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FACTORS INFLUENCING UTILIZATION OF INFORMAL FINANCIAL SERVICES (IFS) IN MACHAKOS COUNTY, KENYA

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Abstract

Financial services play a pivotal role in the development of a country by offering financial intermediation and mobilization of resources for investment. Kenya's financial sector is dualistic with informal financial sector being larger than formal financial sector in its contribution to economic growth. Challenges of accessing financial services from formal financial institutions have largely led to the growth of informal financial services. Outcomes from efforts to streamline the Informal financial services in Kenya by establishing SACCO Societies Regulatory Authority (SASRA) in 2010 is not clear. Further, despite intervention and increased financial inclusion in the country, there is a sizeable gap in the utilization of financial services particularly between the urban and rural dwellers. Research on informal financial services in Kenya has been concentrated on informal settlements in urban areas with limited focus on rural areas. To bridge this gap, this study explored factors influencing utilization of informal financial services in Machakos County using primary data obtained from a stratified random sample. Using inferential statistics, results of the study indicate that gender, marital status, income, availability of credit from formal financial institutions, occupation and perception of financial services influence utilization of informal financial services in the study area.

Keywords: Financial Inclusion, Informal financial services, Formal financial services, Binary Choice, Kenya

INTRODUCTION

There are various channels through which financial sector development can contribute to the growth of the national product of a country. The most basic channel is through intermediation or the way it connects savers and borrowers of capital. It provides savings facility that provides investment capital needed by the investors. For this reason, a well-functioning financial market can contribute to the growth of the GDP through increase in investments.

In recognition of the role that financial sector plays in facilitating economic growth, Kenya's long term economic blue print, Vision 2030, has prominently outlined the aspiration for financial services sector as being the driver to achieving high levels of savings for financing investment needs in order to achieve a Gross Domestic Product (GDP) of 10 percent per annum for the next 25 years (Republic of Kenya, 2013). To achieve and sustain the 10 percent GDP growth, Kenya Vision 2030 proposes deepening of financial services through enhancing its access, efficiency and stability.

The financial sector has not performed as expected with gross national savings as a percentage of GDP being 10.4 percent in fiscal year 2011/2012 against a target of 24.4 percent and total investments as a percentage of GDP standing at 21.9 percent in fiscal year 2012/2013 against a set target of 30 - 32 percent (Republic of Kenya, 2013).

Kenya's financial sector can broadly be classified into formal and informal financial sectors. The formal financial sector is well regulated by the Government through its agencies and legislation and in most cases comprises the banking sector. The major characteristic of the sector is bureaucracy and lengthy procedures required in order to obtain finances. The informal financial sector emerged out of the inefficiencies of the formal financial sector. Development of the informal financial sector was meant to make it easier for the small and medium enterprises to obtain capital that they need for investment (Putnam 1993).

There are number of reforms in the financial sector that have been undertaken aimed at streamlining informal financial sector and deepening financial access. The SACCO Societies Regulatory Authority (SASRA) was established in 2010 to regulate SACCOs and ensure informal financial groups transform themselves to SACCOs. The National Payments System Act 2011 was enacted to allow the Central Bank of Kenya regulate mobile money transfers (MMT). Studies show that the MMT has revolutionized the operations of informal financial services through provision of seamless funds transfer within the social networks (Johnson, 2014).

The government further operationalized banking (Credit Reference Bureau) regulations of 2008 in 2010. The Credit Reference Bureau regulations have assisted financial institutions to share information on borrowers. Financial institutions are able to access information on

borrowers at low cost thus issue more loans (Mwega, 2014). Despite these reforms, informal financial services have continued to thrive alongside the formal financial services (Bett, 2013).

Due to easy access and low cost of borrowing, informal financial services (IFS) have continued to be popular in rural and urban areas and across both gender. In 2013, 26.7 percent of Kenyans in rural areas and 29.6 percent in urban areas were more likely to join institutions offering informal financial services while 34.1 percent of females and 20.9 percent of males were more likely to join these institutions (FinAccess 2013). Given the low penetration of formal financial institutions (FFIs), informal financial institutions (IFIs) have the potential to mobilize additional savings and provide credit especially to sections of the population that do not use banking services and the low – income groups.

