UTILIZATION OF INFORMAL FINANCIAL SERVICES (IFS) AND ITS EFFECTS ON WELFARE OF RESIDENTS IN MACHAKOS COUNTY, KENYA

Dominic Musyoka ✉

Master of Economics Student

Department of Economic theory

Kenyatta University, Kenya

dmmsyoka@gmail.com

Jennifer Njaramba

Department of Econometrics and Statistics

Kenyatta University, Kenya

njaramba.jennifer@ku.ac.ke

Abstract

Financial services in Kenya can broadly be classified into two: formal and informal financial services. The informal financial services in Kenya are as important in their contribution to the economic growth as the formal financial services. Studies have found out that informal finance use improves performance of small and medium enterprises in Kenya. Funds obtained from informal financial institutions are expected to improve the welfare of the participants by purchasing durable goods, starting income generating activities, paying school fees thus helping alleviate poverty. Research on informal financial institutions in Kenya has concentrated on motives influencing utilization informal financial services on informal settlements in urban areas with limited focus on the effects on utilizing the financial services. This study focused on the effects of utilization of informal financial services on the welfare of residents in Machakos County to bridge the observed gap using primary data obtained from a stratified random sample. Using inferential statistics, results of the study show that effects of utilization of informal financial services on socio – economic status on the residents as determined by the perception

of individuals had a positive relationship with the probability of using the informal financial services in the study area. Given this positive relationship, there is need to streamline and link informal financial services to formal financial sector while ensuring that their identities and unique features are retained.

Keywords; Informal financial services, Formal financial services, Social Economic status, Utilization, Heckman estimation

INTRODUCTION

Financial services are fundamental to economic growth of a country. They assist in mobilizing resources needed for investment through offering services such as savings and borrowing. In Kenya, financial services are broadly classified into formal and informal financial services. The main difference between the two is the operation, procedure, cost of the fund and the application requirements needed to obtain the fund. Formal financial services operate under the supervision of the Central Bank of Kenya and their procedures are highly controlled and monitored. On the other hand, most of the informal financial services operate on the trust of the members and procedures are highly flexible (Republic of Kenya, 2010)

Informal financial services (IFS) are 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 formal financial services and the low – income groups.

Although empirical literature exists on how utilization of informal services has affected social economic factors, the conclusion has not been unanimous. Bett (2013) indicated that, utilization depends on the type of fund and the location under consideration. Heyer and Kings (2015) in their study on the Kenyan Financial Transformation (2000 – 2015) using the FinAccess data for 2013 observes that mobile money transfer enable informal financial arrangements. Women and rural populations use mobile money on activities associated with informal financial sector. In addition (Lewis, Villasenor and West, 2017) note that even though there is increased financial inclusion to about 75 percent driven mainly by transformation in mobile telecommunication, there is need to address the gaps on inclusive financial systems that will assist the low income earners to pursue growth opportunities. Currently, the loans offered by

digital credit providers are of low value only made to solve short – term liquidity problems and not for development purposes. This being the case, it is important to find out how use of informal finances has affected various social economic factors in the rural regions. This is because most of the literature has focused on the informal settlements of the urban Kenya.

Problem statement

Investment is an important factor in the economic growth of a country as it affects growth of the national output as well as improvement in the welfare for the citizens. Individuals or organizations who want to invest can obtain funds for investment from formal or informal financial services. Funds from informal financial services are easier to access and returns or the cost of the fund is lower than that of the formal financial services.

Growth of informal financial services has been on the increase in the past few years and this is expected to have a direct impact on the welfare and other social economic factors facing members of society. Despite this increase in utilization of the informal financial services, there is little empirical content on how this phenomenon has affected the various social economic variables in the country (Mwangi, 2012). Studies on informal financial institutions have concentrated on informal settlements in the urban areas in Nairobi such as Kibera and Mathare slums (Mbuthia,2011; Wawire, 2010; Mwangi and Ouma, 2012). In addition, the studies have focused more on the factors influencing participation in informal financial services. To bridge this research gap, this study focuses on the social – economic effects of the residents of Machakos County which is mainly rural.

