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Financial access and exclusion in Kenya and Uganda

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Abstract

Policy emphasis has recently shifted to 'Finance for All' given evidence that financial sector development contributes to growth but effects on poverty do not arise from pro-poor provision. We argue that, given this policy goal, analyses of barriers to access must be country specific and go beyond the emphasis on transactions costs to incorporate the effects of social institutions since these contribute to discrimination. This paper uses data from Financial Access Surveys carried out in 2006 in Kenya and Uganda to investigate the socio-economic, demographic and geographical factors causing access to and exclusion from formal, semi-formal and informal financial services

1. Introduction

The role of the financial sector as leading contributor to growth has been substantially accepted and recently the focus has turned to its contribution to poverty reduction. However, the evidence of direct links to poverty reduction is deemed to be weak (World Bank 2008b) and hence the policy agenda for financial sector development has turned away from a period of emphasis on microfinance towards ensuring access to 'Finance For All' (World Bank 2008). This new focus therefore requires that policy makers have an adequate understanding of the factors enabling access and creating exclusion in particular financial markets. Moreover, the contribution of the semi-formal and informal sectors to access needs to be better understood. In many countries these sectors provide services that are important to people's livelihoods and successful financial sector development needs to operate in ways that complement and develop this rather than undermine them.

From a theoretical perspective constraints to access have been understood mainly through the lens of the New Institutional Economics with its focus on transactions costs and asymmetric information arising from factors such as physical distance, cost of services (both financial and non-financial) and requirements such as identity cards. However the causes of non-use are complex and may arise from costs, risk or discrimination with these interacting in different ways (Claessens 2006). Studies of the determinants of access therefore need to utilise a range of socio-economic, demographic and geographic indicators which can influence exclusion. In particular, dimensions of

discrimination may be at work that arise from the role of social institutions – defined as those arising from 'primordial identity' such as those of age, gender, class, caste, religion, race and ethnicity – but which are rarely the focus of economic analysis (Harriss-White 2004).

This paper uses data from nationally representative datasets collected in 2006 by FinAccess Kenya and Finscope Uganda to examine the nature and extent of financial service use across the formal, semi-formal and informal financial sectors. These surveys are among a new set of datasets available for African countries that focus specifically on financial service use by individuals. In particular they offer a depth of insight into use of the informal sector which has previously been missing. We also employ the concept of the 'financial access strand' (DFID/Finmark Trust/World Bank 2005) that has been developed to provide a summary profile of access to formal, semi-formal and informal financial services, and overall exclusion. We use logistic regressions to investigate the influence of socio-economic, demographic and geographic characteristics on use in specific country contexts in order to be able to compare and contrast results.

The paper makes three main points. First, we find that results from other studies regarding the role of employment, gender, age and education on formal sector use are supported. However, in contrast to studies which find urban location to be important we find that being in a rural location is not associated with access. Rather variables relating to region in particular are significant and these are likely to be capturing the effects of a range of factors such as agro-ecology and socio-cultural context as well as distance from key economic centres. This has important implications for mainstream strategies of financial access since these often concentrate on physical proximity.[1] While physical proximity is undoubtedly important, this demonstrates that once a wider range of other variables are taken into account, it is possible that barriers arising from other socio-economic and cultural factors are present. More detailed analysis is then necessary to uncover these, although the limitations of this dataset did not allow as extensive analysis as is needed.

Second, the data allows analysis not only of formal sector access but a detailed profile of semi-formal and informal sector access and exclusion which goes beyond that available in the existing literature. This provides an important picture of how these sectors complement each other in the overall landscape of access.   Regional variables – in particular - appear to capture aspects of socio-cultural differentiation that help explain these patterns. Third, we find that while gender is a significant barrier for formal sector access - as has been found elsewhere - informal sector access is significantly skewed towards women in Kenya and hence results in men being more likely to be excluded overall. Overall, given these findings, we argue that the analysis of access and exclusion needs to, and now can, start to be more fine-grained and analyse barriers to access arising from a range of social, cultural and economic factors which are country specific.

2. Context: Financial sector access and financial sector development (FSD)

Recent research on the role of FSD in poverty reduction has shifted donor policy emphasis from a focus on providing access to financial services to the poor – in particular via microfinance - to the need to provide 'Finance for All' (World Bank 2008b) and a wider focus on the unbanked and those on low incomes. Studies that provide the basis of this shift are, first, Jalilian and Kirkpatrick (2005) who conclude that the effect of FSD via its indirect effect on growth offers greater potential for poverty reduction (up to a threshold of economic development) than the direct effect of improved access for poor people although this impact will be adverse if income inequality deteriorates as a result of FSD. Honohan (2007) also finds that the FSD impact on poverty is via measures of financial depth rather than access levels, with access not strongly correlated with poverty rates or national income. Although he also finds that access levels are quite well correlated with inequality suggesting that better access lowers inequality. However, research by Beck, Demirguc-Kunt and Levine (2007a) suggests that FSD disproportionately benefits the poor through faster than average growth of GDP per capita. Their evidence suggests that 60 percent of the impact on the poorest 20 percent operates through aggregate growth while 40 percent operates through reducing inequality. As they indicate, however, this does not suggest how to better achieve poverty-reducing financial development.