Problem statement

Financial services play an important role in the economic growth of a country by providing intermediation between savings and investment. The Kenya's Vision 2030 underscores this importance of financial services in achieving a sustained Gross Domestic Product (GDP). The Kenyan government has recognized that informal financial sector is as important as formal financial sector in achieving a 10 percent growth of GDP up to 2030. A notable intervention has been the establishment of SACCO Societies Regulatory Authority (SASRA) in 2010 to streamline this important sector and ensure informal financial groups transform themselves to SACCOs (Republic of Kenya, 2012). The reforms initiated by the government have achieved mixed results with overall financial inclusion increasing to 75.3 percent nationally in 2016 with limited access of financial services in rural areas. However, in the overall, use of informal financial services has continued to grow alongside the formal financial services(FinAccess 2016).This sustained use of informal financial services despite their weaknesses is of interest in this study. The drivers of growth of informal financial services in Kenya, their use and their effects in the country are not very clear.

Studies on informal finance use reveal that informal financial services are ahead of formal financial services in mobilizing funds for Micro- Enterprises in Kenya. A national household survey conducted in 2016 by Financial Sector Deepening, Kenya reveal that own savings were the most important source of financial services for business at 42.6 percent while banks accounted for 10.1 percent. Family and friends accounted for 14.5 percent while *chamas* utilization stood at 11.8 percent. It is not clear whether the savings translate into investment and whether they affect the livelihood in rural areas.

The vibrancy and robustness of informal financial services has not received adequate attention from policy makers and researchers who have concentrated more on formal financial

services (Bett, 2013). In addition, studies on informal finance use have concentrated on Nairobi in informal settlements of Kibera and Mathare, on Central Kenya and Western Kenya. To close this research gap, the study was conducted in Machakos County which is in Eastern Kenya. To achieve the objective the study intended to explore financial services in Kenya by providing empirical evidence on the factors influencing utilization of informal financial services in Machakos County.

OBJECTIVE OF THE STUDY

The objective of the study was to determine the main factors influencing utilization of informal financial services (IFS) in Machakos County.

EMPIRICAL LITERATURE

Kibuuka (2006) conducted a study to investigate factors influencing utilization of informal financial services in South Africa using primary data that was collected by way of questionnaires. Random sampling was used to select a sample of 13 groups and descriptive statistics used to analyze data. The study indicated that there were various reasons behind the popularity of IFS in South Africa. First, IFS provided a disciplined environment for the members to save since such finances could not be withdrawn before the end of the stated period. The second reason was that, such facilities provided members with an opportunity to save little amounts of money a service that was rare in the FFS. The third reason was that, such facilities provided an opportunity for the members to network. The study further found out that, the major independent variables influencing utilization of IFS in South Africa were gender, income, age, education, and occupation.

Gugerty (2007) conducted a study in Busia and Teso districts of Western Kenya on rotating savings and credit organizations (ROSCAs). The main objective of the study was to investigate why individuals developed and maintained local financial savings organizations. To achieve the objective, the study relied on primary data that was collected using random sampling method from a sample of 340 ROSCAs in the region. The study applied a probit model with gender, age, marital status and income as the independent variables. The study findings were that, the main reasons behind the growth of IFS was that, they provided control and acted as a commitment device for savings to the members. Most of the respondents indicated that, it was flexible to obtain finances from such organizations and that they used this money to pay school fees for their children and to buy household items that they needed.

Johnson et al. (2009), conducted a study in Kenya to investigate increase in access to financial services in Kenya using secondary data from financial access survey, 2006. The study

was descriptive in nature and relied on logistic regression in analyzing social economic and demographic attributes of users. The study findings were that, approximately 68.3 percent of the participants indicated that, the main reason of joining IFS was to get money which they needed in the times of difficulty. Approximately 72.6 per cent indicated that, they joined such groups to get money for investment.