Objective of the study

The general aim of this study was to investigate the effects of utilization of informal financial services (IFS) on welfare of residents in Machakos County.

LITERATURE REVIEW

Gugerty (2007) conducted a study on rotating savings and credit organizations in Kenya. The study investigated why individuals develop and maintain local level financial savings organizations in Busia and Teso districts of Western Kenya. Probit model was used to analyze the probability of a self – help group member belonging to a Rotating Savings and Credit Associations (ROSCAs). Random sampling was used to select 340 ROSCAs which were used in the study and independent variables included gender, age, marital status and income. The respondents reported that they participated in ROSCAs because of self – control problems and that ROSCAs acted as a commitment device for saving. Most of the participants reported that

they used their pot to pay school fees and purchase household goods. The study used both descriptive and inferential statistics but did not establish whether participation in ROSCAs improved welfare of the participants.

Johnson et al. (2009), investigated the role of informal financial groups in extending access of financial services Kenya using the 2006 financial access survey data. The results of the report indicate that about 68.3 percent of respondents who were members of welfare/clan groups reported the main reason for joining as to get financial aid in times of difficulties and 72.6 percent of the respondents who participated in investment clubs reported the need to pool resources together for investment purposes. The study was mainly descriptive despite stating use of logistic regression to analyze socio – economic, geographic and demographic attributes of users.

Mwangi and Ouma (2012) did a study on social capital and credit access in Kenya. Bivariate probit model was used to analyze the likelihood of an individual accessing informal credit. In the study, independent variables were demographic characteristics of an individual, individual earnings, social capital and distance from FFIs. The findings of the study indicate that social networks were beneficial to individuals in starting SMEs. Individuals joined IFIs for the purpose of networking besides obtaining cheap loans for their businesses. An increase in distance from FFIs, being in rural area, age increase and being married had a positive relationship with use of informal credit. The study did not establish whether there was welfare improvement after the SMEs were started.

Mohammed et al. (2014) investigated the socio – economic impact of informal financial sector in Nigeria. The study used a sample of 500 respondents in Northern – Central Nigeria and a logit model was employed to investigate whether there was a relationship between informal financial sector and SMEs, income and employment generation. The dependent variable in the study was the probability that informal financial sector promotes growth of SMEs, income and employment while the independent variables were education, loan repayment rate, guarantor, earning after loan, employment generation and SMEs development. The study results indicate that there was a positive correlation between use of informal financial services and improvement of welfare of people and that IFIs played a major role in poverty reduction.

Heyer and Kings (2015) did a study on the Kenyan Financial Transformation (2000 – 2015) using the FinAccess data for 2013 and observed that mobile money transfer enabled informal financial arrangements. Women and rural populations used mobile money on activities associated with informal financial sector. The study found out that failure to engage with and understand Kenya's deeply embedded informal financial landscape would hamper the capacity

of the formal financial sector to deliver real value in the lives of consumers. The study was descriptive.

METHODOLOGY

The study adopted non-experimental research design where cross – sectional primary data was obtained from a representative sample of the population of Machakos County.

Theoretical framework

To achieve the objective of the study on the effects of utilization of informal financial services (IFS) on welfare residents of Machakos County, it is assumed that an individual is faced with two financing alternatives: formal and informal. Individuals have a perception or attitude towards a particular financing option and that dictates utilization of the finance option. From the Utility maximization and Random utility maximization theories, an individual will use informal financial services if utility of informal financial services (U_A) is greater than utility of formal financial services (U_B) and will use formal financial services if U_B is greater than U_A. The theoretical framework for the study is based on McFadden's random utility model (RUM). An individual is faced with various financial alternatives to utilize to improve well-being and they include formal and informal choices to be made.