With this shift in policy focus to extending access comes the need for empirical measurement of access and analysis of its determinants. One issue has been the distinction between access and use, this recognises that use figures may not adequately signal actual access due to voluntary exclusion (Claessens 2006). On the other hand, involuntary exclusion may arise from barriers such as identity requirements, high costs relative to income or due to lack of a credit record. The new institutional economics (NIE) highlights the moral hazard and adverse selection problems in credit markets that can lead to lack of supply and rationing and hence that the reasons for exclusion can be complex and difficult to establish empirically (Claessens 2006). While the NIE offers a means to recognise the transactions and information costs of geographic access and that overcoming these information barriers has costs, the causes of non-use are complex and may arise from costs, risk or discrimination with these interacting in different ways. Moreover, these may arise from the way the effects of social institutions such as gender, religion, ethnicity, age and so on interact with the pricing, terms and conditions, or operational service delivery mechanisms of providers. Hence, if women receive lower incomes than men then the costs of using a formal account may be too high relative to income for them; or intra-household gender relations may make it hard for women to place their savings in places where their husbands can easily see that they have them; or norms of mobility may constrain their access.[2] The distinction between involuntary and voluntary exclusion may therefore be important in developed countries with already high levels of access, in part because this high level of access signals that the array of financial services available is appropriate and affordable to the majority of users. However, it is not clear that it is so useful in developing

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countries where, as a rule of thumb, as many people are not using services as are using services in developed countries. Under these circumstances, it is adequate to proceed on the assumption that exclusion is primarily involuntary, in particular since a range of research demonstrates the interests of poor people in saving and the complexity of their use of informal services to manage their funds (Bouman and Hospes 1994 ; Collins, Morduch et al. 2009). Data on use is therefore taken as an adequate starting point to explore the causes of exclusion in most developing countries given the complexities of these distinctions (DFID/Finmark Trust/World Bank 2005).

However, access has largely been calculated from the supply side through studies of numbers of bank accounts in relation to key indicators. The World Bank's 2009 study of access in a 54 country study (World Bank 2008a) is such an example. It finds that income is the key determinant of access levels, and in particular having a formal sector job, but argues that short of increased incomes, lowering the costs of access i.e. transactions costs, especially in terms not only of fees and charges but also requirements for documentation are the main areasfor attention. However, Porteous estimates that halving the costs of running a bank account may only bank some 20 per cent of the unbanked in the African region (Bankable Frontier Associates LLC 2007).

The importance of the financial costs of running accounts obviously interacts with income levels as a determinant of access and these costs are often cited by the unbanked. For example, in Mexico City, surveys asking why people were not banked found that location was not an issue and that the largest factor was lack of money or the high minimum balances required (Caskey, Duran et al. 2006). Those who were unbanked were less educated, less likely to be working and had lower household income.

In a range of studies, income, wealth and education have been found to play key roles in explaining use (Claessens 2006). Porteous finds employment, age, education, gender and poverty proxies to be important in his multi-country analysis of seven African Finscope datasets but finds that country dummies were also significant, leading him to argue that there may be other unobserved supply or demand side factors that would help explain access (Bankable Frontier Associates LLC 2007).

Further factors of convenience and trust and the lack of need or ability to save are also important, as are overall perceptions of the formal sector which can be affected by banking crises and wider macro-economic conditions (Claessens 2006). In terms of convenience, proximity has been seen as a key issue in access and in particular the proxy for this of a rural – urban divide. Porteous also found urban location to be important for formal sector access (Bankable Frontier Associates LLC 2007). However, in Brazil a study of urban access (Kumar 2005) found that income, wealth, education and gender were important determinants but also that there were important variations in access by region and by neighbourhood within region, with key differences between those in legal

rather than illegal settlements and related to the quality of housing. This highlights that policies regarding bank location at region or municipality would be inadequate since they are likely to serve better off people within them. Moreover, in examining access through regression techniques they found that changing the variables included changed their relative importance and that geographic factors were less important once income was added.

Beck et al (Beck, Demirguc-Kunt et al. 2007b) have undertaken cross-country analysis of the variation in banking sector outreach across countries. Outreach indicators are developed which reflect density of coverage geographically and demographically (bank branches and ATMs per 1000 km^2 or per 100,000 people) deposit and loan accounts per capita and loan/deposit to income ratios. These are then regressed on variables of institutional quality (an index of governance indicators), credit information sharing and banking freedom, banking system structure, and physical infrastructure. They find outreach to be correlated with population density and economic size and this suggests economies of scale in banking provision. They find that their measures of institutional quality are strongly associated with outreach, and that the effective sharing of credit information and fewer restrictions on access are to some extent related to higher use. They also find that better physical infrastructure for transport and communications is positively associated with banking use (after controlling for population density and economic size), although none of these results suggest directions of causality between supply and demand.

As Claessens has pointed out, discrimination can also interact with aspects of cost and risk to create involuntary exclusion (2006). However, studies of financial service access do not usually incorporate variables that could capture these effects. This converges with Harriss-White's concern to understand the way social institutions regulate markets. She defines these as arising from 'primordial identity' such as those of age, gender, class, caste, religion, race and ethnicity (Harriss-White 2003 ; Harriss-White 2004). She argues that underlying social institutions are powerful in their impact on market structure and development and that economists have rarely given this adequate attention. Moreover, recent developments in institutional analysis have started to recognise the role of social institutions. Williamson's (2000) four-fold hierarchy describes the first level as institutions related to underlying social structure; second, the rules of the game – seen as those such as property rights and the judiciary which define the overall (formal) institutional environment and in the context of markets define what can be exchanged; third, rules related to the playing of the game, for example, contracts and, fourth, rules related to resource allocation mechanisms (eg trade flow regimes, social security systems). Institutional analysis, including in relation to financial sector development (Fergusson 2006), has focused on the formal rules necessary and neglected their embeddedness in underlying social institutions. Rodrik has also recognised that the market economy is embedded in non-market institutions, but that there is no direct or 'unique mapping' between them (2000:3) and that these non-market institutions are not there to serve the logic of market institutions. These social institutions have multiple forms but their

function is to create social difference and processes through which inclusion and exclusion in the economy operates (Johnson 2006). This suggests that more attention needs to be given to the role they play in creating access and exclusion.

As this overview of literature demonstrates, the shift in focus towards financial sector development rather than pro-poor provision raises questions about the key influences on access and exclusion, and hence the requirements for policy to overcome barriers to access. The theoretical contribution of the NIE has placed the focus of analysis on transactions costs – mainly the financial costs entailed in opening bank accounts and their relationship to incomes, while also addressing issues of physical proximity.   A number of variables have been shown to be important across contexts including incomes, employment, wealth, education, age and gender but their relative importance can differ across contexts and - as the Brazilian study suggests – assessing the importance of geography may be affected by the variables included in the analysis. Developments in recent research on the role of institutions in development suggest that there is a theoretical basis for inclusion of variables relating to social differentiation arising from the deep influence of social institutions such as age, gender, race, class, caste, ethnicity and religion. Moreover, the analysis of access in the studies cited above has been focussed on formal services and there is a paucity of systematic and representative data and analysis on access to the semi-formal and informal sectors.