Koech (2012) conducted a study on the role of informal credit schemes in mobilizing funds for micro-enterprises in Kenya using a sample of 73 respondents from a target population of 729 small micro-enterprises in Kericho County. The study results indicate that ROSCAs, ASCAs, investment clubs and welfare/clan groups were the most common sources of informal credit for SMEs accounting for 35.4 percent of total respondents followed by relatives and friends who accounted for 32.3 percent and suppliers and Mobile Financial Institutions (MFIs) at 10.8 percent. This study did not look at a specific informal credit scheme to relate it to the source of the loan.

Bett (2013), investigated the determinants of informal finance use in Kenya. The study used secondary data from FinAccess National Survey, 2009. The study employed a logistic regression model to investigate how socio – economic factors, attitude towards formal finance and internal business regulations influence choice of finance for an individual. The results indicate that negative attitude influenced individuals to use informal savings by 5 percent confidence level and use informal credit by 10 percent significance level. Respondents cited high transaction costs in FFIs which were not disclosed at the time of drawing saving/ loan contract as well as high interest rates as the main factors why their attitude towards banks was negative. The study identified determinants of informal finance use and did not establish how they influence lives of the individuals. The study used secondary data while this study used primary data.

METHODOLOGY

The study adopted non-experimental exploratory research design. The study relied on cross sectional primary data that was collected from the residents of Machakos County.

Theoretical framework

To achieve the objective the study on utilization of informal financial services, it is assumed that an individual is faced with two options: to utilize formal financial services or informal financial services. If an individual utilizes informal financial services, then the utility is captured by W_A and if formal financial services are utilized the utility is captured by W_B. Therefore, from the Utility

Maximization Theory, an individual will use informal financial services if $W_A > W_B$ and will use formal financial services if $W_B > W_A$.

Considering an individual who seeks to maximize benefits derived from utilization of financing options, his choice will depend on the value he attaches to each of the options. This implies that there is an expected value attached to using a given form of financing option whether formal or informal. The theoretical framework for the study is based on McFadden's random utility model (RUM). An individual is faced with various financial alternatives which include formal and informal choices to be made. This can be captured by utility function expressed as:

$U = f(X, Z)$ …….…… (1)

Where: X represents observable individual characteristics while Z represents unobservable individual characteristics. This can also be represented as:

$U_{ij}(X_{ij}; Z_{ij}) = V_j(X_{ij}; \beta)$, i =1,2…,N, j =1, 2…,M ……(2)

Where: i represents individuals while j represents financial services,

U_{ij} represents the utility derived by individual i from 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, and

V_j denotes the deterministic component of the utility function.

This shows that the choice made by an individual i is determined by the utility derived from alternative j such that an individual chooses alternative A if $U_A > U_B$ and $W_A > W_B$.

Model Specification

This section provides the model used in the study. An individual is assumed to maximize utility upon making a choice represented by j in equation (2).

Taking an additive random utility model, equation 2 can further be written as:

$U_{ij}(X_{ij}; Z_{ij}) = V_j(X_{ij}; \beta) + \varepsilon_{ij}$ ……..…..……(3)

Where; V_j is the deterministic component of the utility estimated while ε_{ij} is the unknown utility and β represents the estimated coefficients of the explanatory variables.

Assuming there are two alternatives A and B that an individual faces and has to make a random choice; then A is chosen if net utility of A is greater than net utility of B. This can be represented as:

$V_A(X_{iA}; \beta) + \varepsilon_{iA} > V_B(X_{iB}; \beta) + \varepsilon_{iB}$ ……(4)

Rearranging the equation and bringing all the like terms on the left hand side gives the following: Letting $K(x_i; \beta) = V_A(X_{iA}; \beta) - V_B(X_{iB}; \beta)$ and $\mu = \varepsilon_{iA} - \varepsilon_{iB;}$ Equation 4 reduces to:

$K(x_i; \beta) + \mu > 0$ ……..…..…..…(5)

Letting Y* represent net utility, then Y* is a latent variable and equation (5) can be expressed as:

$Y^* = K(x_i; \beta) + \mu$ ……..……..……(6)

Where; Y* as a latent variable helps identify an individual *i* in choosing one alternative over the other; $K(x_i; \beta)$ is the observable functional index as a result of choice decision and μ is the unobservable component arising from omission of other variables.

