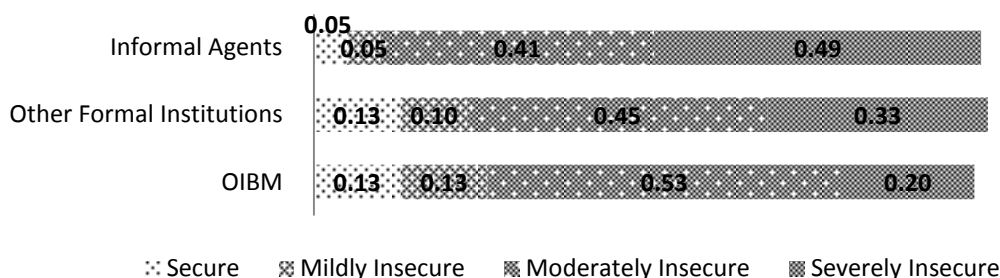


Figure 9: Food Security Status of New Savers and Borrowers

There was no substantial difference in the proportion of new savers with OIBM, other formal institutions, and informal agents who lived above the \$2 per day poverty line (Table 7). Nearly 78 percent and 84 percent of new depositors with OIBM and other formal institutions lived above the PPP\$2 poverty line while the figure among new depositors with informal agents was 83 percent. Similarly, while 19 percent and 15 percent of new savers with OIBM and other formal institutions lived between the median and PPP\$1 poverty lines, 13 percent of new savers with informal did so.

Individuals who lived above the \$2 per person per day poverty line were more likely to borrow from OIBM and other formal institutions relative to informal sources (Table 7). 80 percent and 81 percent of new borrowers with OIBM and other formal institutions lived above the poverty line while the figure among new borrowers with informal agents was 63 percent. On the other hand, clients who lived below the median poverty line were significantly more likely to borrow from informal sources. While 13 percent and 16 percent of new borrowers with OIBM and other formal institutions lived below the median poverty line, 32 percent of new informal borrowers did so.

Table 7: Poverty Status of New Savers and Borrowers

		Above \$2 per day	Between \$2 per day and National poverty	Between National Median poverty and Median poverty	Between Median poverty and \$1 per day	Below \$1 per day	Total
New Savers							
	OIBM	0.78	0.00	0.02	0.19	0.00	88
	Other Formal Institutions	0.84	0.00	0.01	0.15	0.00	177
	Informal Agents	0.83	0.03	0.02	0.13	0.00	64
New Borrowers							
	OIBM	0.80	0.00	0.07	0.13	0.00	15
	Other Formal Institutions	0.81	0.00	0.03	0.16	0.00	92
	Informal Agents	0.63	0.01	0.04	0.32	0.01	473

Note: New OIBM savers or borrowers refer to the new savers or borrowers with OIBM. New formal savers or borrowers refer to the new savers or borrowers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal savers or borrowers refer to the new savers or borrowers with informal agents like ROSCAs, friends, relatives, neighbors.

Average savings balances held by new savers with OIBM and other formal institutions were higher than that of new savers with informal agents (Figure 9). The average savings balance with OIBM, other formal institutions and informal agents, respectively, represents 18 percent, 21 percent and 8 percent of GDP per capita indicating a good depth of poverty outreach by OIBM.¹¹ There was little difference in median savings balances across all types of institutions. The median saving balances amount to approximately 3-4 percent of nominal GDP per capita in 2010 for all three types of financial service providers.¹²

There was a considerable difference in average and median savings balances in formal savings accounts compared to informal accounts (Figure 9). This suggests that formal institutions attracted savers with heterogeneous income and wealth profiles than informal institutions.

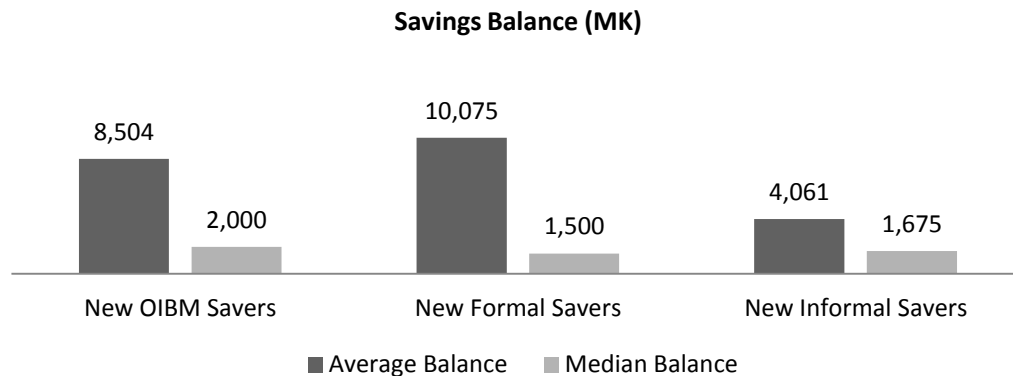


Figure 10: Average and Median Savings Balance for New Savers (MK)

Average and median loans with OIBM and other formal institutions were substantially higher compared to new borrowers with informal agents (Figure 10). The loan sizes were also high relative to GDP per capita indicating that OIBM and other formal service providers are lending out to not very poor clientele. The median loan sizes with OIBM and other formal institutions were 41 percent and 21 percent of GDP per capita, respectively. In contrast, median loan size from informal sources was 2 percent of GDP per capita indicating an outreach to the poor with loans. Small savings balances and loan sizes increase the per unit administrative costs of financial institutions, a reason why many formal institutions shy away from serving the rural areas and the poor.

