

Financial inclusion in Kenya

Survey results and analysis from FinAccess 2009

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Foreword

In its development strategy, Vision 2030, Kenya strives to become a regional financial hub with vibrant, efficient and globally competitive financial system to drive savings and investments. This, it is believed, will lead to a high and sustainable, but also broad-based economic growth. There is growing recognition in the current body of knowledge that increasing access to financial services has both private and social benefits. In addition to enhancing efficiency and stability therefore, Vision 2030 identifies the need to increase access to affordable financial services and products for a wider section of Kenyans, particularly poor, low-income households and micro-, small- and medium- scale enterprises (MSMEs). Poor and low-income households in informal urban settlements, small and micro-level businesses, rural areas, and women are therefore prioritized in the new vision for financial sector development.

In recognition of the association between access to financial services and poverty reduction, the Central Bank of Kenya has partnered with Financial Sector Deepening (FSD) Kenya and other financial sector players and stakeholders under the private-public partnership arrangement, the Financial Access Partnership (FAP), to monitor and measure levels of access to financial services. At the heart of the FinAccess programme is a nationally representative survey of Kenyan individuals repeated at regular intervals of approximately 2 years. The first FinAccess survey was in 2006 and the second in 2009. The survey documents changing patterns of financial service usage and uptake in Kenya. FinAccess data disaggregates access and usage of specific financial services by the socio-economic profile of users, enabling us to derive a rich profile of financial access in Kenya. This helps policymakers to better identify perceived difficulties in obtaining services and barriers to use for different population groups.

This volume presents five research papers commissioned by the Financial Access Partnership (FAP), following the data launch in 2009. The papers provide important insights into how the financial access landscape has changed in Kenya and how emerging trends affect people's livelihoods. This detailed analysis of FinAccess findings broadens our understanding of the relationship between access to financial services, poverty reduction and growth, linkages between formal and informal financial markets and the drivers of exclusion as well as drivers of financial inclusion. Many of the papers utilize the data from both 2006 and 2009 surveys to identify emerging trends,

and highlight the progress that has been made towards financial inclusion over the last few years. Also in this volume, the main findings of the FinAccess 2009 survey are presented as an appendix which includes an additional section on access by wealth quintile. A second appendix presents us with a variety of additional data points in the form of detailed tables on product and provider usage.

I believe that the results of this CBK-FSD Kenya partnership in collaboration with FAP will help policy makers, practitioners, researchers and the private sector to better understand the relationship between current and potential supply and demand for financial services. Analysis of the FinAccess database will not only allow the Central Bank, the Government and other stakeholders to track progress in achieving Vision 2030; it will also identify bottlenecks to financial access and thus improve our capacity to develop appropriate policies for reform and suitable products and delivery channels for the market. It is my hope that readers of this volume will find its contents useful and stimulating of new ideas. It is also my hope that researchers in this area will find it useful for their research input. But above all, the Domestic Financial Regulators Platform will have a wealth of options to ponder for the future-development of the financial sector in Kenya.

Prof. Njuguna Ndung'u

Governor, Central Bank of Kenya

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Abbreviations and definitions

ASCA	Accumulating Savings and Credit Association
ATM	Automated Teller Machine
Baraza	Locally convened community meeting
CBK	Central Bank of Kenya
Chama	ROSCA in Swahili
Duka	Shop in Swahili
FAP	Financial Access Partnership
FSD	Financial Sector Deepening
HELB	Higher Education Loans Board
ID	Identity Card
KISH	Sampling method for randomly selecting individuals in household
KNBS	Kenyan National Bureau of Statistics
KSh	Kenya Shilling
LSM	Living Standards Measure
MFI	Micro-finance Institution
M-PESA	Mobile-based money transfer service (pesa means money in Swahili)
NASSEP	National Sample Survey and Evaluation Programme
NHIF	National Hospital Insurance Fund
NSSF	National Social Security Fund
ROSCA	Rotating Savings and Credit Association
SACCO	Savings and Credit Co-operative

Contributors

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Introduction

FinAccess 2009 documents a dramatic shift in Kenya's financial landscape over the two and a half years since the previous survey in 2006. There has been a significant jump in the proportion of formally included (26.3% to 40.5%), mainly driven by the advent of mobile money. A lesser but still impressive contributor to formal inclusion has been the banking sector, which has pushed the banked population up by four percentage points (18.5% to 22.6%). Like Safaricom's M-PESA which dominates the market for mobile transactions, the increase in bank access is largely due to the driving force of one market player- Equity Bank. Also impressive is the growth in MFIs. While still representing a tiny proportion of the financially included, MFIs have doubled their intake between 2006 and 2009 (1.7% to 3.4%). SACCOs and Postbank on the other hand, have suffered a substantial loss in numbers. This may be a cause for concern in view of the fact that these institutions reach deeper into the poverty strata than other formal/semi-formal institutions (with the exception of M-PESA). Interestingly, despite the rise in formal inclusion, informal usage has also risen from 37.5% of the population in 2006 to **38.7%** in 2009. Meanwhile, financial exclusion has dropped by over eight percentage points (41.3% to 32.7%), and has virtually been halved in urban areas.

The present volume addresses these and other findings in more detail through a series of analytical papers by top researchers and academics.* Among other things, the papers discuss the impact of formal inclusion on household investment and growth, the complementary role of formal and informal financial institutions and patterns of financial exclusion. The papers contextualise the FinAccess findings in relation to macro-level socio-economic trends in Kenya, as well as patterns of financial inclusion in the continent as a whole.

An introductory paper by David Ndiu asks us to look beyond financial market trends to appreciate wider socio-economic influences on the financial sector. Prior to 2008 Kenya experienced exceptionally high levels of economic growth which has undoubtedly supported the rapid success of new products and services for middle income markets such as M-PESA, MFIs and Equity Bank. There followed a series of shocks (election violence, drought, the global financial crisis), which impacted heavily on the economy. These may have been responsible for some of the more unexpected patterns of financial behaviour documented in the survey, such as a rise in hoarding or savings 'under the mattress', and also a rise in consumption-related loans. Changes in Kenya's demographic

profile towards a younger population and a shift away from formal labour markets may also have played their part in the success of particular product offerings. For example, the youth have played a major part in the uptake of technology-based services such as M-PESA, while the downturn in SACCO usage could be partly attributed to the decreasing proportion of the formally employed.

Ndiu comments on the significant rise in demand for consumption-related credit, citing this as a potential issue in view of policy commitments to improving credit for investment purposes. Notwithstanding the significance of 'lump sums' in mitigating household vulnerability, the role of financial markets in stimulating productive investment is also a corner stone of macro-economic growth and improved income earning opportunities for low-income households. Ellis et al. take up this point, analyzing the FinAccess data on usage of savings and loan products to determine the extent to which improved levels of financial inclusion are translating into higher levels of productive investment at household level. They find that investment in productive assets (as opposed to consumption) correlates with access to formal as opposed to informal financial services. Further, the authors find that people who borrow to invest are 16% more likely to use formal financial services than those who borrow to consume. This underscores the potential poverty impacts of policies to encourage formal inclusion and thereby stimulate productive investment and macro-economic growth. The authors suggest that policy frameworks must continue to address supply-side barriers, which continue to be negatively correlated with people's ability to borrow or save for investment.

Thorsten Beck frames these trends against the wider backdrop of financial inclusion patterns in the continent as a whole. He finds that formal inclusion in Kenya is at par with other countries in the East African region (although lower than Southern African countries). However, the share of the population that is completely excluded from any formal or informal financial service is lower in Kenya than in any other country except for South Africa. While income is still the most prominent barrier for the unbanked, Beck points out that access-related barriers, especially documentation, have gained in prominence compared to 2006.

Barriers to formal inclusion form the topic of another paper by Johnson and Arnold, who analyse in more detail the relationship between financial sector trends and patterns of exclusion. The

* These research reports were generated from independent analysis of survey findings. This statistics on inclusion may therefore vary slightly for each paper. The statistics presented in Appendix 1, Main Findings, should be taken as the official and definitive measures.

authors beg the question: To what extent is expanded supply resulting in reduced barriers to access? They conclude that patterns of usage have not changed significantly, and that the rapid expansion of financial service markets has mainly resulted in the inclusion of those most able to take up the services rather than overcoming barriers to access. The authors go further to suggest that some parameters of exclusion may even have solidified in recent years. They find that access to formal services is, if anything, increasingly biased against rural populations and women. They also find a clearer pattern of inclusion and exclusion by Province, possibly due to patterns of service expansion pursued by providers. The increased association of ROSCA use with education, also identified in Malkamaki's paper, suggests that informal mechanisms are not so much a substitute, but rather a complement for more formal services.

Finally, the authors qualify the sense of optimism generated by the undoubted contribution of M-PESA to financial inclusion in the recent past. They find that M-PESA users have similar characteristics to users of formal services, and that the service is strongly positively associated with secondary education and income sources from government and the private sector. At the same time, M-PESA-only users are likely to be younger than other registered users, and economically diverse. The questionable extent to which increased financial inclusion in Kenya is addressing barriers to access demonstrates the need for proactive policies to tackle on-going patterns of exclusion.

A surprising finding from the FinAccess 2009 survey is that the usage of informal products and services is rising alongside formal usage. This suggests a degree of complementarity between the two, which is further explored in a paper by Markku Malkamaki. Malkamaki finds that uptake of informal services, perhaps expectedly, is stronger among women than men, underlining the association between women and informal sector and women's relative exclusion from formal services. Other drivers of informal uptake are more counter-intuitive. For example, Malkamaki finds that the increase in usage of informal services is a strongly urban phenomenon, which is surprising given that urban populations enjoy greater ease of access to formal products. Compared with 2006, informal users are generally more educated and more food-secure, suggesting a possible link between informal services and upward mobility (as in South Africa, for example). These and other factors point to the need for further research on the drivers behind expanding informal markets. The findings also demonstrate the relatively high risks inherent in informal services (group members experience between 10% and 20% losses), and the wide variation in governance procedures. Policies to address security of funds and stronger governance structures for

informal groups may therefore substantially increase the benefits for users. This has indirect implications for poverty alleviation, in that informal usage is still overwhelmingly concentrated among the lower wealth quintiles.

A final paper presents us with a powerful and innovative visual presentation of the FinAccess data. Using a combination of statistical and GIS techniques, Fouillet and Johnson produce a series of maps which highlight the comparative changes in the financial access landscape between 2006 and 2009, as well as the relative significance of different types of financial institutions within those years. The paper reinforces the general argument in the previous paper by Johnson and Arnold, which highlights the extent to which nation-wide increases in financial access do not necessarily translate into greater equality of access. For example, some of the largest increases in usage of formal services have been among populations which already have relatively high levels of access. In Central Kenya, the expansion of banking services is complemented by a slight drop in usage of informal institutions such as ROSCAs. In Eastern and Coast provinces, by contrast, informal services have gained in popularity, while formal coverage still remains weak. The 2009 maps emphasise the relative breadth of coverage of M-PESA compared to other services, but also highlight the concentration of M-PESA in Nairobi. This forceful presentation of geographical variation in access has potentially strong policy implications, highlighting areas where services, and particularly formal services, are still scarce despite impressive statistics showing strong levels of expansion in financial access for the country as a whole.

These papers present analytical windows through which we can begin to understand and interpret the FinAccess findings, while at the same time illuminating gaps in the survey, and pointing to the need for more research. It is not enough simply to provide a picture of access to financial products in Kenya. To appreciate the potential significance of financial access for poverty processes, we also need to understand more about the extent and depth of usage, and the way in which this impacts on household livelihoods and macro-level patterns of growth and inequality. While more information on usage can be incorporated into the future FinAccess surveys, our understanding of financial inclusion and its poverty impacts also requires that the FinAccess findings are triangulated with multiple quantitative and qualitative data sources. We hope that this publication will stimulate academics and researchers to probe more deeply into the trends illuminated by the FinAccess survey through undertaking complementary research. Coordination of research efforts on financial inclusion in Kenya will ultimately enhance the capacity of policy makers to steer financial markets in the direction of pro-poor growth.

CHAPTER 1

Financial inclusion

Recent developments and lessons from Kenya

DAVID NDII

1. Introduction

Over the last decade, financial inclusion (banking the poor) has made its way into the centre stage of development policy. Microfinance success stories, epitomized by the Grameen Bank, have led to an unusual convergence of interests between governments, businesses, official aid agencies, philanthropists and civil society. Underlying this consensus is a belief that access to financial services is a powerful means of reducing poverty. Consequently, many countries, both rich and poor, have adopted outreach (i.e. reaching the un-banked and under-banked population) as a core objective of financial policy (in addition to stability and supporting economic growth). Alongside this, governments, financial institutions, and donors, recognized that policy formulation as well as business strategy requires data that the financial sector has not traditionally generated.

One of the critical gaps has been the lack of data on the use of financial services by households. To address this gap, Kenyan stakeholders in 2006 launched FinAccess; a national household survey program dedicated to informing policy makers and financial institutions on how to improve financial access in the country. The first survey was conducted in 2006, and provided a comprehensive picture of Kenya's financial landscape. A second survey was completed in 2009.

The period between the two surveys has witnessed remarkable changes in terms of economic development, new policy initiatives and market dynamics that were expected to have an impact on the financial landscape. On the economic front, after close to a decade of stagnation, growth surged to a peak of 7 percent in 2007 before succumbing to three major shocks: post-election violence in early 2008, a severe drought, and the global financial crisis hitting domestic markets. The policy initiatives include the enactment of a microfinance law and a newly established credit fund for youth and women by the government. But perhaps the most significant development has been the rapidly changing market environment following the arrival of mobile banking.

Against this backdrop, the key findings of the 2009 FinAccess survey include a dramatic increase in the reach of formal financial institutions from 26 to 41 percent of the adult population, an even more dramatic surge in money transfer activity, and a decline in the importance of savings and credit societies (SACCOs) in providing access compared to 2006. This paper seeks to further illuminate these developments from the survey data and to outline the macro-level context in which these shifts must be viewed.

2. Macro-level socio-economic developments 2006-2009

2.1 Economic performance

After close to a decade of stagnation, the Kenyan economy performed strongly, following the change of government in 2003. From 2004 to 2007, growth accelerated, peaking at 7 percent in 2007. A succession of shocks – the post-election crisis of December 2007, a severe drought, and the global financial crisis–brought the economic expansion to an abrupt end. Growth slumped to 1.7 percent in 2008 (figure 1).

While agriculture, the traditional backbone of the Kenyan economy, has been the main growth driver, contributing about a fifth of the growth, the Communications sector–driven by the mobile phone industry – has been the most dynamic. It was the fastest growing sector for four years in a row (2004 –2007) and was only overtaken marginally by construction in 2008 (figure 2). The dynamism of the telecommunications sector is as noted, is driven by mobile telephony.

Alongside the economic growth were specific policy interventions that brought about considerable socio-economic gains. The free primary education program, introduced in 2003, is perhaps the most significant of these.

These developments were associated with a substantial reduction in the incidence of poverty from the period between 1997 and 2006. In 2006, national incidence of poverty was estimated at 46 percent, down from 52 percent in 1997.

Figure 1: GDP Growth 2002 – 2009

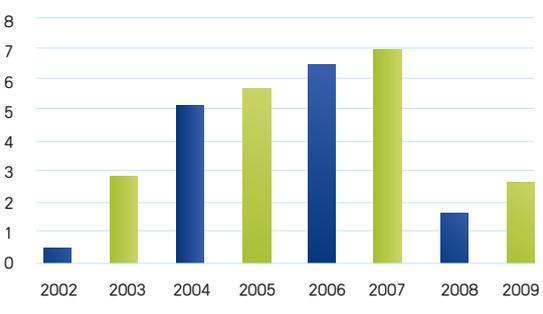


Figure 2: Sector growth rates, average 2003-7, %

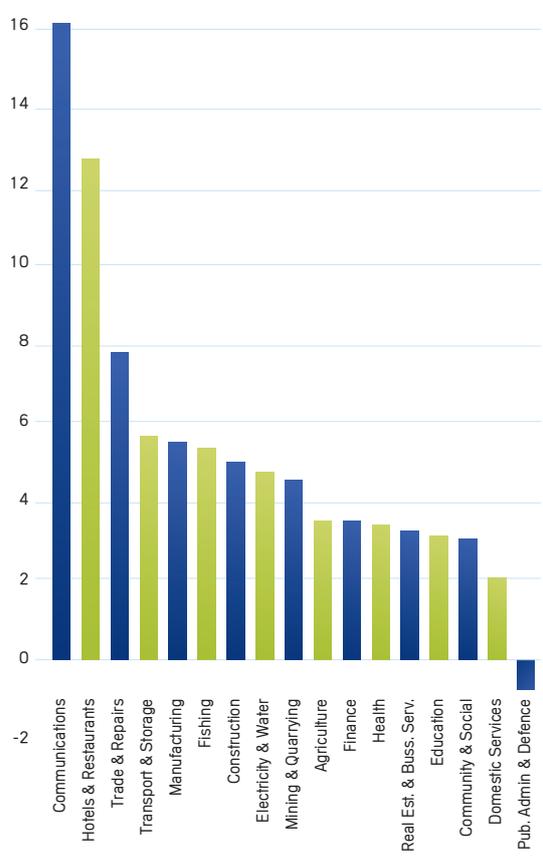
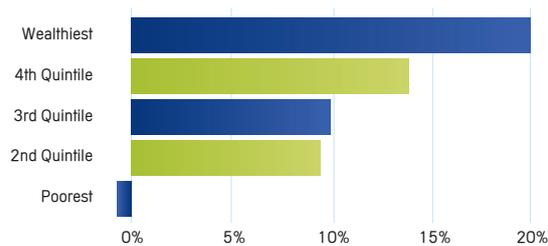


Figure 3: Household expenditure change 1997-2006, %

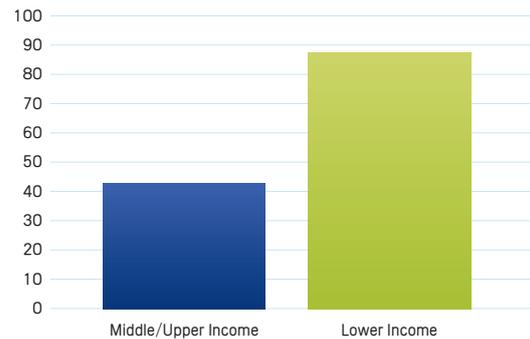


However, as shown in figure 3, economic recovery was highly regressive, with the better off income groups benefiting most. The poorest fifth of the population suffered a decline in their living standards. The principal driver of a worsening trend in income distribution is inflation. Contained at below 10 percent for several years, inflation reached 14 percent in 2006, and 28 percent in 2008.

Because food prices have been the principal driver of inflation, and the poor spend more on food in proportion to their incomes, the impact on the poor has been particularly pronounced. In the period between 2004 and 2008 the cost of living for the lower income groups increased by 80 percent, twice the increase in the cost of living for the middle/upper income groups (figure 4).

In addition to these economic developments, there are two underlying long term structural dynamics that affect the country's financial landscape, the first being demographic change. Kenya's adult population is getting younger at

Figure 4: Cost of living increase 2004-8, cumulative, %



a faster rate and in 2006 the age cohort between 15 and 19 was larger than the total population over 40. The implications of this for financial services are very significant as this means that the population that has reached 18 between the two surveys i.e. eligible to operate a bank account (those aged 15-17 in 2006) is at least 2.8 million, more than the entire population that was above 50 years of age.

The second dynamic is the predominance of the informal sector whose contribution to employment (outside smallholder agriculture) has increased from 40 percent in the early 90s to over 80 percent in 2008, overtaking agriculture as the largest source of employment in Kenya (figure 6). In urban areas, the informal sector accounts for two out of three jobs, and close to 40 percent of rural employment.

Figure 5: Population age structure

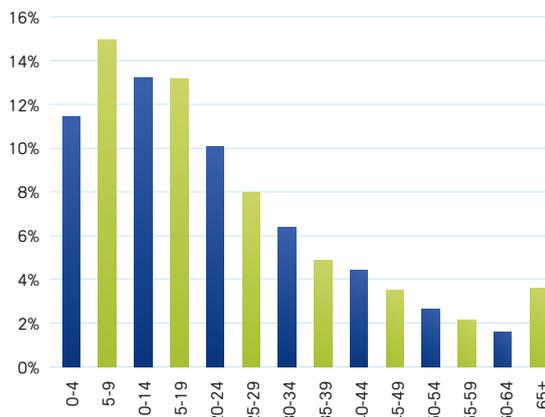
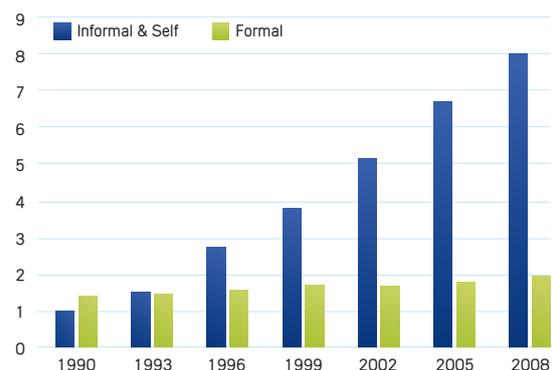


Figure 6: Structure of nonfarm employment, millions

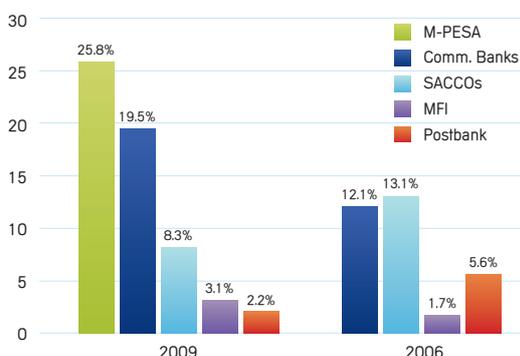


3. Financial landscape trends 2006 – 2009

3.1 Access

The 2006 FinAccess survey estimated that the formal financial system was serving just over a quarter (26.4 percent) of Kenya's adult population. Savings and Credit Cooperatives (SACCOs) and commercial banks had comparable customer bases at 13 percent and 12 percent of the adult population respectively. The Post Office Savings Bank (Postbank) emerged as the single most significant institution, with 5.6 percent of the adult population having accounts there. Microfinance institutions were the least significant with only 1.7 percent using them. In terms of contribution to access, banks (including the Postbank) contributed to 18.5 percentage points (70 percent of the access), while the non-bank institutions (SACCOs and MFIs) add 7.8 percentage points (30 percent of the access).

Figure 7: Financial services market penetration, % of adult population



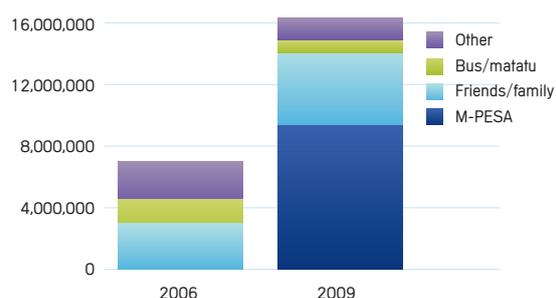
By 2009, the landscape had changed dramatically (figure 7). A quarter of the adult population had registered as M-PESA users, catapulting it to the top of the league in terms of customer base. The MFI customer base grew by 117 percent, while commercial banks also registered an impressive 92 percent growth in customer numbers. SACCOs and the Postbank lost customers. Postbank's customer base reduced by 54 percent to 2.2 percent of the population, while SACCOs suffered a lesser but still significant 25 percent reduction in membership, leaving them with a membership of 8.5 percent of the population.

3.2 Mobile money as a driver of financial inclusion in Kenya

The advent of mobile phone accounts is undoubtedly one of the most important developments since the 2006 survey. In April 2007, Safaricom, Kenya's dominant mobile phone provider launched Kenya's first mobile phone account, M-PESA¹. M-PESA accounts for the lion's share of the growth in access to formal financial services since 2006. The FinAccess survey estimated 5.3 million registered M-PESA customers, which equals 25 percent of the adult population. This is consistent with Safaricom's reported figure of 5.4 million customers as of January 2009. Close to half of its customers are in the formally included category exclusively on the basis of being registered M-PESA users. This accounts for 85 percent of the increase in the formally included category over the period between the two surveys.

Adoption of M-PESA is more widespread among men than women, although the difference is not large. As might be expected, there is a higher rate of adoption among young people and the better educated. It is highest among the 18-24 age group at 38 percent, falling to 14 percent among the over 65. The geographical pattern of adoption is broadly similar to the distribution of banking services—Nairobi leads with 68 percent, followed by the Central Province at 34 percent, while the North Eastern has the lowest adoption at 8 percent. However, M-PESA is more widespread than other services in all the provinces. M-PESA had the highest penetration among the formally employed, and lowest among farmers, pastoralists, fishers and dependents. However, in terms of contribution to access, it has made

Figure 8: Use of money transfer options in 2006 and 2009



¹ M-PESA's spread in Kenya has been remarkable. It registered over 2 million users in 2007, its first year of operation, and established a network of over 2,500 agents. The number of registered users tripled to 6 million in 2008, while the network expanded to over 8,000. This explosive growth has continued, and was approaching 10 million customers and over 10,000 agents by the end of the third year.

a more significant contribution to groups having high incidences of exclusion, notably domestic employees, farm workers, dependents and pastoralists.

The most significant evident impact of M-PESA is a virtual explosion of money transfer activity. People who reported sending money domestically during the year grew by 150 percent, from 2.9 million to 6.8 million. Two thirds of them sent money by M-PESA. Other than friends and family, use of all other means of sending money suffered absolute declines. In effect, M-PESA has had two impacts, a growth impact, i.e. stimulating an increase in transactions², and a substitution impact, i.e. diverting business from other service providers. It is quite possible that in the absence of economic growth, the uptake of M-PESA would have been less significant.

3.3 Contribution of commercial banks and MFIs

The banking sector expanded significantly between 2005 and 2008. The number of deposit accounts increased by 3.9 million, up from 2.5 million at end of 2005, to 6.4 million accounts at the end of 2008, an impressive growth of 152 percent. Deposits increased 71 percent, from Ksh. 560 billion equivalent to 36 percent of GDP to Ksh. 864 billion, equivalent to 41 percent of GDP.

The branch network has also expanded considerably. Banks opened 312 new branches, which expanded the network from 534 to 887 branches, representing a 60 percent expansion. The ATM infrastructure expanded fourfold, from 323 units to 1,325 units. Staff employed doubled from 12,600 to 25,400.

Table 1: Selected bank expansion indicators, 2005-8

	2005	2008	% Change
Branches	534	887	66.1
ATMs	323	1325	310.2
Employment	12,589	25,491	102.5
Accounts('000)	2,551	6,429	152.0
Accounts/Staff	203	252	24.5
Customers/Branch	4,777	7,247	51.7
Accounts/ATM	7,898	4,852	(38.6)

Table 2: Number of bank accounts, 2005-8

	2005	2008	% change
Total, '000	2,551	6,429	152.0
MF banks, of which	1,164	4,159	257.3
Equity	557	3,018	441.9
Other MF	607	1,141	87.9
Other banks	1,387	2,270	63.7
	Shares %		
MF banks, of which	45.6	64.7	77.2
Equity	21.8	47.0	63.5
Other MF	23.8	17.7	13.8
Other banks	54.4	35.3	22.8

The pattern of expansion translates into a significant shift from reliance on staff to reliance on technology.

Although the number of accounts does not correspond to customer numbers, given that there is considerable number of multiple account holders, it is nonetheless reflective of the trend in customer acquisition. The growth in accounts has largely been driven by four banks categorized by the Central Bank as microfinance oriented, namely Equity, Cooperative Bank, K-Rep and Family Bank. These have accounted for 80 percent of the growth in accounts, with Equity Bank alone accounting for 67 percent.

This growth is reflected primarily in transactions accounts, which registered 1.5 million customers, marginally more than the total number of new customers, while the number of traditional savings account remained virtually unchanged in absolute terms. The number of bank account holders with ATM cards grew 120 percent from an estimated 1 million to 2.2 million, which translates into an increase from 40 percent to 57 percent of bank customers. Notably, a number of banks have also introduced "ATM only" accounts.

Access to bank credit increased slightly, from 1.7 percent to 2.3 percent of the population, and lending to women

² For instance, it has become common for people to provide M-PESA accounts for funeral expenses donations. This makes it easy for friends and relatives to donate who else would not have been able to do so, e.g. because they live far away.

increased more than lending to men. The bias in lending towards the formal wage employed, in particular public sector workers, increased. One third of public sector employers had outstanding bank loans in 2009, up from 18 percent in 2006. Put differently, a public sector employee was 15 times more likely to get a bank loan than other customers in 2009, up from 11 times in 2006. There is also a notable improvement in access to bank credit by entrepreneurs. With manufacturers reporting bank credit increased from 0.3 percent, way below the national average, to 4.5 percent, about twice the national average. Geographical distribution of bank credit has also improved. In 2006, 5.5 percent of Nairobi residents had bank credit, more than double the number at the Coast, which was the next highest province. In 2009, Nairobi was down to 4.5 percent, while all the other provinces had registered improved access, with the exception of the Coast Province which remained the same.

Increasing access to credit remains a major policy interest. The establishment of the Youth Fund and Women's Fund underline the importance that government attaches to credit as a means of addressing unemployment and poverty³. Although there seems to be an increase in access to banks and MFIs, delivery of credit remains very low. Moreover, the increased availability of bank credit appears to target consumer lending to public sector employees. Bank lending to households grew by 180 percent between the two surveys, from Ksh. 47 billion outstanding at end of 2005, to Ksh. 130 billion at the end of 2008. Loans to households as a share of total lending doubled from 8 percent to 15 percent, meaning that this segment grew twice as fast as overall credit. The number of households with bank credit, as estimated in the FinAccess surveys, increased by 56 percent. This implies that the bulk of the increase in credit—68 percent—is accounted for by an increase in the average size of loans, and 32 percent is attributable to an increase in the number of borrowers. Given that the main focus of policy is to increase credit to enterprises, the fact that growth in credit appears to be targeted at consumption is an issue of concern. While some of these loans may be going into enterprises, it does raise the question as to whether consumer lending is replacing business lending.

Bank outreach, despite the dramatic growth in its customer base, has not been a significant contributor to increased access. Rather, there are two significant drivers of the growth of commercial banks' customer numbers. The first is due to customers switching from the Postbank and SACCOs who, combined, lost a million customers between the two surveys. The second factor is market expansion, on account of new entrants into the banking market, namely cohorts coming of age (and eligible to operate a bank account) as well as entrants into the labor force is growing faster than the population. To illustrate, the tertiary educated population grew from 7.7 percent to 11 percent of the population, in absolute terms by over 800,000 people. Banks captured less than proportionate share of this increase, hence the banked percentage of tertiary educated declined from 56 to 45 percent of the tertiary educated. However, in absolute terms, the numbers with banked tertiary educated increased by just over 250,000 customers, a growth of 32 percent. This population driven market expansion, is equivalent to 17 percent of the growth in commercial banks' customer growth between the two surveys.

Commercial banks primarily gained female and young customers. Women with commercial bank accounts increased by six percentage points from 10 to 16 percent of the female population, while men increased by only one percentage point, from 17 percent to 18 percent. The proportion of the 18 to 24 age bracket with bank accounts increased threefold, from 7 percent to 21 percent. Commercial banks also made significant progress in banking farmers and entrepreneurs, who, as noted earlier, are predominantly micro-enterprise owners. They also gained in the lower education brackets, but interestingly lost out among the more educated. The proportion of banked university graduates declined sharply from 80 percent to 57 percent, and that of those with other tertiary education from 50 percent to 42 percent. (This may be explained by the introduction of M-PESA, given that these categories also show the highest adoption rates of M-PESA, at 58 percent and 53 percent for university educated and other tertiary educated, respectively.)

Geographically, commercial banks had the largest gains in Nairobi and Kenya's Central province, the regions where

³ The Youth Enterprise Development Fund (YEDF) and the Women Enterprise Fund were launched in 2006 and 2007, respectively, in response to the perceived constraints that both youth and women have in accessing finance for enterprises. The funds provide credit lines to financial intermediaries for on-lending to these target groups. The participating intermediaries include commercial banks, microfinance institutions as well as SACCOs. During its two years of operation the youth fund reports having disbursed Ksh. 1.75 billion. It was allocated another Ksh. 500 million in the FY 2008/9 budget. The women's fund reports disbursement of Ksh. 964 million by December 2009.

access already had been highest. The proportion of people with bank accounts in Nairobi rose from 30 percent to 43 percent. In the Central Province, the proportion rose from 18 percent to 31 percent. However, this does not translate into an increase in access, as the gains by banks were offset by SACCOs and the Postbank, which combined lost about the same percentage in both provinces. The same pattern can be observed in three of the other six provinces – Nyanza, the Western and the Eastern provinces. In the Coast and Western provinces, banks increased their customer base without offsetting losses of SACCOs and the Postbank. The North Eastern province, which did not feature at all on the financial landscape in 2006, appears with 5 percent of the population reporting bank accounts.

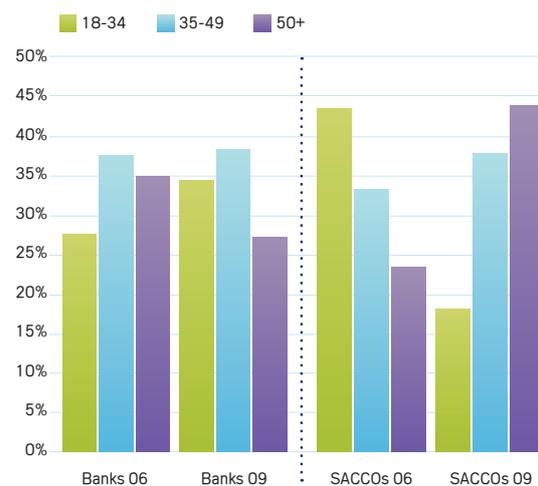
Also impressive is the growth of MFIs. Between 2006 and 2009, MFIs doubled their market share from 1.7 to 3.4 percent of the population. The growth is also broad-based, reflected in all the socio-economic groups as well as regions. Notably however, they attracted more men than women, and registered a significant growth among public sector employees. Their market share in Nairobi declined marginally from 2.8 percent which was above the national average in 2006, to 2.6 percent in 2009, below their national average. The leap in MFI market penetration is driven by credit. MFIs' credit outreach doubled, from 0.8 percent of the population to 1.6 percent. Although still well below banks and SACCOs, their performance is impressive in relative terms, given that banks and SACCOs have four and three times the number of customers, respectively. In 2006, the number of people reporting outstanding MFI loans was about half of those reporting bank credit. This increased to 70 percent in the 2009 survey.

3.4 Why are SACCOs and the Postbank losing customers?

The SACCOs' loss of customers cuts across all socio-economic groups except public sector employees. It is however more pronounced among men than women, older age cohorts and the employees in the formal private sector. The Postbank also lost customers across the board, but the most significant loss is among the tertiary educated—the proportion of university educated with Postbank accounts fell from 20 percent to one percent.

There are at least two factors that could be driving the SACCOs' loss of customers. First, there is competition from the banks, as a result of proactive outreach by banks offering

Figure 9: Age composition of bank and SACCO customers, %



easy access transactions accounts as well as consumer credit. This needs to be contextualized. The growth of SACCOs has been in part, a response to the banking industry's withdrawal from the lower end of the consumer banking after liberalization. This compelled SACCOs to open front offices (FOSAs) to provide transaction accounts for members who were locked out of banks, particularly lower income public sector employees.

The second factor is attrition of the SACCO customer base as a result of retirement in the public sector, the mainstay of the SACCO sector. Total public sector employment contracted by 2.5 percent between 2004 and 2008, from 654,000 to 638,000, reflecting a policy of containing the public sector wage bill by not replacing retiring workers in the same numbers. The impact of this dynamic can be seen in figure 9 comparing the age structures of SACCO and bank customer base from the two surveys. The age profiles are reversed, with bank customers becoming younger, and SACCO customers becoming older.

Yet a third factor is pyramid schemes. In 2007 a number of pyramid schemes that had been operating in the country collapsed. In the aftermath of the collapse, it became evident that thousands of Kenyans had fallen prey to the schemes. A number of these pyramid schemes had been operating under the guise of SACCOs, that is, they were either registered as SACCOs or were companies with "SACCO" in their name. The collapse of the schemes will have affected the survey finding in two ways. Since this happened in between the two surveys,

it will be reflected in the 2009 survey as a reduction in the SACCO membership, although in reality it is not.

As SACCOs have lost customers, their importance as sources of credit has also declined. The population with outstanding SACCO loans declined from 4 percent to 2.8 percent. However, they have retained their importance with their traditional customer base, namely farmers and public sector employees. Indeed, the percentage of farmers and public servants with outstanding SACCO loans increased marginally. The main loss for SACCOs appears to be among private sector wage employees.

The Postbank would seem to be primarily a victim of competition. Historically, the Postbank has been the “bank of last resort” offering low cost transactions account that, in the “pre –connectivity” era, was the only account that a customer could transact from any of its branches countrywide. This type of account is primarily responsible for the growth in customers of commercial banks. In addition, mobile phone accounts offer the same functionality as a Postbank account to low income customers, with the exception that the latter pays interest on savings. At the same time, their competitive advantage is a much more ubiquitous distribution network for money transfers. That said, the mere presence of competing products does not explain why the Postbank would lose customers so dramatically, particularly as it has also embraced technology over the last few years. At the very least, it would be expected that it would be able to retain existing customers.

The Postbank is of particular interest because it is a publically owned financial institution whose primary mandate is to provide financial access. Indeed, as noted earlier, it has in the past been the single most important institution in this regard. Based on the trends indicated by the 2009 survey—loss of more than half of its customers in under three years—it is unlikely to continue being as important as it has been in the past.

These developments raise the question if its public ownership and special status are justified. Clearly, if the goal of financial inclusion can be achieved by the market there is no justification for maintaining this institution. Moreover, its continued public ownership is a downside risk—if it fails to compete successfully in the market, its losses will become a charge on the public purse. The only case for maintaining its public ownership and special status can be made if it is determined that the market—the mobile phone banking revolution notwithstanding,

is unlikely to meet the universal policy goal of financial inclusion. However, this is only a necessary condition. It is not sufficient, since as it is, its contribution to this goal is declining. It would require redefining its mandate to re-orient its services to the underserved segments of the population.

3.5 Informal finance

Informal finance, both organized groups, as well as nonmarket saving and credit activities continued to thrive alongside the penetration of formal financial service providers. Participation in organized groups, (ROSCAs/ASCAs) and informal credit was by and large unaffected. There are, however, two notable exceptions. Intriguingly, the percentage of people reporting hoarding cash (i.e., savings kept in a secret place) increased dramatically, from 28 percent to 56 percent of the population. Reasons for this may relate to economic insecurity resulting from the crash in global financial markets, however, further research is needed on the informal sector to determine the drivers of informal market trends.

4. Conclusions

Financial Access in Kenya has clearly been driven by market-level factors (supportive regulation, technology advances, innovative business models, increased market dynamism). However, any analysis of the drivers of change for Kenya's financial markets, must also take account of macro-level socio-economic trends. Kenya's impressive economic growth rates leading up to 2008 have stimulated demand for financial services in all but the bottom wealth quintile, which has suffered an economic decline. Increased economic buoyancy is likely to have been a factor in the growth of M-PESA, as well as possibly fuelling the growth of MFIs and Bank services for middle-income markets. Demographic shifts towards a younger market profile along with the stagnation of formal sector employment, have also influenced nature of demand. Population trends may have contributed to the decline in demand for SACCOs whose market was geared to the older, formally employed niche. Similarly, M-PESA is capturing a large share of the younger market segment, especially in tertiary education, at the expense of institutions like Postbank.

Drawing on data from the FinAccess surveys, this paper gives a broad overview of developments in the financial sector, setting these against a backdrop of socio-economic change. It also indicates the need for further research on the influences of wider social and economic trends in the development of financial markets in Kenya.

CHAPTER 2

FinAccess 2009

Trends, analysis and policy conclusions

THORSTEN BECK

1. Introduction

The second round of the FinAccess survey in 2009 shows encouraging trends vis-à-vis the first round in 2006 in terms of use of formal bank and other formal financial services. This paper offers a comparison of access to finance in Kenya with other countries in the regions that underwent similar exercises. It compares the findings of the 2006 round with the 2009 round, provides an analysis of the drivers and determinants of access to finance on the individual level and offers policy conclusions and suggestions for future research.

The main findings can be summarized as follows:

- The use of formal financial services in Kenya is at similar levels as in other East African countries, but below that of several countries in Southern Africa. However the share of population that is completely excluded from any formal or informal financial service, however, is lower in Kenya than in any other country except for South Africa.
- The use of formal banking and other formal financial services has increased significantly between 2006 and 2009, driven by higher use of transaction services, especially M-PESA, and higher use of MFIs and banks.
- While the use of formal banking and other formal financial services has increased across all population groups, men are more likely to use formal financial services than women and urban Kenyans are more likely to use formal financial services than rural Kenyans; gains in use of formal financial services have been more prominent in urban than in rural areas.
- While low income is still the most prominent barrier for the unbanked, access-related barriers, especially documentation related barriers, have gained in prominence compared to 2006.
- M-PESA has revolutionized the remittance market and has expanded the access frontier. The challenge will be to link unbanked M-PESA users to other financial services.
- When comparing the predictive power of different factors; income, education, age, geographic location and employment status are strong predictors of the use of financial services, while gender, risk aversion and numeracy are not.

2. Use of financial services in Kenya – comparisons across countries & over time

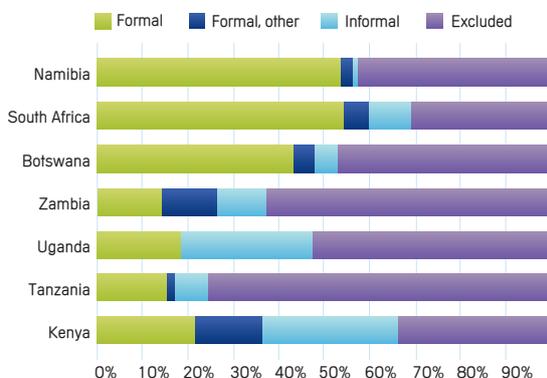
The use of formal financial services in Kenya is at similar levels as in other East African countries, but below that in several countries in Southern Africa. Figure 1 replicates a similar graph from Porteous (2007), but includes the results from the 2009 FinAccess survey. Note that these surveys are not from the same year, but were all undertaken in the period 2004 to 2006. As the different FinScope and FinAccess surveys are not completely consistent across countries, we follow Porteous in his definition of formal bank and bank-like financial services, which varies from the definition to be used in the remainder of this paper¹. Kenya has a higher share of population using formal financial services (21.5%) than Tanzania, Uganda and Zambia but a lower share than in Botswana, Namibia and South Africa, where this share is above 40%. The share of population that uses non-bank formal but not bank services is relatively high (with 15%) – mostly driven by M-PESA – and higher than in the other African countries for which we have such data. The share of population that is completely excluded from any formal or informal financial service is lower in Kenya (34%) than in any other country except for South Africa, suggestive of the strong role that informal and other formal arrangements play in Kenya. Using the cross-country definition by Porteous (2007), we note that the share of population with access to formal bank and non-bank financial services has increased dramatically between 2006 and 2009, mainly due to M-PESA – while the share

of population that uses only informal financial services or is excluded completely, has dropped significantly.

The access strand for Kenya distinguishes between four different groups: formal, other formal, informal and excluded. While many people use both formal and informal financial services, we assign each surveyed person to the “most formal” segment of the access strand; this implies that the share of people using other formal or informal financial services is larger than indicated by the access strand, which indicates the proportion of the population, for which this respective segment is the “highest”.² The formal segment include users of banks, Postbank and insurance services, while the segment of the other formal include users of MFI and SACCO services – as these are non-regulated and supervised entities (at least until recently) – as well as users of money transfer operators (MTO), including M-PESA users, a cell-phone based transaction service offered by Safaricom, a telecom and thus non-financial corporation. The informal segment denotes users of ROSCAs and other group savings or credit activities, while the excluded include people relying purely on friends or family for their financial service needs or not using any financial service at all.

The use of formal and other formal financial services has increased between 2006 and 2009 (figure 2). Comparing the financial access strands of 2006 and 2009, we note a significant increase in the use of formal bank and other formal financial services. While in 2006, 18.5% of the population used formal financial services – banks, Postbank and insurance companies – 22.6% do so in 2009. The share of the population that uses only other formal financial services – MFIs, SACCOs and M-PESA – increased from 7.8% in 2006 to 17.9% in 2009. On the other hand, the proportion of the population with access to only informal financial services, decreased from 32.4% to 26.8% and the share of the population excluded from any financial service decreased from 41.3% to 32.7%. This suggests a pushing out of the access frontier, especially among the non-bank formal financial services. Considering the absolute shares of population using other formal and informal financial services, we note that the use of other formal financial

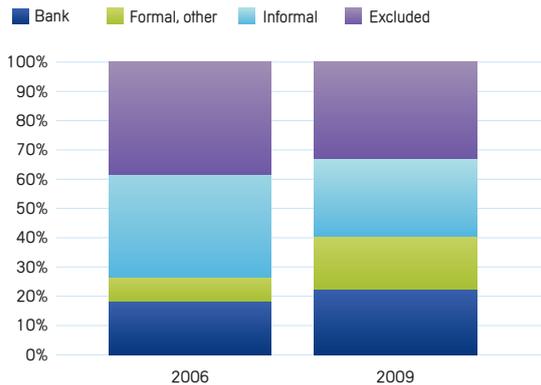
Figure 1: Access strands across African countries



¹ Porteous (2007) classifies banks and Postbank as formal and insurance companies and formal money transfer operators, such as M-PESA, as non-bank formal. SACCOs and MFIs, on the other hand, are classified as informal financial institutions.

² In the following, we will present numbers of both the different segments of the access strand as for the use of non-bank formal and informal financial services, but will illustrate with the graphs on the former, not the latter, unless otherwise noted.

Figure 2: Access strands, 2006 vs. 2009

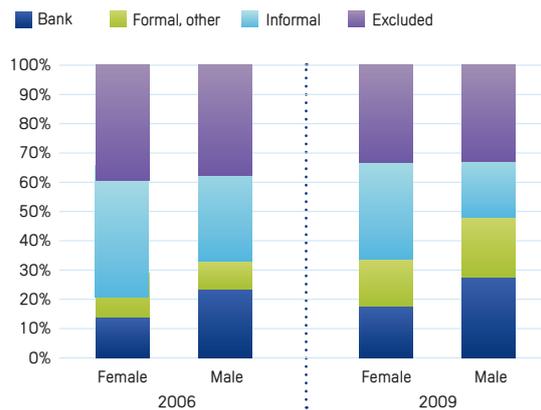


services has more than doubled between 2006 and 2009 (from 16.3% to 36%), while the use of informal financial services has not significantly changed.

Most people using formal financial services also use informal financial services, with newly banked complementing not substituting for informal financial services. According to the 2009 survey, 58.5% of users of formal financial services and 56% of users of other formal financial services also use informal financial services. This overlap is stronger among women than men, while there is little difference between urban and rural Kenya. As the comparable numbers in 2006 were 56.4 and 37.7, this suggests that the additional users of other formal financial services in 2009, such as M-PESA, have maintained their informal financial relationships.

Both male and female Kenyans are more likely to use formal and other formal financial services in 2009 than they were in 2006, but the gender gap still exists, with men more likely to use formal and women more likely to use informal financial services (figure 3). Men are more likely to use formal banking services, while women are more likely to be restricted to informal financial services. The use of formal bank services has increased both among men and women between 2006 and 2009, from 23.5% to 27.9% among men and from 14% to 17.8% among women, still with an advantage for men, therefore. There is a similar advantage for men in access to other formal financial services, although the use of MFIs, SACCOs and M-PESA among women tripled between 2006 and 2009 while it “merely” doubled in the case of men. Women are significantly more likely to use informal financial services, with the proportion of both men and women using only

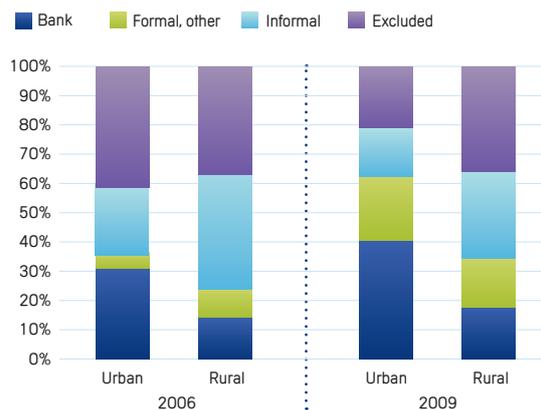
Figure 3: Access strands – men vs. women



informal services decreasing significantly between 2006 and 2009. Financial exclusion, on the other hand, is at similar levels for men and women.

In both urban and rural areas, the use of formal and other formal financial services has increased between 2006 and 2009; most of the gains, however, have been in urban areas (figure 4). While urban Kenyans were more likely to be excluded in 2006 than rural Kenyans, they were significantly less likely to be excluded in 2009. In 2006, rural Kenyans were less likely to use formal banking services, but more likely to use both other formal and informal financial services than Kenyans in urban areas. On the other hand in 2009, rural Kenyans were less likely to use formal banking or other formal financial services, but were still more likely to use informal financial services

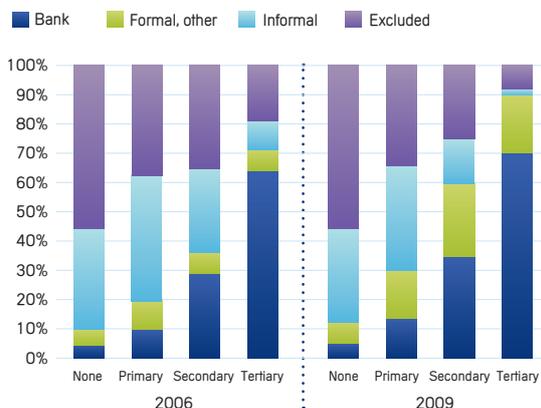
Figure 4: Access strands, rural vs. urban area



than urban Kenyans. Gains in access to formal banking services have thus far been concentrated in urban areas, rising from 31% to 40.3%, while access in rural areas has increased only from 14.9% to 17.6%. Similarly, the use of other formal financial institutions almost quintupled in urban areas, while it “merely” doubled in rural areas. While the share of financially excluded population in rural Kenya has decreased only slightly, it has halved in urban Kenya.

Use of financial services increases with the level of education. Consequently, increases in the use of formal banking and other formal financial services have been concentrated in the population segment with at least secondary education (figure 5). The use of formal and other formal financial services increases in the level of education, while the use of informal financial services is higher for Kenyans with primary, secondary and/or tertiary education than for Kenyans without any formal education. This finding holds for both the 2006 and 2009 surveys. However, it is the most educated segment of the Kenyan population (i.e. population with a secondary or tertiary education) that increased most their use of formal and other formal financial services and where we find the highest drop in the share of excluded population. On the other hand, among Kenyans without any formal education, on the other hand, we cannot observe any significant changes in the Access Strand between 2006 and 2009. The gap between the groups of different educational attainment is greatest for Kenyans with tertiary education compared to all other

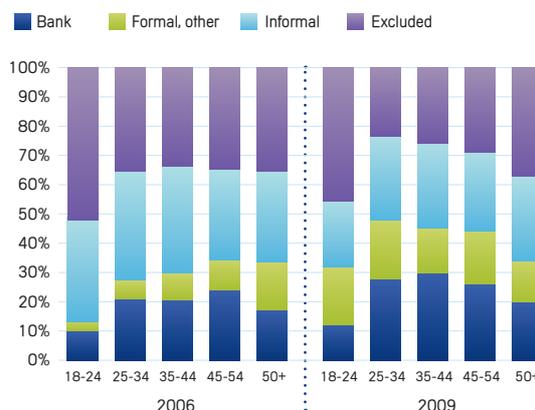
Figure 5: Access strands, by level of education



groups. Only 10.2% of this segment is either limited to informal finance or excluded from any financial service.

Kenyans below 25 and above 55 years of age are least likely to use financial services, with an increase in the use of formal banking and other formal financial services across all age groups below 55 (figure 6). Kenyans between 35 and 44 years are the age group with the highest proportion of formal banking service users, while Kenyans between 25 and 34 years are the age group with the highest proportion of users of formal banking or other formal financial services. However, comparing Kenyans across the age groups of 25 to 34, 35 to 44, and 45 to

Figure 6: Use of financial services, across age groups



54, however, we do not find significant differences in the use of formal banking and other formal financial services. The share of excluded is highest among Kenyans below the age of 25, almost twice as high as that of Kenyans between 25 and 54 years. The use of formal banking and other formal financial services has increased across all age groups, especially among Kenyans between 25 and 44 years. With exception of Kenyans above 55, the share of financially excluded Kenyans has decreased across all age groups.

It is the use of transaction services that has increased most between 2006 and 2009, while there has been little increase in savings, credit and insurance services. The FinAccess surveys allow us to distinguish between different financial services derived from the use of different products. While the definition of insurance and credit products is straight forward, a strict distinction between transaction and savings services might not be possible,

especially as there is unreliable evidence that more and more users use M-PESA, which we classify as a product for transaction services, also for value storing, not simply for payments³. Abstracting from these definitional problems, it is the use of transaction services that has increased most from 2006 to 2009, due to the market entry of M-PESA, as we will discuss in more depth below. The use of credit, savings and insurance services has increased across the board, but to a much lower extent.

Figure 7: Access frontier for different financial services

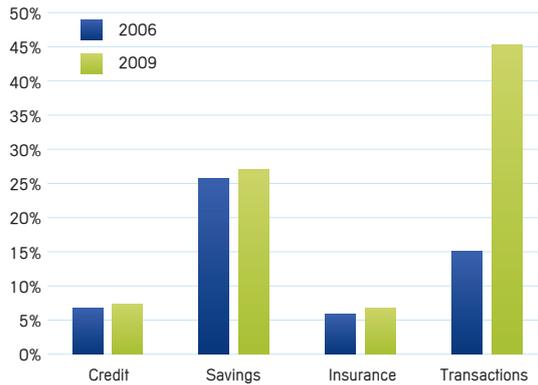


Figure 7 shows the access frontiers for the four service types in 2006 and 2009, focusing on formal banking and other formal financial services, as defined above. We note that the use of formal and formal other savings services has increased from 25.6% to 27%, while the use of insurance services has increased from 5.9% to 6.8%. The use of credit services has also increased, from 6.7% to 7.3%. Most notably, however, the use of transaction services – both in terms of sending and receiving remittances through formal and other formal channels as well as in terms of having current accounts or simple transaction accounts and ATM or debit cards – has increased substantially, from 15% to 45.2%. Behind this tripling of the use of transaction services is the new dominance of the remittance market by M-PESA, which has crowded out both informal as well as other formal players in this market. The commercial success of M-PESA is in fact attracting other mobile phone service providers in the market to offer similar transaction services, e.g. Zain through ZAP “Pesa Mkononi”.

Figure 8: Access frontier for different financial services, men vs. women

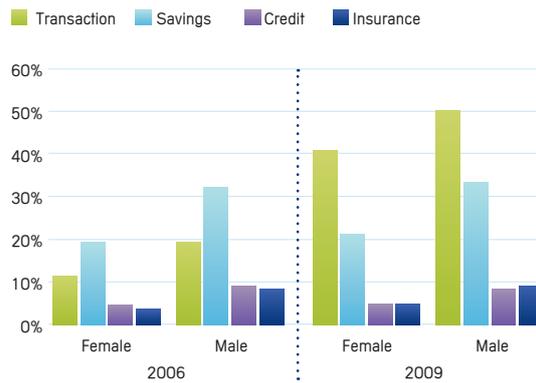
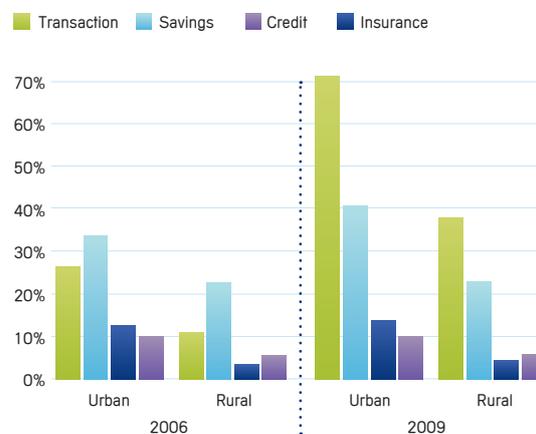


Figure 9: Access frontier for different financial services, urban vs. rural areas

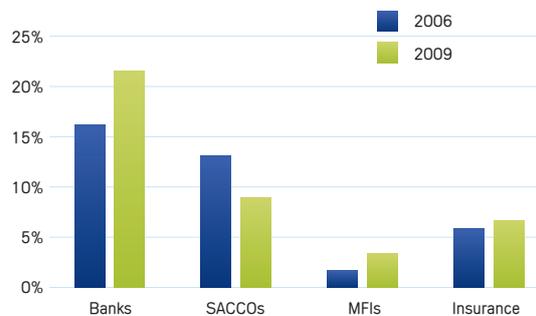


The increase in transaction services has been especially strong among women, but similarly strong in urban and rural areas (figures 8 and 9). Both women and men increased the use of transaction services – mostly M-PESA – while the use of other financial services has increased only slightly. Similarly, both rural and urban Kenya has seen an increase in the use of transaction services, although the percentage increase has been higher in rural areas. In addition, the use of savings services has increased in urban, but not in rural areas. There have been no significant changes in the use of credit and insurance services.

³ Following Porteous (2007), the following products are classified as transaction products: ATM card, debit card, current account, money transfer with bank or MTO. The following products are classified as savings products: fixed deposit account, retirement annuity, government social security, education plan and savings at SACOO or MFI. The following are classified as serving both a transaction and savings function: Post Bank account, savings/transaction account.

We also note that in rural areas, the use of credit is stronger than the use of insurance, while the reverse holds in urban Kenya. In both 2006 and 2009, men were more likely to use any of the four financial services than women. Similarly, inhabitants of urban areas are more likely to use any of the four financial services than inhabitants of rural areas.

Figure 10: Use of different financial institutions, 2006 vs. 2009



The increase in the use of formal banking and other formal transaction services is driven by an increase in the use of remittance services. The use of remittance services through different channels has increased significantly between 2006 and 2009; the share of population sending money domestically increased from 16.9% to 35.3%, while the share of population receiving domestic remittances increased from 16.5% to 51.8%. In spite of dominating the international policy debate, international remittances continue to be relatively rare. 4.3% of surveyed received remittances from abroad, up from 2.8% in 2006, with only 0.8% sending money abroad (compared to 0.7% in 2006).

While the use of bank, insurance and MFI services has increased over the past three years, use of SACCO services has decreased (figure 10). While the access frontier has been pushed out, there have been significant changes in the use of different institutions. While the usage of banks (including Postbank), MFIs and insurance companies has increased, the usage of SACCOs has significantly decreased. Specifically, while the usage of MFIs doubled from 1.7% to 3.4%, the usage of SACCOs has declined from 13.1% to 9%. The decline in the usage of SACCOs might be a consequence of reputational fears, related to incidences of mismanagement in some of these institutions. When looking at former clients of SACCOs, 53% now use bank services, the same

percentages, as among current users of SACCOs, which suggests that former users of SACCOs are not leaving the financial sector. When considering specific institutions, we find that Equity Bank and Postbank are especially attractive for former users of SACCOs – 30% of former SACCO clients report to have an Equity Bank account and 9% a Postbank account; compared to 25% and 4.5%, respectively, for current SACCO users.

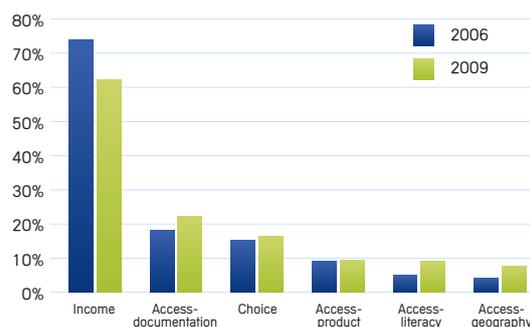
3. Barriers to banking

Survey responses from the unbanked can be used to explore the barriers to access to formal banking services. In order to understand the barriers to the use of formal banking services, we use survey responses to the question: "Why do you not have a bank account?" While we recognize that these are self-reported barriers, they give us some insights into the barriers faced by the unbanked. The possibility of multiple responses makes it on the one hand easier to identify constraints (as the unbanked might face several constraints), but, on the other hand, also impedes the identification of the binding constraint.

Income-related reasons are the main self-reported barrier to use of formal bank services (figure 11). 61.8% of the unbanked state income-related reasons, such as no money to save, no regular income or lack of affordability. This proportion is higher among women than men and higher in rural than in urban areas. Unbanked citing income-related barriers as reason for exclusion have, on average, lower incomes, than the unbanked who cite product or documentation related access barriers.

Access barriers related to (i) documentation and qualifications, (ii) products characteristics, (iii) literacy, and (iv) geography constitute the next most important reason for being unbanked⁴. 22% of the surveyed unbanked state barriers related to lack of necessary documents (e.g. lack of national ID card), lack of a formal job and lack of other qualifications as barrier to the use of formal banking services. Among these reasons, lack of job and lack of national ID are the most prominent barriers. This proportion is stronger among women than among men, while there is no significant difference between rural and urban areas. 9% of the unbanked state reasons related to product characteristics (e.g. service fees, minimum balance and delay in getting money), while 8.8% of the unbanked point to the lack of literacy (e.g. illiterate, lack of knowledge about bank products and language barrier). Among women, lack of literacy is a higher barrier than product characteristics, with the reverse holding for men. Similarly, illiteracy is more important a barrier than product characteristics for rural Kenya, with the reverse holding for urban Kenya. Geographic barriers like "bank too far away" are, on average, the least important reason, with exception for rural Kenyans.

Figure 11: Access frontier for different financial services



Voluntary exclusion constitutes a reason for only 16.2% of the unbanked. While this proportion is higher among men than women, it is surprisingly higher among rural than urban Kenyans. The responses "I prefer other options", "I do not need a bank account" or "I prefer cash" are the most common ones in this category. Comparing the income level among unbanked due to choice with the income level among unbanked due to reasons linked to income or access barriers underlines the voluntary nature: it is, on average, 1000 KSh higher per month. The share of users of informal financial services is also higher among this group than in the group of unbanked due to income or access barriers.

Between 2006 and 2009, there has been a shift from income to access barriers among the unbanked. While in 2006, 73.5% of unbanked stated income-related reasons, this proportion has fallen to 61.8%. The proportion of unbanked claiming access-related barriers, on the other hand, increased from 29.4% to 35.3%. This increase has been particularly prominent in the proportion of unbanked stating reasons related to documentation, lack of literacy and geographic distance.

The limited role of geographic barriers reflects also the recent increase in physical outlets of banks and the innovative use of non-branch channels. While branches per capita have not increased until around 2005, there has been a recent increase, though mainly in Nairobi and Rift Valley. This increase has been even stronger for ATMs; in addition, several financial institutions have started using mobile branches to reach out to customers. This reduction in geographic barriers is also reflected in the share of those surveyed that state that they need more than one hour to get to the nearest bank outlet, which has dropped from 11.4% in 2006 to 3.8% in 2009.

⁴ Some of the self-reported barriers are ambiguous, in the sense, that they could be access or income related, such as lack of a job. We follow Porteous (2007) in his classification of self-reported barriers as being related to income, access or choice.

4. The impact of M-PESA

The entry of M-PESA into the remittance market has been powerful and has been behind the increase in the use of transaction services. 39.9% of those surveyed claim to have used M-PESA, more than the users of any other financial institution or product in Kenya. M-PESA is an urban product, though, where 65.9% of those surveyed have used it, as opposed to rural Kenyans, of which only 32.9% have used it. Men are more likely to use it than women (43.9% vs. 36.2%). The use of M-PESA varies enormously with education, with only 7.7% of Kenyans without formal education using it, while 29.8% of Kenyans with a primary education, 63.6% of Kenyans with a secondary school education, and 78.7% of Kenyans with some post-secondary education using it. On the other hand, there is little variation of the use of M-PESA across different age groups, with the exception of Kenyans over 55 who are less likely to use it, implying they are comparatively more “technology challenged.”

