

Determinants of Access to Banking Services in Malawi

By

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Contents

List of tables	iv
List of figures	iv
Abstract	v
1. Introduction	1
2. Literature review	6
3. Methodology and data	12
4. Results	19
5. Conclusion and policy implication	31
References	35
Appendix	37

List of tables

Table 1: Commercial bank Infrastructure in Malawi 2010, 2012 and 2014	1
Table 2: Percentage banked adults 2008–2013, reasons for opening account in 2013, and banking activities 12 months prior to 2014 FinScope Consumer Survey Malawi	2
Table 3: Supply factors affecting access to banking services	9
Table 4: Demand factors affecting access to banking services	10
Table 5: Economic results: Probability of having a bank account from pooled data	21

List of figures

Figure 1: Location and access to banking services	19
Figure 2: Income and access to banking services	20
Figure 3a: Income source and access to banking services	21
Figure 3b: Income source and access to banking services	21
Figure 4: Education and access to banking services	22
Figure 5: Age and access to banking services	23
Figure 6: Gender and access to banking services	23
Figure 7: Distance and access to banking services	24
Figure 8: Bank charges and access to banking services	25
Figure 9: Innovation and access to banking services	26

Abstract

The study aims to investigate the determinants of access to banking services in Malawi, taking into account that limited coverage of banking services especially in rural areas, has been constraining sustainable economic development. To explore the determinants of access to banking services in Malawi, household-level data from the FinScope Malawi 2008 and 2014 surveys of demand for financial services was used. From both an analysis of cross-tabulation of frequency of responses and a regression analysis, the study establishes that the degree of access to banking services rises in ascending order from rural to peri-urban to urban areas, and that the degree of access to banking services rises with rising levels of income. It also found that the degree of access to banking services is high among those who receive salaries and pensions and those residents who conduct business or earn rental income, as well as those who receive transfers and remittances from other people. Conversely, the degree of access to banking services is low among those who receive low and irregular incomes, such as smallholder farmers and casual workers. It is further established that access to banking services rises with higher levels of education and that distance to the nearest bank branch is negatively correlated with access to banking services. Another outcome is that financial innovation encourages access to banking services. Furthermore, the study notes that the above factors are interrelated. From the results of the study, suggestions are offered on how to improve access to banking services in Malawi.

Key words: *access, banking services, bank account, banks, location, income, education, age, gender, bank charges, distance, supply, demand*

1 Introduction

Background

Malawi has 12 commercial banks — five are local and seven are foreign — with varying levels of local ownership. The government does not own any of the banks. Commercial bank infrastructure in terms of number of branches, agencies, kiosks and mobile vans, automatic teller machines (ATMs) and staff as at the end of 2010, 2012 and 2014 is shown in Table 1.

Table 1: Commercial bank Infrastructure in Malawi 2010, 2012 and 2014

Year	2010	2012	2014	% Change between 2010 and 2014
Number of branches	70	80	98 ^a	40.0
Number of agencies, kiosks and mobile vans	146	185	187 ^b	28.1
Number of auto teller machines	261	369	435 ^b	66.7
Number of staff	4,049	4,689	5,502 ^b	35.9

^aExcludes International Commercial Bank, which ceased operations in Malawi but includes New Finance Bank of Malawi, which resumed operations in the country after the lifting of suspension.

^bExcludes both International Commercial Bank and New Finance Bank of Malawi.

Source: Calculated by the authors from data contained in the Annual Bank Supervision Reports of the Reserve Bank of Malawi.

The data in Table 1 show that there was a marked expansion in bank infrastructure between 2010 and 2014. However, despite this impressive growth, a significant part of Malawi's population still does not have access to banking services, raising the question whether the supply of banking services is sufficient. According to FinScope Malawi 2008, for example, the percentage of adults excluded from banking services in 2008 was 81% (FinMark Trust et al, 2008). By 2013, this percentage had declined to 67% (FinMark Trust et al, 2014), which is still relatively high. Correspondingly, the percentage of adults who were banked in 2008 was 19%, rising to to 33% in 2013. These figures are complemented by high levels of indirect access to banking: 22% of adults in 2008 and 24% of adults in 2013 made use of accounts that were not registered

in their names.

Table 2 shows changes in the percentage of adults who were directly or indirectly banked between 2008 and 2013, changes in the uptake of various bank products between 2008 and 2013, reasons for opening a bank account in 2013, and what the banked population did 12 months prior to the 2014 FinScope Consumer Survey Malawi.

Table 2: Percentage banked adults 2008–2013, reasons for opening account in 2013, and banking activities 12 months prior to 2014 FinScope Consumer Survey Malawi

Year	2008	2013
Adults directly banked, per cent	19	33
Adults indirectly banked, per cent	22	24
Adults unbanked, per cent	81	67
Uptake of savings accounts with ATM	640,000	1.1 million
Uptake of receipts of income into bank account	273,000	578,000
Uptake of Makwacha pin-protected online debit card	N/A	500,000
Bank accounts opened to receive salary/deposit money from employer, per cent	N/A	20
Bank accounts opened to keep money safe from theft, per cent	N/A	17
Bank accounts opened to receive money from others who deposited into bank accounts, per cent	N/A	15
Banked population withdrawing cash from bank accounts, per cent	N/A	47
Banked population depositing cash into bank accounts, per cent	N/A	37
Banked population receiving transfers from others through their bank accounts, per cent	N/A	36
Banked population requesting bank statements, per cent	N/A	14
Banked population using cash points to pay bills, per cent	N/A	11

Sources: FinScope Malawi 2008 (FinMark Trust et al, 2008) and FinScope Consumer Survey Malawi 2014 (FinMark Trust et al, 2014).

The data in Table 2 show that between 2008 and 2013 there was a marked increase in savings and other bank accounts, as well as in transactions relating to deposits, receipts, withdrawals, payments and transfers of money using banks. The improvement in the percentage of adults who are banked that has been noted above is therefore associated with these products and services. Access to banking services is not driven by credit and loan products as such.

In 2008, for example, only 5% of adults used bank credit/loan products, according to the FinScope Malawi 2008 survey. By 2013, this percentage had declined to 2% (FinMark Trust et al, 2014). Overall, the percentage of adults borrowing money increased from 20% in 2008 to 32% in 2013. The percentage of adults borrowing money from formal, non-bank financial institutions remained the same at 4%. By contrast, the percentage who borrowed from the informal financial sector jumped from 7% to 18%, and borrowing from relatives, friends and neighbours went up from 9% to 16%. The problem with these sources of credit is that the loan amounts tend to be small, which might be suitable for setting up or expanding micro enterprises, but they are hardly

suitable for setting up or expanding small and medium enterprises.

Besides a formal financial sector, Malawi has a microfinance sector and an informal financial sector. The microfinance sector comprises 24 microfinance service providers, having grown from three at independence, and 48 savings and credit cooperatives (SACCOs).

Microfinance service providers are registered but not regulated. SACCOs are registered under the Financial Cooperatives Act, 2011, and regulated, but not all are amenable to control through conventional monetary policy instruments (Reserve Bank of Malawi, 2008).

The informal financial sector comprises:

- Entities that accept deposits purely for safe-keeping; e.g. money-keepers.
- Entities that lend, but normally do not accept deposits, such as employers, and moneylenders, merchants, traders, estate owners and businesses.
- Communal lenders and/or deposit takers such as accumulating and non-accumulating communal funds (ACFs and NACFs); staff loan funds; accumulating savings and credit associations (ASCAs); cooperative savings associations (CSAs), also known as rotating and credit associations (ROSCAS); informal microfinance institutions in the form of village banks, community savings and investment groups and other similar institutions; and friends, neighbours and relatives.

These institutions are not registered and regulated, and they are not amenable to control through conventional monetary policy instruments.

Despite the numerous financial institutions, a 2008 FinMark Trust survey revealed that only 45% of the adult population in Malawi was financially included, and had access to banks, microfinance or informal financial institutions. Of this percentage, 19% of the adult population had access to banking services and another 19% had access to informal financial services, but only 7% had access to microfinance. Of the 19% that had access to banks, 6% also had access to informal financial institutions, implying that the total proportion that had access to informal financial institutions was 25% (FinMark Trust et al, 2008). By 2014, the percentage of the adult population that was financially included had increased to 54%. Here too there were overlaps. For example, 6.4% of the adults used a combination of banks, other formal institutions such as microfinance lenders, and informal financial mechanisms (FinMark Trust et al, 2014).

Problem statement

The limited coverage of banking services and low access to credit in Malawi, especially in rural areas, is said to be constraining sustainable economic development. One of the key development objectives of the Republic of Malawi is, therefore, to address this situation and achieve improved access to banking services in the medium term so as to attain sustained and accelerated economic growth (Government of Malawi, 2012). In this regard, the Republic of Malawi believes that improved access to banking services by micro, small and medium enterprises (MSMEs) is an essential instrument for increasing agricultural productivity and production, starting or expanding micro and small enterprises, creating employment, reducing vulnerability, ensuring food security, increasing household income, and smoothing consumption, among other

things. Expanding access to banking services is also believed to be an important tool for achieving the Millennium Development Goals (Government of Malawi, 2010).

For the purpose of expanding access to banking services, the Republic of Malawi, together with other stakeholders, formulated the Malawi National Strategy for Financial Inclusion, which was completed at the beginning of 2010. The vision of the strategy is to economically empower Malawians who are excluded from the mainstream financial system. The national strategy targets low income people who are excluded from the mainstream formal financial system, namely, smallholder farmers, MSMEs, women, the youth, the self-employed, and disadvantaged groups in urban and rural areas (Government of Malawi, 2010), who are denied access to larger loans and safe deposit facilities provided by commercial banks.

Key actions in this strategy include supporting existing inclusive finance providers to increase their outreach; eliminating financial exclusion by improving access to inclusive financial services to disadvantaged groups; and establishing new inclusive finance providers (Government of Malawi, 2010).