Using a utility function to represent both the formal and informal financial alternatives, the utility function can be captured as follows:

$$U = f(X, Z) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(1)}$$

Where: X represents observable individual characteristics. Z on the other hand represents unobservable individual characteristics. Model (1) can also be represented as:

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

i in this case 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 $U_A > U_B$.

Model specification

The estimation of the effects of utilization of informal financial services (IFS) on social economic status of residents is a two-staged estimation. The first estimation involves estimating utilization

of informal financial services and then using the Heckman estimation procedure to obtain the predicted values on the probability of using informal financial services to be used in the estimation of the effects of informal finance utilization.

Assuming there are two alternatives A and B that an individual faces and has to make a random choice. Further assuming that choice is determined by utility maximization and that if alternative A is preferred to alternative B, then the utility derived from B is smaller than utility derived from A. Taking that the error term is independent across alternatives, then A is chosen if:

$V_A(X_{iA}; \beta) + \varepsilon_{iA} > V_B(X_{iB}; \beta) + \varepsilon_{iB}$ …………………………………… (3)

Where; V_j is the deterministic component of the utility estimated; j = A, B and ε_i is the unknown utility and β represents the estimated coefficients of the explanatory variables.

Rearranging the equation (3) and bringing the all the like terms on the left hand side and letting the net known utility: $K(x_i; \beta) = V_A(X_{iA}; \beta) - V_B(X_{iB}; \beta)$ and net unknown utility: $\mu = \varepsilon_{iA} - \varepsilon_{iB}$; the equation reduces to:

$K(x_i; \beta) + \mu > 0$ ……………………………………………………… (4)

Equation (4) can be transformed further using a latent variable as follows:

$Y^* = K(x_i; \beta) + \mu$ …………………………………………………… (5)

Where; Y* is a latent variable which helps identify an individual i in choosing one alternative over the other using net utility, $K(x_i; \beta)$ is the observable functional index as a result of choosing alternative A or B, 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 = 1 ⌈ Individual uses informal finance service

      0 ⌊ Otherwise   ………………(6)

The dependent variable (Y) is a latent variable taking 1 when the attribute is present and 0 if the attribute is not there. Y is determined by social-economic characteristics and the perception of individuals and its utilization is maximized subject to budget constraint.

In stage one of estimation, equation (6) is modified to help estimate utilization of informal financial services (IFSUSE) which 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)…...(7)

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. Equation (7) can be expressed as a linear or non-linear model.

This can further be expressed as:

$$\text{IFSUSE} = \beta_0 + \beta_1 \text{GDR} + \beta_2 \text{AGE} + \beta_3 \text{ED} + \beta_4 \text{MAR} + B_5 \text{HH} + \beta_6 \text{RE} + \beta_7 \text{INC} + \beta 8 \text{OCP} +$$
$$\beta_9 \text{DST} + \beta_{10} \text{FAVL} + \beta_{11} \text{PERCFS} + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(8)$$

To capture how each of the variables in equation (8) influences the choice of using informal financial services, a logistic model was estimated and marginal effects obtained

In stage two of estimation, predicted values (PRED) of equation (8) are obtained using the Heckman estimation procedure and used to estimate the effects of utilization of informal financial services. Theoretically, use of financial services on capital expenditure items improves the standards of living of an individual. Empirical literature in this study has identified various explanatory variables that contribute to improvement of standards of living arising from use of financial services. Measurement of wellbeing is complex and in this study perception of improvement of wellbeing as a result of using informal financial services was investigated. Thus perception that wellbeing had improved was expressed as a function of gender, age, education, household size, amount of credit from FFI and IFIs, income improvement, type of expenditure, credit facility availability from FFIs and perceptions of residents on the benefits of financial services. This can be expressed as;

PERCINDV = F (GDR, AGE, ED, HHS, CRTFFI, CRTIFI, INCIMP,FAVL, TYPEXP, GENPERC)……………………………………………………….…… (9)

