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Determinants of Access to Credit by Individuals in Kenya: A Comparative Analysis of the Kenya National FinAccess Surveys of 2006 and 2009

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Abstract

Access to credit remains a farfetched goal to the vast majority of Kenyans. Kenya's National FinAccess Survey, 2009 revealed that 60.4% of Kenya's adult population is totally excluded from the credit market despite concerted government efforts to deepen access. This however marks a slight improvement from the 63.4% figure recorded in 2006. Using multinomial probit models, the study drew a comparative analysis of the role played by individual characteristics on access to credit from various strands in 2006 and 2009. Results indicate that increase in household size reduced access to bank loans and ASCAs while it promoted access to loans from buyers of harvest. Increase in distance to service provider led to a decline in access to credit even though the impact was marginal. On the other hand, increase in age; education and income tend to enhance access to credit but the probability of access drops as one draws close to retirement age. The study recommends that measures geared towards reduction of information asymmetry like assessing the household characteristics, increased sharing of information, increased income need to be enhanced to help deepen access to credit.

Keywords: Financial access; Financial exclusion

1. INTRODUCTION

A key policy concern in Kenya is that financial institutions are not providing enough credit to new economic activities, and in particular, the expansion of small and micro enterprises (SMEs). Recent financial access surveys show that access to credit is a major problem especially in the rural areas (FSD 2006 and FSD and Central Bank, 2009). Specifically, the 2009 survey shows that 50 percent of the rural individuals had never used any credit service compared to 61.7 percent in 2006.

According to Sacerdoti(2005), among the reasons for lack of access to credit from banks in Sub-Saharan Africa are inability of borrowers to provide accurate information on their financial status, absence of reliable and updated company and land registries, weak claim recovery and collateral realisation process such as malfunctioning courts and cumbersome legal and judicial procedures. Other reasons include, long physical distance to the nearest financial services provider, high cost of the credit, socio-economic and demographic characteristics that make them less creditworthy[1].

There are a number of other alternatives to bank credit. First is Microfinance Institutions (MFIs), which have an advantage over traditional banks and largely favour Small Medium Enterprises (SMEs) which may be unable to meet conventional bank criteria such as producing formal financial statements. Instead, MFIs depend on cash-flow based lending, credit scoring, prior lending experience with the client, and group lending which gives them a competitive edge over banks. However, the main challenges to MFIs are lack of credit lines, medium-term and long-term financing from banks or other sources as well as high cost of their credit to potential borrowers. Second, is Savings and Credit Cooperative Societies (SACCOs) which depends on the amount of mobilised savings and deposits to extend loans to members. Other credit sources include; Accumulating Savings and Credit Associations (ASCAs or chamas), Government, Employer, Informal lenders, Buyers of Harvest, Local shops and family/friends.

The practise of credit rationing by financial institutions using interest rates has locked out most poor individuals as only large scale borrowers who expect higher returns can bear the high cost of borrowing (Stiglitz and Weiss, 1981). Due to the potential for adverse selection resulting from information asymmetry between lenders and borrowers, lenders are often discouraged from using the interest rate as a way to ration credit. Most rural individuals particularly rely on informal credit facility from buyers and sellers of consumer goods like shops and farmers. However, where there is no full information about the level of risk and credit worthiness of the individual, access to credit facility from both formal and informal lenders is constrained. The establishment and launch of the credit reference bureaus is expected to change the credit landscape since information on the credit worthiness is to be made available hence reducing the degree of information asymmetry. However, launch of this body does not suffice since information on most potential borrowers and first timers remain unknown. An understanding of the individual demographic and socioeconomic characteristics and the level of access to credit could help in filling the knowledge gap on why most people remain financially excluded and how access can be deepened.

[1] Banks and other credit suppliers use the following in credit assessment: Character of the borrower(C), Amount to be borrowed (A), Margin (M) or profit from lending, Purpose(P) of the loan, Ability(A) to repay, Repayment Amounts (R), Insurance (I) for the loan or security. This is referred to as CAMPARI framework in commercial banking parlance.

To analyze this problem, a multinomial probit framework is used on both the 2006 and 2009 FinAccess National Survey data. The results show that income, gender (1 is male and 2 female), marital status, and higher education tend to have a direct positive relationship to credit access. Distance to service provider and household size has an inverse relationship with access to credit. The study recommends that credit reference bureaus needs to be strengthened to facilitate more sharing of information about potential borrowers. Besides, the government should ensure there is increased productivity given the critical role played by income in raising access to credit.