Specific strategies for implementing the objectives and meeting the targets are set out below.

At the macro level

- Aligning the strategy with the wider financial sector development policy and macro and sectoral policies/strategies of government, e.g., integrating it with strategies that foster private investment in agriculture and micro and small enterprises.
- Improving the legal and court system to enforce contracts.
- Designing a legal framework and registry that would allow the use of movable and non-movable properties as collateral.
- Improving roads, warehouse infrastructure, electricity, telecommunications, the national ID system and security infrastructure to reduce the cost of providing financial services, especially in rural areas, and hence encourage providers to expand their rural network.

At the meso level

Promoting linkages between commercial banks and microfinance providers so that (i) the former can channel part of their liquidity to the latter, and (ii) the former can outsource lending to micro, small and medium enterprises to do the same.

At the micro/institution level

- Loan products for diverse activities in both rural and urban areas.
- Savings products that are accessible, attractive in terms of pricing, safe and secure, have simple features and are convenient for clients.
- Payment systems and remittances that reduce the physical handling and labour costs associated with an ever-expanding volume of paper money, cheques, deposit slips and the like, e.g., ATMs, cash cards, debit cards, point-of-sale terminals, mobile phones and home banking over the internet, direct deposits and direct bill payment schemes.

At the client level

This target seeks to achieve financial literacy aimed at increasing knowledge of financial concepts, skills and attitudes among the financially excluded (Government of Malawi, 2010).

These four key actions and specific strategies have not been implemented in a holistic way so far because of lack of agreement among donors. Only the United Nations Capital Development Fund has lent support to their implementation with a focus on increasing the access of unbanked, marginalized groups through mobile money, loans for the youth, and agency and electronic banking. The lack of agreement among donors partly reflects doubts over the efficacy of the proposed key actions and specific strategies. On the domestic front, the central bank is implementing a financial literacy programme. The results of this study are expected to improve empirical knowledge of the factors that determine access to banking services and, therefore, assist in ultimately redesigning the strategy for increasing access to banking services in Malawi. Similarly, the results of this study will shed light on the impact of innovative measures which some donors and service providers have introduced recently to increase access to banking services. These measures include the launch of the Mobile Money Accelerator Programme (MMAP) by USAID; the launch of the Mobile Money for the Poor (MM4P) programme, youth loans, agency and electronic banking by the United Nations Capital Development Fund; the launch of mobile money by TNM and Airtel; and the introduction of MALSWITCH, a common platform providing a number of electronic-based payment, clearing and settlement facilities (Finmark Trust et al, 2014).

Objectives

The main objective of this study is to investigate the determinants of access to banking services in Malawi. The specific objectives of the study are to determine whether access to banking services in Malawi is determined by:

- location;
- income;
- level of education;
- gender;
- age;
- distance of clients from banks;
- bank charges;
- innovation; and
- time.

The results of this study will be useful to policy makers, to donors who are supporting the development of the financial sector in Malawi, and, ultimately, to beneficiaries of banking services.

The rest of the paper is organized as follows: The next section reviews the theoretical and empirical literature, followed by an explanation of the hypotheses of the study in Section 3, and an exposition of the methodology and data in Section 4. Section 5 describes the results of the study. Finally, the conclusions and policy implications are explained in Section 6.

2. Literature review

Access to banking services essentially means having a bank account (Beck and De la Torre, 2007; Littlefield and Porteous, 2006). This is because having a bank account enables people to perform other important financial functions, such as accessing savings schemes, accessing credit, taking out loans or insurance, and making money transfers. In this way, bank accounts determine access to many other financial services (Mohan, 2006).

What does access to banking services entail? First is the question of availability: are banking services available and in what quantity? Second is the question of cost: at what price are banking services available, including all costs, which includes the opportunity cost of having to stand in a queue waiting to be served or having to travel a long distance to a bank branch? Third, what are the range, type and quality of banking services being offered? (Claessens, 2005). The various dimensions can be categorized as follows: reliability, i.e., are bank services available when needed/desired; convenience, i.e., ease of access; continuity, i.e., can bank services be accessed repeatedly; and flexibility, i.e., are bank products tailored to the needs of clients (Murdoch, 1999). These dimensions imply that access to banking services is constrained by supply and demand factors.

Beck and De la Torre (2007) have grouped supply and demand limitations that lead to a contrast between the active use of a given financial service by a certain group, on the one hand, and the low use or lack of use thereof by another group, on the other hand, into:

- geographic limitations – such as the absence of bank branches or delivery points in remote and sparsely populated rural areas that are costlier to serve;
- socioeconomic limitations – when banking services are inaccessible to specific income, social or ethnic groups either because of high costs, rationing, financial illiteracy, or because of discrimination, and
- limitations of opportunity – where, for example, gifted newcomers with profitable projects are denied finance because they lack fixed collateral or are not well connected.

Beck and De la Torre (2007) formulated a framework for explaining supply and demand constraints to access to banking services. In this regard, they distinguish between supply of and demand for savings and payment services, on the one hand, and supply of and demand for bank credit, on the other hand.

Concerning the supply of savings and payment services, they contend that the fixed

component of transaction costs acts as a barrier to serve clients with low-value payments and savings transactions. They distinguish between potential supply of savings and payment services, which is the maximum outreach given state variables such as the contractual and informational framework, the macroeconomic environment, technology and other country characteristics; and actual supply, which takes into account market structure and contestability, implying that no bank operates at the frontier of catering to marginal customers.

As regards demand for savings and payments services, Beck and De la Torre (2007) contend that price and income are the salient economic determinants of demand for savings and payments services, but that demand is also driven by sociocultural factors. Potential demand is driven by economic factors, specifying it as $D^* = f(\text{income, price})$, with demand as an increasing function of income and a decreasing function of price. They also contend that actual demand can be lower than potential demand due to self-exclusion arising from non-economic reasons such as financial illiteracy, and ethnic or religious factors. Taking into account these non-economic factors, demand can be specified as $D^* = f(\text{income, price, financial illiteracy, cultural barriers})$, with demand as a decreasing function of the third and fourth arguments.

Beck and De la Torre (2007) define an access possibilities frontier for savings and payments services as the intersection of potential demand and supply curves, and thus the bankable population as a share of total population that could be served by the banking system given constraints imposed by state variables and demand defined by economic factors.

Turning to credit, Beck and De la Torre (2007) say that in addition to costs, the outreach of credit is constrained by risks, especially default risk. The risks can be borrower-specific, as in the case with default risk, or systemic, typically stemming from high macroeconomic uncertainty associated with significant volatility in the rate of inflation, the terms of trade, the real interest rate, and the real exchange rate; and weaknesses in the contractual and informational environment, for example, poorly defined and difficult to enforce credit rights, deficient accounting and disclosure practices, and a lack of a credit bureau, or geographical limitations, such as a small country prone to flooding or drought.

Whatever its origin, systemic risk hinders the supply of credit because it increases default probability and loss, leading to higher cost of funds and, therefore, a higher floor for the interest rate required by a creditor to make a loan. As systemic risk increases, it enlarges the number of borrowers that find the cost of credit unaffordable and are thus kept excluded from access to credit (Beck and De la Torre, 2007).

As with savings and payments services, Beck and De la Torre (2007) developed an access possibilities frontier for credit services, which shows the maximum equilibrium outreach in terms of access to credit that is prudently achievable given state variables. Again, they allow for the possibility that the banking system may not achieve this potential so that actual supply falls short of potential supply. A second possibility is that lenders do not exploit all the outreach opportunities, resulting in a too low supply outcome. The third possibility is that of excess access, shown by supply to the right of the prudent access possibilities frontier.

Concerning the demand side, demand for credit is said to be an inverse function of

the rate of interest. Beck and De la Torre (2007) admit that cultural barriers and financial illiteracy might reduce demand for credit, while incentives arising from limited liability with asymmetric information increase demand.

The empirical literature sheds light on the importance of supply and demand factors in determining access to banking services in many countries. For example, data collected by the World Bank and Gallup in 148 countries in 2011 revealed wide disparities in access to banking services across regions, countries, and individual characteristics such as gender, education and age. According to the World Bank's Global Index database, 89% of adults in advanced economies have a bank account, compared with 41% of adults in developing countries. Among the poorest people, 23% of adults living on less than \$2 a day have bank accounts. Globally, 55% of men have a bank account, compared with 47% of women (Demirguc-Kunt and Klapper, 2012).

Based on an analysis of data from the survey of 148 countries referred to above, Demirguc-Kunt and Klapper (2012) concluded that the most common reasons for not having a bank account are not having enough money, banks or accounts are too expensive or too far away, and not having the necessary documentation. So removing physical, bureaucratic and financial barriers could expand the use of bank accounts (Demirguc-Kunt and Klapper, 2012).

Although 36% of adults globally had saved money during the previous 12 months, only 22% had done so at a bank or other formal financial institution. The 9% of adults who had borrowed money from banks was dwarfed by the 23% who had borrowed from friends or family. In developing countries, community-based clubs are another alternative to saving at a bank (Demirguc-Kunt and Klapper, 2012).

Mobile money provides a new opportunity for increasing access to banking services. In sub-Saharan Africa, 16% of adults reported having used mobile money, with half of these being unbanked. However, the world average use of mobile money in developing countries is only 5%, which suggests that there are still regulatory and other barriers to the introduction of mobile money (Demirguc-Kunt and Klapper, 2012).

Using information from 193 banks in 58 countries, Beck, Demirguc-Kunt and Peria (2006) developed and analysed indicators of physical access, affordability and eligibility barriers to deposit, loan and payment services. They found substantial cross-country variation in barriers to banking, and showed that in many countries these barriers can potentially exclude a significant proportion of the population from using banking services. They showed that bank size and availability of physical infrastructure are the most important predictors of barriers. Furthermore, they found evidence that there are fewer barriers in more competitive, open and transparent economies, in foreign bank-dominated systems, and in non-government bank-dominated systems (Beck, Demirguc-Kunt and Peria, 2006).