The popularity of M-PESA is also reflected in Kenyans’ perceptions. While in 2006, a relative (weighted) majority of those surveyed named specialist money transfer operators as the least risky and fastest channel to send remittances and friends and family as the least expensive and easiest to get, in 2009 it was M-PESA that was rated the least risky, the fastest and the easiest to get, and it came in as second under the category of least expensive (friends and family continue to be rated as the least expensive channel).

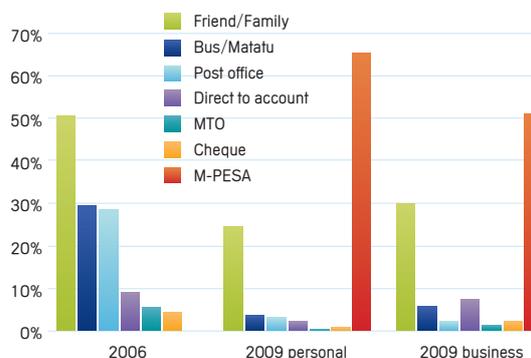
However, M-PESA has not only had an impact on perceptions, but also on remittance flows. Using M-PESA, over 30% of respondents indicated that they increased the frequency and amount of remittances sent and received, while only 20% reported that the frequency and amount had decreased. The market entry of M-PESA might also explain the increase in remittance flows within Kenya – while in 2006, 16.5% of those surveyed reported having received a domestic remittance, while in 2009, 51.8% report doing so. Similarly, while in 2006, 16.9% of those surveyed reported having sent a domestic remittance, in 2009, 35.3% report doing so.

M-PESA has crowded out not only informal, but also other formal remittance channels (figure 12). In 2006, half of the surveyed used friends and families to send remittances, while a third used either a bus or matatu driver or the post office. In 2009, on the other hand, only 24.7% (29.9%) use friends and family to send personal (business) remittances, 2.6% (5.9%) a bus or matatu driver and 3.1% (2.2%) the

post office. 65.6% of surveyed use M-PESA for personal remittances and 51.1% for business-related remittances; probably an attribute to it being the least risky, the fastest, most accessible and one of the least expensive channels of remitting transfers.

The impact of M-PESA on the use of other financial services has been limited. Most of the users of M-PESA, are also users of formal and other formal financial services, while only few people in the informal and excluded segments of the access strand use M-PESA. Specifically, 41.1% of M-PESA users also use formal banking services, while 34.3% use at least other formal services from SACCOs and MFIs. Only 11.4% of M-PESA users are excluded from any other financial service. While anecdotal evidence suggests that many M-PESA users have been using their M-PESA accounts for storing and thus effectively savings services, this does not give them access to formal savings services or allow them to link to the formal financial system.

Figure 12: Use of different remittance channels, 2006 vs. 2009



5. What explains access to financial services –insights from FinAccess 2009

As discussed in the previous section, many individual characteristics are associated with the use of financial services, ranging from gender and age over income and labor status to geographic location. However, many of these characteristics are also correlated to each other. Inhabitants of rural areas are typically poorer and less likely to work in formal jobs – which of these characteristics is the decisive one explaining whether an individual has access to financial services or not? In order to determine the decisive factors, we utilize multivariate regression analysis, as discussed in more depth in the appendix. Figure 13 illustrates the results. We analyze the factors that explain the use of (i) formal banking, (ii) formal other, and (iii) informal financial services. We also explore the factors explaining the use of (iv) M-PESA and (v) financial exclusion. Please note that here we are considering the overall use of a specific service, not the likelihood of being in a specific segment of the Access Strand.

and other formal financial services – controlling for other individual characteristics -, women have a 19 percentage points higher likelihood of using informal financial services and a 10 percentage point lower likelihood of being excluded from any financial service*.

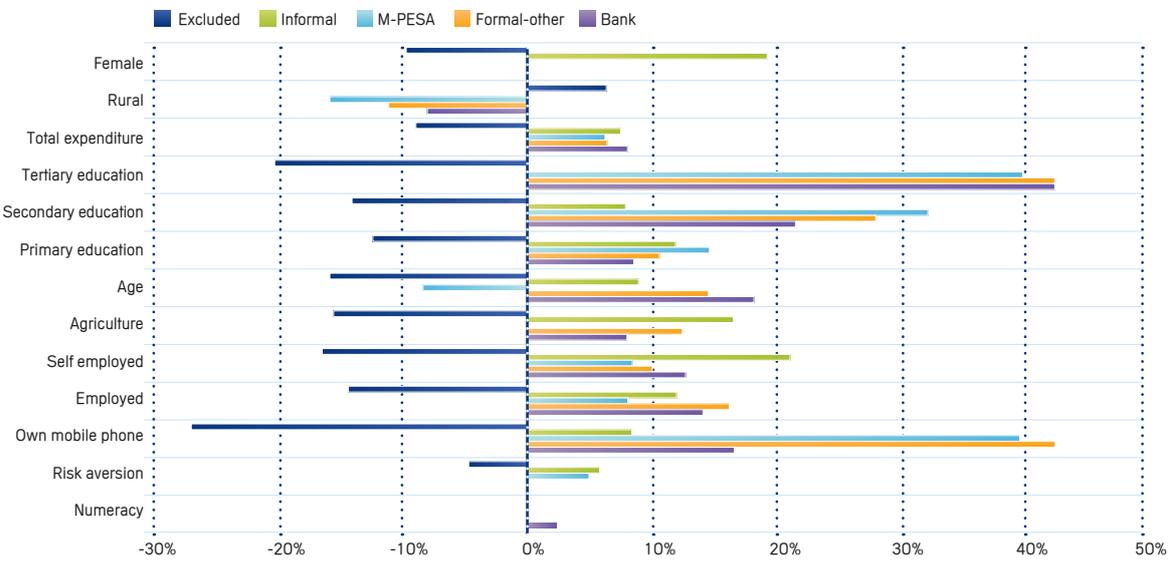
Rural Kenyans are less likely to use formal and other formal financial services, but not informal services. Rural Kenyans are eight percentage points less likely to use formal financial services and 11 percentage points less likely to use other formal financial services than urban Kenyans. They are also six percentage points more likely to be excluded from any financial service. Finally, they are less likely than urban Kenyans to use M-PESA, credit or transaction services, while there is no significant difference between urban and rural Kenya in the use of savings and insurance services.

Figure 13 illustrates the marginal effect of the different factors on the likelihood of using a specific financial service or being excluded. In case, a variable is not significantly associated with the outcome, we set the effect at zero.

Income is one of the strongest predictors of usage of both formal and informal financial services. As is common in such surveys, income is substituted by total expenditures, as people have typically fewer reservations about revealing their consumption as opposed to their income. Higher income is associated with higher use of formal and informal financial services, including M-PESA and with lower likelihood of exclusion. To illustrate the economic size of this effect, consider Kenyans with monthly income of less than KSh 10,000, Kenyans with monthly income between KSh 10,000 and KSh 50,000, Kenyans with income between

Controlling for other characteristics, women are not less likely to use formal or other formal financial services, but they are more likely to use informal services than men and are more likely to be excluded. While there is no significant difference between men and women in the use of formal banking

Figure 13: What drives use of financial services



* This is consistent with evidence for other Sub-Saharan African countries. See Aterido, Beck and Iacovone (2011).

KSh 50,000 and KSh 100,000 and Kenyans with monthly income above KSh 100,000. The predicted probability of being formally banked – controlling for the other individual characteristics – increases from 11.9% over 40.8% over 73.7% to 82.7%, as we move across the income brackets.

Education is a strong predictor of the use of formal banking and other formal financial service. Kenyans with tertiary education are more likely to use formal and other formal financial services (any of the four service types) than Kenyans with secondary education who in turn are more likely to use these services than Kenyans with only a primary education who in turn are more likely to use these services than Kenyans without any formal education. While Kenyans with primary or secondary education are more likely to use informal financial services than Kenyans without a formal education, there is no significant difference for Kenyans with tertiary education compared to Kenyans without formal education. Education is also positively associated with the use of M-PESA.

Older Kenyans are more likely to use financial services, with the exception of M-PESA. There is a non-linear relationship between age and the likelihood of using financial services, with the maximum point in most cases being between 50 and 60 years. Older Kenyans are also more likely to use informal financial services and are less likely to be excluded. On the other hand, age is negatively associated with the use of M-PESA.

Salaried employees are more likely to use formal financial services and are less likely to be excluded. Compared to Kenyans dependent on pensions or remittances, employed, self-employed and agricultural workers are more likely to use bank and other formal financial services and are less likely to be excluded. They are also more likely to use informal financial services.

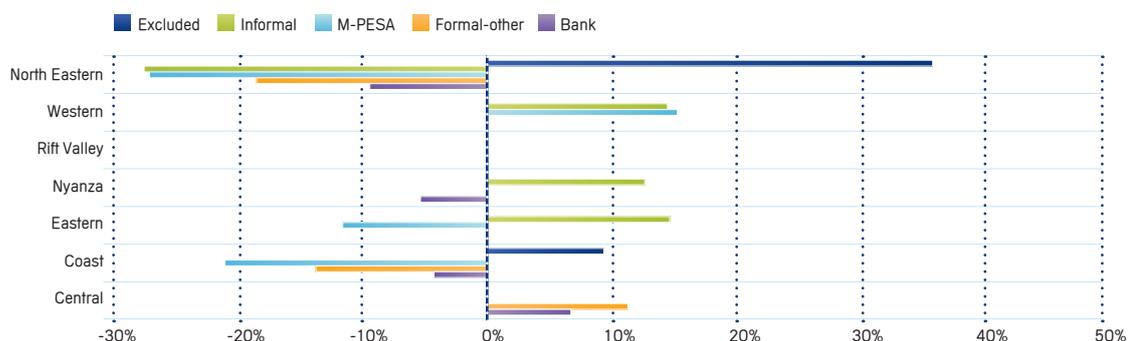
Owners of cell phone are more likely to use formal, other formal and informal financial services. While cell phone users have typically higher income, the ownership of a cell phone has an additional positive effect on the likelihood of using financial services, while it is negatively associated with the likelihood of being excluded. Having a cell phone is also positively associated with a higher likelihood of using M-PESA and any of the four financial services.

Higher numeracy is associated with higher use of formal bank services, but is not significantly associated with the use of other formal or informal financial services or with being excluded. The survey included several questions on basic calculus problems and on risk diversification. We find that people who correctly respond to these questions are more likely to use formal banking services, while there is no significant association with the other dependent variables.

More risk-averse people are more likely to use informal financial services and are less likely to be excluded. While there is no significant relationship between risk aversion and the use of formal and other formal financial services, risk-averse persons are more likely to use informal financial services and M-PESA and are less likely to be excluded from financial services.

There are many significant differences in the use of financial services across provinces, even after accounting for their different socio-economic demographic composition (figure 14). Even after controlling for many individual characteristics, there are still province-level effects. All these residual unexplained effects are relative to Nairobi. We find that Kenyans living in North Eastern province are significantly less likely to use any financial service and more likely to be excluded, an effect that is not only statistically significant, but also economically large. Kenyans in Western province are

Figure 14: Use of financial services across provinces



more likely to use M-PESA or informal financial services. There is no significant difference in the use of financial services between Nairobi and the Rift Valley. Kenyans in Nyanza province are less likely to use formal banking services, but more likely to use informal financial services. Kenyans in Eastern province are more likely to use informal financial services, but less likely to use M-PESA. Kenyans in Coast province are less likely to use formal banking, other formal financial services and M-PESA and are more likely to be excluded than Kenyans in Nairobi. Finally, Kenyans in the Central province are more likely to use formal banking and other formal financial services than Kenyans in Nairobi.

5.1 Analyzing perceptions about banks

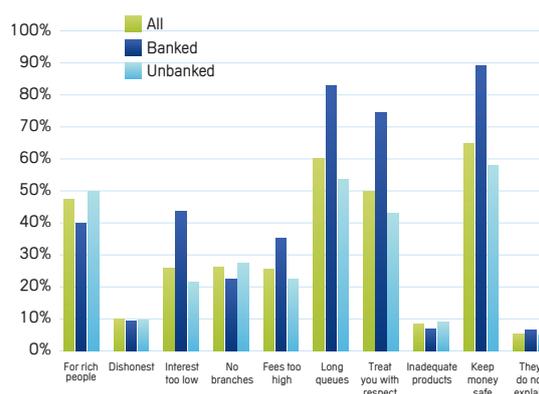
Long queues and lack of respect are the biggest negative attributes of banks, while most people esteem banks to be safe and honest. Analyzing perceptions about different financial service providers offers valuable insights both for banks, policy makers and other stakeholders. On the negative list, 60% complain about long queues, 50% about lack of respect, and 47.7% see banks as being primarily for rich people. On the other hand, product features, such as low interest rates high fees, lack of branches or inadequate products, on the other hand, do not feature high on people's "complaint list". Most people consider banks to be safe and honest places. SACCOs and MFIs are not seen as places for the rich and people complain less about long queues and high fees, however, fewer people state that they associate SACCOs and MFIs with respect vis-à-vis clients and safety. Compared to 2006, fewer people regard the SACCOs as safe savings outlet (11.5% vs. 18.7%), which might explain the loss of market share these institutions have suffered and which is documented above.

The perceived lack of respect and missing trust in the safety of banks seem to be higher barriers for the unbanked than low interest rates, high fees or long queues. Perceptions about banks can also help to understand barriers to accessing formal financial services, especially if comparing survey responses from the banked and unbanked. It is interesting to note that 90% of unbanked people do not consider banks to be corrupt, approximately the same percentage as banked people. Fewer unbanked people consider low interest rates to be a problem than banked people (21.5% vs. 43.9%); similarly, findings apply for fees charged by banks (22.8% vs. 35.6%) and queuing (53.6% vs. 83.2%). On the other hand, more unbanked (49.6%) than banked (40.6%) people see banks as appropriate mainly for rich people, but the difference

is not as big as one would have expected, especially given the income differences between banked and unbanked people documented above. Similarly, while more unbanked (27.4%) claim that "no branches are available" than banked (22.5%) people, this difference is not significant. Notably, unbanked people have a significantly bleaker view on the respect they would receive in a bank than the banked population – only 43.2% expect to be treated respectfully compared to 75% of banked – and are significantly less assured of the safety of their savings in a bank (58.2% vs. 89%).

In summary, while fees and low interest rates have been at the center of the political debate in Kenya, they might not be the main barrier to accessing formal financial services. The perceptions illustrated in figure 15 show some similarities, but also some differences to the findings of section 4. Both analyses suggest that income barriers are an important reason for exclusion from financial services. Both analyses also suggest that while geographic distance might still be a deterrent in some rural areas, for the broad majority of unbanked it is not the primary barrier. While survey responses on the reason for being unbanked points to important access barriers, such as product features, documentation requirements and lack of financial literacy, the perception analysis also points to two important reasons, why the unbanked might exclude voluntarily: perceived lack of respect and lack of trust in the safety of banks.

Figure 15: Perceptions about banks

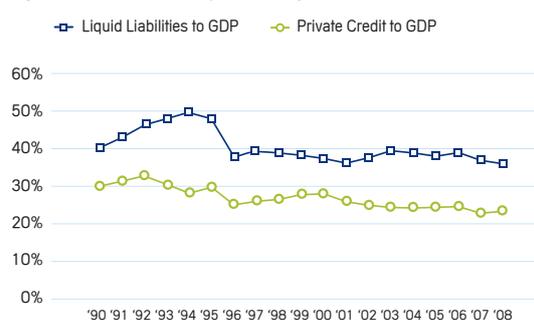


6. The broader picture

Kenya has experienced some broadening of financial services over the past years, while no further deepening has taken place. The number of deposit accounts has increased by 26% between 2007 and 2008 and the use of formal financial services has increased, as documented earlier. At the same time, financial depth measures such as Liquid Liabilities to GDP and Private Credit to GDP have shown little change over the past years or have even decreased (figure 16). Interest rate spreads are still high.

Financial depth has been shown to be an important driver of economic growth and poverty alleviation. Cross-country comparisons have shown that countries with better developed financial systems do not only grow faster, but also experience faster reductions in poverty levels⁵. Efficient financial systems help allocate society's savings to its best uses; they can help reduce financing constraints especially for smaller firms that are most constrained by lack of external financing. However, it is mostly through enterprise and less through household lending that the banking system helps countries grow faster and reduce poverty at a faster rate⁶.

Figure 16: Financial depth in Kenya, 1990 to 2008.



Preliminary evidence suggests that the strongest pro-growth and pro-poor effect does not necessarily come through expanding access to credit, but through indirect effects. While there are ample microfinance success stories, there is limited evidence for a broad poverty-reducing effect of microcredit⁷. This might be related to the fact that a large proportion of microcredit is being used for consumption purposes, as well as to the lack of scale. On the other hand, there is preliminary evidence that financial development can have a transformative effect on economies, i.e. by changing

the structure of the economy and allowing more entry into the labor market of previously un- or underemployed segments of the population, finance helps reduce income inequality and poverty, but not by giving access to credit to everyone⁸.

Evidence from the FinAccess 2009 survey shows that saving and credit services are used both for similar, mostly family-related purposes and less for business-related purposes. Table 1 shows that people using both savings and credit services use them for very similar purposes, but mostly related to personal and family needs. This includes day-to-day needs, emergency needs, education and consumption. Business expansion and agricultural expansion rank relatively low on the list. This confirms other studies that most of household credit given by microfinance institutions is given for consumption and not necessarily investment purposes⁹. This is also consistent with the results of a recent field study in Bumala where the subsidization of opening savings account at a local village banks led female (but not male) microentrepreneurs to invest more and helped protect their working capital against being used to cope with personal health shocks¹⁰. Helping microentrepreneurs getting access to formal savings accounts can be thus as or even more useful as providing them with access to credit. In addition, this study also shows the superior quality of formal as opposed to informal savings mechanisms.

Table 1: Reasons for Saving and Borrowing.

Top reasons for saving	Top reasons for borrowing
Day to Day Needs	Day to Day Needs
Emergency needs	Emergency Needs
Education	Education
Consumption	Business Expansion
Business expansion	Agricultural Input

Note: These are the five top reasons for saving and borrowing among a sample of surveyed who both save and borrow. This suggests that access to finance can have an important effect on individual and household welfare, but it is not necessarily credit services that provide these benefits. It is important to look beyond credit services to other financial services, including savings and transaction services. Even in its limited function of providing transaction services, M-PESA and cell phone services in general can have an important effect on welfare by enabling users to connect to the modern market economy.

⁵ Among others, see Beck, Levine and Loayza (2000) and Beck, Demircuc-Kunt and Levine (2007).

⁶ See Beck *et al.* (2010)

⁷ See World Bank (2007) for an overview

⁸ See, for example, Gine and Townsend (2004) and Beck, Levine and Levkov (2007).

⁹ Compare Johnston and Morduch (2008).

¹⁰ Dupas and Robinson (2009)

7. Conclusion

FinAccess 2009 has shown some progress in expanding access to financial services, but also many remaining challenges. There have been some expansion of the access frontier, though mostly in urban areas and through bank and bank-like other formal financial institutions. The biggest increase can be observed in the usage of formal remittance services, due to the market entry of M-PESA.

FinAccess 2009 confirms the powerful role of technology and of public-private partnerships. The use of the cell phone for payment services has increased the depth and breadth of the remittance market. This success came after a seed grant from DFID for the provider of M-PESA services. However, the success of M-PESA poses new challenges; how can previously unbanked users of this service be connected to the formal or other formal financial sector and gain access to savings and other financial services.¹

The challenge for financial institutions, including banks and MFIs will be to improve the quality of services. In the case of banks, both survey and anecdotal evidence suggests inflexible, slow and costly services, while the challenge for MFIs and SACCOs will be to increase their reputation of being honest and safe outlets for people's savings. Financial sector reforms underway to bring deposit taking MFIs and SACCOs into formal regulation are a step in the right direction and would improve people's confidence in them as safe institutions for their deposits. Outreach to previously unbanked clients might involve adopting less rigid requirement on documentation and formality, but also more transparent and easy-to-understand marketing material. Increased competition and a level playing field between different segments of the financial system can contribute to improvement along these dimensions.

The biggest challenge for policy makers will be to address non-income related access barriers to banking services. While low income continues to be the main barrier to expanding access, access barriers related to documentation requirements and literacy are also prominent. Allowing alternative identification means other than the national ID card might help reduce the documentation barrier. The most important policy lever, however, will be increasing competition and leveling the playing field among the different segments. This should include establishing a sound and effective regulatory and supervisory framework for SACCOs and MFIs and including these institutions into the credit registry. It is

important to maintain an open remittance market that allows M-PESA to compete with other financial service providers, but at the same time keeps the market open and contestable.

The FinAccess surveys give a good snapshot of the demand side for financial services, but are only a first step in a comprehensive analysis of the access landscape and access frontier. They allow us to compare banked and unbanked and explore the reasons for being unbanked. It would be important to continue this exercise, with a three-year frequency being appropriate. However, it is only with supply side data that the binding constraints for expanding access to and use of financial services; efforts to collect such data are under way. The example of similar studies for South Africa that combined supply-side and demand-side data seems a fruitful route in this respect.

The focus on access to financial services is more important than ever in the current crisis. As international capital flows, including international remittance flows, are drying up, there will be increased pressure on domestic intermediation efficiency and increasingly on resource mobilization. The reduced risk appetite might derail efforts both on the bank, but also on broader financial system level to expand the financial system further downwards. Suggestions for tighter regulatory restrictions to ensure stability – result of the fall-out from the global financial crisis – might put additional pressure on stakeholders. In this somewhat adverse environment, it is more important than ever to keep the focus on expanding outreach of the financial system further. This might involve financial and non-financial institutions of different types – banks, MFIs, SACCOs, telecoms – and requires both private and government participation. Appropriate data and analysis can provide the basis for proper action by all stakeholders.

Deepening Kenya's financial system and increasing its efficiency should top policy makers' agenda as well. As discussed above, financial deepening has an important effect on economic growth and poverty alleviation through indirect effects. Putting in place the necessary reforms to allow for a sustainable and sound increase in Private Credit to GDP should be a top priority for policy makers in addition to increasing access to basic financial services. This includes strengthening the contractual and information frameworks, such as courts and collateral and credit registries. It also involves putting a premium on macroeconomic stability, prerequisite for long-term financing. It also requires policies to further deepen capital markets and enable pension funds (including NSSF) and insurance companies to take a more active role in these markets.²

¹ Since the writing of this article, Safaricom has partnered with Equity Bank to offer M-Kesho, a product that allows M-PESA users access to a low-price account with Equity Bank.

² For further discussion, please see Beck et al. (2011)

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Annex: Regression analysis

We use probit regressions of the following form:

$$\text{Access}_i = bX_i + gP_i + e_i$$

Where **Access** is one of our measures of use of (i) formal banking services, (ii) other formal financial services, (iii) M-PESA, and (iv) informal financial services. In addition, we use a dummy variable that indicates whether a person is financially excluded. The regression is weighted and stratified on the rural-urban level. Table 2 reports the regression results.

The explanatory variables are as follows:

- **Female** is a dummy variable indicating gender.
- **Rural** is a dummy variable indicating whether the individual lives in a rural district.
- **Total expenditures** are the survey-based measure of total monthly expenditure.
- **Primary, secondary and tertiary education** are dummy variables that indicate whether the individual has:
 - (i) some education, but at most on the primary level,
 - (ii) at most some education on the secondary level, and
 - (iii) at least some post-secondary education.
- **Age** is included in logs.
- **Agriculture, Self-employed and Employed** are dummy variables indicating the employment status and sector, with the omitted category being dependent on pension or family.
- **Own mobile** is a dummy variable that takes value one if the individual responds correctly or yes to any of the three following questions:
 1. You are in a chama/group and win a promotion or competition for KSh 200,000. With 5 of you in the chama, how much do each of you get?
 2. You have a lot of mangoes on your farm and your neighbor has lots of tomatoes. You make a bargain and he says he will give you three tomatoes for every mango you give him. If you give him fourteen mangoes, how many tomatoes do you expect him to give back to you?
 3. If you had extra money, say 30,000 shillings, and you could only invest it in either chickens or goats, do you think its better to buy all goats, all chickens, or a mix of goats and chickens?
- **Risk aversion** is a dummy variable that takes on value one if the individual responds yes to the following question: You avoid taking risks with your money or resources.

Table 2: Regression results

	Formal	Formal, other	M-PESA ever used	Informal	Excluded
Own mobile phone	0.166 (0.000)***	0.422 (0.000)***	0.393 (0.000)***	0.084 (0.000)***	-0.270 (0.000)***
female	-0.018 (0.115)	-0.025 (0.132)	-0.002 (0.930)	0.191 (0.000)***	-0.097 (0.000)***
Log(age)	0.180 (0.000)***	0.144 (0.000)***	-0.084 (0.003)***	0.088 (0.001)***	-0.159 (0.000)***
Employed	0.140 (0.000)***	0.160 (0.000)***	0.080 (0.010)***	0.118 (0.000)***	-0.144 (0.000)***
Self employed	0.126 (0.000)***	0.100 (0.001)***	0.084 (0.008)***	0.210 (0.000)***	-0.164 (0.000)***
Agriculture	0.079 (0.000)***	0.122 (0.000)***	0.007 (0.818)	0.164 (0.000)***	-0.156 (0.000)***
Risk aversion	0.015 (1.26)	0.027 (0.092)*	0.049 (0.009)***	0.057 (0.004)***	-0.047 (0.009)***
Rural	-0.081 (0.000)***	-0.112 (0.000)***	-0.159 (0.000)***	-0.015 (0.624)	0.062 (0.023)**
Log of total expenditures	0.078 (0.000)***	0.064 (0.000)***	0.062 (0.000)***	0.074 (0.000)***	-0.090 (0.000)***
Primary education	0.085 (0.000)***	0.105 (0.000)***	0.145 (0.000)***	0.118 (0.000)***	-0.123 (0.000)***
Secondary education	0.214 (0.000)***	0.278 (0.000)***	0.321 (0.000)***	0.077 (0.034)**	-0.141 (0.000)***
Tertiary education	0.422 (0.000)***	0.422 (0.000)***	0.396 (0.000)***	0.017 (0.696)	-0.202 (0.000)***
Numeracy	0.023 (0.000)***	0.015 (0.117)	0.016 (0.096)*	-0.006 (0.460)	-0.006 (0.489)
Central	0.067 (0.048)**	0.111 (0.024)**	-0.035 (0.499)	0.044 (0.368)	-0.026 (0.536)
Coast	-0.045 (0.036)**	-0.138 (0.000)***	-0.211 (0.000)***	0.035 (0.446)	0.092 (0.028)**
Eastern	-0.027 (0.291)	0.005 (0.920)	-0.117 (0.015)**	0.145 (0.003)***	-0.049 (0.219)
Nyanza	-0.056 (0.020)**	-0.031 (0.489)	0.072 (0.185)	0.125 (0.007)***	0.001 (0.977)
Rift Valley	-0.002 (0.931)	0.022 (0.605)	0.018 (0.731)	-0.014 (0.764)	0.075 (0.070)*
Western	-0.006 (0.839)	-0.024 (0.575)	0.150 (0.007)***	0.144 (0.001)***	-0.028 (0.472)
North Eastern	-0.096 (0.000)***	-0.186 (0.000)***	-0.274 (0.000)***	-0.275 (0.000)***	0.355 (0.000)***
Observations	6326	6323	6328	6328	6328

CHAPTER 3

Investigating the impact of access to financial services on household investment*

KAREN ELLIS, ALBERTO LEMMA
AND JUAN-PABLO RUD

1. Introduction

This report presents the findings of a research project which has used FinScope household survey data from Kenya (where the survey is called FinAccess) and Tanzania to examine the extent to which access to financial services facilitates household investment in productivity-enhancing activities². Productivity-enhancing activities are defined as activities which may be expected to contribute to a higher income in future, such as education, starting a new business, or investment in agricultural inputs or equipment. It is posited that if better access to financial services can facilitate greater household level investment (as opposed to household consumption), this could contribute directly to income growth.

We define the term access to financial services as the ease with which an individual can use financial services if they

want to. It is thus distinct from usage; an individual may have access to financial services but choose not to use them. It is also possible for an individual to face access constraints even if they are using a financial service. For example, an individual may have a bank account, but may face constraints to using it actively because the nearest bank branch or ATM is so far from their home.

In many studies, usage is used as a proxy for access, as it is easier to measure. However, in this study we are able to disentangle the two to some extent, as the FinScope survey data includes information on the reasons individuals give for not using financial services³. This enables us to ascertain whether an individual is not using financial services because of supply side constraints to access (e.g. distance to bank, cost of services, eligibility

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² For further information see www.FinScope.co.za. In Kenya the survey is called FinAccess, although it has been implemented under the FinScope umbrella. For ease of exposition we refer to the surveys as FinScope throughout this report.

³ However, it is impossible to specifically identify cases where individuals have access to financial services, but do not choose to use them. The most common reasons cited for not using financial services, as the study results show, relate to a lack of money, or to not needing a loan, so it is possible – perhaps likely – that individuals citing these responses have not tried to use financial services, so are not aware of supply side barriers to access they might face. Similarly, it is hard to separate out individuals who face access constraints (e.g. in terms of time taken to get to the bank or ATM for example) even if they are using a financial service (e.g. they have a bank account), because respondents in the survey are only asked about barriers to access if they are not currently using a financial service.

requirements etc.), which would imply they do face access barriers, or for demand side reasons (e.g. don't have enough money to save, don't want to borrow money etc.), which means they may have access to financial services, but are choosing not to use them.

The study utilises FinScope survey data from Kenya and Tanzania to examine saving and borrowing behaviour by individuals, the reasons for which they invest, the types of financial services they use, the barriers to access they face, and how this varies according to individual characteristics. These two countries were selected as it seemed likely they would generate some interesting comparisons without being too different in terms of their economic fundamentals, and because the survey questionnaires they used were very similar thus facilitating direct comparison.

The report is structured as follows:

- Section 2 of the report discusses the theoretical underpinnings for the hypothesis we are testing, and reviews the literature on this issue.
- Section 3 presents graphical results from the Kenya FinScope survey.
- Section 4 presents graphical results from the Tanzania FinScope survey.
- Section 5 compares the Kenyan and Tanzanian results and discusses possible supply side factors which may help to explain the differences.
- Section 6 presents econometric analysis to test the extent to which the lack of access to financial services constitutes a binding constraint to household investment, using Kenya FinScope survey results.
- Section 7 concludes and discusses policy implications.

2. Theoretical underpinnings and literature review

2.1 The gap in the evidence base

The potential contribution that access to financial services can make to growth and poverty reduction is now widely accepted in academic and policy circles, and thus improving access has become an issue of increasing focus for developing country governments and donors. But the empirical link between access to financial services and growth has not been well established in the academic literature, despite a range of theoretical literature suggesting about the potential economic linkages that may exist between the two. The availability of robust empirical evidence to support or disprove these theories has been limited to date, due to a lack of adequate data on access to financial services, which is now being remedied through data collection efforts by DFID, the World Bank and others (see Honohan (2004)).

There is a substantial literature, both theoretical and empirical, establishing the link between financial sector depth (measured by macro-level indicators such as total amount of bank deposits or private credit as a proportion of GDP) and growth, (see for example King & Levine (1993), Levine (1997), and Calderon & Liu (2003)). There are also a number of studies linking financial sector depth to poverty reduction (e.g. Jalilian & Kirkpatrick (2001) and Honohan (2004) - this literature was also reviewed in a DFID Working Paper (2004)).

These studies use measures of financial depth collected from financial institutions themselves, such as the total value of bank deposits, or private credit, which do not capture the distribution of these bank deposits or credit across the population. In many countries, household survey evidence shows that most bank deposits and loans are held by only a small proportion of the population with relatively high incomes, and that relatively few people have access to any kind of formal financial services. Many people rely instead on informal or semi-formal providers such as microfinance institutions or cooperatives etc. for which data is not usually available.

These traditional indicators of financial depth may not therefore be very strongly related to the level of access to financial services for the population as a whole. Thus there are hardly any empirical studies linking access to financial services, growth and poverty reduction, despite a range of theories as to why this relationship might exist.

But recently enhanced data collection efforts by the World Bank/Consultative Group to Assist the Poor (CGAP), and

others are beginning to remedy this gap. The World Bank has been collecting macro-level indicators of access to financial services in recent years, (such as number of accounts held, and number of bank branches or ATMs) from regulators and banks in a large cross-section of developing countries. They have started to use this data to explore the link between access to financial services and financial sector development, economic activity, firms' financing constraints, inequality and poverty (see Beck, Demirguc-Kunt & Martinez Peria (2007), Honohan (2007), and CGAP (2009)).

However, these indicators still only capture formal financial services providers for the most part, and it is clear that informal and semi-formal providers reach a much greater proportion of the population in many countries than banks. So developing a greater understanding of the role that access to and usage of financial services as a whole (including formal, semi-formal and informal financial services) is thus an important, and currently under-researched area for investigation.

This study has begun to address this gap in the literature, by utilising more recently available FinScope household survey results (part-funded by DFID through their Financial Sector Development programmes in each country) on the usage of financial services in Kenya and Tanzania. This is an extremely rich dataset, which includes a great deal of information which is not available from any other source. The dataset includes nationally representative information about which financial services and financial services providers are being used, for what purposes, and what barriers to financial access are being faced. This can be broken down in many different ways using the detailed information that has been collected on individual characteristics (gender, wealth, family position, location, attitudes etc.). Despite the richness of this new dataset, it has been under-utilised for the purposes of economic research so far.

Broadly comparable data have been generated in each of the countries covered – although the ways in which questions are asked are not always identical, which can complicate matters when comparing results. One of the reasons why Kenya and Tanzania were chosen for this analysis was because the questions of interest for this study were asked in a very similar way in both countries, thus facilitating direct comparison.

2.2 The relationship between financial access and growth

The theoretical relationship between access to financial services and growth is not straightforward. According to the theoretical literature, there are several mechanisms through which the two may be related – and this also varies depending on which financial services we are talking about.

First, and the main hypothesis upon which this study is based, is the idea that access to financial services facilitates greater household level investment in productivity-enhancing assets, and that this increases household income in future.

Investment is the active redirection of resources by an economic entity (e.g. an individual or a firm) from being consumed today, to creating benefits in the future. The hope is that the investment will yield greater benefits in future than would be yielded by consuming those resources today. The investment may take the form of savings, of a financial instrument (e.g. an equity investment), of physical capital (e.g. a new tool or piece of equipment that improves productivity such as agricultural machinery), or of human capital (e.g. education).

According to growth theory (e.g. Solow (1956), and Romer (1990)), growth depends on the stock of human and physical capital in the economy, as well as technological progress. Investment at the level of the firm or the individual can contribute to all of these things, and thus plays an important role in facilitating long run economic growth.

In practical terms this means that the provision of a bank account that enables an individual to accumulate funds in a secure place over time more easily than they would otherwise have been able to, (perhaps because the money is safe from being stolen or plundered by other family members), or access to credit which enables them to borrow funds, can strengthen their productive assets. It does this by enabling them to invest in micro-enterprises, in productivity-enhancing new 'technologies' such as new and better tools, equipment, or fertilizers, or in education and health, and thus facilitates greater capital accumulation and growth (DFID, 2004).

Savings and access to credit or insurance can also minimise the negative impacts that income shocks can sometimes have on longer term income prospects, if

income-generating assets are sold at low prices out of necessity during a household crisis. Access to regular remittances (e.g. from relatives abroad) can also reduce risks for households, by diversifying their sources of income.

Eswaran and Kotwal (1990) argue that having access to credit may reduce household vulnerability to negative shocks by increasing their ability to smooth consumption during difficult times, and that availability of credit also allows households to undertake riskier investments as it will enable them to better deal with the consequences of poorly performing investments.

In addition, Deaton (1991) argues that by reducing the financial risks faced by households in this way, access to financial services may decrease the proportion of low-risk, low-return assets held by households for precautionary purposes (such as jewellery), and enable them to invest in potentially higher risk but higher return assets, (such as education or a rickshaw), with overall long-term income enhancing impacts.

Ghosh, Mookherjee & Ray (1999) argue that credit is essential in allowing capital investments among producers (such as farmers) who are not able to save, as well as giving households the ability to obtain money in an emergency. The availability of credit also increases risk taking with the adoption of new technologies or productivity enhancing investments for poorer households or producers, hence contributing to increases in production and income.

Galor & Zeira (1993) find that access to household credit can have a positive impact on growth through its impact on human capital accumulation, and that this is affected by the initial distribution of wealth; richer families are better able to invest in human capital accumulation leading to increased growth.

De Gregorio (1996) also argues that access to credit promotes human capital accumulation, as credit constraints will force students to work, which will reduce the time available for study. Dehejia & Gatti (2002), Beegle, Dehejia & Gatti (2003), and Jacoby (1994) also find that access to risk-reducing financial services increases investment in schooling.

A second channel through which access to financial services, (or more specifically, access to credit), may affect economic growth is by facilitating the entry of new firms

(Klapper, Laeven and Rajan, 2004) and the Schumpeterian process of “creative destruction”. They argue that access to credit permits greater market entry by talented new entrants, who would otherwise be constrained by their lack of inherited wealth and absence of connections to the network of well-off incumbents. To the extent that access to credit is limited to only privileged groups, or preferred sectors, this will reduce the value of the investments undertaken, reducing growth. So wider access to credit for individuals as well as firms (given that small and micro-enterprises are often financed by individual borrowers), will increase the productivity returns to investment.

A third channel of impact relates to the effect of access to credit on savings, and this provides a more complicated story. The level of savings is an important determinant of the overall level of investment in an economy, and thus is directly linked to growth. Given that savings may be considered less of a necessity when credit is available, Jappelli and Pagano (1994) argue that alleviating credit constraints on households reduces the savings rate, with negative repercussions for economic growth, and they provide empirical evidence to support this argument, based on a sample of middle and high income countries. Beck, Buyukkarabacak, Rioja & Valev (2008) also provide empirical evidence showing that while access to credit for enterprises does increase growth in GDP per capita, increasing access to credit for households does not have a positive impact on growth.

On the other hand, the impact of access to savings facilities, such as a bank account, will clearly help to increase savings. Aportela (1999) looked at the impact of increasing financial access in Mexico, arising from the expansion of a Mexican savings institute, on the savings of those on low incomes. They found that once low income people are given access to savings instruments, they often become prolific savers. Results suggest that increased access to savings increased saving rates by an average of 3%. The highest effect was seen in the poorest households, where the increase reached 7%.

Burgess and Pande (2004) studied the effects of bank expansion into rural India following government reforms which encouraged the move. Bank expansion into rural areas was followed by a reduction in rural poverty, which was also linked to an increase in savings mobilisation. The study finds that the increased number of bank branches allowed households to accumulate more capital and have

access to longer term investment loans than previously possible. Bank branch openings thus helped increase total per capita output, especially for small scale manufacturing and services.

Thus while the theory is ambiguous on the overall impact of access to credit on growth (and this may also be true of other financial services which reduce risks and hence may reduce the need to save, such as insurance schemes and remittances), the impact of bank accounts or other savings facilities, appears from the existing theoretical literature at least, to be unambiguously positive.

2.3 The hypothesis being tested

This paper is focusing on just one channel of impact - the effect of access to financial services on household level investment. If better access to financial services can be shown to facilitate greater productivity-enhancing investment, we will have established for the first time one of the key potential linkages between access to financial services and growth⁴. We do not directly test the impact on growth, as there is inadequate data available to do that as yet. However, the links between investment and growth are well established in the theoretical literature, as discussed above.

The data is thus used to examine several questions:

- The extent to which financial services are used for investment purposes (rather than for consumption);
- The types of financial services and financial providers (formal and informal) that are used and how this varies within different demographics;
- The extent to which barriers to access constrain the ability of households to undertake productivity-enhancing investments;
- How the results compare across the two countries;
- What the policy implications are in terms of how best to promote productivity-enhancing investment at the household level.

⁴ Of course given that savings itself contributes to growth, (by facilitating investment by others, through financial intermediaries), savings for consumption purposes can also be good for growth. However, we are not investigating that aspect of the relationship between financial access and growth in this paper.

In sections 3 and 4 below we present selected data from Kenya and Tanzania respectively, in a graphical format, to shed light on the above questions. In section 5 we compare the results for Kenya and Tanzania. In section 6 we present the econometric results.

2.4 Survey data used

The analysis in this was undertaken using data from the FinScope / FinAccess Kenya 2006 & 2009 surveys, and the Tanzania 2006 survey. All the surveys are nationally representative. The Kenya 2006 survey was undertaken by 4214 respondents, the Kenya 2009 survey was undertaken by 6598 respondents, and the Tanzania 2006 survey was undertaken by 5434 respondents.

The results shown in sections 3 are based mainly on the Kenya 2006 Survey, to facilitate comparison with the Tanzania 2006 survey, which was the latest available dataset for Tanzania at the time of writing. However, some comparisons are made between the Kenya 2006 and 2009 results at the end of section 3. The econometric analysis is based on the Kenya results (using both 2006 and 2009 data). Significant gaps in the Tanzania dataset relating to demographics and the stated use of financial services precluded us from undertaking econometric analysis on the Tanzania dataset.

Both the Kenya 2006 and 2009 surveys use a very similar format (with negligible differences) whilst the Kenya and Tanzania surveys share the same basic structure as well as very similar questions. The close similarity between the Kenya and Tanzania surveys allows the results to be adequately comparable as the majority of relevant questions used for the purpose of this study are identical whilst the remainder have small differences (based mainly on differences in the local context rather than the actual question itself). Those questions where local context may lead to different meanings were clarified using the assistance of FinScope personnel in both Kenya and Tanzania in order to ensure appropriate comparisons have been made between the two surveys.

3. Results for Kenya

3.1 Summary findings

Many people save and borrow for household investment purposes: 44% of the sample had at some point used savings for at least one kind of productivity-enhancing investment, and 24% of people had at some point used a loan for this purpose.

The most common reasons given for saving and borrowing were for consumption purposes however, with meeting day to day expenses and providing for household needs given as the most important reasons.

But the second most common reason given by people for saving, (at 28% of the whole sample population), was to invest in education for themselves, their children, or others. Twelve percent save to purchase livestock, and 10% save to start a business.

Savings tend to be used more than borrowing for all purposes. However, patterns of usage when broken down into different purposes look very similar, suggesting that people may see savings and borrowing as substitutes for most purposes.

Men and women exhibit very similar patterns of behaviour in terms of saving and borrowing for investment purposes.

Rural inhabitants save and borrow more for agricultural investments, whereas urban inhabitants tend to save and borrow more for all other purposes, although the results are very similar between the two groups in relation to investment in education.

A substantial number of people even in the poorest groups borrow and save for a range of investment purposes; 26% percent of those in the lowest income groups save for educational purposes, and 13% save to purchase livestock. Individuals with a better education are more likely to borrow and save to invest than those with less education.

Many people (42% of the sample) both save and borrow, suggesting they are seen as complements rather than substitutes. Almost 40% of survey respondents have used both semi formal and informal instruments, and almost 20% have used both formal and semi-formal instruments, which suggests that for a reasonable proportion of people, these different types of

financial instruments are also considered complements rather than substitutes.

However, those who use financial services for investment purposes are more likely to use formal financial services, and those who use them for consumption purposes are more likely to use informal financial services.

The most common reasons for not borrowing or saving relate to a lack of money, but many supply side access barriers are also cited, such as high charges.

Results shown in this section are based mainly on the Kenya 2006 FinScope Survey, to facilitate comparison with the Tanzania 2006 survey in the next section. However, some comparisons with the 2009 results are also shown at the end of this section.

In section 3.1 we look at the extent to which financial services are used for investment purposes, (as opposed to consumption). In section 3.2 we look at the types of financial services and financial providers (formal and informal) that are used and how this varies dependent on demographics. In section 3.3 we look at the extent of supply side barriers to access identified which could potentially be constraining the ability of households to undertake productivity-enhancing investments.

3.2 Extent to which financial services are used for investment purposes

In the Kenya 2006 survey, almost 50% of people say they have borrowed money at some point in their lives, and around 70% say they have held some form of savings, either through a formal or semi-formal financial institution, or through more informal mechanisms, such as savings hidden in safe places, or loans from family and friends.

The survey asked respondents to specify the purpose for which they saved or borrowed. We used this information to categorise savers and borrowers according to whether they were saving for investment or consumption purposes. Reasons to borrow or save were classified as investment reasons if they could contribute to increasing the income of the household in the future through human or capital accumulation⁵. The categorisation of what we have deemed investment and consumption purposes are set out in Table 1 overleaf.

⁵ This is a simplification, as one or two non-investment categories (i.e. to leave something to my children) are not really consumption, but they cannot be counted as investment either which is the main focus of this analysis, so we have simply used the term 'consumption' for ease of exposition.

Where the purpose could be seen as either investment or consumption we have classified it according to what we considered to be the most probable use. For example, vehicles or land may have been bought for either personal or investment reasons (or indeed for both). They were classified as consumption choices as that was considered to be the most probable use in our assessment, and also avoids any apparent attempts to over-represent the extent of investment facilitated by financial services.

The data shows that many people save and borrow for household investment purposes. Forty-four percent of the sample had at some point used savings for at least one kind of productivity-enhancing investment, and 24% of people had at some point used a loan for investment purposes.

The most common reasons given for saving and borrowing were for consumption purposes however, with meeting day to day expenses and providing for household needs given as the most important reasons. However, the second most common reason given by people for saving, (at 28% of the whole sample population), was to invest in education for themselves, their children, or others.

Figure 1 shows reasons given for borrowing, and figure 2 shows reasons given for saving. This suggests that financial services play an important role in facilitating household investment in human and physical capital.

In terms of demographics, the results show that:

- Men and women exhibit very similar patterns of behaviour in terms of saving and borrowing for investment purposes;
- Rural inhabitants save and borrow more for agricultural investments, whereas urban inhabitants tend to save and borrow more for all other purposes;
- a substantial number of people even in the poorest groups borrow and save for a range of investment purposes. For example, 26% percent of those in the lowest income groups (defined here as the bottom 4 LSM⁶ categories) save for educational purposes, and 13% save to purchase livestock;
- individuals with a better education are more likely to borrow and save to invest.

Table 1: Investment vs. consumption reasons to save or borrow in Kenya

Consumption reasons to save or borrow	
For meeting household needs	For meeting day to day expenses
For an emergency	For old age
For social reasons	To pay off own debts
For personal reasons	To repay for someone else
To Improve a house	To buy a house for your family to live in
Acquire household goods	Purchase a building or house
To buy a car or motorbike	Personal purchases
To leave something to your children	Purchase land
Investment reasons to save or borrow	
Agricultural improvements	For education
Agricultural implements	Fishing equipment
Agricultural inputs	To purchase shares/stocks/bond/T Bills
To start a new business	To buy a building/house to rent out
To invest in someone else's business	Purchase livestock
To expand own business	

⁶ LSM is a Living Standards Measure, or proxy for income, that was provided in the Kenya survey results. It is based on the aggregation of a set of information about household characteristics, such as the type of dwelling the individual resides in. Low LSM values correspond to those with the poorest living standards, i.e. those in LSM 1-4 are deemed to be the poorest people in the sample, and LSM 9-12 are the richest.

Figure 1: Reasons to borrow in Kenya⁷

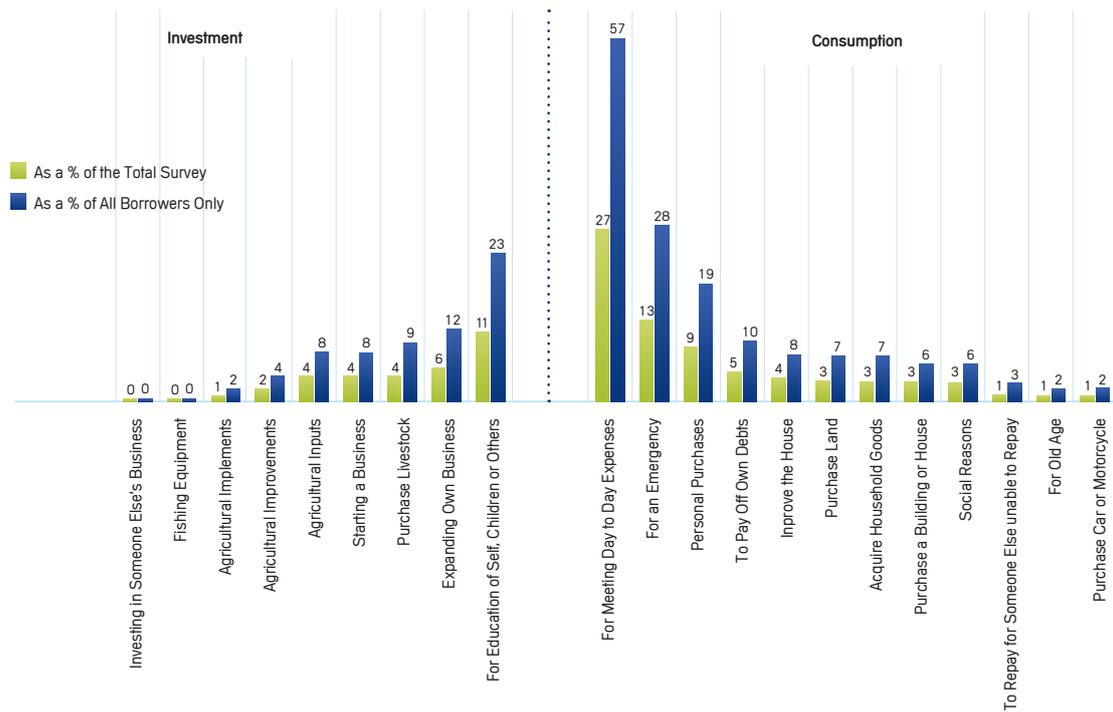
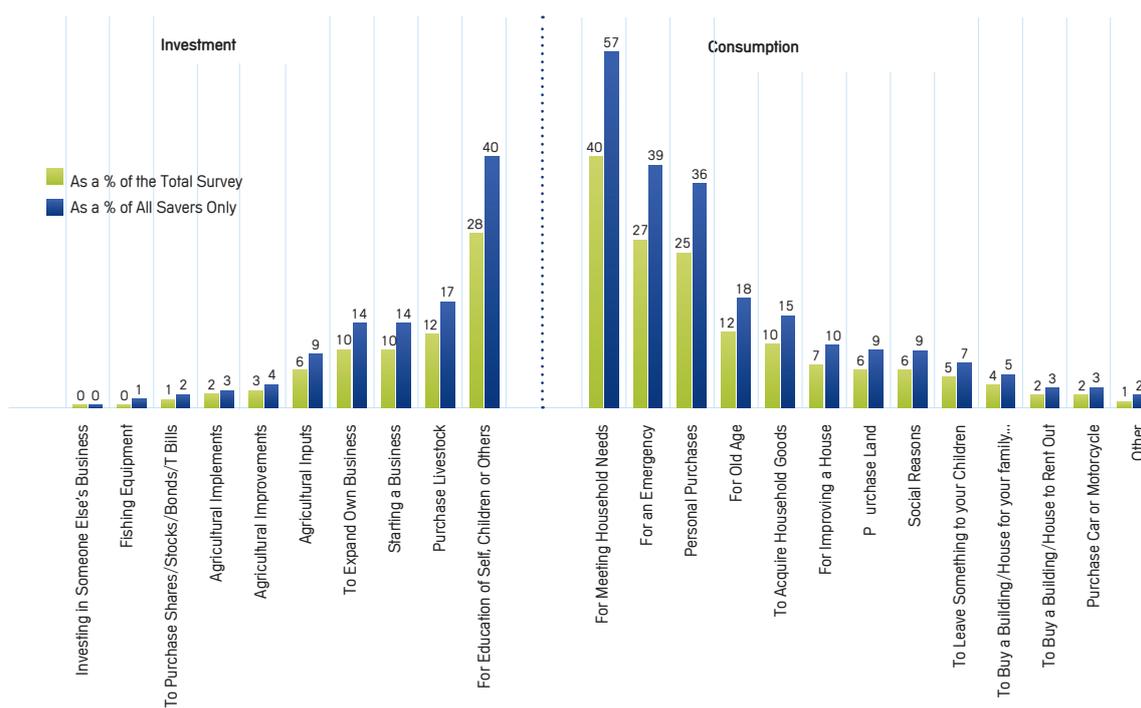


Figure 2: Reasons to save in Kenya



⁷ All the numbers shown in this and other figures have been rounded to the nearest whole number.

3.3 Types of financial services and informal mechanisms used

Table 2 right lists the financial services and mechanisms used by respondents in the survey, and shows how we have classified them into formal, semi formal, and informal categories. Formal financial services were defined as those provided by banks, building societies, government or employers. Semi-formal financial services were defined as those provided by organisations not fitting into any of those categories, or organised groups. Informal financial services were defined as those not fitting into either of the above categories.

Figure 3 shows the usage of formal, semi-formal and informal financial instruments. Sixty-one percent of the sample had used semi-formal instruments, whereas only 25% used formal financial services. But figure 4 shows that many people use more than one kind of financial instrument, with as many as 38% of survey respondents saying they use both semi formal and informal instruments. This suggests they are to some degree complements rather than substitutes for each other.

Figure 5 shows usage of the various financial instruments, (where SACCOs are Savings and Credit Cooperatives, ROSCAs are Rotating Savings and Credit Associations, ASCAs are Accumulating Savings and Credit Associations, and MFIs are microfinance institutions). It shows the predominance of informal and semi-formal instruments. ROSCAs were the most widely used financial service, with 37% of the population claiming to use them. Savings accounts were the most commonly used formal financial service.

In terms of demographic patterns, the data shows that:

- Men are much more likely to use formal financial services than women (32% of men, compared with 19% of women), and women are more likely to use semi-formal services than men (63% of women compared with 58% of men). Broadly equal numbers use informal services.
- Urban dwellers are much more likely to use formal financial services than those living in rural areas (39% compared with 19% respectively), though usage of semi-formal and informal services is quite similar.
- Usage of formal financial services is much higher in higher income groups (with 77% of people in the

Table 2: Financial instrument classification in Kenya

Informal
Savings in secret hiding place
Savings given to family
Savings with a group of friends
Loan from an informal Money Lender
Loan from family or friend
Semi Formal
Savings with a ROSCA (Rotating Savings and Credit Association)
Savings with an ASCA (Accumulating Savings and Credit Association)
Saving Account at SACCO (Savings and Credit Cooperative)
Savings at Microfinance Institution
Local Shop Credit for Products
Loan from a SACCO
Loan from a Microfinance Institution
Loan from an ASCA
Loan from a buyer of your products
Hire Purchase
Loyalty Cards
Formal
Loan to build a house or buy land from a Bank
Loan to build a house or buy land from a Building Society
Loan from a Bank
Loan given by the Government
Loan from a Government Institution
Loan from an Employer
Postbank Account
Savings Account at Bank
Current Account
Fixed Deposit Bank Account
Overdraft
ATM Card
Debit Card
Credit Card

top 4 LSM groups using formal financial services, compared with only 19% of people in the bottom 4 LSM groups). Usage of informal and semi-formal financial services is broadly similar across LSM groups, with lower income groups only slightly less likely to be using them.

3.4 Barriers to access

The survey results show that 31% of respondents have never had savings, whilst 52% never borrowed money. Figure 6 shows the main reasons given by respondents for not saving (where respondents were able to give more

Figure 3: Use of formal, semi formal & informal Financial Instruments in Kenya, % of total survey

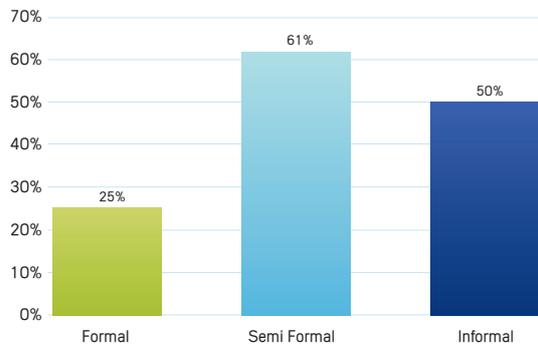


Figure 4: Use of multiple types of Financial Instruments in Kenya, % of total survey

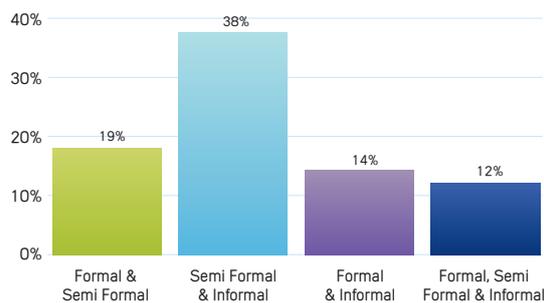
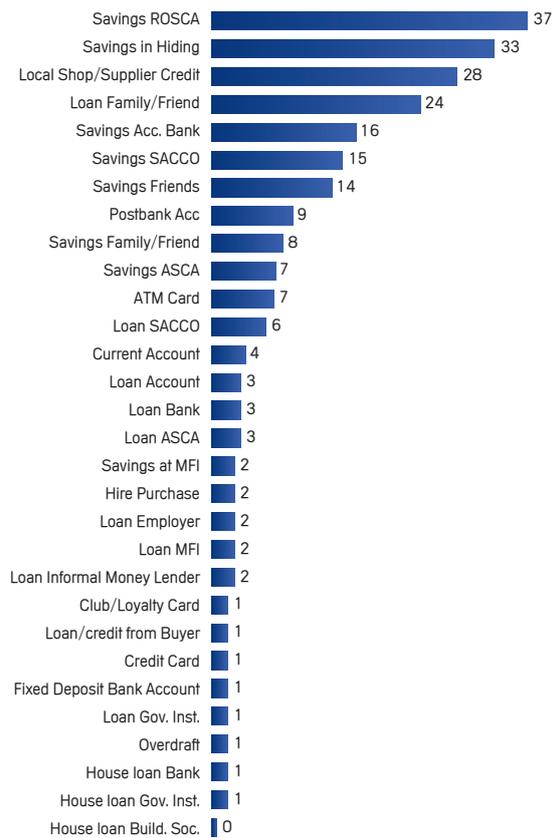


Figure 5: Financial Instruments used by savers & borrowers in Kenya, % of total survey



than one reason). The most common response by far, given by 75% of people who did not save any money, was that it was because they did not have money to save. This is not a barrier to access as such – it is a demand side constraint, reflecting a limited need or demand for a savings facility.

The fact that the most common reason given for not saving relates to lack of demand for financial services may suggest that a lack of access to financial services is not the binding constraint to usage of financial services and that it is instead the lack of money which is the binding constraint.

However, this doesn't necessarily imply that supply side barriers are not a problem. Just because many people have cited demand side constraints as the main problem, doesn't necessarily mean they would have access to financial services if they wanted it. It could be the case that these people have not even tried to use financial services

(because they don't have enough money) and hence do not yet know whether they would be able to access them.

Indeed, supply side barriers to access were also identified by many people, and account for 3 of the top 4 reasons given for not saving. The second most important reason, (after not having the money to save), given by 18% of those who did not save, was that you need a lot of money first, which might be related to minimum balances that are required for certain savings products, though that was not specified in the question. Twelve percent of respondents said that savings products were too expensive, which presumably relates to bank charges and similar, and 7% stated that they did not understand how to save money, implying a lack of financial literacy.

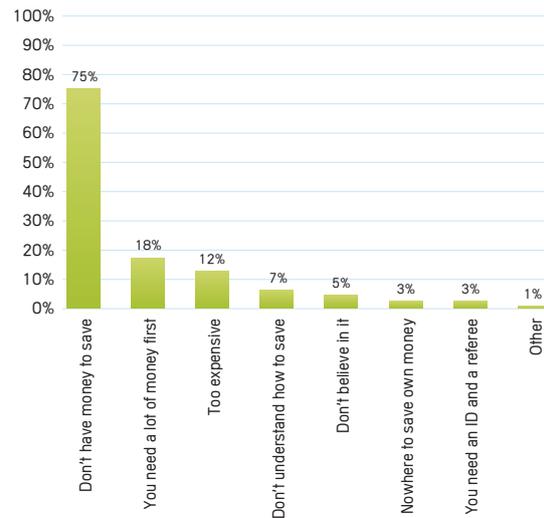
In terms of demographics, the data show that:

- Men have a slightly greater tendency not to save for presumed logistical reasons (such as not being close to a bank or needing ID), whereas women have a greater tendency not to save due to a lack of money, or because they don't understand how to save.
- Urban and rural inhabitants cite broadly similar barriers to access. The main area of difference is that rural inhabitants are twice as likely to say they do not understand how to save than urban inhabitants.

Figure 7 shows the main reasons given for not borrowing money. The top reason respondents gave for not borrowing was that they did not earn enough (at 47%). This could be taken as either a supply side or a demand side barrier, as it is not clear whether it means they do not earn enough to qualify for a loan or if it simply means they don't earn enough to want to borrow money, perhaps because they fear they will be unable to pay it back.

Thirty percent of non-borrowers said that they had never needed a loan implying they did not necessarily face access barriers (although they may have found that they did if they had tried to get a loan), but did not want or need a loan. However, most of the other reasons given were supply side barriers, including high charges, not knowing where to get a loan, and not having a guarantor or referee.

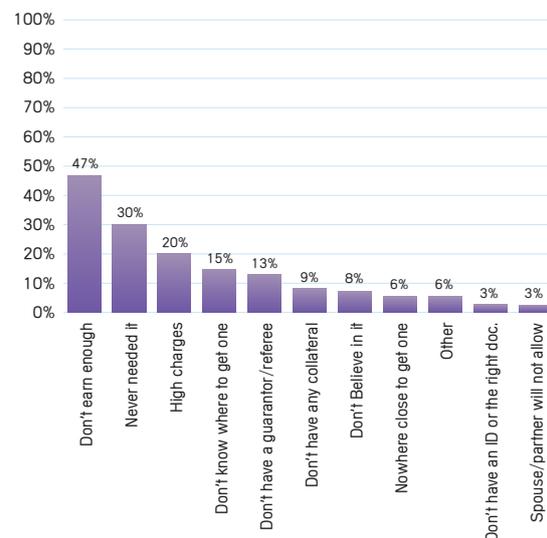
Figure 6: Main barriers to saving in Kenya



In terms of the demographics:

- there were similar patterns in responses for men and women, though a higher percentage of men than women gave high charges as a reason for not taking a loan out, whilst a marginally higher proportion of women than men stated that they did not know where to get a loan or did not earn

Figure 7: Main barriers to borrowing in Kenya



- enough money to qualify for a loan.
- barriers to borrowing cited by urban and rural inhabitants were broadly similar, though urban people were slightly more likely to say they had never needed to borrow, while rural people were slightly more likely to say that they didn't earn enough, or know where to get a loan.

3.5 Comparing Kenya in 2006 & 2009

While most of the analysis in this section so far has focused on the 2006 results (to allow comparison with the Tanzania results contained in the next section), the availability of the Kenya 2009 FinScope results facilitates comparison over time.

Figure 8 shows the change in usage of different financial products and services in Kenya between 2006 and 2009.

Overall usage of financial services is higher for most formal instruments in 2009 than in 2006, especially for transactions bank accounts and debit card usage, perhaps reflecting the substantial increases in access provided by Equity Bank and the increased competition it has generated in the market. The increase in transactions accounts also reflects the introduction of legislation prohibiting the charging of fees on savings accounts.

Informal and semi formal instrument usage has also mainly increased, most notably people saving their money in secret hiding places (which has almost doubled, perhaps because of fears about financial instability and bank solvency in the wake of the international financial crisis) as well as a very fast uptake of the M-PESA money transfer service (which was launched since the 2006 survey).