The rest of the paper is organized as follows; Section 2 discusses the literature review, Section 3 gives the empirical framework and data analysis while Section 4 discusses the empirical results. Section 5 gives the conclusions and policy recommendations for the study.

2. LITERATURE

Although theories such as pecking order hypothesis (Myers, 1977), theory of perfect capital markets (Modigliani & Miller, 1958), shape the functioning of capital markets, most of the reviewed literature hugely supports the permanent income hypothesis (Friedman, 1957) in explaining the functioning of credit markets. This model assumes the presence of perfect capital markets. Besides, it assumes that economic and political institutions do not matter, even though they determine the structure and costs of human interaction. On the contrary developing countries, especially low-income countries, are characterized by institutional rigidities in the capital markets that deny the sustainability of the neo-classical assumptions of well functioning markets, perfect competition and mobility of factors of production. With institutions playing a critical role in determining the performance of economies, it is perhaps no surprise that credit channel plays a critical role as safety nets to cushion the poor against income loss or transitory changes in income as well as counter situations where the state is too weak to implement effective market policies.

Developing countries are also characterized by ubiquitous information asymmetry and weak mechanisms in the financial markets to enforce formal contracts forcing them to look for alternatives in the informal sector which act as risk sharing mechanisms (Cox and Fafchamps, 2007). Given this fact, individuals are highly likely to receive loans from close relatives such as parents, spouses, and children among other informal lenders as opposed to the organized formal strands. Contrary to expectations of permanent income hypothesis where only permanent changes in income affect consumption, transitory changes in income have been found to impact on the consumption pattern (Campbel and Mankiw, 1989).

While two major approaches have been put forward to guide empirical work on access to credit; the direct method by Japelli (1990) appears to be more robust. This method was used to counter the shortcomings of the indirect method where uncertainty among other factors was observed as leading to precautionary behaviour among households which ultimately led to changes in the consumption behaviour due to transitory changes in income even in the absence of credit constraints.

Empirical studies indicate that increase in income raises access to credit. This was supported by Johnson and Morduch (2007), Diagne (1999), Bhuiya et al (2001) and Marge Sults (2003). People with more wealth captured in terms of household assets, size of land and number of livestock are found to have greater access to credit. Rassmussen et al (2005) puts it rightly by his argument that poverty is indeed a credit constraining factor. Bali Swain (2002) shares similar sentiments through his findings that more resource endowment enhances access to credit. Age and education appeared to play greater role in the informal credit markets. Zeller (1994) established that highly educated persons preferred loans from informal markets than formal ones. In general, more educated persons were less constrained according to Marge Sults (2003). In terms of age, the study argued that persons falling between 26-35 years were more constrained than those less than 26 years of age. The study further argued that big families were less constrained.

Other determinants cited included gender where Mayada et al (1994) claimed that women are especially discriminated against in formal financial markets. However, according to Zeller (1994), gender appeared to have no impact. Navajas and Tejerina (2006) cited high service cost as a major constraint.

Table 1: Expected Effects from theory

Variable	Description	Expected sign	Explanation
Income	Proxied using expenditure/main economic activity that earns income;	Positive	Transitory changes in income affect consumption (Campbel and Mankiw, 1989)
Age	Age of respondents in years	Positive	Access at intermediate age is higher (Zeller, 1994)
Level of Education	This is captured using highest education level attained	Positive	The higher the education , the higher the demand (Zeller, 1994)
Gender	1-Male (Reference dummy); 2-female	Negative for women	Women are discriminated against (Mayada et al, 1994)
Age_Gender	Random selection of age category and gender	Positive	Likely to be positive for intermediate aged males (Zeller, 1994; Mayada, 1994)
Marital Status	1-Single (reference dummy); 2-Divorced; 3-Widowed; 4-Married/living with Partner	Positive	Based on the household constitution
Household Size	Number of family members in household	Positive	More labour available in a household improves family business (Marge Sults, 2003)
Distance from Credit Source	Captured using duration to the nearest financial service provider	Negative	Despite being close to credit source, households were still rationed (Johnson and Morduch, 2007)

3. CONCEPTUAL FRAMEWORK AND DATA ANALYSIS

The current study adopts a direct approach as used by (Jappelli, 1990 and Marge Sults, 2003) where data on the credit status of households has been collected. This approach focuses on those who applied and received credit, those who applied and were denied and those who never applied for credit. While both studies explored those with access and the credit constrained, the current study seeks to extend this study by distinguishing the level of access with respect to formal and informal institutions. This is besides capturing the impact of the interaction between age and gender.