A study released by ACEF Centre Montreal (1996) concluded that the reasons why consumers do not deal with financial institutions are the number and nature of identification documents needed to open an account, withholding of funds, increasing service charges, the disappearance of branches from some neighbourhoods, and a lack of consumer knowledge.

Similarly, Beck, Demirguc-Kunt and Peria (2006) found minimum account/loan balances, account fees, required documents and low outreach as the major reasons for lack of access to banking services.

In a study of access to banking services and poverty reduction in India, Bhandari (2009) emphasized low level of saving, low level of income/poverty, inequality in the distribution of income and lack of investment opportunities in rural areas as the reasons for lack of access to banks. The poor have limited access to financial services as they lack requisite collateral, credit histories, and connections (Levine, 2005; World Bank, 2007; Ncube and Senbet, 1997).

Anyanwu (1992) found that women's access to banks is not the problem in Nigeria. The problem is that few women approach banks due to ignorance and illiteracy. Commercial banks do not discriminate against women as such. The binding constraints are the size of business and investment, lack of collateral and perceived risk.

Using multiple discriminant analysis to investigate access to banks by smallholder farmers in Tanzania, Kashuliza and Kydd (1996) found awareness of availability of credit facilities, history of having used formal loans before, contact with extension officers and the gender of the recipient as the main explanatory variables.

A large theoretical and empirical literature has shown the importance of a well-developed banking system for economic development and poverty alleviation (Beck, Levine and Loayza, 2000; Beck, Demirguc-Kunt and Levine, 2004; Honohan, 2004). However, while a causal link running from financial depth to growth has been convincingly established by empirical research, the search for causality between breadth of access and growth has not been established yet (Beck and De la Torre, 2007). The discussion of the plausible channels through which financial depth could stimulate economic growth often employs access-related explanations (De la Torre and Schmukler, 2006). One of these explanations is the Schumpeterian view that finance leads to growth because it fuels "creative destruction" by allocating resources to efficient newcomers. In other words, through broader access to external funds, gifted newcomers are empowered and freed from disadvantages that arise from lack of their own and other resources (Rajan and Zingales, 2003). The other explanation sees access to banking services as a public good that is necessary to enable participation in the benefits of a modern, market-based economy (Peachey and Roe, 2004).

Table 3 summarizes various supply factors that influence access to banking services, as identified in the theoretical and empirical literature.

Table 3: Supply factors affecting access to banking services

Number	Supply factor	Impact on access	Authors
1	Number of bank branches	Positive	Demirguc-Kunt and Klapper, 2012
2	Low outreach of banks	Negative	Beck, Demirguc-Kunt and Peria, 2006
3	Bank size	Positive	Beck, Demirguc-Kunt and Peria, 2006
4	Availability of physical infrastructure	Positive	Beck, Demirguc-Kunt and Peria, 2006
5	More competitive, open and transparent economies	Positive	Beck, Demirguc-Kunt and Peria, 2006
6	Better contractual and informational frameworks	Positive	Beck, Demirguc-Kunt and Peria, 2006
7	Foreign-dominated banking systems	Positive	Beck, Demirguc-Kunt and Peria, 2006

8	Predominantly government-owned banking systems	Negative	Beck, Demirguc-Kunt and Peria, 2006
9	Low cost banking	Positive	Allen et al, 2011
10	Competition with informal financial institutions	Negative	Demirguc-Kunt and Klapper, 2012; Allen et al, 2011
11	Mobile money revolution	Positive	Demirguc-Kunt and Klapper, 2012
12	Perceived risk	Negative	Anyawu, 1992
13	Size of business	Positive	Anyawu, 1992

Table 3 indicates how different supply factors affect access to banking services. Some affect access to banking services positively and others negatively. The table also indicates the main authors associated with them.

Similarly, Table 4 summarizes various demand factors, which have been identified in the theoretical and empirical literature, that influence access to banking services.

Table 4: Demand factors affecting access to banking services

Number	Demand factor	Impact on access	Authors
1	Lack of requisite collateral	Negative	Levine, 2005; World Bank, 2007; Ncube and Senbet, 1997; Anyawu, 1992
2	Lack of credit histories	Negative	Levine, 2005; World Bank, 2007; Ncube and Senbet, 1997; Kashuliza and Kydd, 1996
3	Lack of connections	Negative	Levine, 2005; World Bank, 2007; Ncube and Senbet, 1997
4	Not enough money	Negative	Demirguc-Kunt and Klapper, 2012
5	Number of necessary documents	Negative	Beck, Demirguc-Kunt and Peria, 2006; ACEF Centre, Montreal, 1996
6	Withholding of funds pending clearance of cheques	Negative	ACEF Centre, Montreal, 1996
7	Increasing service charges	Negative	Beck, Demirguc-Kunt and Peria, 2006; ACEF Centre, Montreal, 1996
8	Financial illiteracy	Negative	Kashuliza and Kydd, 1996; Anyawu, 1992; ACEF Centre, Montreal, 1996
9	Minimum account balances	Negative	Anyawu, 1992; ACEF Centre, Montreal, 1996
10	Inequality in income distribution	Negative	Bhandari, 2009; Anyawu, 1992
11	Lack of investment opportunity	Negative	Bhandari, 2009
12	High consumption	Negative	Bhandari, 2009
13	Poverty	Negative	Bhandari, 2009; Levine, 2005; World Bank, 2007; Ncube and Senbet, 1997
14	Gender	Negative	Kashuliza and Kydd, 1996
15	Education	Positive	Demirguc-Kunt and Klapper, 2012; Allen et al, 2011
16	Age	Positive	Demirguc-Kunt and Klapper, 2012
17	Interest rate on loans	Negative	Beck and De la Torre, 2007
18	Source of income	Positive	Finmark Trust, 2014

Table 4 shows how various demand factors affect access to banking services. Some affect access to banking services positively, and others negatively. The table also indicates the main authors associated with them.

Hypotheses of the study

From the above theoretical and empirical literature review, the study has derived the following null hypotheses to test:

- i. Location: That location in an area which is well served by banks has a negative effect on access to banking services.
- ii. Income: That having enough income has a negative effect on access to banking services.
- iii. Source of income: That having a salary as the main source of income has a negative effect on access to banking services.
- iv. Education: Education and hence literacy has a negative effect on access to banking services.
- v. Gender: That gender has a negative effect on access to banking services, with the access of women exceeding that of men.
- vi. Age: That age has a negative effect on access to banking services.
- vii. Distance from banks: That distance from banks has a negative effect on access to banking services.
- viii. Bank charges: That bank charges have a negative effect on access to banking services.
- ix. Innovation: That innovation has a negative effect on access to banking services.
- x. Time dummy: That the time dummy has a negative effect on access to banking services.

The choice of variables to test was dictated by availability of data. In the studies cited in Tables 3 and 4, which were not specifically on Malawi, the variables have either a positive or a negative impact. Therefore, for policy purposes it is of interest to know whether their impact in Malawi is also positive or negative.

3. Methodology and data

Specification and estimation of the model

In this study, a measure of access to banking services was regressed on different explanatory variables related to a number of factors, including the socioeconomic characteristics of the surveyed population. The factors affecting access to banking services was analysed in two stages: first, a cross-tabulation process of the frequencies of responses and, second, an econometric analysis of factors explaining access to banking services and their relative importance.

To examine the determinants of demand for banking services, a threshold decision-making theory proposed by Akudugu (2012) was used. The general premise of the theory is that when people are faced with a decision to do or not to do something, in this case to have a bank account, every individual has a threshold that is dependent on a certain set of factors. As such, at a certain value of stimulus below the threshold, the individual will not choose to have a bank account, while at a critical threshold value, a reaction is stimulated. Such phenomena are generally modelled using the relationship:

$$Y_i = \beta X_i + \mu_i \quad (1)$$

where Y_i is the dependent variable, X_i is a set of explanatory variables, and μ_i is assumed to be an independently and normally distributed stochastic term with zero mean and constant variance. Y_i is equal to 1 when a choice is made to do, and zero otherwise. This means that $Y_i = 1$ if X_i is greater than or equal to a critical value, X^* and $Y_i = 0$ if X_i is less than a critical value X^* . In this particular case, X_i represents income, income source, education, age, gender, distance to the nearest bank branch, and bank charges.

On the supply side, the model is given in terms of the following equation:

$$y^*_i = \beta X'_i + \varepsilon_i \quad (2)$$

where y_i^* is the observed latent variable or the threshold that must be exceeded for a reaction to take place, X_i' is a set of explanatory variables and ε_i is assumed to be an independently and normally distributed stochastic term with zero mean and constant variance. X_i' represents location, innovation and time.

Although the number of demand and supply factors that influence access to banking services is fairly large, as shown in Tables 1 and 2, it is not possible to consider all of them because data are not available for the majority. Besides, some of the factors are state variables, which apply to all individual adults, or they cannot be quantified.

Bringing the demand and the supply equations together, the general idea of the relationship to be analysed was of the form:

Access = f(Location, Income, Income Source, Education, Age, Gender, Distance, Bank Charges, Innovation).

Specifically, the logistic regression model is displayed as:

$$(1) \Pr(\text{Account}_i = 1) = f(\beta_1 + \beta_2 \text{Location}_i + \beta_3 \text{Income}_i + \beta_4 \text{IncomeSource}_i + \beta_5 \text{Education}_i + \beta_6 \text{Age}_i + \beta_7 \text{Gender}_i + \beta_8 \text{Distance}_i + \beta_9 \text{BankCharges}_i + \beta_{10} \text{Innovation}_i + \beta_{11} \text{Time}_i + \mu_i)$$

where Pr denoted probability, f is the standard normal cumulative distribution function, the β_s are coefficients and μ is the error term. The idea is to determine factors that could affect the probability that an individual has a bank account.