3. Methodology

Data availability at all levels to examine the extent and determinants of access to financial services has been relatively limited (Claessens 2006). While household level surveys have collected data – usually on the use of formal services – it has rarely probed in more detail into savings and loan behaviour, and rarely looked at individuals rather than household level access. In particular, with the growth of microfinance, understanding of the complexity of poor people's financial service use has developed (Rutherford 1999 ; Collins, Morduch et al. 2009). In particular it has highlighted the variety of informal financial service use (Wai 1992) and multiple use of a range of services by individuals and households. In the past, the extent and volumes involved in informal service use have been surveyed only by relatively small scale household surveys (eg of moneylender credit) and been the subject of 'guesstimates' of overall use (Germidis, Kessler et al. 1991).

In-depth financial access surveys have been undertaken in a number of sub-Saharan African countries since 2002 using a model developed in South Africa by the Finmark Trust (Finmark Trust website, Accessed 04/08/08) providing a level of detail on financial service use for African countries which has been absent until now. In Kenya and Uganda the surveys have been supported by a coalition of public and private agencies with the main financial support coming from Financial Sector Deepening Programmes in each country supported by a number of donors. The

survey itself was undertaken by a market research company, The Steadman Group, in 2006. In Kenya the Financial Access Survey comprised a nationally representative sample of 4418 observations of which 4214 were used in the analysis - those respondents aged 18+ years old. In Uganda the survey comprised a nationally representative sample of 2959 respondents aged 18+ years. In both cases the sample frame was provided by the national statistical offices based on their national sampling frame (for details see (FinAccess 2007 ; FinScope Uganda 2007).

On the basis of the initial work in South Africa, and the wider concern to track changing access over time, the concept of the 'access strand' has been developed (DFID/Finmark Trust/World Bank 2005). This places each respondent in a single and mutually exclusive category of financial service use dependent on the most formal service they use. Hence if someone has a bank account but also uses informal groups they will be counted as being a user of formal services and placed in the formal access strand. If they only use a rotating savings and credit association (ROSCA) they would be placed in the informal access strand. The four strands in use are: formal, other formal, informal and excluded. 'Other formal' refers to those subject to some reporting requirements and usually involves entities such as consumer finance companies, credit card companies and savins and credit cooperatives (SACCOs, also known as credit unions). In the context of Kenya and Uganda the institutions in this category are referred to as semi-formal – see table 1.

Table 1: Access strand definitions

	Kenya	**Uganda**
Formal	Banks, building society, PostBank, insurance companies	Banks, credit institutions and MDIs
Semi-formal	SACCOs, MFIs, Government institutions	MFIs (excl MDIs) and SACCOs
Informal	ROSCAs, ASCAs, groups/individuals other than family/friends (eg.employer, moneylender, hire purchase / shop/ buyer)	ROSCAs, ASCAs, NGOs, savings clubs, welfare funds, investment clubs (other than family/friends) and moneylenders
Excluded	None of the above financial services	None of the above financial services

Source: (FinAccess 2007 ; FinScope Uganda 2007)

The paper uses the access strand as the basis for its categorization of access and exclusion. It then uses the variables available in the data set to investigate the geographic, demographic and socio-economic factors that influence the likelihood of using each type of service, that is, each access strand. The socio-economic characteristics included in the dataset offer a useful if not ideal and complete basis for the analysis of determinants of use. Proxy poverty indicators in the form of assets and basic needs - shelter, fuel, water, food – were included. Expenditure data was not collected, although an income question was asked in the Uganda survey and has been included in

the analysis and is indicative, its use is limited as it refers to cash income only. Main income source or employment can, to an extent, also be interpreted to reflect levels of income which are likely to be higher and more reliable amongst public and private sector employees. Geographic variables available were the classification of location as rural or urban and the Province or Region of the country.

A best-fit logistic regression model was developed and applied for all access strands. Logistic regression was preferred since the use or not of a financial service is a binary one. The excluded access strand is 'clean' in this sense and incorporates a choice or not (constrained, of course, by determinants of access) to use a service. Although there are three further access strands there is no presumption that they are in any way 'ordered'[3].

The data for the two countries have been estimated separately because we are interested in country specific determinants of access in order to compare and contrast them. Two further reasons support this strategy. First, separate estimation allows us to utilize the full extent of data available whereas pooling would force a degree of standardization across contexts which would lose explanatory power. Although very similar surveys, they were tailored to local conditions and this resulted in a number of variables being constructed differently[4]. This in particular applies to variables related to regions within country which are necessarily different; employment variables as these were constructed slightly differently; and a number of the poverty proxy variables. Second, we estimate separately in order to avoid a problem which has been argued to arise from pooling, in that using a dummy for country membership forces unobserved variation to be the same. This is a problem that interaction terms do not necessarily solve, and that for logistic regressions can produce significant results opposite to the actual relationship (Hoetker 2007).

In addition to the access strand analysis, regressions were run for each type of savings and credit service reported in the survey. The full results of this latter set of regressions are not reported here but are referred to in the discussion where they offer further explanation of the access strand results obtained (see also (Johnson and Nino-Zarazua 2007a ; Johnson and Nino-Zarazua 2007b).

4. Access strands in Kenya and Uganda

Before proceeding to the analysis it is necessary to have an overview of financial service use in each country according to the access strand analysis (see Annex 1 for a more detailed background on financial service use). When mutually exclusive use of services is defined as in the classifications in table 1 above, access strands as in table 2 are derived. In Kenya, this indicates that overall some 18.5 percent use formal services, 8.1 per cent use semi-formal services as their 'most formal' service, while some 35 per cent use the informal sector and 38.3 per cent are

excluded. In order to understand use better, we have also computed the figures for multiple use of access strands breaking down those who use formal services into those who only use formal services and those who combine these with other types of services also. This indicates that only 4.9 per cent use formal services alone, 3.2 per cent use them in conjunction with semi-formal services, while 5.5 per cent use formal and informal services and 5 per cent use services from all three sectors. In the semi-formal sector also, the majority of these users also combine their use with informal services.