3.1 Theoretical Model

This study is motivated by McFadden's random utility model (RUM). An individual is faced with various credit alternatives. The utility function can be written as;

$$U_{ij}\left(x_{ij};z_{ij}\right)=V_j\left(x_{ij};\beta\right)+\varepsilon_j, i=1,2,...,N,\ j=1,2,...M \quad (1)$$

Where;

$U_{ij}\left(x_{ij};z_{ij}\right)_j$ represents the utility derived by individual *i,* from credit choice of alternative *j*

x_{ij} represents the observed characteristics of individual *i* and alternative *j* chosen

z_{ij} represents the unobserved characteristics of individual *i* and alternative *j* chosen

$V_j\left(x_{ij};\beta\right)$ denotes the deterministic component of the utility

ε_j is the random component of the utility

There are 11 alternatives, j;

Formal: loans from banks.

Formal other: Loans from Savings and Credit Cooperative Societies (SACCOs), government institution, and Hire Purchase.

Informal: Loan from employer, Accumulative Savings and Credit Associations (ASCA's)[2], Informal lenders, Buyers of harvest and loans from Shops/suppliers

Excluded: This comprises of loans from family/friends. They are considered as excluded since even informal groups require some sort of organizational structure with some common overriding purpose.

Different multinomial models can be used by making different assumptions about the joint distribution of the error terms. The assumption that the error terms are independent across alternatives would lead to the unordered multinomial logit (MNL) and conditional logit(CL) models. Although this assumption has the advantage that the likelihood function is easy to compute, but it leads to very unrealistic predictions e.g.

[2] Commonly referred to in Kenya as Chamas i.e.swahili name for groups

adding another alternative does not change the choices individuals make, which is the classic case of the independence of irrelevant alternatives (IIA) or the red bus-blue bus problem.

The nested logit relaxes the IIA assumption by grouping the errors with independence across the credit alternatives but correlation permitted within groups. The nested logit require existence of a clear nesting structure. The challenge in our case is that the existing survey data does not have alternative-varying regressors.

The alternative model that is used in the study is the multinomial probit (MNP). This approach introduces correlation across choices by assuming that the errors are jointly normally distributed with covariance matrix Σ, which is not restricted to be a diagonal matrix.

$\varepsilon - MND(0,\Omega)$, with $\Omega = I_M \otimes \Sigma$ and (2)

$$\Sigma = E(\varepsilon_j \varepsilon_j') = \begin{bmatrix} \sigma_{11} & - & - & - & \sigma_{1M} \\ - & - & - & - & - \\ - & - & - & - & - \\ - & - & - & - & - \\ \sigma_{M1} & - & - & - & \sigma_{MM} \end{bmatrix}$$

Where $\otimes$ is a kronecker product, M is the number of alternatives

3.2 Data type and sources

The analysis is based on Financial Access, 2009 and 2006 survey data, collected by the Financial Sector Deepening (FSD) Kenya, in collaboration with the Central Bank of Kenya and the Kenya National Bureau of Statistics (KNBS). FSD Kenya is an organization founded in 2005 with an aim of accelerating growth of the financial markets to stimulate wealth creation and poverty reduction by low income households and small enterprises.

The study targeted 6,343 (2009) and 4214 (2006) respondents who were above 18 years which is the current legal age for obtaining a national identity (ID) card in Kenya. Those below 16 years were not investigated since they are not considered to be mature enough to make independent decisions as to where to seek credit services.

The households were selected randomly throughout the country based on the rural and urban clusters. Respondents were later selected from those households to give their response on various financial matters.

4. ESTIMATION RESULTS

4.1 Descriptive statistics

Appendix Table A1 presents change in predicted probabilities on access to loans from selected sources for years 2006 and 2009 while figure 1 below represents a comparative analysis of the access strands in 2006 and 2009.