Figure 8: Change in usage of financial services in Kenya between 2006 and 2009

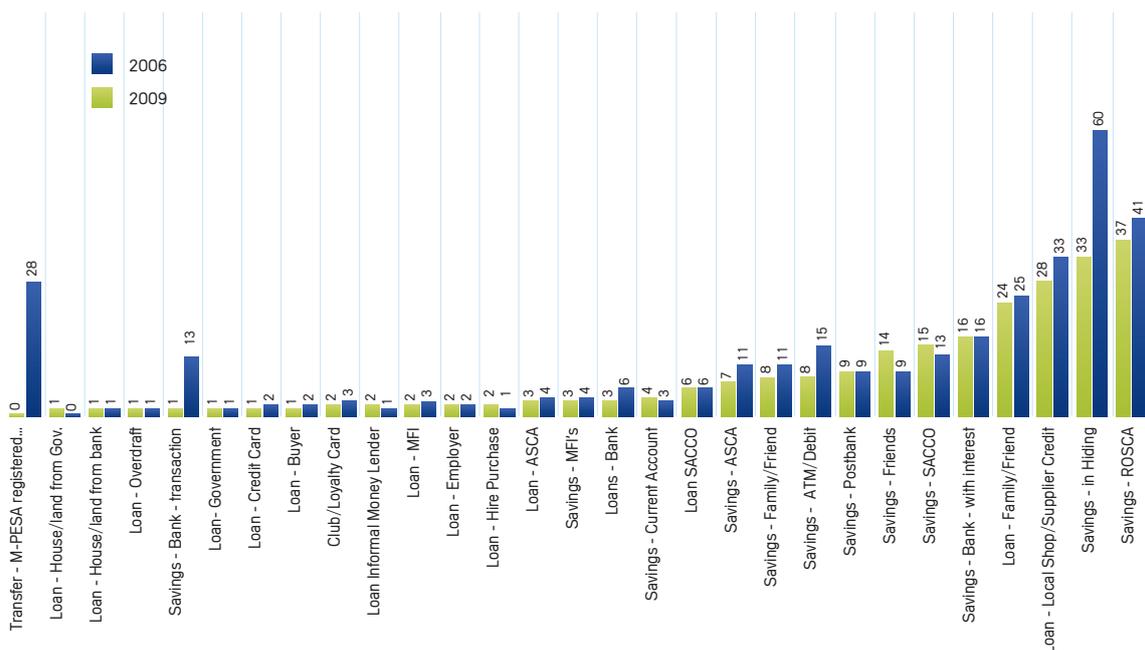


Figure 9: Comparison of reasons for saving as a percentage of the Kenyan population between 2006 & 2009

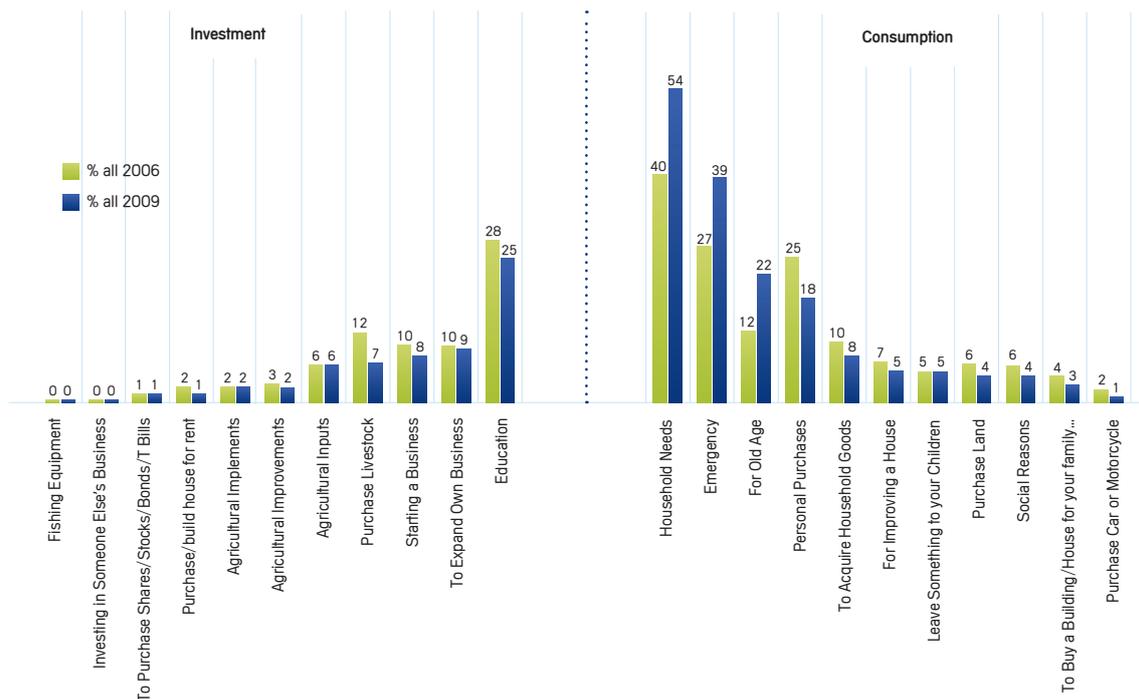


Figure 9 shows that the percentage of people saving for many purposes, particularly investment purposes, has fallen slightly, though it has increased a lot for other purposes, notably for ordinary household needs, for emergencies, and for old age. Overall, there has been a significant increase in the percentage of the population with some kind of savings, from 69% in 2006 to 83% in 2009.

Figure 10: Comparison of reasons for borrowing as % of the Kenyan population between 2006 and 2009

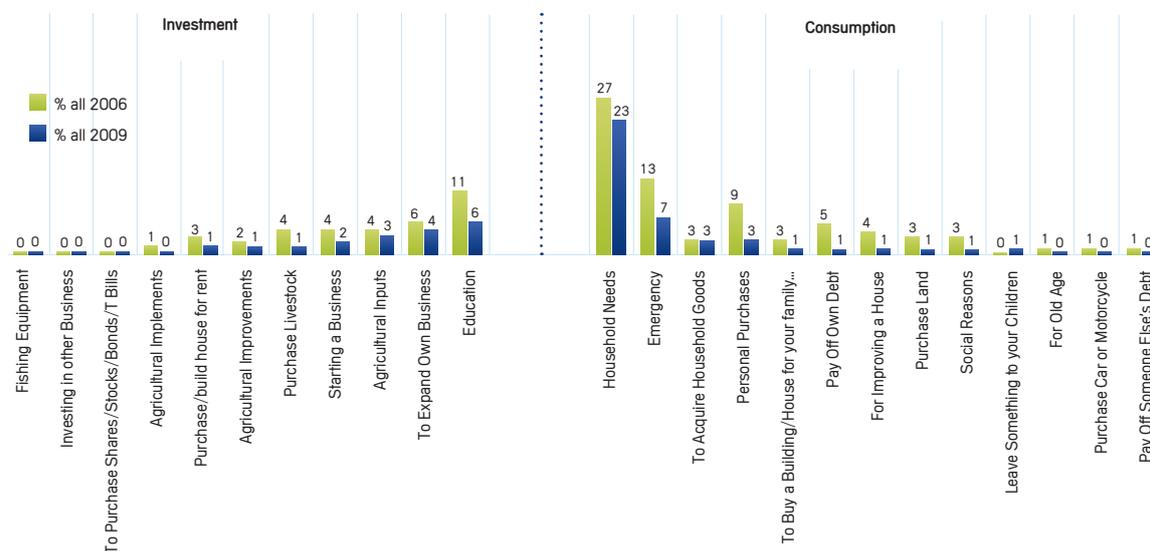


Figure 10 shows that there has been a marked decrease in loans for most reasons, perhaps in part reflecting the impact of the global economic downturn.

Table 3: Banks used in Kenya in 2006 and 2009

Bank Name	2006 % of population	Position	2009 % of population	Position	Percentage point Difference
Equity Bank	3.42	2	11.90	1	8.48
Co-Op Bank	2.95	3	2.08	2	-0.87
Kenya Commercial Bank	3.55	1	2.02	3	-1.53
Barclays	1.76	4	1.83	4	0.07
National Bank	0.58	6	0.80	5	0.22
KRep Bank	0.25	7	0.59	6	0.35
Standard Chartered	1.05	5	0.44	7	-0.61
Stanbic	0.25	7	0.11	8	-0.14
CBA	0.20	9	0.06	9	-0.14
Bank of Baroda	0.22	8	0.03	10	-0.19
Other	5.47	N/A	4.52	N/A	-0.95
Total	19.69	N/A	24.37	N/A	4.68

Table 3 shows which banks are being used in Kenya in 2006 and 2009 as a percentage of total respondents. The significant growth in accounts held at Equity Bank is clear, as the proportion of the population using Equity Bank has increased by 8.48 percentage points over the period 2006 – 2009. Of course some of these new accounts could be held by people who already had bank accounts elsewhere, and who may continue to hold two or more bank accounts in different banks. Nonetheless, this information in combination with the results shown in figure 8 suggests Equity Bank has made a major contribution to improving access to financial services over the period.

4. Results for Tanzania

4.1 Summary findings

Seventy-one percent of survey respondents say that at some point in their lives they have either borrowed or saved money, using formal, semi-formal, or informal financial services.

Many people save and borrow for investment purposes. Starting a new business is the most commonly given reason for borrowing money (cited by 46% of those who gave a reason for borrowing).

Men are more likely to save or borrow to invest than women.

Rural inhabitants save and borrow more for agricultural investments, whereas urban inhabitants tend to save and borrow more for all other purposes.

While those in the poorest groups are relatively unlikely to save or borrow for investment purposes, 10% even in the lowest income group save to invest in education.

Individuals with a better education are more likely to borrow and save to invest than those with less education.

Around 33% of survey respondents have used both semi formal and informal instruments, and around 13% have used both formal and semi-formal instruments, which suggests that for a reasonable proportion of people, these different types of financial instruments are not substitutes for each other, but complements.

Informal financial services are most commonly used, and formal financial services are the least commonly used.

The most common reasons for not borrowing or saving relate to a lack of money, but many supply side access barriers are also cited, such as not having the necessary lump sum to start with.

The Tanzania 2006 FinScope survey has a total survey size of 5453 respondents, and provides a representative sample. However, the survey gives age and gender for only around half the sample, hence any figures which show age or gender are based only on those respondents whose gender and age information is available. In addition, only 24% of all borrowers gave a reason as to why they had borrowed, which reduces the reliability of the results examining the usage of loans.

We follow the same format as for the Kenya results: in section 4.1 we look at the extent to which financial services are used for investment purposes, (as opposed to consumption). In section 4.2 we look at the types of financial services and financial providers (formal and informal) that are used and how this varies depending on demographics. In section 4.3 we look at the extent of supply side barriers to access identified, which could potentially be constraining households from undertaking productivity-enhancing investments.

4.2 Extent to which financial services are used for investment purposes

Seventy-one percent of the Tanzanian sample said they had either borrowed or saved money currently or at some point in their lives (through either formal, semi-formal, or informal mechanisms). Forty-three percent had both saved and borrowed.

The reasons for saving and borrowing given in the Tanzania survey were slightly different to those given in the Kenya survey, and are listed in Table 4 overleaf, which also shows how we categorised them. The same caveats apply with respect to categorisation choices.

Figure 11: Reasons to borrow in Tanzania

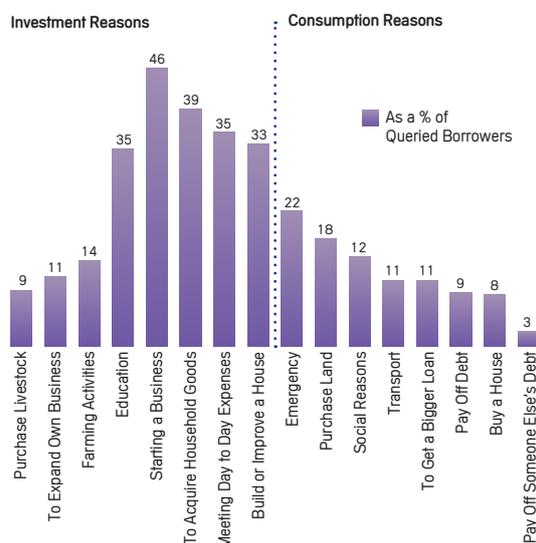


Table 4: Investment and consumption reasons to save or borrow in Tanzania

Consumption Reasons to Save or Borrow	
Improve a house	Pay off debts faster
Acquire household goods	Purchase a car or motorcycle
Purchase land	Purchase a house to live in
For old age	Leave something to your children
Meeting household needs	For emergencies
For social reasons	To buy jewellery
To repay someone else's debts	To increase bank balance to get bigger loans
Investment Reasons to Save or Borrow	
Purchase or build a house to rent out	Purchase shares/stocks/bonds
Buy agricultural inputs	Buy agricultural implements
Buy fishing equipment	Expand own business
Start up own business	Invest in someone else's business
Education	For Farming Activities
To buy livestock	-

Figure 12: Reasons to save in Tanzania

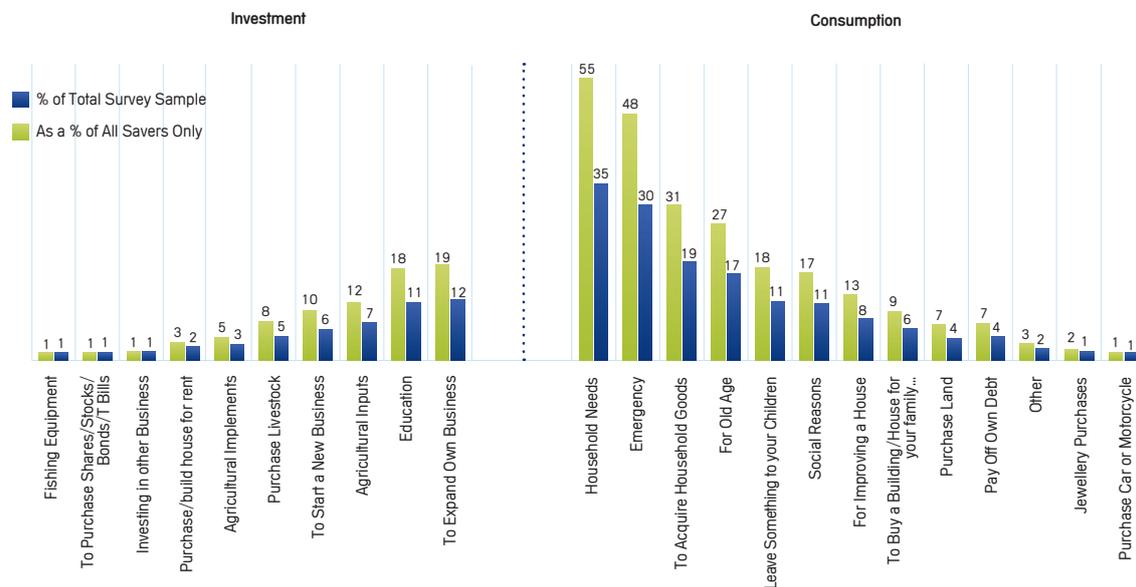


Figure 11 shows the breakdown of reasons to borrow and is compiled from survey respondents who stated that they had borrowed money and also gave at least one reason why (noting that only 24% of borrowers answered that question).

The figure shows that starting a new business is the main reason given for borrowing money. Education was another key investment related objective given for borrowing money⁸.

Figure 12 repeats the same exercise for saving reasons, though all the respondents who said they had saved also gave the reason why, so the figure also shows responses as a percentage of the total survey sample.

The figure shows that the top five saving reasons all fall into the consumption category, with meeting household need as the main saving reason, followed by emergencies. The top investment reasons to save are to expand own business, for education and to purchase agricultural inputs, coming in at close to 10% of the total sample in each case. Thus, as in Kenya, it is clear that access to financial services is the foundation for a reasonable degree of household investment, although more people borrow and save for consumption purposes.

Comparing the results from figures 11 and 12 suggests that people who want to start their own business tend to prefer borrowing over saving, whilst those who already have a business tend to save rather than borrow. This is an interesting finding as it may be expected that access to loan finance would be easier for somebody in business than for a new start-up. It may reflect the increased availability of money to save for those who are already in business, but if both options are available to people in business, this would imply a preference for savings-based investment rather than loan financed investment, perhaps due to the risks and costs involved in borrowing.

In terms of demographic determinants of saving or borrowing to invest, the headline results show that:

- Though women are more likely overall to save than men, men are more likely to save and borrow for investment purposes specifically, than women;
- Urban inhabitants are more likely to save and borrow for most investment purposes than rural inhabitants, except for the purchase of livestock;
- Those in higher income brackets are more likely to borrow and save in order to finance investment than those in lower income brackets, except for investments in education where those in the lowest income bracket are more likely to save than those in middle income groups. For all investment reasons, those in the lowest income bracket do not take any loans at all, indicating possible exclusion from access to loans for those who do not earn enough money.
- The higher the level of education the more likely you are to borrow or save for investment purposes. People who have some form of tertiary education are much more likely to both borrow and save, particularly for investment in education; 97% of people with tertiary education have saved money in order to invest in education. The results show that the higher the level of education achieved, the more importance is placed on investing in human capital accumulation.

4.3 Types of financial services and informal mechanisms used

Table 5 opposite lists the financial services and mechanisms used by respondents in the survey, and shows how we have classified them into formal, semi formal, and informal categories. We used the same definition as for Kenya, but also included savings through insurance schemes, and compulsory savings, (neither of which were included in the Kenyan survey), in the formal category.

⁸ However, as we have already noted, only 24% of borrowers in Tanzania gave a reason for borrowing, and it may be that those who chose not to answer the question were more likely to be people who borrowed to make ends meet, rather than for what are perceived to be more justifiable reasons such as starting a business, which would explain this high score for investment purposes. If true, this may imply that Tanzania has a culture in which indebtedness is less socially acceptable than in Kenya.

Table 5: Financial Instrument Classification in Tanzania

Informal
Loan from family or from a friend
Loan from an informal money lender
Loan in kind
Savings with a group at my workplace
Savings given to family or friends
Savings kept in a secret hiding place
Savings in kind
Semi Formal
Loan from a SACCO
Loan from a microfinance institution
Loan from an ASCA
Hire Purchase
Credit from a kiosk
Credit from a hospital or school
Saving account at a SACCO
Savings at a microfinance institution
Savings with an ASCA
Savings with a merry-go-round
Formal
Personal loan from a Bank
Loan from a government institution
Loan from an employer
Education loan
Car purchase loan
Business loan
Loan to buy a house from a bank
Loan to buy land from a bank
Loan to buy a house from a financial institution
Employer saving schemes
Savings through insurance schemes
Compulsory savings e.g. NSSF/ZSSF
ATM card
Debit card
Postbank account
Current account
Savings account
Fixed deposit

Figure 13: Use of formal, semi formal & informal Financial Instruments in Tanzania, % of total survey

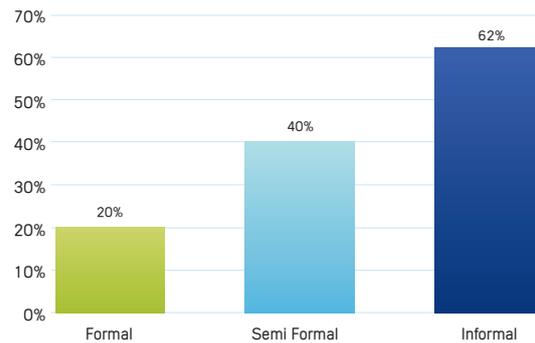


Figure 13 tells us that the majority of the sample population use informal financial mechanisms, (62%), whilst formal instruments are used by only 20% of the whole survey sample. Figure 14 shows that many people use more than one kind of financial instrument.

Figure 14: Use of multiple types of Financial Instruments in Tanzania, % of total survey

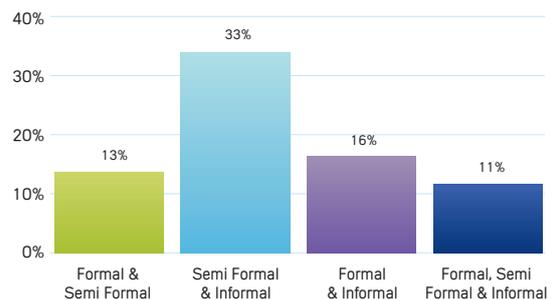
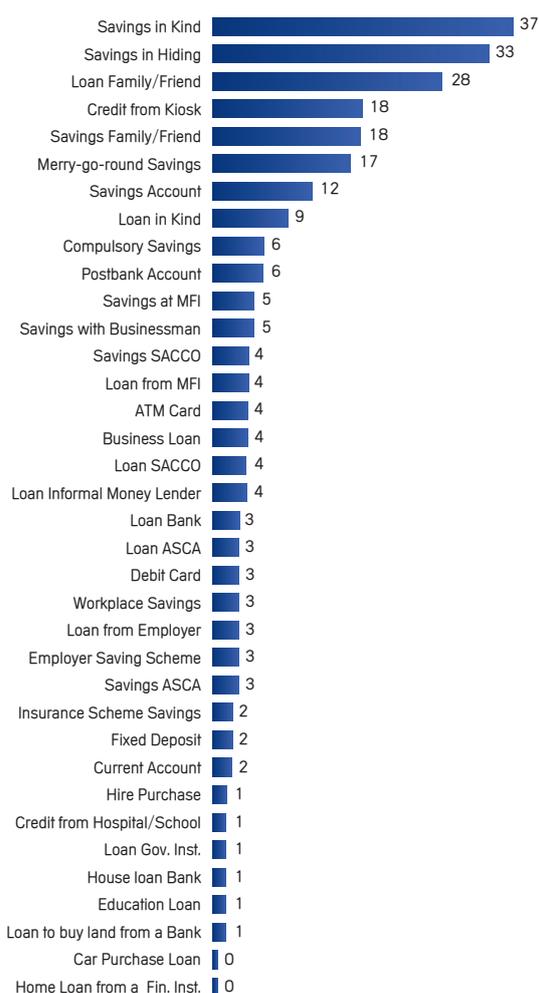


Figure 15 shows all the financial services used by savers and borrowers in Tanzania. It shows that informal financial services are the most commonly used by quite some margin. Savings in kind and hidden savings are the most common form of savings used in Tanzania, whilst loans from friends and family and from kiosks are the most common type of loans used. The most commonly used formal financial service is a savings account, and the most common semi-formal instruments are credit from a kiosk, and merry go round savings.

Figure 15: Financial services used by savers & borrowers in Tanzania



In terms of demographics the headline findings are that:

- Men are more likely to use formal and informal financial services than women, but women are more likely to use semi-formal financial services than men, perhaps because of their high usage of group lending schemes, such as merry go round savings schemes;
- Urban inhabitants are more likely to use formal and semi-formal financial services, while rural inhabitants are more likely to use informal financial services;
- People in high income brackets are more likely

to use formal, informal and semi-formal financial services, but this is more pronounced in relation to formal financial services;

- People with more education are more likely to use formal, informal and semi-formal financial services, but this is more pronounced in relation to formal financial services;

4.4 Barriers to access

The results show that 29% of the survey sample has never used any form of borrowing or saving instruments. Figure 16 shows the main reasons given for not saving. The majority of people who have not saved (57%) have stated (multiple answers were allowed in the questionnaire) that it was due to not having or earning enough money to be able to save. Thus as with Kenya, it seems that demand side barriers are the most common binding constraint to savings identified by survey respondents. However, almost as many people – at 53% - said that they did not have the required start-up capital in order to open a savings account, and the third most common reason given for not saving – at 39% - were the low returns from saving, implying that interest rates on savings are deemed too low. Thus supply side factors do appear to be an important constraint on usage of financial services.

In terms of demographic differences:

- Male and female non savers show similar reasons for not saving, though not having enough money is cited by a higher percentage of women than men.
- Whereas more rural than urban inhabitants state that the main reason not to save is due to a lack of money to save, urban inhabitants give a lack of start-up capital, and poor returns to savings as more important reasons than rural inhabitants. Rural inhabitants place more importance on the lack of nearby facilities in which to save.

The main reasons given for not borrowing money are shown in figure 17 above. As with people who did not save, the most important reason for not borrowing is a lack of money, either not earning enough (35%) or not having enough money to repay debts (33%). A third of respondents (33%) also stated that they never took a loan because they had never needed one. However, several

supply side barriers to access were also cited, such as not knowing where to get a loan (21%), or charges that were too high (13%).

With regard to demographic differences:

- Men and women give similar answers with regard to reasons for not borrowing.

- Over thirty percent of both urban and rural inhabitants cited not needing a loan as the main reason for not borrowing. But, rural inhabitants were much less likely to cite all other reasons for not borrowing than urban inhabitants, perhaps because their demand for, and expectations of access to loans is much less.

Figure 16: Main reasons not to save in Tanzania

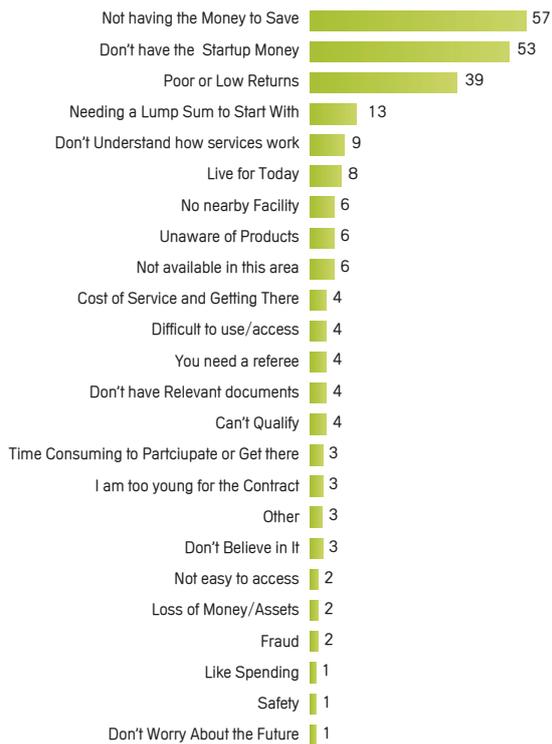
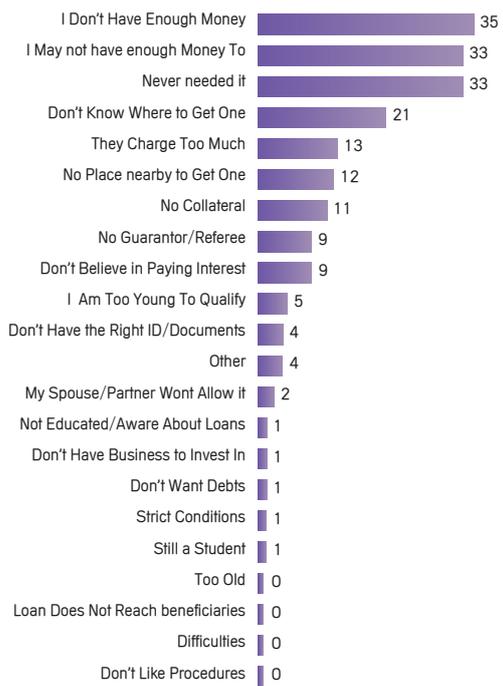


Figure 17: Main reasons not to borrow in Tanzania



5. Financial access comparison between Kenya and Tanzania

5.1 Summary findings

There are remarkably similar levels of saving and borrowing in Kenya and Tanzania, with just over 70% of the population saving and / or borrowing in both countries. Despite significant differences in the availability of financial services in the two countries, Kenyans borrow and save only slightly more than Tanzanians.

However, the financial instruments and providers they use are quite different. Usage of semi formal financial providers is considerably higher in Kenya than Tanzania, while use of informal providers is higher in Tanzania.

This appears to be explained to a large degree by the greater usage of ROSCAs, SACCOs and ASCAs in Kenya. MFIs are more important in Tanzania than Kenya, but the numbers served by MFIs are much lower in both countries than the other semi formal instruments such as ROSCAs.

There are some surprising differences between Kenya and Tanzania in relation to the reasons given for savings and borrowing. There is a higher level of borrowing in Kenya for most purposes, and particularly for consumption purposes such as day to day expenses and emergencies. However, Tanzanians are much more likely to borrow to start a business than Kenyans. In contrast, Tanzanians are less likely than Kenyans to save to start a new business, though they are more likely to save to expand a business. Kenyans are much more likely to save for education than Tanzanians.

Tanzania appears to suffer slightly more from supply side barriers (such as 'lack of collateral', or 'no place nearby to get it'), whereas Kenyans were more likely to cite demand side constraints, (such as 'I don't have enough money'), perhaps reflecting a different binding constraint in Kenya, which enjoys better overall financial services provision.

However, Kenyans complain more about high costs than Tanzanians, which is surprising, given that interest rates in Kenya tend to be lower, but may again reflect a different binding constraint, or perhaps a greater degree of financial literacy.

Understanding of financial services appears to be more of a problem in Tanzania, as more people cite 'don't know where to get one' and 'don't understand how services work' as reasons for not using financial services.

5.2 Comparing Kenya and Tanzania FinScope results

The results of the Kenya and Tanzania 2006 surveys were compared in order to highlight the differences and similarities in usage of finance between these two countries figure 18 demonstrates that Tanzania and Kenya show fairly similar levels of borrowing and saving as a proportion of the population. Sixty-nine percent of the Kenyan sample had some form of savings, compared with 63% of the Tanzanian sample, and 48% of Kenyans borrowed, compared with 43% of Tanzanians. Thus Kenyans both borrow and save slightly more than Tanzanians, which is perhaps unsurprising given that Kenya is relatively advanced in terms of financial sector development, and enjoys better performance indicators along a number of dimensions (see section 5.2 overleaf).

Figure 19 shows that Kenya has much higher usage of semi-formal financial services, and also formal financial services (though to a lesser extent), whereas Tanzania has higher usage of informal financial services. This is in line with the higher degree of financial sector development observed in Kenya.

Figure 20 compares the usage of specific types of financial services in Kenya and Tanzania. It highlights the far greater usage of semi-formal financial services such as Savings and Credit Cooperatives (SACCOs), Rotating Savings and Credit Associations (ROSCAs), Accumulating Savings and Credit Associations (ASCAs), and local shop credit in Kenya compared with Tanzania. It also shows the higher usage of informal financial mechanisms in Tanzania, such as loans and savings with family and friends. Savings and loans in kind were also very commonly used in Tanzania, but no equivalent question was asked in Kenya, so direct comparison is impossible.

Figure 21 compares the reasons given for borrowing in Kenya and Tanzania. It shows a higher level of borrowing in Kenya for most purposes, and particularly for consumption purposes such as day to day expenses

and emergencies. Interestingly however, Tanzanians are much more likely to borrow to start a business than Kenyans – indeed it is the most popular reason for borrowing given by Tanzanians altogether. However, as only 24% of borrowers in Tanzania gave a reason for borrowing, it may be that those who chose not to answer the question were more likely to be people who borrowed to make ends meet, rather than for what are perceived to be more justifiable reasons such as starting a business, which would explain why this scored so highly. If true, this may imply that Tanzania has a culture in which indebtedness is less socially acceptable than in Kenya.

Figure 18: Comparison of combined saving & borrowing behaviour in Kenya and Tanzania

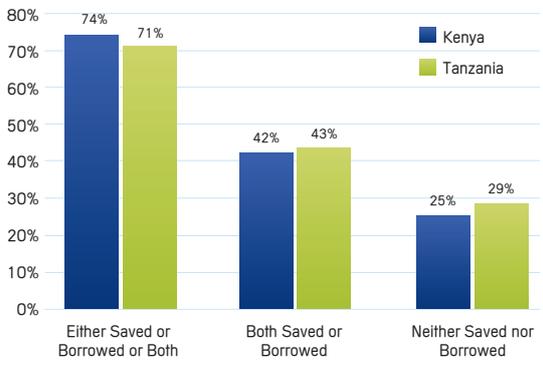


Figure 19: Use of formal, semi formal and informal Instruments by Savers & Borrowers in Kenya and Tanzania, % Savers & Borrowers

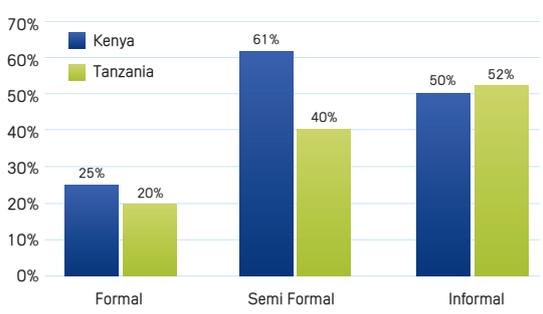


Figure 20: Financial services used in Kenya and Tanzania

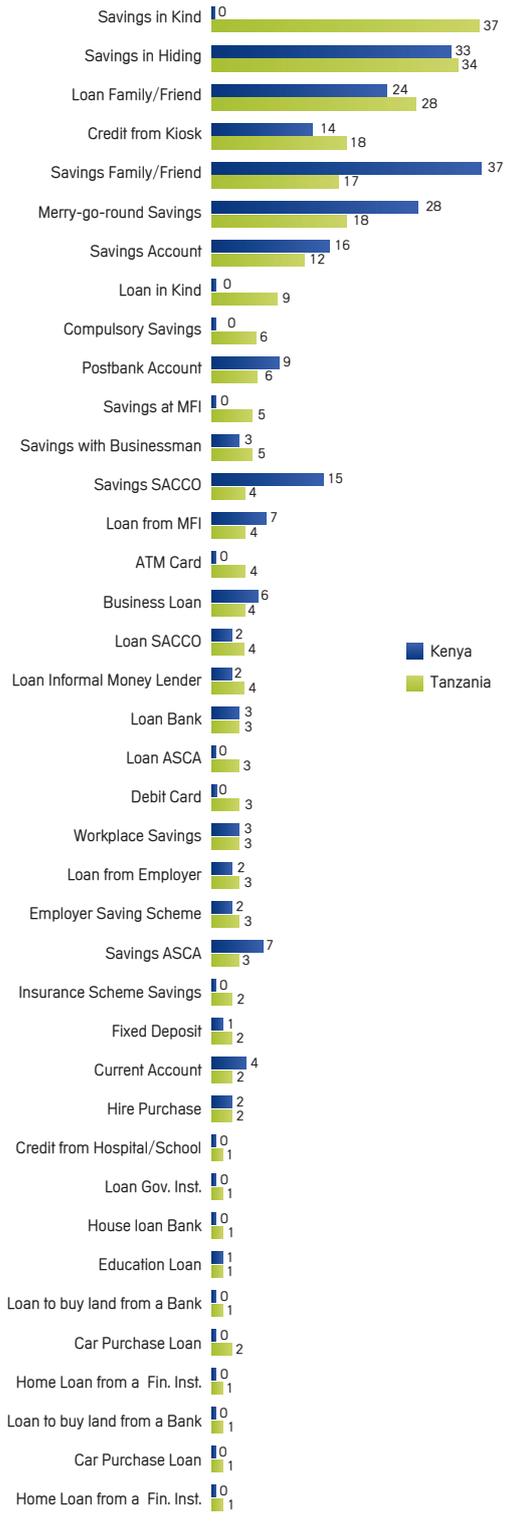


Figure 22 compares the reasons given for saving across Kenyans and Tanzanians. It shows a mixed picture. In contrast to borrowing, Tanzanians are less likely than Kenyans to save to start a new business, though they are more likely to save to expand a business. Kenyans are much more likely to save for education than Tanzanians.

Figures 23 compares the reasons given by respondents for not borrowing. It shows that a higher proportion of non-borrowers in Kenya cite a lack of money as a reason for not borrowing, which perhaps reflects the increased availability of financial services which means that demand side issues become more of a binding constraint to borrowing than supply side barriers.

Kenyan non-borrowers are also more likely to claim that charges are too high, which is perhaps surprising given that interest rates appear to be lower in Kenya than Tanzania on average. However, this may again reflect a different binding constraint to access in Kenya, or it may be because of higher financial literacy in Kenya compared with Tanzania.

Tanzanian non-borrowers are more likely than Kenyan non-borrowers to complain that they don't know where to get a loan, or that there is no place nearby to get a loan, potentially reflecting more limited financial provision in Tanzania than Kenya, and possibly a lower level of financial literacy.

Figure 21: Country comparison for borrowing in Kenya and Tanzania

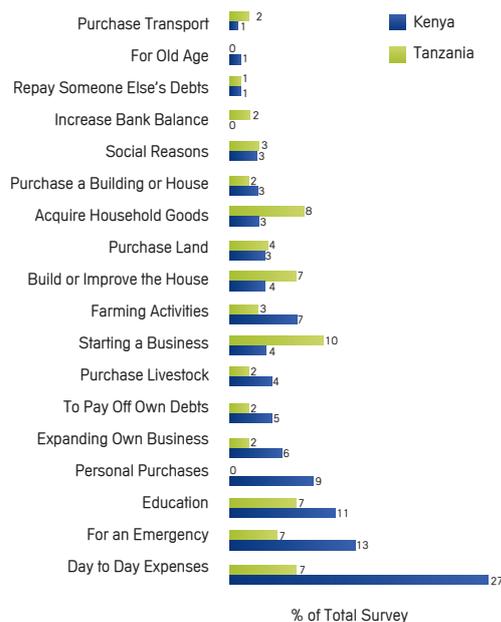


Figure 22: Country comparison for saving in Kenya and Tanzania

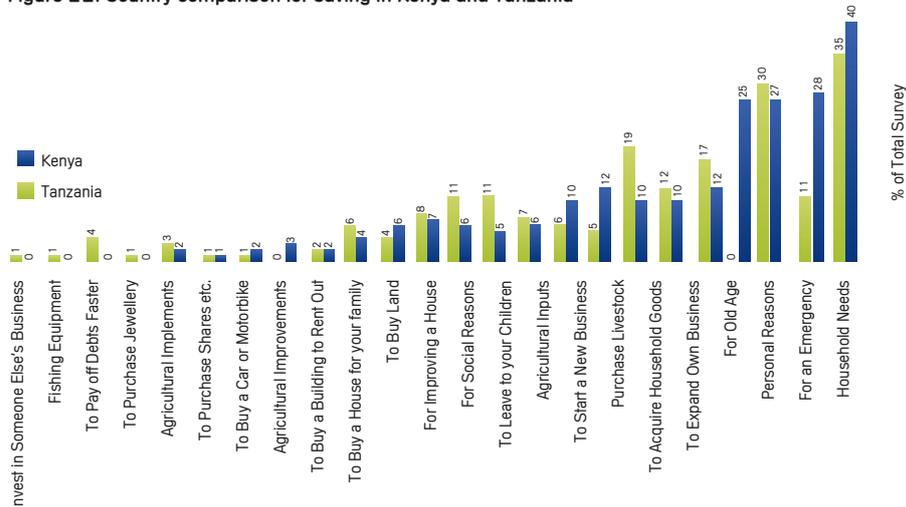


Figure 24 compares the reasons given by respondents for not saving. It shows a similar pattern to figure 23 with a higher proportion of Kenyan non-savers saying they do not have the money to save, and that the cost of the service is too high, while a higher proportion of Tanzanian non-savers say they don't understand how services work, or that there is no nearby savings facility.

5.3 Possible supply side factors affecting provision

It is not straightforward to draw conclusions about the determinants of overall access to financial services. It is not clear to what extent it is dependent on the financial sector policy framework, or whether it simply reflects the overall level of development and other country specific factors

such as population density. As more cross-country data on access to financial services becomes available going forward, it should facilitate more in-depth analysis of these determinants.

The financial sector appears to be more developed in Kenya than in Tanzania, as evidenced by Tables 6 and 7 below. The data shows that Kenya has more financial institutions of various kinds, and that it performs better on a range of indicators. For example, it shows higher levels of both credit and deposits relative to GDP in Kenya, and although banking sector concentration is higher (as measured by ownership of assets at least), the data suggests that the sector is nonetheless more efficient, with a lower cost to income ratio.

Figure 23: Comparable reasons not to borrow in Kenya and Tanzania

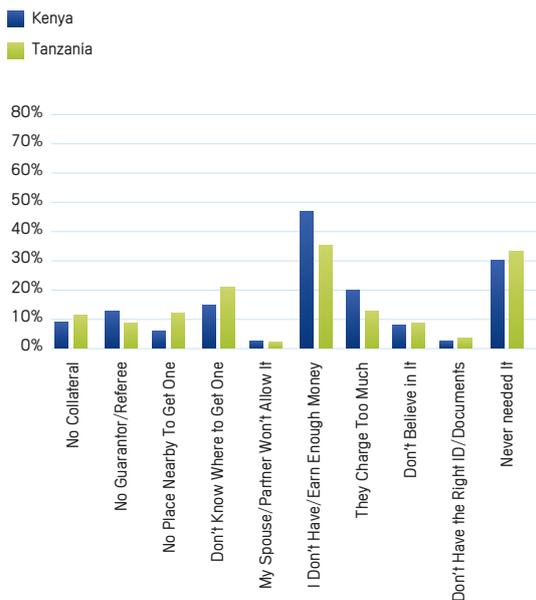


Figure 24: Comparable reasons not to save in Kenya and Tanzania

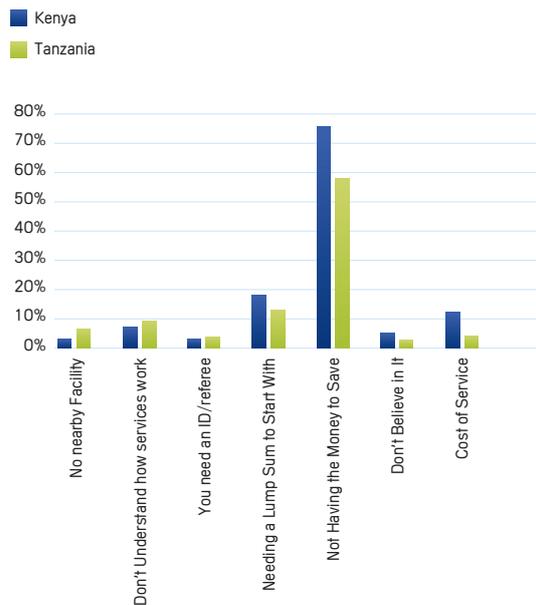


Table 6: Financial services providers in Kenya and Tanzania

Financial services providers:	Kenya*	Tanzania**
Commercial banks	39 (10 of which are foreign owned)	25 (16 of which are foreign owned)
SACCOs	5000+	3500+
MFIs	100+	60+

* Source: Central Bank of Kenya, 2008

** Source: Bank of Tanzania, 2009

Table 7: Comparison of banking sector indicators in Kenya & Tanzania

Measure	Kenya (%)	Tanzania (%)
Private Credit by Deposit Money Banks / GDP	22	12
Bank Deposits / GDP	31	21
Bank Credit / Bank Deposits	71	62
Net Interest Margin	7	6
Bank Concentration*	78	49
% total retail bank clients served by top 3 banks	59	77
Bank Return on Assets	3	2
Bank Return on Equity	20	25
Bank Cost to Income Ratio	56	78
* Defined as the ratio of the three largest bank assets to total banking sector assets		

Source: WB (2008)

Table 8 shows that the interest rate spread is also lower in Kenya than Tanzania, with lending rates slightly lower and savings rates higher.

Table 8: Comparison of interest rates in Kenya & Tanzania

	Kenya* (as of June 2008)	Tanzania** (average for 2008)
Savings deposit rates	4.48%	2.66%
Short term lending rates	14.06%	15.01%
Spread between lending and savings rates	9.58%	12.35%

* Source: Central Bank of Kenya, 2008

** Source: Bank of Tanzania, 2009

There has been significant expansion in accounts opened in Kenya in recent years, through financial institutions such as Equity Bank, and this has created greater competition in the market for retail customers, which bodes well for overall levels of access to formal financial services. However, the ability of formal financial institutions to provide cost effective services to the poorest people in the country is still fairly limited, and reliance on semi-formal and informal providers remains high. Thus semi-formal providers such as SACCOs, local shops, and ROSCAs, remain a key plank of financial services provision in Kenya.

Appropriate regulation for semi-formal providers such as these is important to underpin a more inclusive financial sector, but represents a tricky balance between providing better depositor protection from fraud and instability, and not over-burdening the sector with regulation in a way that thwarts its growth and development. Expert opinion suggests that Kenya may have greater regulatory capacity than Tanzania, but that neither has a perfect regulatory model.

In Tanzania, MFIs operate under the Banking and Financial Institutions Act (BAFIA) of 1991, the Bank of Tanzania Act of 1995 (BOT), the Cooperative Societies Act of 1991 and the Public Finance Act. Revisions to the BAFIA of 1991 include⁹:

- a licensing framework for MFIs;
- the introduction of Financial Cooperative Societies¹⁰ (FICOS) licensed and supervised by the Bank of Tanzania;
- the establishment of a Client Identification and Client Reference system (operated by private credit reference institutions);
- a revision of accounting standards to incorporate MFIs;

⁹. Rubambey, 2005.

¹⁰. SACCOs with recorded deposits equal to or greater than the minimum requirements for MFIs.

- the introduction of fair lending and collection practices;
- requirements to publish financial information; and
- allowing banks and MFIs to use correspondence contracts, which can be completed, signed and approved by mail.

MFIs are regulated with a view to ensuring a level playing field across all institutions (Rubambey, 2005). However, microfinance institutions that do not take deposits are not subject to financial regulation and supervision. MFIs with multiple branches and FICOS have a minimum core capital requirement of US\$ 800,000 whilst single branch MFIs need US\$ 200,000;

SACCOS operate under the Cooperative Societies Act of 1991 and the BAFIA of 1991; however small SACCOS (with a core capital below US\$ 200,000) are not supervised by the Bank of Tanzania, though they are still subject to prudential supervision (Ministry of Finance of Tanzania, 2000).

In Kenya, deposit taking non-NGO MFIs are regulated by the Central Bank of Kenya under the Microfinance Act of 2006. NGO MFIs operate under the NGO Coordination Act and are, in principle at least, self regulated. A large number of NGO MFIs work under the Association of Micro-Finance Institutions (AMFI), which has a code of standards, although it is not clear to what extent this is monitored or enforced by AMFI.

SACCOS previously operated under the Cooperative Societies Act of 2004, but there is a new SACCO Societies Act (2008) although that has yet to come into force. New regulations have been developed, but have not yet been gazetted, and the SACCO Societies Regulatory Authority (SASRA) is not yet operational. Meeting the new requirements has been challenging for many SACCOS. In addition, SACCOS must have a minimum of just ten members, and some argue this is too low to be sustainable.

In broad terms the views of in-country experts suggest that Kenya has had a more stable, liberal financial sector policy over the years, while policy in Tanzania has been more unpredictable and often more interventionist. It is argued that this can help to explain the higher degree of financial sector development in Kenya, as the policy framework created a more conducive environment

for the growth of private financial institutions, whereas in Tanzania the policy framework appears to have sometimes undermined financial sector development.

A recent example of this is provided by developments affecting SACCOS in Tanzania. There has been a sharp increase in the number of SACCOS in Tanzania in recent years, as a result of the Government's decision to establish a 'National Empowerment Fund' with the aim of improving access to finance. Under this policy, the Government said it would make 21 billion Tanzanian Shillings available in credit, which would be disbursed through SACCOS.

This led many people to establish new SACCOS specifically in order to take advantage of this initiative, and SACCOS now have average membership of only about 160 people, which some deem to be unsustainable. It has been argued that people viewed this money as a handout rather than a loan, and as a result SACCOS saw a huge rise in non-performing loans, which has contributed to a culture of non-payment, significantly weakening the SACCO sector.

Comparing the experience with financial sector development in Kenya and Tanzania suggests that a liberal, predictable, and non-interventionist approach may be the best way to support financial sector development.

6. Econometric results for Kenya

In this section we present the results of econometric analysis undertaken using the Kenya 2006 and 2009 survey results. Unfortunately significant data gaps in the Tanzania dataset relating to demographics and the stated use of financial services, have precluded us from undertaking similar analysis on the Tanzania dataset.

We first present results of a regression which investigates whether the probability of using formal¹¹ rather than informal financial services is related to whether an individual is using financial services for investment or consumption purposes. We then examine whether supply side barriers to access are related to the probability that an individual undertakes borrowing or saving for investment purposes.

First, we undertake a regression using a linear probability model¹² of the form:

$$P_{ihd} = \alpha_d + B_1F + B_2X_{ihd} + B_3H_{hd} + \varepsilon_{ihd} \quad (1)$$

using a sample of all those people who have borrowed, where P_{ihd} is a discrete variable equal to 1 if the person i in household h and district d uses formal borrowing or loan facilities, and a value of 0 if they use informal borrowing or loan facilities.

We regress this variable against a dummy variable F with a value of 1 if that individual has borrowed for investment purposes, or equal to 0 if the person has only borrowed for consumption purposes.

We also include a range of other explanatory factors (for further discussion see Annex 3):

- individual characteristics (X_{ihd}) includes a set of dummies for main occupation, another for language used to answer the questionnaire, the age, gender and marital status of the respondent, and, finally the educational attainment.

- Household characteristics (H_{hd}) includes variables capturing whether the household is located in a rural or urban area, whether it receives remittances from within Kenya or from other countries, and a set of variables capturing housing conditions (i.e. type of dwelling, whether owned, quality of building, source of lighting, source of water and sanitation etc.).

We also include district fixed effects (α_d), in all equations, meaning that we control for district characteristics that affects all district residents equally. It also implies that we exploit within district variation. For example, we are comparing rural and urban households within a district and not just comparing districts that are mostly rural versus urban districts.

We weight observations to obtain results that are representative at the country level. We also correct for the presence of heteroskedasticity by using robust standard errors and we cluster standard errors at the sub-district level to allow for correlation of errors across households, within sub-districts.

We then run a regression of the same form for savings, i.e. using a sample of all those people who have saved, where P_{ihd} is a discrete variable equal to 1 if the person i in household h and district d uses formal savings facilities, and a value of 0 if they use informal savings facilities, and then regressing this variable against a dummy variable F with a value of 1 if that individual has saved for investment purposes, and equal to 0 if the person has saved only for consumption purposes. The results are shown in Table 9 and 10 opposite.

¹¹ Where formal savings products are defined as: a current account, savings account, fixed deposit bank account, Postbank account or savings at a microfinance institution, and where formal credit products are defined as: a personal or business loan from a bank, loan from a microfinance institution, loan from a government institution, loan to buy / build a house or buy land from a bank, building society, or government institution, an overdraft, or a credit card.

¹² A major risk associated with the use of a linear probability model is that predicted values might take values outside the 0-1 range. However, in the regressions presented here, around 95% of predicted values are within range. Additionally, as opposed to Probit models, this model lends itself well to fixed effect estimations of the kind presented here.

Table 9: Relationship between usage of formal financial services and investment using Kenya 2006 survey results.

	If use formal loans	If use formal savings
Use of loan to invest	0.16 (0.02)***	
Use of savings to invest		0.09 (0.02)***
Controls incl.	Yes	Yes
Observations	1875	2811

Standard errors are in (); *** significant at 1%, ** at 5%, * at 10%.

Table 10: Relationship between usage of formal financial services and investment using Kenya 2009 survey results.

	If use formal loans	If use formal savings
Use of loan to invest	0.16 (0.02)***	
Use of savings to invest		0.10 (0.01)***
Controls incl.	Yes	Yes
Observations	3487	5741

Standard errors are in (); *** significant at 1%, ** at 5%, * at 10%.

The results from running the regression using the 2009 survey show there is a positive relationship between using loans to invest and using formal financial services. People that use loans to invest are 16 percentage points more likely to use formal financial services than people who take loans to consume, even after controlling for individual and household characteristics. This is a significant result at the 1% level.

The results for saving show that people who use savings to invest are 10 percentage points more likely to use formal financial services than people who use savings to consume, after controlling for individual and household characteristics. This is again significant at the 1% level.

The result is similar in magnitude for both survey years. These are strong results, showing an important relationship between saving / borrowing for investment purposes, and the use of formal financial services, that is independent of individual characteristics that might also affect investment decisions.

However, these regressions do not tell you the direction of causation. Thus, it could be that using formal financial services encourages or enables an individual to invest, in a way they might not otherwise be able to do (because informal or semi-formal financial services are unavailable or unsuitable perhaps). And / or it could be because a desire to invest encourages or enables individuals to use formal financial services – perhaps because having a specific investment purpose in mind (which should provide a positive return in future), helps people to access formal financial services because they appear to be a better credit risk, or a potentially more profitable customer.

Either way it establishes a link between access to formal financial services and investment, and hence growth, and shows that formal financial services are more suitable for investment purposes than other forms of provision, perhaps because they enable people to access larger sums of money, or to save in a safer or more stable environment than semi-formal and informal mechanisms. However, in order to understand the direction of causation better, we need to investigate the extent of barriers to access faced.

We now try to establish whether supply side barriers to access are related to the probability that an individual undertakes borrowing or saving for investment purposes.

The questionnaire asks the reason why respondents do not hold a bank account. Some of these can be considered supply side barriers to access (e.g. "it's expensive" or "the branch is too far"), while others reflect a lack of demand for financial services (e.g. "I prefer dealing in cash" or "I don't need a bank account"). We categorise these as either supply or demand side constraints as set out in Table 11¹³. We construct our indicator of barriers to access from this data, including only those we have categorised as supply side constraints, as barriers to access.

¹³ Noting that some of these could be categorised as either. For example, 'you do not have a job' could be a supply side constraint if it meant that employment was an eligibility requirement for opening a bank account, or it could be a demand side constraint if the survey respondent simply meant that they did not have a monthly pay packet to save in an account.

Table 11: Reasons why people are not banked, as listed in Q.A16a of the Kenya 2006 survey

Supply side barriers	Demand side constraints
You don't want to pay service fees	You don't have money to save
You have to keep a minimum balance in the bank	You don't have a regular income
It's expensive to have a bank account	You prefer dealing in cash
You can't afford to	You prefer to use other options rather than a bank
The bank is too far from where you live	It's cheaper to use someone else's account
It takes too long to get your money	You use someone else's bank account
You do not have a job	You can't read or write
You don't have a national ID	You earn too little to make it worthwhile
You don't have a referee	You don't need a bank account
You don't qualify to open an account	You don't trust banks
You are too young to have a bank account	Someone you know has lost money they kept at a bank
You don't know how to open a bank account	
They can't speak your language	
You are not allowed to open an account by your partner / spouse	

We then run a regression in which a discrete variable capturing whether an individual saves to invest (through any kind of savings mechanism including informal ones) is regressed against a dummy variable indicating whether or not an individual has cited any supply side barriers to holding a bank account, plus the usual set of control variables. (Note: all individuals who do hold a bank account are assumed not to face supply side barriers to holding a bank account. This seems a reasonable assumption, but in any case there is no other option, given that the question about barriers to access in the survey was only asked of people who did not hold a bank account.)

Thus we undertake a regression of the same form as in equation (1) above, but this time where $P_{i,hd}$ is a discrete variable equal to 1 if the person i in household h and district d saves to invest, and a value of 0 if they don't, and where the dummy variable F takes a value of 1 if that individual has cited supply side constraints to holding a bank account, and equal to 0 if they haven't.

We then also rerun the regression looking at the relationship between access barriers and whether an individual borrows to invest, using the same barriers measure as in the previous regression (e.g. supply side constraints to holding a bank account). It would have been better to use a variable capturing barriers to credit for this purpose, but in the survey the question about barriers to credit was only asked of individuals who had never borrowed money, so this was not possible. We also try regressions which include the demand side constraints to using a bank account as a separate explanatory variable. The results are presented in Tables 12 and 13 below:

Table 12: Bank-constrained individuals and investment from Kenya 2006 survey

	Use of savings to Invest	Use of savings to Invest	Use of loan to Invest	Use of loan to Invest
Supply side barriers	-0.10 (0.02)***	-0.08 (0.02)***	-0.03 (0.01)**	-0.02 (0.01)*
Demand side constraints		-0.18 (0.02)***		-0.11 (0.02)***
Controls incl.	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Observations	3951	3951	3951	3951

Table 13: Bank-constrained individuals and investment from Kenya 2009 survey.

	Use of savings to Invest	Use of savings to Invest	Use of loan to Invest	Use of loan to Invest
Supply side barriers	-0.04 (0.01)***	-0.04 (0.01)***	-0.08 (0.02)***	-0.06 (0.01)***
Demand side constraints		0.11 (0.02)***		0.0003 (0.01)
Controls incl.	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Observations	6598	6598	6598	6598

The 2009 survey results show that individuals who cite supply side barriers to accessing a bank account are 4 percentage points less likely to use savings to invest than people who do not, after controlling for individual, household and district characteristics. This is significant at the 1% level.

However, the relationship with demand side constraints is positive implying that individuals who cite demand side constraints to having a bank account are 11 percentage points more likely to use savings to invest. That is not consistent with the 2006 results shown in Table 12 however, which suggest a negative relationship. But in both cases, the inclusion of the demand side constraints variable has little effect on the size or significance of the supply side barriers variable, which helps to strengthen the conclusion that supply side access barriers are independently and negatively related to people's ability to save to invest.

People who cite supply side barriers to accessing a bank account are also 6 - 8 percentage points less likely to borrow to invest than people who do not. This is significant, and larger than the relationship with savings based investment, and suggests that access to a bank account can also help individuals to access credit.

Once again, the regression does not establish causation however. So it is possible that causation goes the other way to some extent, i.e. that saving or borrowing to invest itself reduces supply side barriers to access because it improves the perceived creditworthiness or potential profitability of the individual.

In addition, there may be problems of endogeneity in this analysis, given that individual investment decisions and access barriers are likely to be interrelated, and perhaps similarly affected by individual characteristics. So in order to test the results and shed more light on the direction of causation, we have undertaken instrumental variable analysis – whereby regressions are carried out using an exogenous variable which can explain some of the variation in the access barriers variable without affecting the decision to invest in any other way. So for example, one of the instrumental variables we have used is the number of bank branches in an area. This helps us to unpick causality as investment decisions are unlikely to affect the number of bank branches in an area. Overall the results suggest that causation does run in the expected direction (although

bi-directional causality remains a possibility), and thus confirm that supply constraints do affect the ability of individuals to undertake productivity-enhancing investments.

Thus in sum, we can conclude that these results support our hypothesis that individuals facing supply side barriers to access are less likely to invest, and suggest that lifting barriers to access to formal financial services might increase the proportion of individuals carrying out productivity-enhancing investments.

Finally, the effect of location (urban / rural) and gender does not show a consistent pattern across years or across financial instruments; there is not enough evidence to suggest any empirical regularity relating to urban or gender bias. In 2006, there was no significant difference in the use of formal loans or in the use of loans to invest between rural and urban households or between male and female. Even though urban households were around 4% more likely to use formal savings than rural households and males were 3% more likely than females, there were no significant differences in the use of savings for investment purposes. In 2009, a small urban/rural gap shows with respect to loans: urban households were 4% more likely to use formal loans and 4% more likely to use loans for investment than rural households. However, there is no difference in the use of savings. Women were 3% more likely to save formally, whereas men were 4% more likely to save for investment purposes.

7. Conclusions and policy implications

Our analysis of the FinScope survey data shows that there is a clear demand for financial services across all sections of the population. Individuals use financial services for a range of purposes, from day to day needs, to productivity enhancing investments – in activities such as education, starting a business, or purchasing livestock or agricultural inputs - which are likely to contribute to higher future income and hence growth. This implies that improving access to financial services can contribute to higher economic growth.

Semi-formal and informal financial services are very important in the overall landscape of financial access, and are much more widely used in Kenya and Tanzania than formal financial services. Semi-formal forms of provision are used much more in Kenya than in Tanzania, where informal provision dominates. These results are in line with the higher degree of financial sector development expected in Kenya on the basis of other (supply side) indicators.

Yet despite significant differences in the profile of financial services provision between the two countries, levels of saving and borrowing are remarkably similar. It seems that where formal financial services are unavailable, unsuitable or expensive, people seek alternative, more accessible semi-formal or informal forms of provision.

However, the survey results show that people do not always confine themselves to one form of provision, and some use a combination of formal, semi-formal and informal financial services, implying that the different types of financial services and mechanisms are to some extent complements rather than substitutes.

This suggests that, while the provision of formal financial services is likely to remain the ultimate goal for policy, efforts to promote financial access should also provide a supportive environment for these other forms of provision to flourish, whilst balancing that objective with the need to maintain adequate levels of consumer protection from fraud and financial instability. Indeed, it seems possible that increased financial inclusion may most easily be achieved by widening access to such semi-formal forms of provision

However, our econometric analysis shows that formal financial services tend to be used more for investment purposes; people who borrow specifically to invest are 16 percentage points more likely to use formal financial services than

people who borrow to consume, after taking other possible explanatory factors into account. And people who save to invest are 10 percentage points more likely to use formal financial services than people who save to consume.

This suggests that using formal financial services encourages or enables an individual to invest, in a way that they might not otherwise be able to do (because informal or semi-formal financial services are unavailable or unsuitable perhaps). It could also be because a desire to invest encourages or enables individuals to use formal financial services – perhaps because having a specific investment purpose in mind (which should provide a positive return in future), helps people to access formal financial services because they appear to be a better credit risk, or a potentially more profitable customer.

Either way, it establishes a link between access to formal financial services and investment - and hence growth - and shows that formal financial services are more suitable for investment purposes than other forms of provision, perhaps because they enable people to access larger sums of money, or to save in a safer or more stable environment than semi-formal and informal mechanisms.

Thus it seems that while the goal of financial inclusion may be promoted through semi-formal financial services, growth can best be promoted by improving access to formal financial services.

Barriers to access are a significant problem however. Although the most commonly cited reasons for not borrowing or saving reflect a lack of demand for financial services (i.e. because people do not have the money to save, or do not need a loan), which suggests that the binding constraint to usage is often on the demand side rather than the supply side, many people also cite supply side barriers to access e.g. high charges, a lack of collateral, or the fact that there is nowhere nearby that provides a savings or credit facility.

The results suggest that there are greater supply side barriers to access in Tanzania, whereas demand side constraints to borrowing and saving are more of a binding constraint in Kenya. These findings are backed up by other indicators which show that Kenya is more financially developed than Tanzania. The main supply side barriers to access identified by survey respondents in both countries relate to:

- high charges - which was more commonly cited as a problem in Kenya;
 - a lack of financial literacy i.e. not knowing where to access a service, or how services work, which seems to be more of a problem in Tanzania, and amongst women and rural inhabitants in Kenya;
 - not having a nearby financial services facility, which was most commonly cited as a problem in Tanzania, especially amongst rural inhabitants;
 - difficulty meeting qualifying requirements such as the need to have collateral, a guarantor, or an initial lump sum; and
 - the lack of required documentation.
- cell phone banking, and e-banking, and the use of new distribution channels for financial services, such as local stores;
 - investment in financial literacy or marketing programmes to improve understanding of financial services and knowledge about their availability, particularly for women and inhabitants of rural areas whom our findings suggest have lower levels of financial literacy on average;
 - assistance in the establishment of credit bureaus and asset registries to make it easier for people to qualify for loans; and
 - provision of support for regulatory reform and capacity building to create the right environment and providing incentives for financial providers to expand access, which appropriately balances the need to protect against instability, fraud and money laundering, with the need to encourage wider access to financial services.

Our econometric analysis shows that supply side barriers to accessing a bank account can reduce a household's ability to invest. Individuals who cite supply side barriers to accessing a bank account are 4 percentage points less likely to save for investment purposes than people who do not. They are also 6 - 8 percentage points less likely to borrow for investment purposes, which suggests that access to a bank account may play an important role in helping individuals to access credit. These are strong results, and provide the first quantitative estimates of the negative impact of access barriers on household investment.

These results thus provide new evidence of the importance of promoting financial inclusion and tackling barriers to accessing formal financial services, in order to contribute to investment and growth. They are also consistent with other studies; for example, a recent World Bank (2008) growth diagnostic analysis of Kenya concludes that investment by smaller businesses could be constrained because of poor and costly access to finance, and that improving access to finance for small and rural entrepreneurs is a priority.

The kinds of policies and interventions that have been used to tackle the most commonly cited access barriers identified in this study include:

- efforts to reduce costs and increase geographical availability by supporting the development and roll-out of innovative cost saving technologies and business models such as mobile banking,

Thus in sum, this study provides the first concrete, quantitative estimates of the potential impact of access barriers on household investment. The findings suggest that barriers to access could have potentially significant implications for growth, as access to financial services can underpin the investment that is crucial to enable households to build up the physical and human capital that contributes to higher income going forward.

These results thus provide strong, new evidence of the importance of tackling barriers to access. Policies and interventions designed to reduce barriers to access could help to stimulate higher levels of household investment, thus making an important contribution to growth and poverty reduction in developing countries.

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CHAPTER 4

Informality and market development in Kenya's financial sector*

MARKKU MALKAMÄKI

1. Introduction

This paper discusses the role of informal financial groups in extending access to financial services in Kenya based on the data from the Financial Access 2009 Survey. We also, when possible, compare the results with the Financial Access 2006 Survey (FA06).