Table 2: Access strands and multiple use Kenya and Uganda

	Kenya		Uganda	
Access strands (weighted)	**per cent**		**per cent**	
Formally Included	**18.5**		**18.1**	
Of whom: Formal only		4.9		11.8
Formal and semi-formal		3.2		1.6
Formal and informal		5.5		4.3
Formal and semi-formal and informal		5.0		0.4
Semi-formally included	**8.1**		**3.1**	
Of whom: Semi-formal only		3.0		2.4
Semi-formal and informal		5.2		0.6
Informally included	**35.0**		**16.6**	
Excluded	**38.3**		**62.2**	
Total	**100**		**100**	

Source: FinAccess Surveys[5] and own calculations

In Uganda, a similar overall proportion use formal services, only 3.1 per cent use the semi-formal sector as their most formal service and 16.6 per cent use the informal sector while 62.2 per cent are excluded. Of those using the formal sector the majority - a higher proportion (11.8 per cent)   - use these only compared to Kenya, while 4.3 per cent combine them with the use of informal services, and a further 2 per cent are combining them with semi-formal services. On the other hand of the 3.1 per cent using the semi-formal sector, only a minority are combining their use with informal services (0.6 per cent) – a very different picture to Kenya which reflects the less vibrant informal sector. The transformation of some microfinance institutions (MFIs) into licensed deposit takers following the introduction in 2003 of specific legislation means that these transformed MFIs – termed microdeposit taking institutions (MDIs) - have been included in the formal sector because they are now fully regulated by the Central Bank and, in terms of quality, therefore do not differ from Banks and credit institutions. In this case the 'other MFIs' are classified with savings and credit co-operatives (SACCOs) in the semi-formal access strand to contribute to the 3.1 per cent total. The informal sector at 16.6 per cent has only around half the outreach of the informal sector in Kenya.

It is notable that formal sector outreach is very similar between the two countries despite there very different political histories and degrees of stability and this level of 18% is similar to Tanzania and

Zambia (Bankable Frontier Associates LLC 2007). However, the role of the semi-formal and informal sectors differ significantly between them. This reflects different histories of the co-operative movement in each country and the different profile of the informal sector may result from the impact of instability and war disruption of the 1970s and 1980s in Uganda on social networks as well as on the economy (see Annex 1 for further details).

5. The determinants of access and exclusion

We now discuss the findings of the logistic regressions of use of the access strands which are given in Table 3. We order the discussion on the basis of the factors that were most significant in their association with access across all the access strands and also across the two countries.

Employment or main income source is the factor that is most associated with access and exclusion in both countries. In Kenya, those employed on domestic chores and those dependent on pension/transfers are more than twice as likely to be totally excluded than those whose main income is from farming, livestock or fishing (base category) and this is also reflected in significantly lower likelihoods of being formally included. Those employed on other people's farms in full time/seasonal work are also more likely to be excluded than those in the base category, and significantly less likely to be semi-formally included although there is no significant impact on formal inclusion.

On the other hand, government employees are nine times more likely to use formal services and seven times less likely to be completely excluded from financial services compared to the base category. This is due to the fact that government employees must have a bank account through which to receive their salaries and contrasts to the predominantly informal and more precarious forms of employment for which likelihoods are much lower. Therefore even low income government employees are formally included. This is then mirrored in the fact that they are half as likely to only use semi-formal services and four times less likely to only use informal services. Private sector employees are more than twice as likely to be formally included and half as likely to be excluded, suggesting that having a bank account to receive a salary is likely but not as prevalent. Those whose main income is running their own business are less likely to be excluded, but more likely to be included via formal or informal services and less likely to be semi-formally included. This reflects the fact that SACCOs tend to cater to farmers and employees and that MFIs who are targeting this market have made limited impact so far. On the other hand since those who run their own business span a huge spectrum of formal to informal businesses they are therefore likely to use rotating/accumulating savings and credit associations (ROSCAs/ASCAs) and formal services.

For Uganda, the pattern is very similar. Those dependent on pensions and transfers and those working on people's farms or domestic chores, and those selling agricultural farm, livestock and

fish produce are more likely to be excluded than those who run their own businesses (the base category in this case) and correspondingly significantly less likely to be included via the formal sector. Being employed in the formal sector is associated with a significantly increased likelihood of inclusion via the formal sector, and this contrasts clearly and strongly to working for an individual in a private business, so that again the degree of employment formality leading to salary payment via the banking system is associated with formal inclusion.

Age is also strongly associated with use in both countries. In Kenya the associations are strong and consistent, the older age groups are much less likely to be excluded than 18-24 year olds. The oldest age groups are much more likely to be formally or semi-formally included and less likely to be only informally included. This result also demonstrates that for younger people, ROSCAs/ASCAs in the informal sector do not provide services to fill the gap between exclusion and more formal services. This can be understood in relation to the higher levels of mobility and weaker social networks that these people are likely to have.

The associations of age with use in Uganda, on the other hand, presents an interesting contrast. Those in the 25-34 and 35-44 age groups are significantly more likely to be formally included than the 18-24 years category, but age categories over 45 are not. This formal inclusion is also reflected in the fact that the 25-44 year olds are significantly less likely to be excluded, the 45-54 age group was also less likely to be excluded than 18-24 year olds. People in the over 55 category were also significantly less likely to be included through the informal sector. This pattern may be explained by the fact that banking services have expanded in the last 20 years since the civil war ended in the 1980s and while younger age groups may have learnt to use them older people did not have access to and learn banking practices during the unstable years of the 1970s and 1980s. Hence the contrast to Kenya highlights the potentially cumulative effect over time of having had reason to open a bank account at some point in your life and hence being more likely to still be using one.