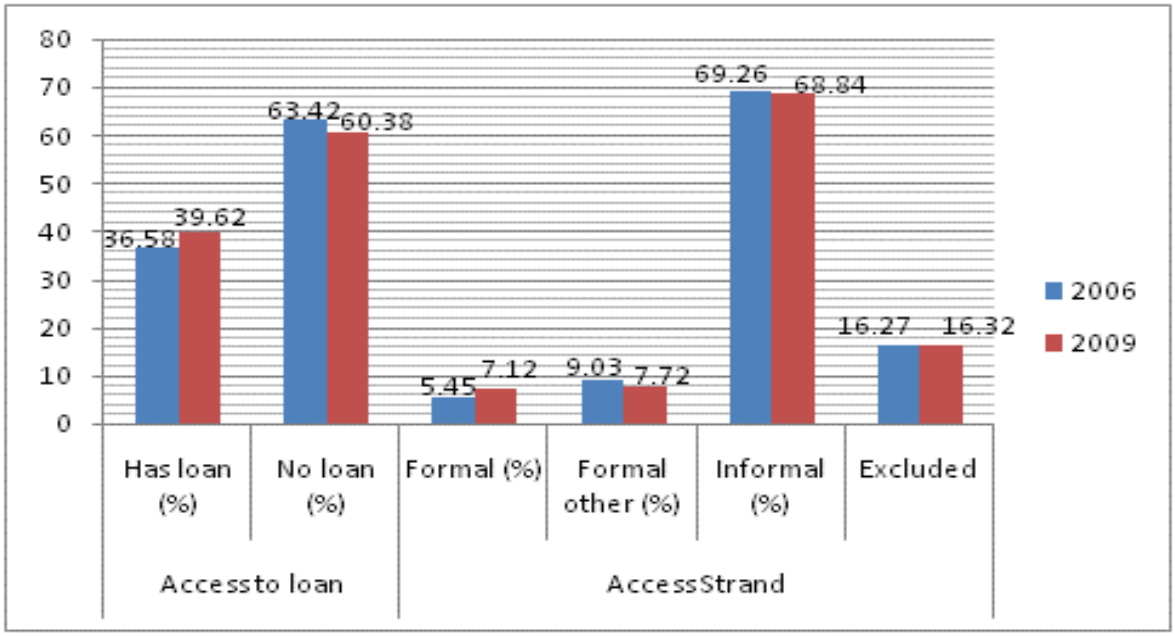

Fig 1: Comparative analysis of 2006 and 2009 Access to Credit from Various Strands

The figure indicates that there was a marginal increase in access to credit in 2009 (39.62%) up from 36.58% in 2006. Access to credit was distributed among the four strands in 2009 as follows; formal (7.12%), formal other (7.72%), informal (68.84%) and excluded (16.32%). The trend shows that there was a 1.67% increase in access to credit in 2009 from the formal strands where banks fall as compared to 2006. The average age of respondents with access to loans rose from 37.21 in 2006 to 39.21 in 2009 an indication that the probability of accessing loans increases with age.

4.2 Econometric Analysis

Since discrete choice models rely heavily on marginal effects, this section focused on the predicted probabilities of various alternatives as analysed using multinomial probit technique.

4.2.1 Changes in Probability

This technique sought to establish the linkage between socioeconomic and demographic variables for selected individuals and their choice of credit source. 11 alternative sources of credit were evaluated to establish the factors driving individual preferences for each alternative. This is presented in the Appendix (Table A1). Table A2 shows that the probability of accessing loans from the *formal* (Banks being the highest gainer) and *formal other* strand improved in aggregate terms (1.5 per cent and 1.4 per cent, respectively) implying that, most formal institutions are now becoming more aggressive in promoting their

loan facilities while at the same time trying to make them most attractive for potential borrowers. Previously, banks only targeted customers visiting the branch to apply for loans. Given the level of competition in the banking industry, banks have been forced to invest heavily in marketing their products and this initiative appears to be bearing fruit. The probability of obtaining a loan from a bank increased by 1.52 per cent in 2009 with a similar trend being observed for SACCOs and MFIs whose probabilities increased by 1.21 per cent and 1.4 per cent, respectively.

Despite Government and Hire Purchase loans falling in the *formal other* strand, the probability of accessing loans from theses alternatives reduced by 0.2 per cent and 1 per cent, respectively. This could be explained by the rising default cases especially in the case of Higher Education Loans which limits the amount of funds available for advancement to other needy cases. Hire Purchase also faces similar challenges and can be explained by the rising auctioning of property from the defaulters. The *informa*l strand has been on a loosing trail given that the probability of borrowing declined for all the alternatives 5.8 per cent in aggregate.