Considering the theoretical framework and the literature review, individual *i* has two choices for *j*: using informal financial service or formal financial service. The choice of the individual *i* to use an informal financial service or formal financial service is a binary choice and can be represented by the variable Y such that;

$$Y = \begin{cases} 1 & \text{Individual uses informal financial service} \\ 0 & \text{Otherwise} \end{cases} \quad \text{……..…….. (7)}$$

The dependent variable (Y) is a latent variable taking 1 when the attribute is present and 0 if the attribute is not there.

Financial services sector in Kenya is made up of formal financial services and informal financial services. Formal services include banks while informal financial services SACCOs, ROSCAs, ASCAs, welfare/ clans, shops/suppliers, money lenders, employers, relatives/ friends.

Theoretical model as expressed in equation (6) is modified to help addresses the main factors influencing utilization of informal financial services. Considering the social – demographic and economic characteristics and the perception of individuals, utilization of informal financial services (IFSUSE) can be expressed as a function of various variables such as gender, age, education, marital status, household size, region, income, occupation, distance from financial institution, credit availability from FFIs and perception an individual has of a financial services. The functional relationship can be expressed:

IFSUSE = F(GDR, AGE, ED, MAR, HHS, RE, INC, OCP, DST, FAVL, PERCFS)……. (8)

Where, IFSUSE is the choice to use informal financial service, GDR is gender of the individual, AGE is the age of individual, ED is education level of the individual, MAR is the marital status of the individual, HHS is the household size, RE is the place of residence of the individual whether rural or urban within the Machakos County, INC is income of the individual, OCP is the occupation of the individual, DST is the distance to the financial institution, FAVL is credit availability from a FFIs and PERCFS is individual perception on Financial services.

Given that the dependent variable (IFSUSE) which is the choice to use informal financial services is a dichotomous variable. The concern becomes establishing the probability of the choice being made.

From theory, the probability of choice in equation (8) can be expressed as a linear or non-linear model. If linear, then we have a linear probability model expressed as;

$$\rho_i = Ln \left[\frac{\rho_i = \beta_0}{1 - \rho_i} \right] + \beta_1 GDR + \beta_2 AGE + \beta_3 ED + \beta_4 MAR + B_5 HHS + \beta_6 RE + \beta_7 INC + \beta_8 OCP$$

$$+ \beta_9 DST + \beta_{10} FAVL + \beta_{11} PERCFS + \varepsilon_i \ldots\ldots\ldots(9)$$

Where ρ_i = Prob*(IFSUSE$_i$=1);* the probability that an individual used informal financial service, 1- ρ_i is the probability that an individual did not use informal financial service option, *ln* is the natural logarithm, β_0 to β_{11} are the parameters to be estimated and $\varepsilon_i$is the error term of the model and ρ_i / 1- ρ_i is an odds ratio.

The explanatory variables are as explained in equation (8). To capture how each of the variables in equation (9) influences the choice of using informal financial services, logistic regression method was used.

A non-linear probability function of the choice variable of interest can be expressed as a sigmoid (S-shaped) function of the explanatory variables;

$$\rho_i = F(Ƶ_i) = \frac{1}{1 + e^{-Ƶ_i}} \ldots\ldots\ldots (10)$$

Ƶ is a variable expressed as a linear function of the explanatory variables as given in equation (8), where;

$$Ƶ_i = \beta_0 + \beta_1 GDR + \beta_2 AGE + \beta_3 ED + \beta_4 MAR + B_5 HH + \beta_6 RE + \beta_7 INC + \beta_8 OCP + \beta_9 DST +$$
$$\beta_{10} FAVL + \beta_{11} PERCFS + \varepsilon_i \ldots\ldots\ldots(11)$$

ρ_i is as defined above and F(Ƶ$_i$) is the non – linear function. Equation (11) can be estimated using logit or probit estimation methods. To achieve the objective a logistic model was estimated and marginal effects obtained.