Major trends highlighted in by the FinAccess 2009 survey include the strong expansion of semi-formal sector use (mostly M-PESA) and formal bank use (mostly Equity bank). Whilst one would anticipate an upward trend in financial inclusion in terms of formal and semi-formal provision in the context of Kenya's rapidly expanding financial sector, we also see a more surprising rise in the use of informal financial mechanisms. Even more striking is the fact that the increase in ROSCA and ASCA use since 2006 is a strongly urban phenomenon. This trend is puzzling since it is towns and urban areas where the formal and semi-formal financial services are most easily available. Both of these findings indicate that informal groups and formal financial institutions are not simply substitutes for each other, but that clients value both the formal and informal services, and that these different institutional forms may even be complementary.

The survey is also suggestive of another counter-intuitive factor, namely that the use of informal groups correlates with higher levels of education than previously, and also, in the case of ROSCAs, more food secure households. This points to a possible correlation between informal group usage and slightly wealthier categories than was the case in 2006. Lastly, there has been a marked shift in the relationship between gender and informal groups since 2006, in that fewer men now use these groups, and they are therefore increasingly associated with women.

The paper explores these and other factors relating to Kenya's informal financial sector, drawing on the data sets from FinAccess 2006 and 2009. Section 2 explains the classificatory approach taken to analysis of the group level data. Section 3 discusses the importance of informal groups in relation to other financial services and goes on to compare the evidence available on ROSCA and ASCA use between the 2006 and 2009 FinAccess surveys. Section 4 then analyses in more depth the FinAccess 2009 survey results. We consider questions from FinAccess 2009 relating to group size and membership, volume of savings mobilised through groups, group organisation, and motivations for membership. We review each of these areas in turn. Section 5 concludes.

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2. Definition of groups

There are several types of financial self-help groups in Kenya. In the FinAccess questionnaire, informal groups were divided into four main categories, namely Welfare groups (WG), Rotating Savings and Credit Associations (ROSCAs), Accumulating Savings and Credit Associations (ASCAs) and investment groups.

Welfare Groups do not intermediate funds but provide financial support for members and their next of kin in the case of illness, death etc. ROSCAs and ASCAs facilitate saving and lending between members. They are similar to each other in the sense that there are both voluntary and independent groups with their own rules, and no outside organisation has control over them. The central difference between ASCAs and ROSCAs is that each time a ROSCA group meets and savings are collected, the whole pot is then immediately redistributed in the same meeting to one or several members of the groups. ASCAs by contrast lend the funds to willing borrowers and charge interest. The interest paid on the loans then accumulates in the group fund. At the end of the year ASCA members often divide all or part of the profits (from interest payments) to the members. The majority of investment groups have invested in a joint income generating project, business or property. Investment groups that invest in securities traded on the Nairobi Stock Exchange has also been a recent phenomenon. The groups in their various capacities provide a variety of products including savings, loans, investment and some form of insurance.

However, the categorisation of groups is not a straightforward exercise, since many of these groups may in fact run some of these mechanisms in parallel. Hence in the section of the questionnaire devoted to a more detailed examination of informal group membership, respondents were asked to select the functions of the group(s) that they belonged to².

The different options from which the respondent could select were:

1. We help each other out for things like funerals
2. We lend money to each other in the group and repay loans with interest
3. We distribute any additional income the group makes amongst the members
4. We collect money and give to each member a lump sum (pot) in turn
5. We invest in stock market
6. We make other kinds of investments e.g. property, business

The aim of the first option was to capture welfare groups or welfare function within the group. The purpose of second and third alternative was to capture groups that were ASCAs. The fourth option catered for ROSCAs and the fifth and sixth option were meant to cover investment groups

Indeed, the majority of respondents did select several responses to describe the functions of their group, meaning that the majority of groups had multiple functions. Table 1 indicates that while the majority of groups reported were single function ROSCAs, many ROSCAs also contain welfare functions, and ROSCA mechanisms often are combined with other types of groups. ASCAs on the other hand are rarely operating as an ASCA alone and are more often combined with other functions. Similarly investment groups are most likely to be combined with other functions than to be free standing.

Table 1. Group operations: multiple functions

Description	Frequency	Percent
R	2 461 069	13.2
R/W	1 477 310	7.9
W	613 038	3.3
A	448 949	2.4
A/W	435 865	2.3
A/R/W	348 595	1.9
A/R	332 233	1.8
INV/A/W	231 207	1.2
INV	197 363	1.1
INV/W	166 155	0.9
INV/A/R/W	164 702	0.9
INV/R/W	126 764	0.7
INV/A	109 076	0.6
INV/R	77 700	0.4
INV/A/R	41 674	0.2
Total	7 231 700	38.7

R= ROSCA, W= Welfare group, A= ASCA,
INV= investment group

² This approach was different to that in the 2006 survey in which respondents selected the type of group to which they belonged. This change responded to concerns raised as a result of the 2006 survey that this scenario may be more complex than a single response allowed.

As table 1 indicates 38.7% of the respondents belonged to at least one informal self-help group, be it a ROSCA, ASCA, Welfare or investment group or a combination of them. Further, many respondents belonged to more than one group: about 10% of the respondents belonged to at least two groups and 3% belonged to at least three groups.

Since the questionnaire did not ask what was the main function of groups that had several functions, it is not possible to know whether a group with, for example, both ROSCA and Welfare functions is mainly a ROSCA with a minimal welfare contribution or whether it is a Clan welfare groups which main responsibility is to organise and fundraise for the funerals but that also has a small ROSCA. The same applies for other combinations.

However, for the purposes of further analysis, it was necessary to simplify table 1 to a shorter list. The approach taken has therefore been to classify the groups based on a view of their most sophisticated or complex function. For this exercise therefore, investment groups have been taken as the most sophisticated and complex form because they usually require book-keeping skills and longevity in order that the benefits of an investment can be reaped. ASCAs also require book-keeping skills and thus treated as more complex than ROSCAs which do not usually require these (although records may be kept). Since transactions in the Welfare groups do not usually involve financial intermediation and may only require that a record of contributions is kept, they are treated as the least complex form³.

Based on this classification 4.1% of the respondents belong to Welfare groups, 23.2% to ROSCAs, 10.0% to ASCAs and 6.8% to investment groups.

Another way to look at the figures is on an inclusive basis, i.e. show those who have access to Welfare, ROSCA, ASCA and investment functions. In that case 20.9 % of the respondents had access to Welfare, 28% to ROSCA, 12.5% to ASCA and 6.2% to investment function.

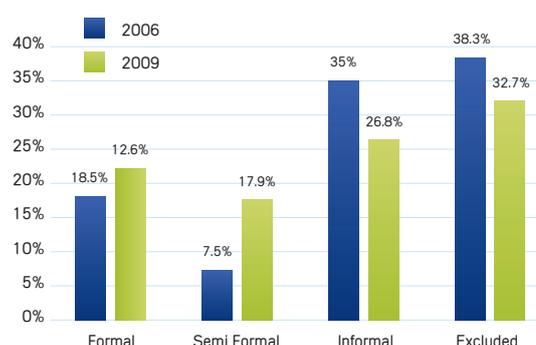
³ The exception to this approach has been in the combination of investment clubs and ASCAs in those cases where the investment clubs don't invest in Nairobi Stock Exchange. While the investment clubs investing in businesses or buildings can be considered as more sophisticated, the ASCA function is usually undertaken on a much more frequent basis and forms the core of the groups activities. Where groups combine these two functions they have been treated as ASCAs. With this exception, the classification of respondents groups therefore responds to the most sophisticated function that it was reported to undertake. See Annex 1 for the detailed classification.

3. ROSCA and ASCA use in 2006 and 2009

3.1 Informal groups and financial access strands

Access strands indicate the proportion of the population using formal, semi-formal and informal⁴ services, and give the proportion of those completely excluded from financial services. They are calculated on a mutually exclusive basis⁵ and figure 1 charts the access strands in Kenya. In 2006 18.5% of the population used formal financial services (have an account in the bank or in the Postbank or have an insurance product). In 2009 the share of formal service users had increased to 22.6%. Similarly the share of formal other service users had increased from 7.5% to 17.9% in 2009. The increase can largely be attributed to the introduction of the M-PESA service. Consequently the share of people that only use informal services has reduced from 35% to 26.8%. The share of the financially excluded population shrank from 41.3% in 2006 to 32.7% in 2009.

Figure 1: Financial Access Strands in Kenya in 2006 and 2009



The graph shows that the informal access strand still represents the largest proportion of the financially included population. Where the Access Strand concept presents a confusion is in its exclusivity. It does not tell us about the overlaps in usage across formal, 'formal other' and informal. If we look at the absolute numbers using these different types of financial service, we see that the overall proportion of the population using informal sector services has in fact increased from 37.5% to 38.7%. Furthermore, as table 2 shows that the 'informal' category is heavily dominated by use of informal groups.

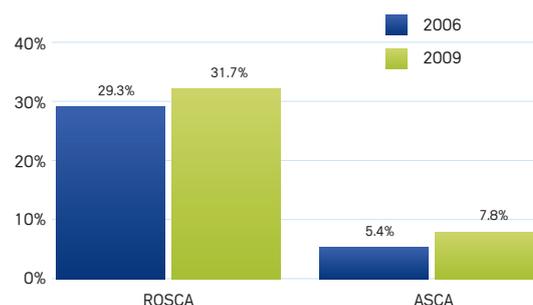
Table 2. Financial service use – % of adult population using informal financial services

	2006		2009	
	Savings	Loans	Savings	Loans
ROSCA	29.3	--	31.7	--
ASCA	5.4	1.7	7.8	1.8
Local shop	--	22.8	--	24.3
Group of friends	10.9	--	5.5	--
Employer	--	0.9	--	0.5
Buyer	--	0.9	--	1.2
Informal moneylender	--	0.7	--	0.4

3.2 Increased informal group use

In 2009 38.7% of the population (7.2 million Kenyans) belonged to at least one informal group that provides financial services. This is up from 37.5% in 2006. Increased numbers were using two or three groups also, 9.9% reported belonging to two groups and 3% to three or more groups compared to 6.0% and 1.8% in 2006. The implication is that groups may be complementary to increased formal financial service use rather than competitive to it. At the same time, some of the reduction in exclusion may be accounted for by first use of informal groups.

Figure 2: Increased ROSCA and ASCA use



⁴ Most of these groups informal, some are registered with the Ministry of Social Services but according to access strand definition even the registered groups are informal.

Figure 2 shows the increases in both ROSCA and ASCA use between 2006 and 2009. ROSCA use has risen from 29.3% to 31.7%, and ASCA use has gone up from 5.4% to 7.8%. This means that over 5 million adults were members of at least one ROSCA group in 2006 and close to 6 million adults were members in these groups in 2009 and that just under a million were in an ASCA in 2006 and almost 1.5 million adults were members in 2009. Next we examine these movements in greater depth to understand how this use has changed (see also Annex 2 table 1 and for regression analysis Annex 2 Table 2).

3.3 Regional differences in informal group use

Findings demonstrated differential access to informal groups across the country. People in Rift Valley, Coast and especially North Eastern are much less likely to use ROSCAs compared to other Provinces. People in Western, Eastern and especially North Eastern are less likely to use ASCAs. However, regional differences in terms of group use are smaller in 2009 than they were in 2006.

As figure 3 shows, by region in 2006 the proportions using ROSCAs in Nyanza, Central, Eastern, Western and Nairobi were higher than the national average. Roughly one third or

slightly above one third of the adult population in Nyanza, Central, Eastern and Western were members of a ROSCA. Slightly less than one third (31.5%) of Nairobi residents were in ROSCAs. The share of Rift Valley was below the mean proportion nationally and Coast was approximately one half the levels of the regions where they are the most used. In North Eastern only 0.2% of the population use ROSCAs. However, in 2009 the share of population using ROSCAs had dramatically increased in the Coast Province from 14.3% to 25.6% and in North Eastern from 0.2% to 3.3%. Similarly, the proportion of ROSCA users had increased slightly in Eastern (37.1%) and in Rift Valley (28.1%). However, the proportion had reduced in Central Province from 37.4% to 34.6% and in Nyanza from 39.4% to 37.0%. Overall it seems that in 2009 differences in regional prevalence are smaller than in 2006 (see table 1 in Annex 2).

As in the case of ROSCAs, in 2006 again the highest use of ASCAs is in Central Province followed by Nyanza, while Western and Rift Valley are close to the national mean. All the other provinces are below the national mean. However, in 2009 the proportion of ASCA users has dramatically increased in Western, Eastern and Nairobi. The proportion of ASCA users has also increased in all the other provinces except in Rift Valley where it has slightly reduced.

Figure 3: Differential access to ROSCAs and ASCAs in different provinces

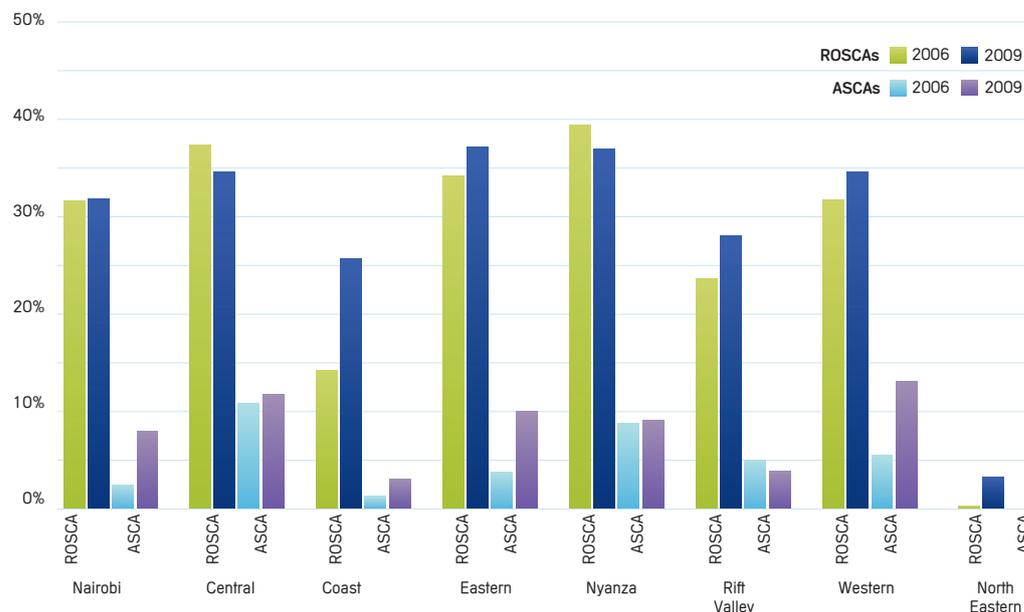
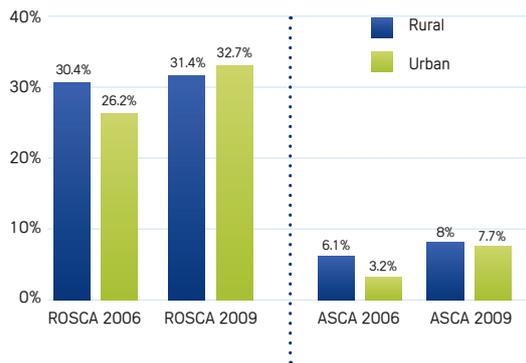


Figure 4: Increased ROSCA and ASCA use in urban areas



3.4 Urbanisation and informal groups

Figure 4 indicates that in 2006 a higher proportion of rural residents belonged to ROSCAs (30.4%) compared to urban residents (26.2%). However, in 2009 the proportion of urban residents using ROSCAs has increased by a quarter to 32.7% whereas the share of rural population increased by only three percent. Hence, while in 2006, the greater incidence of rural compared to urban residents using ROSCAs was significantly associated with location, this pattern has reversed in 2009. The regression results confirm this change: in 2006 rural residents were more likely to use ROSCAs than urban residents.

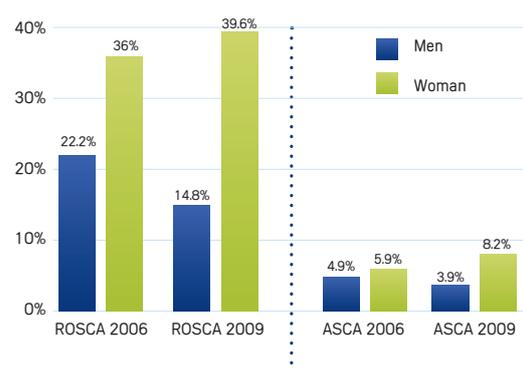
However as regression table 2 in Annex 2 indicates, urban residents were in 2009 more likely to use ROSCAs, but this result is not significant. Thus while the cross tabulations show a big change in percentages, the regression analysis indicates that there is no longer a bias towards rural residents, but neither does it suggest a bias in favour of urban.

Similarly, in 2006 the proportion of rural residents using ASCAs was almost twice as high as the proportion of urban residents and the association was strongly significant (see table 2 in Annex 2). However, since then the proportion of urban residents using ASCAs has more than doubled and the association with location is no longer significant. Hence, the increase since 2006 in ROSCA and ASCA use is therefore a strongly urban phenomenon.

3.5 Gender and age in informal group usage

As figure 5 shows, in 2006 over one third of all women (36.0%) belonged to ROSCAs compared to 22.2% of men. Since

Figure 5: Share of men using ROSCAs and ASCAs reducing



then, the proportion of men using them has declined quite dramatically to 14.8% while the proportion of women using them has increased to 39.6%. Regression results in table 2 in Annex 2 also indicate that the probability of women using ROSCAs has increased by 23%.

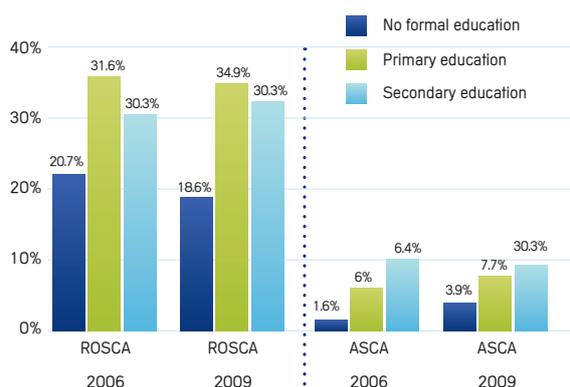
The trend for ASCA use is similar with a decline in the proportion of men using them and an increase in the proportion of women. As a result, the association of women compared to men with ASCA use has strengthened.

With respect to age, in 2006 those who were 25-44 years were more likely to use ROSCAs compared to 18-24 years and older people above 44 years. In 2009 the proportion of middle aged groups (25-54 years) has slightly increased whereas the proportion of 24 years and younger and people above 54 years has declined. However the proportion of population using ASCAs had increased across all age groups.

3.6 Education and informal groups

Regarding education, in 2006, 20.7% of the population who did not have any formal education belonged to a ROSCA. Above 30% of the respondents that either had completed primary education or secondary education were members of a ROSCA. In 2009 the proportion of population with no formal education using ROSCAs has declined from 20.7% to 18.6% whereas the proportion of population that had completed either primary or secondary education had increased from 31.6% to 34.9% and from 30.3% to 32.4% respectively. The fact that a bigger share of ROSCA members had primary or secondary education in 2009 means that both primary and secondary education significantly increase the probability that the person belongs to a ROSCA. In 2006 education levels were not a significant influence on use. However interestingly, the proportion of population with no

Figure 6: ROSCA and ASCA members more educated than before



formal education using ASCAs had increased from 1.6% to 3.9%. Nevertheless, unlike in the case of ROSCAs, more educated people are significantly more likely to use ASCAs in 2006 than those with no education, and this is still the same in 2009. This may relate to the greater complexity of their operation compared to ROSCAs, and the recognition by those who are better educated of how to organise and use these to meet their financial service needs. These results may imply that people who have joined ROSCA and ASCAs between 2006 and 2009 are actually more educated (might be the case since urban people tend to be more educated). Alternatively it may simply be that the population in general is more educated in 2009 than it was 2006.

3.7 Poverty status and informal groups

Regarding food security, in 2006 proportion of people in ROSCAs who 'often' did not have enough food to eat were almost as high as the proportion of people who only 'sometimes' 'rarely' or 'never' experienced food shortages. In 2009 the proportion of people who 'often' do not have enough food to eat has declined by 19% from 27.3% to 22.9%. The proportion of people in other categories has increased, indicating that in 2009 the people who belong to ROSCA are slightly less likely to experience hunger than in 2006 (also strong association based on chi-square). In the case of ASCAs, the proportion using them has increased in three of the four categories - except for those who 'rarely' experience food shortages and this is even the case for those, who 'often' did not have enough food to eat⁵.

The expenditure is significantly associated with increased probability of ASCA use. Source of income is significantly associated with the use of ROSCA and ASCA services.

Those depending on pensions and transfers, those employed in farming and those subletting land or rooms were in 2009 significantly less likely to use ROSCAs than those whose main income was from farming.

On the other hand, those running their own businesses were significantly more likely to use ROSCAs than the farmers. With respect to ASCAs, those depending on pensions and transfers were significantly less likely and those with own business significantly more likely to use ASCAs in 2009 (see regression analysis table 2 in Annex 2).

The results for the poverty proxy of dwelling conditions for ROSCA when compared against the base case that is temporary dwelling show that living in permanent or semi-permanent or traditional house is significantly associated with reduced probability of ROSCA use. On the other hand, interestingly, living in a permanent or semi-permanent dwelling significantly increases the probability of ASCA use.

The ownership of radio and bicycle is significantly associated with increased probability of ROSCA use where as the ownership of a car is significantly associated with reduced probability of the ROSCA use. The ownership of a car also mildly reduces the probability of ASCA use.

The influence of mobile phone ownership or access to somebody's mobile phone is significantly associated with an increased probability of both ROSCA and ASCA use. Those who can't afford to buy a mobile phone or who don't have access to a mobile phone are significantly less likely to belong to ROSCA and ASCAs. Unlike in 2006 when the mobile phone ownership was only mildly significant, this is now an indicator more strongly associated with both ROSCAs and ASCA use.

⁵ Increase in 'often' and 'sometimes' categories for ASCAs might at least partly be related to the fact that several organisations are training ASCA groups in deep rural areas with Village Savings and Loan Association methods.

4. Socio economic characteristics of informal groups (2009)

The previous section examined comparable data for 2006 and 2009 on ROSCAs and ASCAs. In order to make trend comparisons, over time we used directly comparable questions from the two surveys which asked about types of groups. In the 2009 survey, a more in depth section on groups was added, which allows for a more detailed analysis of group features and functions. This section uses the classifications of groups from the 2009 data which

incorporates categories of welfare and investment groups and compares the pattern of socio-economic characteristics across users of these different groups. Cross tabulations and regression analysis were used to assess the socio-economic, geographic and demographic characteristics of users. In discussing the regressions the results are always relative to a base category for each variable. The analysis discusses mostly the variables that were statistically significant.

Table 3. Socio-economic characteristics of Welfare, ROSCA, ASCA and Investment groups in 2009

N = 6343	Welfare	ROSCA	ASCA	Inv group
Overall	4.1	23.2	10.0	6.8
Clustertype	***		*	**
Rural	4.6	22.9	9.4	7.3
Urban	2.3	24.3	11.8	5.1
Gender	**	***	***	*
Male	1.1	11.9	4.8	5.1
Female	4.2	28.0	11.4	7.2
Age	***	***	***	***
18-24	1.0	16.1	4.9	3.9
25-34	4.0	29.7	12.2	8.1
35-44	5.4	29.3	14.8	9.4
45-54	6.9	22.6	12.1	8.0
55+	6.8	17.8	8.0	6.1
Education		***	***	***
No formal education	4.7	13.2	5.0	3.2
Primary	4.4	25.9	10.3	6.6
Secondary+	3.5	23.6	11.4	8.6
Region	***	***	***	***
Nairobi	2.2	24.2	12.4	6.5
Central	5.5	26.7	13.0	8.2
Coast	1.2	16.3	10.5	2.7
Eastern	12.8	29.2	5.3	4.3
Nyanza	3.0	25.6	14.4	9.5
Rift Valley	1.5	20.7	6.7	7.4
Western	2.4	24.0	15.1	9.3
North Eastern	2.4	2.5	0.2	0.3
Frequency without enough food to eat	*	***	***	***
Often	5.5	16.0	6.8	4.7
Sometimes	4.5	23.4	7.6	5.7
Rarely	3.8	25.3	11.9	8.2
Never	3.5	24.8	11.6	7.6

*, ** and *** significance at the 0.05, 0.01 and 0.001 level respectively. Chi-square was calculated on un-weighted data.

Welfare groups

Welfare groups (WG) are important means of pooling savings together to assist members in different events such as sickness, funerals, and purchases of household goods. Table 3 shows that almost 4.1% of the adult population are members of WGs. The proportion of the rural population (4.6%) using WGs is double of that of the urban population (2.3%). The highest proportions using them are in Eastern followed by Central and Nyanza and the lowest use in Coast. Regarding gender the WGs are almost four times more popular among women than men. Regarding age, results indicate that as age increases, the proportion of people using WGs also increases. Only 1% of those who are 18-24 belong to WGs, but 6.8%-6.9% of those aged 45+.

ROSCAs

Almost one third of all women, 28.0% belong to ROSCAs whereas only 11.9% of men belong to them. In geographical terms, slightly more urban people belong to ROSCAs (24.3%) compared to rural people (22.9%). The highest proportions using them are in Eastern, Central, Nyanza, Nairobi and Western. Roughly one quarter of the adult population in these five provinces are members of a ROSCA. Rift Valley is below the mean proportion and 16.3% of Coastal population use ROSCAs, whereas in North Eastern only 2.5% of the population use ROSCAs. This indicates that ROSCAs are not filling the gap left by more formal services in Coast and North Eastern in particular.

ASCAs

Table 3 shows that among the 10.0% using ASCAs, a bigger share are urban people (11.8%) than rural (9.4%). Regarding gender, 11.4% of women belonged to ASCAs compared to 4.8% of men. Highest use is in Western region followed by Nyanza Central and Nairobi.

In terms of age, similar to ROSCAs, the proportion of people using individual ASCAs increases from those aged 18-24 years (4.9%) to 35-44 years old (14.8%), and then drops slightly to 12.1% in the 45-54 age category and further to 8.0% in the 55+ age category. This concentration in middle age groups may also reflect periods of greatest economic activity over the life-cycle.

Investment clubs

Of the 6.8% using investment clubs, the proportion of rural residents using investment groups was higher (7.3%) than urban (5.1%) and this association was significant. Also, proportionally more women (7.2%) than men (5.1%) use them. As age increases, the proportion of people belonging to investment clubs also increases, except for those aged 55+. Similarly, as the level of education increases, the proportion of people belonging to investment clubs increases and the association is significant. By region, Nyanza, Western, Nairobi and Rift Valley were higher than the national average.

4.1 Features of informal groups

The 2009 dataset allows for a more detailed description of the informal groups to which respondents belong. Table 4 shows the mean and median numbers of members of different group types. Welfare groups tend to be the largest with the largest groups having over 1000 members and this reflects their clan or village base and the fact that as contributory systems in the event of death and illness they offer a form of social safety net and support. The mean and median sizes of other types of groups is in the range of 15-30.

Table 4. Group size

N=3509	Mean	Median
Welfare	98	40
ROSCA	22	15
ASCA	30	20
Investment Club	27	20

Table 5. Group size by gender.

N= 3509	Welfare		ROSCA		ASCA		Inv. Club	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Male	63	15	19	15	23	14	25	22
Female	99	40	21	15	30	20	25	17

The median⁶ group sizes for Welfare groups, ROSCA and ASCAs are higher in rural compared to urban areas but this is not the case for investment groups. Disaggregating group size by gender shows in table 5 that the median size of welfare groups that women belong to are larger than those that men belong to. Also ASCA groups to which women belonged were somewhat larger than the ASCA groups where men were members.

The median size of welfare groups to which respondents belonged in Eastern Province were three to five times larger than in other provinces. The median welfare group size is also higher in Central, Nyanza and Western Provinces compared to others, while the smallest groups are found in North Eastern and in Rift Valley. Differences in median group sizes of other types of groups were not so marked. Respondents were also asked what their relationship to the other members of the group was. Overall people were most likely to be in groups with neighbours (44%) and friends (37%). Only 10% of groups were among relatives, 5% workmates and 4% members of a religious group. Only women were members of ROSCAs and ASCAs which had a religious connection. The role of neighbours is more important in rural areas (47%) than in urban (24%). In urban areas the share of friends (50%) and workmates (12%) is more important than in rural areas.

As table 6 indicates welfare groups have had the longest life followed by investment groups. Similarly, the respondents have been members for longer in welfare and investment groups.

Table 6. Age of group and duration of membership

N=3509	Age of group membership		Duration of	
	Mean	Median	Mean	Median
Welfare	7.6	5	5.9	3
ROSCA	3.8	2	2.8	2
ASCA	4.4	3	3.7	2
Inv.Club	5.1	3	3.9	2

If longevity of groups are looked at by province, the oldest welfare groups measured by median are in Eastern (9 years), followed by Nyanza (6 years) and Nairobi (5 years). Regarding range, the oldest groups had been in existence for 60 years in Central and 50 years in Eastern. Regarding ROSCAs the longest median life of groups were in Central (4 years) and Eastern (3 years). The median for all the other provinces was 2 years. Regarding range, the oldest ROSCAs overall were in Central (70 years) and in Eastern (50 years). The youngest welfare and ROSCA groups were in North Eastern. North Eastern did not have any ASCA or Investment groups.

ASCAs with the longest median life were found in Central, followed by Nyanza. The oldest ASCAs overall were in Central (33 years old). The investment groups with longest median life were in Rift Valley followed by Central and Nairobi.

4.2 Contributions to informal groups

Respondents were also asked about their contributions to the informal groups. Table 7 indicates that ROSCAs receive the largest average contribution amongst informal groups. People using Welfare groups reported the smallest mean contribution out of the other informal groups followed by investment groups and ASCAs.

Table 7. Contributions to informal groups (mean and median) in KShs per month

N=3509	Mean	Median
Welfare	398	120
ROSCA	758	400
ASCA	619	300
Investment Group	701	300

N= 3509

⁶ We use the median, as the mean tends to be skewed by a small number of particularly large groups.

Table 8. Informal group contributions by gender

Monthly mean contribution by gender (in Kshs)			
	Male	Female	T-test
Welfare	148	459	***
ROSCA	748	777	***
ASCA	435	658	***
Investment	699	748	***

*** significance at 0.001 level,

Examining the contributions by gender, table 8 shows that women's mean contributions to all groups are significantly higher than men's.

Table 9 shows the total contributions being made to these groups in Kenya. It suggests that ROSCAs are mobilising some Kshs3.3bn (US\$42.4m), followed by ASCA and investment clubs. This is 0.6% of the value of commercial bank liabilities in February 2009.

Table 9. Total contributions made to informal groups in a month (mean)

	Total members	Monthly Mean by service (KSh)	Total Contribution (KSh)	Total cont in (USD)
Welfare	767 307	398	305 388 186	
ROSCA	4 336 202	758	3 286 841 116	
ASCA	1 858 929	619	1 150 677 051	
Investment	1 275 755	701	894 304 255	
Total contr.			5 637 210 608	72 785 160

4.3 Reasons for belonging to informal groups

Table 10 shows the different reasons for belonging to informal groups. This question did not ask about loans (except to acquire a certain item) or insurance functions which are also important⁷.

By far the most important reason for belonging to any of the groups is that the respondents feel they cannot save alone and that they get strength to save from sitting with others. The second most important reason especially in the groups that intermediate is that you can't save at home because money gets used for other things. These findings support Gugerty's (2007) findings from Western Kenya that the main reason why individuals join ROSCAs is for self-control purposes in order to save.

The third most important reason is to acquire certain items. This reason is more important for women. This finding supports Besley, Coate, and Loury(1993)that suggested

that members join ROSCAs because they wish to buy an indivisible durable good. According to this theory the advantage of saving together is that everybody except the last person will have saved-up the lump sum quicker compared to a situation where they would save alone.

Anderson and Baland have suggested a third explanation. They claim that the main reason why members and especially women join groups is the household conflict. Based on data from Kibera in Nairobi, Anderson and Baland(2002) show that men prefer immediate consumption to saving. However, even if the husband prefers consumption, he will not force the wife to withdraw from the ROSCA because they both are aware of the social sanctions that the ROSCA would put on the household if the wife withdraws. When the wife has received her pot (the lump sum from the ROSCA) the husband is usually willing to allow her to purchase the goods towards which she has been saving if she has enough bargaining power within the household. However, the FinAccess 2009 data does not support the findings of Anderson and Baland. Only less than 2% of

⁷ This is because responses used were the same that Gugerty (2007) used and Gugerty emphasised the savings side.

Table 10. Reasons for belonging to informal groups by gender

N= 3509	Welfare		ROSCA		ASCA		Inv. Group	
	Male	Female	Male	Female	Male	Female	Male	Female
Strength to save	74	59	48	47	57	53	33	47
Acquire certain item	-	4	5	15	7	16	11	19
Can't save at home. Money used on other things	-	6	20	16	10	11	14	10
Visit each other's houses	-	-	4	3	6	4	4	2
Safe to save	-	7	9	5	7	10	12	7
My family will use savings	-	1	5	5	-	8	18	9
My spouse will use savings	-	3	5	1	-	2	4	2
Meet and socialise	18	9	7	11	17	8	27	8

Table 11. Features of informal groups organisation

N= 3509	ROSCA	ASCA	Inv. Club	Welfare
Holds meetings on regular fixed intervals	78.4 (1)	78.0 (1)	79.5 (1)	50.1 (2)
Elect officials	44.7 (2)	69.0 (2)	73.8 (3)	61.2 (1)
Have a constitution	42.8 (3)	64.1 (3)	75.6 (2)	34.6 (5)
Keep account record	30.9 (4)	53.3 (4)	62.9 (4)	47.4 (3)
Have a treasury / finance person who is not also the chairman	30.9 (5)	42.4 (7)	59.2 (5)	28.9 (7)
Minute	22.7 (6)	49.7 (5)	51.6 (6)	21.0 (9)
Book for any money received	14.0 (7)	34.3 (9)	34.7 (9)	28.0 (8)
Certificate of registration	12.4 (8)	44.4 (6)	45.2 (7)	40.1 (4)
A bank account	9.3 (9)	41.5 (8)	45.0 (8)	31.4 (6)
Passbook for recording savings or loans for each member	5.9 (10)	26.1 (10)	25.6 (10)	7.2 (10)
Have a group cheque book	2.4 (11)	11.3 (12)	15.7 (11)	4.9 (13)
Have accounts checked by an external auditor	1.6 (12)	7.0 (13)	9.2 (13)	6.1 (11)
More than one signatory on the cheque book	1.1 (13)	12.1 (11)	16.2 (12)	5.2 (12)
Non member manager	1.1 (14)	5.1 (14)	3.1 (15)	1.5 (15)
A money box with more than one key	0.9 (15)	4.1 (15)	7.5 (14)	1.7 (14)

the female ROSCA, ASCA and Investment group members said that they are in groups because they think the husband would otherwise use the money. Actually, in the case of ROSCAs and investment groups the share of men being worried that their wives will use the money unless invested in the groups is higher.

4.4 Organisational features of groups

Respondents were asked about the organisational features of the informal groups to which they belong. Table 11 reports these across the different types of groups, and is ordered by the relative frequency of these characteristics for ROSCAs as the most used type. The most important features were in the same order also in the 2006 survey. For ROSCAs, 78.4 % of members report regular meetings. This is at the same level as reported by ASCAs and Investment Clubs but higher than in Welfare groups. 44.7% of ROSCA members reported that their groups elect their officials, which is again a lower proportion than ASCA and Investment Club members but higher than Welfare groups.

This pattern is significantly associated with location, more groups in rural areas undertake this practice compared to urban areas and more men than women. 42.8 % reported having a constitution; again this is the lower than in ASCA and investment clubs but higher than in Welfare groups and was more significantly associated with rural areas than urban areas. 30.9 % of groups are reported to keep accounts and this is the lowest proportion across all group types, and significantly more men reported that their groups keep records compared to women. Nevertheless, this is still a relatively high figure since the operations of ROSCA are the simplest of all the informal groups.

For ASCAs, regular meetings are the most frequent feature, followed by electing officials, having a constitution and keeping account records and minutes. These features are much more common in ASCAs than in ROSCAs, (and again these patterns tended to be more associated with men using these groups than women.) Investment clubs are clearly the most well organised and this fits also with the bias towards their more educated and wealthier

Table 12. Cross-tabulation features of informal groups by gender

N=3509	Male	Female	Significance
A bank account	24.6	21.4	-
Certificate of registration	24.6	24.2	-
Book for any money received	23.1	21.9	-
Have a constitution	54.6	46.7	*
Minute	33.1	32.0	-
Elect officials	50.8	53.5	-
Passbook for recording savings or loans for each member	15.4	12.9	-
Have a group cheque book	9.2	6.0	-
Holds meetings on regular fixed intervals	79.2	74.6	-
Keep account record	39.2	41.3	-
Have accounts checked by an external auditor	6.2	4.5	-
Have a treasury / finance person who is not also the chairman	33.1	35.8	
-			
More than one signatory on the cheque book	10.8	5.2	**
A money box with more than one key	6.9	1.8	****
Non member manager	4.6	2.1	*

*, **, *** and **** significance at the 0.10, 0.05, 0.01 and 0.001 level respectively. Chi-square was calculated on un-weighted data.

membership. Welfare groups appear to be somewhat better organised than the ROSCAs in some aspects such as electing officials and keeping account records.

As table 12 shows, some features were also significantly more likely to be carried out by groups to which men belonged compared to those to which women belonged: having a constitution, more than one signatory on the cheque book and a money box and non-member manager. This may suggest that men prefer groups to be better organised as a means of better ensuring the safety of their money. It fits with the general finding in the literature in Kenya that men find it harder to operate in groups than women and suggests that they may therefore resort to greater formalisation to overcome their concerns about operation (see Johnson 2004).

In table 12 all the groups had been lumped together. In order to understand better in which types of groups there is a strong association between men and particular characteristics or between women and particular characteristics that data was analysed further. Interestingly most of men's significant associations are with welfare and investment groups. Men are clearly more interested in investment groups than women. The association with welfare groups might be as a result of the fact that many of these groups are based on clan groupings and it has been the household head who usually represents the family in these.

4.5 Security of funds

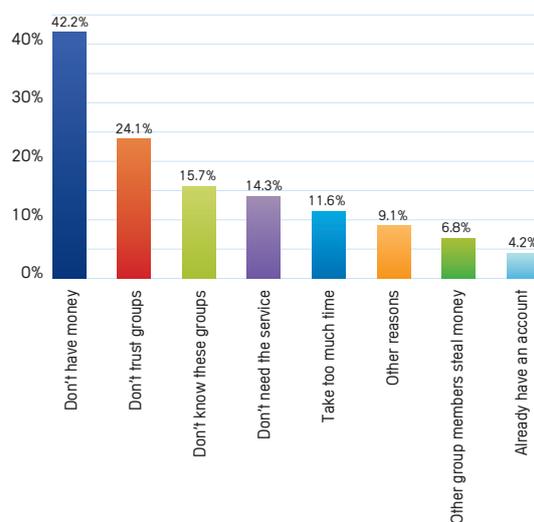
Respondents were also asked whether they had lost savings in informal groups and if so, whether this was during the last 12 months. Ten percent of the Welfare group members reported that they had lost savings in the group. Of those who had lost, half had lost their savings in the group during the last 12 months. Of the ROSCA members 12.7% had lost savings, of whom 60% during the last 12 months. Of the ASCA members 18.8% had lost savings, of whom 62.8% had lost during the last 12 months. Similarly, in investment groups 18.2% had lost savings, of whom 57.8% during the last 12 months. Findings indicate that ASCAs and investment groups are almost twice as risky as the Welfare and ROSCA groups.

Respondents were also asked why they did not belong to any groups. Figure 7 shows that 24.1% reported they don't trust the groups and a further 6.8% of the respondents (mainly women) reported that because other group

members steal money they don't want to belong to a group. These concerns may have some validity in view of the figures above that suggest a reasonably high level of risk in membership of groups. However, the most important reason for not joining groups (42% of respondents) was that they don't have money. More women than men reported this reason and the association was significant. For 15.7% the reason for not joining a group was that they don't know these groups. Significantly more men reported this reason. 14.3% reported that they don't need the service. For 11.6% they don't want to join groups because groups take too much time.

4.2% of respondents report that they don't belong to groups because they have an account in a bank or in another financial institution. This pattern is significantly associated with gender, more men than women reporting this reason for non-participation.

Figure 7: Reasons for not belonging to any group



5. Conclusion

The findings of this report have demonstrated that, despite the strongly expanded semi-formal sector use and increase in the population of formally banked, usage of informal financial groups has also increased between 2006 and 2009. The analysis shows that groups often have multiple functions (e.g. welfare, ROSCA, ASCA etc.), and a variety of products (savings, loans, investment, and some form of insurance). They also provide the discipline for members to save, which is highly valued by users, as well as other social and financial benefits, including flexibility or 'negotiability' (Johnson 2004). This may partly account for their continued popularity.

The popularity of informal financial associations is paralleled by fairly high levels of risk compared to formal and semi-formal offers. Users report losses of between 10% - 20% of savings, and the second highest reason reported for non-membership by non-users is lack of trust. There is also a wide variation in governance procedures for groups, with men valuing higher levels of organisation and rules compared to women (who are the main users). Policies to address the security of funds and stronger governance structures for informal groups may therefore substantially increase the benefits of this sector for users. This has potential poverty impacts, in that usage of informal groups is still the dominant form of finance among lower wealth quintiles. In this regard, the strong correlation between mobile phone use and membership of financial groups points to the potential significance of technology in securing group-based finance.

While the FinAccess surveys of 2006 and 2009 reveal a number of interesting factors relating to informal finance, we still need to understand much more about why informal financial institutions are expanding alongside a rapidly expanding formal and semi-formal sector, and this merits further research. In particular, what are the linkages between informal finance, formal and semi-formal finance? In what ways do these different sectors complement each other (or not) and enable a richer financial portfolio for low-income households? Why has the usage of informal services expanded so significantly in urban areas? What are the underlying implications of the increasing association between informal finance and women? How does this relate to women's exclusion in other financial sectors? Why are we seeing a more educated and less food insecure population being associated with informal groups, and especially ROSCAs? What does this imply for the poverty impacts of informal sector trends? These and other questions will help to develop policies for improved integration across different financial sectors, and improved consumer protection within the informal sector, as well as enabling us to enhance the poverty impacts of financial inclusion.

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Annex 1: Defining access strands

Table 1. Access strands

Description	What it becomes
R	R
R/W	R
W	W
A	A
A/w	A
INV	INV
A/R/W	A
A/R/W	A
Inv/W	INV
A/w	A
Inv/R/W	INV
A/R	A
A/R	A
A	A
A/R	A
A/w	A
A	A
Inv/A/W	A
Inv/R	Inv
Inv/A/R/W	A
Inv/A/W	INV
Inv/A	A
Inv/A/R/W	A
Inv (S/E) /A/R/W	Inv
Inv (S/E) /A	Inv
A/R	A
Inv (S/E)	INV
Inv (S/E) /A/W	INV
Inv (S/E) /A/R/W	INV
Inv (S/E) /W	INV
Inv	INV
Inv/A/R/W	INV
Inv/A	INV
Inv/A/R/W	Inv
INV/A/W	INV
Inv/R/W	INV
Inv/A/W	Inv
Inv/R	INV
Inv/A	INV

Annex 2: ROSCA and ASCA membership by socio-economic characteristics

Table 1. 2006 and 2009 compared

	ROSCA 06 N=4214	ROSCA 09 N = 6343	ASCA 06 N= 4214	ASCA 09 N = 6343
Overall	29.3	31.7	5.4	7.8
Clustertype	*		**	
Rural	30.4	31.4	6.1	8.0
Urban	26.2	32.7	3.2	7.2
Gender	***	***	*	***
Male	22.2	14.8	4.9	3.9
Female	36.0	39.6	5.9	8.2
Age	***	***	***	***
18-24	23.3	21.0	2.4	2.6
25-34	32.4	39.2	5.9	9.1
35-44	33.5	41.2	7.3	12.3
45-54	27.9	32.7	7.0	11.2
55+	27.6	25.7	4.7	7.3
Education	***	***	***	***
No formal education	20.7	18.6	1.6	3.9
Primary	31.6	34.9	6.0	7.7
Secondary+	30.3	32.4	6.4	9.4
Region	***	***	***	***
Nairobi	31.5	31.7	2.6	8.1
Central	37.4	34.6	10.8	11.7
Coast	14.3	25.6	1.4	3.1
Eastern	34.2	37.1	3.9	10.0
Nyanza	39.4	37.0	8.8	9.1
RiftValley	23.7	28.1	5.0	3.9
Western	31.7	34.6	5.6	13.1
North Eastern	0.2	3.3	-	-
Frequency without enough food to eat		***	**	**
Often	27.3	22.9	2.5	7.1
Sometimes	27.3	30.5	4.9	7.3
Rarely	31.6	35.7	7.7	7.7
Never	31.1	33.5	5.7	8.5

*, ** and *** significance at the 0.05, 0.01 and 0.001 level respectively. Chi-square was calculated on un-weighted data.

Table 2. Regression analysis – ROSCA and ASCA 2009

18+ years old	ROSCA	ASCA
Location		
Rural	-0.006	0.010
Urban	---	---
Gender		
Men	---	---
Women	0.225 ***	0.042 ***
Marital status		
Single	-0.09 ***	-0.052 ***
Divorced	-0.040	-0.011
Widowed	0.005	-0.001
Married/Cohabiting	---	---
Education		
No formal education	---	---
Primary	0.106 ***	0.031 **
Secondary+	0.081 ***	0.049 ***
Region		
Nairobi	---	---
Central	0.069 **	0.017
Coast	0.010	-0.031 **
Eastern	0.194 ***	0.028
North Eastern	-0.234 ***	--
Nyanza	0.08 ***	0.010
RiftValley	0.023	-0.039 ***
Western	0.087 ***	0.046 **
Expenditure	0.004 ***	0.024***
Main source of income/money		
Sell produce from farm, livestock & fishing	---	---
Pension/transfer from family or friend	-0.123 ***	-0.031 ***
Employed on people's farm full time/seasonal	-0.084 ***	0.031 **
Employed on domestic chores	-0.055	-0.012
Government	-0.068 *	0.004
Private sector	0.003	0.015
Running own business	0.066 ***	0.031 ***
Sub letting of land, house/rooms,	-0.113 **	0.007

Table 2. Regression analysis – ROSCA and ASCA 2009 continued.

18+ years old	ROSCA	ASCA
Earning from investments & others		
Dwelling general condition		
Permanent	-0.101 ***	0.046 **
Semi-permanent	-0.059 **	0.035 *
Temporary	---	---
Traditional	-0.077 **	-0.008
Household assets		
Radio	0.036 **	0.008
Television	0.020	0.016 *
Bicycle	0.063 ***	0.017 **
Car	-0.118 ***	-0.024 *
Mobile phone usage		
Use own mobile phone	0.145 ***	0.078 ***
Use somebody else's mobile phone	0.083 ***	0.052 ***
Do not use at all	---	---
Number of obs.	6 315	5 984
Pseudo R2	0.135	0.079

*, ** and *** significance at the 0.05, 0.01 and 0.001 level respectively. Chi-square was calculated on un-weighted data.

Annex 3: Features significantly associated with male and female respondents

Table 1. Features significantly associated with male and female respondents

--- = base characteristic

N=3509	Welfare	ROSCAs	ASCAs	Inv.Clubs
A bank account				
Certificate of registration				
Book for any money received				
Have a constitution		** women		
Minute				
Elect officials		** women		
Passbook for recording savings or loans for each member				
Have a group cheque book				
Holds meetings on regular fixed intervals	* men			
Keep account record		** women		*men
Have accounts checked by an external auditor				*men
Have a treasurer who is not also the chairman				
More than one signatory on the cheque book	* men			
A money box with more than one key	** men			**** men
Non member manager				** men

*, ** and *** significance at the 0.10, 0.05, 0.01 and 0.001 level respectively. Chi-square was calculated on un-weighted data.

CHAPTER 5

Financial exclusion in Kenya

Examining the changing picture 2006-2009

SUSAN JOHNSON AND STEVEN ARNOLD

1. Introduction

1.1 Conceptual framework and approach to the analysis

A key concern of policy makers is to understand how to extend access to financial services to poor and low income people and as a result efforts have been developed in the last few years to monitor this outreach. The first such survey in Kenya – the FinAccess Kenya survey carried out in 2006 by Steadman International on behalf of FSD Kenya and its partners (FinAccess 2007) – provided a baseline understanding of financial sector outreach. The follow up survey undertaken in February 2009 now offers an opportunity to measure progress.

In reviewing progress a key concern is to understand how patterns of access and inclusion may be changing and therefore whether the changes in provision that are underway are addressing key barriers to access. It is well understood that a range of factors can affect poor people's ability to use financial services – particularly formal ones. Obviously cost is a factor so that minimum deposits,

fees and charges mean that holding a bank account, for example, is too expensive for many. In addition to these financial costs, the cost of reaching a bank is also important – hence distance from a bank implies transport costs or at least travel time and inconvenience. In addition, analysis has also highlighted the non-financial costs that people may incur in accessing banks such as the difficulties of understanding and completing forms for those who are not literate or the social barriers of status experienced in dealing with bank staff. Hence it is not solely economic factors that determine access.

Factors that can affect access to services beyond those of income, wealth and education, are such as gender and location. It is well known for example that women are less likely to use banks than men, which is rooted in gender relations related to control of income and assets such as land (especially with respect to borrowing). The use of SACCOs which is strongly related to cash crops such as tea, coffee and dairy may also be more extensive amongst men given historically gendered patterns of control over these

agricultural activities. On the other hand women often make more extensive use of group-based financial mechanisms such as ROSCAs compared to men. These differences are rooted in deeper social and cultural traditions of the way in which women co-operate in community groups and gendered patterns of access to and control of income and expenditure responsibilities¹. Moreover, the extent to which ROSCAs and group-based mechanisms are used differs among ethnic groups (proxied by geographic location) who have different social and cultural traditions.

Given that a wide range of socio-economic, demographic and geographic factors do influence use, they present barriers to access for poor people and policy makers need to understand these. The report on the 2006 data entitled *Financial Access and Exclusion in Kenya* examined these factors in detail. It found that employment, age, education, gender, geography and assets were strongly associated with patterns of access. The 2009 survey offers an opportunity to re-examine these factors and consider to what extent these barriers to access may be changing. There have been important changes in provision in the Kenyan financial market, and it is therefore valuable to understand how patterns of access and exclusion may be changing. The FinAccess dataset can therefore be analysed to establish patterns of use and to examine which factors are relatively more important in their associations with them.

1.2 Methodology

This report closely follows the methodology employed in the first report on the 2006 Financial Access survey dataset to examine the geographic (rural/urban, Province or region), socio-economic (income, wealth, education etc), and demographic (age, gender, household composition, marital status etc) characteristics of users.

First, the analysis uses cross-tabulations to examine the percentage of the population² in particular sub-groups that are using a particular service and examines how this

has changed since 2006. Therefore, instead of looking at what proportion of bank users are male or female (eg: 61% and 39% respectively), it looks at the proportion of men who are bank users (28%) compared to women (18%). Approaching the analysis in this way enables us to start to understand the overall extent of access in relation to underlying socio-economic characteristics.

The analysis then uses regression techniques to establish which socio-economic, geographic and demographic characteristics are most associated with people's access to services³. In discussing the results we refer to the effect that a characteristic has on the probability that a service is used - this is always relative to a base category for each variable. Hence the regression results - which produce "marginal effects"⁴ - indicate the increased or decreased probability that a person with a particular characteristic uses the service compared to someone with the base characteristic⁵.

These have been presented in charts of marginal effects, and only those results that are statistically significant are shown⁶. The strength of regression techniques is that they enable the influence of a particular variable to be established when all other variables in the analysis are held constant. Hence, for example the influence of gender on access to a bank account is independent of the fact that more women have no education than men since education is also contained in the equation. The effect of education is therefore being separated out from that of gender.

The analysis has been written prioritising the variables which were statistically significant in the regression results in 2006 and comparing them to the 2009 results. At the service level, we first review changes in proportions of users with particular characteristics, and then discuss how the regression results are different. Charts are provided of marginal effects which indicate the changed probability for the 2009 data of a characteristic occurring relative to the base case characteristic. So, for example, discussion of

¹ See (Johnson 2004)

² Weights are used in producing overall percentages which reflect the ratio of an individual's characteristics to the population as a whole.

³ See Annex 2 for more detail.

⁴ The 2006 study used logistic regressions, while this study uses probit regressions, the findings are not directly comparable so the analysis of them relies on their interpretation.

⁵ The selection of the base case is usually undertaken on the basis of a sufficiently sized sub-sample (ie avoiding the smallest sub-samples) and for logical coherence (eg the youngest age group, or least educated). It does not affect the significance of the results relative to each other, however the interpretation is relative to the base case and this must be born in mind at all times. The base case can be seen in Annex 2 and 3 in the regression results as the category against which no results are reported.

⁶ Full regression results available in Annex 2 and 3.

income sources uses a base case of income from farming and fishing, so that discussion of increased probabilities of those with income from government employment - or any other income source - represents an increased or reduced probability relative to this base case. The charts show the scale of effects and only results that are statistically significant have been included. The exception is the variables for age and expenditure which are continuous and whose results are reported in the text and not included in the charts.

The analysis slightly differs to that for 2006 because a variable for cash expenditure was included in the 2009 survey⁷. The data collected in 2009 still does not allow for the estimation of an individual's position relative to national poverty lines because the data collected did not allow for the value of own-consumption⁸. This means that it is not possible to directly relate access to an income or consumption poverty measure. However, we have included this variable in the regression analysis since it is obvious that levels of cash flow are likely to influence financial service use and this goes some way to addressing the effects of income on access that we could not capture in the 2006 analysis.

Overall, the inclusion of this variable has produced some interesting results and adds to the discussion of the specification of regression equations in analyses such as this (see Annex 2 for a discussion). The influence of expenditure level was therefore likely being picked up by other variables in the 2006 analysis which we included as poverty proxies, but did not include all of in the 2009 analysis. In order to better compare the overall influence of factors in 2009 with the 2006 results, a set of regressions was also run using the same specification as the 2006 analysis (ie excluding the expenditure variable). This was done to cross-check the ordering of findings and seek to confirm how the inclusion of this variable was affecting the results.

By comparison to the 2006 survey, the 2009 dataset also collected more robust indicators regarding the distance to

a bank. In 2006 this was confined to the respondents own assessment of whether the bank was "near", "not so far" "far" or "very far". In the 2009 dataset there is data on mode of transport, time and cost involved in getting to the nearest bank. In modelling the use of banks, we have therefore used the cost data to construct a variable for distance which is an improvement on the accuracy of the 2006 data.

In pursuing the analysis, we use the access strand analysis approach. However, a key issue is whether to include M-PESA as a savings service similar to other savings services - M-PESA is a mobile phone based payments service. Given this concern (discussed further in section three) and the need for comparability with the 2006 analysis in order to understand how the access strands have changed, we have removed M-PESA from the access strands and created an M-PESA only access strand. This helps the analysis to isolate and scrutinise the impact of M-PESA services in the landscape⁹.

⁷ The survey question was how individuals spend their money, so it has to be assumed that this was interpreted as the individual's own expenditure, and not household expenditure, so reflecting the funds an individual has at his/her disposal.

⁸ Since a high proportion of households may grow food which they themselves consume, data collected on cash expenditure alone will underestimate their standard of living relative to a national poverty line compared to households who are dependent on buying their food. The standard methodology is to include an estimate of the value of produce that a household has consumed from its own production, but this was not done in this survey.

⁹ There are minor differences between the access strand figures reported here and those reported for Kenya by FinAccess, 2007. These arise from minor differences in service classifications between access strands.

2. Overview of key changes in financial service use since 2006

This section first reviews the changes in use of particular financial services between 2006 and 2009. Table 1 presents these in percentage terms and figures 1 and 2 show these in chart form. For the sake of convenience we report M-PESA.

The biggest change to the financial landscape over the period has been the introduction of the M-PESA money transfer service. According to the FinAccess survey, by early 2009, 27.9% of the population over 18 were registered M-PESA users - approximately 5.2 million people. As M-PESA is technically a money transfer service, it does not entirely fit the profile of other savings services although evidence suggests that users are keeping funds on their phones as a safe way to store money. While research suggests (Government of Kenya, FSD Kenya et al. 2009) that storing money in M-PESA does make it a form of savings service rather than purely for money transfer with some 75% of their (mainly user) sample storing money in this mechanism, only 21% reported that it was their most important service. A similar question in the FinAccess 2009 survey indicates that 10.5% of the population has used M-PESA to save money.

The second key change in the landscape is the increased use of Bank services rising from 17.8% to 21.5%. This has been strongly driven by the expansion of Equity Bank which has expanded its customer base from 0.5m accounts to 3.2m between end 2005 and end 2008¹¹. This alone accounted for an increased proportion of its own outreach in the population of 8.7 percentage points from some 3.6% to 12.3% (Stone, Johnson et al. 2010).

At the same time, the use of PostBank has halved. SACCO use has also fallen for both savings and loans – although retaining a similar ratio between borrowers and savers of a third. This demonstrates the significant competition in the market from the banks over the last couple of years as they have moved away from charging monthly fees to charging a fee per transaction. MFI use has doubled, but still presents a rather small proportion of the market as a whole. Despite the expanded use of formal services, ROSCA use has also risen – suggesting yet again that ROSCAs are a complement in terms of money management to other services rather than substitutes. Curiously, hidden savings has seen a doubling in reported use. There is no clear cause for this and it may reflect reporting rather than a

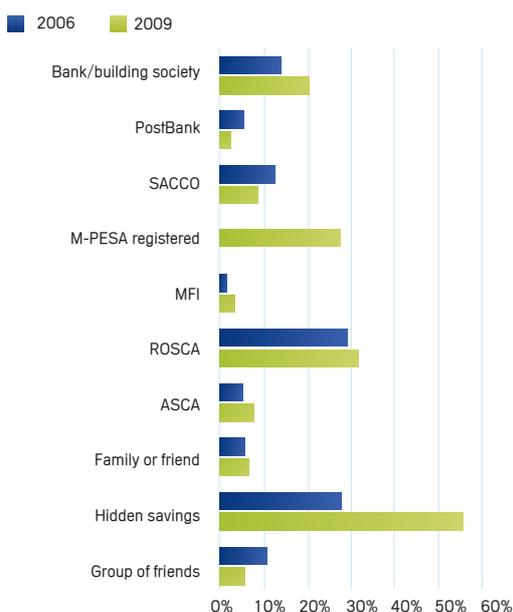
Table 1: Financial service use – % currently using

	2006			2009		
	Savings/ Transactions	Loans	Overall	Savings/ Transactions	Loans	Overall
Bank/building society	13.7	2.1	17.8	20.4	3.3	21.5
PostBank	5.6	--		2.5	--	
SACCO	12.8	4.1	13.1	8.9	3.0	9.0
M-PESA registered	--	--	--	27.9	--	27.9
MFI	1.5	0.8	1.7	3.2	1.8	3.4
ROSCA ¹⁰	29.3	--	29.3	31.7	--	31.7
ASCA	5.4	1.7	5.7	7.8	1.8	8.0
Local shop	--	22.8	22.8	--	24.3	24.3
Family or friend	5.7	12.6	17.5	6.7	12.2	17.5
Hidden savings	27.9	--	27.9	55.7	--	55.7
Group of friends	10.9	--	10.9	5.5	--	5.5
Government	--	1.1	1.1	--	0.3	0.3
Employer	--	0.9	0.9	--	0.5	0.5
Buyer	--	0.9	0.9	--	1.2	1.2
Informal moneylender	--	0.7	0.7	--	0.4	0.4

¹⁰ We report ROSCA's only on the savings side as the FinAccess questionnaire treats ROSCAs as a savings service and the figure for taking credit would be exactly the same as for savings as all members received the pot during the round.

¹¹ By end 2009 this had increased to 4m depositors and 0.7m borrowers.

Figure 1: Savings services (% currently using)

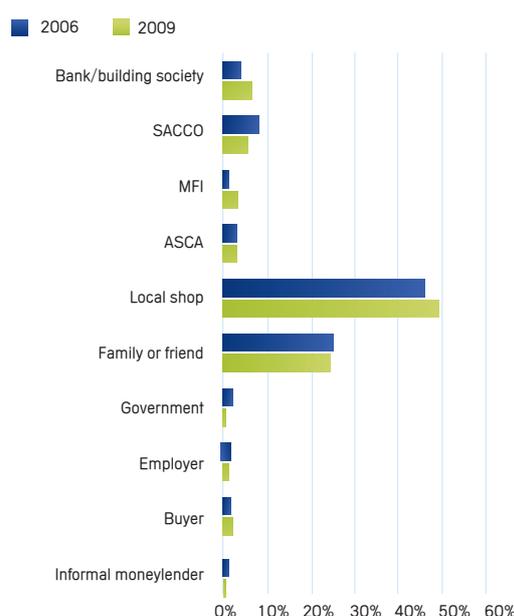


real change in use. For example, the generally increased awareness and openness of discussion about financial services, this may have enabled respondents to recognise and report this where they might have been less aware that this was what they were doing and more suspicious of reporting it in the past. Given that few people do not deal with cash at all and the level of exclusion in the 2006 survey was 38%, it was perhaps surprising that only 28% reported using hidden savings as a strategy.

On the loan side the changes are less notable. Bank loan use (including credit cards, overdrafts etc) has risen proportionately to savings use. Increased MFI use is similarly proportionate while SACCO use has fallen. Local shop use has risen – and this might also be interpreted in relation to the relatively tougher macro-economic conditions of Kenya in early 2009 compared to 2006¹². Other services are little used and differences in these are less likely to be robust as samples of users in both surveys were rather small.

With the dramatic expansion of M-PESA services and modest expansion of bank services, the key question that arises is whether the main determinants of access have changed. What evidence is there that the changes on the

Figure 2: Loan services 2006 – 2009 (% currently using)



supply side which have resulted in this changing pattern of use have significantly changed access to financial services across the financial landscape as a whole?

2.1 Banks

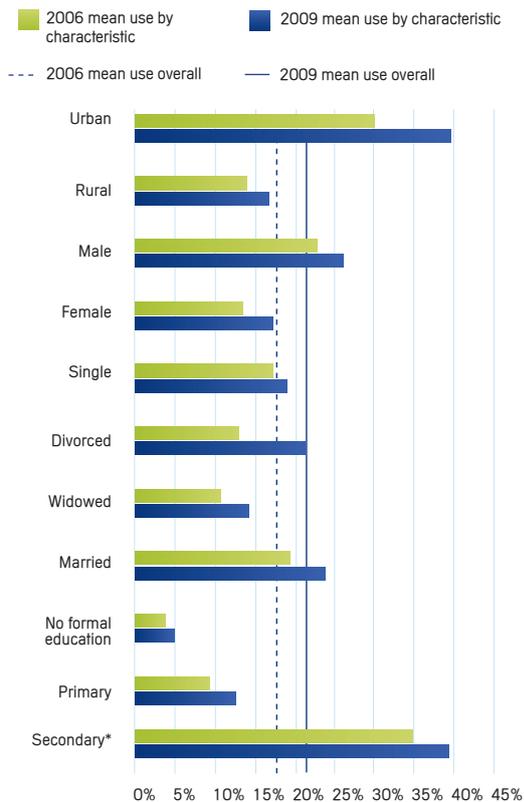
The proportion using banks for savings or credit¹³ has risen from 17.8% to 21.5% since 2006. In examining this data we are interested to see whether earlier patterns of bias in access to banking services are being eroded as services expand. We look at each factor in two ways: first we examine how the pattern has changed relative to the mean change for the service as a whole – these changes are shown in figures 1 and 2. Second, we consider whether the regression analysis suggests that the influence of the characteristic has increased or decreased.

Figure 3 shows that the increase in bank use has been much greater in urban than rural areas. The regression analysis also shows that rural location is associated with a negative effect of about -5% on the probability of people using banks compared to those in urban areas – see figure 5. This contrasts with the finding in 2006 when rural location was neither negative nor significant and therefore suggests that the rural – urban divide has widened.

¹² CBK Monthly Economic Review figures (January 2010) indicate that GDP growth fell back to 1.69% in 2008 (latest year for which figures are available) compared to 6.32% in 2006 and 7.1% in 2007. People are more likely to take goods on credit from local shops when they are facing hard times.