Local shops/supplier lost with the highest margin 3.2 per cent despite its wide popularity in the rural areas followed by ASCAs (1.5 per cent). Similar declines in probabilities were observed for loans from informal money lenders, buyers of harvest and employers. Loans from this strand are usually grounded on mutual trust and goodwill. While social capital may be the greatest endowment by the rural populace, failure to tap it will continue to deprive them from accessing loan facilities from both the formal and informal strands.

Table A2 Change in Probabilities of Accessing Loans in 2009 and 2006

Credit Strand	***Predicted Probabilities***		
	2009	***2006***	***Difference***
Formal strand			
Bank	0.03177045	0.01653999	0.01523
Formal Other Strand			
SACCO	0.03305839	0.02096975	0.012089
MFI	0.02454787	0.01050907	0.014039
Government	0.00166945	0.00386978	(0.0022)
Hire purchase	0.00005091	0.01011519	(0.01006)

Informal Strand			
Informal Lender	0.00537951	0.00704183	(0.00166)
ASCA	0.03468041	0.01921676	0.015464
Buyer of harvest	0.01503235	0.01737726	(0.00234)
Employer	0.00559312	0.01135729	(0.00576)
Local shop/supplier	0.66618853	0.69866491	(0.03248)

4.2.2 Marginal Effects from MNP Model

Household size

The results in Table A1 show that household size significantly explains access to credit from the buyer of harvest only in both 2006 and 2009. In the 2009 survey an increase in household size by one person increases the probability of accessing loan from buyer of harvest by 0.2 per cent. This makes sense since a large family is quite important in the production of agricultural produce. However, the results for 2006 survey paint a different picture- household size reduces access to credit from the buyer of harvest.

Age

In the 2006 survey age has a positive statistically significant relationship with access to credit from banks and SACCOS as expected? However, it has a negative relationship with loans from government. The rather unexpected results can be rationalised by the fact that the loans from government are mainly from the High Education Loans Board (HELB), which mainly target young people just joining universities. In the 2009 survey age has a positive statistically significant relationship with credit from banks, SACCOs, MFI and ASCAS. However, age reduces the probability of accessing credit from a local shop/supplier.

In both 2006 and 2009, there is a quadratic relationship between access to credit and age. There are two trends noted. First, for banks, MFIs and ASCAs, increase in age raises the probability to access credit but after some age the probability declines. This can be rationalised by the fact that the CAMPARI framework used by banks automatically views very old applicants are less creditworthy. Second, government loans in 2006 and loans from local in 2009, there is a U-shaped relationship with age. This means that at a very young age the probability of accessing credit declines upto some optimal age when the probability increases.

Gender

In the 2006 survey, gender was a significant factor for SACCOs and ASCAs. Specifically, SACCOs preferred lending to males compared to females. Contrariwise the ASCAs preferred lending the women compared to men. This makes sense given the fact that ASCAs which are otherwise known as 'chamas' mainly comprise of women making them the biggest beneficiaries.

In the 2009 survey men had a higher probability of accessing credit facilities from banks, SACCOs and Employers compared to women. Contrariwise women had a higher chance of accessing credit facilities from MFIs and local shops. This can be rationalised by the fact that MFIs in Kenya mainly target women groups. Similarly, local shops mainly offer household goods on credit, which generally benefits women who manage household expenditure in most homes. Going by the 2006 and 2009 figures which depict a rising trend, there is a strong indication that females are becoming more actively involved in the credit markets.

Level of education

In the 2006 survey, increase in the number of schooling years was found to increase the probability of accessing loans from banks, SACCOs, MFIs, ASCAs and Employer. However, the number of schooling years reduced the probability of accessing credit facilities from a local shop. Specifically, as the number of schooling years increase by one year, the probability of accessing loans from the local shop declined by about 4.7 per cent.

In the 2009 survey the situation did not change much- increase in the number of schooling years increased the probability of accessing loans from banks, SACCOs, government, and employer. However, just like in 2006 survey, the probability of accessing credit facilities from a local shop declined with increase in the number of schooling years.

Marital status

Except for loans from local shops, marital status is not a statistically significant variable in explaining access to loans. The results show that the probability of accessing loans from a local shop is higher for married people. This can be rationalised by the fact that local shops lend on the basis of trust which to a certain extent will be higher for a married person since a married person is perceived to be responsible over his/her action and is therefore not likely to default in settling the debt. Married persons are also considered to be abit stable and would take longer to migrate to another place.