ANALYSIS AND FINDINGS

Summary statistics of variables used in the study

The study had four continuous variables namely age, household size, income of the respondent and distance from the respondent's home to a FFI while the remaining seven were discrete and or qualitative variables. Table 1 presents summary statistics of the continuous variables.

Table 1: Summary statistics of continuous variables

Variable	**Obs**	**Mean**	**Standard deviation**	**Minimum**	**Maximum**
Age (AGE) in years	374	38.96791	12.50304	18	81
Household size (HHS). Number of members living with the respondent	374	5.018717	1.964067	1	12

Table 1...

Income (INC) in Ksh.	374	18676.47	8926.25	0	30,000
Distance (DST) in Km	374	19.24866	12.81937	0.5	62

Source: Authors computation from survey data (January, 2018)

Results from Table 1 show that the mean age of the respondents in the sample was 38.97 years implying that majority of the respondents were in the productive age. The youngest respondent was 18 years old while the oldest was 81 years old. The average number of persons living with the respondents (household size) in the study was 5.02 persons. This is higher than the national average of 4.4 reported in the 2009 Kenya Population and Housing Census (KNBS, 2013). The mean distance of the respondents from a formal financial institution was 19.2 kilometres implying that one had to take some time before reaching the FFIs. The average income of the respondents was Ksh. 18,676.47. Ten respondents representing 2.67 percent of the sample reported nil income since they were unemployed while 77 respondents which was about 20.59 percent reported earning about Ksh. 30,000. The income at the 10^{th} percentile was Ksh. 5,000 and the 25^{th} percentile was Ksh. 10,000. The Median income (50^{th} percentile) in the sample was Ksh. 20,000 while the 75^{th} percentile income was Ksh. 25,000. Summary statistics for the income showing details of percentiles are presented in the appendix.

Table 2: Summary statistics for discrete variables

Variable		**Frequency**	**Percent**
Gender (GDR)	Male	175	46.79
	Female	199	53.21
Marital status (MAR)	Married	263	70.32
	Single	90	24.06
	Other (Separated, divorced, widow (er)	21	5.61
Education Level (ED)	No education	15	4.01
	Primary	48	12.83
	Secondary	170	45.45
	University	92	24.60
	Other	49	13.10
Region (RE)	Urban	76	20.32
	Rural	298	79.68
Occupation (OCP)	Employed	138	36.90
	Self-employed	127	33.96
	Agriculture	92	24.60
	Other	17	4.55

Table 2...

Facility Availability (FAVL)	Available	111	29.68
	Not available	263	70.32
Use of IFS (IFSUSE)	Used	206	55.08
	Did not use	168	44.92
Main reason of joining IFIs	To save	154	41.18
	Socialize/ network	55	14.71
	Force to save	12	3.21
	For Assistance when in problems	67	17.91
	As a source of loan	29	7.75
	Other	57	15.24

Source: Authors computation from survey data (January, 2018)

The results in Table 2 indicate that 53.21 percent of the respondents were female while 46.79 percent were male. Approximately 70.32 percent of the respondents were married, 24.06 percent were single while 5.61 percent were either divorced, widow or widower. Approximately 83.16 percent of the respondents had at least attained secondary level of education and above with most of them having secondary education at about 45.45 percent. Those with no education were 4.01 percent; primary education 12.83 percent and university education were 24.60 percent. About 13.1 percent of the respondents indicated they had diploma or certificate.

Most of the respondents in the range of 79.68 percent resided in the rural area while 20.32 percent resided in urban area. Approximately 36.90 percent of the respondents were employed, 33.96 percent were self - employed, 24.60 percent were farmers and 4.55 percent were unemployed. The proportion of the respondents who did not access credit from FFI was about 70.32 percent while the percentage of those who accessed the credit facilities was 29.68 percent. This is in tandem with findings of in (FinAccess 2013) who observed that individuals in rural areas were financially excluded.