¹¹ Benchmarks set by MicroBanking Bulletin state that average savings balances of less than 20 percent of GDP per capita indicate a good depth of outreach.

¹² Based on IMF's estimate of Malawi's 2010 GDP per capita of \$322 and approximate exchange rate of US \$1 = 150 MK (www.oanda.com).

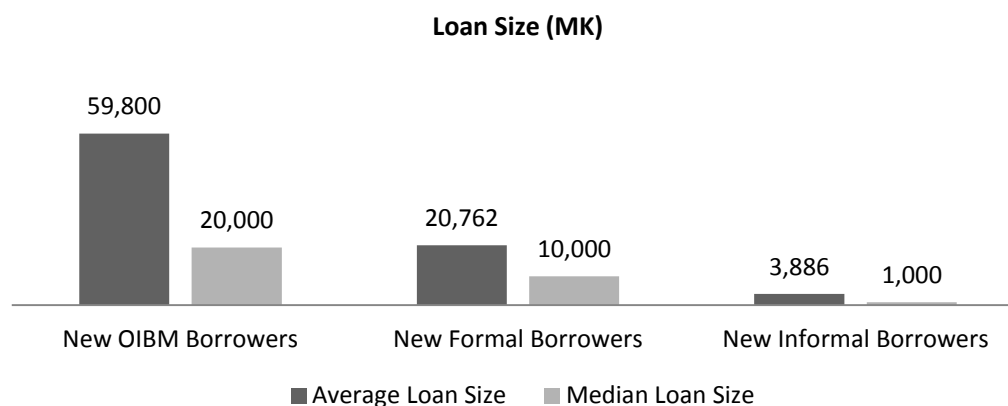


Figure 11: Average and Median Outstanding Loan Balance for New Borrowers (MK)

The lending capacity of informal lenders is limited, both due to liquidity constraints and, in absence of legal recourse to recoup loans, the risk of loans going sour. Formal institutions on the other hand are able to make large loans due to higher level of liquidity, security provided by collateral, and legal support. Hence it is likely that clients borrow from formal sources to finance large investment or expenditure, but resort to borrowing from informal sources to smooth consumption or cope with risk.

POTENTIAL CLIENTS OF OIBM, FORMAL INSTITUTIONS AND INFORMAL AGENTS

In order to understand the potential clients of various service providers and infer the presence of any market segmentation, we now estimate the likelihood of an individual choosing to take up financial services with OIBM, other formal institutions, and informal agents. To that end, we use multinomial logit regression method, and to create mutually exclusive categories for the purpose of the regression, new users of OIBM, formal, and informal services are defined as the individuals who opened a new savings account or took a new loan exclusively with OIBM, other formal institutions, and informal agents.

Results presented in Table 8 show the following:

- New OIBM users are significantly more likely to come from areas where the intense information campaign was conducted indicating the effectiveness of information campaign.
- Those with a household business or in a salaried profession are more likely to take up financial services from OIBM or other formal institutions compared to farmers. On the other hand, the use of formal financial services was lower among wage laborers, although small number of wage laborers in the sample does not allow us to measure the estimate with precision.
- We do not observe a statistically significant effect of formal schooling or literacy in the use of formal financial services.¹³

¹³ This result stands in contrast to the results for the baseline sample (Adelman and Nagarajan, 2009). One possible explanation for the reversal is that formal financial institutions were able to reach to the uneducated and illiterate sections of the population between 2008 and 2010.

- We also find that residents of Mchinji and Dedza districts were less likely to be new users of formal financial services from OIBM or other formal financial institutions relative to services from informal agents. This result is reasonable because formal financial institutions are likely to have a much more extensive network of bank branches and other access points in Lilongwe, the district where the capital city is located. Residents of Lilongwe are also more likely to be financially literate and sophisticated because of the availability of information due to their proximity to the capital.
- The most consistent predictor of the use of formal financial services from OIBM or other formal financial institutions relative to informal agents is the distance from the nearest OIBM service points. Note that most of the other formal financial institutions are also present in at least two of the six OIBM mobile bank service centers. Transaction costs of accessing and using financial services possibly act as an insurmountable hurdle for many potential clients, and, as we later show, direct and opportunity cost of travel constitutes the largest component of transaction costs. Therefore, it is no surprise that the use of formal financial services decreases with the distance to the service points of formal financial institutions.
- The use of formal financial services from OIBM or other formal financial institutions also appears to be lower among the poorer sections of the population as measured by their food security and poverty status.

The results indicate that markets remain segmented, even after the entry of OIBM, between formal and informal financial service providers in terms of types of clients served. The market most likely to be served by OIBM and other formal institutions include food secure households living in areas near service points of OIBM in Lilongwe district.

The effort of OIBM to bring the bank closer to the rural population and provide services with better terms and conditions with more information on its services has increased the breadth of outreach but has still not closed the gap on market segmentation between the vulnerable and non poor populations. In the next section, we examine the costs of outreach for OIBM, other formal institutions and informal agents to understand the possible reasons for the observed market segmentation.