Distance

Distance is measured as the duration it takes to reach the nearest financial provider like a bank. While distance was quite significant in explaining access to loans for most alternatives in 2006, only the marginal effects for the employer and local shop loans were significant in 2009. Specifically, the probability of accessing credit facilities from a local shop increase with distance to the nearest financial services provider in both 2006 and 2009 surveys. There is therefore need to take steps to take credit services to the people, especially in the rural areas.

Level of income

While income was not significant in explaining access to loans in 2006, the variable was found to be statistically significant in explaining loans from Banks, SACCOs and local shops. Increase in income was found to contribute positively on access to loans from both Banks and SACCOs while it reduced the probability of accessing loans from a local shop by 0.15% in 2009 up from 0.013% in 2006. The negative relationship with credit from local shops can be explained by the fact that households with low income live hand to mouth and are likely to utilise credit from the local shop.

4.3 CONCLUSIONS

Findings from this study reveal that only 39.62% (up from 36.58% in 2006) of the total sampled population have access to credit in Kenya, for whom 5.82% and 33.80% accounts for formal and informal credit sources. The total adult population considered to be credit constrained (excluded) therefore stands at 60.38%. Men continue to enjoy access to loans from banks as women seek alternatives like MFIs and other informal loans from ASCAs and local shops. The age of a person appear to have a quadratic relationship, with the middle aged persons having a higher access than the elderly persons. Similarly, highly educated persons have a higher access to credit from the formal strand and particularly Banks and SACCOs, while their participation in local shop loans is greatly reduced. Distance on the other hand served as a hindrance to accessing credit since most individuals were observed to prefer walking shorter distances to their financial service providers. However, the impact of distance was minimal, reducing access to bank loans marginally while at the same time increasing access to local shop loans with the same margin.

4.4 POLICY RECOMMENDATIONS

This paper focused on the socioeconomic and demographic factors that characterize access to credit in Kenya and particularly centred on the four credit strands namely the formal formal other, informal and the excluded category. The study established that despite the spirited campaigns stepped up by the government to deepen access to loans; majority remain financially excluded. This is attributed to lack of information about their individual characteristics which if known could help reduce the degree of information asymmetry. Disclosure of their individual characteristics could signal their credit worthiness and make them attractive to lending institutions. One initiative by the government through establishment of Credit Reference Bureaus (CRBs) will go a long way in lowering credit risks through improved sharing of borrower information. Towards this end, the government should ensure that CRBs are extended to all sectors including agriculture where most borrowers hail from.

Agency banking which is now being used by various commercial banks to increase access to financial services should be extended further to increase proximity to financial service providers. Such initiatives will also help in lowering operating costs for the banks and this could help expand access to loan services.

Given that of the total banked population, only 7.12% and 7.72% acquired loans from a formal and formal other strand respectively, there is need for further research to investigate why informal credit is more preferred to formal so that the formal institutions can borrow a leaf to increase their market share. The potential for informal lenders can be tapped further given their popularity among the rural populace. An Act of Parliament should also be introduced to oversee and regulate the operations in the informal sector.

Economic empowerment of masses should be enhanced to increase the income levels. This can be enhanced through increased participation in the labour markets as a result of increased creation of jobs and self employment. This will help in raising income which could in turn be used as collateral when applying for loans. The government must therefore step in to ensure that more jobs are created and for the self employed, the government should ensure that raw materials are acquired at affordable prices besides creating markets for the finished goods. Since rural residents rely heavily on agricultural produce, the government should provide subsidies for the farm inputs and introduce high yielding and fast maturing crops so that the frequency of receiving earnings can be raised. Besides to mitigate against the adverse effects of drought, the government should sink boreholes and establish irrigation projects to ensure there is constant water flow for framing activities.

Since education enhances access to credit, the government must ensure that free primary education and free secondary education is extended to tertiary levels since higher education makes people arrive at informed decisions about loans. The government should be ready to support the bright students who lack the ability to pay fees. This can be done by increasing the money allocated towards bursary funds. The various devolved funds should therefore be monitored to ensure that students benefit from the same. More tertiary institutions should also be established. In doing this, the government must ensure that courses under study are relevant and applicable outside the classes to promote self employment.