Definitions, measurement of the variables and expected signs

Access to banking services

As indicated before, one of the measures of access to banking services is typically the number of people who have bank accounts (Beck and De La Torre, 2007; Littlefield and Porteous, 2006)¹. This is so because bank accounts enable people to perform other important financial functions such as obtaining access to saving schemes and credit, taking loans, insurance and money transfers. Therefore, bank accounts determine access to many other financial services (Mohan, 2006). For this reason, we estimated an access to banking services model in which the dependent variable, *Account*, was a dummy variable indicating whether the individual *i* had a bank account or not. The dummy variable took value “1”, if an individual had a bank account (or had ever used a bank account), and took the value “0” if the individual had no bank account (or had never used a bank account) at the time the survey was carried out. This choice of access captured the then “current” holders of a bank account and left out “past” holders of bank accounts.

The idea was to analyse the empirical relationship between some obstacles to access banking services and the socioeconomic characteristics of the individuals to get

some insight into the reasons why some people do not have bank accounts. In order to explore what explains access to banking services in Malawi, the dependent variable, “Account” was regressed on a number of independent variables as explained below.

Location/area

The location of the respondent (rural, peri-urban or urban) determines the likelihood of having a bank account. Theoretically, living in remote areas where access to the financial system is generally more limited seems to be one of the major reasons why some people do not have access to banking services (Camara et al, 2014). This is the case because most banks tend to locate their branches in densely populated areas to take advantage of economies of scale.

Locational measures of access have been among the means through which the Malawi Government has tried to track and address the shortcoming of access to banking services. It has been noted that most banks in Malawi are concentrated in urban areas, leaving most of the rural population unbanked. Some of the efforts by the government therefore have been to ensure that banking services are available in rural areas. To assess whether the location of a respondent (whether urban or otherwise) plays a role in access to banking services in Malawi, we constructed a dummy variable called “Location”, taking a value of “1” if the individual was in an urban area and “0” if the individual was living in a rural or peri-urban area during the time of the interview. The coefficient “Location” was therefore expected to be positive.

Income

Access to banking services can depend on the degree of client information available, mainly because of the impact of risks and hence costs. Obtaining such information can assume special importance in environments where the capacity to enforce repayment may be difficult due to limited resources of the client. One of the key reasons for limited access to banking services by the poor is the huge difficulty in gathering information on such people – the asymmetric information problem. In the absence of full information, especially on poor people with limited credit histories, banks tend to look for proxies to information on creditworthiness. Such information includes cash flow of the clients (income). In Malawi, most banks desire information about a client’s monthly income when opening an account, mainly due to the need to service accounts. In the two FinScope surveys used in this study, one of the main barriers to banking access mentioned by respondents was lack of sufficient income. People felt that they did not have sufficient funds to meet the expenses associated with opening and maintaining a bank account, or that they could not afford the minimum account balance required by most banks in Malawi. In this study, we constructed a dummy variable called “Income” to capture the impact of the size of the respondents’ monthly income on the probability to have (or use) a bank account. From both the 2008 and 2014 FinScope surveys, income was not coded as a continuous variable. Instead, income was categorized into quintiles. To avoid having too many dummy variables, the responses will be divided into two income groups: those that had a monthly income of not less than MK25,000 and those whose monthly income was less than MK25,000 at the time the interview was conducted. The MK25,000 cut-off point is the middle income quintile in the survey used, and was

taken to reflect the income per month earned by an average Malawian. The dummy variable “Income” will take a value “1” for those individuals with a monthly income of MK25,000 and above, and “0” for those with a monthly income of less than MK25,000. We thus expected the coefficient of the variable “Income” to be positive.

Main source of income (income source)

The main source of an individual’s income is one of the determinants of access to banking services in Malawi. For most employers in Malawi, including the Malawi Government, it is compulsory that salaries should be paid into employees’ bank accounts. This increases the probability of having (or using) a bank account for those people whose main source of income is a salary. We therefore constructed a dummy variable to capture the impact of income source on access to banking services. The dummy “IncomeSource” will take a value of “1” for respondents whose main source of income is a salary, and “0” otherwise. We also expected the coefficient of “IncomeSource” to be positive.

Education

Education is also one of the key determinants of access to banking services. This is because banks in Malawi require their clients to provide their details (in English) when opening an account and other services. This means that it is easier for people who are able to read and write (in English) to open and maintain a bank account than for those people who are unable to read and write. We included a dummy variable called “Education” to capture the impact of education on access to banking services in Malawi. The variable “Education” will take a value of “1” for respondents whose education was beyond primary school level and “0” for respondents whose level of education was primary school (standard 8) and below. Since so many education groups were included in the survey, a one-by-one analysis will be taken care of by the cross-tabulation method. The cut-off point was based on the understanding that, on average, people whose education level is above primary school are able to read and write. We hence expected the coefficient of “Education” to be positive.

Age

We also included the age of the respondent to see if age affects the choice to have a bank account or not. We included a variable “Age” to capture the impact of age on access to banking services in Malawi. Age was a continuous variable in this study and we expected the coefficient of the variable “Age” to have a positive sign, as the older one becomes the greater the need to save money and consequently the need to have a bank account. Conversely, very old people may find it challenging to use modern banking facilities like ATMs and to use a PIN. This may limit the possibility of having a bank account at a certain age. For example, Efobi et al. (2014) found a positive relationship between the age of an individual and the probability of having a bank account. However, when older individuals (age squared) were included, they observed that there was no significant relationship between age and having a bank account, implying that older individuals are unlikely to have a bank account.

Gender

Despite huge leaps in access to banking services and the financial system globally, it has been shown that there is a persistent gap between the percentage of men and women who have bank accounts. For instance, the World Bank's latest global financial inclusion report showed that while 700 million adults around the world became first-time bank account holders over the past three years, thereby increasing access to formal financial institutions, women are still lagging behind. The report showed that 58% of women globally were banked in 2014, compared with 65% of men. We believe that Malawi is not an exception to this gap between men and women. We therefore included a categorical variable "Gender" to capture the role played by gender in access to banking services in Malawi. The variable "Gender" took a value of "1" if the respondent was a man and "0" if the respondent was a woman, and we expected the coefficient of "Gender" to be positive.

Distance (to the nearest bank)

Access to banking services can also be influenced by physical access, which refers to the points of service delivery. Greater physical access means that services are delivered in multiple and more convenient ways (Beck et al, 2007). Physical access to banking services is a barrier as, in most cases, potential individuals have to travel long distances to visit bank headquarters, branches or agencies in order to open a bank account or access other services. In this paper, physical access means the distance to reach the nearest bank branch or agency. By including this variable, the study tried to answer the question: is physical distance a barrier to access to banking services in Malawi? To answer this question we built a variable called "Distance" to explore how distance to the nearest bank branch can affect the probability of having (and using) a banking account. Distance in this case was proxied by how long it takes for a respondent to reach the nearest bank branch. A priori, the shorter the time it takes to reach the nearest bank, the higher the probability of having (and using) a bank account and vice versa. The dummy variable "Distance" took a value of "1" for respondents who take a maximum of one hour to get to the nearest bank branch or agency, and "0" for those who take more than an hour. We expected the coefficient of "Distance" to be positive.

Bank charges

A complementary supply side study by FinScope in 2009 identified high transaction costs as one of the barriers to financial access (Mandiwa, 2014). To address this barrier, the Malawian Government is trying to institute policies that target the rural people, i.e., policies that would establish services with lower charges. However, it is not known if such policies would really address the problem of access to banking services in the country. To capture how bank charges affect access to banking services in Malawi, a dummy variable called "BankCharges" was constructed, taking a value of "1" for individuals who perceive that bank charges in Malawi are reasonable, and "0" for those individuals who perceive that bank charges are not reasonable. We also expected the coefficient of "BankCharges" to be positive since it is hypothesized that those individuals who consider bank charges to be reasonable would be more likely to have a bank account, and vice versa.

Innovation

Innovation in the banking industry mainly relates to new ways of conducting financial business (Wambua and Datche, 2013). Innovation includes online banking, telephone banking and ATM banking. As highlighted earlier, the banking system in Malawi has undergone a number of innovative changes in the past few years. However, it is not known a priori if such innovative actions have assisted in improving access to banking services in the country. This is because the ability of users to interact with the new systems without the help of specialized knowledge or training is very crucial in making sure that the innovations benefit the people and the financial system as a whole. One of the reasons why clients like and use such innovations is to avoid carrying cash. To capture the impact of financial innovation on access to banking services in Malawi, we constructed a dummy variable “Innovation” that took the value “1” for individuals who said do not prefer to carry cash, and “0” for those who said they prefer to carry cash when making transactions. The coefficient of this variable was also expected to be positive.

Time

We also included a variable “Time” to capture if the passage of time from 2008 to 2014 has had an impact in itself on the probability of having a bank account. The dummy variable “Time” took the value ‘0’ for 2008 and ‘1’ for 2014 to reflect the changes that have been made in the financial sector in Malawi between 2008 and 2014. We expected the coefficient of the variable “Time” to have a positive sign.

Data

To explore the determinants of access to banking services in Malawi, we used household-level data from the FinScope Malawi 2008 and 2014 surveys of demand for financial services, which were conducted between November 2008 and January 2009, and November 2013 and March 2014, respectively.

The universe of the 2008 survey was all adult residents of Malawi defined as men and women aged 18 years or over. For each of the 27 districts in the country, enumeration areas were sampled with a probability proportional to size by the National Statistical Office (NSO). In the sampled enumeration areas, individual adults were randomly selected to create a representative sample at district level. For the 2008 survey, a total of 4,993 adults were sampled and interviewed face to face, with the help of a questionnaire that was administered in the national language, Chichewa. Weighting of the data was conducted by FinMark Trust and approved by the NSO using preliminary 2008 Population and Household Census data. The methodology for the 2014 survey was similar. However, unlike for the 2008 survey, the adult cut-off point was 16 years. The total number of face-to-face interviews was lower, at 3,005.