Table 8: Potential Clients of OIBM, Other Formal Institutions and Informal Agents: Log Odds Ratio from Multinomial Logit Regression (Reference Group = New Informal Users)

	New OIBM Users	New Formal Users
Information Areas (dummy)	1.25***	0.02
Age (years)	0.03	0.00
Female (dummy)	0.02	0.47**
Occupation (Base Group = Farming) – Dummy		
Household Business	0.50	1.04**
Salaried Profession	0.37	1.20**
Wage Labor	-15.22	-15.47
Formal Schooling (years)	0.26	0.04
Literacy (dummy)		
Literate in Chichewa	0.69	0.07
Literate in English	0.66	0.43

District (Base Group = Lilongwe) - Dummy			
	Mchinji	-0.62	-0.52*
	Dedza	-1.00**	-0.24
Distance (Base Group = 0 – 5 km) – Dummy			
	5 – 7 km	-1.57***	-0.62**
	7 – 12 km	-1.17***	-0.62**
	More than 12 km	-2.36***	-0.85**
Food Security (Base Group = Food Secure) – Dummy			
	Mildly Insecure	0.31	-0.56
	Moderately Insecure	-0.89	-0.49
	Severely Insecure	-1.45**	-0.88**
Poverty Status (Base Group = Above \$2 per day) - Dummy			
	\$2 per day – National poverty	-15.05	-16.09
	National poverty line – Median poverty	1.42	-0.37
	Median poverty line – \$1 per day	-0.28	-0.76**
	Below \$1per day	.	.
Value of Durable Asset (MK)		-0.00	0.00
Obs.		553	
Pseudo R²		0.14	

Note: New OIBM savers or borrowers refer to the new savers or borrowers with OIBM. New formal savers or borrowers refer to the new savers or borrowers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal savers or borrowers refer to the new savers or borrowers with informal agents like ROSCAs, friends, relatives, neighbors.***Significant at 1% level **Significant at 5% level *Significant at 10% level

COST OF OUTREACH

The “pure” cost of using savings services or taking out a loan is the opportunity cost of the funds, net of interest accrued to the saver or the returns enjoyed by the borrower. Any additional costs incurred to facilitate the transaction between financial service providers and users are known as transaction costs. Such costs are “frictions” in the functioning of financial markets and they increase the cost of accessing and using financial services beyond the explicit interest rates. Transaction costs may be borne by the service providers (supply side) or the users (demand side).

Transaction costs to financial institutions include the cost of processing, delivering, and administering the savings accounts and loans and, in the case of credit, the cost of the risk of default (Saito and Villanueva, 1981). Absence of national identification numbers and credit histories, poor monitoring and enforcement mechanisms, and weak legal and regulatory environment to recoup delinquent loans also increase the cost of lending. Administrative costs as a percentage of total savings or loans increase as the size of savings and loans decrease and the duration for which savings are held and funds are borrowed shorten.

Demand side transaction costs include the direct and opportunity costs borne by users in acquiring and using financial services (Abiad, Cuevas, and Graham 1988). They include rigid ID requirements that formal institutions often have to open a savings account or apply for a loan and the high minimum balance required to open a savings account. Some institutions also require application fees to open a savings account or apply for a loan, and to access the funds. More significantly, formal institutions are usually located in large cities or towns, far from the rural population. The direct and opportunity costs of traveling to the bank branches to access and use formal financial services may be prohibitively high for a large section of the rural population. All these variables have costs associated with them, which makes the use of formal financial services out of reach for many of the poor.

Demand side transaction costs can be disaggregated according to the nature of the costs (explicit or implicit) and the stages of at which they are incurred (Table 9). Explicit costs refer to the costs incurred directly in accessing and using financial services, like cash expenses required to travel to service providers and access the services. Implicit costs refer primarily to the opportunity cost of time.

Transaction costs explain the predominant use of informal financial services among the rural population in developing countries. Informal financial services include, among others, loans from money lenders, lines of credit from retailers and wholesalers, loans for agricultural inputs from landlords, loans and gifts from friends and relatives, and informal saving arrangements like ROSCAs and roving deposit collector. The costs of processing, delivering, and administering loans and savings products are minimal for informal agents because unlike formal organizations with brick and mortar branches that have to cover their overhead, informal agents operate out of their own homes. More importantly, informal agents have much more intimate information about the riskiness of the clients and their projects, and they can observe with more fidelity the actions taken by the clients and any unanticipated shocks. This availability of information reduces the interest rates by reducing the cost of acquiring information and monitoring the actions of clients. Furthermore, both service providers and clients expect to continue to interact repeatedly in the future, which leads to better contract enforcement due to reputation effects. Informal agents are often based in the same or surrounding villages as the clients, reducing the cost of travel to access the funds. Therefore, it is no surprise that rural populations in developing countries choose informal sources of financial services over formal sources. For formal finance to make inroads into these areas, service providers have to come up with innovative product features that reduce the transaction costs of access to and use of formal financial services.