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APPENDIX TABLES

Table A1: Multinomial Probit Results

VARIABLE	**2009**			**2006**		
FORMAL CREDIT STRAND						
BANK	**Marginal Effects**			**Marginal Effects**		
Variables	**Probability= 0.03177045**	**z-stat**	**Mean**	**Probability= 0.01654**	**z-stat**	**Mean**
age	0.0049229***	2.92	39.2067	0.0028279**	1.99	37.2073
income	8.40e-07***	5.73	19144.5	0.0000442	0.21	10.5538
gender	-0.0149364****	-2.42	1.5682	0.0007796	0.14	1.54797
education	0.0230425 ***	8.63	3.42317	0.0163973***	5.01	3.35093
maritalstatus	0.0007942	0.24	3.31635	0.0031188	1.18	3.30328
Hhsize	-0.0025225	-1.58	4.83895	0.0009735	0.48	2.54089
distance	-0.0047556	-1.34	2.68159	-0.006269***	-4.04	4.28525
agesq	-0.0000452 ***	-2.37	1741.84	-0.0000219	-1.37	1577.78
FORMAL OTHER CREDIT STRAND						
SACCO	**Probability= 0.03305839**	**z-stat**	**Mean**	**Probability= 0.02096975**	**z-stat**	**Mean**
age	0.002252*	1.75	39.2067	0.0030557**	2.09	37.2073

income	2.79E-07**	2.09	19144.5	0.0003053	1.40	10.5538
gender	-0.0212081***	-2.86	1.5682	-0.0143802**	-2.08	1.54797
education	0.0184774***	7.09	3.42317	0.0088487***	3.59	3.35093
maritalstatus	0.0042691	1.10	3.31635	0.0057041	1.58	3.30328
Hhsize	-0.0008188	-0.50	4.83895	0.0003661	0.15	2.54089
distance	-0.0027686	-0.75	2.68159	-0.010746***	-5.59	4.28525
agesq	-3.24E-06	-0.25	1741.84	-0.0000225	-1.45	1577.78
MFI	**Probability= 0.02454787**	**z-stat**	**Mean**	**Probability= 0.01050907**	**z-stat**	**Mean**
age	0.0037732**	2.28	39.2067	0.0012973	1.11	37.2073
income	2.54E-08	0.17	19144.5	0.0000938	0.52	10.5538
gender	0.0238309***	3.36	1.5682	0.0053842	1.06	1.54797
education	0.0072871***	3.08	3.42317	0.0009435	0.56	3.35093
maritalstatus	0.0038699	1.11	3.31635	0.0003009	0.13	3.30328
Hhsize	0.0016447	1.16	4.83895	0.0000783	0.04	2.54089
distance	-0.0019826	-0.62	2.68159	-0.005993***	-4.42	4.28525
agesq	-0.0000404**	-2.08	1741.84	-0.0000145	-1.07	1577.78
GOVERNMENT INSTITUTION	**Probability= 0.00166945**	**z-stat**	**Mean**	**Probability= 0.00386978**	**z-stat**	**Mean**

age	0.0003698	1.03	39.2067	-0.00113*	-1.95	37.2073
income	2.04E-08	0.88	19144.5	-2.86e-06	-0.03	10.5538
gender	-0.0001059	-0.08	1.5682	0.0003178	0.14	1.54797
education	0.0011368	1.50	3.42317	0.0050653***	2.58	3.35093
maritalstatus	-0.0012802	-1.43	3.31635	0.0006145	0.61	3.30328
Hhsize	0.0002011	0.76	4.83895	0.0009776	1.16	2.54089
distance	-0.0008311	-0.98	2.68159	-0.0011158	-1.68	4.28525
agesq	-4.88e-06	-1.04	1741.84	0.0000131**	1.99	1577.78
HIRE PURCHASE	**Probability= 0.00005091**	**z-stat**	**Mean**	**Probability= 0.01011519**	**z-stat**	**Mean**
age	4.15e-06	0.24	39.2067	0.0005405	0.32	37.2073
income	1.37e-10	0.09	19144.5	-0.000034	-0.15	10.5538
gender	-0.0000177	-0.18	1.5682	0.0001378	0.03	1.54797
education	0.0000683	0.46	3.42317	0.0017043	0.91	3.35093
maritalstatus	-3.45e-06	-0.09	3.31635	-0.0008701	-0.42	3.30328
hhsize	-0.0000631	-0.51	4.83895	0.0017427	0.98	2.54089
distance	-0.000038	-0.43	2.68159	-0.0015914	-1.24	4.28525
agesq	1.88e-09	0.01	1741.84	-0.0000157	-0.71	1577.78
INFORMAL CREDIT STRAND						