We used the two surveys for a number of reasons. Firstly, they captured important dimensions of access to banking services as they were specifically designed to measure access to financial services in Malawi. Secondly, in addition to providing information on

banking services, they provided information on individual and household characteristics, such as education level, gender, asset ownership, income source, age group, location and household size. Thirdly, they are nationally representative household surveys that covered the universe of districts in Malawi, thus alleviating potential sample selection bias problems.

We further supplemented the data from the above surveys with information obtained from each of the commercial banks, the Ministry of Finance, the Reserve Bank of Malawi, the UNDP, The Malawi Confederation of Chambers of Commerce and Industry, the Indigenous Business Association of Malawi, the Tea Association of Malawi, the Farmers' Union of Malawi, the Smallholders Farmers Association of Malawi, and the Consumer Association of Malawi on problems of access to banking services in Malawi through open-ended questions.

4. Results

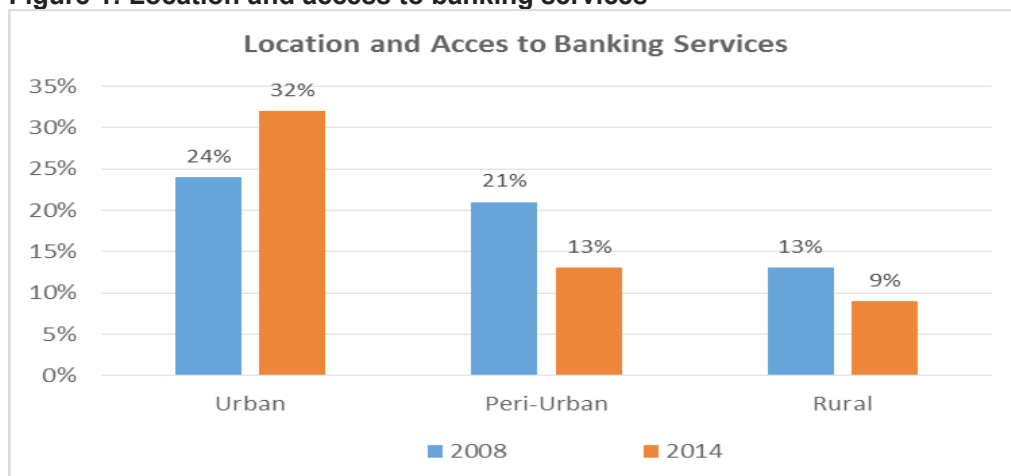
Analysis of cross-tabulation of frequencies: What determines access to banking services in Malawi?

First we analysed the association between our measure of access to banking services (Account) and the various factors through the construction of cross-frequencies. This was done for both the 2014 and the 2008 data.

Role of location in access to banking services

A clear variation is evident in terms of access to banking services across the three regions of the country classified in the surveys (Figure 1).

Figure 1: Location and access to banking services



Source: Cross-tabulation from FinScope Survey data.

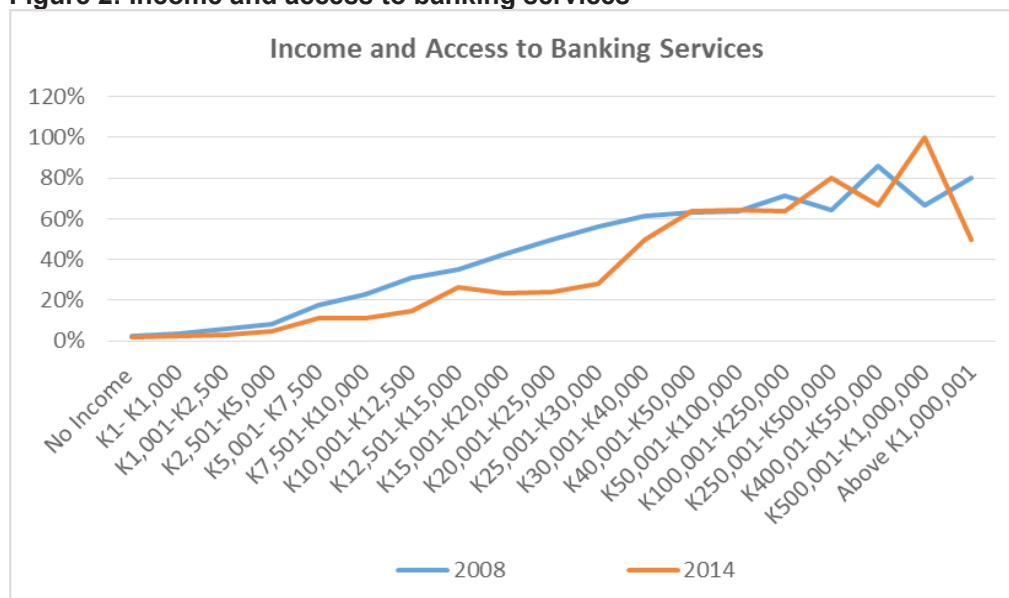
The results indicate that the rural population is more limited in terms of access to banking services. About 32% of urban respondents had a bank account at the time the 2014 FinScope survey was administered. By contrast, only 13% of individuals from the peri-urban region had a bank account. Moreover, just 9% of individuals from the rural region of the country had an account. In 2008, 24% of the people in urban areas interviewed had used a bank account at all. The figure was higher at 21% for peri-urban

people and 13% for rural people. These data suggested that there are still differences between the availability of banking services among the three regions of the country as classified in the survey. This calls for broadening access in the rural and peri-urban regions of the country. The data also suggested that the factors that determine access to banking services such as income and source of income have recently impacted more favourably on the urban population than on those who live in rural and peri-urban areas.

Role of income on access to banking services

The results further revealed that although there are differences in the availability of banking services among the regions of the country, establishing banks in each region is in itself not a sufficient condition for broadening access to banking services. This is because important differences also exist among and within neighbourhoods and regions of the country (Figure 2).

Figure 2: Income and access to banking services



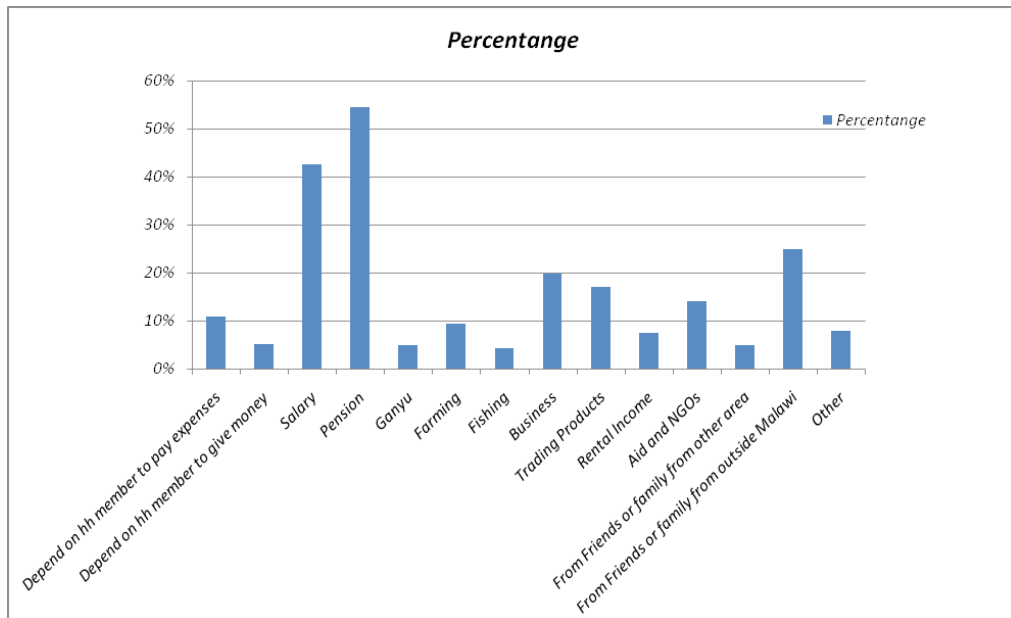
Source: Cross-tabulation from FinScope Survey data.

In terms of income of the respondents, generally, the percentage of individuals with a bank account in the lower income groups was smaller than those in the higher income groups. For example, while only 3% of individuals who had a monthly income of between K1 and K1,000 had a bank account, 11% of individuals with a monthly income of between K7,501 and K10,000 had a bank account in 2014. Furthermore, about 64% of respondents with a monthly income between K50,001 and K100,000 had a bank account, while up to 80% of individuals whose monthly income ranged from K250,001 to K500,000 had a bank account in 2014. The 2008 data also show a positive relationship between income amount and the likelihood of using a bank account. This confirms the importance of information on income in the provision of banking services in Malawi.

Role of income source on access to banking services

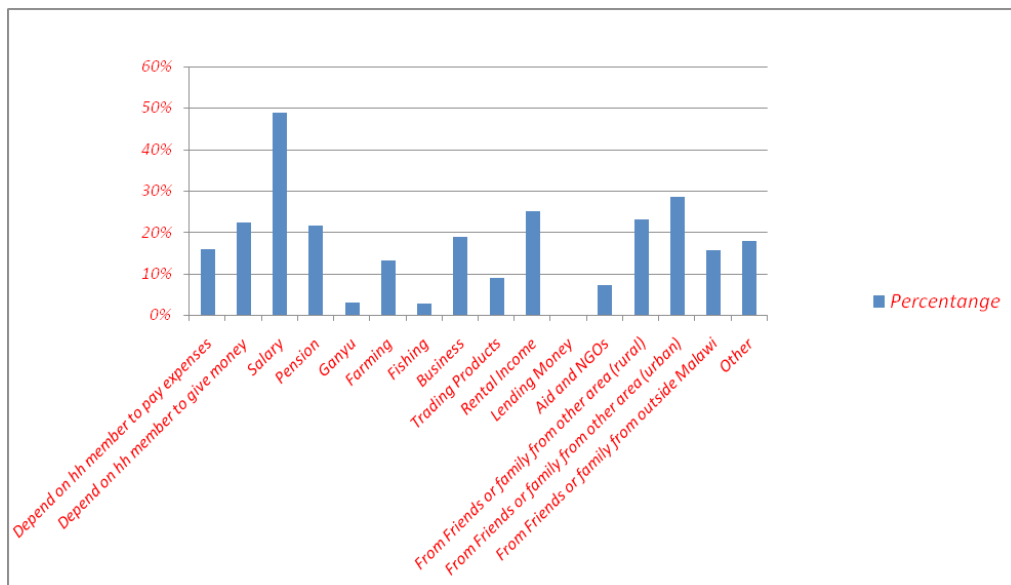
We further turned our attention to income source as a determinant of access to banking services (Figures 3a and 3b).