Table 9: Demand Side Components of Transaction Costs

	Explicit Costs	Implicit Costs
Application and acquisition costs	<ul style="list-style-type: none"> • Costs of collecting information • Application fee • ID and ATM card costs • Travel costs • Group fee (for group loans) • Training fee (if any) 	<ul style="list-style-type: none"> • Opportunity cost of travel time • Opportunity cost of time for group search and formation (for group loans) • Opportunity cost of time for training
Service costs	<ul style="list-style-type: none"> • ATM fee / teller fee • Travel costs 	<ul style="list-style-type: none"> • Opportunity cost of travel time • Opportunity cost of time for group meetings (for group loans)
Other costs	<ul style="list-style-type: none"> • Fee and travel costs for refinancing 	<ul style="list-style-type: none"> • Opportunity cost of time spent in refinancing • Risk of theft / insecurity

In the following section, we describe and quantify the transaction costs of accessing and using formal financial services by rural households in Malawi.

TRANSACTION COSTS OF OPENING A SAVINGS ACCOUNT

As outlined in table 9, the costs of opening an account consist of the following components:

- i. Costs to obtain IDs to open the account;
- ii. Direct costs of travel;
- iii. Application fees;
- iv. Expenditure on ATM cards;
- v. Opportunity cost of travel time.

To estimate the opportunity cost of time of travel, we use the average hourly *ganyu*¹⁴ wage as an approximation for the hourly wage rate even though an individual may not be a wage laborer. This provides a lower estimate of the opportunity cost of travel time.

As a fraction of savings balances, transaction costs of opening a savings account are substantially higher for formal accounts relative to informal accounts (Figure 11). Costs of opening a savings account with formal institutions constitute of approximately 40 percent of median savings balances. In contrast, cost of opening an account with informal institutions is

¹⁴ *Ganyu* is a short-term labor relationship prevalent in rural Malawi which involves working in the fields of other smallholders or on large agricultural estates for a daily wage.

about 7 percent of median savings balance. These figures demonstrate the barriers faced by rural households in accessing formal financial services.

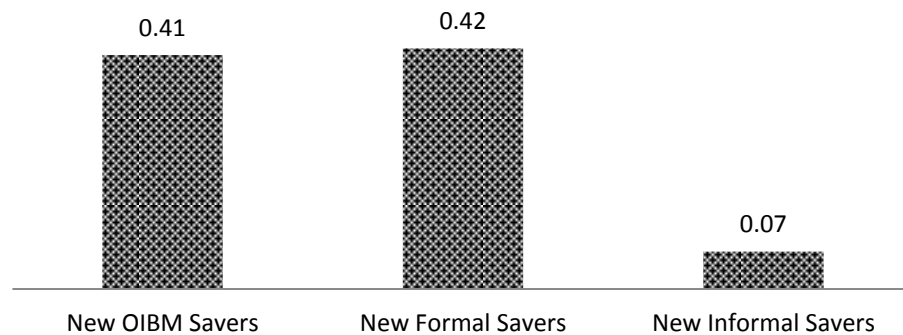


Figure 12: Transaction Costs to Open a Savings Account as Fraction of Savings Balance

Median account opening costs are six to eight times higher for OIBM and other formal financial institutions relative to informal agents (Table 10). This illustrates the hurdle that rural populations face in accessing formal financial services.

Transaction costs of opening a savings account with formal institutions increase substantially with the distance to the service provider. Median costs of opening a savings account with OIBM increase from 531 MK (\$3.54) for residents within a five kilometer radius of a call center to 1136 MK (\$7.57) for residents who live more than 12 kilometers from the nearest call center.

Transaction costs of opening an informal savings account do not increase with the distance to the call center. Unlike formal service providers that are mostly located in towns and city centers, informal sources of finance are available locally so transaction costs do not increase with the distance to the calling centers.

Travel costs, consisting of direct and opportunity cost of travel, account for the bulk of the total transaction costs to open a savings account. Physical distance to the banks remains the most significant barrier to access of formal services by rural residents.

Table 10: Median Transaction Costs to Open a Savings Account (MK)

	New OIBM Savers	Obs.	New Formal Savers	Obs.	New Informal Savers	Obs.
Total Transaction Cost	813	89	627	185	109	64
0 – 5 km	531	34	545	57	109	17
5 – 7 km	745	15	218	38	164	16
7 – 12 km	880	37	800	72	115	20
More than 12 km	1136	3	936	18	109	11
Opportunity Cost of Travel	327	89	258	184	109	64
0 – 5 km	310	34	218	56	109	17
5 – 7 km	327	15	218	38	164	16
7 – 12 km	375	37	327	72	115	20
More than 12 km	436	3	304	18	109	11
Direct Cost of Travel	200	89	100	184	0	64
0 – 5 km	75	34	0	56	0	17
5 – 7 km	200	15	0	38	0	16
7 – 12 km	150	37	288	72	0	20
More than 12 km	200	3	350	18	0	11
ID Costs	0	17	0	49	0	1
Application Fee	0	74	0	166	0	64
ATM Fee	250	45	0	69	0	19

Note: New OIBM saver refers to the new savers with OIBM. New formal saver refers to the new savers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal saver refers to the new savers with informal agents like ROSCAs, friends, relatives, neighbors. ***Significant at 1% level **Significant at 5% level *Significant at 10% level

TRANSACTION COSTS OF DEPOSITING INTO A SAVINGS ACCOUNTS

Our surveys collected information on two sources of costs for depositing funds into savings account¹⁵:

- i. Direct cost of travel to access the account;
- ii. Opportunity cost of time spent in traveling.