Where: PERCINDV is the perception of an individual that informal financial services have improved wellbeing, GDR is the gender of the individual, AGE is the age of the individual, ED is education level of the individual, HHS is the size of the household, CRTFFI is the amount of a loan an individual gets from formal financial institutions, CRTIFI is the amount of a loan an individual gets from informal financial institutions, INCIMP is the income improvement, FAVL is credit availability from a FFIs, TYPEXP is the type of expenditure for which the loan from

informal financial services was utilized on which include capital items, school fees, medical and consumption and GENPERC is the general perception of residents on usefulness informal financial services.

A linear model with the predicted values can be expressed as;

PERCINDV = β_0 + β_1GDR + β_2AGE+β_3ED + β_4MAR+ β_5HHS + β_6CRTFFI + β_7CRTIFI + B_8INCIMP + β_9FAVL + β_{10}TYPEXP + β_{11}GENPERC + β_{12}PRED + ε_i....(10)

Where: PERCINDV is a dummy variable representing whether individual's wellbeing has improved as a result of using IFS or not. PRED is the predicted values for IFS utilization. It is expected that a high probability of informal financial services utilization on capital items is associated with high living standards while low probability of utilization of informal financial services on recurrent items is associated with low living standards. In this case logistic regression was used to estimate equation (10). Heckman estimation procedure was employed to filter out those who have used IFS.

ANALYSIS AND FINDINGS

Summary Statistics of the Study

The study had six continuous variables namely age, household size, income of the respondent, distance from the respondent's home to a FFI, amount of loan (credit) obtained by the respondent from FFIs and amount of loan (credit) obtained by the respondent from IFIs for the last one year while the remaining 12 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
Income (INC) in Ksh.	374	18676.47	8926.25	0	30,000
Distance (DST) in Km	374	19.24866	12.81937	0.5	62
Credit from FFIs (CRTFFI) in Ksh	104	119,500	227541.1	2000	2000000
Credit from IFIs (CRTIFI) in Ksh.	195	40,019.5	71972.5	1000	672000

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. Summary statistics for the income showing details of percentiles are presented in the appendix. The average amount of loan obtained from FFIs was Ksh. 119,500 while loan from IFIs amounted to Ksh. 40,019.50.

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
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
Perception of the individual (PERCINDV)	Beneficial	292	78.07
	Not beneficial	82	21.93
General Perception (GENPERC)	Beneficial	304	81.28
	Not beneficial	70	18.72
Type of Expenditure (TYPEXP)	Started Business	132	35.29
	Built House	44	11.76
	Paid school fees	41	10.96
	Paid for emergency	16	4.28
	Bought food/ clothes	12	3.21
	Other	129	34.49
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

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 a diploma or certificate as qualification.

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 concurs 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 concurs with findings of Bett (2013) and FinAccess (2013) who observed that informal financial sector was larger than formal financial sector.

In terms of general perception of the residents, there was a greater concurrence with 81.28 percent of the responds feeling that IFS were beneficial to the society. Respondents who reported not using IFS also felt that the services were important.

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 are in tandem 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 the Effects of Utilization of Informal Financial Services on the Welfare of the Residents of Machakos County

The objective of the study was to determine the effects of utilization of informal financial services on the socio- economic status of residents. The dependent variable was perception of an individual on the usefulness of IFS (PERCINV). Heckman estimation procedure was used to obtain results on the effects of utilizing IFS on welfare. A logistic regression analysis was carried out on equation (10) and its marginal effects generated and represented in table 3. Overall the model explained 48.79 percent of the variations in the probability of effects of IFS utilization of socio – economic status of residents of Machakos County.