Figure 3a: Income source and access to banking services, 2014



Source: Cross-tabulation from FinScope Survey data.

Figure 3b: Income source and access to banking services, 2008



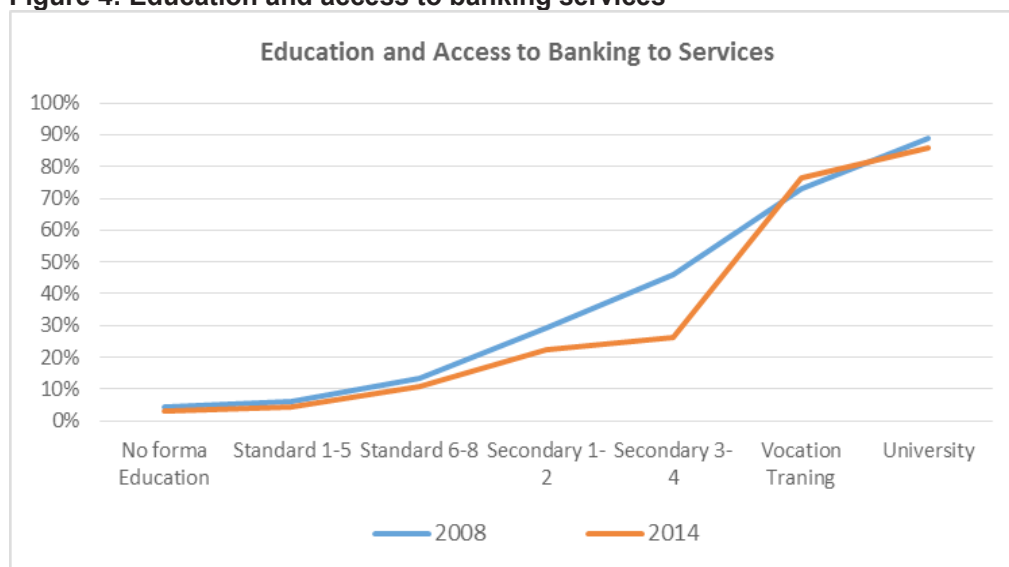
Source: Cross-tabulation from FinScope Survey data.

As shown in Figures 3a and 3b, about 43% of individuals whose main source of income is a salary had a bank account in 2014. By contrast, just 4% of the individuals whose main source of income is fishing had a bank account during that period. It is interesting that individuals whose main source of income is pension benefits had the highest percentage of people with a bank account (about 55%). This is because the government had directed that all former civil servants receive their pensions through banks. Another interesting fact is that almost 25% of people who depend on friends and relatives from outside the country to earn a living had a bank account in 2014. This is a clear message that a significant number of people in the country opens a bank account just to use it as a way of receiving money from others. From the 2008 data, up to 49% of people whose main source of income was a salary had ever used a bank account. About 29% of those who depend on friends and relatives to send them money had ever used a bank account.

Role of education in access to banking services

The results of the cross tabulation using both the 2014 and the 2008 data show that the higher the level of education, the higher the percentage of people with a bank account (Figure 4).

Figure 4: Education and access to banking services



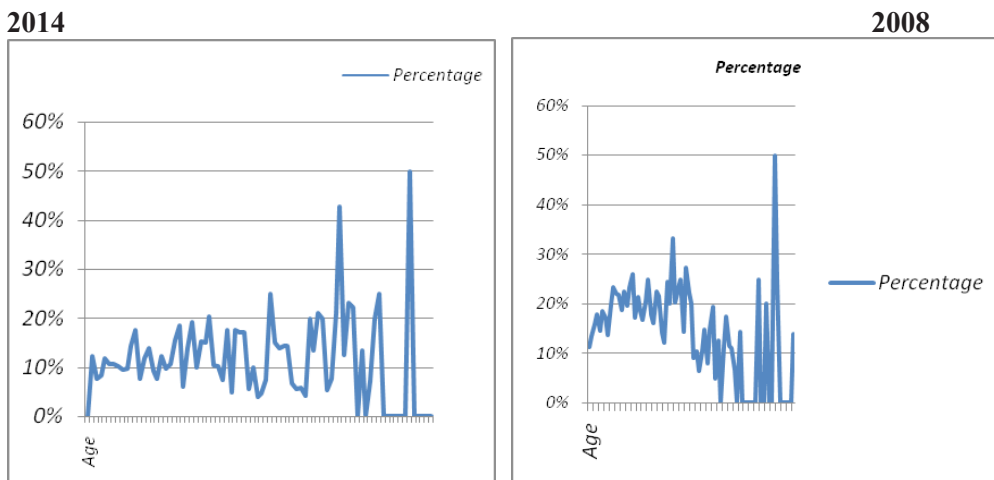
Source: Cross-tabulation from FinScope Survey data.

This confirms that education is another important determinant of access to banking services in Malawi. While only 3% of people with no formal education had a bank account, 11% of those within the Standard 6–8 range had a bank account, and up to 86% of those who had attained university education had a bank account in 2014. From the 2008 data, 3% of people with no formal education, 11% of those within the Standard 6–8 range and up to 86% of those with university education had ever used a bank account at the time the 2008 survey was administered.

Role of age in access to banking services

The results of the cross tabulation using both the 2014 and 2008 data showed great inconsistency where age is concerned in deciding whether to have a bank account. This may mean that the age of the individual does not matter much in as far as having a bank account is concerned in Malawi (Figure 5).

Figure 5: Age and access to banking services

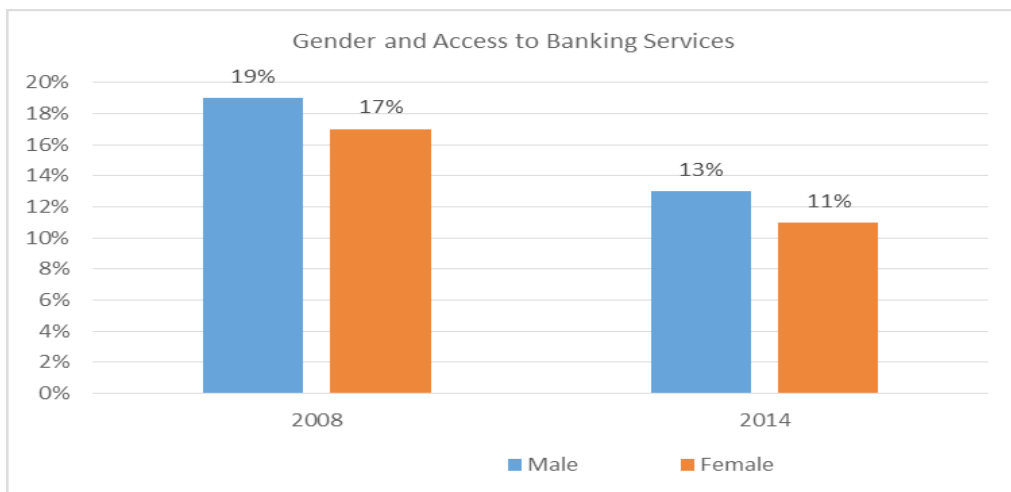


Source: Cross-tabulation from FinScope Survey data.

Role of gender in access to banking services

The cross-tabulation results for both 2014 and 2008 data confirmed that women in Malawi lag behind in having bank accounts compared with men (Figure 6).

Figure 6: Gender and access to banking services



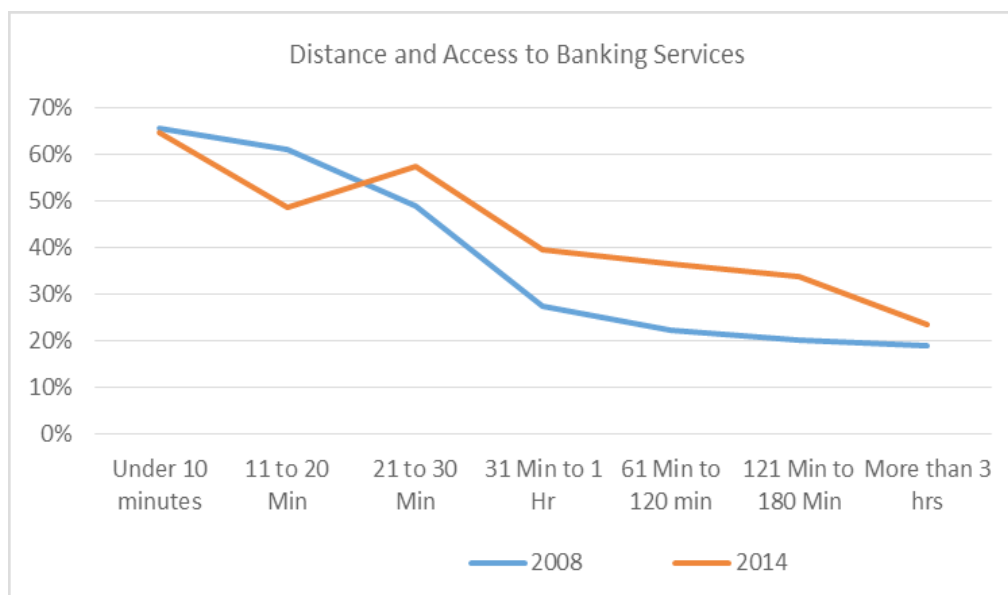
Source: Cross-tabulation from FinScope Survey data.