About 55.08 percent of the respondents ranked informal financial use as number one. This finding is in tandem with findings of Bett (2013) and FinAccess (2013) who observed that informal financial sector was larger than formal financial sector.

Approximately 35.09 percent of individuals who utilized IFS spent most of their funds on income generating activities such as starting or expanding business or to purchase agricultural inputs; 11.76 percent spent the funds to improve the lives through better housing, provision of water and electricity; while 10.96 percent used the funds to pay school fees.

Individuals who joined IFIs to save were about 41.18 percent while those who joined the institutions so as to get help in times of problems were 17.91 percent. About 14.71 percent

joined the institutions to socialize and network and 15.24 percent did not provide response to this area and were reported under 'other' category. They stated that they had not joined IFIs. Several respondents reported multiple reasons for joining IFI especially the need to save, socialize and obtain loans. These findings concur with the observations of Kedir (2005) that individuals join IFIs to save for purchase of durable goods. Dagnelie and Boucher (2008), observed that insurance ranked as the second reason why households participate in IFIs, a finding that has been observed in this study.

Regression Analysis on Utilization of Informal Financial Services

The objective of the study was to determine factors influencing utilization of informal financial services in Machakos County. The dependent variable was use of informal financial services (IFSUSE). A logistic regression analysis was carried out on equation (9) and its marginal effects generated and represented in Table 3. Overall the model explained 12.98 percent of the variations in the probability of factors influencing utilization of IFS.

Table 3: Logistic regression results on factors that determine Utilization of Informal Financial Services

Variable	Coefficients	Marginal effects (dy/dx)	Z	P > |z|
Gender (GDR)	-0.5507617	-.1342575**	-2.37	0.018
	(0.2343755)			
Age (AGE)	0.0022235	0.0005439	0.19	0.849
	(0.0117161)			
Education Level (ED)	-0.2087543	-0.051069	-1.52	0.130
	(0.1378084)			
Marital Status (MARR)	0.5261549	0.1297727*	1.80	0.071
	(0.2921791)			
Household size (HHS)	0.0304974	0.0074608	0.46	0.646
	(0.0663797)			
Region (RE)	-0.3342561	-0.0825956	-1.06	0.287
	(0.3122128)			
Income (logINC)	-0.4534843	-0.1109391*	-1.66	0.097
	(0.2738609)			
Distance (DST)	0.0039185	0.0009586	0.43	0.670
	(0.0092009)			
Occupation (OCP_1)	-0.4863398	-0.1193407*	-1.82	0.068
	(0.2671729)			

Table 3...

Facility Availability (FAVL)	-1.247448 (0.272041)	-0.3019466 ***	-4.86	0.000
Perception of Financial Services (PERCFS)	0.904974 (0.3267732)	0.2222928***	2.85	0.004
Number of obs = 364		LR chi2(11) = 64.81		
Prob> chi^2 = 0.0000		Pseudo R2 = 12.99%		

Source: Authors computation from Survey data (January, 2018)

**** Coefficient was significant at 1 percent level, ** and * Coefficients were significant at 5 and 10 percent levels respectively; standard errors in parenthesis.*

Results presented in Table 3, show that there were six statistically significant coefficients in the IFSUSE regression equation. The results indicate a negative relationship between credit facility availability (FAVL) from FFIs and utilization of informal financial services. Increase in credit availability from FFIs decreased the likelihood of using informal financial services by 30.19 percentage points. Decrease in credit availability from FFIs increased the probability of utilizing informal financial services by 30.19 percentage points. This suggests that when credit was not available from FFIs, individuals turned to the alternative source of credit which is IFS. The coefficient was significant at one percent level. This shows that credit availability from FFIs influences the utilization of IFS. This is concurs with findings of Mbuthia (2011), who observed that households with access to loans from IFIs had greater probability of saving in the same institutions.