The findings regarding rural and urban location are contrary to expectations. While it is usually found that rural location is associated with greater exclusion, being rural or urban in Uganda had no significant association, while in Kenya being rural had a significantly *reduced* association of being excluded overall and this is matched by a marginally significant increase in the likelihood of inclusion via the semi-formal sector. The service level analysis (Johnson and Nino-Zarazua 2007a) demonstrated that in Kenya this result was due to the SACCO sector which originates in agricultural co-operatives that have historically been very strong, having social and economic benefits origins and benefits as well as political dynamics (Zeleza 1990 ; Johnson 2004b). In Uganda the co-operative sector has not been so strong historically although there has been a recent wave of local level SACCO development inspired by the MFI sector, which may – along with MFIs and the informal sector - have helped neutralise the effects of rurality on overall exclusion.

Table 3: Logistic regression results by access strand - Kenya and Uganda

18+ years old	Kenya					Uganda			
	Formally included	Semi formally included	Informally included	Excluded		Formally included	Semi formally included	Informally included	Excluded
Location					**Location**				
Rural	1.02	1.57*	1.05	0.75**	Rural	1.02	1.20	1.03	0.95
Urban	---	---	---	---	Urban	---	---	---	---
Gender					**Gender**				
Men	---	---	---	---	Men	---	---	---	---
Women	0.82	0.87	1.46***	0.77***	Women	0.69**	0.94	1.26*	1.06
Marital status					**Marital status**				
Married/Cohabitating	---	---	---	---	Married	---	---	---	---
Divorced	1.00	0.95	0.79	1.50	Divorced	1.18	0.49	0.82	1.18
Widowed	1.17	0.73	1.28*	0.89	Widowed	1.42	0.56	0.90	0.98
Single	0.90	0.75	0.77**	1.74***	Single	1.19	0.35*	0.70*	1.34*
Age					**Age**				
18-24	---	---	---	---	18-24	---	---	---	---
25-34	2.29***	1.84*	1.00	0.64***	25-34	1.75***	1.17	0.96	0.71**
35-44	2.72***	2.90***	0.87	0.57***	35-44	2.22***	1.91	0.95	0.61***
45-54	3.53***	3.16***	0.63***	0.65**	45-54	1.70	1.36	1.09	0.65*
55+	6.02***	5.19***	0.50***	0.56***	55+	1.75	1.61	0.51**	1.10
Education					**Education**				
No formal education	---	---	---	---	No formal education	---	---	---	---
Primary	2.06***	1.88**	1.00	0.67***	Primary	2.49**	2.55	1.06	0.75*
Secondary+	4.34***	1.88**	0.68**	0.62***	Secondary+	8.59***	2.85	0.65*	0.44***
Region					**Region**				
Nairobi	---	---	---	---	Central Kampala	---	---	---	---
Central	1.45	2.72**	1.05	0.41***	Other Central Regions	0.58*	1.34	0.44**	1.86***
Coast	0.72	0.17**	0.37***	3.23***	Eastern	1.61	0.45	0.62	0.94
Eastern	1.33	1.32	1.48*	0.49***	Northern	1.93*	1.85	0.61	0.76
North Eastern	---	---	0.01***	69.14***	Western	1.75*	3.90**	0.73	0.61*
Nyanza	1.13	1.38	1.66**	0.46***					
Rift Valley	1.33	0.88	1.22	0.70					
Western	0.88	0.86	0.68	1.40					
Employment / Main source of income					**Employment / Main source of income**				
Pension/transfer from family or friend	0.46***	0.28***	0.92	2.16***	Pension/transfer from family or friend	0.31***	---	0.27***	5.24***
Sell produced from farm, livestock & fishing	---	---	---	---	Sell produced from farm, livestock & fishing	0.37***	0.64	0.80	1.80***
Employed on people's farm full time/seasonal	0.67	0.48**	1.06	1.32*	Trading agricultural, livestock & fish products	0.87	1.26	1.00	1.10
Employed on domestic chores	0.19***	0.19	1.11	2.44***	Working on people's farm/domestic chores	0.21***	0.47	0.66	2.38***
Government	9.68***	0.49*	0.25***	0.13***	Employed in the formal sector	2.30***	0.69	0.55	0.48***
Private sector	2.64***	0.91	0.86	0.49***	Working for an individual in a priv. business	0.88	0.64	0.97	1.22
Running own business	1.46**	0.41***	1.38***	0.76**	Running own business	---	---	---	---
Sub letting of land, house/rooms, earning from investments & others	1.59	1.23	0.95	0.60	Sub letting of land, house/rooms, earning from investments & others	0.85	0.33	0.62	1.60*
Dwelling general condition					**Dwelling general condition**				
Permanent	1.42	1.21	1.11	0.70*	Permanent	---	---	---	---
Semi-permanent	1.10	1.34	1.37*	0.62***	Semi-permanent	0.89	0.66	1.48**	0.84
Temporary	---	---	---	---	Temporary	0.56	0.80	1.01	1.14
Traditional	0.41*	0.56	1.18	0.90					