This is not surprising, as the income levels of most women are generally lower compared with their male counterparts. Moreover, most women are usually overburdened with household expenditures, which further diminish their meagre income, hence the reduction in their chances of opening and maintaining bank accounts. As can be seen from Figure 6, 19% of men interviewed had a bank account in 2008. The percentage was lower, at 17%, for women interviewed during the same period. The percentage of men and women who has bank accounts stood at 13% and 11% for men and women, respectively, in 2014.

Role of distance (to the nearest bank) in access to banking services

The results further showed that the shorter the distance to the nearest bank, the more people have a bank account (Figure 7).

Figure 7: Distance and access to banking services

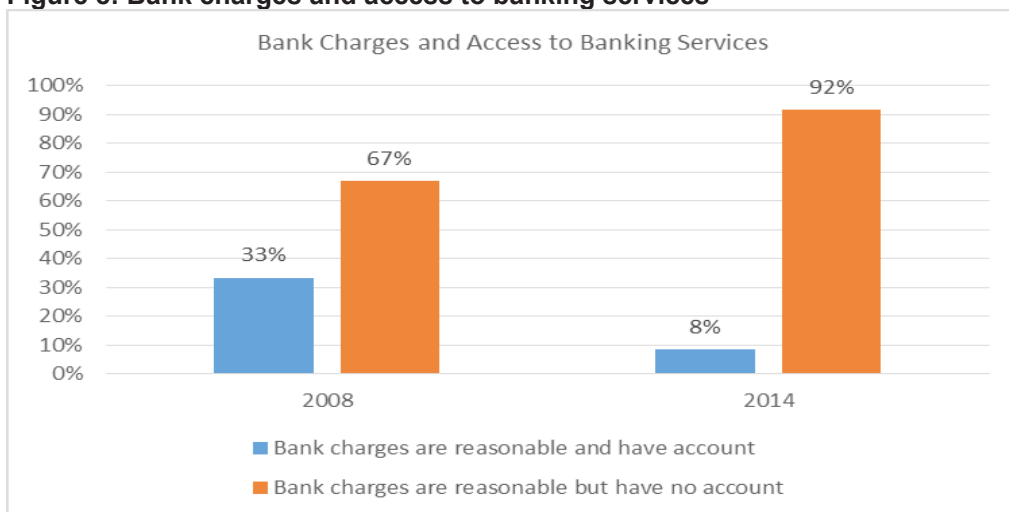


Source: Cross-tabulation from FinScope Survey data.

As can be seen from Figure 7, 24% of individuals who spend more than three hours to get to the nearest bank had a bank account, and 65% of people who spend less than 10 minutes to get to the nearest bank had a bank account in 2014. The 2008 survey results also confirm the inverse relationship between distance to the nearest bank and the percentage of people having access to banking services. This means that the different expansion strategies undertaken by different commercial banks in Malawi are likely to improve households' access to banking services.

Role of bank charges in access to banking services

The results revealed another interesting outcome (Figure 8).

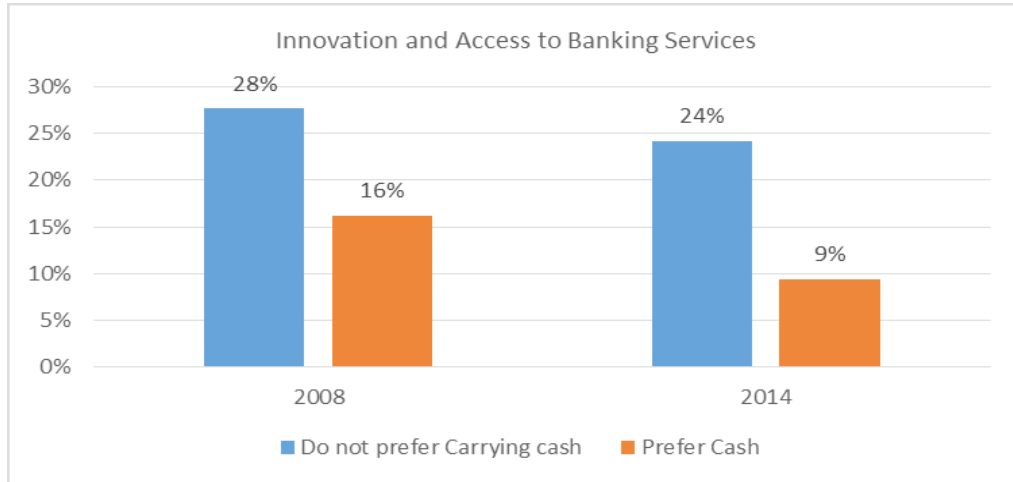
Figure 8: Bank charges and access to banking services

Source: Cross-tabulation from FinScope Survey data.

While (high) bank charges are perceived as a barrier to accessing banking services in Malawi, not many people who felt that bank charges are reasonable had a bank account. Only 8% of individuals who felt that bank charges are reasonable had a bank account at the time the 2014 survey was administered. The rest, about 92%, did not have a bank account although they felt that bank charges are reasonable in Malawi. In 2008, 33% of those who felt that bank charges are reasonable had ever used a bank account. The rest (about 67%) had never used a bank account although they felt that bank charges are reasonable in Malawi. These results indicate that although bank charges can be one of the barriers to accessing banking services in Malawi, there are other factors that play a more important role in stopping Malawians from accessing banking services. Some of the important factors are the ones explained already in the above subsections.

Role of innovation in access to banking services

The results confirmed that innovation is important in improving access to banking services in Malawi. From the cross-tabulation procedure, 24% of respondents who do not prefer to carry cash according to the 2014 survey had a bank account, while only 9% of those who prefer carrying cash had a bank account. In 2008, 28% of those respondents who do not prefer to carry cash had ever used a bank account. By contrast, only 16% of those who prefer carrying cash had ever used a bank account.

Figure 9: Innovation and access to banking services

Source: Cross-tabulation from FinScope Survey data.

Determinants of accessing banking services based on econometric investigation

We further evaluated the relative importance of different factors affecting access to banking services in Malawi based on a regression analysis. A Probit model was estimated at this stage. The model was designed to take the value of 0 for individuals who did not fulfil the given criterion (such as having or using a bank account), and a value of 1 for individuals who did satisfy the specified criterion. We, therefore, attempted to estimate $E(I/X)$ where X is the vector of independent variables that have some relation to I , and E is the expectation operator. The Probit model is one of the models that is used when the variables fall in any set of categories and cannot be ordered in any meaningful way. The idea is to determine the probability of the dependent variable, given each of the independent variables. We used pooled data for the 2008 and 2014 FinScope surveys to estimate a regression. As highlighted in the methodology section, there is a sufficient degree of comparability between the two datasets and hence pooling could be conducted comfortably. Aggregation of the two datasets is done in order to obtain more precise estimates.

The log likelihood ratio (LR) statistic is significant at 1%, indicating that the explanatory variables included in the model jointly explain the probability of respondents deciding to have bank accounts. It can, therefore, be concluded that the Probit model used has integrity and is appropriate. The results are presented in Table 5.

Table 5: Econometric results: Probability of having a bank account from pooled data

Dependent variable: Account

Econometric model: Probit

Independent variable	Beta	Significance
Location	0.19*	0.0004
Income	0.60*	0.0000
Income source	0.54*	0.0000
Education	0.64*	0.0000
Age	0.02*	0.0009
Age squared	-0.00**	0.0017
Gender	0.04	0.2729
Distance	0.83*	0.0000
Bank charges	0.68*	0.0000
Innovation	0.39*	0.0000
Time	-0.18*	0.0001

* and ** implies significance at 1% and 5%, respectively.

From the regression results, using the probability of having a bank account as our measure of access to banking services, all independent variables in the regression, except for “time”, have the expected positive sign. However, the variable gender is not significant, implying that the gender of individuals does not affect the decision to have a bank account in Malawi. Looking at the marginal effects, in terms of overall access to banking services (Table 3), moving from rural (or peri-urban) to urban areas increases the probability of having a bank account by about 19 percentage points. Moving from a monthly income of less than K25,000 to a monthly income of K25,000 or more increases the probability of having a bank account by 60 percentage points. Having a salary as the main source of income increases the probability of having a bank account by about 54 percentage points. In terms of education, persons educated beyond primary school level increase their probability of having a bank account by about 64 percentage points. The findings also confirm the a priori expectation that young people are less likely to have bank accounts than elderly people and have a quadratic relationship with bank accounts. The results further disclose that the less time it takes to reach the nearest bank, the higher the likelihood of having a bank account. Taking less than an hour to get to the nearest bank increases the probability of having a bank account by 83 percentage points. The results also show that bank charges play a role in determining whether to have a bank account or not. Individuals who feel that bank charges are reasonable increase their probability of having a bank account by 68 percentage points compared with those who feel that bank charges are not reasonable in Malawi. The variable “innovation” has a marked impact on access to banking services. Persons who do not prefer to carry cash increase their probability of having a bank account by 39 percentage points compared to those who prefer carrying cash. Finally, the dummy

variable “time” has an unexpected negative sign, which is significant. This may be explained by the incomparability of data for 2008 and 2014.

We further estimated a Logit model to check the Probit estimates. The estimation results of the Logit model are presented in Appendix II and yield the same results as those of the Probit model in terms of the signs of the coefficients.

Stakeholder views

The Science and Technology Act No. 16 of 2003 forbids the conduct of research in Malawi involving human beings unless permission has been granted by the National Commission for Science and Technology. Therefore, before carrying out field work we applied to the National Commission for Science and Technology for permission. The Research Ethics Committee of the Commission reviewed our application and approved it with the condition that we would not reveal the names of the stakeholders whom we interviewed or the individual identity of the institutions concerned.