¹³ This figure combines savings or credit use and includes PostBank.

Figure 3: Use of bank services 2006 and 2009 by characteristics – rurality; gender; marital status and education



In 2006 we also found that access was not significantly associated a distance variable¹⁴. In 2009 we have been able to examine the association of bank use with two distance variables – one based on cost of getting to the nearest bank and the other based on time required to travel there¹⁵. We found a significant association with distance for those for whom it took more than 1 hour to travel to the bank and they were significantly less likely to use it (-6%) as a result. However, there was no relationship between the cost of travelling there and use. This suggests that distance as a barrier to access becomes significant only beyond a particular point. According to the survey 75% of the population reported living less than an hour away

from the bank. Hence for the majority, distance is not a key factor in determining their access, and this only becomes significantly associated with access for those beyond this point.

In 2006 age was a particularly important influence, and older people were much more likely to use a bank account than younger people. Although the mean age of users has fallen from 39.0 years in 2006 to 37.0 years in 2009, the influence of age is still very strongly positive¹⁶.

Source of income was found to be a key influence in 2006. In particular, 64% of government employees used a bank account and were five times more likely to be associated with bank use than those whose main income was farming or fishing (8% of whom had a bank account). Those who were in the private sector¹⁷ were twice as likely to be associated with having a bank account, while those employed on domestic chores were ten times less likely and those who were farm employees or who relied on pensions/transfers from others were three times less likely.

Figure 4 shows mean increases for different categories of location and employment. The proportion of those who sub-let or have investment income has increased the most, however this figure may be affected by the smallness of the sub-sample. The proportion using bank accounts has increased more than the mean among those who are employed in government, the private sector or those who have their own business or are in farming and fishing, while those dependent on transfers or who are employed in agriculture or domestic chores lag behind the mean increase. The regressions show that source of income is still one of the most influential factors in determining access, independent of level of expenditure.

Having government employment rather than a main income from farming or fishing has the strongest positive marginal effect on using a bank account (+38%). Private sector employment and own business have a positive association while employment in agriculture or domestic chores have the negative associations that are the strongest in this income/employment category.

¹⁴ The variable used for distance in 2006 was a subjective assessment by the respondent of very near; near; far; very far.

¹⁵ These distance indicators were used independent of the mode of transport.

¹⁶ We exclude age from the chart of marginal effects as it is a continuous variable and therefore its effect is not comparable so directly with other categorical variables.

¹⁷ The data set does not enable us to breakdown this employment into formal and informal employment.

Level of expenditure¹⁸ was also strongly positively related to use of bank services, as would be expected.

Education was also strongly associated with the likelihood of bank use in 2006. 33.5% of those with a secondary education had a bank account and this has increased to 39% in 2009, with an above average increase compared to those with primary or no education. Moreover, having a secondary education rather than no education now has the second largest positive association with bank account use (+21% - figure 5), while primary education also has a positive association (+8%).

In 2006 13.3% of women compared to 22.6% of men used a bank account and being a woman was associated with a significantly lower likelihood of bank access. Since 2006, the proportion using bank accounts has increased in line with the overall average for both genders. However, this has not removed the negative association of being female with bank use (-2%).

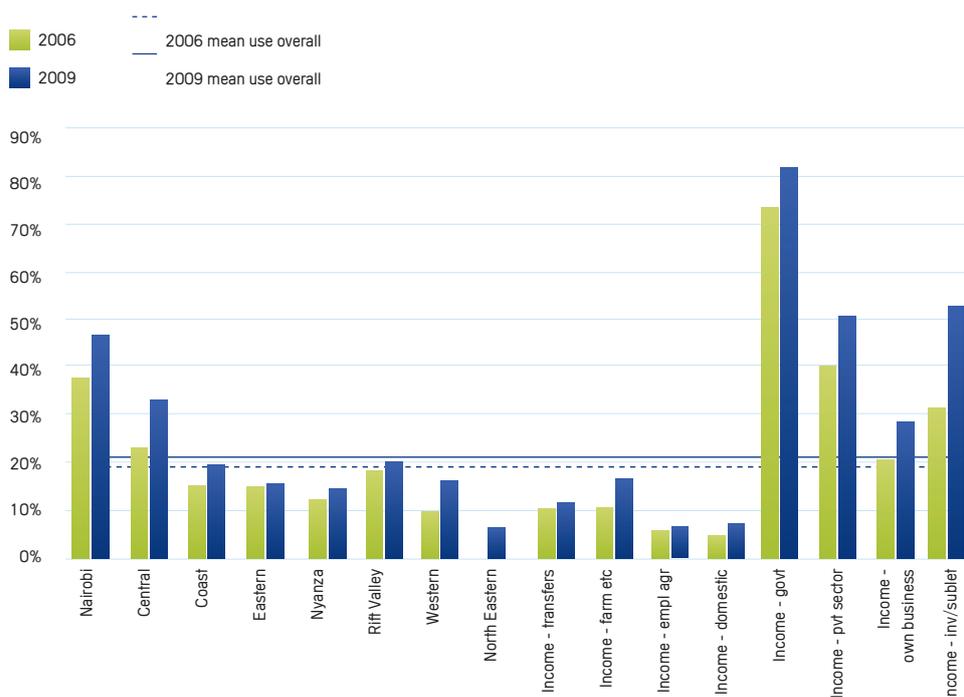
Changes to the regional pattern of access can be seen in figure 4. Here it is evident that the highest increases in use have been seen in Nairobi, Central, Western and North Eastern. The above average increases in Western and North Eastern are encouraging, while that in Coast is similar to the overall average. The regression analysis suggests that; in comparison to being in Nairobi, being in Central creates a positive effect, while being in Coast, Nyanza or North Eastern has negative marginal effects on use.

The regression analysis (figure 5) shows that mobile phone ownership is strongly associated with bank account use. Obviously this is not a causal relationship but demonstrates that this is a strong proxy indicator for bank account use, and more so than assets such as cars or permanent housing.

2.2 SACCOs

Overall use of SACCOs stood at 13.1% in 2006 and has now fallen to 9%, a fall in use of 4.1 percentage points.

Figure 4: Use of bank services 2006 and 2009 by characteristics – income source and Province



¹⁸ We do not include the effect of level of expenditure (log) in charts of marginal effects as its interpretation is not directly comparable to other categorical variables where there is a base case for comparison.

Figure 5: Factors associated with differences in probability of bank account use (relative to base category for each characteristic)

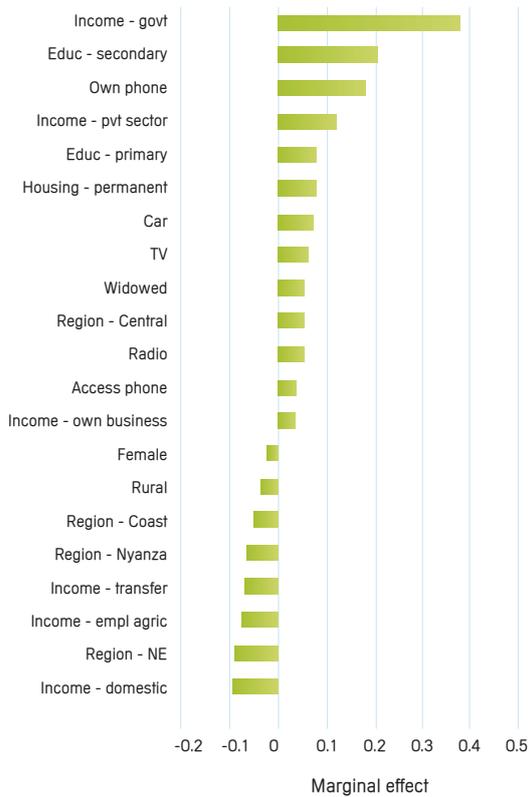
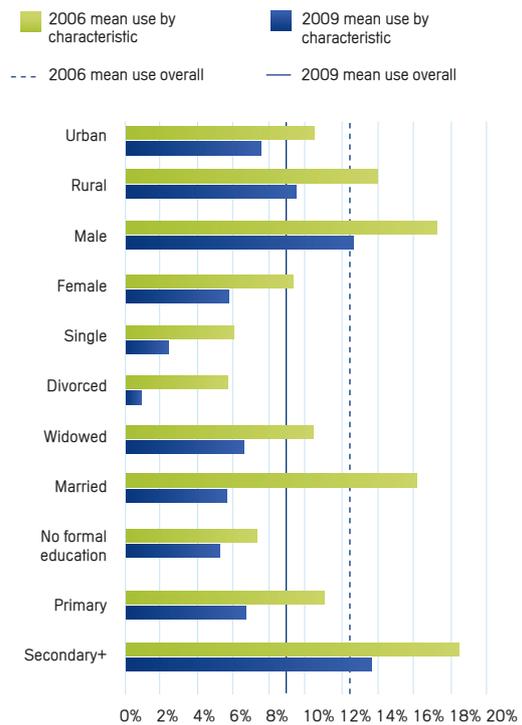


Figure 6: Use of SACCO services 2006 and 2009 by characteristics – rurality; gender; marital status and education

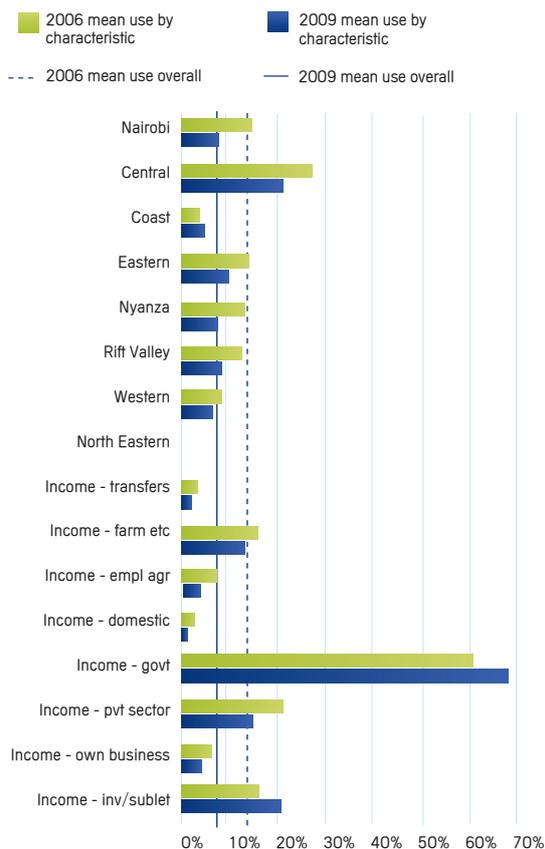


Geographic factors were found to be particularly important in determining access to SACCOs in 2006. 13.9% of the rural population used them compared to 10.5% of the urban population and rural people were twice as likely to save in them and three times as likely to borrow from them. By 2009 the proportion using them had fallen by slightly more in the rural areas (-4.5 percentage points) compared to urban areas (-3 percentage points) but being in the rural areas still presented a significant though small positive association with use compared to urban.

Regional differences were important in SACCO use in 2006, with being located in the Central region more than doubling the likelihood of using them compared to Nairobi while living in the Coast region reduced it fourfold. By 2009, Coast was the only region showing a slight increase in use (see figure 7) while all others followed the overall decline. Being located in Central or Eastern provinces

had a small but significant positive associations with use. The key influences on using SACCOs in 2006 were similar to those for banks – main income source again being a key factor. This pattern remains in 2009, with being a government employee rather than farming or fishing being the employment types most associated with increased likelihood of SACCO use. In the face of the trend decline, the proportion of those with government employment who use SACCOs has in fact risen, as it has also for those with income from sub-lettings and investment. Being dependent on transfers, employed in agriculture or domestic chores, or having your own business were still factors associated with reduced probabilities of holding a SACCO account relative to those doing farming or fishing – these effects are unchanged. Level of expenditure also had a positive and significant association with SACCO use, but at a much smaller scale than it did for use of banks.

Figure 7: Use of SACCO services 2006 and 2009 by characteristics – income and Province



In 2006, a higher age increased the likelihood of using SACCO services. With the drift away from SACCO use, the average age of users has risen slightly further: from 44.8 to 45.5 years.

Education was also a key factor associated with the use of SACCOs, with 18.4% of those with secondary education using SACCOs and this was associated with a raised likelihood of their use more than twofold compared to having no formal education, whereas a primary education raised the likelihood almost twofold. In terms of change, there has been a very slightly higher departure from SACCOs by those with primary education than those with secondary, and having a secondary education retains a small but positive and significant effect on the probability of use.

In 2006, SACCO use was significantly biased towards men. While the fall in the proportion of men using them is slightly

Figure 8: Factors associated with difference in probability of SACCO use 2009 (relative to base category for each characteristic)

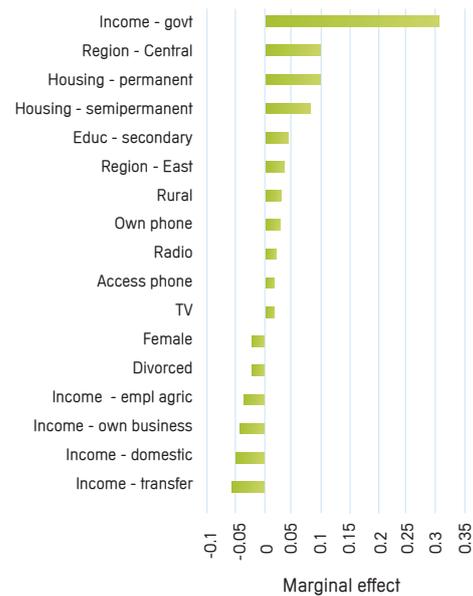


Figure 9: Registered M-PESA users by characteristic – rurality, gender, marital status and education

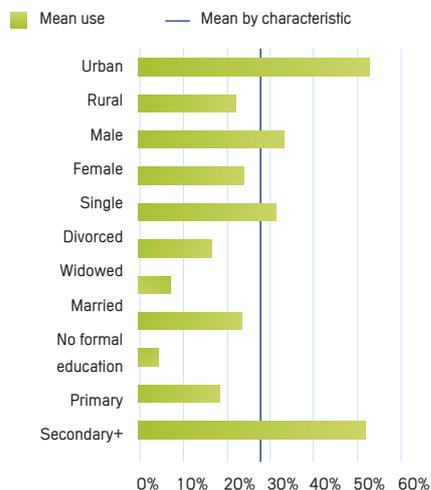


Figure 10: Registered M-PESA users by characteristic – income and Province

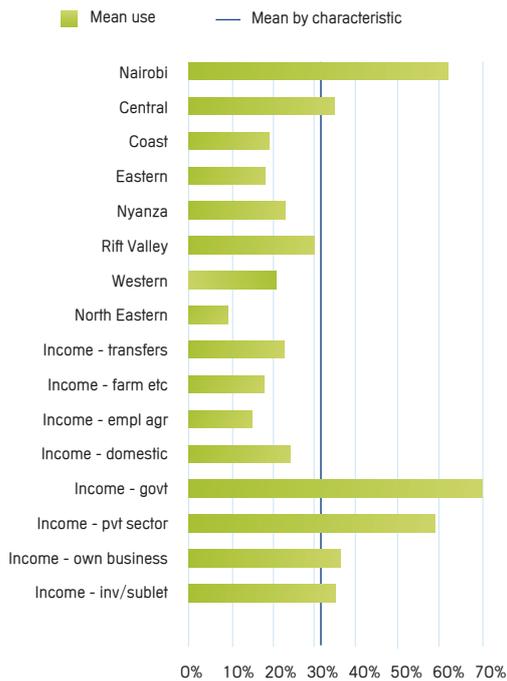
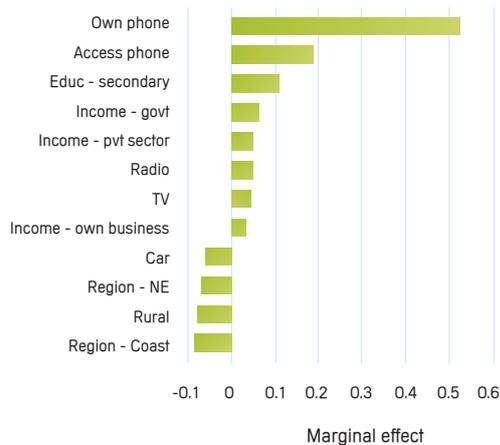


Figure 11: Factors associated with differences in probability of M-PESA use 2009 (relative to base category for each characteristic)



higher than women, the negative bias towards women's use remains. While being of single reduced the likelihood of using a SACCO account in 2006, this effect appears to have disappeared in 2009 and divorce results in a small but negative and significant effect on the probability of use.

2.3 M-PESA

Overall 27.9% are registered M-PESA users. We do not have a comparable figure for 2006 as the service was only just beginning.

Figure 9 shows that urban use at 51.4% is more than double rural use at (21.4%), and marginal effects indicate that rural location is associated with a small but significant negative impact on use. Use in Nairobi is almost double that of any other region with Central and Rift Valley following with higher than average use, while those located in North Eastern use the service least, and this location is also associated with a small negative effect on the probability of use (see figure 10).

A higher proportion of men use the service than women, though interestingly a higher proportion of single people

than the average use it (figure 9). The mean age of registered M-PESA users was 32.5 years compared with 37 years for bank users, suggesting this service tends to reach a younger clientele.

Use is also strongly biased towards those with secondary education. This is the third largest marginal effect in the regressions, increasing the probability of use over those with no education by some 11%.

The proportions of those using the service is higher than the mean of overall use for among those whose main employment is with government or the private sector and this is a strongly positive and significant association in the regression analysis.

Level of expenditure also had a significant and positive effect on use, though this was about a third the size of the effect for banks and SACCOs, suggesting it is relatively less important for this service.

However, the regression equations also show that the factor most associated with use, rather unsurprisingly, is owning a phone or having access to one. While the association

with owning a phone is obvious, it is not entirely clear why having access to one presents such a strong effect since the association here is with registered M-PESA use rather than simply use - which may be via others phones.

This may arise from having a SIM which is used in another's phone but the size of the effect remains slightly surprising. Other associations appear relatively small by comparison at under 10%, but are consistent with the size of these effects we have been finding for other services. Characteristics such as secondary education, income sources from government, private sector or own business, are again associated with increased probabilities of use. Rural location and being in Coast or North East province are negatively associated. However, this pattern is interesting because it shows that the factors that are key determinants for access to banks and SACCOs are again important here.

2.4 Microfinance institutions

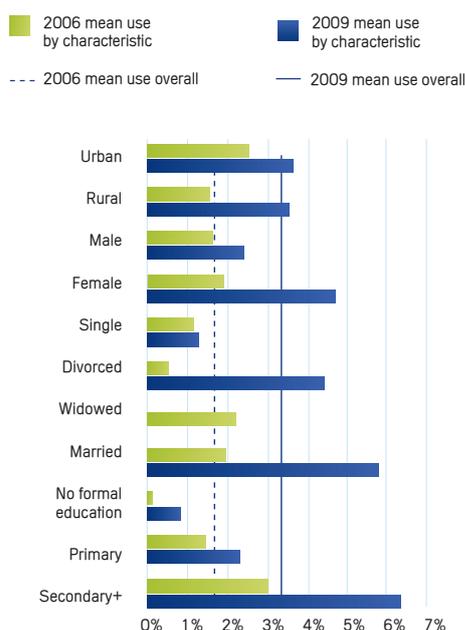
Overall 1.7% of the population used MFIs in 2006 and this share has increased to 3.4% in 2009. Geographically, in 2006 the proportion of urban residents using MFIs (2.4%) was higher than that of rural residents (1.5%), but this is now much more even at 3.5% and 3.4% reflecting a significant expansion of MFI outreach to rural areas. We found that in 2006, geographic differences including those by province did not appear to be having an influence on patterns of use – especially perhaps at the low levels of penetration that were then in place. The changes to regional patterns of use can be seen in figure 13 showing the increased use in Western and Coast in particular and the fact that Nairobi and Central have increased less than the average.

In 2006 we found that the pattern of factors influencing MFI use were prioritised differently to those for banks and SACCOs. First was age, with those over 35 being much more likely to use MFIs. The average age of users has fallen by 3.4 years in 2009: from 40.0 to 36.6 years. This would appear to be quite a big shift (almost double the fall in age of bank users) and suggests some success at attracting younger clients.

In 2006 we found that owning a mobile phone more than doubled the likelihood of using an MFI compared to not using one at all, and we find a similarly strong association with this variable in 2009.

Given that many MFI services have been targeted to

Figure 12: Use of MFI services 2006 and 2009 by characteristics – rurality, gender, marital status and education

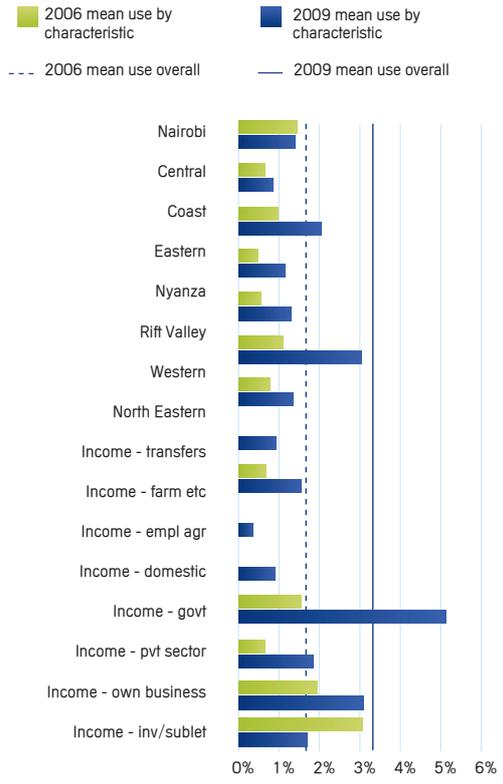


women we would expect to find that gender is a significant variable and women are indeed significantly more likely to use one than men. However this effect is small - indeed all the marginal effects in figure 14 are small –under 5% - and much lower than the effects for Banks or SACCOs where they largest marginal effects are between 30 and 40%. Similarly running your own business rather than having an income from farming and fishing increases the probability of use, but again while significant is only a very small effect. This suggests that these biases although significant are overall much less important than for other services.

Source of income is a much less important determinant of access to MFIs than to banks and SACCOs. figure 13 shows that now some 10% of those employed in government are using MFIs and this is a much higher increase than the average across other services, however this does not produce a positive marginal effect through the regression analysis suggesting that this is not a bias in the service offer.

Never the less, this big increase is very interesting and suggests that government employees are now making use of a wider range of services – including a higher use of SACCOs as above. This may equate to

Figure 13: Use of MFI services 2006 and 2009 by characteristics – income and Province



the extension of multiple use strategies to complement bank access.

The association of level of expenditure with use was significant but small and much lower for MFIs compared to other services.

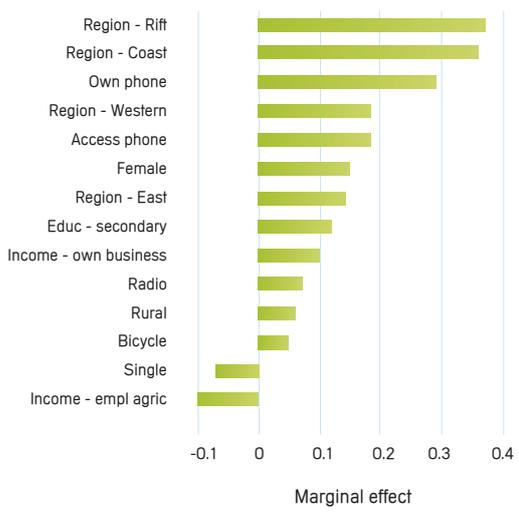
2.5 ROSCAs

The use of ROSCAs has increased from 30% to 31.7% between 2006 and 2009.

Geographically, while a higher proportion of rural than urban residents used ROSCAs in 2006, interestingly this has reversed in 2009. The pattern of regional coverage has also seen some interesting changes.

In 2006 those located in Central region were more likely to use these services than those in Nairobi and those in Coast were much less likely to use them. Figure 16 shows that the proportion using them in Central Region has actually

Figure 14: Factors associated with differences in probability of MFI use 2009 (relative to base category for each characteristic)



fallen, as it has also done in Nyanza while Coast has experienced a big increase in their use of almost 11%. While Rift Valley and Western have experienced rises of 4.3% and 3.9% respectively. Figure 16 shows that living in Western now produces a higher marginal effect relative to Nairobi than Central does. Since the proportion using them in Nairobi has only increased slightly, this suggests that the main increases in urban uses have been in urban cities other than Nairobi. This suggests that ROSCA use is catching up to the average in areas of the country which have used them less in the past.

Reflecting the long known prevalence of informal groups with women, the data indicates that higher proportions of women used ROSCAs in 2006 and that this difference has increased in 2009, with an increase of 2.9 percentage points for women using them but slightly less men (-0.1 percentage points) men. As a result the bias towards women's use is the most important effect demonstrated by the regression results, increasing the probability of use by some 22%. The gender bias of use has therefore increased since 2006.

In 2006 those who ran their own businesses were somewhat more likely to use a ROSCA compared to those undertaking farming or fishing. In the 2009 results, it is those who are government employees, those dependent on transfers and employed in agriculture who

Figure 15: Use of ROSCA services 2006 and 2009 by characteristics – rurality, gender, marital status and education

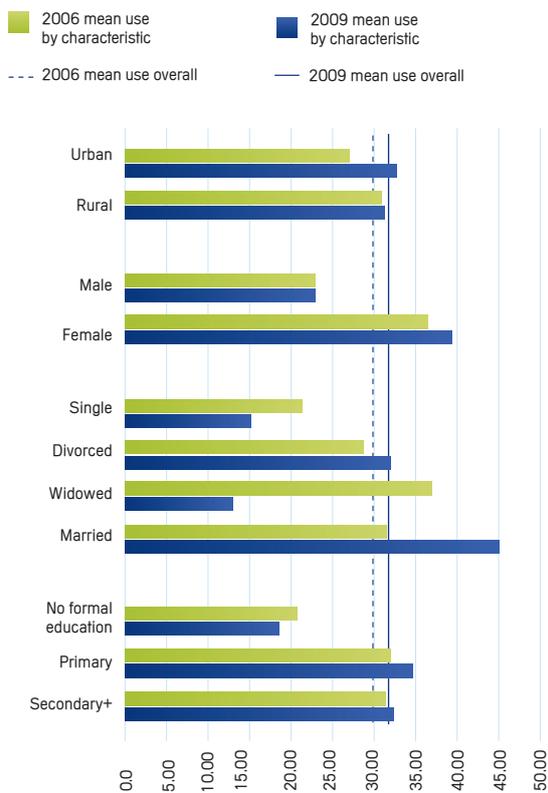
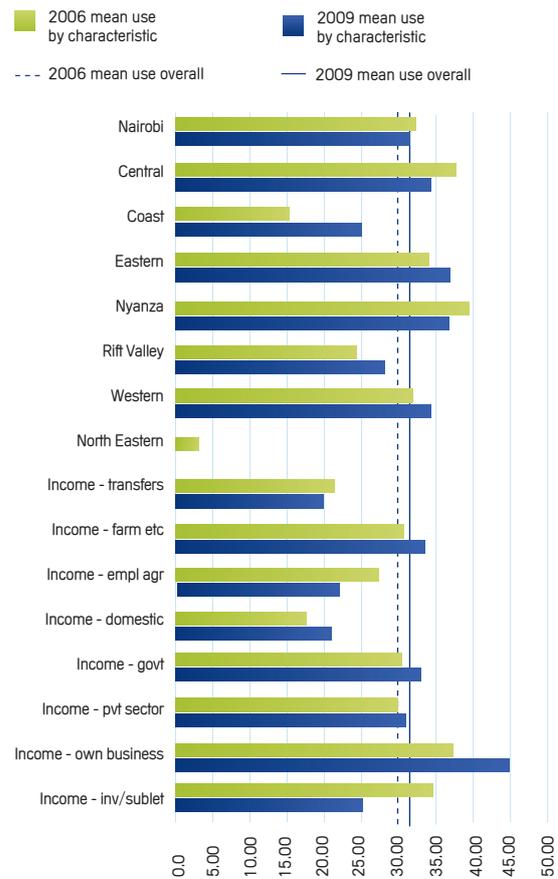


Figure 16: Use of ROSCA services 2006 and 2009 by characteristics – income and Province



have reduced probabilities of using ROSCAs. However, interestingly the reduced probability of use by government employees was not there in 2006. Level of expenditure was also significantly associated with use of ROSCAs, but surprisingly this influence was approximately half as large as for banks and higher than it is for SACCOs and MFIs.

In 2006 although higher proportions of the better educated used ROSCAs, this did not present a significant association with ROSCA use according to the regression analysis. However, in the 2009 data, the proportions of those with primary or secondary education using ROSCAs has increased over 2006 while the proportion of those without

education using them has actually fallen. This widening of the gap has resulted in secondary education appearing as a positive and significant characteristic associated with use. This is disappointing in that it suggests that in the last few years they have not presented a route towards increased financial access for the less educated, despite their simplicity.

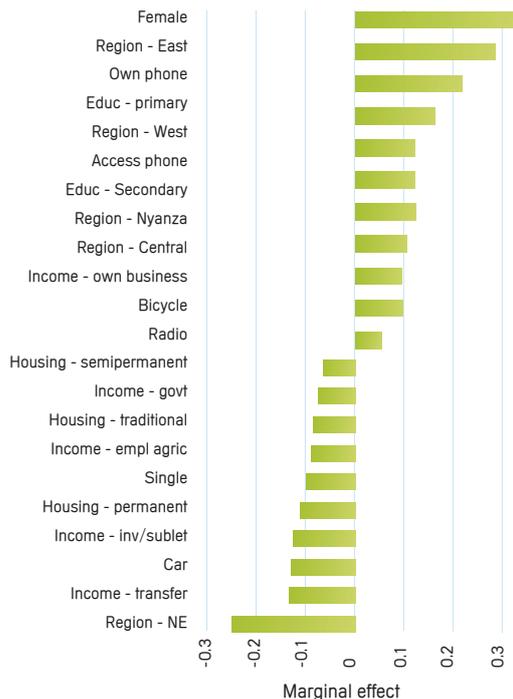
Owning a radio or bicycle and using your own mobile phone all significantly increased the likelihood of using a ROSCA compared to not having them in 2006 and the same is true in 2009.

In terms of age – the mean age of users has fallen from 37.7 to 36.1 years. However, being older is still associated with a positive albeit small and significant marginal effect on the probability of use.

Education, both primary and secondary, have strong positive effects on the probability of use of ROSCAs. This contrasts with the 2006 data in which this effect while positive was not at all significant, and is surprising since we might expect the better educated to use these services much less.

When it comes to marital status, the proportions of those single and widowed using ROSCAs has fallen while the divorced and married have increased their use. In 2006, being single was significantly associated with a reduced likelihood of being in a ROSCA and this effect is still apparent in the 2009 regressions.

Figure 17: Factors associated with differences in probability of ROSCA use 2009 (relative to base category for each characteristic)



3. Financial access strands

The previous section analysed characteristics of users of a range of different financial services. The concept of the financial access strand is to place each user in one category dependent on the most formal service they use. Hence if someone has a bank account but also uses ROSCAs they will be counted as being a user of formal services and placed in the formal access strand. If they only use a ROSCA they would be placed in the informal access strand.

In Kenya the access strands have been defined as follows:

- Formal: banks, building societies, PostBank, insurance companies
- Formal other (semi-formal): SACCOs, MFIs¹⁹, Government institutions, M-PESA
- Informal: ROSCAs, ASCAs, group of friends, employer, moneylender, hire purchase / shop/ buyer
- Excluded: none of the above financial services

The definition of the informal sector used here only involves the use of ROSCAs and ASCAs. These are the two most used forms of informal service and represent intermediation involving more than one other person. The dataset did collect information on a range of other informal services such as local shops as a source of credit, or borrowing from family and friends (as discussed in the previous chapter), or "hidden savings". However, in the financial access strand analysis, people who only use these services are treated as excluded based on the view that their financial activity did not involve interacting with more than one other person²⁰.

The key changes are therefore a 4.1 percentage point increase from 18.5% to 22.6% in formal inclusion. And an increase of 9.8 percentage points from 8.1% to 17.9% in semi-formal inclusion. These rises are reflected in a fall from 35% to 26.8% in informal inclusion and a fall in exclusion of 5.6 percentage points (see Table 2).

In comparison to 2006 the big change is therefore in semi-formal inclusion and this is largely a result of M-PESA services which are now included in this access strand. We have seen above in the service level classification how SACCO use has fallen and MFI use has risen, but these are not the key influences here. We need therefore to

examine the inclusion of M-PESA in more depth, since it is not a savings service in the same way as other services in this category.

In order to clarify trends we have therefore re-classified the access strands to create an M-PESA only access strand. This is also justified on the basis that – as a money transfer service – it does not compete with savings and loan services but is more likely to act as a complement to them. In Table 2 we re-distribute those who are only using M-PESA as a semi-formal service away from this strand to the informal strand or to an 'M-PESA only' access strand. As a result 12.3% move out of the semi-formal strand, 6.5% of these are using M-PESA alongside another informal service so move to the informal access strand, while 5.8% are using M-PESA alone. This helps to demonstrate the increase in financial inclusion that M-PESA has brought about: it has increased overall inclusion by 5.8 percentage points and it means that some 6.5% who are using an informal service also use a more formal service.

As this data suggests, multiple use of services is still very common and Table 3 demonstrates this in more detail. Although the proportion using formal services has increased by 4.1 percentage points, the proportion using bank services alone has fallen by half to 2.5%, while the proportion using these alongside semi-formal services has more than doubled, as has the proportion using all three types of service – primarily a result again of M-PESA. The proportion using formal alongside informal alone has halved.

For the semi-formal strand, both categories of users have doubled, the 'semi-formal only' here represents those in the M-PESA only access strand who are only using M-PESA ie 5.8% and another 2% who are using this alongside other semi-formal services. The doubling of the proportion using semi-formal and informal services includes the 6.5% who have been re-allocated to the informal access strand in the analysis above.

¹⁹ The first MFI to register under the new 2006 Microfinance Act was Faulu in May 2009, this was after the FinAccess survey had been completed, and hence for this survey all MFIs are still in the 'formal other' access strand.

²⁰ However, the category "saving with a group of friends" which is 11.1% of the sample was also excluded from the informal access strand.

Table 2: Access strands 2006 and 2009 and recalculated to exclude M-PESA

	2006	2009	2006-9	2009 Excl M-PESA	2006-9
Access strands (weighted)	%	%	Percentage point change	%	Percentage point change
Formally Included	18.5	22.6	+4.1	22.6	+4.1
Semi-formally included	8.1	17.9	+9.8	5.6	-2.5
Informally included (ASCA & ROSCA)	35.0	26.8	-8.2	33.4	-1.6
Excluded	38.3	32.7	-5.6	32.7	-5.6
M-PESA only				5.8	+5.8
Total	100	100		100	

Table 3: Multiple use of services across access strands

	2006	2009
Access strands (weighted)	%	%
Formally Included (Bank & Post office)	18.5	22.6
Of whom: Formal only	4.9	2.5
Formal & semi-formal	3.2	6.9
Formal and informal	5.5	3.0
Formal & semi-formal & informal	5.0	10.2
Semi-formally included (SACCO, MFI & M-PESA)	8.1	17.9
Of whom: Semi-formal only	3.0	7.8
Semi-formal and informal	5.2	10.1
Informally included (ASCA & ROSCA)	35.0	26.8
Excluded	38.3	32.7
Total	100	100

We proceed to examine the effect of the geographic, demographic and socio-economic factors on affiliation to different strands to see which ones are most important overall in determining the type of access people have (see Annex 2 for regression tables). We have used the revised access strands presented above which exclude M-PESA from the semi-formal strand, and place people who only use M-PESA in their own strand, while those who also use

an informal service remain in the informal access strand. This is in order to be able to better understand whether the main factors associated with inclusion and exclusion in the 2006 report have changed.

Before we proceed, it is useful to note that in comparison to the regression of all registered M-PESA users presented above, the 'M-PESA only' access strand showed again that the ownership of, or access to a phone had the most important effect on affiliation, with this ownership or access increasing the probability of use by some 50% compared to not having or accessing one. However, the effect of all other variables was reduced to less than 1% changes in probability, so that factors which had relatively large and significant effects in the registered M-PESA users regression such as secondary education, income from government or the private sector were not significant in the M -PESA only access strand regression²¹ (see Annex 2). The implication of this is that while those who use M-PESA are more likely to have characteristics of secondary education or employment in government or the private sector, those who only use M-PESA do not have a clear profile in terms of characteristics, that is, it is enabling inclusion of a very diverse range of people. On this basis it is hard therefore to argue that its effect on overall inclusion is overcoming particular socio-economic or demographic barriers to access.

In what follows we assess the importance of particular socio-economic, geographic and demographic variables on affiliation to different access strands following the order

²¹ We should note that this regression did not produce especially robust results, largely because the sample on which it was making observations was quite small.

of influence that was established in the 2006 analysis. We seek to assess whether there have been noticeable changes to the influence of these factors.

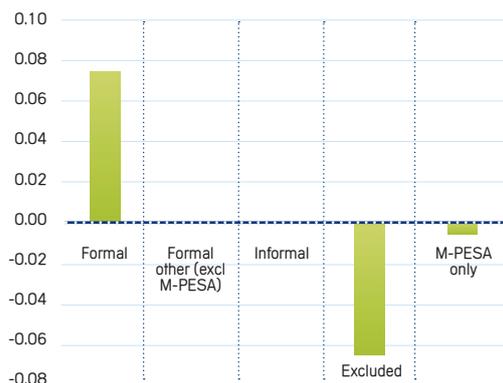
3.1 Level of expenditure and source of income

The main source of income was the factor that had most influence on exclusion in the 2006 analysis. A key point in this round of analysis – as indicated above – is that we have been able to include an expenditure variable, so that where in the earlier analysis, the main source of income was likely to have also been picking up the influence of level of expenditure, so now controlling for this effect. We discuss this before proceeding to analyse the influence of different income sources.

The effect of the expenditure variable is shown in figure 18. The association of expenditure level is strongest with formal inclusion, the expenditure variable having a positive influence of 7.5% on the probability of formal inclusion, while it had a negative 6.5% influence on exclusion. While it had a very small but significant negative effect on M-PESA only use (-0.1%), that regression was not as robust as the other access strands. However, expenditure level had no apparent association with affiliation to the semi-formal or informal access strand.

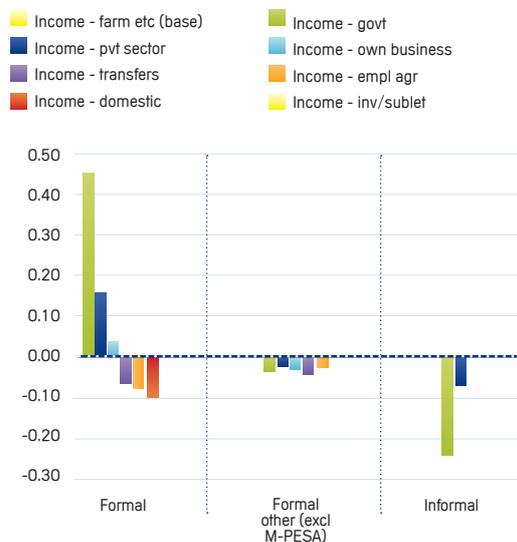
Figure 19 shows that the main income source or employment has a strong overall associations with financial inclusion in similar ways to 2006. Government employees are 45% more likely to be included in the formal access strand and 22% less likely to be excluded compared to

Figure 18: Influences on inclusion – level of expenditure



someone whose main livelihood is farming and fishing. They are also 24% less likely to only use informal services.

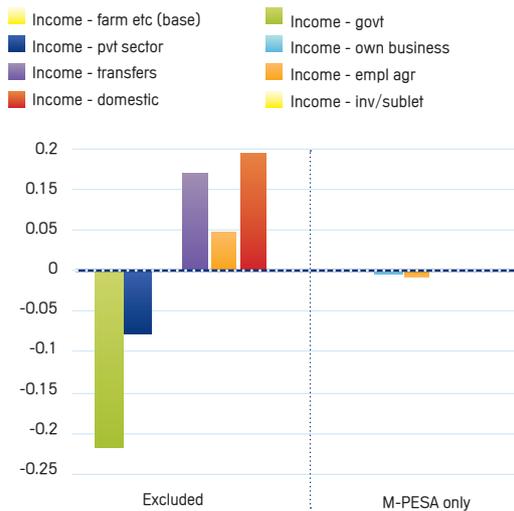
Figure 19: Influence on formal, semi-formal and informal inclusion – employment (main income source)



Private sector employees are 8% less likely to be excluded compared to those who rely on farming and fishing, and 15% more likely to be formally included. The category of employment most associated with exclusion is still undertaking domestic chores - increasing this probability by 15% and reducing the probability of formal sector inclusion by 10%, relative to those getting their income from farming and fishing. The association with dependence on pensions and transfers shows a similar pattern – that they are more likely to be excluded (13%) compared to those in farming and fishing and less likely to be formally or semi-formally included. Those employed on people’s farms in full time/seasonal work are also more likely to be excluded than those in farming and fishing.

Those whose main income is running their own business have a 4% higher probability of using formal services, but a 3% lower probability of using semi-formal services compared to farming or fishing. However, the significance of this form of employment on overall exclusion or informal use has changed in this round of results. This may be due to the inclusion of the expenditure variable which is now controlling for the fact that some of those who run their own business may have rather low incomes.

Figure 20: Influence on exclusion - employment (main income source)



This analysis shows that despite the inclusion of the expenditure variable the ordering of results on the sources of income that are most associated with inclusion and exclusion has changed compared to the 2006 analysis. This demonstrates that while expenditure level does have an association with access, the nature of employment is still strongly influential, and suggests broad categories of people who are more likely to be excluded. The strong influence of Government employment relates to the requirement of having a bank account in order to receive wages and salaries, and similarly for the private sector.

3.2 Age

The effect of age was found to be a key association with inclusion in the 2006 analysis with older age groups much less likely to be excluded overall than 18-24 year olds. The oldest age groups were much more likely to be formally or semi-formally included and less likely to be only informally included.

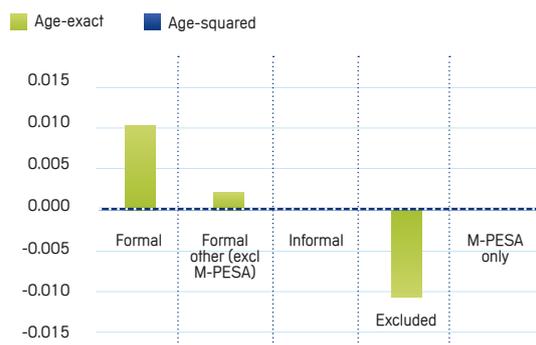
In this analysis, the specification was changed to use the exact age of respondents rather than age categories as this should improve the explanatory power of the regressions. In addition, a variable for "age-squared" was incorporated. This is a standard approach for finding out how the age variable affects the dependent variable as age rises. It is expected that in general the effect of age

would be an inverted U shape in which older people are less likely to use a service. If this is the case, while the coefficient on age may be positive, the "age-squared" variable is expected to have a negative coefficient to confirm that the association reduces at the top of the age range.

The effects of age appear rather small at less than 1% but it must be kept in mind that this is the increased probability for every additional year of age. Hence we can see the effect is as positive for formal sector inclusion as it is negative for exclusion with much smaller effect for semi-formal and no effect for the informal and M-PESA only strands.

This analysis of the influence of age is mostly consistent with the 2006 findings. It again shows how inclusion is strongly associated with age. However, the mean age of users in the M-PESA only access strand was 28 years - contrasting to 32.5 for registered M-PESA users and 37 years for bank users, and a mean age of the whole sample of 35.8. This suggests that M-PESA is attracting a younger age groups of users in general and an even younger group for whom it is their only more formalised service. The regression equation however, does not indicate that age is significantly associated with M-PESA use when other variables are controlled for. But as indicated above, the regression results for this strand were not the most robust of those generated. So we can conclude here that while there would appear to be a bias towards younger people in M-PESA use, the analysis does not so far demonstrate that this is a strong effect compared to other influences.

Figure 21: Influence on inclusion - Age



3.3 Geographic location – province and rural/urban

The influence of location in terms of Province had some important effects on inclusion in the 2006 analysis. Since this analysis holds other factors constant – and in particular now contains an expenditure variable – this is not simply picking up the relative differences in poverty levels across Provinces.

Those living in North-Eastern Province are much more likely to be excluded compared to those living in Nairobi, which is unchanged since 2006. They are also significantly less likely to be included in the formal or informal access strands.

The second highest association with overall exclusion is living in Coast Province which increases the probability of being excluded by 10% compared to living in Nairobi. However, while in 2006 this was explained by the deficit of both access to informal and semi-formal services in the Province, this has changed and now the probability of informal service use is significantly higher compared to Nairobi by 6%. This is an interesting reversal of the pattern.

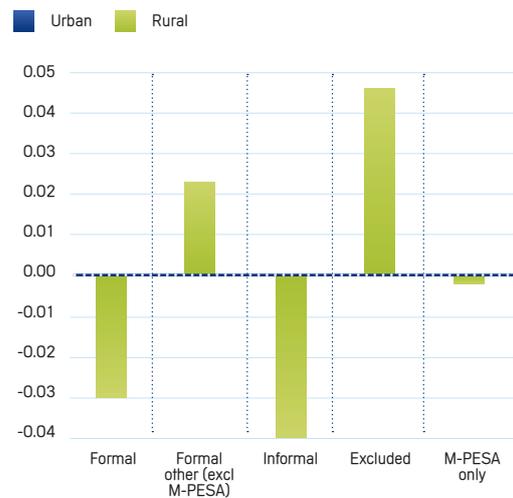
Compared to Nairobi, living in Rift Valley has the next highest association with increased exclusion, increasing it by 6%. Those in Western are more likely to use informal services compared to Nairobi but otherwise are little different to Nairobi in terms of use of other services or overall exclusion. This is little changed since 2006.

While previously, those in Nyanza were more than twice as likely to be excluded and more likely to be informally included compared to Nairobi, now they are no more likely to be excluded but are 6% less likely to be formally included and more likely to be informally included (10%), so that it is the informal sector that is filling the gap in provision.

For Eastern the pattern has not changed. People are less likely than in Nairobi to be excluded overall (8%) but this is a result of being much more likely to be included via the informal sector – with an increased probability of (18%) relative to Nairobi. This is similar to Nyanza in the way that the informal sector is filling the gap in provision although they are not less likely to be formally included.

While those in Central Province were significantly less likely than those in Nairobi to be excluded in 2006, this was matched by increased likelihood of inclusion via the semi-formal rather than formal sector. However, this is no longer the case and they are no less likely to be excluded than those in Nairobi, but are now more likely than those in Nairobi to be included by the formal sector (6%), although also still the only province in which there is a significantly higher probability of being included via the semi-formal sector compared to Nairobi as it is a region where rural cash-crop based SACCOs are particularly strong.

Figure 22: Influences on inclusion - rural vs. urban location



In 2006, the pattern of formal inclusion was – perhaps surprisingly – not significantly affected by Province²². This echoed the findings on rurality at that time suggesting that for those who were able to access banks, the regional factor was not important and hence that there was no obvious bias in formal inclusion once other factors were controlled for. However, this has now changed²³ and Province is an influence on formal inclusion with the effect being positive for Central (6%) but negative for Nyanza (-6%) and Coast (-5%) and North Eastern (-10%). This suggests that the pattern of increased outreach by the banks evident in the 4 percentage point overall increase in outreach does have some regional bias. This is not surprising to the degree that

²² Although this excluded North Eastern for which there were no formal sector participants in the sample and hence the regression equation could not produce a coefficient.

²³ This result is robust to the changed specification of the equation.

the formal sector will inevitably choose its markets and these Provinces represent some of the more inaccessible areas of the country.

The pattern of inclusion via the informal sector is still the same in Nyanza and Eastern; it is this sector that compensates for the lack of formal inclusion. For the semi-formal sector, there is still an increased likelihood of inclusion via this sector in Central – which is still in the main due to SACCOs rather than MFIs, but the bias of this sector against Coast province has disappeared no doubt due to the overall decline of this sector relative to the formal sector as a whole.

This analysis therefore gives us a very strong regional picture of the strength of coverage and the way in which the informal sector reduces that exclusion, especially in Nyanza and Eastern, while the semi-formal sector makes a significant impact on exclusion in Central (relative to Nairobi) - and according to the service by service analysis this is most likely to be contributed through the role of the SACCOs rather than the MFIs, which is understandable from the prevalence of rural SACCOs related to coffee and dairy in that Province.

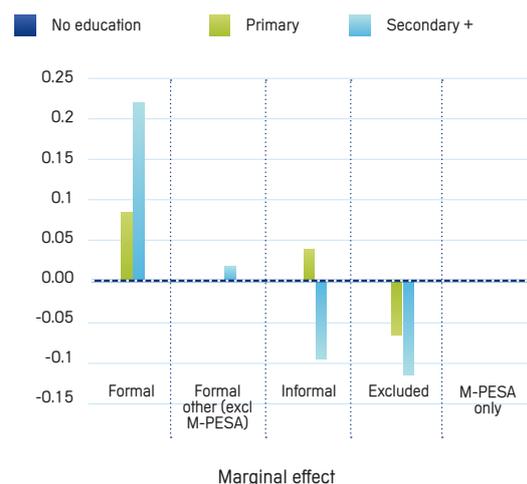
We now turn to the urban – rural dimension of geographical coverage. In the 2006 analysis, being rural was associated with an increased likelihood of overall exclusion, but not from formal or informal services, while being slightly positively and significantly associated with semi-formal inclusion – the effect predominantly of rural SACCOs. In the 2009 analysis, rurality is now appearing to have a small but significant association with access. The association with overall exclusion is still significant and positive, and for formal sector access is still not significant. There is still a significant association of rurality with semi-formal access. However, informal sector access is now negatively and significantly associated with access to the informal sector, which underlines the increased use of ROSCAs in urban areas reported above. Interestingly for the 'M-PESA only' strand, there is a very small effect but this is in fact negative and statistically significant and therefore suggests M-PESA is certainly not reversing the exclusion bias of rural location.

3.4 Education

Education is still strongly associated with the pattern of access: educated people are still significantly less likely

to be excluded than those without formal education, with the influence of secondary education being greater than that of primary. Having a primary education is associated with an increased likelihood of formal inclusion of 9%, while having a secondary education increases it by 21%. Those with secondary education are still significantly less likely to be included through the informal sector. However, the influence of education on semi-formal inclusion is less significant than before: having a secondary education is associated with a slight and significant increased probability of inclusion although being educated at primary level is no longer associated with a positive influence. However, the effect of education on M-PESA use is both very small and not significant suggesting that this is not an important barrier to access. These results suggest the enduring importance of education for formal financial service access. It suggests that while secondary education was still strongly positively associated with M-PESA use for all M-PESA users, it is not currently showing such a bias for those who use M-PESA as their only formal service, and this is obviously positive.

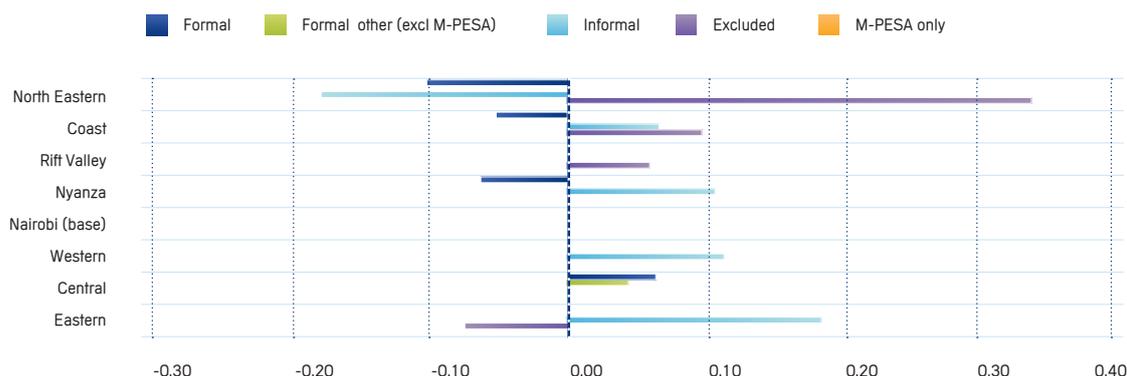
Figure 23: Influences on inclusion - education



3.5 Gender and marital status

Similar to the results for 2006, being a woman is still significantly associated with a lower likelihood of exclusion from financial services overall. However in contrast to 2006, it has also now a significant negative influence on the probability of inclusion in the formal sector relative to men – previously it showed a negative but not significant association. Given the inclusion of the expenditure variable,

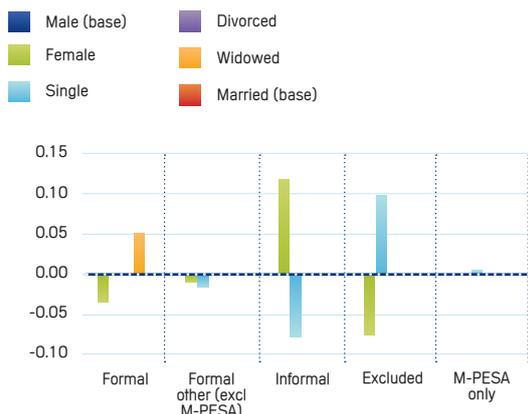
Figure 24: Influences on inclusion - Province



this again suggests that this is not simply a feature of the fact that women may earn less than men. The significantly lower likelihood of exclusion is still associated with a higher probability of inclusion via the informal sector than men, that is, by 12%. The probability of inclusion via the semi-formal sector is similarly negative but now significant. In 2006, the lack of a significant gender effect on semi-formal inclusion was neutralised by the counteracting factors of SACCO bias against women and MFI influence in favour of women. The still slight bias against women in this sector suggests that the positive influence of increasing MFI coverage still does not overcome the bias of SACCOs against women.

In terms of marital status, figure 25 shows that being single can have a strong influence on exclusion and also on semi-formal and informal inclusion, though it does not have a significant effect on formal sector access. This underlines the role of groups in the informal strand in particular, since these often exclude single people if it is felt

Figure 25: Influences on inclusion - gender and marital status



they may be mobile or unreliable. Given that the increase of group use demonstrated above is in urban areas this perhaps presents them with an added disadvantage as they are even less likely to be seen as reliable or stable without family or relations to vouch for them.

3.6 Asset ownership

The analysis looked at the influence of five assets: car, TV, radio, bicycle and mobile phone. Apart from mobile phone use in relation to M-PESA, they operate as proxies for wealth in the overall analysis.

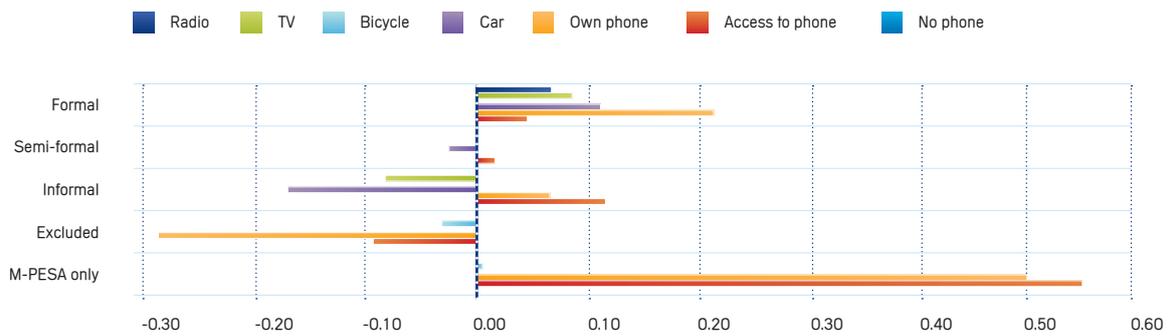
Owning a phone, and even access to a phone, increases the probability of M-PESA use by some 50%. While this is virtually self-defining for owning a phone, the category of access to a phone also increasing the probability of use compared to no phone is intriguing. Since the category is of registered M-PESA users, it may suggest that quite a lot of people use their own SIM cards in other people's phones. It is unclear how otherwise having access to a phone influences use. Interestingly, owning a phone is also strongly associated with formal sector use, with an increased probability of 19%. Owning a phone is also associated with a significantly reduced likelihood of overall exclusion of 30%.

The next asset most associated with patterns of inclusion is a car, which raises the probability of formal sector use by 10%, while significantly lowering the probability of use of the semi-formal or informal sector, though intriguingly not reducing the overall likelihood of exclusion.

Owning a TV is associated with an increased probability of inclusion via the formal sector (+8%) and a lowered

probability of only using informal services. Owning a radio is associated with an increased likelihood of formal sector inclusion (+6%), but not with any other pattern of use, where in 2006 it was associated with reduced likelihood of overall exclusion. Owning a bicycle is associated with a lowered probability of overall exclusion (-3.5%) but not with any other pattern compared to being associated with a slightly higher likelihood of informal inclusion in 2006.

Figure 26: Influences on inclusion - assets



4. Conclusions

The main conclusion of this analysis is that patterns of use have changed little since 2006. If anything, the results suggest that the determinants of use are similar to before, and in the context of an overall service expansion, this has mainly resulted in the inclusion of those most able to take up the services rather than the overcoming of barriers to access. In the 2006 report, we undertook segmentation analysis which indicated that some 8% of the population had characteristics similar to those who were formally included, but who were in fact excluded. The overall expansion of formal sector use by 4% with little change in socio-economic and demographic patterns of use implies that this expansion may have absorbed around half of this group without the need to overcome key barriers to access.

Patterns of formal sector inclusion are still strongly associated with main income sources of government and private sector employment. While those dependent on employment in domestic chores, pensions or transfers are still strongly associated with being excluded, compared to those in farming, livestock and fishing. These results have not been strongly affected by the inclusion of the expenditure variable in this round of analysis. This confirms that the nature of employment is very important in formal sector access in particular. Employers who pay through the banking system are one of the strongest overall influences on formal inclusion.

In fact, the results suggest that some barriers to access are more evident than before, and are in fact now more evident.

First, there is an increased association of ROSCA use with education which is particularly intriguing and suggests the use of these mechanisms is a complement rather than a substitute for more formal services. This appears also to complement the increased use of these in urban areas and suggests this is therefore amongst the most educated rather than a route to access for the less educated.

Second, there is a clearer pattern of inclusion and exclusion by Province, which may have been caused by the patterns of service expansion pursued by formal providers. Formal inclusion is now more associated with use among those located in Central, and less likely for those located in Nyanza and Coast. In 2009, those located in North Eastern and Coast are still associated with significantly higher probabilities of overall exclusion compared to Nairobi, and

Rift Valley has now joined them. Eastern is the only province with lower likelihoods of exclusion overall compared to Nairobi and this is as a result of high levels of informal sector use.

Third, the rural – urban divide for formal services in particular appears stronger. Rurality is now significantly associated with bank use where it was not before. However, distance variables are still not associated with use. We concluded in the 2006 report that rural location was not primarily an issue of distance, and the results in 2009 confirm this (see Annex 4 for a discussion). Rather rurality is more evidently associated with a range of other poverty wealth proxies.

Fourth, the gender bias against formal sector inclusion is also stronger than before in 2006. The increase in proportions using banks has been similar for men and women since 2006, but this has not overcome the historic effects of their reduced use. Indeed, similar to the overall argument, it suggests that the expansion of services has occurred among women most easily able to take them up and most similar to existing customers.

Fifth, M-PESA as now the second most-used service after ROSCAs, has strong associations with characteristics similar to formal services also being strongly positively associated with secondary education and income sources from government and the private sector. However, when we examine patterns of those for whom M-PESA is their only service, we find that these patterns disappear and that these users are very diverse. While M-PESA only users are younger than the mean for all registered users, it is not yet clear that it is reversing the age-bias of service inclusion as a whole.

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Annex 1: Methodology

This study used the Financial Access Survey (FAS) undertaken by the Steadman Group in 2009. This was a repeat of a very similar survey which was first carried out in 2006. The FAS comprises a nationally representative sample of individuals. In 2006, the sample comprised 4418 observations of which 4214 who were over 18 years were used in the analysis. In 2009, the sample comprised 6598 individuals, and 6343 over 18's have been used in the analysis.

The analysis used two main statistical approaches. First, cross-tabulations were used to report the proportions of people with a particular characteristic using a service. These results have been presented in charts in the report. Second, we used probit regressions to examine the association of geographic, demographic and socio-economic factors with the probability of access to different services.

On the left-hand side of the regression model, the dependent variable represents the financial service which has been actually used, hence taking a dichotomous form: a value of 1 if a financial service has been used and a value of zero otherwise. On the right-hand side of the model, the independent or explanatory variables are those geographic, demographic and socio-economic characteristics taken from the Financial Access survey which are used to represent people's profiles. As with the dependent variables, the explanatory variables are categorical and coded in binary form: thus having a value of 1 if a specific socio-economic characteristic corresponds to an individual and a value of zero otherwise. Two variables were continuous: age and log of expenditure.

The results reported are the regression results converted into marginal effects which indicate the probability of someone with a particular characteristic using a service relative to someone with the base characteristic for that group of variables. For example, the result reported for "female" is relative to men. The marginal effect can be considered a probability, hence -0.023 indicates that a woman is 2.3% less likely to use a bank than a man. The regression results therefore indicate the influence of the variable when all other variables in the analysis are held constant.

Annex 2: Regression tables - access strands

Table 1. Access strands

	(1)	(2)	(3)	(4)	(5)
	Formal	Formal other (excl M-PESA)	Informal	Excluded	M-PESA only
Urban		-	-	-	-
Rural	-0.03		0.023 ***	-0.04 *	0.046 **
Male		-	-	-	-
Female	-0.03 ***		-0.009 *	0.117 ***	-0.077 ***
Single	-0.007		-0.016 **	-0.079 ***	0.098 ***
Divorced	0.032		0.014	-0.045	0.030
Widowed	0.05 **		-0.005	-0.008	-0.008
Married		-	-	-	-
Age-exact	0.01 ***		0.002 **	0.003	-0.01 ***
Age-squared	0.00 ***		-0.000	0 **	0 ***
No formal education	-	-	-	-	-
Primary	0.09 ***		0.004	0.039 *	-0.07 ***
Secondary+	0.22 ***		0.017 *	-0.097 ***	-0.115 ***
Nairobi	-	-	-	-	-
Central	0.06 ***		0.042 **	-0.016	-0.046
Coast	-0.05 **		-0.013	0.063 **	0.095 ***
Eastern	-0.029		0.002	0.181 ***	-0.076 ***
Nyanza	-0.06 ***		0.001	0.104 ***	0.019
Rift Valley	0.001		0.002	-0.015	0.063 **
Western	0.003		-0.011	0.111 ***	-0.017
North Eastern	-0.10 ***			-0.18 ***	0.332 ***
Income - transfers	-0.07 ***		-0.038 ***	-0.006	0.13 ***
Income - farm etc	-	-	-	-	-
Income - empl agr	-0.08 ***		-0.023 ***	0.022	0.051 **
Income - domestic	-0.10 ***		-0.016	0.014	0.153 ***
Income - govt	0.45 ***		-0.032 ***	-0.238 ***	-0.229 ***
Income - pvt sector	0.16 ***		-0.023 ***	-0.068 ***	-0.079 ***
Income - own business	0.04 **		-0.028 ***	0.020	0.000
Income - inv/sublet	0.038		-0.016	-0.035	-0.003
Housing - permanent	0.10 ***		0.018	-0.093 ***	-0.022

Note: base categories for categorical variables are as follows: Urban; Bank near; Bank 0-30 mins; Male; Married; No education; Province - Nairobi; Income - sale of own produce from farming and fishing; Housing - temporary; No phone.