18+ years old	Kenya					Uganda			
	Formally included	Semi formally included	Informally included	Excluded		Formally included	Semi formally included	Informally included	Excluded
Main source of lighting					**Main source of lighting**				
Electricity, solar & gas	1.24	0.59*	0.95	1.00	Electricity, solar, generator, battery & gas	1.16	0.67	0.75	1.03
Kerosene	---	---	---	---	Paraffin (Lantern & Tadooba)	---	---	---	---
Firewood, candle & others	0.85	0.75	0.63*	1.52*	Firewood, candle & grass	0.43*	1.24	0.92	1.42
Main source of water					**Main source of water**				
Tap	---	---	---	---	Tap/pipe water	---	---	---	---
Well	0.78	0.47***	1.22	1.25	Well, springs & bore hole	0.83	1.97	1.75***	0.70*
Surface water	0.77	0.58***	1.12	1.25*	Rain water, surface water & vendors	0.81	1.45	1.42**	0.81
Toilet facilities					**Main source of cooking fuel**				
Own flush toilet	---	---	---	---	Electricity, gas	1.48	1.84	0.73	0.91
Shared flush toilet	0.58*	3.97*	1.61	0.97	Paraffin, grass	2.87***	1.26	1.06	0.53**
Latrine	0.73	2.81	1.56*	0.98	Charcoal	1.73***	1.51	0.62*	0.91
					Firewood	---	---	---	---
Household assets					**Household assets**				
Radio	1.58*	1.39	1.15	0.75**	Radio	1.24	2.60*	1.05	0.83
Television	1.75***	0.96	0.73**	0.85	Television	2.06***	0.98	0.64	0.58***
Bicycle	1.18	0.80	1.22*	0.80*	Bicycle	1.21	0.72	1.21	0.87
Car	3.11***	0.24*	0.56*	0.50***	Car	1.30	0.94	0.71	1.01
					Motorcycle	1.30	0.27	0.81	1.16
					Every HH member has two sets of clothes	1.65*	0.56*	1.41*	0.71**
Mobile phone usage									
Use own mobile phone	2.84***	1.17	0.70**	0.53***	Mobile phone	2.70***	1.01	0.95	0.48***
Use somebody else's mobile phone	0.86	1.27	1.13	0.91					
Do not use at all	---	---	---	---					
Frequency of family without enough food to eat					**HH meat/fish meals in the last 7 days**				
Often	0.45***	0.52*	1.17	1.34*	5 to 7 days a week	---	---	---	---
Sometimes	0.53***	1.10	1.20	1.10	3 to 4 days a week	0.90	1.10	0.93	1.01
Rarely	0.78	1.35	1.19	0.86	1 to 2 days a week	0.65	1.16	1.09	1.19
Never	---	---	---	---	Not at all	0.73	1.42	0.93	1.19
Frequency of family feeling unsafe from crime inside home					**Income**				
Often	0.89	1.46	0.80	1.12	None	1.11	1.36	0.82	1.16
Sometimes	1.17	0.99	0.83*	1.14	1-90,000(US$50)	---	---	---	---
Rarely	1.07	1.28	0.83*	1.09	90,000-300,000 (US$167)	1.20	1.90	1.06	0.91
Never	---	---	---	---	300,000 – 850,000 (US$472)	1.84*	1.41	1.32	0.63**
					850,000+	2.80***	1.33	0.97	0.52***
Number of obs.	**4084**	**4084**	**4214**	**4214**	**Number of observations**	**2959**	**2650**	**2959**	**2959**
Pseudo R2	**0.4020**	**0.1764**	**0.1310**	**0.2130**	**Pseudo R2**	**0.3854**	**0.1307**	**0.0818**	**0.1933**

*, ** and *** significance at the 0.05, 0.01 and 0.001 level respectively

The geographical variables examined include sub-national regions captured by Province in Kenya and Region in Uganda. Since the regression holds other variables constant and contains a number of poverty proxies, this variable is not only picking up some of the variation in poverty and economic activity levels across the country. Those living in the remote and difficult terrain of North-Eastern Province in Kenya are 69 times more likely to be excluded compared to those living in Nairobi. This exclusion is not moderated by the informal sector in this province as people are also 100 times less likely to use informal services. Levels of access to formal and semi-formal services were zero among the sample so the regression could not produce results. Those living in Coast Province are three times more likely to be excluded than those in Nairobi. This appears to be related to the deficit of informal and semi-formal services, since while they are not significantly less likely to have a bank account they are almost three times less likely to be informally included and nearly six times less likely to be semi-formally included. On the other hand, those in Nyanza and Eastern are less than half as likely to be excluded and more likely to be informally included indicating that the informal sector is helping fill the gap in these two areas. Those in Central Province are less likely to be excluded by comparison to Nairobi. However, it appears that in this case it is the semi-formal sector that fills the gap. The service level analysis demonstrated that this is related to the role of SACCOs in the region (i.e. rather than MFIs who are also included in the semi-formal access strand), and relates to the fact that these are operating within the strong tea and coffee cash crop sector.

The failure of the semi-formal and informal sectors in Coast and North-Eastern– especially group-based systems of ROSCAs and ASCAs – to provide services where the formal sector has failed to reach, relates to the different economic, social and cultural contexts of these areas which are less strongly agrarian based – especially contrasting to the north-east in which livelihoods are predominantly based in the pastoral economy. Group-based systems have deep origins in labour sharing arrangements in agrarian economies which in particular mobilised women. Also the colonial government put emphasis on developing these after the 1950s emergency in central Kenya, and into the independence era in the form of Harambee, and these origins are deeper and more concentrated in the Central and Western areas of the country (Fisher 1954 ; Mwaniki 1986 ; Alila 1992). On the other hand the SACCOs have been prevalent in areas where cash-crops have been strong – especially tea and coffee - and hence similarly have been more successful in providing services in these same areas.

This analysis therefore gives us a very strong picture of the strength of coverage regionally and the way in which the informal and semi-formal sectors reduce that exclusion. The regional variables in particular are capturing some of the effects of the diversity of socio-economic and cultural contexts, that create different profiles of service availability. These have also evolved over time with economic factors, such as greater agricultural productivity in Central Kenya, interacting with socio-cultural and political dynamics (Zeleza 1990 ; Johnson 2004b) to allow the strong development of

SACCOs in the region. The interaction of finance with growth is reinforced by this association, but this does not illuminate the causal pathway. It does however suggest that barriers to access to user-owned and managed services such as SACCOs and groups may arise also from social and cultural differentiation, though it has not been possible to further examine these using this data set.

Further, a key finding for Kenya is that, overall, inclusion via the *formal* sector is *not* significantly associated with Province or rurality once other factors are controlled for. This result was further confirmed in the service level analysis for banks in which a variable regarding the distance of the nearest bank on a four point scale of 'near' to 'very far' was included in the regression and did not produce significant results (Johnson and Nino-Zarazua 2007a). This result therefore suggests that factors other than distance from formal services create barriers to access although we have not been able to examine this in the depth we would wish using variables such as ethnicity and religion.