Depositors do not make frequent deposits into the savings accounts. At end line, funds were deposited into 24 percent of the savings accounts (136 of 560) in the previous 30 days. Among the accounts in which funds were deposited at least once, funds were deposited exactly once in 65 percent of the accounts (89 of 136). High transaction costs of making deposits into savings accounts could be one of the reasons why the frequency of deposits was low. Also, the survey was carried out during the hungry season, a period of low cash surplus among rural households in Malawi.

¹⁵ Transaction costs also include the ATM or teller fees for making a deposit. However, this information was not collected in the end line survey because the baseline survey showed very infrequent use of ATMs and tellers.

Median cost to deposit funds was the highest for OIBM accounts (343 MK or \$2.29), followed by other formal institutions (109 MK or \$0.73) and informal agents (109 MK or \$0.73) (Table 11). However, unlike transaction costs of opening a savings account, transaction costs of making a deposit did not increase monotonically with the distance to the OIBM service center. These observations are subject to the caveat that our analysis is based on a small number of observations, especially for OIBM, so the estimates are not precisely measured.

Table 11: Median Transaction Costs to Deposit into a Savings Account (MK)

	New OIBM Savers	Obs.	New Formal Savers	Obs.	New Informal Savers	Obs.
Total Transaction Cost	343	14	109	65	109	32
0 – 5 km	373	3	109	19	164	13
5 – 7 km	184	2	109	18	109	7
7 – 12 km	268	8	109	22	71	8
More than 12 km	318	1	495	6	109	4
Opportunity Cost of Travel	218	14	109	62	109	32
0 – 5 km	218	3	109	19	164	13
5 – 7 km	109	2	109	17	109	7
7 – 12 km	218	8	191	20	71	8
More than 12 km	218	1	163	6	109	4
Direct Cost of Travel	100	14	0	65	0	32
0 – 5 km	100	3	0	19	0	13
5 – 7 km	75	2	0	18	0	7
7 – 12 km	50	8	115	22	0	8
More than 12 km	100	1	250	6	0	4

Note: New OIBM saver refers to the new savers with OIBM. New formal saver refers to the new savers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal saver refers to the new savers with informal agents like ROSCAs, friends, relatives, neighbors. ***Significant at 1% level **Significant at 5% level *Significant at 10% level

TRANSACTION COSTS OF WITHDRAWING FROM A SAVINGS ACCOUNT

Two sources of transaction costs for clients to withdraw funds from savings account were collected in two rounds of surveys¹⁶:

- i. Direct cost of travel to access the account;
- ii. Opportunity cost of time spent in traveling.

¹⁶ Transaction costs also include the ATM or teller fees for withdrawing from savings account. However, this information was not collected in the end line survey because the baseline survey showed very infrequent use of ATMs and tellers.

Withdrawals from savings accounts were even less frequent than deposits. At end line, funds were withdrawn from 16 percent of the savings accounts (88 of 560) in the previous 30 days of the survey. Among the accounts from which funds were withdrawn at least once, there was exactly one withdrawal in 85 percent of the accounts (75 of 88). In our interviews with depositors of formal institutions, we found that many generally limit withdrawals from banks to only lump sum cash and not for emergencies, primarily due to high transaction costs. They tend to borrow from informal sources to meet emergency needs. They could also use their ATM cards at a few agriculture input dealer shops close to their home to get quick cash during emergencies but at a high withdrawal fee.

Transaction cost to withdraw from a savings account was higher for OIBM and other formal savings account compared to informal accounts (Table 12). The costs of making a withdrawal also did not increase linearly with the distance to the nearest OIBM service center.

Table 12: Median Transaction Costs to Withdraw from a Savings Account (MK)

	New OIBM Savers	Obs.	New Formal Savers	Obs.	New Informal Savers	Obs.
Total Transaction Cost	443	14	265	21	109	17
0 – 5 km	318	9	164	8	105	6
5 – 7 km	.	0	109	3	82	4
7 – 12 km	468	3	393	10	327	5
More than 12 km	568	2	.	0	109	2
Opportunity Cost of Travel	218	14	109	18	109	17
0 – 5 km	218	9	109	8	105	6
5 – 7 km	.	0	164	2	82	4
7 – 12 km	218	3	218	8	327	5
More than 12 km	218	2	.	0	109	2
Direct Cost of Travel	200	14	200	21	0	17
0 – 5 km	100	9	0	8	0	6
5 – 7 km	.	0	97	3	0	4
7 – 12 km	200	3	265	10	0	5
More than 12 km	350	2	.	0	0	2

Note: New OIBM saver refers to the new savers with OIBM. New formal saver refers to the new savers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal saver refers to the new savers with informal agents like ROSCAs, friends, relatives, neighbors. ***Significant at 1% level **Significant at 5% level *Significant at 10% level

DRIVERS OF TRANSACTION COSTS FOR DEPOSITORS

In order to examine the factors that drive transaction costs of depositors to identify areas for improvements, we run an Ordinary Least Squares (OLS) regression and present the results in Table 13 below. Our analysis indicates the following:

- Districts in which households are located do not matter for transaction costs to open a savings account. There is little difference in the transactions cost to open a savings account among all three types of service providers across all the three districts.
- Location matters for transaction costs to make deposits. Savers in Mchinji and Dedza incur higher transaction costs on average to make deposits into their accounts.
- The type of service provider matters. There is a clear indication of differences in cost by the type of financial service provider, although the differences are not statistically significant. Cost to new OIBM savers for opening a savings account is 378 MK (\$2.52) more than the cost to new informal savers, and cost to new formal savers is 439 MK (2.93) higher than the cost to informal savers. Costs to new OIBM savers is lower than the cost to new savers with other formal financial institutions possibly due to OIBM's roving van which lowered the direct and opportunity cost of travel.
- Distance from OIBM service center was not a main determinant of costs for depositors. Among new savers with OIBM and other formal institutions, cost of opening a savings account, or depositing into and withdrawing from the accounts is not necessarily increasing linearly with the distance to the OIBM service points.

Table 13: OLS Estimates of Transaction Costs for Depositors with OIBM, Other Formal Financial Institutions and Informal Agents (Reference Group = New Informal Savers)

	Costs to Open a Savings Account (MK)	Costs to Deposit into a Savings Account (MK)	Costs to Withdraw from a Savings Account (MK)
Constant	329 (276)	89 (149)	218 (153)
5 – 7 km (dummy)	-114 (368)	-69 (196)	-124 (233)
7 – 12 km (dummy)	-132 (348)	-126 (187)	-7 (227)
More than 12 km (dummy)	-173 (418)	-70 (262)	-109 (293)
Mchinji (dummy)	-15 (141)	200 (125)	18 (146)
Dedza (dummy)	-40 (155)	201* (110)	38 (138)
New OIBM Savers (dummy)	378 (328)	159 (268)	289 (189)
New OIBM Savers * 5 – 7 km	558 (512)	-380 (505)	.
New OIBM Savers * 7 – 12 km	382 (439)	402 (361)	-151 (325)
New OIBM Savers*More than 12 km	666 (746)	141 (535)	170 (402)
New Formal Savers (dummy)	439 (300)	60 (163)	26 (206)
New Formal Savers * 5 – 7 km	-57 (433)	32 (241)	179 (380)
New Formal Savers * 7 – 12 km	573 (397)	339 (230)	361 (291)
New Formal Savers*More than 12 km	842* (842)	300 (300)	.

	(507)	(335)	
Obs.	303	98	51
Adj. R ²	0.09	0.09	0.04

Note: New OIBM saver refers to the new savers with OIBM. New formal saver refers to the new savers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal saver refers to the new savers with informal agents like ROSCAs, friends, relatives, neighbors. Standard errors are reported in parentheses. *** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level

TRANSACTION COSTS OF APPLYING FOR A LOAN

Transaction costs to apply for a loan consists of the following costs:

- i. Costs to obtain IDs specifically to open the account;
- ii. Direct costs of travel;
- iii. Application fees;
- iv. Expenditure on ATM cards;
- v. Opportunity cost of travel time.

We analyze the transaction costs to apply for a loan for new borrowers with OIBM, formal financial institutions other than OIBM, and informal sources.

Transaction cost to apply for a loan as a fraction of loan size was the least for new OIBM borrowers (Figure 12).

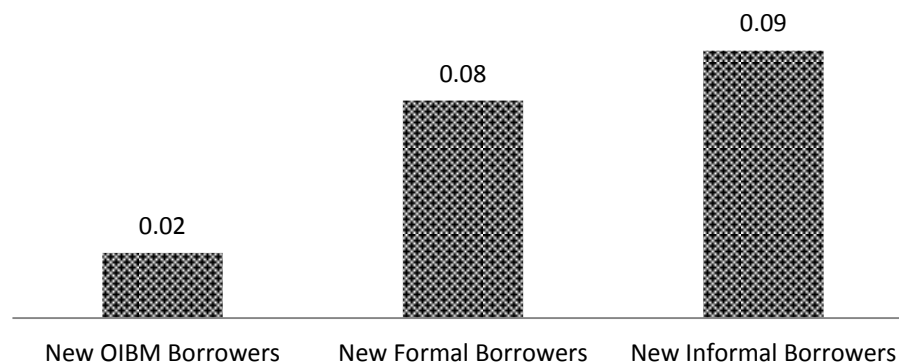


Figure 13: Transaction Costs to Apply for a Loan as Fraction of Loan Size

Transaction cost to borrow from formal sources was five to eight times higher than transaction costs to borrow from informal agents (Table 14). New borrowers with other formal institutions incur the highest median transaction costs to apply for a loan (756 MK or \$5.04), followed by new OIBM borrowers (453 MK or \$3.02) and new informal borrowers (93 MK or \$0.62).

Transaction cost to apply for a loan increases with distance to the call centers for formal borrowers but not for informal borrowers. Rural residents are attracted to informal sources of finance because of their proximity and ease of access.