INFORMAL LENDER	**Probability= 0.00537951**	**z-stat**	**Mean**	**Probability= 0.00704183**	**z-stat**	**Mean**
age	0.0003675	0.66	39.2067	0.0001142	0.10	37.2073
income	-7.44e-08	-0.60	19144.5	-0.0002581	-0.71	10.5538
gender	-0.0002895	-0.09	1.5682	-0.00152	-0.34	1.54797
education	0.0010165	0.88	3.42317	0.0004328	0.27	3.35093
maritalstatus	-0.0022422	-1.59	3.31635	-0.0002013	-0.11	3.30328
hhsize	-0.0000351	-0.05	4.83895	-0.0036228*	-1.70	2.54089
distance	0.0007711	0.53	2.68159	-0.0010582	-0.99	4.28525
agesq	-2.00e-06	-0.34	1741.84	-4.68e-06	-0.32	1577.78
ASCA	**Probability= 0.03468041**	**z-stat**	**Mean**	**Probability= 0.01921676**	**z-stat**	**Mean**
age	0.0045486***	2.71	39.2067	0.0028422	1.64	37.2073
income	9.12e-09	0.05	19144.5	-0.0001217	-0.40	10.5538
gender	0.0288151***	3.48	1.5682	0.0272258***	3.54	1.54797
education	0.0055543**	1.97	3.42317	0.0029996	1.21	3.35093
maritalstatus	-0.0056704	-1.53	3.31635	0.0029507	0.80	3.30328
hhsize	-0.0030038	-1.62	4.83895	0.0040156	1.58	2.54089
distance	-0.0040987	-1.02	2.68159	-0.004689***	-2.82	4.28525
agesq	-0.0000416**	-2.24	1741.84	-0.000033	-1.61	1577.78

BUYER OF HARVEST	**Probability= 0.01503235**	**z-stat**	**Mean**	**Probability= 0.01737726**	**z-stat**	**Mean**
age	-0.0001549	-0.15	39.2067	-0.0010621	-0.85	37.2073
income	-2.86e-07	-1.24	19144.5	-0.000805	-1.32	10.5538
gender	-0.0046139	-0.88	1.5682	-0.0036163	-0.51	1.54797
education	-0.0014515	-0.71	3.42317	0.0009457	0.36	3.35093
maritalstatus	0.0029898	1.09	3.31635	0.0025668	0.76	3.30328
hhsize	0.0023893**	2.20	4.83895	-0.006661**	-2.16	2.54089
distance	-0.0025854	-1.06	2.68159	0.0044017**	2.17	4.28525
agesq	-3.07e-07	-0.03	1741.84	0.0000131	0.97	1577.78
EMPLOYER	**Probability= 0.00559312**	**z-stat**	**Mean**	**Probability= 0.01135729**	**z-stat**	**Mean**
age	0.0011733	1.44	39.2067	0.0006242	0.38	37.2073
income	5.62e-08	1.15	19144.5	-0.0000104	-0.04	10.5538
gender	-0.0051966*	-1.75	1.5682	-0.0063619	-1.13	1.54797
education	0.0018928*	1.74	3.42317	0.0037843**	1.88	3.35093
maritalstatus	0.0016287	1.21	3.31635	0.0013455	0.52	3.30328
hhsize	-0.0006786	-1.00	4.83895	-0.0006036	-0.27	2.54089
distance	-0.003632**	-2.10	2.68159	-0.001588	-1.23	4.28525
agesq	-0.0000169	-1.65	1741.84	-0.0000116	-0.55	1577.78

LOCAL SHOP/SUPPLIER	**Probability= 0.66618853**	**z-stat**	**Mean**	**Probability= 0.69866491**	**z-stat**	**Mean**
age	-0.0229682***	-5.93	39.2067	-0.0046889	-0.96	37.2073
income	-1.48e-06***	-2.83	19144.5	-0.0001344	-0.13	10.5538
gender	0.0691342***	3.37	1.5682	0.0073154	0.30	1.54797
education	-0.0397645***	-5.35	3.42317	-0.047375***	-5.38	3.35093
maritalstatus	0.0188001**	1.93	3.31635	0.0004504	0.04	3.30328
hhsize	-0.0011009	-0.25	4.83895	0.0125103	1.39	2.54089
distance	0.0355028***	3.74	2.68159	0.0139117**	2.27	4.28525
agesq	0.0002162***	5.16	1741.84	0.00003	0.55	1577.78

Base category is credit from friends/relative