As already indicated, the results in Uganda were similar with respect to the urban-rural variable with rurality not giving significant results for formal sector access. Again this demonstrates that taking a wider range of variables into the equation strips out the effect that rurality has in other studies. However, the regional analysis in Uganda does suggest that region was weakly significant in its association with inclusion via the formal sector. Compared to Central Kampala, those in Northern and Western regions are moderately significantly more likely to be included via the formal sector. But, this is not an explicable result and may be a curiosity of the data. People in Central Regions (excluding Kampala)[6] are half as likely to be included via the formal sector and almost twice as likely to be excluded as those in Central Kampala. They are also twice less likely as those in Central Kampala to be informally included, suggesting that the informal sector is less strong there than in other regions as a means of inclusion. A further significant result is that those in Western Region are four times more likely than those in Central Kampala to be included via the semi-formal sector and can be explained by the higher prevalence of SACCOs. Overall then, while the results for the formal sector in Northern and Western are a little surprising, the data indicates a reduced role for the informal sector in 'other central regions' compared to Kampala and a slightly stronger role for the semi-formal sector in Western region.

The association with education levels is strong in both countries and presents a clear and expected pattern. In Kenya, educated people are significantly less likely to be excluded than those without formal education, and much more likely to use formal and semi-formal services. Concomitantly, secondary education also results in a reduced likelihood of exclusion via the informal sector.

In Uganda the picture is similar and having a secondary education is one of the strongest positive factors associated with use of formal sector services, by a factor of eight compared to those having no education, while primary education more than doubles this likelihood. But, educational level

does not significantly increase the likelihood of inclusion via the semi-formal sector. This reflects the lower level of development of this sector overall but the service level analysis for all MFIs (ie MFIs and MDIs) gives the result that being educated to secondary level increased the likelihood of holding a savings account with an MFI by over four times - suggesting that MFIs were not overcoming educational barriers to entry.

The relationship between gender and access is interesting and somewhat surprising in both countries. In Kenya, being a woman significantly *lowers* the likelihood of exclusion from financial services overall, and this is because it significantly raises the likelihood of inclusion through informal services, especially ROSCAs.   The heavy use of the informal sector by women in Kenya has been argued to result from the gendered norms that affect both their ability to form groups to supply such services, as well as the gendered patterns of demand for savings and credit services arising from their gendered position in the economy and household. This research in central Kenya showed that women managed flows of income that were relatively small but frequent, compared to men's which were larger but periodic or even irregular, hence these flows fit better with the regularity of ROSCA mechanisms for women (Johnson 2004a). According to the access strand analysis, women are less likely to access formal and semi-formal services but not significantly so. However, the service level analysis shows that gender is significantly associated with access to particular types of service: the analysis of bank services on their own does indicate that women are significantly less likely to have a bank account, while this is not the case for the PostBank when it is separated out from other banks, so that combining these in the formal access strand therefore ameliorates the negative impact of gender on bank access (Johnson and Nino-Zarazua 2007a). The reasons why PostBank does not exhibit such a bias are worthy of further investigation. This happens similarly in the semi-formal access strand: SACCO and MFI services independently showed that women were significantly less likely to use SACCOs but significantly more likely to use MFIs, which is as we would expect given their emphasis on targeting women. SACCOs are less used by women because, being based on cash-crops and formal employment, both of these are more often owned or undertaken by men. Given therefore that in the formal and semi-formal access strands respectively, banks and SACCOs are the more important services overall compared to the PostBank and MFIs, it is important to recognise that gender does present a barrier to access to banks and SACCOs which the access strand analysis alone can obscure.

In Uganda, women were significantly less likely to be included via the formal sector than men. They are also significantly more likely to be included via the informal sector – mainly ROSCAs. Again this reflects some of the history of women's groups in Uganda and their embeddedness in social relations as it does in Kenya, however, and by contrast this has not been as heavily targeted by development interventions in the 1970s and 1980s and has been disrupted by political instability. By contrast the MFIs that are in the semi-formal sector do not have the expected bias

towards women. Overall this does not result in a significant gender bias in the likelihood of being excluded as it does in the case of Kenya.

The analysis looked at the relationship between the ownership of five particular assets and access: car, TV, radio, bicycle and mobile phone, however since they are poverty/wealth proxies we cannot necessarily adduce a specific causal relationship. In Kenya, they presented a fairly consistent and expected pattern in relation to financial service use. Of these, owning a car is the asset indicator most associated with reducing exclusion and increased formal inclusion. Owning a TV is not significantly associated with a reduced likelihood of exclusion but significantly increases the likelihood of being included via formal services. Owning a radio is associated with a reduced likelihood of exclusion and a significantly increased likelihood of formal inclusion. Owning a bicycle significantly associated with a reduced likelihood of exclusion but this is matched by a significantly increased likelihood of only being included in the informal sector. In Uganda, having a TV or mobile phone was significantly associated with increased likelihood of formal inclusion and reduced likelihood of being excluded. Owning one of these means that someone is around half as likely to be excluded but more than two times more likely to be formally included, while not affecting use of informal and semi-formal services. Using somebody else's mobile phone compared to not using one at all has no association with use. Having a TV was also significantly associated with an increased likelihood of using a semi-formal MFI. By contrast to Kenya, owning a car in Uganda had no significant association with inclusion in any particular sector and may be due to the inclusion of the income indicator in the regression. Owning a bicycle was not associated with a strong effect either, although having a radio had a mildly significant association with semi-formal inclusion.

Of the other poverty indicators used, in Kenya a food security indicator had an understandable pattern. Those who 'often' go without enough food were more likely to be excluded and significantly less likely to be included in the semi-formal and formal sectors. On the other hand, only 'sometimes' going without enough food was significantly associated with a reduced likelihood of formal inclusion but not a significantly increased likelihood of exclusion. It is interesting to note that the food security indicator is not as highly associated with use as might be expected. This may be because it is a subjective assessment and therefore the relative assessment of 'rarely', 'sometimes' or 'often' for those who experience food insecurity may differ between areas of the country.

In Uganda, an income indicator asking about monthly cash income was collected and split into five categories and while its accuracy might be weak it has a straightforward effect. Cooking fuel as a poverty proxy has a slightly surprising association with formal inclusion. Those who cooked on paraffin or charcoal were significantly more likely to be formally included than those cooking with firewood, but those who cooked with electricity were not significantly more likely, but this may be due to the very low overall use of electricity as a cooking fuel (1.5%).