Table 14: Median Transaction Costs to Apply for a Loan (MK)

	New OIBM Borrowers	Obs.	New Formal Borrowers	Obs.	New Informal Borrowers	Obs.
Total Transaction Cost	453	15	756	94	93	548
0 – 5 km	186	6	518	28	74	91
5 – 7 km	336	1	720	19	93	110
7 – 12 km	1112	7	892	38	87	256
More than 12 km	1420	1	1349	9	93	91
Opportunity Cost of Travel	232	15	279	93	81	526
0 – 5 km	186	6	186	27	67	85
5 – 7 km	186	1	341	19	93	104
7 – 12 km	372	7	279	38	77	248
More than 12 km	652	1	372	9	93	89
Direct Cost of Travel	150	15	0	93	0	526
0 – 5 km	0	6	0	27	0	85
5 – 7 km	150	1	50	19	0	104
7 – 12 km	400	7	75	38	0	248
More than 12 km	500	1	500	9	0	89
ID Costs	0	2	0	21	0	1
Application Fee	0	15	0	87	0	107
ATM Fee	0	15	70	87	70	107

Note: New OIBM borrower refers to the new borrowers with OIBM. New formal borrower refers to the new borrowers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal borrower refers to the new borrowers with informal agents like ROSCAs, friends, relatives, neighbors. *** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level

TRANSACTION COSTS OF LOAN REPAYMENT

Transaction costs of loan repayment consist of the following components:

- i. Any explicit fee required for the loan repayment method;
- ii. Direct cost of travel to the lender to make a loan payment;
- iii. Opportunity cost of time spent in traveling.

Loan repayments are not very frequent among households with an outstanding loan. Of the 985 outstanding loans at end line, no payment had been made in almost 80 percent of the accounts (778 of 985) in the past 30 days. This is not an unexpected observation because most of the loans were sourced from informal agents and they tend not to have strict repayment schedules, especially during the hungry season.

Median transaction costs to repay a loan are slightly higher for OIBM borrowers (93 MK or \$0.62) compared to none for borrowers with other formal institutions and informal sources (Table 15). In our interviews with OIBM borrowers, we found that some clients close to Lilongwe travelled to the branch in Lilongwe to repay their loans instead of using the mobile bank since the repayment dates and day did not coincide with the visit of the mobile bank. They mentioned that it costs 700 MK (\$4.67) for a round trip to Lilongwe and about six hours

for travel, while it would only cost 200 MK (\$1.33) and one hour to travel to the nearest mobile stop. Some borrowers in Mchinji and Dedza districts also reported that they missed repayment dates when the mobile bank broke down and did not arrive on time, and therefore preferred to go to nearest branch office for loan repayments. However, they still preferred to deposit at the mobile bank kiosk since the mobile van arrived on market days when many could earn cash.

Table 15: Median Transaction Costs to Repay a Loan (MK)

	New OIBM Borrowers	Obs.	New Formal Borrowers	Obs.	New Informal Borrowers	Obs.
Total Transaction Costs	93	15	0	93	0	547
0 – 5 km	47	6	47	27	0	90
5 – 7 km	2528	1	0	19	0	110
7 – 12 km	240	7	0	38	0	256
More than 12 km	0	1	93	9	0	91
Opportunity Cost of Travel	186	9	93	38	93	37
0 – 5 km	93	3	79	14	93	11
5 – 7 km	186	1	93	6	70	6
7 – 12 km	186	5	186	13	79	12
More than 12 km	.	0	186	5	140	8
Direct Cost of Travel	100	9	0	38	0	37
0 – 5 km	0	3	0	14	0	11
5 – 7 km	2,342	1	0	6	0	6
7 – 12 km	400	5	0	13	0	12
More than 12 km	.	0	150	5	0	8
Payment Fee	0	15	0	93	0	547

Note: New OIBM borrower refers to the new borrowers with OIBM. New formal borrower refers to the new borrowers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal borrower refers to the new borrowers with informal agents like ROSCAs, friends, relatives, neighbors.
 *** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level

DETERMINANTS OF TRANSACTION COSTS FOR BORROWERS

In order to identify the factors that are the most significant and consistent predictors of transaction costs incurred in applying for a loan, we run Ordinary Least Squares (OLS) regressions and present the results in Table 16. Our analysis shows the following:

- Distance to the OIBM service points has no significant effect in the transaction costs to apply for or repay a loan for informal borrowers. This is an expected result because of the local origin of informal loans.
- Transaction costs to apply for and repay a loan are higher for new borrowers with OIBM and other formal institutions compared to new borrowers from informal sources although the point estimates are not always statistically significant.
- Transaction costs to apply for a loan and repay it do not increase monotonically with distance to the service center for new borrowers with OIBM and other formal institutions.