The perception of financial services (PERCFS) by an individual that IFS were beneficial and utilization of IFS had positive relationship. Increase in perception that IFS were beneficial increased the chance of utilizing the services by 22.22 percent. The coefficient was significant at all levels.. This concurs with findings of Bett (2013) who observed that negative attitude on FFIs boosted the use of IFIs.

Gender of the individual had a negative relationship with the utilization of IFS. Males were less likely to utilize informal financial services by 13.43 percentage points and as compared to females who had a higher chance of utilizing informal financial services by 13.43 percentage points. The coefficient was significant in influencing utilization of informal financial services at 5 percent level. This is in tandem with the observations of Betty (2013) who found out that women were more likely to use IFS as they were majority participants in merry – go – rounds Women had greater informational and physical accessibility to the IFIs compared to men (Helms, 2006; Wawire and Nafhuko, 2010).

Occupation which was a categorical variable was transformed to a dummy variable and recoded as OCP1 where being employed was equal to 1 and being self – employed, engaged in agriculture or being unemployed was equal to zero. Being in agriculture was a type of self – employment while the unemployed had ways of earning some income which could fall under this category. There was a negative relationship between being employed and utilization of IFS. Being employed reduced the likelihood of utilizing IFS by 11.93 percent. Being in self – employment whether business or agriculture increased the likelihood of utilizing IFS by 11.93 percent. Occupation was significant in influencing utilization of IFS at ten percent significance level. Respondents who were employed had an income stream and were likely to use FFIs. The self – employed individuals turned to IFS to get capital for their enterprises. This fact is collaborated by Atieno (2001) who indicated that informal credit sources provide easier access of credit facilities for small and micro – enterprises. Mungiru and Njeru (2015) found out that informal finance had positive influence on SMEs.

Marital status was transformed to a dummy variable where being married was equal to 1 and being single or other (separated, divorced or widow (er)) was equal to zero. This was recoded as "MARR". The relationship between marital status of an individual and the utilization of informal financial services had a positive relationship. Being married increased the chance of utilizing informal financial services by 12.98 percent and being single or divorced or widow or widower decreased chance of utilizing informal financial services by 12.98 percentage points. The coefficient was significant at 10 percent confidence level meaning that marital status of an individual played a role influencing utilization of informal financial services. Mwangi and Ouma (2012) made the same observations that being married increased the probability of accessing credit.

Income was transformed by taking its logarithm. Income level and utilization of informal financial services had a negative relationship. Holding other factors constant, a one percentage increase in income would decrease use of informal financial services by 0.11 percentage points and a decrease in income by one percent would lead to increase in utilization of informal financial services by 0.11 percent. The coefficient was significant at 10 percent level meaning that income influenced utilization of informal financial services. Increase in the income of an individual provides some form of security which is what is needed by the formal financial institutions. This therefore reduces the need to utilize informal means. Mwangi and Ouma (2012) acknowledged that increase in income by one shilling reduced the probability of using IFS. This is also consistent with Mbuthia, (2011) who observed that as income increases; individuals seek institutions where their higher income was more secure thus reduced utilization of IFS. The results also concur with findings conducted in Papua Guinea and India where use of

IFIs was found to be more prevalent in low income households because of easier to access and convenience (Sukhdeve, 2008).

CONCLUSION AND POLICY RECOMMENDATIONS

The objective of the study was to determine the main factors influencing utilization of informal financial services in Machakos County. The study draws the conclusion that gender, marital status, income occupation and availability of credit facilities are the main factors that influence utilization of informal financial services.

Utilization of financial services improves welfare of individuals and society as a whole. Given that there is large percentage of population that uses informal financial services, the Government needs to fast-track streamlining of the operations of informal financial services and link them to formal financial sector while ensuring that their identities and unique features are retained. This can be achieved through legislation and creation of a fund that is as flexible as the informal financial services.

Formal financial institutions can also be impressed upon through incentives to have products similar to those offered by informal financial services. If this is embraced by the population, much of finances that are locked out of the formal circulation of money will be re-introduced back and this will have a multiplier effect through credit creation. Formal financial institutions can reduce the requirements of opening group accounts and especially the need to register with social services department and production of minutes when withdrawing funds. It is this flexibility which makes the IFS popular.