Table 3: Logistic regression results on effects of utilization of IFS on the welfare of the residents

Variable Name	Coefficient	Marginal effects (dy/dx)	z	P> |z|
Gender (GDR)	0.3755573 (0.4262905)	0.0161261	0.85	0.396
Age (AGE)	-0.0227097 (0.0166893)	-0.000981	-1.23	0.220
Education level (ED)	0.3579594 (0.2362439)	0.0154625	1.38	0.168
Household size (HHS)	-0.0574774 (0.0956106)	-0.0024828	-0.59	0.554
Credit from FFIs (CRTFFI)	-0.0005879 0.0019803	-0.0000254	-0.30	0.766
Credit from IFIs (CRTIFI)	0.0136947 (0.0053974)	0.0005916***	3.44	0.001
Type of Expenditure (TYPEXP)	0.051106 (0.1575935)	0.0022076	0.33	0.744
Facility Availability (FAVL)	2.34714 (0.8115542)	0.0791873**	2.14	0.033
Income Improvement (INCIMP)	2.176203 (0.654369)	0.139734**	1.96	0.050
General Perception (GENPERC)	1.749129 (0.3988661)	0.1311881**	2.14	0.032
Predicted Values (PRED)	6.311907 (1.779958)	0.2726509**	2.25	0.025

Number of obs = 364	LR chi^2(11) = 179.34
Prob > chi2 = 0.0000	Pseudo R2 = 48.79%

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

The regression results presented in table 3 show that there were five statistically significant coefficients in the regression equation. The amount of credit from IFIs (CRTIFI) was transformed by taking the square root of the credit from IFIs. The results indicate a positive

relationship between the amount of credit from IFIs and perception of individual on socio – economic welfare. An increase in credit facility from IFIs by Ksh. 10,000 was likely to improve the perception of individual on socio – economic welfare by 5.92 percent. The coefficient was statistically significant at one percent level. Ghazala (2006), acknowledged that there were positive effects on the use of IFS on the welfare of people as loans acquired by individuals were used on assets that improved their living standards. This fact was also collaborated by Abanyam, et al (2013), who observed that IFS were instrumental in reducing poverty through their credit facilities.

The predicted values on probability of an individual's use of informal financial services and the perception of individual on socio – economic welfare were positively related. A unit increase in the probability of an individual using informal financial service would improve the perception of individual on socio – economic welfare of an individual by 27.27 percentage points. The coefficient for the predicted values was statistically significant at five percent confidence level indicating that use of informal financial services improved welfare. This finding is consistent with study by Mungiru and Njeru (2015) which found out that self-help group finance sources were a viable funding strategy for sustainable Micro - Enterprises which offered great assistance in smoothening business financial cycles as well facilitating cash flow management and improvement of welfare.

There is a positive relationship between general perception of residents on the usefulness of IFS and perception of individual on socio – economic welfare. A unit increase in the general perception of residents on the usefulness of IFS increased the perception of an individual on socio – economic welfare of residents by 13.12 percentage points. Decrease in perception of the general public decreased the perception of an individual on socio – economic welfare of the residents by 13.12 percentage points holding all factors constant. The coefficient was statistically significant at five percent level indicating that there was a general agreement that use of informal financial services improved welfare of residents of Machakos County. Majority of respondents reported that they started business using the funds which led to increased income. These findings concur with the results of Mohamed et al (2013) who observed that there was positive and significant relationship between earnings after loan, SMEs development, employment generation and informal financial sector in some selected North Central states in Nigeria.

Availability of credit services (FAVL) from FFIs and perception of an individual on socio – economic welfare had a positive relationship. Increase in credit facilities from FFIs by one unit was likely to increase perception of an individual on socio – economic welfare as a result of utilization of IFS by 7.92 percentage points. Decrease in the credit facilities was likely to reduce

perception of an individual on socio – economic welfare of residents by 7.92 percentage points. The coefficient was statistically significant at five percent level. This shows that availability of credit facility from FFIs had influence on perception of an individual on socio – economic status in utilizing IFIs. This may be attributed to the fact that some FFIs advanced credit to informal groups and *chamas* which in turn advance the funds to their members who use them for income generating activities. This is consistent with observations of Mbuthia (2011) that when offering micro-credit, most microfinance organizations use the group based lending method, which requires an individual to be attached to an organized saving group. Given that some FFIs in Kenya also offer microfinance services, this can explain the positive effect of credit availability in FFIs on savings in IFIs.