7. Conclusion

These findings suggest a number of points for the analysis of financial service access. First, and in line with other studies, they suggest that access to formal financial services is strongly influenced by employment, poverty/wealth proxies and hence income, but also social differences such as education, and the social institutions of age and gender. But, in contrast to other studies, we find that rurality is not a factor associated with access to formal services in either country. We argue that this arises from the inclusion of a wider set of variables than is often the case in the regression and their specification at country level so capturing a more fine-grained analysis of the determinants of access. However, we also acknowledge that - as in Kumar's Brazil study noted above – the inclusion of more detailed data on income levels may affect this finding. This only confirms the need for the development of these datasets.

Second, the analysis has contributed a detailed profile of access to semi-formal and informal services of a type hitherto unavailable in the literature. The analysis by province/region in particular helped explain differential access to semi-formal and informal provision and this appears to be capturing important socio-economic, historical and cultural factors that vary across the country. In particular this variable is picking up different socio-cultural dispositions towards group-based provision, which is effectively self-generated at the local level. It suggests the need for the inclusion of even more detailed variables reflecting such differences such as ethnicity, religion and so on, which were unfortunately not available in this dataset.

Third, and further demonstrating the second point, the gender bias of the informal sector comes out clearly from the analysis. This effect is especially strong in Kenya where the informal sector is dominated by ROSCAs. Moreover, this interestingly results in the greater exclusion of men compared to women across the whole financial landscape. We have argued however, that the lack of apparent gender bias in access to formal services in Kenya obscures the role of PostBank which when removed does leave the formal sector as significantly biased against women. This suggests an important note of caution in using access strands as they may obscure important underlying dynamics of exclusion.

From a theoretical and policy point of view, these findings do suggest that it is necessary to broaden the analysis of access to a wider range of underlying social institutions, and their influence on market development. Variables such as religion, race and ethnicity were not available in this dataset, but are clearly important potential factors in creating exclusion in a number of socio-cultural contexts, including in Kenya and Uganda. In this analysis, these effects are mainly being captured by regional variables. In relation to understanding the way in which such social

institutions structure access to services in specific markets little analysis of this kind has yet been undertaken, but is needed if the impact of discriminatory aspects of involuntary exclusion is to be adequately understood. Such institutions can not only create barriers to access in and of themselves, but can also interact with property rights and other aspects of the institutional framework - such as legal enforcement – to structure opportunities in the market. This will also offer further evidence to develop our understanding of the role of these institutions in growth and development overall.

The policy implications of these findings are numerous. First, the focus on proximity and lowering transactions costs in many attempts to extend access may produce limited results within the new policy emphasis on "finance for all". While the affordability of services relative to income is clearly important, challenges to extending access go well beyond this and approaches to analysing the constraints to access need to systematically address a much wider range of potential barriers.

Second, education is clearly a variable that has strong influence on access and this underlines the importance of universal primary education policies, but these will take significant time to produce the desired results. Third, the results regarding the influence of age show that the youngest age group is the most excluded. With growing numbers of youth in the developed world, then means of providing them access to financial services that meet their needs and ensures their inclusion are worthy of particular attention.

Fourth, gender barriers offer ongoing constraints to formal sector access. Microfinance methodologies have partially reversed the bias but clearly their limited overall outreach means that if policy now emphasises working with the formal sector, then renewed attention needs to be given to the gendered barriers to accessing these services.

All of these barriers – age, gender and education - can operate through features of product design, terms and conditions and delivery systems, for example, because of the degree of literacy these require, collateral or co-signatory requirements and so on. Hence, product development needs to be particularly alert to these effects. With respect to gender, these barriers to access also arise from wider norms in society - especially in the household - about who owns bank/SACCO accounts, assets and so on. While legally women may have the same rights as men in property ownership, practice is rarely in fully in line with policy so that policy-makers need to consider also how to promote good role models and examples of women using financial services and systematically identify and tackle the norms that are constraining this.

Despite the overall policy shift identified above, considerable investment is being made in the development of the semi-formal sector, through programmes working with both MFIs and SACCOs, and the informal sector through programmes working with informal groups. Within the semi-formal sector, while MFIs have some bias towards women, SACCOs are usually more similar

to the formal sector in being biased against them. These programmes must then be aware of the biases in their provision that this study demonstrates and work to reverse them. Where there are programmes with informal groups, men are much less likely to use them and this is a constraint to their access. Programmes being developed to work with informal groups[7] need methodologies that make them more transparent and easier to operate, this is also likely to have the effect of making them more useful to men, as they will be prepared to work together to mediate larger volumes of funds. Some savings-led methodologies such as Village Savings and Loan Associations (see (Allen 2006 ; Anyango, Esipisu et al. 2007) offer scope for this, and while they may not fully address the demand for finance, they can assist in closing the gaps in provision.

Finally, to enhance financial sector development policy over the long term, we conclude that while this analysis has enabled a fuller understanding of the dimensions of access and exclusion in both countries, there is a need to further develop the model on which these datasets have been based which is now in use in some 15 countries[8]. Including variables that can capture features of underlying social institutions is required in order to have effective means of establishing the sources of discrimination that result in differential access.

Endnotes

[1] Although of course systems of electronic banking and payments are now gaining ground. The example of M-PESA in Kenya has been particularly successful, but was not in operation at the time of the 2006 survey.
[2] Women in Kenya have often used ROSCAs as a means to keep savings secretly (Ardener 1995).
[3] A multinomial logit did in fact produce the same results.
[4] This has also resulted in different base categories in the analysis in table 3, since the model needed to take into account the sense of the base category and it having a sufficient proportion of observations, and then to result in a best-fit model.
[5] There are minor differences between the access strand figures reported here and those reported for Kenya by (2007). These arise from minor differences in service classifications between access strands.
[6] Referred to in the table as 'other central'.
[7] The Bill and Melinda Gates Foundation has been investing in this area, see www.gatesfoundation.org
[8] See www.finscope.co.za.

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