LIMITATIONS OF THE STUDY AND AREAS OF FURTHER RESEARCH

The study had two main limitations. First, due to limited time and financial resources the study covered one county out of the 47 counties in Kenya and could not access the interior of some rural areas. Poor roads network and unreliable means of transport caused delays and increased cost of data collection. The results may not be directly inferred in rural areas of other counties. However, this will be a basis for study in the other counties.

Secondly, respondents were not comfortable in disclosing how much they earned. Income was estimated from grouped data given by respondents and it was likely those with lower income increased it or those with higher income reduced it. There is need to have two or three other measures of income if this variable is to be reliable such as assets in possession of the household and monthly expenditure estimate on items like food.

There is need to investigate the influence of technological advancement on the informal financial utilization especially the mobile money transfer and agency banking. Further, there is need to focus on the challenges facing informal financial services and how they can be solved.

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APPENDICES

Summary Statistics of Income (INC)

Percentiles		Smallest
1%	0	0
5%	5000	0
10%	5000	0
25%	10000	0
50%	20000	Largest
75%	25000	30000
90%	30000	30000
95%	30000	30000
99%	30000	30000

Obs	374
Sum of Wgt.	374
Mean	18676.47
Std. Dev.	8926.247
Variance	7.97e+07
Skewness	-.3114106
Kurtosis	1.88386

Logistic regression results and marginal effects for factors determining utilization of IFS

logit IFSUSE GDR AGE ED MARR HHS RE OCP_1logINC DST FAVL PERCFS

Logistic regression		Number of obs	= 364
LR chi2(11)	= 64.81	Prob> chi2	= 0.0000
Log likelihood	= -216.98673	Pseudo R2	= 0.1299

IFSUSE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
GDR	-.5507617	.2343755	-2.35	0.019	-1.010129	-.0913942
AGE	.0022235	.0117161	0.19	0.849	-.0207396	.0251865
ED	-.2087543	.1378084	-1.51	0.130	-.4788537	.0613452
MARR	.5261549	.2921791	1.80	0.072	-.0465055	1.098815
HHS	.0304974	.0663797	0.46	0.646	-.0996045	.1605992
RE	-.3342561	.3122128	-1.07	0.284	-.9461819	.2776696
OCP1	-.4863398	.2671729	-1.82	0.069	-1.009989	.0373094
logINC	-.4534843	.2738609	-1.66	0.098	-.9902418	.0832732
DST	.0039185	.0092009	0.43	0.670	-.0141149	.0219519
FAVL	-1.247448	.272041	-4.59	0.000	-1.780639	-.7142579
PERCFS	.904974	.3267732	2.77	0.006	.2645103	1.545438
_cons	4.893319	2.456598	1.99	0.046	.0784765	9.708162

Marginal effects after logit
y =Pr(IFSUSE) (predict)

= .57323142

Variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
GDR*	-.1342575	.05654	-2.37	0.018	-.245082	-.023433	.46978
AGE	.0005439	.00287	0.19	0.849	-.005073	.006161	39.4945
ED	-.051069	.03369	-1.52	0.130	-.117096	.014958	3.28846
MARR*	.1297727	.07198	1.80	0.071	-.0113	.270845	.722527
HHS	.0074608	.01624	0.46	0.646	-.024366	.039288	5.04121
RE*	-.0825956	.07756	-1.06	0.287	-.234618	.069427	.197802
OCP1*	-.1193407	.06541	-1.82	0.068	-.247545	.008864	.379121
logINC	-.1109391	.06695	-1.66	0.097	-.24215	.020272	9.7263
DST	.0009586	.00225	0.43	0.670	-.003453	.00537	19.3159
FAVL*	-.3019466	.06213	-4.86	0.000	-.42372	-.180174	.304945
PERCFS*	.2222928	.07807	2.85	0.004	.069275	.37531	.763736

(*) dy/dx is for discrete change of dummy variable from 0 to 1