Table 1. Regression tables: Access strands continued

	(1)		(2)		(3)		(4)		(5)	
	Formal		Formal other (excl M-PESA)		Informal		Excluded		M-PESA only	
Housing - semi-perm	0.06	**	0.019		-0.040		-0.006		0.002	
Housing - temporary	-	-	-	-	-	-	-	-	-	-
Housing - tradition	0.012		-0.010		-0.035		0.008		0.001	
Radio	0.06	***	0.008		-0.019		-0.009		0.001	
TV	0.08	***	-0.003		-0.083	***	-0.028		-0.001	*
Bicycle	0.003		0.003		0.019		-0.035	**	0.001	*
Car	0.10	***	-0.025	**	-0.171	***	0.001		-0.001	*
Own phone	0.19	***	0.010		0.067	***	-0.29	***	0.502	***
Access to phone	0.04	*	0.017	**	0.115	***	-0.098	***	0.551	***
No phone	-	-	-	-	-	-	-	-	-	-
Logexp	0.08	***	0.004		0.006		-0.065	***	-0.001	***
Observations	6315		5984		6315		6315		6315	
Robust in parentheses *** p<0.01, ** p<0.05, * p<0.1										
Pseudo R2	0.3978		0.1525		0.1233		0.2507		0.2124	
Sensitivity	61.26%		0.00%		36.59%		48.15%		0.00%	
Specificity	92.49%		100.00%		87.22%		90.81%		100.00%	
Positive predictive value	74.56%		-		58.73%		69.22%		-	
Negative predictive value	86.91%		94.08%		73.47%		80.32%		95.27%	
False + rate for true \bar{D}	7.51%		0.00%		12.78%		9.19%		0.00%	
False - rate for true D	38.74%		100.00%		63.41%		51.85%		100.00%	
False + rate for classified	25.44%		-		41.27%		30.78%		-	
False - rate for classified	13.09%		5.92%		26.53%		19.68%		4.73%	
Correctly classified	84.23%		94.08%		70.42%		78.00%		95.27%	

Note: base categories for categorical variables are as follows: Urban; Bank near; Bank 0-30 mins; Male; Married; No education; Province - Nairobi; Income - sale of own produce from farming and fishing; Housing - temporary; No phone.

Annex 3: Regression tables - services

Table 1. Services

	(1)	(2)	(3)	(4)	(5)	(6)	(7)						
	BANK	BANK	BANK	SACCO	MFI	ROSCA	M-PESA						
Bank not far	0.017												
Bank far	0.007												
Bank very far	-0.029												
Bank - 10-30mins		0.006											
Bank - 30-60mins		-0.017											
Bank - >60mins		-0.055	***										
Rural			-0.034	**	0.028	***	0.006	*	-0.006		-0.072	***	
Female	-0.023	**	-0.022	*	-0.022	*	-0.021	***	0.015	***	0.225	***	-0.014
Single	-0.005		-0.006		-0.004		-0.010		-0.007	**	-0.09	***	0.019
Divorced	0.031		0.032		0.030		-0.023	*	-0.002		-0.040		0.003
Widowed	0.056	***	0.058	***	0.055	***	0.010		-0.001		0.005		0.009
Age Exact	0.008	***	0.009	***	0.008	***	0.005	***	0.003	***	0.01	***	0.001
Age Squared	0	***	-0.000	***	0	***	0	***	0	***	0	***	-0.000
Educ - primary	0.076	***	0.083	***	0.08	***	0.013		0.002		0.106	***	0.029
Educ - secondary	0.204	***	0.214	***	0.209	***	0.044	***	0.012	**	0.081	***	0.114
Region - Central	0.032		0.034	*	0.055	**	0.103	***	0.004		0.069	**	0.017
Region - Coast	-0.059	***	-0.059	***	-0.051	***	-0.019		0.036	***	0.010		-0.085
Region - Eastern	-0.045	**	-0.034		-0.031		0.032	**	0.014	**	0.194	***	0.002
Region - Nyanza	-0.076	***	-0.079	***	-0.065	***	0.005		0.010		0.08	***	-0.012
Region - Rift Valley	-0.03	*	-0.028		-0.019		0.019		0.037	***	0.023		0.024
Region - Western	-0.020		-0.018		-0.003		0.012		0.018	**	0.087	***	0.020
Region - North Eastern	-0.086	**	-0.095	***	-0.09	***					-0.234	***	-0.069
Income - transfer	-0.065	***	-0.074	***	-0.07	***	-0.055	***	-0.004		-0.123	***	-0.014
Income - empl agric	-0.076	***	-0.083	***	-0.077	***	-0.033	***	-0.01	*	-0.084	***	0.020
Income - domestic	-0.093	***	-0.103	***	-0.096	***	-0.049	***	-0.002		-0.055		0.019
Income - govt	0.386	***	0.393	***	0.381	***	0.306	***	-0.004		-0.068	*	0.064
Income - pvt sector	0.131	***	0.128	***	0.122	***	0.016		-0.003		0.003		0.055
Income - own business	0.041	***	0.039	**	0.033	**	-0.042	***	0.01	***	0.066	***	0.032
Income - inv/sublet	0.049		0.043		0.033		-0.004		-0.003		-0.113	**	-0.002
Housing - permanent	0.08	***	0.080	***	0.08	***	0.096	***	0.000		-0.101	***	0.011
Housing - semipermanent	0.039		0.040		0.042		0.083	***	-0.004		-0.059	**	0.009
Housing - traditional	-0.006		-0.006		-0.004		0.049		-0.007		-0.077	**	-0.026

Note: base categories for categorical variables are as follows: Urban; Bank near; Bank 0-30 mins; Male; Married; No education; Province - Nairobi; Income - sale of own produce from farming and fishing; Housing - temporary; No phone.

Table 1. Regression tables: Services continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	BANK	BANK	BANK	SACCO	MFI	ROSCA	M-PESA
Radio	0.054 ***	0.055 ***	0.055 ***	0.019 **	0.007 **	0.036 **	0.049 ***
TV	0.067 ***	0.069 ***	0.065 ***	0.016 **	0.004	0.020	0.046 ***
Bicycle	0.006	0.007	0.009	-0.008	0.005 *	0.063 ***	0.005
Car	0.074 ***	0.082 ***	0.078 ***	0.010	0.001	-0.118 ***	-0.058 ***
Own phone	0.184 ***	0.185 ***	0.185 ***	0.025 **	0.029 ***	0.145 ***	0.522 ***
Access phone	0.041 *	0.032	0.041 *	0.018 *	0.018 **	0.083 ***	0.194 ***
Log expenditure	0.074 ***	0.076 ***	0.073 ***	0.019 ***	0.004 ***	0.038 ***	0.025 ***
Observations	6315	6081	6315	5984	5984	6315	6315
Robust in parentheses							
*** p<0.01, ** p<0.05, * p<0.1							
Pseudo R2	0.389	0.3819	0.3888	0.286	0.201	0.135	0.4345
Sensitivity	60.53%	60.64%	60.34%	22.46%	0.00%	38.47%	72.52%
Specificity	93.03%	92.54%	93.30%	98.46%	100.00%	87.79%	86.80%
Positive predictive value	74.59%	74.25%	75.29%	64.66%	%	60.91%	68.66%
Negative predictive value	87.45%	86.88%	87.43%	90.99%	96.47%	74.25%	88.78%
False + rate for true \bar{D}	6.97%	7.46%	6.70%	1.54%	0.00%	12.21%	13.20%
False - rate for true D	39.47%	39.36%	39.66%	77.54%	100.00%	61.53%	27.48%
False + rate for classified	25.41%	25.75%	24.71%	35.34%	%	39.09%	31.34%
False - rate for classified	12.55%	13.12%	12.57%	9.01%	3.53%	25.75%	11.22%
Correctly classified	84.81%	84.18%	84.97%	89.97%	96.47%	71.46%	82.72%

Note: base categories for categorical variables are as follows: Urban; Bank near; Bank 0-30 mins; Male; Married; No education; Province - Nairobi; Income - sale of own produce from farming and fishing; Housing - temporary; No phone.

Annex 4: The significance of rural location in formal service use

The analysis in 2006 found that rural location was not a significant determinant of use of formal services in general under the access strand, or bank services in particular. This finding also applied to analysis undertaken on the Uganda Financial Access survey data – see Johnson and Nino-Zarazua (forthcoming). This finding was counter to a number of other studies that have used both this data and other studies that have used other datasets and in general have found that being rurally located is a significant influence on formal service use. We argued that this may have arisen because our specifications were country specific and used a range of proxy indicators for poverty which the rural variable might have been picking up in cross-country studies. In the academic paper on this analysis, we have therefore argued that it is not necessarily distance that is the barrier to use when a range of other socio-economic characteristics are taken into account but that in regressions with a limited range of other variables, rural location may be acting as a proxy for these. To conclude therefore that distance to a bank is the key issue for access to services for rural people may therefore be erroneous.

However, one of the constraints to the 2006 analysis was the lack of an income/expenditure variable. Kumar's study in Brazil has shown that geographic variables became less important once income was added so suggesting that geographic variables were acting as proxies for poverty. The 2009 study now enables the inclusion of this variable – although it captures cash expenditure only and hence is not a complete indicator of relative consumption poverty. We therefore expected that geographic variables would become less important with this changed specification to the regression.

First, the regression results for the formal access strand do not show rurality as significant when the expenditure variable is included, suggesting that the 2006 result may also have been robust to this.

Second, however, rural location is now significant for bank access with the inclusion of expenditure as a variable, where it was not in 2006. This result is valid with or without the expenditure variable and rurality is significant and negative in both cases but having a relatively small effect of under 5% in both cases. The emergence of rurality as significant between 2006 and 2009 for Bank use therefore

runs counter to our expectations about what may happen once expenditure was included. So this suggests it is a real change in aspects of access. As the analysis showed above, the increase in rural bank use was lower than that for urban use and this proportionately differential use has increased rather than reduced.

Third, we have also run the regressions replacing rurality with two distance variables – time and cost to get to the nearest bank. Only where it takes more than 1 hour to travel to the bank is it significant. Since 75% of the population live less than one hour from the nearest bank, this therefore suggests that it is not distance per se that is the key factor in making rural location a significant characteristic and appears to confirm our earlier conclusion that the rural variable is picking up factors other than distance. Running the regression with additional variables (but without expenditure) related to source of lighting, water and sanitation also result in the rural variable not being significant – which tends to confirm that rural location is operating as a proxy variable for a range of other factors to do with rural conditions rather than distance.

We are then left with the question; why is it significant for bank use but not for the formal access strand? The size of the effect is overall rather small – an increase in probability of use of 3-4%. The formal access strand includes use of various services other than banks, in particular, insurance and pensions. It appears therefore that this slight rural bias for banks disappears once users of these services – or of particular products which are long term and do not require less frequent interactions – are incorporated. In particular, pensioners are likely to retire to rural areas and may draw these through eg SACCOs rather than banks.

CHAPTER 6

Spatial dimensions of the financial sector in Kenya 2006-2009

CYRIL FOUILLET AND SUSAN JOHNSON

1. Introduction

Analysis of the spatial dimensions of financial access is an important and effective means of mapping excluded populations and improving understanding of the overall dynamics of financial inclusion. Based on data from the FinAccess surveys of 2006 and 2009, this report uses Geographic Information Systems (GIS) and statistical techniques to trace financial service usage patterns in Kenya. This spatial approach allows us to present spatial variation in estimated usage at a fine scale for the main formal, semi-formal and informal financial services in Kenya, namely, banks, SACCOs, MFIs, M-PESA, ROSCAs and ASCAs.

For each type of financial institution six maps are shown. The first pair of maps shows the estimation of usage levels in 2006 and 2009 respectively (maps a and b), giving us a visual comparison of the changes in usage patterns between the two surveys. A second pair of maps (c and d) shows the standard deviations around the mean level of usage for different parts of the country. This gives a visual

representation of inequality of access across the country in 2006 and 2009. The analysis must be interpreted with reference to a third pair of maps (e and f) in each section, indicating variations in the quality of the spatial interpolation of the data for different sampling clusters. These maps show that the best quality estimates are in the highest populated regions where more of the sample was concentrated. They suggest that the mapped data for the north and north-east in particular should be treated with much greater caution in terms of accuracy. In addition, a reference map showing population densities, roads and railways is provided in figure 1 in order to assist with interpretation.

The report finishes with a set of maps for each survey year, comparing the various financial institutions (banks, SACCOs etc.) in terms of usage. This gives us a sense of the relative significance in terms of usage for different types of financial institution in 2006 and 2009.

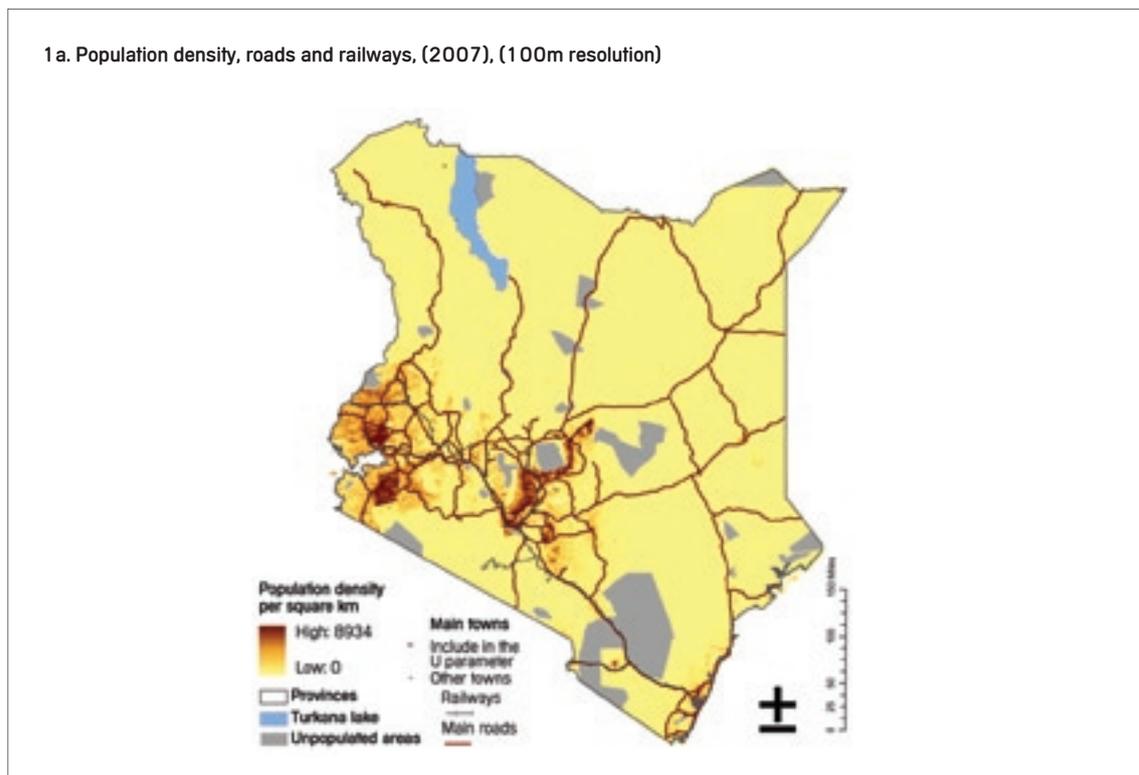
2. Methodology

The FinAccess surveys have been conducted using the fourth National Sample Survey and Evaluation Program (NASSEP IV) sampling frame for nationally representative surveys which gives clustered samples of respondents. In order to create a spatial representation of national coverage from this data it has been necessary to use statistical and GIS techniques to interpolate data from these observations to the whole country.

The methodology used here has been developed by Larmarange (2007) to estimate Human Immunodeficiency Virus (HIV) prevalence from national demographic and health surveys in sub-Saharan Africa, and is inspired by

the technique of trend surface analysis first introduced by Chorley and Haggett (1965). This technique is based on rings of the same number of observed persons. The main idea of this methodology is to analyse spatial variations as the sum of regional trends and local residuals, and a random error. By aggregating data from neighbouring clusters, revised cluster level service use percentages have been estimated and these are then interpolated using the ordinary kriging method (Cressie, 1993; Diggle, 2000). Additionally, since the estimates produced differ in quality, these have also been interpolated to give spatial representation of the data quality. Further details of this methodology can be found in Annex 1.

Figure 1: Population density map



3. Maps by financial service

3.1 Banks

Bank outreach increased from 17.8% in 2006 to 21.7% in 2009 that is by 3.7 percentage points – representing a 20% increase in use. Figure 1a shows the variation for 2006 and the highest concentration of use of some 56% is concentrated in Nairobi and on its north side towards Thika. The density of use shades away towards the south of Nairobi, while it shades off into Central and has similar levels of use towards Eldoret.

The coverage for 2009 (2b) shows higher levels around Nyeri and the shading towards Nakuru is also stronger. The darkest areas represent levels of use of around 50% of the population. This greater density of coverage in these areas in 2009 compared to 2006 may in part be due to the 2009 data set producing better interpolations of actual coverage. However, given the strong differences between the maps the images suggest that much of the increase in usage between the two surveys has been strongly concentrated in this area of the country. By contrast the yellow shading around Eldoret appears to have diminished slightly in 2009 although the levels

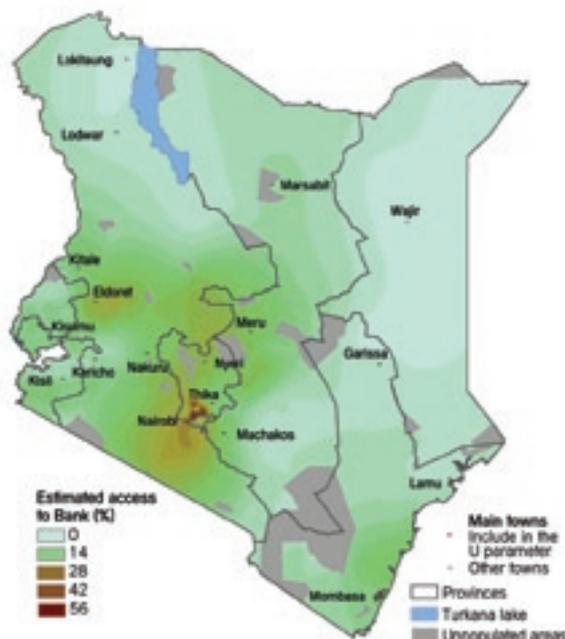
shading representing levels of use of 14% appear to have extended in the area between Kisumu and Kericho.

Maps 2c and 2d show the standard deviations around the mean of usage levels for the country as a whole, giving a visual representation of the inequality of access across the country. The colour moving from yellow to red shading represents those areas that have above the mean levels of access, while the bluer shading shows those areas below the mean. As we would expect the north and north east of the country have below mean levels of access, while Nairobi and the Central Region have above mean levels. Between 2006 and 2009 the areas with above mean levels are more concentrated in the Central Region than elsewhere and some small patches of pink showing slightly higher than mean levels have appeared in Western and on the border of Nyanza and Rift Valley provinces.

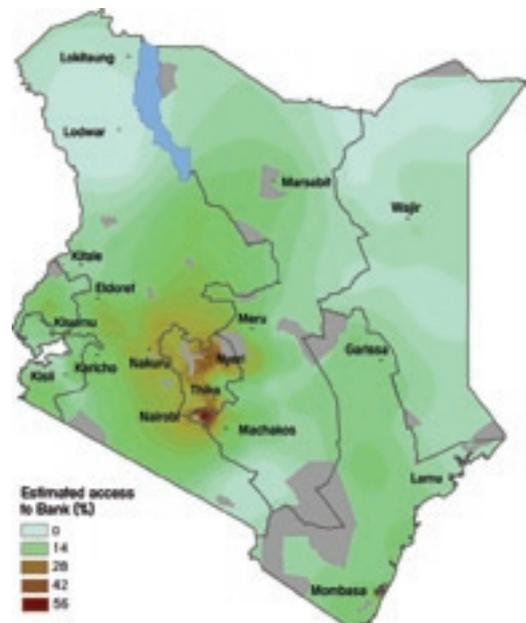
Maps 2e and 2f give quality indicators of the data showing that the best quality estimates are in the highest populated regions where more of the sample was concentrated. It suggests that the mapped data for the north and north-east in particular should be treated with much greater caution in terms of their accuracy.

Figure 2: Access to banks

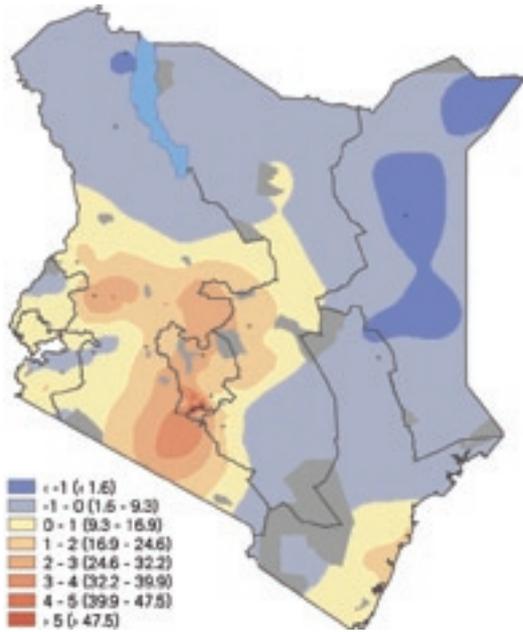
2a. Estimated access 2006



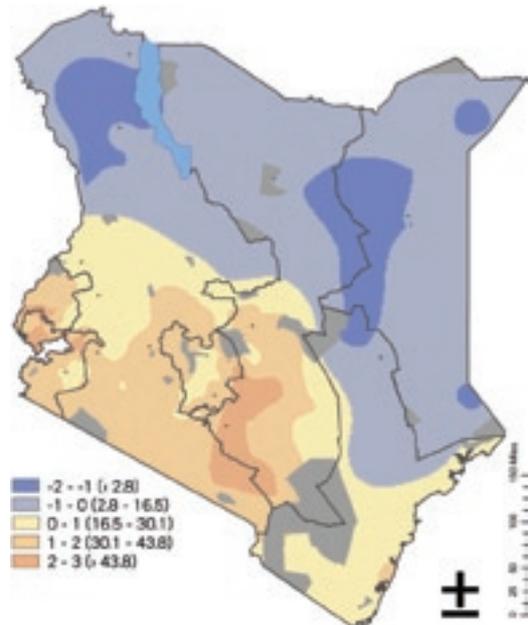
2b. Estimated access 2009



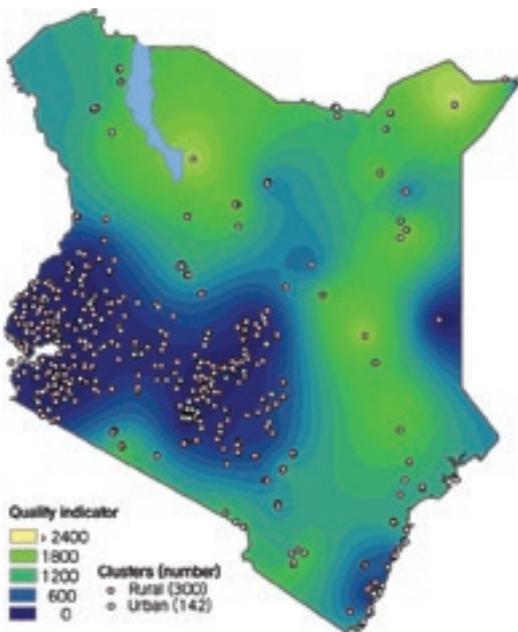
2c. Standard deviation 2006



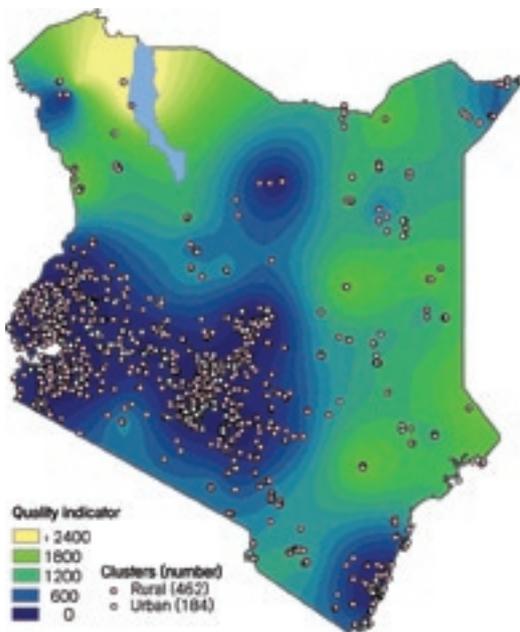
2d. Standard deviation 2009



2e. Quality indicator 2006



2f. Quality indicator 2009



Note 1: Parameters used to estimate the bank access in Kenya in 2006 are N=116 and R=108 and, in 2009 N=142 and R=104. Further details of this methodology can be found in Annex 1. Note 2: Population density information come from the AfriPop project which is part of the Malaria Atlas Project (MAP) (Tatem et al., 2007)

3.2 SACCOs

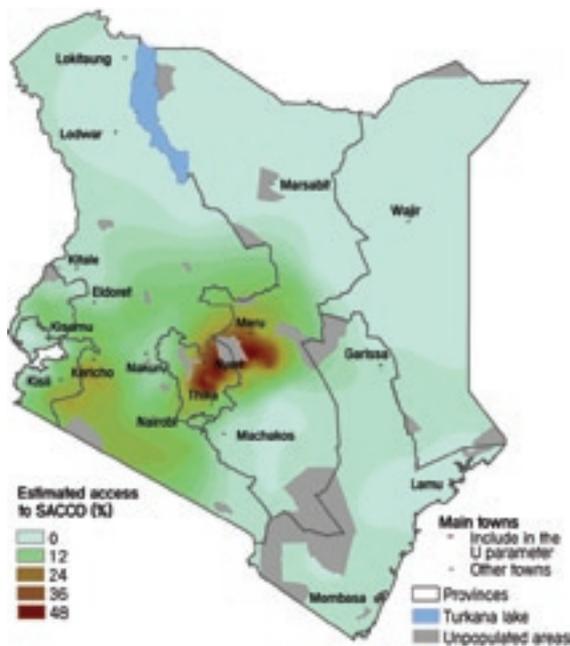
SACCO coverage fell from 13.1% to 9% between 2006 and 2009 according to FinAccess. This 4.1% fall in use represents a fall of 31%. Figure 3 maps 3a and 3b shows that this fall has affected the stronghold of SACCOs in Central and Eastern Province (Meru and Embu) where the highest levels of use reached 48%. However the area of South Nyanza on the border with Rift Valley – and south of Kericho also appears to have seen a reduction in use. This has traditionally been a tea growing area and this suggests that perhaps tea SACCOs have suffered particularly as a result of this decline. Map 3g which shows the percentage change between 2006 and 2009 is harder to interpret in this case. The extreme drops in coverage represented by the blue areas are again in areas where the quality of estimates is low, as is the brown area in the

north representing large increases in coverage, and we therefore do not consider these in depth. A further area of increase in Eastern Province is also on the edge of the higher quality estimates, and does not seem to be reflected in the differences between maps for 2006 and 2009. Areas in Central and near Kericho as indicated above seem to clearly represent areas of falling coverage.

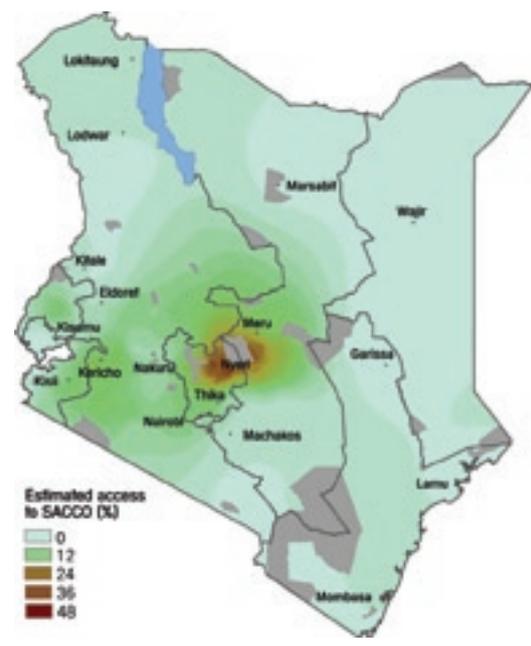
Inequality of access represented by maps 3c and 3d again clearly show the concentration of above average SACCO use in the northern part of Central Province and towards Meru, with below average areas also clearly the case in the Coast Province as much as the northern parts of Rift and Eastern Provinces and North Eastern. The reduced inequality of usage between 2006 and 2009 is a result of the overall reduced levels of use.

Figure 3: Access to SACCOs

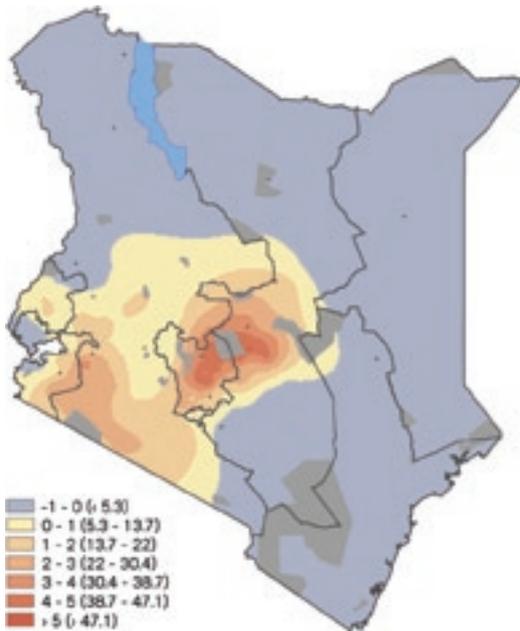
3a. Estimated access 2006



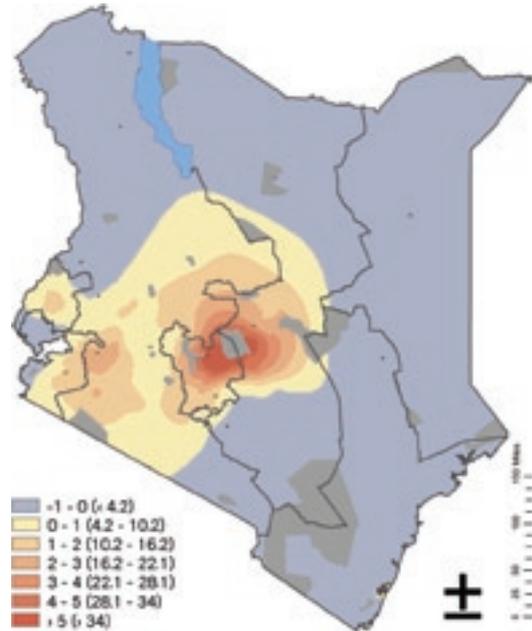
3b. Estimated access 2009



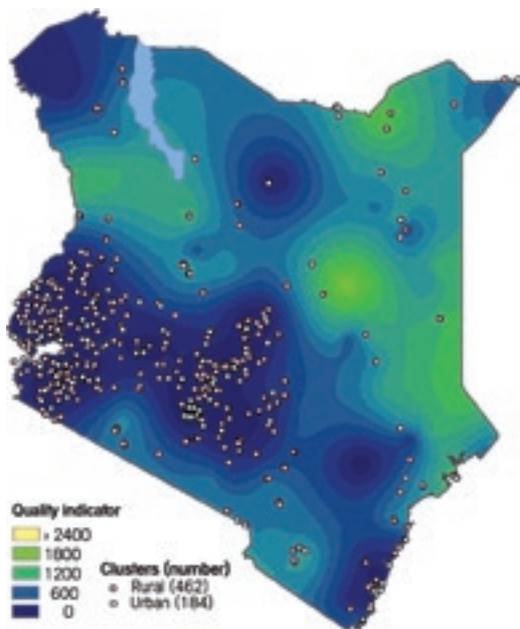
3c. Standard deviation 2009



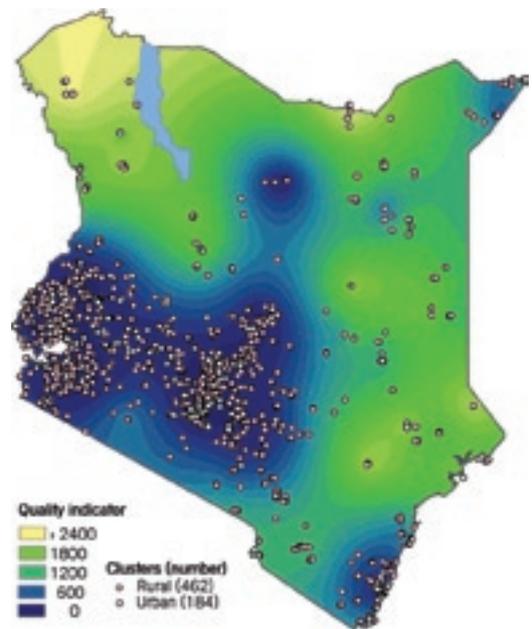
3d. Standard deviation 2009



3e. Quality indicator 2006



3f. Quality indicator 2009



Note 1: Parameters used to estimate the SACCO access in Kenya in 2006 are N=141 and R=118 and, in 2009 N=228 and R=120. Further details of this methodology can be found in Annex 1.

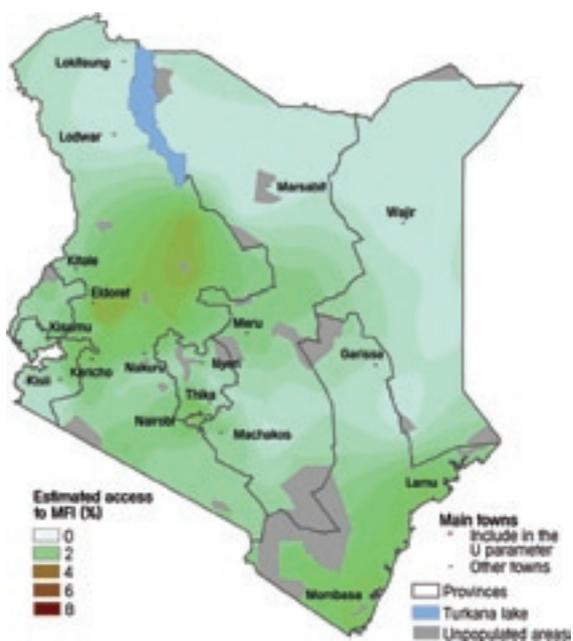
3.3 Microfinance institutions

The maps of microfinance institutions (MFI) coverage are perhaps the most surprising of those produced. Overall coverage doubled from 2006 and 2009 from 1.7% to 3.4%. However given these low overall values, the extrapolation is based on relatively little data. The areas of concentration in both 2006 and 2009 are Nairobi and areas in Rift Valley Province. In 2006, the area to the north east of Eldoret shows slightly higher levels of access than elsewhere. This is not easy to explain other than that it may reflect particular NGO activity working with credit in these areas. While in

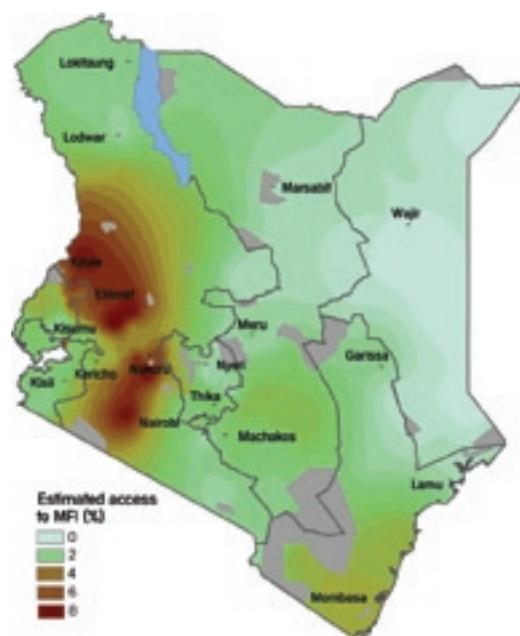
2009 coverage is highest in the western part of Rift valley and south of Nakuru with levels of use reaching 8%. The 2009 coverage may be explained by the consequences of Post-election violence (PEV) for microfinance activity and reflect a rise in use of loans as part of PEV support packages. These hotspots are also reflected in maps 4c and 4d which show levels of inequality. They also suggest that a further geographic focus for rising levels of use is around Mombasa and along the coastal strip. The quality maps (4e and 4f) show that the estimates of use in northern and north-eastern parts of the country are particularly poor for MFI's.

Figure 4: Access to MFIs

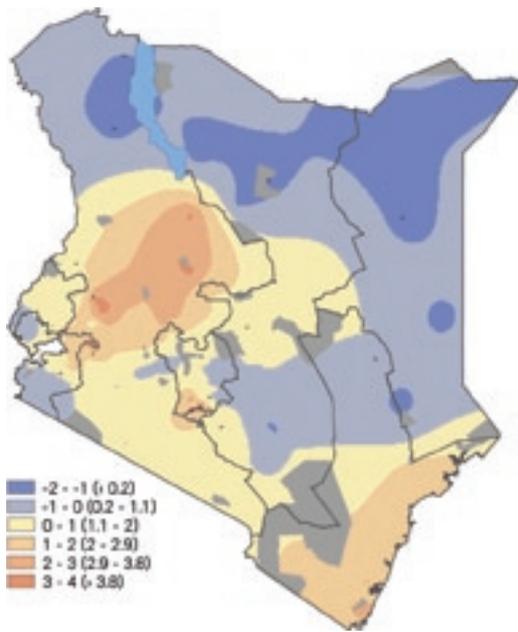
4a. Estimated access 2006



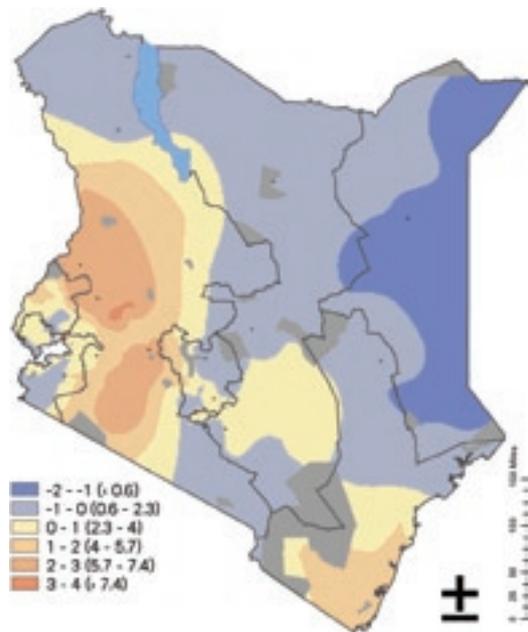
4b. Estimated access 2009



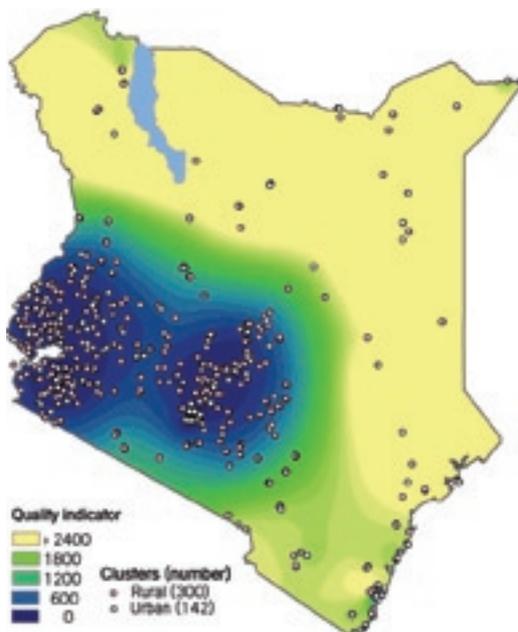
4c. Standard deviation 2006



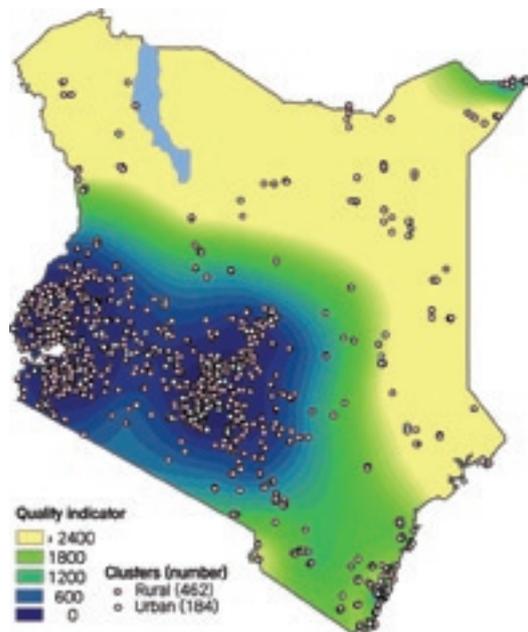
4d. Standard deviation 2009



4e. Quality indicator 2006



4f. Quality indicator 2009



Note 1: Parameters used to estimate the MFI access in Kenya in 2006 are N=392 and R=200 and, in 2009 N=362 and R=136. Further details of this methodology can be found in Annex 1.

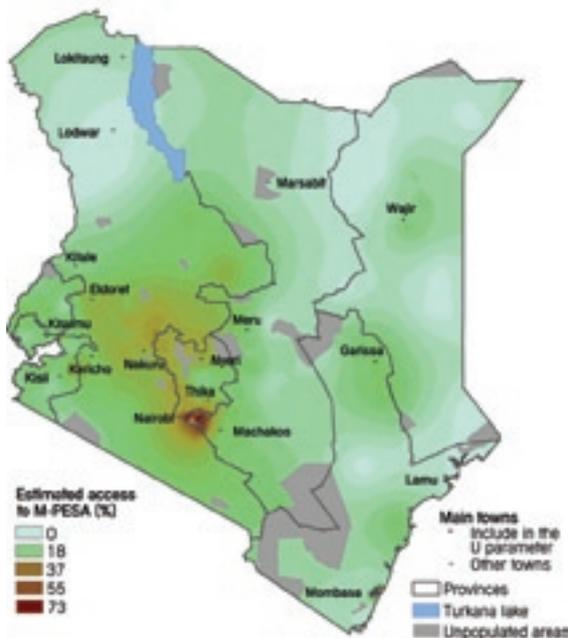
3.4 M-PESA

For M-Pesa we are unable to make a comparison between 2006 and 2009 as it was introduced in 2007. The map for the 2009 coverage clearly conveys the density of Nairobi-based use in comparison to the rest of the country. The highest levels of use in Nairobi reach some 73% of the adult population while the bright green areas still represent levels of use of 18%. Map 5a shows how use also extends towards the highland areas and Nakuru and Nyeri, with

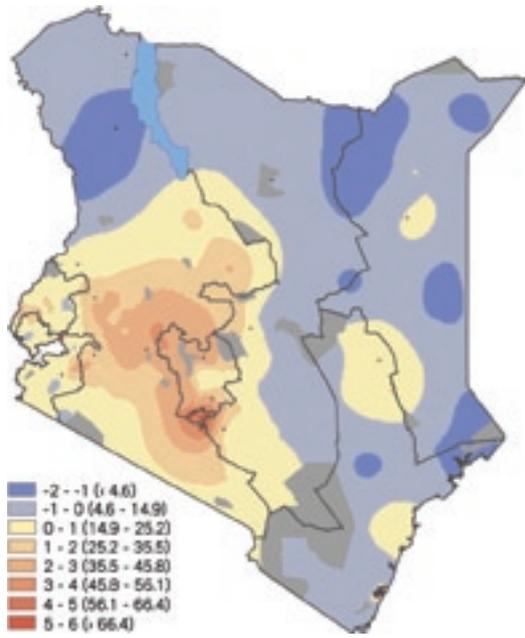
some higher levels of use in Eldoret and Kericho. The latter are also evident in map 5b where the pinker areas show that usage levels are above the mean. As can be seen from the quality map, the density of observations stemming from high levels of registered M-Pesa usage, mean that the M-PESA maps give the highest quality mapping interpolations and these extend to more of the country than for any of the other service maps.

Figure 5: Access to M-PESA

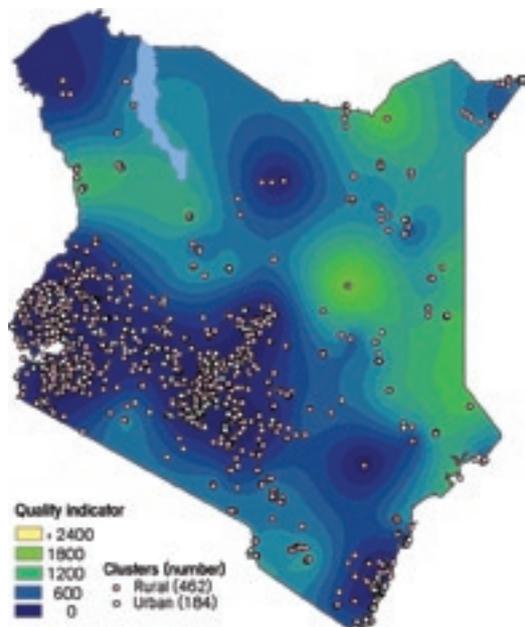
5a. Estimated access 2009



5b. Standard deviation 2009



5c. Quality indicator 2009



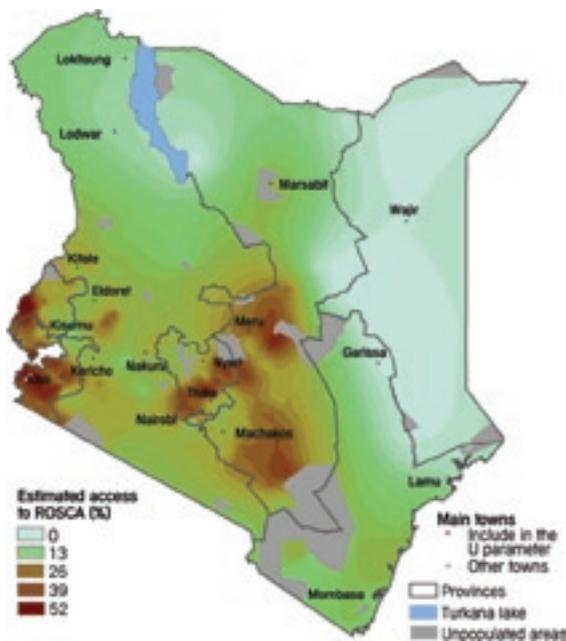
3.5 ROSCAs

ROSCAs are the most used financial service in Kenya at 29.3% of the adult population in 2006 and 31.7% in 2009. Concentrations of usage tend to reflect the most densely populated parts of the country (compare map 6a with figure 1) and the concentration of use is in Central Province and parts of Western and Nyanza Provinces, with the highest levels reaching 52% of the population. The exception to this is usage in Eastern Province which extends well beyond areas of high population densities. The use of ROSCAs in north and northeastern areas of the country is again notably low and this is again reflected in the blue patches on maps c and d.

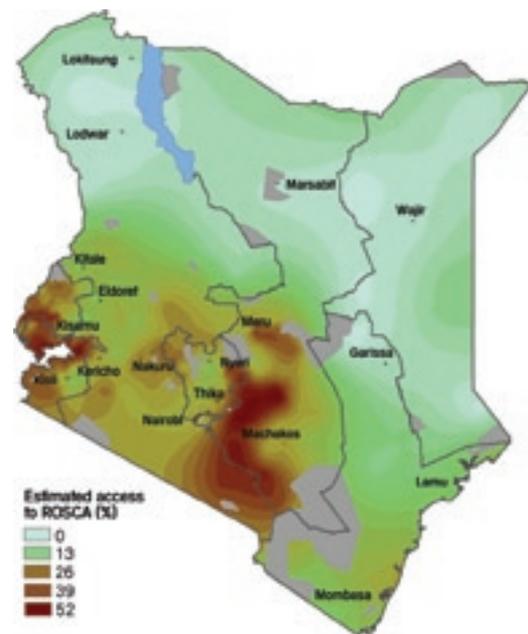
Overall coverage has increased by 2.4 percentage points or 9% between 2006 and 2009. Focusing on the areas where the quality of estimates is strongest, Central Province is indicated as an area where use has in fact tended to fall. On the other hand, we see areas of increased usage in Eastern and Coast Provinces, with a small point of focus near Kitale also. Central Province has long been known to be an area of extensive ROSCA use, and the fall in usage in this area may therefore represent a shift to greater use of formal sector services (compare results on banks above). At the same time, patterns in Eastern and Coast provinces suggest that use of ROSCAs may be growing in areas where they were previously undeveloped.

Figure 6: Access to ROSCAs

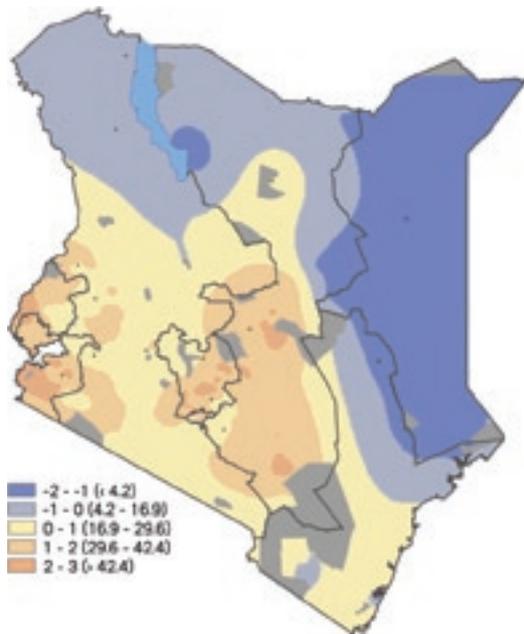
6a. Estimated access 2006



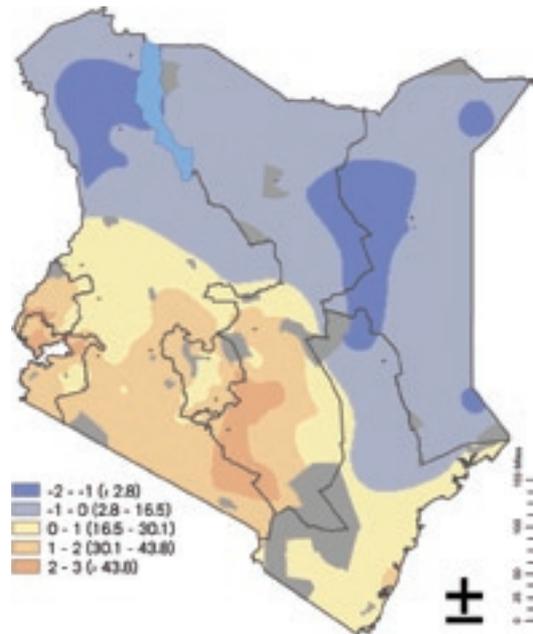
6b. Estimated access 2009



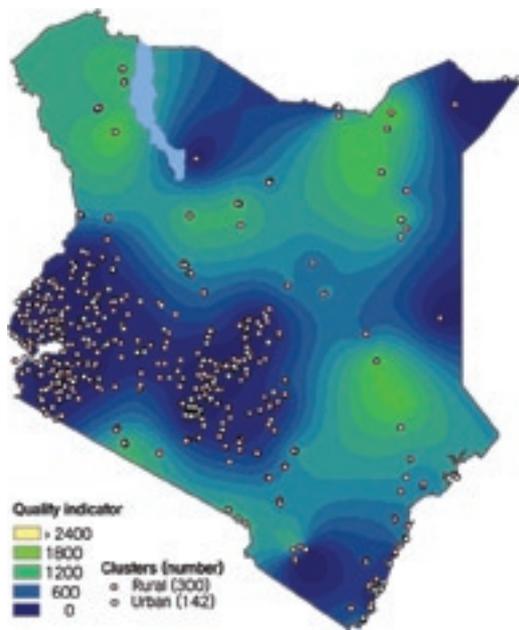
6c. Standard deviation 2006



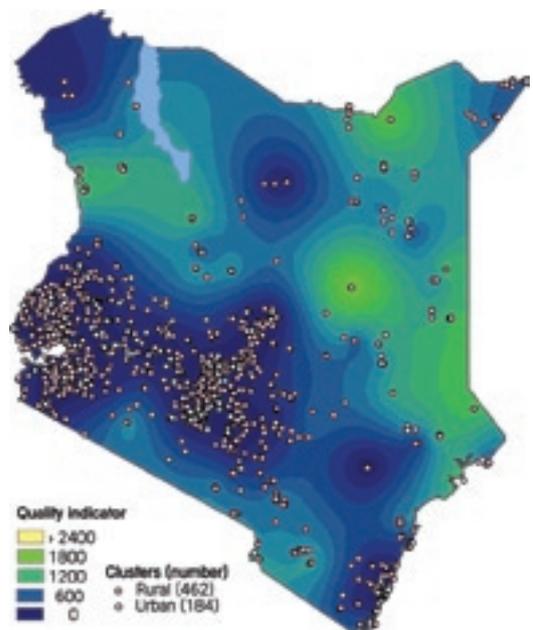
6d. Standard deviation 2009



6e. Quality indicator 2006



6f. Quality indicator 2009



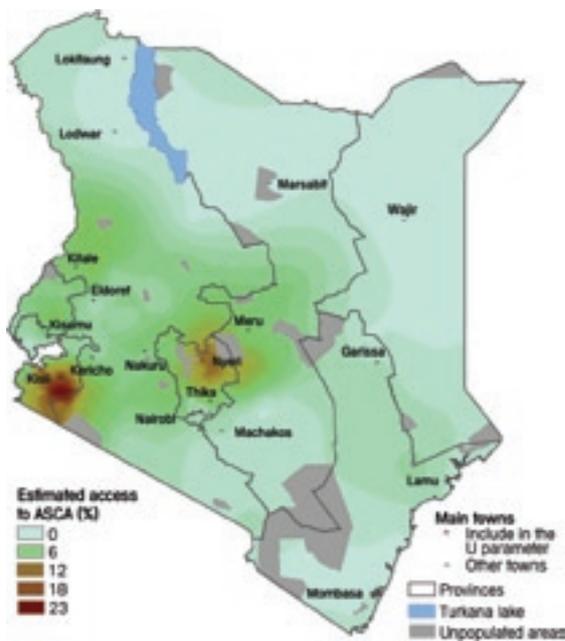
Note 1: Parameters used to estimate the ROSCA access in Kenya in 2006 are N=81 and R=90 and, in 2009 N=112 and R=89. Further details of this methodology can be found in Annex 1.

3.6 ASCAs

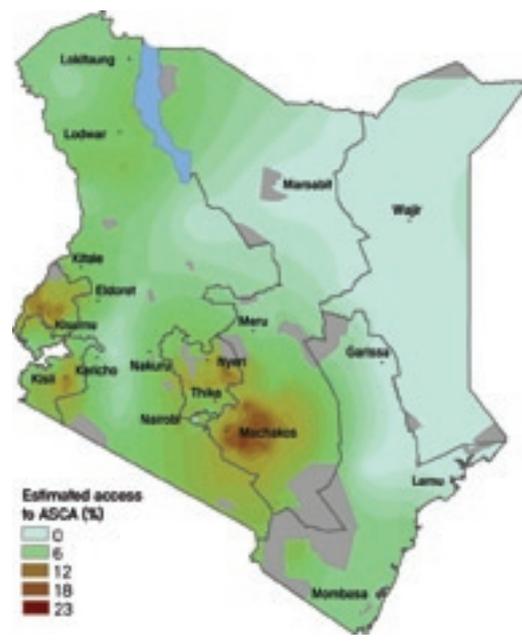
The use of ASCAs increased from 5.7% to 8% in aggregate between 2006 and 2009. In 2006 the map shows a concentration of the highest levels of ASCA use around Nyeri and Kisii, at some 23% of the population. In 2009 these areas of concentration appear to have reduced, and instead the highest levels of use are seen in Eastern Province around Machakos and Kitui, with darker spots towards Nyeri and Western Province.

Figure 7: Access to ASCAs

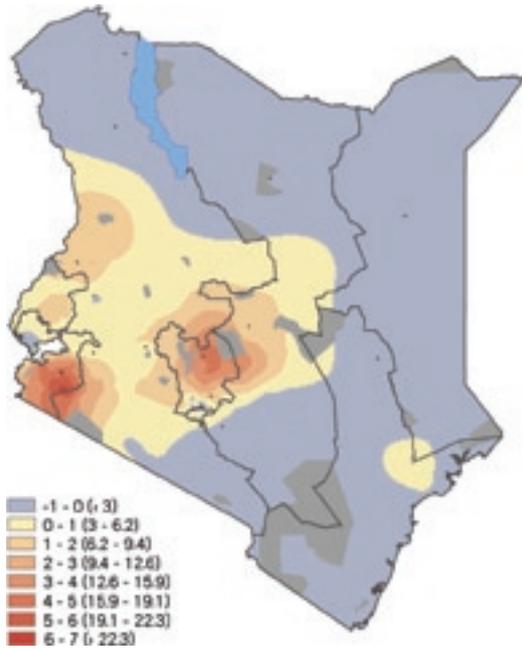
7a. Estimated access 2006



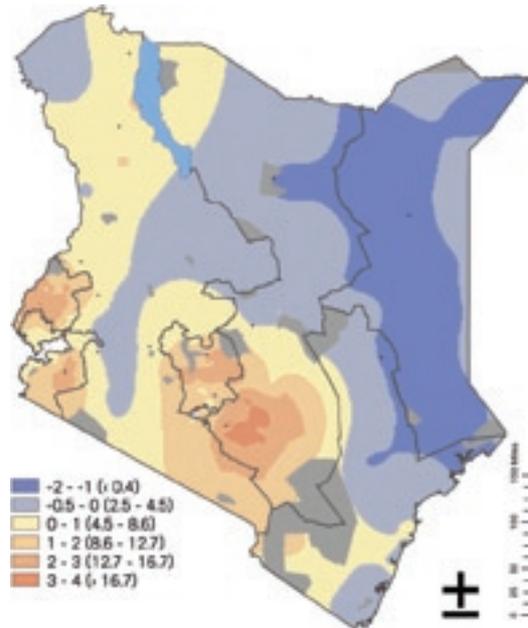
7b. Estimated access 2009



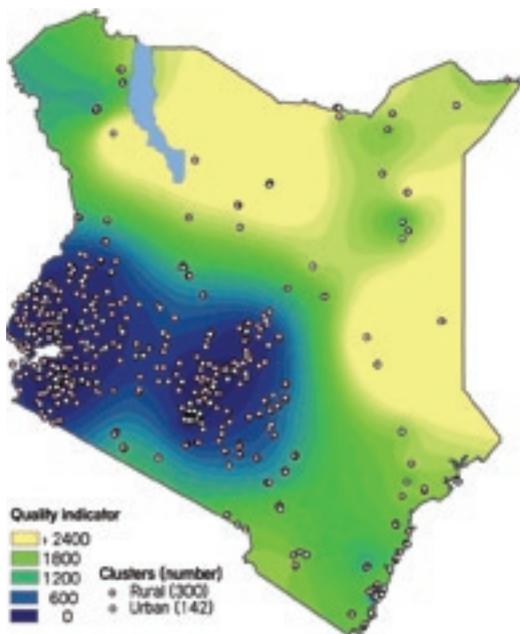
7c. Standard deviation 2006



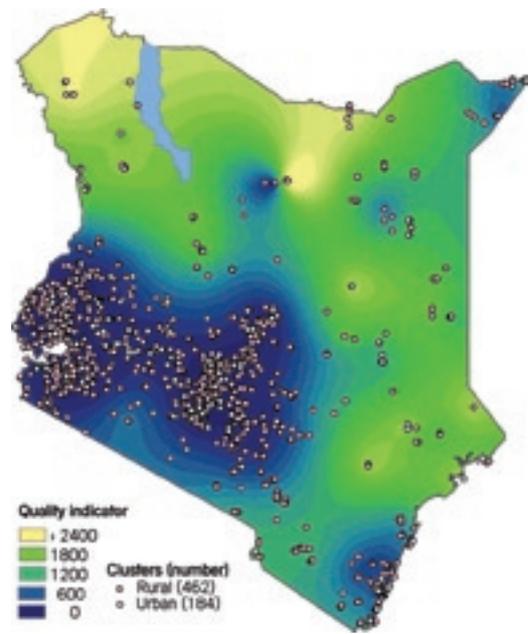
7d. Standard deviation 2009



7e. Quality indicator 2006



7f. Quality indicator 2009



Note 1: Parameters used to estimate the ASCA access in Kenya in 2006 are N=222 and R=153 and, in 2009 N=241 and R=121. Further details of this methodology can be found in Annex 1.

3.7 Comparative assessment between different services

Figures 8 and 10 show the same data for 2006 and 2009 but using comparable gradations so that the extent of use can be directly compared across services.

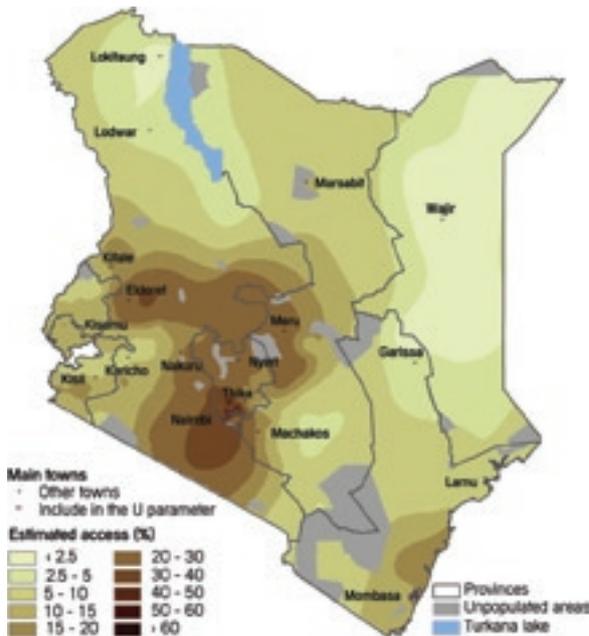
Figure 8 clearly shows the extensive use of ROSCAs across the countries, and the greater extent of this use compared to banks, SACCO, ASCAs and MFIs respectively. It shows the challenge for bank use to be extended to some of the

high population parts of Western and Nyanza Provinces. Figure 9 shows that the inequality of access is lower for ROSCAs than for banks, SACCOs and ASCAs.

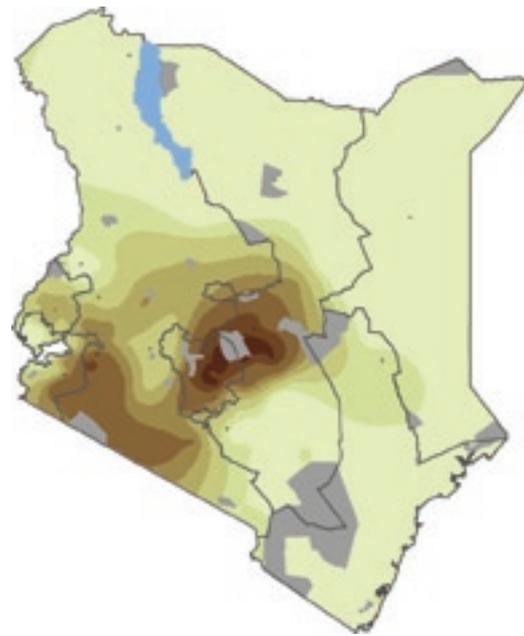
For 2009, the extent of increased bank use is evident and to an extent reduces the contrast with ROSCA use. M-Pesa use is a dramatic new contrast to these. Figure 11 suggests that inequalities of bank and ASCA use have declined somewhat, but M-Pesa use does suggest significant inequality of use for Nairobi.