These interviews were carried out by the two principal investigators and lasted about 30 minutes each. The main aim was to validate the findings from the statistical and econometric analyses. Other aims were to seek the respondents’ opinion on what they thought were the key constraints to accessing banking services in Malawi, and to ascertain progress towards implementing the national strategy for financial inclusion.

Eight out of 12 commercial banks were interviewed. Three commercial banks were not interviewed because they did not grant permission. One other commercial bank was not contacted because it had just resumed operations after it was suspended for a long time. Five non-bank private sector stakeholders were interviewed out of the intended seven, and all three policy institutions that were identified for the study were interviewed. The various stakeholders validated the constraints on access to banking services that were analysed in this study. They also pointed out other constraints not covered already.

Stakeholders representing farmers pointed out the following constraints:

1. Most farmers are poor planners, i.e., they need money quickly.
2. Most farmers do not understand how interest rates on loans work, as most commercial banks are not transparent about how they calculate interest rates and other charges. Consequently, farmers feel robbed when they access bank loans.
3. Due to lack of intensive contract farming, there is high risk of exposure on the part of most farmers, hence they are constrained in accessing loans.
4. Structural problems. Most loans are disbursed when the kwacha is at its weakest point and are repaid when the local currency is at its strongest point. As farmers sell most of their products in kwacha, they are disadvantaged and discouraged from accessing loans, as the returns on the local currency tend to be less than the cost of the imported inputs.
5. Most farmers do not have the collateral required by commercial banks to access loans.
6. Sometimes loans offered by commercial banks are too small for some farmers to make tangible investments (from the Farmers’ Union of Malawi’s point of view).

The following were therefore suggested in the course of the interviews:

1. Banks should provide special accounts for farmers (accounts with incentives, e.g., with forms in vernacular languages).
2. There should be full disclosure of information from commercial banks.
3. The Reserve Bank of Malawi should enhance the provision of information on banking by networking with Agricultural Extension Officers and farmer groups.

Stakeholders representing other non-governmental organizations stated that:

1. High lending interest rates discouraged borrowing, while low deposit interest rates discouraged saving;
2. Lack of trust of banks by less educated people who believe that their money is not safe at banks constrains access to banking services;
3. Although banks are protected from fraudulent behaviour, people who do not have the required documents are denied the opportunity to open a bank account. For example, a water or electricity bill is required in order to open a bank account. Since most people do not depend on electricity or water for which they pay, they are denied access to banking services.

Those representing non-farm business enterprises highlighted the following problems:

1. Most people in Malawi do not borrow from banks due to fear of indebtedness and inability to repay loans.
2. Informal banks are more attractive to rural people because they are more accessible, pay high rates of return on deposits and lend for projects that commercial banks consider risky.
3. The private sector's main concern about the financial system in Malawi is that there is no competition among the banks and that commercial banks provide loans that are mainly short term, for which costs are too high for them to make tangible investments. Cost of capital is very high, making most projects not viable.
4. The main barrier from the private sector's point of view is, therefore, the unavailability of long-term financing in the country.
5. The suggestion is that there should be a development bank (to provide loans which are long term and also cheaper).

On their part, representatives of commercial banks mentioned:

1. Power blackouts, which raise the cost of servicing many service centres through generators;
2. The high cost of establishing bank branches;
3. High risk of loans;
4. High default rate due to declining real disposable incomes; and
5. Financial illiteracy, especially lack of budgeting, savings and debt management skills, as well as the inability of potential customers to provide the required documentation – a problem that would be resolved if everybody had a national identity card as some of the constraints in accessing banking services in Malawi.

They went on to say that they were addressing these constraints through financial literacy programmes of their own or those of other organizations such as Women's

World Banking, by bringing banking close to clients through agency banking, devising special accounts for agents to manage, lending through voluntary groups, and allowing relations offices (static and mobile agencies) to process loans.

Policy institutions indicated that from the official side, the national strategy for financial inclusion has not been implemented. From the donors' side, only the United Nations Capital Development Fund has implemented aspects of the strategy with a focus on increasing the access of unbanked, marginalized groups through mobile money, loans for the youth, and agency and electronic banking. The strategy has now expired, but work on replacing it has not started.

5. Conclusion and policy implication

From the analysis of cross-tabulation of frequencies of responses, we drew the following conclusions:

1. The degree of access to banking services rises in ascending order from rural to peri-urban to urban areas, where most bank branches and services are found.
2. The degree of access to banking services rises steadily with the level of income up to K100, 000.00, thereafter it rises but fluctuates up to K500,000.00, then it falls.
3. The degree of access to banking services is high among those who receive salaries and pensions because employers pay them through banks. It is also high among those who are in business or earn rental income, and those who receive transfers and remittances from other people. It is low among those who receive low and irregular incomes, such as smallholder farmers and casual workers.
4. Access to banking services rises gradually with the level of education from primary to secondary school, then rises rapidly with the transition from secondary school to vocational training, but thereafter it rises gradually to university education.

The above factors are interrelated. Most highly educated people work and live in urban areas, or do business and own rental properties there, and earn more than people with lower levels of education, or without education.

1. Distance to the nearest bank branch is negatively correlated with access to banking services.
2. Most adults consider bank charges to be reasonable, but the majority of those who think so do not have bank accounts.
3. Innovation encourages access to banking services.
4. Age and gender do not have a significant impact on the decision to have a bank account.

From the econometric analysis of the factors explaining access to banking services, we rejected the null hypothesis that location, income, source of income, education, age, distance and bank charges have no influence on access to banking services. Instead, we accepted the alternative hypothesis that location, income, source of income, education, age, distance and bank charges influence access to banking services in Malawi. But we accepted the null hypotheses that gender does not influence access to banking services.

The above findings imply that access to banking services in Malawi can be improved by the following:

1. Increasing income, especially salaried, pension, rental and business incomes.
2. Requiring that salaries, pensions, rents and business incomes are paid through banks.
3. Finding the means to encourage smallholder farmers, traders, fishermen and casual workers to save their money in banks.
4. Increasing the general level of education, including financial literacy in educational curricula at all levels, and implementing financial literacy programmes to reach the general public, focusing on budgeting, saving and debt management skills.
5. Addressing the problem of distance through an expansion in the bank branch network, and in the network of static and mobile agencies, vans and ATMs, and in expanding agency banking.
6. Addressing the problem of high default rate through the group lending technique, and by linking banks with microfinance and informal lenders through whom the former would lend to ultimate borrowers.
7. Using local languages in opening bank accounts and providing other banking services.
8. Reviewing bank charges and interest rates.
9. Encouraging commercial banks to lend long term through development divisions or corporations, as they used to do in the past.
10. Increasing the supply and reliability of power to facilitate the provision of banking services.

Notes

1. Other measures of access to banking services include the number of bank loans, number of deposit clients and borrowers, and the number of financial access points, such as branches, agents and automated teller machines.

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Appendix I: Estimation results of the Probit model from the pooled data

Dependent variable: Account				
Method: ML – binary Probit (quadratic hill climbing)				
Sample size: 1 7997				
Included observations: 7953				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.419547	0.134064	-18.04769	0.0000
LOCATION	0.185087	0.051833	3.570820	0.0004
INCOME	0.599051	0.053365	11.22546	0.0000
INCOMESOURCE	0.536334	0.054975	9.755987	0.0000
EDUCATION	0.636272	0.045273	14.05403	0.0000
AGE	0.020852	0.006294	3.312909	0.0009
AGESQUARED	-0.000216	6.87E-05	-3.136894	0.0017
GENDER	0.044805	0.040862	1.096508	0.2729
DISTANCE	0.828309	0.044318	18.68995	0.0000
BANKCHARGES	0.682068	0.044209	15.42818	0.0000
INNOVATION	0.394055	0.044110	8.933437	0.0000
TIME	-0.187851	0.048895	-3.841933	0.0001
McFadden R-squared	0.311708	Mean dependent var		0.155665
S.D. dependent var	0.362560	S.E. of regression		0.295617
Akaike info criterion	0.598267	Sum squared resid		693.9598
Schwarz criterion	0.608801	Log likelihood		-2367.009
Hannan-Quinn criter.	0.601874	Deviance		4734.017
Restr. deviance	6877.917	Restr. log likelihood		-3438.959
LR statistic	2143.900	Avg. log likelihood		-0.297625
Prob(LR statistic)	0.000000			

Obs with Dep=0	6715	Total observations		7953
Obs with Dep=1	1238			

Appendix II: Estimation results of the Logit model from the pooled data

Dependent variable: Account

Method: ML – binary Logit (quadratic hill climbing)

Sample: 1 7997

Included observations: 7953

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-4.438742	0.257941	-17.20836	0.0000
LOCATION	0.325929	0.094226	3.458995	0.0005
INCOME	1.113068	0.096901	11.48660	0.0000
INCOMESOURCE	0.931094	0.096269	9.671827	0.0000
EDUCATION	1.155333	0.081382	14.19647	0.0000
AGE	0.042182	0.011972	3.523427	0.0004
AGESQUARED	-0.000436	0.000131	-3.318758	0.0009
GENDER	0.067610	0.076382	0.885165	0.3761
DISTANCE	1.492389	0.079484	18.77600	0.0000
BANKCHARGES	1.238458	0.080695	15.34739	0.0000
INNOVATION	0.747957	0.080726	9.265375	0.0000
TIME	-0.339555	0.093113	-3.646712	0.0003
McFadden R-squared	0.313649	Mean dependent var		0.155665
S.D. dependent var	0.362560	S.E. of regression		0.295364
Akaike info criterion	0.596589	Sum squared resid		692.7730
Schwarz criterion	0.607122	Log likelihood		-2360.334
Hannan-Quinn criter.	0.600195	Deviance		4720.669
Restr. deviance	6877.917	Restr. log likelihood		-3438.959
LR statistic	2157.249	Avg. log likelihood		-0.296785
Prob(LR statistic)	0.000000			

Obs with Dep=0	6715	Total observations		7953
Obs with Dep=1	1238			