Table 16: OLS Estimates of Transaction Costs for Borrowers with OIBM, Other Formal Financial Institutions and Informal Agents (Reference Group = New Informal Borrowers)

	Costs to Apply for a Loan	Costs to Repay a Loan
Constant	148* (84)	2 (243)
5 – 7 km	-68 (97)	-94 (283)
7 – 12 km	-57 (84)	-69 (244)
More than 12 km	-83 (102)	131 (298)
Mchinji	119* (72)	353 (208)
Dedza	75 (69)	-117 (201)
New OIBM Borrowers	161 (286)	675 (826)
New OIBM Borrowers * 5-7 km	-24 (738)	1596 (2132)
New OIBM Borrowers * 7-12 km	2219*** (386)	1376 (1116)
New OIBM Borrowers * More than 12 km	.	.
New Formal Borrowers	465*** (149)	349 (438)
New Formal Borrowers * 5-7 km	715 (231)	-185 (672)
New Formal Borrowers * 7-12 km	563*** (192)	-222 (559)
New Formal Borrowers * More than 12 km	1126*** (291)	6054*** (845)
Obs.	638	636
Adj. R ²	0.27	0.12

Note: New OIBM borrower refers to the new borrowers with OIBM. New formal borrower refers to the new borrowers with formal institutions other than OIBM which includes Malawi Savings Bank (MSB), National Bank (NMB), Standard Bank (STB), Malawi Rural Finance Company (MRFC), NBS Bank (NBS), and Cooperatives. New informal borrower refers to the new borrowers with informal agents like ROSCAs, friends, relatives, neighbors. Standard errors are reported in parentheses. *** Significant at 1% level; ** at 5% level; * at 10% level

CONCLUSION AND IMPLICATIONS

The study shows that OIBM has increased its breadth of outreach of savings products in rural Malawi relative to other formal financial institutions. Compared to other formal institutions, OIBM has also attracted more female borrowers. It was also able to service its depositors at a lower transaction costs compared to savers with other formal institutions, and the reduction in costs is driven mostly by reduction in direct costs of travel. Our analysis suggests that the innovative efforts of OIBM to bring the bank closer to the rural population, offer services with better terms and conditions, and provide more information on its products and services was responsible for the increase in the outreach. The outreach is especially remarkable given the crowded financial landscape composed of many mature formal institutions offering almost similar services into which OIBM made its entry in late 2007. However, outreach to the niche markets made of the poor, women and among those living far from the mobile bank stops has been modest. The innovations have provided OIBM with a first mover comparative advantage, but sustaining the current outreach and ensuring further growth amid the competition involves a few implications for OIBM as discussed below. Improved outreach of OIBM in the niche markets could also result in welfare improvements of the unbanked and under-banked populations.

IMPLICATIONS FOR OIBM

The intense information campaign was effective in boosting OIBM outreach and any resulting welfare improvements in clients' lives. A significantly high number of new OIBM clients came from areas that received the intense information campaign, which indicates that the campaign was able to encourage new clients to bank with OIBM. There was a modest positive spillover effect of the information campaign as indicated by higher levels of uptake of other formal financial providers in intense information campaign areas. Some formal financial providers have begun to mimic OIBM's product features, offer mobile bank delivery mechanism, and visit villages, especially during tobacco harvest season, to attract new savers among tobacco farmers who are generally non-poor and men. Indeed, such developments are beneficial for the rural populations who could receive better services from formal financial institutions who compete for the market share. Still, the growing competition puts OIBM in a position to constantly monitor the situation and be aware of the new developments to position itself ahead of its competitors. This will require constant improvements in product features, and delivery and dissemination strategies.

Reaching beyond the clientele typically served by formal institutions is paramount. The growing competition among formal institutions to attract tobacco farmers who are primarily men opens opportunities for OIBM to attract other clients such as women, the poor and those who live in areas far from the OIBM service center. This may indeed require OIBM to engage in some re-engineering of their products in terms of product bundling of savings and loans. The poor and women headed households that were interviewed for the study reported lack access to formal loans and their desire to sign up for deposit services only when access to loans are feasible in near future. Combining the first mover advantage with sustained improvements in products, services, delivery mechanisms and information dissemination methods and its worldwide experience in serving women and the poor could provide OIBM with a competitive edge and opportunity to reach women, poor farmers and population in unbanked areas. Besides, diversifying by clientele type could serve as a risk diversification strategy for OIBM since tobacco farmers experience frequent and large income reducing shocks in the area. Such efforts could also result in any potential welfare improvements due to use of financial services by the vulnerable populations such as the poor and women headed households in rural areas.

Linkages with informal systems could help expand OIBM's outreach. Although OIBM managed to increase its market share among formal institutions, the predominance of informal agents in credit markets provides an untapped market for OIBM to increase its outreach. The markets remain segmented between OIBM and informal financial service providers in terms of types of clients served: lower end clientele are served by informal agents and higher end by OIBM and other formal institutions. Besides, OIBM clients do not use its loan services in exclusion to other service providers. Also, while take up of OIBM has been high, the actual use of savings accounts to deposit and withdraw has been very low due primarily to limited access to mobile banks during emergencies. This has led many households to save at home in cash instead of at OIBM. It is important for OIBM to develop appropriate deposit mobilization and disbursement methods like satellite banking and point-of-service (POS) facilities that can limit money kept under mattresses. Our interviews with depositors of formal institutions revealed that they could use their ATM cards at a few Agriculture Input Dealer shops to get quick cash during emergencies. OIBM could also develop loan products that can link with informal agents to increase its outreach. Over time, a conscientious effort in this direction could result in a shift from informal agents to OIBM, thus increasing its market share and outreach.

It is important for OIBM to further improve and sustain the uptake and use of its services since only sustained improvements in outreach could ensure financial sustainability for the institution and any potential welfare improvement that could result for the clients from use of financial services.

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