Figure 8: Access to financial providers in Kenya 2006

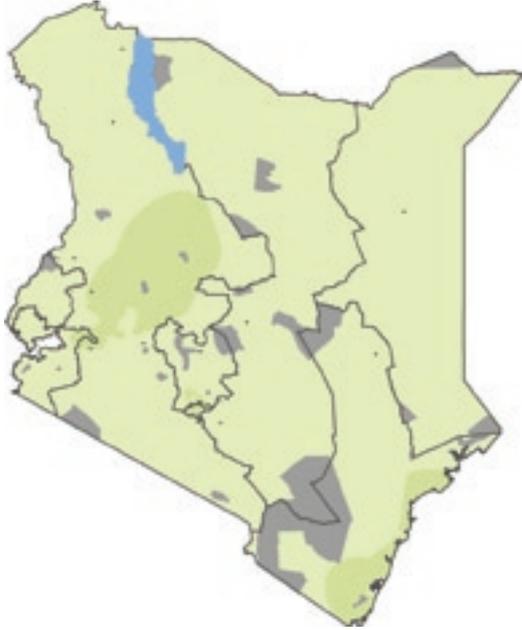
8a. Banks



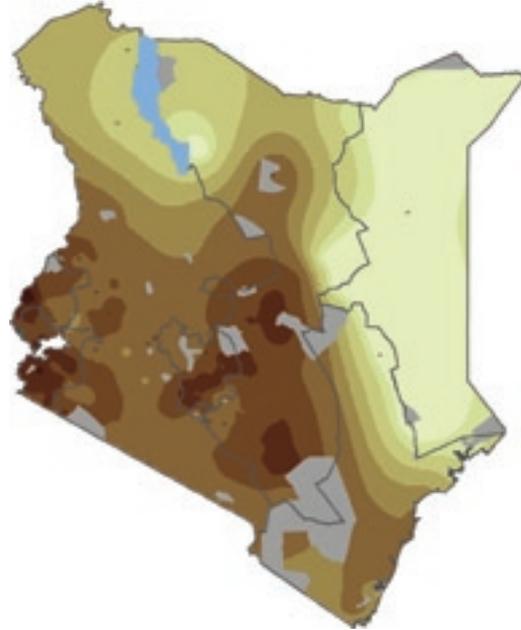
8b. SACCOs



8c. MFIs



8d. ROSCAs



8e. ASCAs

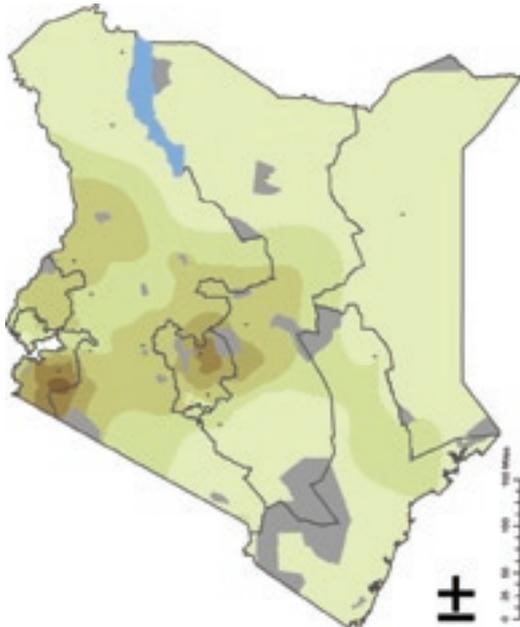
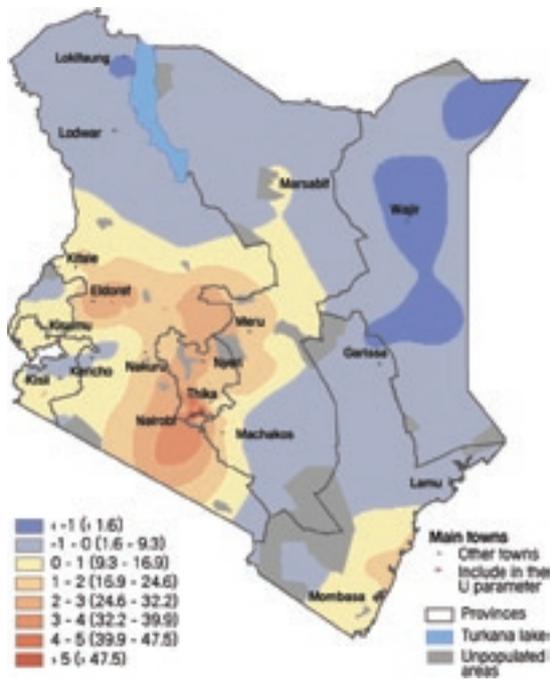
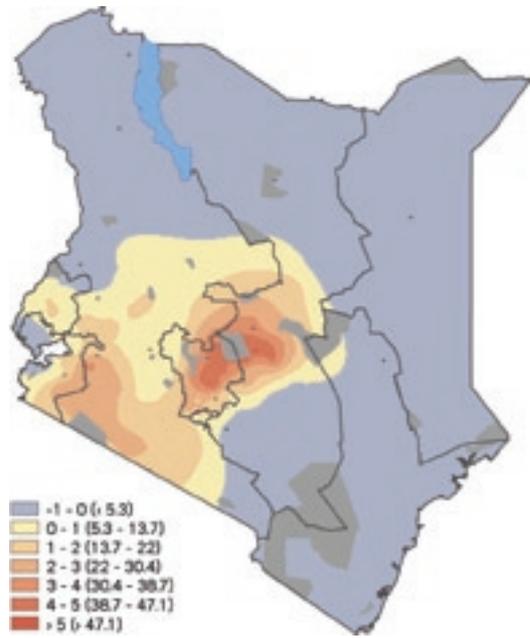


Figure 9: Access to financial providers in Kenya 2006, standard deviation

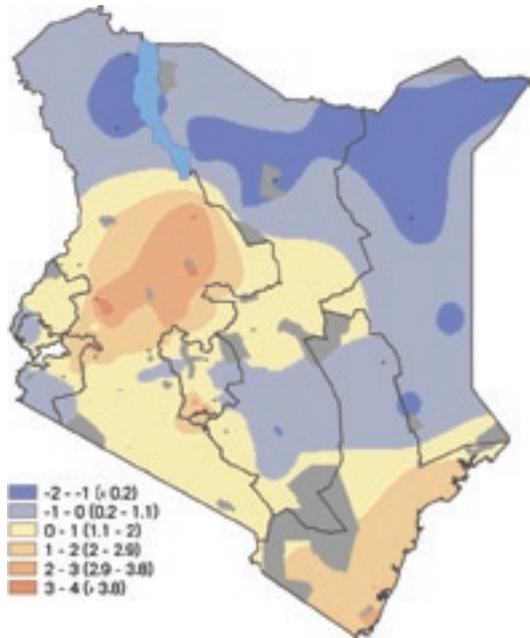
9a. Banks



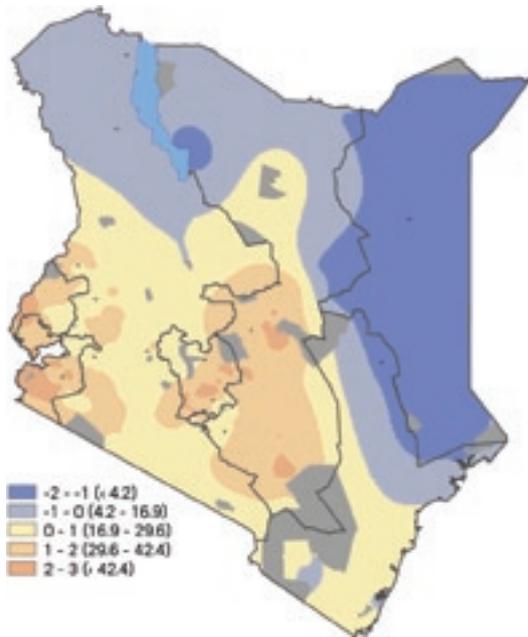
9b. SACCOs



9c. MFIs



9d. ROSCAs



9e. ASCAs

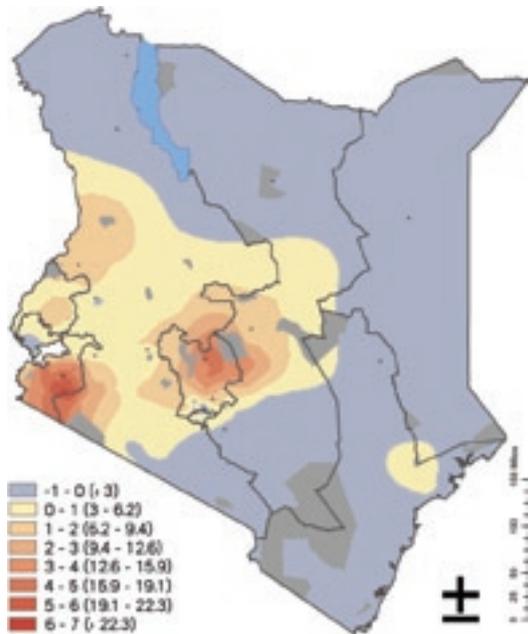
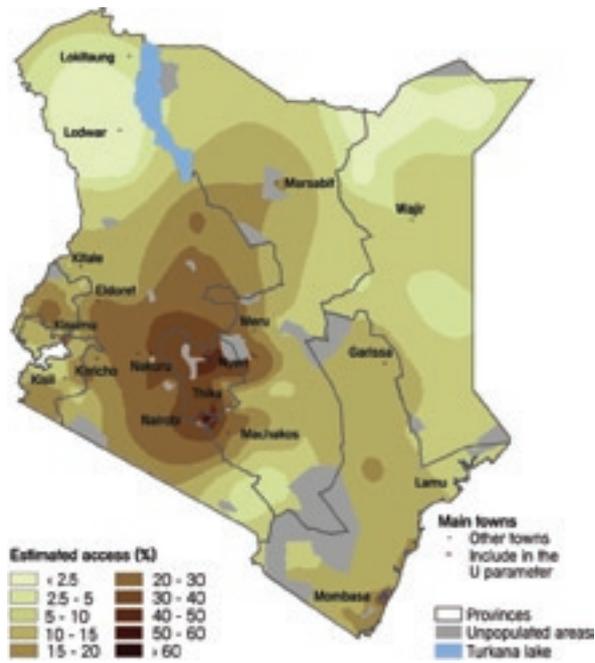
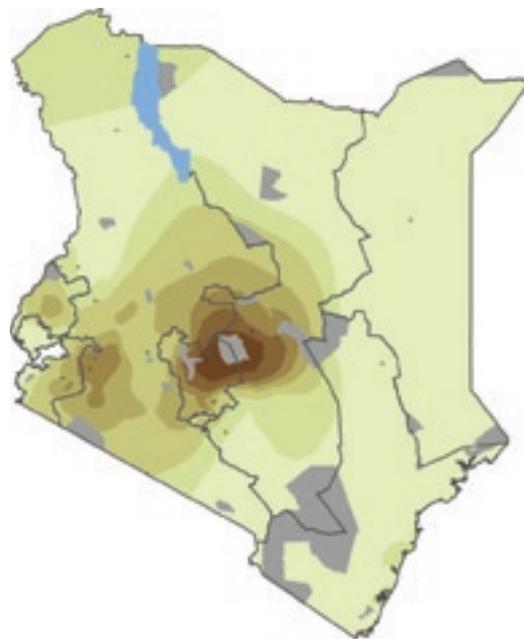


Figure 10: Access to financial providers in Kenya 2009

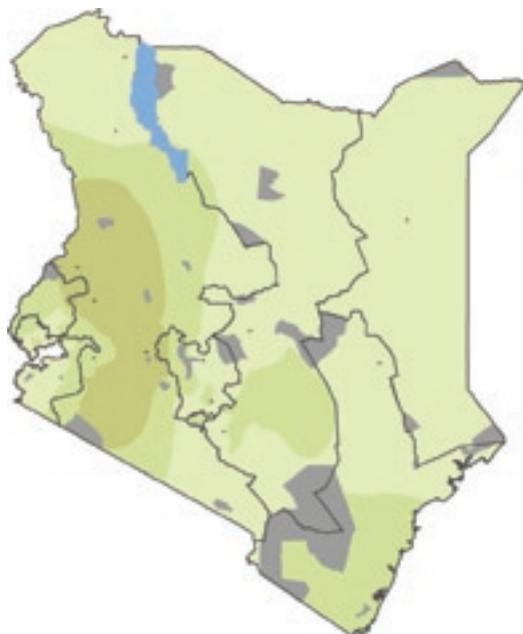
10a. Banks



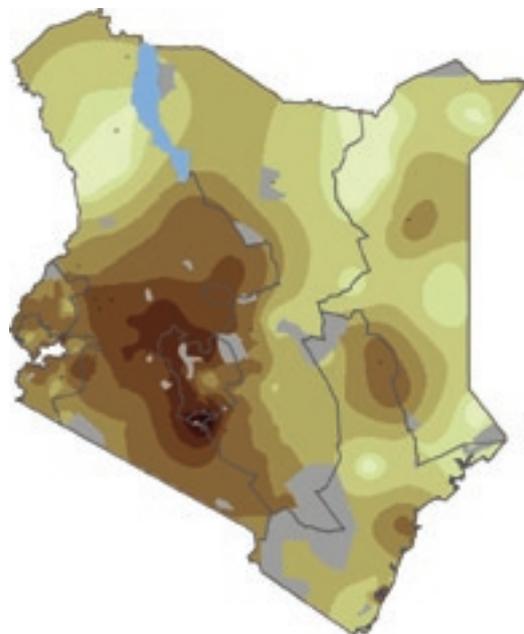
10b. SACCOs



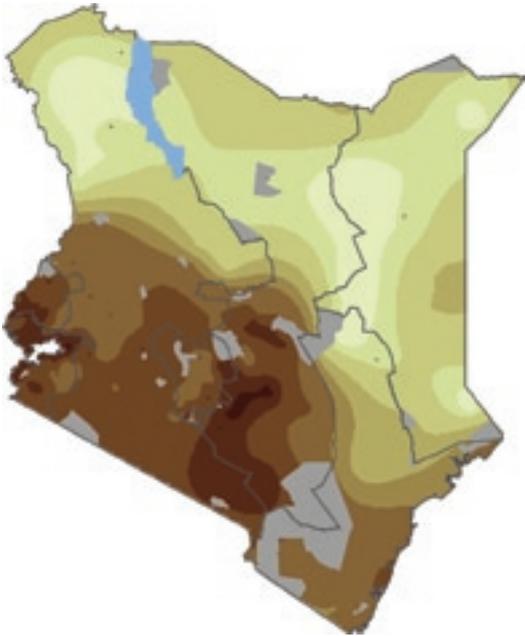
10c. MFIs



10d. M-PESAs



10e. ROSCAs



10f. ASCAs

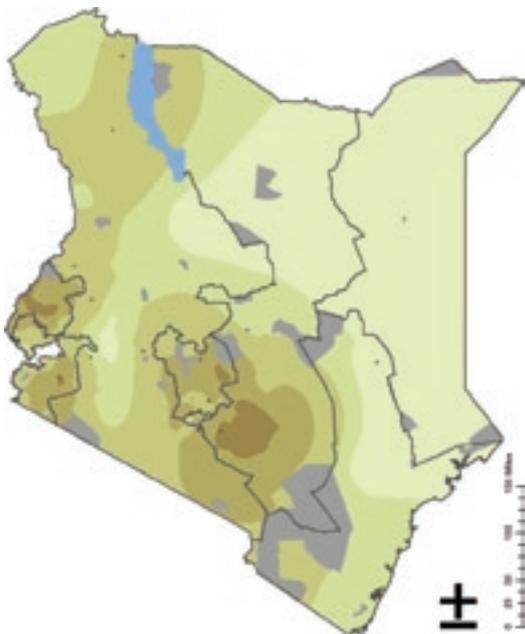
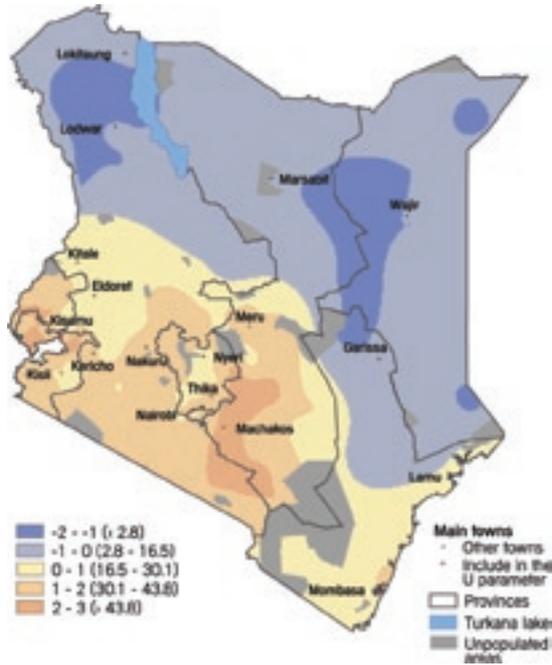
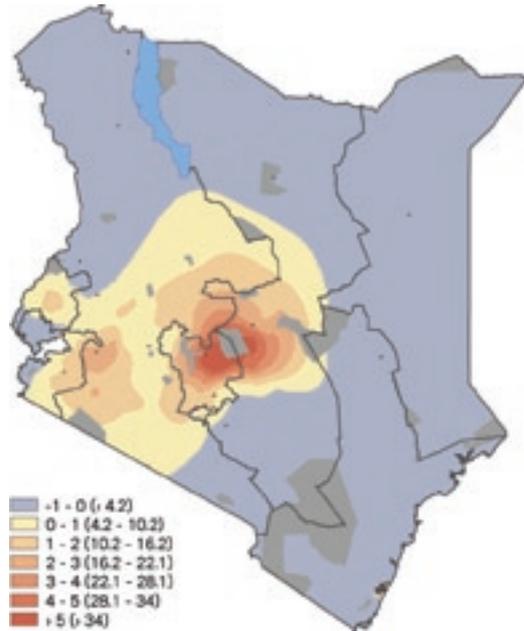


Figure 11: Access to financial providers in Kenya 2009, standard deviation

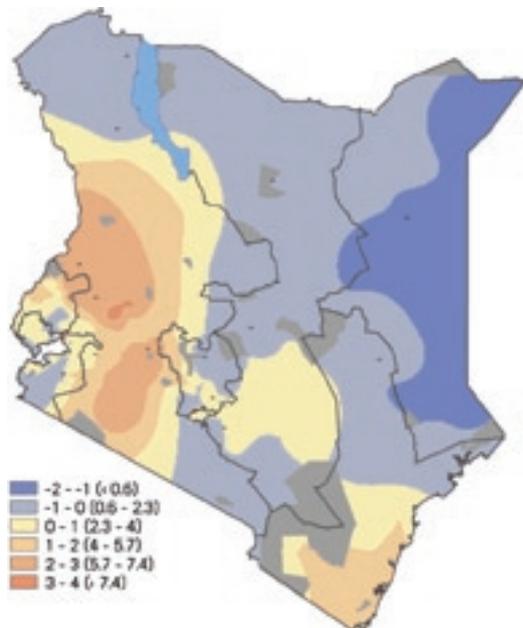
11a. Banks



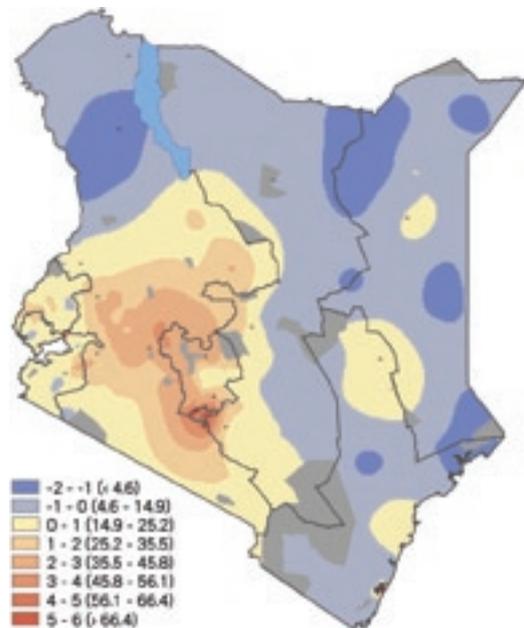
11b. SACCOs



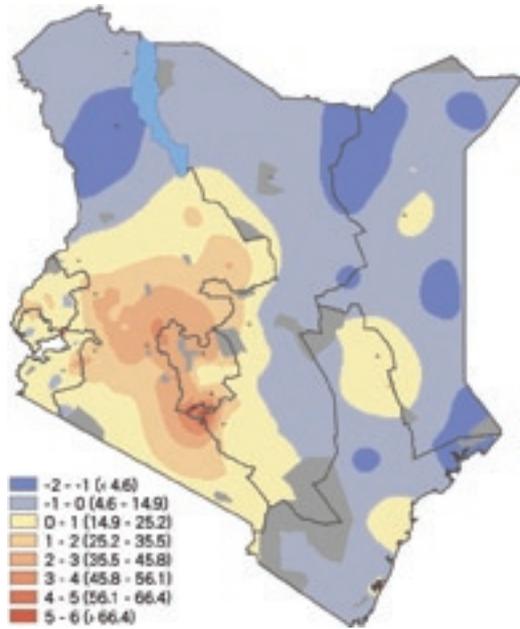
11c. MFIs



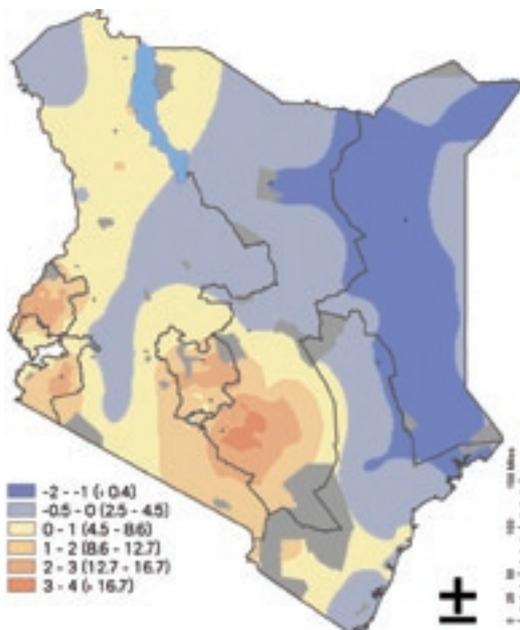
11d. M-PESAs



11e. ROSCAs



11f. ASCAs



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Annex 1: Technical methodology

This analysis uses statistical and Geographic Information System (GIS) techniques to conduct a spatial interpolation from the FinAccess datasets for 2006 and 2009 to map financial sector coverage for the whole of Kenya. The FinAccess datasets use the fourth National Sample Survey and Evaluation Program (NASSEP IV) cluster samples from the Kenyan National Bureau of Statistics (KNBS) but since the basis of choice of these samples could not be established as a basis for interpolation, an alternative method has been used.

The NASSEP IV sampling frame, which is based on the national census of 1999, draws a sample to ensure that eligible respondents (aged 16 and over) have an equal chance of being included. The sample size was calculated to be significant at national level with a confidence level of 95%, and the maximum margin of error to be tolerated was set at 7%. The prevalence rates of the key indicators were set at the 50% peak, to yield the maximum possible sample size. As a result of using cluster sampling format, a design effect of 2 was assumed. Clusters were each allocated an equal sample take of 12 households, with an expectation that an average of 10 questionnaires would be completed per cluster. An individual within that household was randomly selected using a KISH grid (Kish, 1949). In FinAccess 2009, 6343 persons have been surveyed from 646 clusters. In FinAccess 2006, 4214 persons have been surveyed from 442 clusters.

The methodology used here has been developed by Larmarange (2006; 2007) to estimate HIV prevalence from national demographic and health surveys in sub-Saharan Africa, and is inspired by the technique of trend surface analysis first introduced in the literature by Chorley and Haggett (1965). This technique is based on rings of the same number of observed persons. Through this methodology, the main idea is to decompose spatial variations as the sum of regional trends and local residuals, taking into account a random error. By aggregating neighbouring clusters, regional trends have been estimated. This estimate has then been interpolated using the ordinary kriging method (Cressie, 1993; Diggle, 2000).

Several steps have been used. First, we estimate use of each financial provider by cluster. Since the sample size of each cluster in this survey is very small (approximately 10-12 observations) the approach is to estimate the percentage coverage in each sample cluster by

aggregating data from neighboring clusters. To do this, a number (N) of observations is selected using an equation which is specified for this purpose. Then, a ring radius of a cluster is determined so that the number of interviewed people located inside that ring is at least equal to N . The level of access of the central cluster is then re-calculated from all those observations. In some parts of the country, especially in the North-East and regions with low population densities, clusters and observations are very distant from each other and smoothing is therefore limited to a certain maximum radius, R . Thus, in these cases, the estimated access to the different financial providers is calculated on fewer observations. ' R ' is the maximum radius imposed on rings. The figures for N and R are reported at the bottom of each map.

Second, since there are differences between urban and rural financial access, it is appropriate to consider whether a cluster is located inside an important urban agglomeration. Nairobi, Mombasa and Kisumu were treated as urban agglomerations (denoted by 'U') since they were the only agglomerations to concentrate enough observations to be relevant. Then, access to financial services to clusters inside and outside urban agglomerations has been calculated on clusters of the same type.

On the basis of these steps, we have estimated the level of financial access for each cluster for 2006 and 2009 for Bank, SACCOs, MFIs, ROSCAs and ASCAs, and 2009 only for M-Pesa. Using these percentages the spatial interpolation to obtain maps of spatial variations in financial access in Kenya is carried out. Spatial interpolation allows estimates to be made of coverage for unsampled sites within the area covered by existing observations. Following Tobler's "law of geography" (1970) the idea behind spatial interpolation is the observation that points close together in space are more likely to have similar values than points far apart. There are a variety of interpolation procedures that may be used (Cressie, 1993). Here we use ordinary kriging (Kriging, 1951), a linear prediction method where the mean is constant but unknown. Our goal has been to create a prediction surface for the entire region using the cluster points. This method is appropriate when the spatial distribution of observed points is irregular, as it is in this case.

The maps of spatial variations in financial access in Kenya are complemented by maps which offer assistance in interpreting the results. Since the quality of the access

estimates produced is not constant, a map of a quality indicator is also presented using spatial interpolation. The indicator is calculated for each cluster following this formula:

$$r^2 / \sqrt{n},$$

where r is the radius of the smoothing ring used to estimate the access of the cluster and n the number of observations included in this ring. Lower absolute values of this quality indicator indicate higher quality estimates. These results are given in maps e and f for each service, and these maps also show all rural and urban clusters of the 2006 and 2009 FinAccess surveys.

The data sources and software used are as follows: boundaries files have been adapted from the FAO-Global Land Cover Network data (www.glc.n.org) and geolocalisation of main cities from the Global Rural-Urban Mapping Project (GRUMP) (IFPRI, 2004). Population density information through a 100m spatial resolution population map for Kenya come from the AfriPop project which is part of the Malaria Atlas Project (MAP) (Tatem et al., 2007). To conduct our estimations, we used the software R, a free and open source statistical software together with a specific package called prevR which was written by J. Larmarange (2006). Discretization (the division of a statistical series into classes), mapping and spatial analysis was performed with software ArcGis 9.2. Layout of maps have been made under Inkscape, a free and open-source vector graphics editor.

APPENDIX 1

Summary

Main survey findings

JUNE 2009

1. Introduction

Background

Objectives of FinAccess 2009:

- Provide information to policy makers about the main barriers to access, geographic or socio-economic for instance, providing an impetus for necessary reforms;
- Provide information to the private sector about market opportunities, and in particular insight into the types of products that will suit newly identified, unserved market segments;
- Provide a solid empirical basis to track progress and evaluate the effect of various government-led and donor-led initiatives and
- Provide data for use in academic research into the impact of access to financial services on growth and poverty reduction.

Survey methodology:

- Fieldwork carried out by Synovate/Steadman Group.

- Sampling done by Kenya National Bureau of Statistics, based on NASSEP IV.
- Cluster stratified probability sampling used.
- First level selection of clusters to ensure representative at national, provincial and urbanisation levels (urban/rural).
- Second level selection of households within each cluster, twelve selected, ten targeted.
- Third level selection of an individual using the KISH grid to randomly select a respondent aged 16+ years.
- Sampled 650 clusters, with target of 10 interviews in each.

Questionnaire design:

- Led by FSD and guided by the Financial Access Partnership.
- Translated into Swahili and other major languages spoken in Kenya: Kikuyu, Luo, Meru/Embu, Kisii, Luhya, Kalenjin, Kamba, Somali, Turkana, Maasai.
- Back translated into English for validation purposes.

Table 1: Comparison of FinAccess survey questionnaires

	FA06	FA09
Length:	36 pages	49 pages
Average interview:	45 minutes	60 minutes
Sections:	General demographics	General demographics
		Effective literacy & numeracy
	Access to amenities	Access to amenities
	Biggest risks	Biggest risks
		Financial literacy
	Livelihood & income	Livelihood & income
	Product usage	Product usage
	Money transfers	Money transfers
	Savings	Savings
	Community-based groups	Community-based groups
	Credit / loans	Credit / loans
	Insurance	Insurance
	Mobile phone & technology usage	Mobile phone & technology usage
	Vulnerability & general psychographics	Vulnerability & general psychographics
	Housing conditions	Housing conditions
	Allocation of personal expenditure	Personal expenditure & minimum household income

Sample achieved:

- 6,598 completed interviews.
- Target of 10 interviews per cluster; ranged from 3 to 12 interviews.
- Sample weighted back to population.

Sample characteristics

- Gender bias occurred during the survey towards female respondents – possibly because a higher proportion of potential male respondents were not available during the time the survey team were in the area.
- Using statistical techniques, this has been corrected by weighting; weighted gender distribution now similar to the national distribution.
- In this report, all tables and figures present the results for those aged 18 and over, the current legal age for getting a national ID card in Kenya.
- Results for those aged 16 and 17 years old are presented in the final section of this report.

Figure 1: Gender 18+

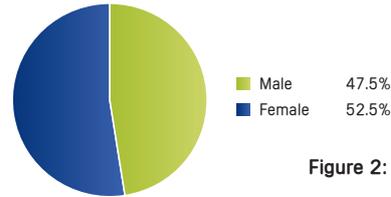


Figure 2: Gender 16/17

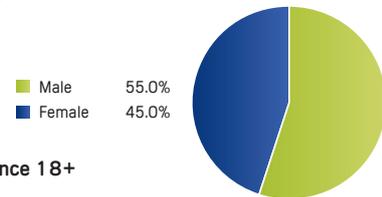


Figure 3: Residence 18+

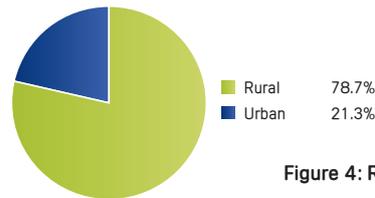
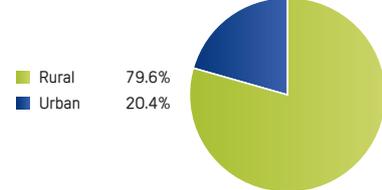
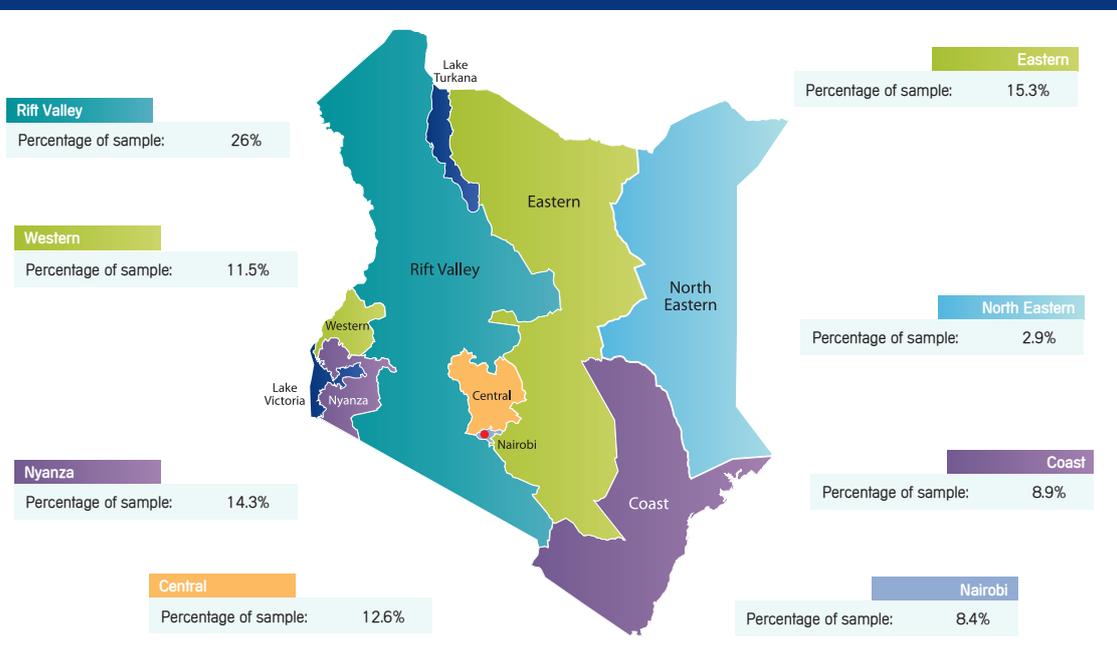


Figure 4: Residence 16/17



SAMPLE DISTRIBUTION BY PROVINCE: 18 YEARS OR OLDER



2. Lifestyle and living conditions

Housing

- Most people own the houses they live in (68.5%), but there's a significant difference between urban (18.6%) and rural (82.6%).
- Employers provide housing for 24.1% of respondents (most of this is perceived as 'free' but strictly speaking, the government does impose some form of taxation on employer-provided housing in the formal sector).
- A third of house-owners acquired their homes through inheritance; only 2.3% acquired their homes through formal or other credit.
- Almost half of Nairobi-based home owners bought their houses, but in all other provinces, the proportion of owners who bought is negligible, at 2%.
- Two-thirds of all respondents used workmen or a construction company to build their houses.
- Most people see their homes as something to keep and never sell (84.3%); the proportion who hold this view is lowest in North Eastern (65.8%) and Nairobi (70.7%).
- Only 23.7% are willing to use their home as security to borrow money; the proportion is highest in Nairobi (33.6%) and lowest in Eastern (17.4%).

Figure 5: Home construction by province

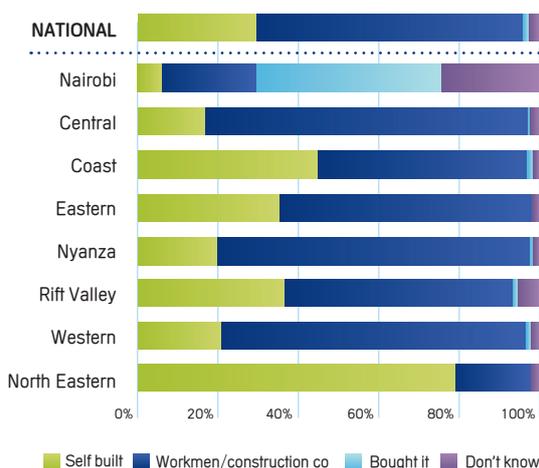
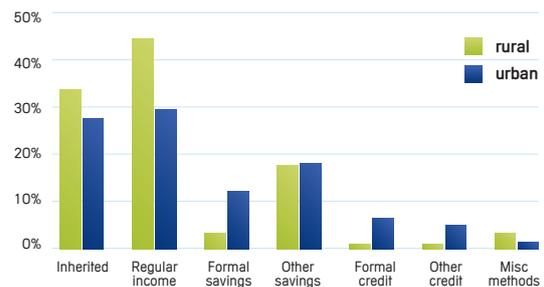


Figure 6: Home acquisition by residence



- In Nairobi 70.3% of houses are permanent dwellings; these are also common on the Coast, where 54.2% of houses are of this type.
- Traditional houses are common in North Eastern (55.3%) and on the Coast (23.2%).

Household size

- Mean household sizes in rural areas are 5.48 persons, and 3.79 in urban areas.
- Household sizes are highest in North Eastern, with a mean of 7.29 persons.

Household assets

- A list of household assets commonly used to construct the Living Standards Measure was administered.
- Average number of assets owned was 3.3 nationally; two provinces had averages higher than the national average: Nairobi (6.7) and Central (3.7).
- Commonly owned assets in rural areas are: radio (80.2%), sofa set (36.3%), bicycle (35.0%).
- Commonly owned assets in urban areas are: radio (90.0%), sofa set (65.5%), colour TV (51.4%).
- Items that require electricity are significantly more common in urban areas, in particular television ownership, DVD players, and electric irons.
- Livestock ownership is common in rural areas (81.9%); with cattle owned by 73.3% of rural households, chickens by 79.6%.

Figure 7: Ownership of non-electrical items by residence

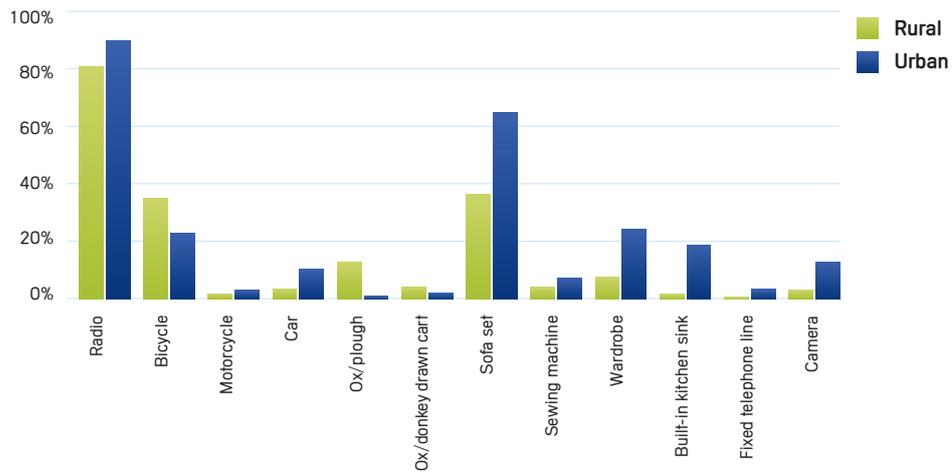
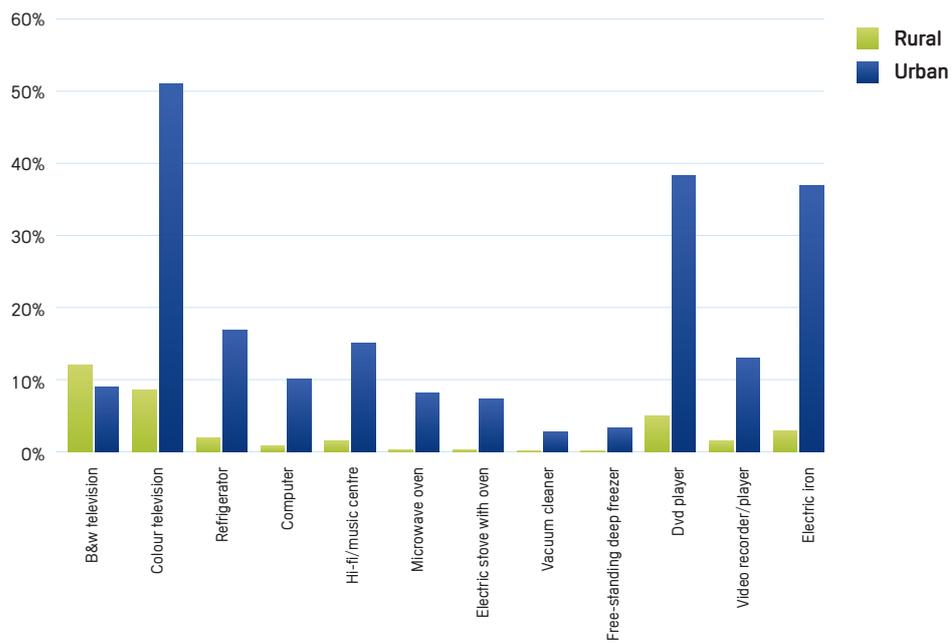


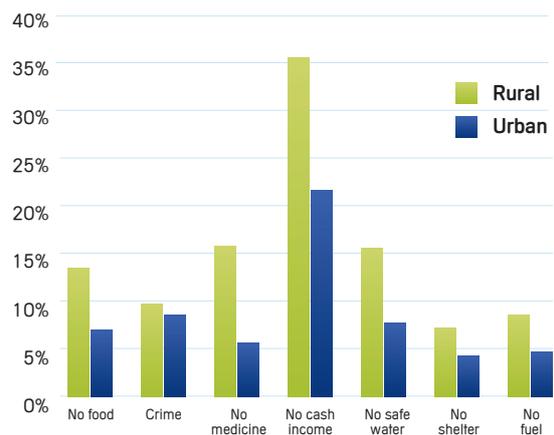
Figure 8: Ownership of electrical items by residence



Vulnerability

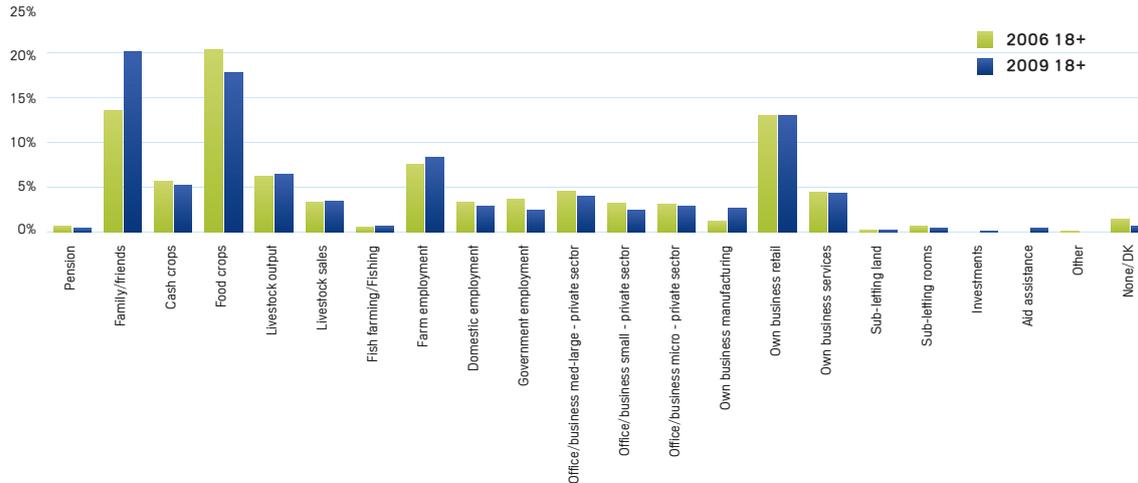
- At a national level, households often went without various items in the preceding 12 months; the highest levels of vulnerability were for: cash income (32.4%), food (15.2%), safe water (13.8%), medicine (13.5%).
- Respondents in North Eastern (68.5%) and Western (51.6%) reported the highest levels of being without cash income.
- Rates of vulnerability in 2009 were generally higher than in 2006: shelter (3.4% in 2006 to 6.5% in 2009), crime (5.9% in 2006 to 9.5% in 2009).

Figure 9: Percentages reporting 'often' as level of vulnerability (2009)



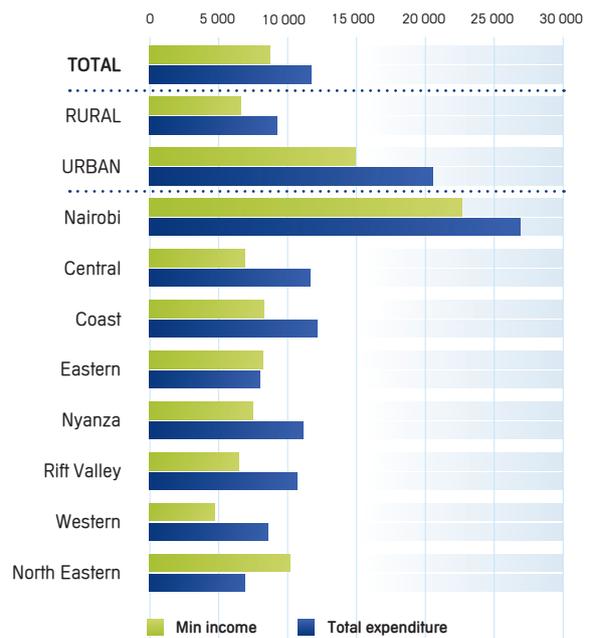
3. Livelihoods, income and expenditure

Figure 10: Main source of livelihood for ages 18 and over



- A higher proportion of respondents were dependent on transfers from family and friends as their main source of income in 2009 (14.3%) than in 2006 (10.0%).
- A lower proportion of respondents were engaged in agriculture in 2009 (42.5%) than in 2006 (48.9%).
- Respondents were asked what the minimum income that would be required for their household expenses; these averages are summarised in figure 11.
- Respondents were also asked to list their expenditure by different categories; the averages are shown in figure 11.
- As can be expected, income and expenditure levels are higher in urban areas than in rural areas; average minimum income required in urban areas is KSh 14,947 compared to KSh 6,594 in rural areas.
- In Nairobi, average minimum income required is KSh 22,658.

Figure 11: Estimated minimum income required compared with expenditure levels by residence and province (2009)



4. Access strands

The access strand presents usage of financial services by level of formalisation:

- **Formal** – use a bank, PostBank or insurance product.
- **Formal other** – do not use any formal product, but use services from non-bank financial institutions such as M-PESA, SACCOs (Savings and Credit Cooperative Societies) and MFIs (Micro-finance Institutions).
- **Informal** – do not use any formal/formal other products but use informal financial service providers such as ASCAs, RoSCAs and groups/individuals other than family/friends.
- **Excluded** – use no formal/formal other or informal financial services.
- 22.6% of the population aged 18 years and older is formally included compared to 18.5% in 2006.
- Usage of non-bank financial institutions has more than doubled from 7.8% in 2006 to 17.9% in 2009 – this can be mostly attributed to the new M-PESA service provided by Safaricom.

Figure 12: Financial access strand



Figure 13: Financial access strand by residence and gender

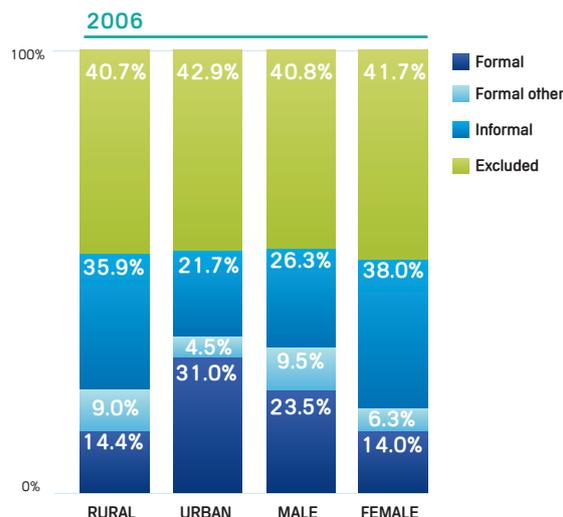
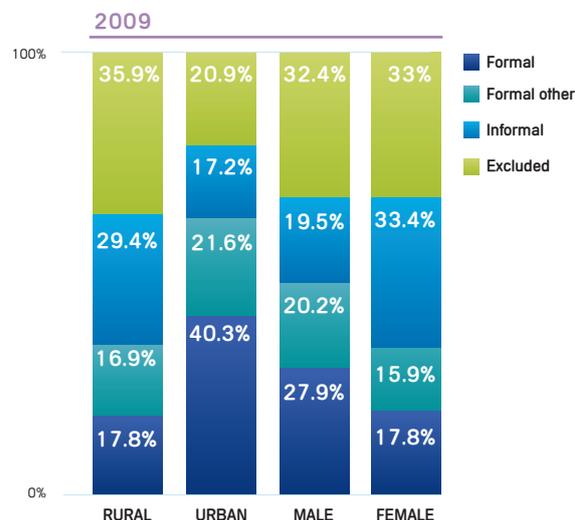


Figure 14: Financial access strand by residence and gender



- A total of 40.5% are formally served, representing approximately 7.6 million of an estimated adult population of 18.7 million in Kenya in 2009.
- Dependence on only informal financial services declined from 32.4% to 26.8%.
- The proportion excluded shrank from 41.3% in 2006 to 32% in 2009.
- Access to financial services improved both in rural and urban areas; in urban areas, the formal strand increased from 31% in 2006 to 40.3% in 2009.

- The proportion of those excluded from financial services also dropped in both; the drop was more marked in urban areas where it declined by about half.
- Access to financial services improved both in rural and urban areas (see figure 16); by age group, exclusion is highest in those under 25 years old and those over 55 years.
- A significant proportion (approx a fifth) of people across all age groups depend only on informal financial services.
- Usage of formal financial services increases significantly with level of education rising from 4.9% for those with no education to 70.3% for those with tertiary education.
- Exclusion decreases as level of education increases, from 55.9% for those with no education to 8.0% for those with tertiary education.
- Over a quarter of respondents report using more than one type of financial service provider; this is represented in the financial access overlap diagrams in figure 17.
- Amongst the urban, a fifth use formal, formal other and informal providers; urban dwellers are more likely to use several different types of providers (47.9%).

Figure 15: Financial access strand by education

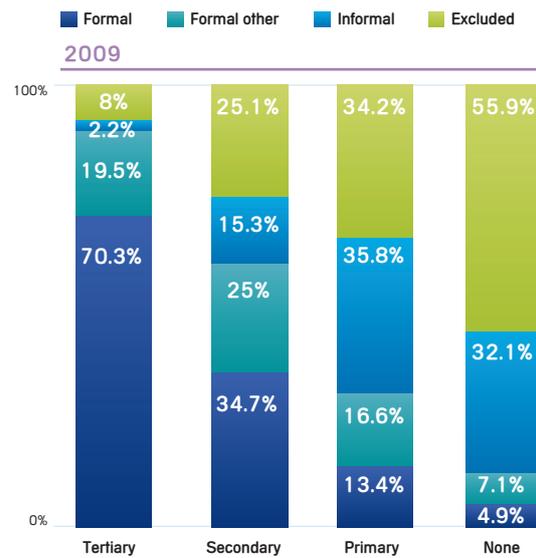


Figure 16: Financial access strand by age

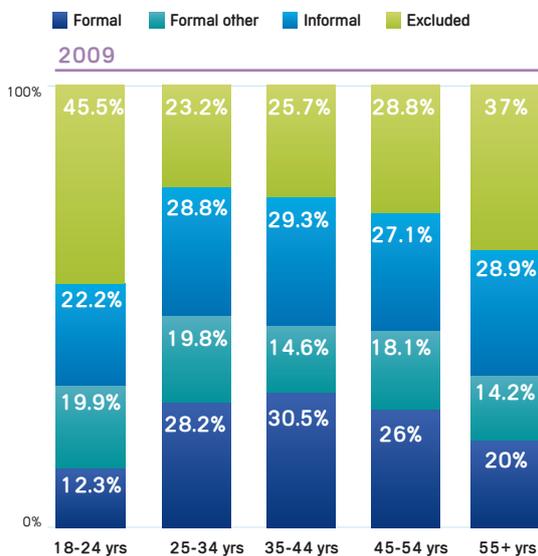
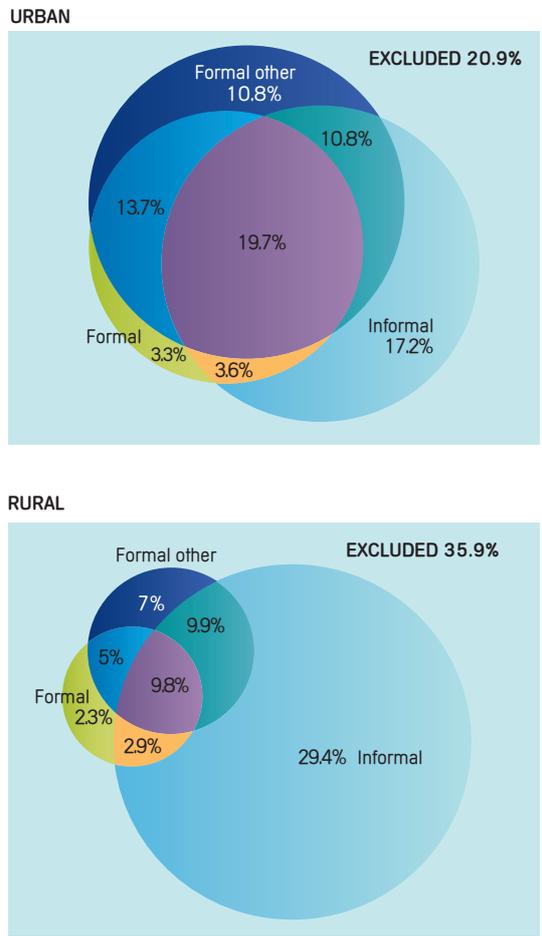
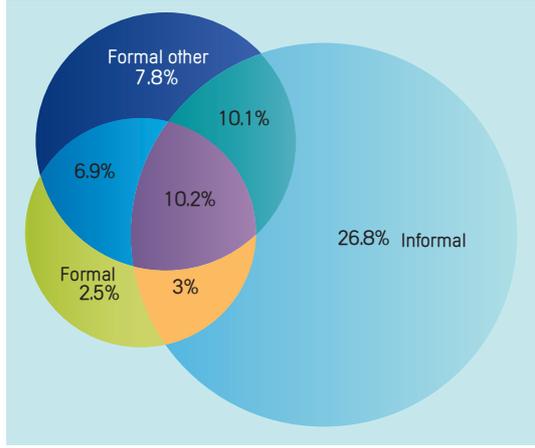


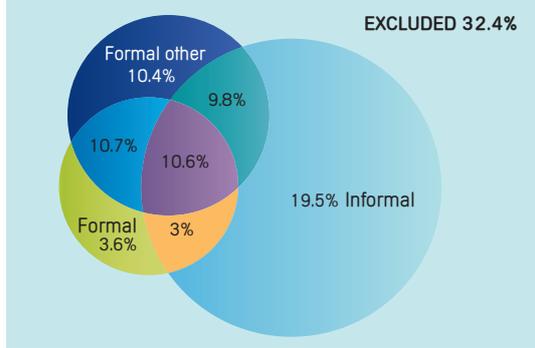
Figure 17: Financial access overlap by residence and gender



TOTAL



MALE



FEMALE

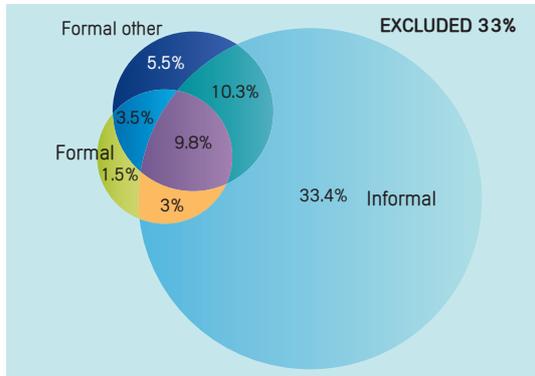
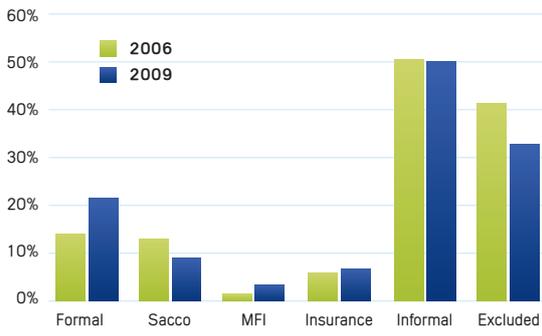


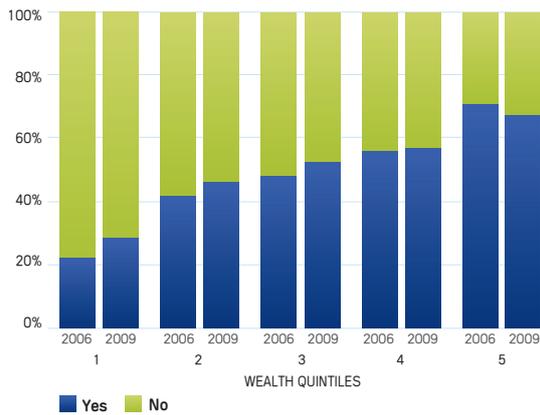
Figure 18: Usage of different financial service providers



- Usage of MFIs doubled, from 1.7% in 2006 to 3.4% in 2009.
- Usage of SACCOs declined from 13.1% in 2006 to 9% in 2009.

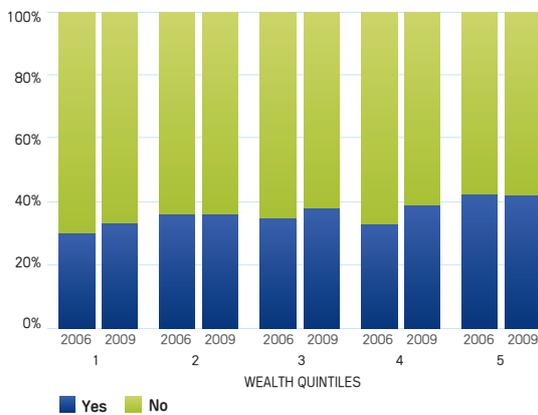
5. Wealth and access

Figure 19: Savings usage by wealth quintile



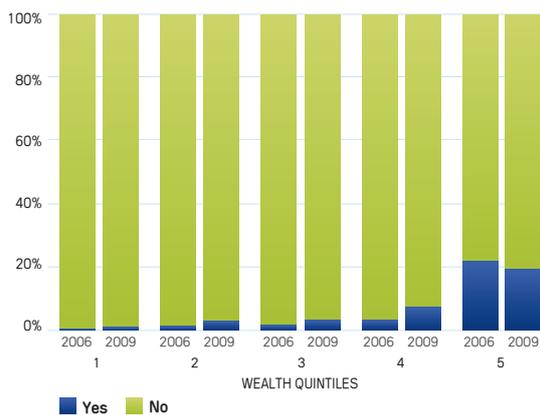
- Savings usage has increased in all but the top wealth quintile between 2006 and 2009. Most importantly, savings rates increased in the lowest wealth quintile, from 23% in 2006 to 29% in 2009.

Figure 20: Credit usage by wealth quintile



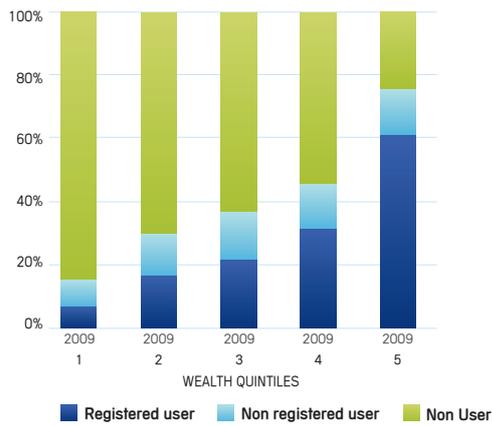
- Credit usage has remained fairly stable between 2006 and 2009, slightly trending upward. The biggest increase (5.5 percentage points) happened in the 4th wealth quintile.

Figure 21: Insurance usage by wealth quintile



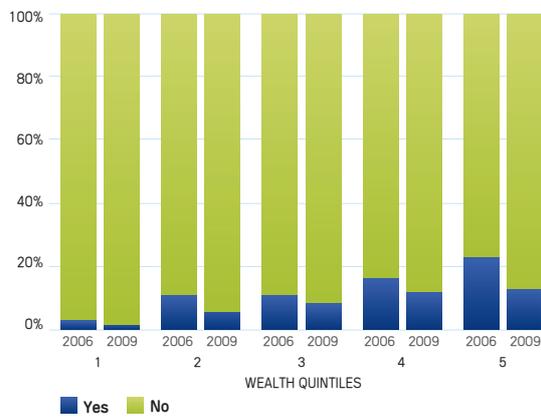
- Insurance products remain the domain of the wealthiest quintile of the population, even though their usage decreased slightly from 22% to 20%. In the lower three quintiles, usage of insurance products remains at very low levels (between 0.7% and 3.6%).

Figure 22: M-PESA usage by wealth quintile



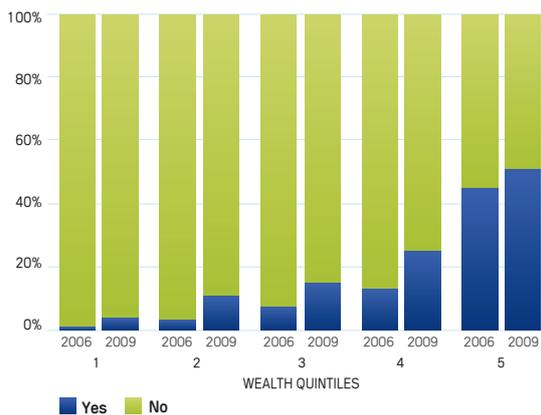
- M-PESA is used more often as people become wealthier. While 62% in the highest wealth quintile are registered users of M-PESA, this number drops to barely 7% in the lowest wealth quintile.

Figure 23: SACCO usage by wealth quintile



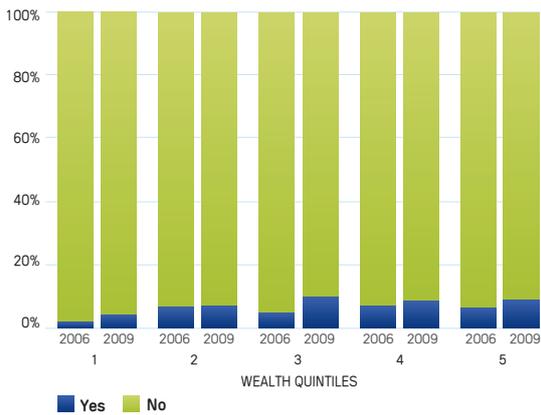
- SACCOs are losing importance: the percentage of people using them decreased in every single wealth quintile. The biggest drop could be observed for the richest 20% of the population, from 23% in 2006 to 13% in 2009.

Figure 24: Bank usage by wealth quintile



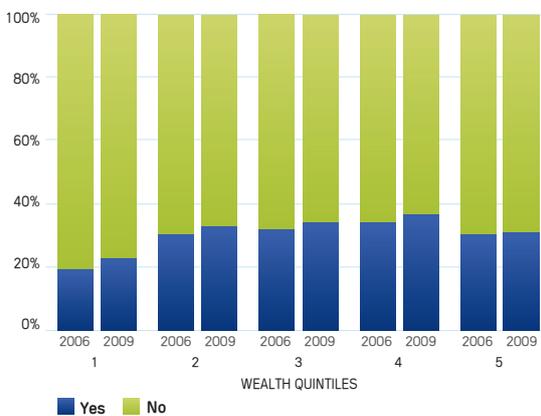
- Bank usage increased in every single wealth quintile between 2006 and 2009. Particularly the second-highest wealth quintile benefitted from this development: usage increased here from 13% to 26%.

Figure 25: ASCA usage by wealth quintile



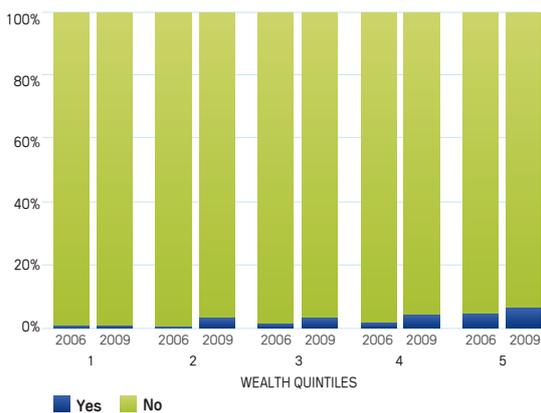
- ASCA usage is increasing across all wealth quintiles. Overall usage has increased from just under a million people in 2006 to 1.5 million in 2009 (figure 25).

Figure 26: ROSCA usage by wealth quintile



- ROSCAs are being used more intensively by people in all wealth quintiles. Overall, this increase is modest (2.3 percentage points between 2006 and 2009), and substantially lower than the increase in ASCA usage (figure 26).

Figure 27: MFI usage by wealth quintile



- MFIs remain a marginal actor in the Kenyan financial sector. Even though there is a general upward trend in usage, overall levels remain low (figure 27). Also, MFIs fail to reach the lowest wealth quintile whose usage remains at below 1%.

6. Savings

- Respondents who only have savings with a group of friends, family/friend or secret place are classified as excluded; typically, even informal groups need to have some sort of organizational structure, with some common overriding financial purpose.
- Usage of savings products has not changed; those currently using them is constant at 52%.
- Most people in urban areas are current savers; the proportion rose from 51.2% in 2006 to 60.1% in 2009.
- Proportion of those in rural areas who have never used a savings product is unchanged at 40.6%.
- The product descriptions changed slightly between 2006 and 2009. Many banks have now developed transaction accounts on which no interest is payable.

Figure 28: Usage of savings products 2006

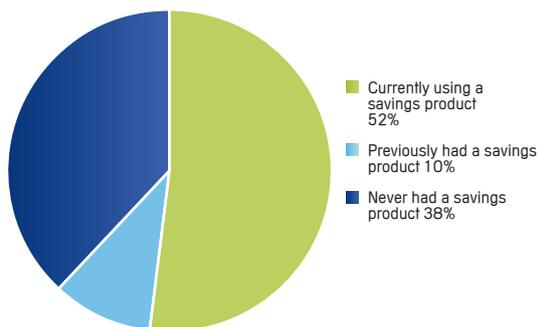


Figure 29: Usage of savings products 2009

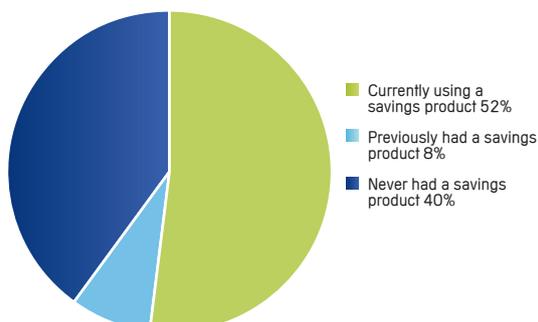


Table 2: Usage of savings products by residence

	2006%		2009%	
	Rural	Urban	Rural	Urban
Currently using a savings product	52.2	51.2	49.2	60.1
Previously had a savings product	7.2	10.0	0.2	0.9
Never had a savings product	40.6	38.8	40.6	29.1

Table 3: Usage of savings products by level of formality

ALL RESPONDENTS Product	2006%	2009%
FORMAL		
Savings - Postbank	5.6	2.5
Savings - Bank Savings Account	12.4	-
Savings - Bank Current Account	2.5	-
Savings - Bank Fixed Deposit Account	0.7	-
Savings - Bank - with interest	-	11.6
Savings - Bank - current	-	1.8
Savings - Bank - transaction	-	8.4
Savings - ATM card	5.8	-
Savings - Debit card	0.7	-
Savings - ATM/Debit	-	11.8
FORMAL OTHER		
Savings - SACCO	12.8	8.9
Savings - MFIs	1.5	3.2
INFORMAL		
Savings - ASCA	5.4	7.8
Savings - ROSCA	29.3	31.7
EXCLUDED		
Savings - Group of friends	10.9	5.5
Savings - Family/friend	5.7	6.7
Savings - Secret place	27.9	55.7

Dashes indicate the product was not described in the same way during the other survey

7. Credit

- Respondents who only have credit with family/friend are classified as excluded; typically, even informal groups need to have some sort of organisational structure, with some common overriding financial purpose.
- Usage of credit products has increased from 31.5% in 2006 to 37.8% in 2009.
- A higher proportion of people in urban areas currently have credit (41.0%) compared to those in rural areas (36.9%).
- In rural areas, one in two has never had credit, down from 53.3% in 2006.
- The most common credit source was from informal sources: 24.3% had credit from shops and from other suppliers.
- Another important source of credit was family/friends, 12.2% in 2009 – although this alone, for our purposes, does not classify a respondent as financially included.

Figure 30: Usage of credit products 2006

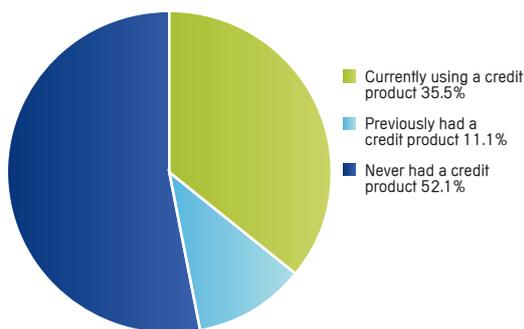


Figure 31: Usage of credit products 2009

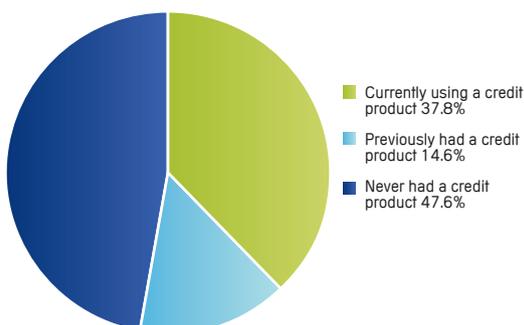


Table 4: Usage of credit products by residence

	2006%		2009%	
	Rural	Urban	Rural	Urban
Currently using a credit product	35.8%	34.6%	36.9%	41.0%
Previously had a credit product	10.0%	14.5%	13.2%	19.6%
Never had a credit product	53.3%	58.6%	49.9%	39.2%

Table 5: Usage of credit products by level of formality

PRODUCT	2006%	2009%
FORMAL		
Loan - Bank	1.8%	2.6%
Loan - House/land from bank	0.4%	0.2%
Loan - House/land from build society	0.1%	-
Loan - Overdraft	0.3%	0.2%
Loan - Credit card	0.7%	0.8%
FORMAL OTHER		
Loan - SACCO	4.1%	3.0%
Loan - MFIs	0.8%	1.8%
Loan - House/land from govt inst	0.2%	0.1%
Loan - Government	0.9%	0.3%
Loan - Hire purchase	0.6%	0.1%
INFORMAL		
Loan - Employer	0.9%	0.5%
Loan - ASCA	1.7%	1.8%
Loan - Buyer	0.9%	1.2%
Loan - Moneylender	0.7%	0.4%
Loan - Shop/supplier credit	22.8%	24.3%
EXCLUDED		
Loan - Family/friend	12.6%	12.2%

Dashes indicate the product was not described in the same way during the other survey

8. Remittances

- Remittances within Kenya are now very common; 52% of Kenyans received money in 2009 compared to 16.5% in 2006. (These figures may exaggerate the rise in remittance rates due to underreporting of informal remittances in 2006).
- International remittances are still low, but 4.3% claim to have received money in 2009, up from 2.8% in 2006.
- The most popular means of money transfer is M-PESA, ever used by 39.9% of all adults.
- 26% of all M-PESA users also save money on their phones.
- One in six, store value in their phone for use while travelling.
- M-PESA is perceived as the least risky by 26.2% of respondents, least expensive (31.7%), fastest (64.3%), easiest to get (47.8%) means of money transfer.

Figure 32: Incidence of remittances

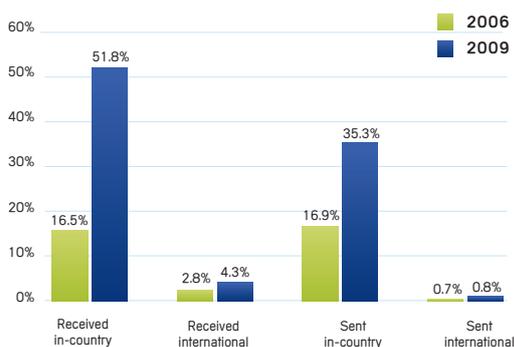


Table 6: Additional uses of M-PESA by current M-PESA users

SERVICES	%
Buy airtime	41.7%
Save money	26.3%
Store money before travelling	16.9%
Make donations	5.4%
Receive payments	4.9%
Buy goods	3.5%
Withdraw money from ATM	2.7%
Pay bill	2.3%
Receive salary	1.8%
Pay salary	1.7%

Figure 33: Usage of M-PESA by residence and province

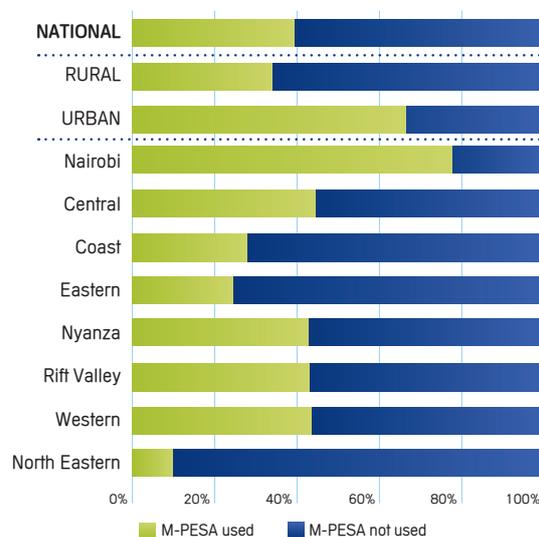


Table 7: Perceptions of different remittance delivery methods

	2006%	2009%
Perceived most risky	Friend/family (50.4%)	Bus/Matatu (45.8%) & Friend/family (42.7%)
Perceived least risky	Specialist money transfer service (19.4%)	M-PESA (26.2%)
Perceived most expensive	Specialist money transfer service (40.0%)	Specialist money transfer service (25.8%)
Perceived least expensive	Friend/family (51.3%)	Friend/family (44.2%) & M-PESA (31.7%)
Perceived fastest	Specialist money transfer service (34.9%)	M-PESA (64.3%)
Perceived slowest	Friend/family (32.9%)	Friend/family (32.4%)
Perceived easiest to get	Friend/family (51.6%)	M-PESA (47.8%) & Friend/family (36.8%)
Perceived hardest to get	Someone else's account (22.6%)	Cheque (18.7%), Money transfer service (20.2%) & Bus/Matatu (16.4%)

9. Insurance and risk

- Current usage of insurance remains virtually unchanged (5.9% in 2006 and 6.8% in 2009).
- Usage in urban areas is higher; 12.8% in 2006; 14.1% in 2009.
- The majority (63.9%) of those currently using insurance are males, but this is slightly lower than in 2006 (68.3%).
- Usage of insurance services increases with rising level of education.
- Most current users are between 25 and 54 years old.
- The most common product was medical government-based products used by 4.2% of all respondents, and private products by 0.7%.

Table 8: Usage of insurance products

Product	2006	2009
Insurance - Car	1.8	1.1
Insurance - Household contents	0.3	-
Insurance - Building	0.3	-
Insurance - House	-	0.2
Insurance - Medical	2.3	-
Insurance - Government medical	-	4.2
Insurance - Private medical	-	0.7
Insurance - Life	1.0	1.0
Insurance - Disability	0.2	-
Insurance - Education	0.9	0.6
Insurance - Pension	1.4	1.2
Insurance - NSSF	2.7	2.9
Insurance - Other long-term	0.2	-
Other Insurance	-	0.0

Dashes indicate the product was not described in the same way during the other survey

Figure 34: Usage of insurance products 2006

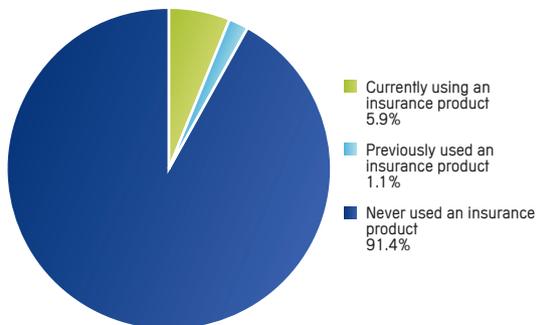


Figure 35: Usage of insurance products 2009

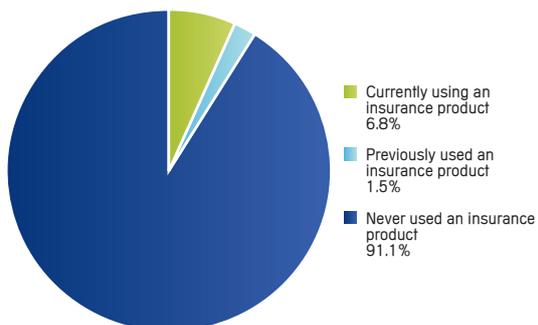


Table 9: Usage of insurance products by residence

	2006%		2009%	
	Rural	Urban	Rural	Urban
Currently using an insurance product	3.6%	12.8%	4.9%	14.0%
Previously had an insurance product	1.6%	1.7%	2.0%	2.5%
Never had an insurance product	93.7%	84.4%	93.1%	83.6%

- The most common product was medical, with government provided products.
- At least half of current insurance users (53.4%) think agents recruit clients fraudulently; a similarly high proportion of users (48.5%) think insurance companies do not explain their products well. Most people agree that insurance protects in emergency, but 81.4% of non-users thought it was expensive.
- In 2009, the list of risks was expanded with respondents being asked to define which was the biggest risk to their household finances; the most mentioned were loss of main income (21.4%), drought/famine (18.0%), inflation (15.8%), loss of land (12.1%), medical costs (9.3%).

Table 10: Perceptions of insurance 2009

Insurance User	Yes%	No%
Cannot afford	49.8%	81.4%
Protects in emergency	91.4%	83.1%
Health insurance brings bad luck	5.9%	7.7%
Life insurance brings bad luck	5.1%	7.7%
Companies don't explain their products	48.4%	25.3%
Companies try to cheat people	45.1%	25.1%
Agents recruit fraudulently	53.6%	25.9%

Table 11: What can affect household finances?

Potential risks	2006%	2009%
Loss of property	62.4%	79.1%
Drought/famine	62.4%	87.4%
Inflation	56.7%	87.9%
Loss of land	47.4%	75.6%
Loss of main income	43.1%	82.4%
Flood	36.0%	58.0%
Loss of livestock	34.0%	69.1%
Loss of outside income	18.1%	57.7%

10. Technology

Mobile phone access

- in 2009 almost half (47.5%) of all Kenyan adults own a mobile phone (up from 26.9% in 2006), with the rate of ownership rising to 72.7% in urban areas (up from 52.3% in 2006) and 80.5% in Nairobi (up from 62.8% in 2006).

Usage of mobile-related technology

- Usage of additional mobile-based services has dramatically increased; 37.1% now send airtime (up from 20.6% in 2006) and 43.1% send text messages (up from 29.2% in 2006).
- Mobile internet access is now used by 4.5% of respondents; in Nairobi this rises to 19.2%.
- An increasing number of people now check their bills on their mobiles, currently 2.7% nationally and 13.3% in Nairobi.

Usage of other technology

- ATM usage is now 13.4% nationally, up from 7.8%.
- Usage of the independent PesaPoint ATM network has also increased to 3.5% from 1.5%, the change being strongest among the formally included (2009 - 13.6%, 2006 - 8.0%).
- The use of standing orders has remained unchanged, at slightly under 1%.

Figure 36: Mobile phone access by residence

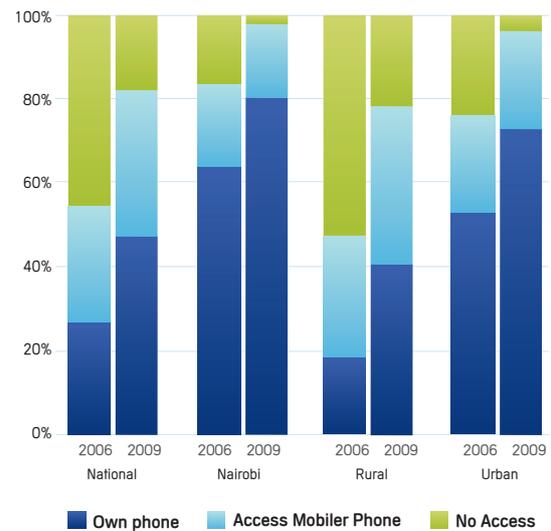


Figure 37: Usage of savings products 2006
Mobile phone access by financial access strand

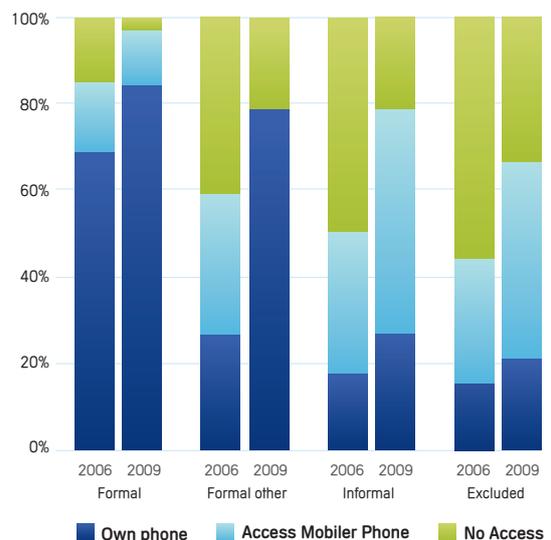


Figure 38: Usage of mobile-based technology services

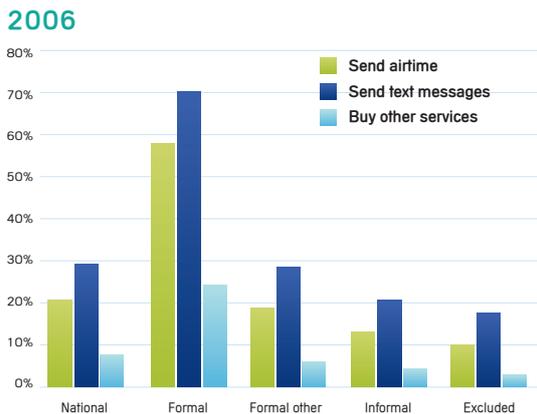


Figure 39: Usage of mobile-based technology services

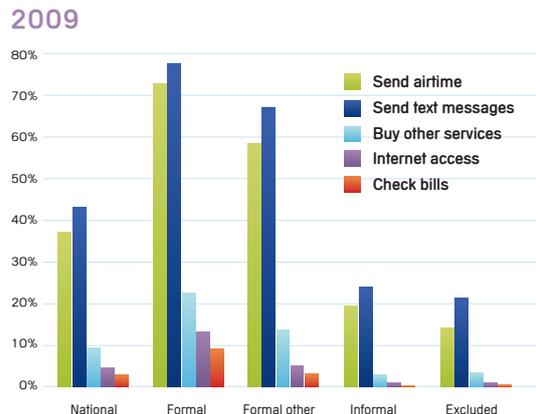


Figure 40: Usage of other technology services

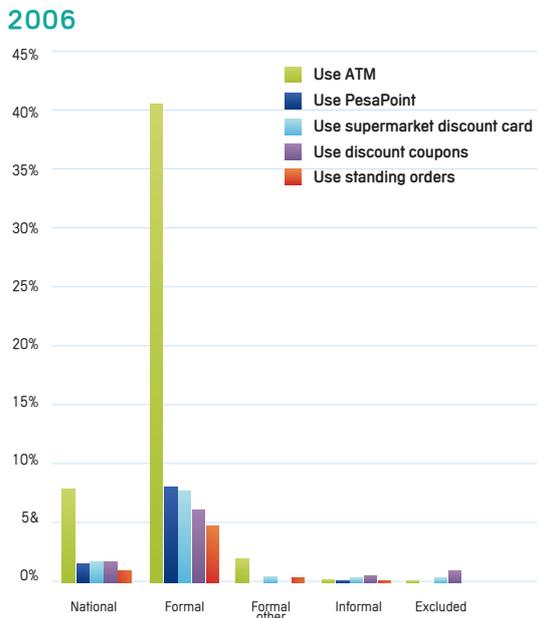
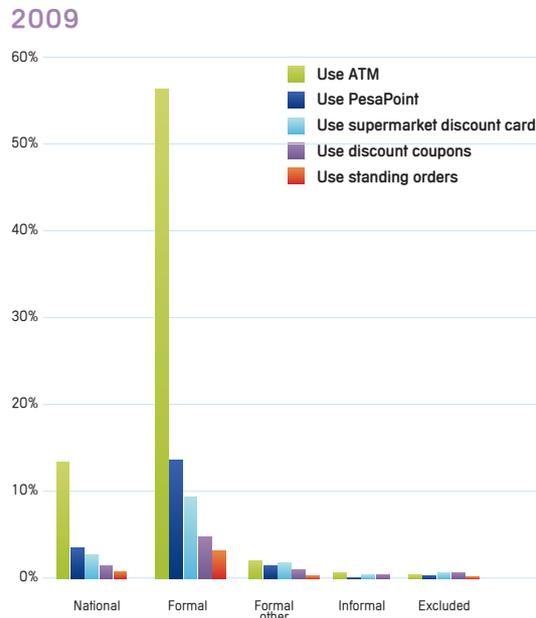


Figure 41: Usage of other technology services



1.1. Financial literacy

Effective literacy

- About 70% of respondents demonstrated effective literacy.
- Around 9 in 10 people in urban areas were functionally literate.

Effective numeracy

- Around 45% of respondents correctly solved the numeracy problems posed; this proportion rose to over 60% in urban areas.

Sources of financial advice

- Most people turn to their friends and family for financial advice (45.6%).
- A quarter go to their financial institution for advice: bank, insurance company, SACCO or agricultural co-op.

Knowledge of financial terms

- Financial terms that are commonly understood include: savings account (91.2%), budget (71.3%), cheque (65.0%), insurance (52.3%), interest (50.9%) and pension (52.7%).
- Financial terms that most people were unfamiliar with include: credit bureau (76.9%), pyramid scheme (69.7%), collateral (62.1%) and mortgage (69.6%).

Knowledge of financial providers

- Most people were familiar with: ROSCAs (85.0%), M-PESA (79.6%) and Postbank (69.0%).
- People were least familiar with the Nairobi Stock Exchange (47.6%) and NHIF (34.6%).

Figure 42: Effective literacy

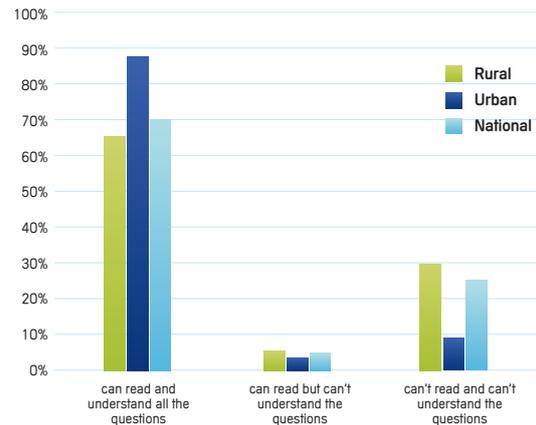


Figure 43: Effective numeracy

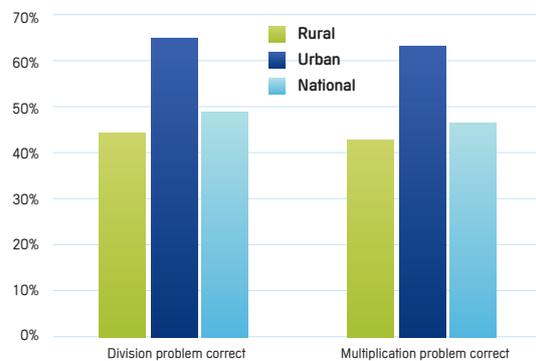


Figure 44: Sources of financial advice

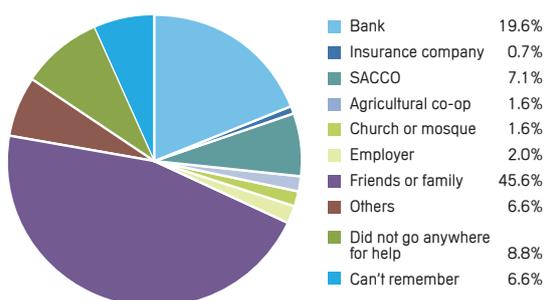


Figure 45: Knowledge of financial terms

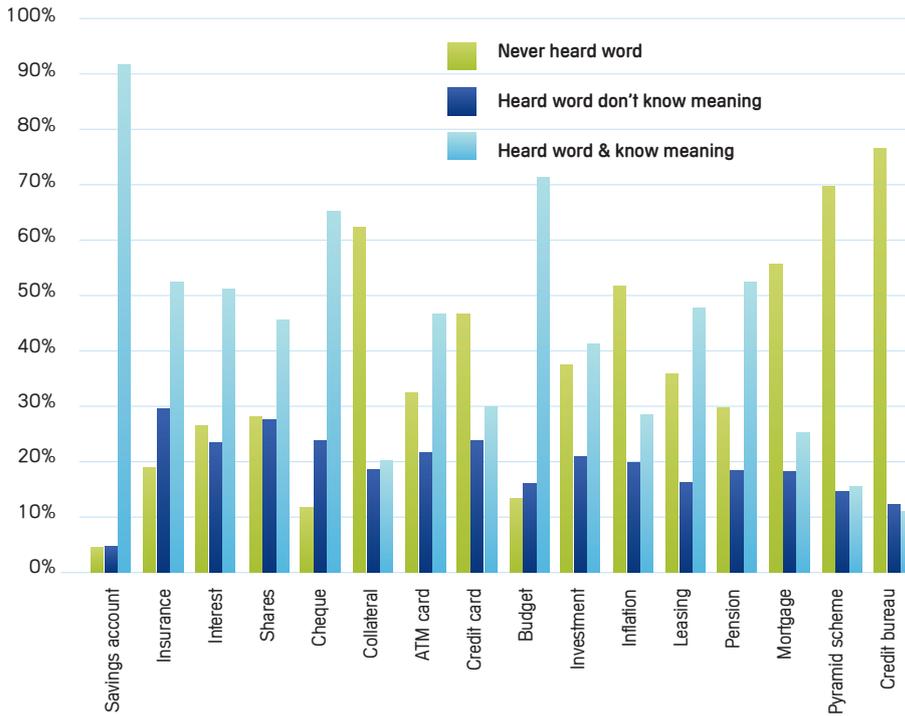
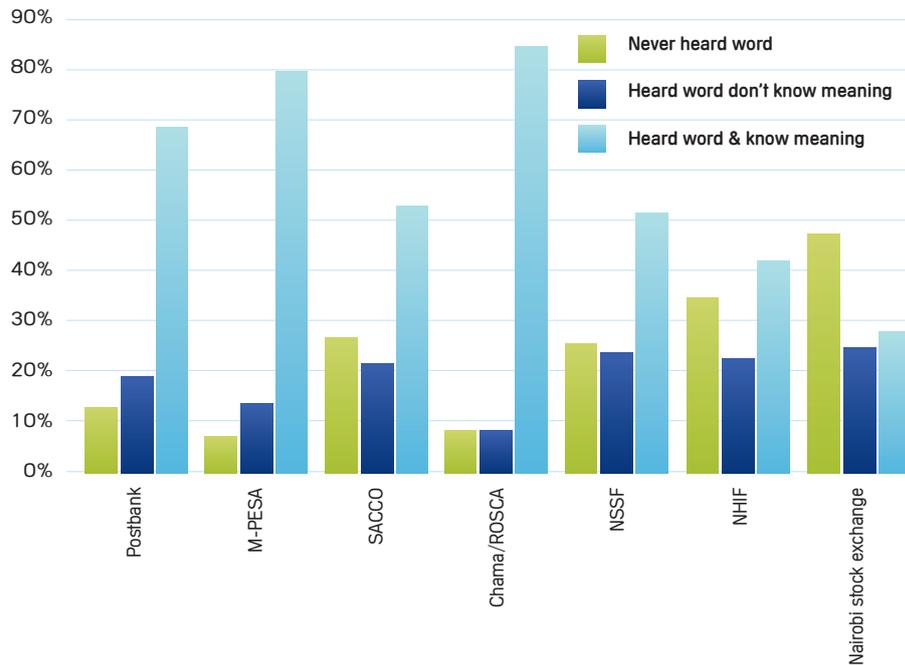
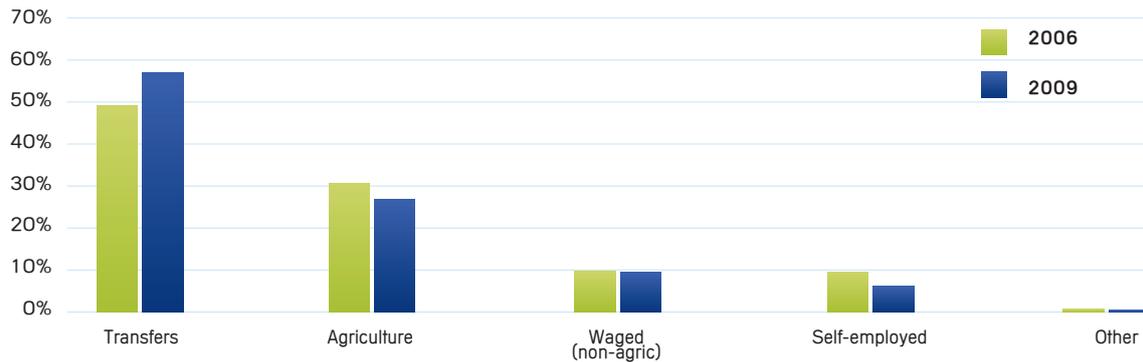


Figure 46: Knowledge of financial providers



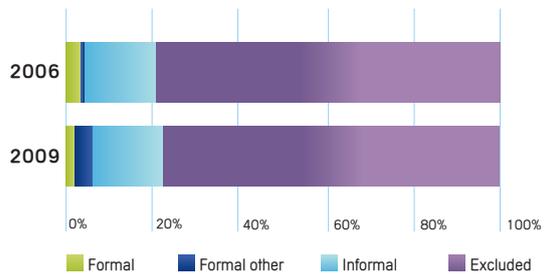
12. Youth

Figure 47: Main income source for youth

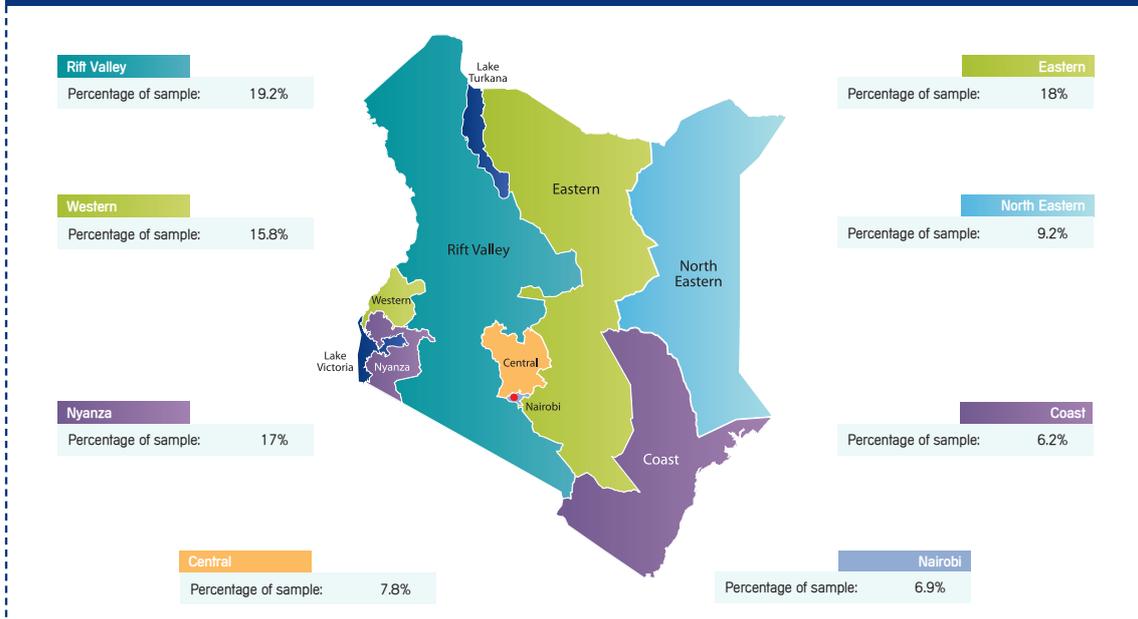


- The main income source for youth is transfers; increasing to 57.0% in 2009 from 49.1% in 2006.
- About a quarter are involved in agriculture, down from 30.8% in 2006.
- The access strand is virtually unchanged from 2006; however there is a slight expansion in the 'Formal other' category, which has expanded from 0.6% to 4.3%, corresponding to a similar decrease in the 'Informal category'. This can be attributed to the usage of money transfers through the M-PESA product.
- Unlike the rest of the population, the proportion of youths using credit in 2009 (19.9%) was higher than those saving (56.3%).

Figure 48: Financial access strand for youth



SAMPLE DISTRIBUTION BY PROVINCE: 16-17 YEAR OLDS



APPENDIX 2

National Survey

Selected data tables

2. Product usage

Table 2.1 - Usage of savings ("Currently has a savings product") vs. Age

	18 to 24 yrs	25 to 34 yrs	35 to 44 yrs	45 to 54 yrs	55+ yrs	Total
Currently	31.6%	60.7%	64.2%	59.6%	52.1%	51.5%
Ever had	9.3%	9.0%	8.7%	13.3%	14.7%	10.3%
Never had	59.1%	30.3%	27.1%	27.0%	33.2%	38.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.2 - Usage of savings ("Currently has a savings product") vs. Gender

	Male	Female	Total
Currently	50.6%	52.3%	51.5%
Ever had	10.5%	10.1%	10.3%
Never had	38.9%	37.5%	38.2%
Total	100.0%	100.0%	100.0%

Table 2.3 - Usage of savings ("Currently has a savings product") vs. Education

	None	Primary	Secondary	Tertiary	Total
Currently	28.0%	50.1%	58.2%	80.9%	51.5%
Ever had	12.0%	12.0%	7.7%	6.2%	10.3%
Never had	60.0%	37.9%	34.1%	12.8%	38.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.4 - Usage of insurance ("Currently has an insurance product") vs. Age

	18 to 24 yrs	25 to 34 yrs	35 to 44 yrs	45 to 54 yrs	55+ yrs	Total
Currently	2.4%	7.6%	10.8%	11.1%	5.7%	6.8%
Ever had	0.1%	1.0%	1.4%	5.1%	7.0%	2.1%
Never had	97.5%	91.4%	87.8%	83.8%	87.3%	91.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.5 - Usage of insurance ("Currently has an insurance product") vs. Gender

	Male	Female	Total
Currently	9.1%	4.7%	6.8%
Ever had	3.6%	0.8%	2.1%
Never had	87.3%	94.5%	91.1%
Total	100.0%	100.0%	100.0%

Table 2.6 - Usage of insurance ("Currently has an insurance product") vs. Education

	None	Primary	Secondary	Tertiary	Total
Currently	0.7%	2.6%	9.2%	37.5%	6.8%
Ever had	0.9%	1.8%	2.5%	5.3%	2.1%
Never had	98.4%	95.6%	88.3%	57.2%	91.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.7 - Usage of insurance ("Currently has an insurance product") vs. Education

	None	Primary	Secondary	Tertiary	Total
Currently	0.7%	2.6%	9.2%	37.5%	6.8%
Ever had	0.9%	1.8%	2.5%	5.3%	2.1%
Never had	98.4%	95.6%	88.3%	57.2%	91.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.8 - Usage of credit ("Currently has a credit product") vs. Age

	18 to 24 yrs	25 to 34 yrs	35 to 44 yrs	45 to 54 yrs	55+ yrs	Total
Currently	30.0%	41.8%	44.3%	43.9%	32.9%	37.8%
Ever had	14.2%	14.7%	12.6%	15.4%	16.8%	14.6%
Never had	55.8%	43.5%	43.1%	40.7%	50.3%	47.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.9 - Usage of credit ("Currently has a credit product") vs. Gender

	Male	Female	Total
Currently	37.9%	37.7%	37.8%
Ever had	15.2%	14.0%	14.6%
Never had	46.9%	48.3%	47.6%
Total	100.0%	100.0%	100.0%

Table 2.10 - Usage of credit ("Currently has a credit product") vs. Education

	None	Primary	Secondary	Tertiary	Total
Currently	30.3%	37.1%	39.3%	51.1%	37.8%
Ever had	10.6%	14.1%	15.9%	20.2%	14.6%
Never had	59.1%	48.8%	44.8%	28.7%	47.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.11 - Usage of savings ("Currently has a savings product") vs. Province

	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Currently	65.3%	66.0%	39.7%	55.6%	51.2%	45.9%	53.3%	9.8%	51.5%
Ever had	9.8%	8.2%	12.5%	6.5%	11.7%	11.6%	13.9%	2.5%	10.3%
Never had	24.9%	25.8%	47.8%	38.0%	37.1%	42.5%	32.8%	87.7%	38.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.12 - Usage of savings ("Currently has a savings product") vs. Cluster type

	Rural	Urban	Total
Currently	49.1%	60.5%	51.5%
Ever had	10.2%	10.8%	10.3%
Never had	40.7%	28.7%	38.2%
Total	100.0%	100.0%	100.0%

Table 2.13 - Insurance usage ("Currently has an insurance product") vs. Province

	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Currently	15.9%	7.9%	7.1%	3.9%	4.3%	7.4%	5.6%	1.6%	6.8%
Ever had	2.2%	3.6%	2.0%	1.3%	1.8%	1.9%	2.9%	0.0%	2.1%
Never had	81.9%	88.5%	90.9%	94.8%	93.9%	90.7%	91.4%	98.4%	91.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.14 - Insurance usage ("Currently has an insurance product") vs. Cluster type

	Rural	Urban	Total
Currently	4.8%	14.0%	6.8%
Ever had	2.1%	2.4%	2.1%
Never had	93.1%	83.6%	91.1%
Total	100.0%	100.0%	100.0%

Table 2.15 - Usage of credit ("Currently has a credit product") vs. Province

	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Currently	38.3%	35.3%	50.5%	34.8%	43.3%	33.2%	44.6%	11.8%	37.8%
Ever had	23.2%	20.5%	16.5%	4.9%	15.8%	13.9%	16.5%	0.5%	14.6%
Never had	38.5%	44.2%	33.0%	60.3%	40.9%	52.9%	38.8%	87.7%	47.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.16 - Usage of credit ("Currently has a credit product") vs. Cluster type

	Rural	Urban	Total
Currently	36.9%	41.2%	37.8%
Ever had	13.2%	19.6%	14.6%
Never had	49.9%	39.2%	47.6%
Total	100.0%	100.0%	100.0%

Table 2.17 - Most important financial service ["Of all the financial services you currently have, which do you consider your most important financial service (this could be either the one you use most often or where you keep the most money)?"]

Savings - Secret place	35.0%
Savings - ROSCA	17.1%
Savings - Bank - with interest	9.8%
Savings - Bank - transaction	6.8%
Savings - SACCO	5.7%
Savings - ASCA	2.7%
Savings - Family/friend	2.7%
Savings - Postbank	1.3%
Savings - MFIs	1.1%
Savings - Bank - current	0.9%
Savings - Group of friends	0.7%
Savings - ATM/Debit	0.1%
Loan - Shop/supplier credit	3.2%
Loan - Family/friend	0.7%
Loan - SACCO	0.1%
Loan - MFIs	0.1%
Loan - ASCA	0.1%
Loan - Buyer	0.1%
Loan - Bank	0.0%
Loan - Government	0.0%
Loan - Employer	0.0%
Loan - Shylock	0.0%
Loan - Hire purchase	0.0%
Insurance - NSSF	0.1%
Insurance - Government medical	0.0%
Insurance - Private medical	0.0%
Insurance - Education	0.0%
Insurance - Pension	0.0%
Transfer - M-PESA registered user	7.2%
None	4.3%
Total	100.0%

3. Access to amenities

Table 3.1 - Bank - Transport Length ("What is the average time you take to travel to the nearest bank branch?")

< 10 min	8.2%
10 to 30 min	31.9%
30min to 1 hour	35.3%
2 hours	16.2%
3 hours	4.2%
4 hours	1.4%
5 hours	1.0%
6 hours	0.7%
7hrs +	1.2%
Total	100.0%

Table 3.2 - Bank - Transport Method ("How do you usually get to the nearest bank branch?")

Public transport to bus or taxi	65.5%
Walk all the way	17.8%
Public transport to bicycle/motorcycle	9.8%
You don't know where the nearest facility is	3.8%
Own transport other than motor vehicle	2.2%
Own motor vehicle	0.6%
Other	0.2%
Other motor vehicle to free or not paid for	0.1%
Total	100.0%

Table 3.3 - Bank - Transport Cost ("How much does/would it cost to travel there and back home by public transport?")

< Ksh 50	28.7%
KSh 51 to 100	25.5%
KSh 101 to 200	20.5%
KSh 201 to 500	9.8%
KSh 500+	3.0%
Close enough to walk	12.3%
Don't know	0.2%
Total	100.0%

4. Savings

Table 4.1 - ("Many people have different reasons why they keep money aside or save, for what reason are you currently saving?")

Ordinary household needs	65.5%
Emergency	45.2%
Education	29.1%
For old age	26.2%
Personal	21.9%
Expanding business	11.1%
Starting up new business	10.0%
Acquire household goods	9.7%
Purchase livestock	8.9%
Agricultural inputs	7.6%
Improving house	6.7%
Purchase land	5.6%
Leave for children	5.6%
Social	5.1%
Purchase/build house for family	3.3%
Agricultural improvements	3.0%
Agricultural implements	2.5%
Purchase/build house for rent	1.5%
Purchase vehicle	1.0%
Other	1.0%
Purchase stocks/shares	0.7%
Investing in other business	0.5%
Fishing equipment	0.1%

Table 4.2 - Savings reason - other ("Many people have different reasons why they keep money aside or save, for what reason are you currently saving?")

For security purposes	17.5%
To qualify for a loan	17.2%
To assist my aged parents	14.4%
To get dividends from SACCO shares	9.5%
When I receive money in ransom	8.9%
To earn interest	8.5%
To avoid careless spending	7.2%
Livestock expenses	4.2%
To have an independent life	4.1%
Rent land for farming	3.1%
To dig a borehole	2.2%
To open a bank account	1.9%
To build a water tank	1.3%
Total	100.0%

Table 4.3 - Reason never saved - ("Why have you never saved any money?")

No money	80.3%
Nothing left over	13.9%
Lots of money needed	13.2%
Too expensive	3.3%
None	3.0%
Nowhere to save	2.8%
ID and referee needed	2.7%
Other	1.7%
Don't believe	1.5%
Don't understand	1.5%

Table 4.4 - Reason never saved - other specified1 ("Why have you never saved any money?")

Irregular income	39.1%
Unemployed	36.4%
Invest in buying livestock	11.3%
My husband saves for me	9.0%
Prefer investing in business	4.2%

5. Credit

Table 5.1 - Loan reason ("Thinking back to your last loan, for what reasons did you borrow money or take credit?")

Ordinary household needs	60.7%
Emergency	17.0%
Education	14.4%
Expanding business	8.8%
Agricultural inputs	7.3%
Acquire household goods	7.1%
Personal	6.7%
Starting up new business	4.6%
Purchase livestock	3.8%
Agricultural improvements	2.5%
Purchase/build house for family	2.4%
Pay off own debt	2.3%
Improving house	2.1%
Purchase land	2.1%
Social	1.6%
Leave for children	1.6%
Purchase/build house for rent	1.1%
Agricultural implements	1.0%
For old age	0.9%
Purchase vehicle	0.6%
Purchase stocks/shares	0.5%
Pay off someone's debt	0.4%
Investing in other business	0.3%
Other	0.1%
Fishing equipment	0.0%

Table 5.2 - Reason never borrowed - other specified1 ("Why have you never taken a loan?")

Don't know how the procedures of getting a loan	17.4%
There is a lot bureaucracy	14.5%
Interest is against my religious belief	12.0%
I am too old	11.1%
Don't have a bank account	10.0%
Still a student	7.6%
No regular income	6.1%
Do not want to repay with an interest	4.9%
Do not have time	4.0%
Don't know how to read and write	3.7%
Does not know what a loan is	3.7%
Does not give loans to pensioners	3.1%
My culture does not allow	1.1%
Not found proper institution	0.8%

Table 5.3 - Reason never borrowed - ("Why have you never taken a loan?")

Don't earn enough	38.4%
Never needed	23.8%
Fear loss of property/assets	16.8%
Unemployed	14.8%
No collateral	13.2%
No guarantor/referee	8.7%
DK where to go	7.9%
High charges	6.2%
No place close by	5.9%
No ID/ documentation	5.1%
Don't believe in it	3.5%
None	2.2%
Spouse won't allow	2.1%
Other	1.4%

6. Insurance

Table 6.1 - Use of car insurance by gender

	Male	Female	Total
Currently have	1.5%	0.7%	1.1%
Used to have but no longer have	0.5%	0.1%	0.3%
Never had	98.0%	99.2%	98.7%
Total	100.0%	100.0%	100.0%

Table 6.2 - Use of car insurance by province

	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Currently have	5.4%	1.2%	0.9%	0.4%	0.5%	1.0%	0.0%	0.3%	1.1%
Used to have but no longer have	0.6%	0.3%	0.2%	0.3%	0.2%	0.2%	0.3%	0.0%	0.3%
Never had	94.0%	98.4%	98.9%	99.4%	99.4%	98.8%	99.7%	99.7%	98.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6.3 - Use of car insurance by cluster type

	Rural	Urban	Total
Currently have	0.6%	2.9%	1.1%
Used to have but no longer have	0.2%	0.4%	0.3%
Never had	99.2%	96.7%	98.7%
Total	100.0%	100.0%	100.0%

Table 6.4 - Use of car insurance by age

	18 to 24 yrs	25 to 34 yrs	35 to 44 yrs	45 to 54 yrs	55+ yrs	Total
Currently have	0.1%	1.0%	1.8%	2.1%	1.6%	1.1%
Used to have but no longer have	0.0%	0.1%	0.2%	0.5%	1.2%	0.3%
Never had	99.9%	98.9%	98.0%	97.5%	97.2%	98.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6.5 - Use of car insurance by education

	None	Primary	Secondary	Tertiary	Total
Currently have	0.1%	0.3%	1.1%	8.4%	1.1%
Used to have but no longer have	0.0%	0.1%	0.3%	1.9%	0.3%
Never had	99.9%	99.6%	98.6%	89.7%	98.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6.6 - Use of car insurance by gender

	Male	Female	Total
Currently have	0.3%	0.1%	0.2%
Used to have but no longer have	0.2%	0.0%	0.1%
Never had	99.5%	99.9%	99.7%
Total	100.0%	100.0%	100.0%

Table 6.7 - Use of house insurance by province

	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Currently have	1.2%	0.0%	0.1%	0.1%	0.2%	0.1%	0.3%	0.0%	0.2%
Used to have but no longer have	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%	0.3%	0.0%	0.1%
Never had	98.7%	99.9%	99.9%	99.9%	99.8%	99.7%	99.4%	100.0%	99.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6.8 - Use of house insurance by cluster type

	Rural	Urban	Total
Currently have	0.1%	0.7%	0.2%
Used to have but no longer have	0.1%	0.2%	0.1%
Never had	99.9%	99.1%	99.7%
Total	100.0%	100.0%	100.0%

Table 6.9 - Use of house insurance by age

	18 to 24 yrs	25 to 34 yrs	35 to 44 yrs	45 to 54 yrs	55+ yrs	Total
Currently have	0.0%	0.2%	0.3%	0.4%	0.3%	0.2%
Used to have but no longer have	0.0%	0.0%	0.1%	0.4%	0.3%	0.1%
Never had	100.0%	99.8%	99.6%	99.2%	99.4%	99.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6.10 - Use of house insurance by education

	None	Primary	Secondary	Tertiary	Total
Currently have	0.0%	0.0%	0.1%	2.3%	0.2%
Used to have but no longer have	0.0%	0.0%	0.1%	0.9%	0.1%
Never had	100.0%	100.0%	99.8%	96.7%	99.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6.11 - Use of private medical insurance by gender

	Male	Female	Total
Currently have	0.8%	0.5%	0.7%
Used to have but no longer have	0.4%	0.1%	0.3%
Never had	98.8%	99.3%	99.1%
Total	100.0%	100.0%	100.0%

Table 6.12 - Use of private medical insurance by cluster type

	Rural	Urban	Total
Currently have	0.2%	2.5%	0.7%
Used to have but no longer have	0.1%	0.7%	0.3%
Never had	99.7%	96.8%	99.1%
Total	100.0%	100.0%	100.0%

Table 6.13 - Use of private medical insurance by province

	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Currently have	3.7%	0.3%	0.3%	0.1%	1.0%	0.5%	0.0%	0.3%	0.7%
Used to have but no longer have	0.9%	0.2%	0.2%	0.3%	0.3%	0.0%	0.4%	0.0%	0.3%
Never had	95.5%	99.5%	99.5%	99.6%	98.7%	99.5%	99.6%	99.7%	99.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6.14 - Use of private medical insurance by age

	18 to 24 yrs	25 to 34 yrs	35 to 44 yrs	45 to 54 yrs	55+ yrs	Total
Currently have	0.5%	1.0%	0.9%	0.6%	0.2%	0.7%
Used to have but no longer have	0.0%	0.1%	0.4%	0.6%	0.6%	0.3%
Never had	99.5%	98.9%	98.7%	98.8%	99.2%	99.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6.15 - Use of private medical insurance by education

	None	Primary	Secondary	Tertiary	Total
Currently have	0.0%	0.2%	0.5%	6.1%	0.7%
Used to have but no longer have	0.0%	0.1%	0.4%	1.1%	0.3%
Never had	100.0%	99.7%	99.0%	92.7%	99.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

7. Technology

Table 7.1 - Technology use ("Which of the following activities do you conduct regularly?")

Send text messages	43.1%
Send airtime	37.1%
ATM	13.4%
Buy other services	9.4%
Mobile for internet access	4.5%
Use Pesa-Point	3.5%
Use supermarket discount card	2.7%
Mobile phone to check bills	2.7%
Use discount coupons	1.5%
Cash back at supermarket	0.9%
Use standing orders	0.8%

Table 7.2 - M-PESA ever used ("Have you ever used M-PESA?")

M-PESA ever received	88.0%
M-PESA to receive income	52.7%
M-PESA - check balance	47.7%
M-PESA - buy airtime	41.7%
M-PESA ever used	39.9%
M-PESA - none	37.8%
M-PESA - save money	26.3%
M-PESA - money lost recovered	25.7%
M-PESA - buy when travelling	16.9%
M-PESA - make donations	5.4%
M-PESA - receive payments	4.9%
M-PESA - buy goods /services	3.5%
M-PESA - money loss	3.3%
M-PESA - ATM	2.7%
M-PESA - pay bills	2.3%
M-PESA - receive salaries/wages	1.8%
M-PESA - pay salaries/wages	1.7%

Table 7.3 - Own mobile phone ("Which of the following activities do you conduct regularly?")

Yes	47.4%
Total	100.0%

Table 7.4 - Internet usage ("Do you use the internet/email?")

Yes	7.7%
Total	100.0%

Table 7.5 - M-PESA sent ("Have you ever sent money by M-PESA using your own phone or someone else's?")

Your own phone	55.5%
Have never sent money by M-PESA	24.7%
A phone belonging to a family member or friend	13.9%
The agent's phone	5.2%
NR	0.3%
Total	100.0%

Table 7.6 - M-PESA usual usage ("Which of the following best describes what you usually do when buying M-PESA?")

You buy just the amount you need to send from an agent, and	65.8%
You always keep some money on your balance so you can send it	34.2%
Total	100.0%

Table 7.7 - M-PESA receive income why ("If yes, why would you like to receive your income by M-PESA?")

It would be easy to access	49.6%
It is fast	43.4%
The charges are low	6.9%
Total	100.0%

Table 7.8 - M-PESA receive income why not ("If no, why would you not like to receive your income by M-PESA?")

Prefer cash	34.1%
Scared of losing your phone and then having to replace	25.6%
Will spend it fast as access too easy	15.2%
Salary won't fit	12.9%
Agents often don't have enough cash	7.6%
Too expensive	4.6%
Total	100.0%

Table 7.9 - M-PESA - frequency ("How often do you use M-PESA?")

Once in a while	51.6%
At least once a month	32.7%
At least once a week	14.3%
Every day	1.3%
Total	100.0%

Table 7.10 - M-PESA - money loss reason ("What was the cause of the error (i.e. Losing money on M-PESA)?")

You sent the money to the wrong number	65%
The agent made a mistake / cheated you	15.5%
M-PESA lost the money	9.3%
Other	7.8%
You lost your phone and you could not get the number back	2.5%
Total	100.0%

Table 7.11 - M-PESA - money loss reason - other specified ("What was the cause of the error (i.e. Losing money on M-PESA)?")

The recipient was not registered	27.3%
Deleted the message	26.4%
Recipient used wrong Pin Number	17.6%
Somebody accessed my Pin Number	11.2%
The agent gave out less money	9.3%
Recipient registered with the wrong ID Number	8.2%
Total	100.0%

8. Community based groups

Table 8.1 -No. of groups ("Many people belong to informal societies or group saving schemes such as merry go round,savings and lending groups, chamas, investment clubs, clan/welfare groups to which they contribute on a regular basis. How many do you personally belong to?")

None	61.3%
1	28.7%
2	7.0%
3	3.0%
Total	100.0%

Table 8.2 - Group2 - contribution frequency ("What is your regular contribution to this group?")

Daily	3.7%
Weekly	33.3%
Monthly	55.3%
Annually	1.2%
Other	6.5%
Total	100.0%

Table 8.3 - Group3 - contribution frequency ("What is your regular contribution to this group?")

Daily	3.5%
Weekly	25.7%
Monthly	61.4%
Annually	2.5%
Other	6.8%
Total	100.0%

Table 8.4 - Group1 - main membership type ("What kinds of people does the group mainly consist of?")

Relatives	10.0%
Friends	34.8%
Neighbours	43.5%
Work mates/Colleagues	8.2%
Religious group	3.5%
Total	100.0%

Table 8.5 - Group2 - main membership type ("What kinds of people does the group mainly consist of?")

Relatives	14.7%
Friends	34.4%
Neighbours	40.5%
Work mates/Colleagues	7.2%
Religious group	3.3%
Total	100.0%

Table 8.6 - Group3 - main membership type ("What kinds of people does the group mainly consist of?")

Neighbours	41.8%
Friends	39.6%
Relatives	8.6%
Work mates/Colleagues	6.1%
Religious group	4.0%
Total	100.0%

9. Financial literacy

Table 9.1 - Household financial decision maker
("In different households, different people make the decisions about finances. Please tell me who is responsible for your household's financial decisions. By this I mean decisions including the purchasing of goods and services for the household and how and where to save and spend money.")

Self	27.0%
Self and spouse	42.6%
Self and immediate family	7.7%
Self and extended family	2.7%
Husband and wife	5.1%
Parents	12.9%
Children	0.5%
Others	1.5%
Total	100.0%

Table 9.2 - Household financial decision maker ("In different households, different people make the decisions about finances. Please tell me who is responsible for your household's financial decisions. By this I mean decisions including the purchasing of goods and services for the household and how and where to save and spend money.") vs. Cluster type

	Rural	Urban	Total
Self	25.6%	32.2%	27.0%
Self and spouse	44.7%	34.7%	42.6%
Self and immediate family	7.5%	8.2%	7.7%
Self and extended family	2.5%	3.7%	2.7%
Husband and wife	5.4%	4.4%	5.1%
Parents	12.7%	13.6%	12.9%
Children	0.5%	0.3%	0.5%
Others	1.2%	2.9%	1.5%
Total	100.0%	100.0%	100.0%

Table 9.3 - Household financial decision maker ("In different households, different people make the decisions about finances. Please tell me who is responsible for your household's financial decisions. By this I mean decisions including the purchasing of goods and services for the household and how and where to save and spend money.") vs. Gender

	Male	Female	Total
Self	31.0%	23.5%	27.0%
Self and spouse	38.9%	45.9%	42.6%
Self and immediate family	8.1%	7.3%	7.7%
Self and extended family	3.2%	2.3%	2.7%
Husband and wife	1.2%	8.7%	5.1%
Parents	15.4%	10.6%	12.9%
Children	0.3%	0.6%	0.5%
Others	1.9%	1.2%	1.5%
Total	100.0%	100.0%	100.0%

Table 9.6 - Household financial decision maker ("In different households, different people make the decisions about finances. Please tell me who is responsible for your household's financial decisions. By this I mean decisions including the purchasing of goods and services for the household and how and where to save and spend money.") vs. Education

	None	Primary	Secondary	Tertiary	Total
Self	42.7%	24.5%	22.6%	31.4%	27.0%
Self and spouse	34.7%	47.5%	38.5%	41.3%	42.6%
Self and immediate family	7.5%	6.2%	9.7%	9.7%	7.7%
Self and extended family	2.9%	3.0%	2.2%	2.9%	2.7%
Husband and wife	6.1%	6.8%	2.9%	1.0%	5.1%
Parents	3.0%	10.4%	21.7%	12.3%	12.9%
Children	2.8%	0.1%	0.0%	0.0%	0.5%
Others	0.2%	1.5%	2.4%	1.3%	1.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9.7 - Financial service experience - Savings account ("There are many words used in Kenya that apply to, or concern, financial services. Please tell me which of the following best describes your experience with each word or phrase.")

	Never heard of this word or phrase	Heard this word but don't know what it means	Heard of this word or phrase/ know what it means
Savings account	4.2%	4.5%	91.2%
Insurance	18.5%	29.2%	52.3%
Interest	26.1%	23.0%	50.9%
Shares	27.5%	27.2%	45.4%
Cheque	11.5%	23.5%	65.0%
Collateral	62.1%	18.1%	19.8%
ATM card	32.1%	21.4%	46.5%
Credit card	46.5%	23.6%	29.9%
Budget	12.9%	15.8%	71.3%
Investment	37.9%	20.9%	41.2%
Inflation	52.1%	19.4%	28.5%
Leasing	36.1%	15.9%	47.9%
Pension	28.8%	18.5%	52.7%
Mortgage	56.1%	18.3%	25.6%
Pyramid scheme	69.5%	14.6%	15.8%
Credit bureau	76.9%	12.2%	10.9%

Table 9.8 - Provider ever heard of - Post Bank ("Which of the following names for financial providers have you ever heard of?")

	Never heard of this word or phrase	Heard this word but don't know what it means	Heard of this word or phrase/ know what it means
Post Bank	12.9%	18.1%	69.0%
M-PESA	7.1%	13.3%	79.6%
SACCO	26.5%	20.9%	52.5%
Chama or Rosca	8.2%	6.8%	85.0%
NSSF	25.2%	23.9%	50.9%
NHIF	34.6%	23.0%	42.4%
Nairobi Stock Exchange	47.6%	24.9%	27.5%

Table 9.9 - Financial adviser - who ("Who/where did you go to, the last time you needed financial advice?")

Friends/family	45.6%
Bank	19.6%
Did not go anywhere for help	8.7%
SACCO	7.1%
Cant remember	6.6%
Others	6.5%
Employer	2.0%
Agricultural co-operative	1.6%
Church or mosque	1.6%
Insurance company	0.7%
Total	100.0%

Table 10.8 - Calculated Income group vs. Cluster type

	Rural	Urban	Total
Transfers	12.0%	22.7%	14.3%
Agric. cash crop	2.9%	0.3%	2.3%
Agric. other produce	14.4%	2.6%	11.9%
Livestock	19.7%	1.3%	15.8%
Agric. waged	15.4%	1.5%	12.4%
Waged domestic	3.4%	5.3%	3.8%
Waged large estab.	3.7%	12.3%	5.5%
Waged small estab.	4.0%	12.5%	5.8%
Business	24.5%	41.4%	28.1%
Not spec/Not cat	0.1%	0.1%	0.1%
Total	100.0%	100.0%	100.0%

Table 10.9 - Calculated Income group vs. age

	18 to 24 yrs	25 to 34 yrs	35 to 44 yrs	45 to 54 yrs	55+ yrs	Total
Transfers	32.1%	8.8%	3.9%	3.5%	9.8%	14.3%
Agric. cash crop	1.1%	1.3%	1.8%	3.8%	6.5%	2.3%
Agric. other produce	8.6%	10.1%	12.3%	13.1%	20.9%	11.9%
Livestock	7.6%	12.6%	19.5%	22.1%	29.5%	15.8%
Agric. waged	12.2%	12.0%	14.9%	13.3%	9.8%	12.4%
Waged domestic	6.9%	3.6%	2.6%	0.8%	1.7%	3.8%
Waged large estab.	3.3%	7.5%	7.6%	7.9%	1.7%	5.5%
Waged small estab.	7.5%	7.4%	4.7%	3.9%	1.9%	5.8%
Business	20.6%	36.5%	32.5%	31.6%	18.2%	28.1%
Not spec/Not cat	0.2%	0.1%	0.1%	0.0%	0.0%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 10.10 - Calculated Income group vs. Education

	None	Primary	Secondary	Tertiary	Total
Transfers	13.7%	10.3%	21.5%	12.2%	14.3%
Agric. cash crop	3.4%	2.5%	1.8%	1.4%	2.3%
Agric. other produce	14.4%	13.9%	8.6%	7.5%	11.9%
Livestock	33.3%	15.3%	10.4%	6.4%	15.8%
Agric. waged	11.5%	16.6%	8.4%	2.0%	12.4%
Waged domestic	1.6%	5.5%	2.7%	1.1%	3.8%
Waged large estab.	0.6%	2.6%	8.4%	23.6%	5.5%
Waged small estab.	1.7%	4.7%	8.3%	10.8%	5.8%
Business	19.5%	28.6%	29.8%	34.7%	28.1%
Not spec/Not cat	0.2%	0.0%	0.2%	0.3%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

11. Wealth index¹

Table 11.1 - Wealth index quintiles by province - 2006

	1	2	3	4	5	Total
Nairobi	4.21%	3.46%	6.24%	6.23%	33.9%	10.8%
Central	4.63%	14.78%	13.94%	17.66%	13.81%	12.79%
Coast	10.48%	8.8%	8.18%	10.77%	7.88%	9.26%
Eastern	10.47%	12.79%	22.14%	23.78%	10.04%	15.83%
Nyanza	19.42%	19.71%	13.42%	11.6%	6.19%	14.06%
Rift Valley	27.05%	23.06%	21.04%	21.96%	24.12%	23.51%
Western	9.38%	16.53%	14.89%	7.76%	4.01%	10%
North Eastern	14.36%	0.87%	0.15%	0.24%	0.04%	3.37%
Total	100%	100%	100%	100%	100%	100%

Table 11.2 - Wealth index quintiles by province - 2009

	1	2	3	4	5	Total
Nairobi	0.4%	1%	2.36%	5.59%	32.41%	8.36%
<i>Change from 2006</i>	<i>-3.81%</i>	<i>-2.46%</i>	<i>-3.88%</i>	<i>-0.64%</i>	<i>-1.49%</i>	<i>-2.44%</i>
Central	1.79%	11.12%	16.31%	17.93%	16.01%	12.64%
<i>Change from 2006</i>	<i>-2.84%</i>	<i>-3.66%</i>	<i>2.37%</i>	<i>0.27%</i>	<i>2.2%</i>	<i>-0.15%</i>
Coast	14.4%	3.55%	6.17%	10.35%	10.11%	8.94%
<i>Change from 2006</i>	<i>3.92%</i>	<i>-5.25%</i>	<i>-2.01%</i>	<i>-0.42%</i>	<i>2.23%</i>	<i>-0.32%</i>
Eastern	12.62%	10.62%	19.78%	26.7%	6.66%	15.31%
<i>Change from 2006</i>	<i>2.15%</i>	<i>-2.17%</i>	<i>-2.36%</i>	<i>2.92%</i>	<i>-3.38%</i>	<i>-0.52%</i>
Nyanza	19.06%	18.05%	16.73%	10.05%	7.87%	14.33%
<i>Change from 2006</i>	<i>4.7%</i>	<i>17.18%</i>	<i>16.58%</i>	<i>9.81%</i>	<i>7.83%</i>	<i>10.96%</i>
Rift Valley	31.86%	31.54%	23.83%	20.9%	22.06%	26.02%
<i>Change from 2006</i>	<i>12.44%</i>	<i>11.83%</i>	<i>10.41%</i>	<i>9.3%</i>	<i>15.87%</i>	<i>11.96%</i>
Western	12.99%	19.49%	14.46%	7.3%	3.2%	11.46%
<i>Change from 2006</i>	<i>-14.06%</i>	<i>-3.57%</i>	<i>-6.58%</i>	<i>-14.66%</i>	<i>-20.92%</i>	<i>-12.05%</i>
North Eastern	6.88%	4.63%	0.37%	1.17%	1.68%	2.94%
<i>Change from 2006</i>	<i>-2.5%</i>	<i>-11.9%</i>	<i>-14.52%</i>	<i>-6.59%</i>	<i>-2.33%</i>	<i>-7.43%</i>
Total	100%	100%	100%	100%	100%	100%

Table 11.3 - Wealth index quintiles by cluster - 2006

	1	2	3	4	5	Total
Rural	89.6%	89.63%	82.18%	74.15%	41%	75.32%
Urban	10.4%	10.37%	17.82%	25.85%	59%	24.68%
Total	100%	100%	100%	100%	100%	100%

¹ Wealth Quintiles were calculated using an asset index on an ascending scale of 1-5 where 1 is the lowest (poorest) wealth group and 5 is the highest (richest). The index gives the internal distribution of wealth for each survey, but cannot be compared across surveys as the relative value of assets changes.



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