Income improvement as a result of investing funds from IFIs and perception of an individual on socio – economic welfare had a positive relationship. Income improvement as a result of utilization of IFS increased perception of an individual on socio – economic welfare by 13.97 percentage points. Income improvement was statistically significant at five percent level. This is consistent with Zaman's (1999) findings that loans provided by the ROSCA increased people's income and accumulation of assets. Funds from the IFS improved economic conditions of subsistence rural farmers through easy availability of finance for adequate storage facilities and cushioned their farm produce from seasonal price fluctuations. This assisted the farmers to store their produce until prices were reasonable enabling them to reap the reward of high profits thus increased income and welfare.

CONCLUSION

The main objective of the study was to establish the effects of utilization of informal financial services on the socio – economic status of residents of Machakos County. The study draws the conclusion that utilization of informal financial services plays a vital role in the society in improving the socio - economic status of the individuals. The amount of credit from IFIs and FFIs, Availability of credit services had a positive relationship with perception of individual on socio – economic welfare.

POLICY IMPLICATIONS

Utilization of informal financial services improves welfare of individuals and society as a whole. There is large proportion of the population using informal financial services and therefore the government and formal financial services need to understand informal financial services landscape in order to take advantage of their popularity. The government need to enact legislation aimed at linking informal financial services to formal financial sector while maintaining

their uniqueness. In addition, the government needs to encourage formal financial institutions to offer financial services to informal financial institutions through incentives such as tax holidays and development of policies that support to formal financial institutions to devote part of their capital to serve informal financial institutions. This will ensure funds from IFS are available to FFS and also funds from FFS and available to IFS. Linkage of FFS and IFS should be done in the context and environment that is almost similar to the one found in the informal financial services set up. This includes streamlining lending procedures and requirements as well as being flexible in the hours of operations. In addition, formal financial institutions should train and sensitize their staff to the financial, socio and cultural needs and expectations of the informal financial services clients.

There is an age lag in the utilization of financial services whereby individuals realize the importance of using the services as they grow older. There is need to increase awareness on the importance of financial services utilization at early ages. This can be through introduction of benefits of utilization of financial services in the early ages of education of an individual. The government can consider introducing in the education curriculum aspects of financial services and their effects at early ages.

LIMITATIONS AND FURTHER RESEARCH

One of the limitations of the study was poor roads network and unreliable means of transport. This resulted in increased cost of data collection. Secondly, there were challenges in obtaining records on the amount of loans borrowed in the last one year as well as how much income one earned. Information on expenditure was scanty thus the study resulted in using perception to measure improvement of well-being. There is need of other methods of approximating improvement of welfare as a result of informal financial services utilization such as use of expenditure approach.

REFERENCES

Abanyam, et al. (2013).The effects of informal financial institution on the socio – economic development of Adikpo town. University of Mkar. Nigeria.

Bett, (2013).Determinants of Informal Finance Use in Kenya. Kenya Institute for Public Policy (KIPPRA). Nairobi. ISBN 9966 058 20 1.

Dagnelie, O and LeMay – Boucher, P (2008).Rosca participation in Benin: a commitment issue. University of Namu; Edinburgh (UK)

Ghazala, M (2006). Rural, Informal and Micro-Finance: Sustainable Rural and Urban Development: http//go.worldbank,org./B8COGHMQXL

Gugerty, M. K. (2007). You Can't Save Alone: Commitment and Rotating savings and Credit Associations in Kenya, Economic Development and Cultural Change. pp. 251-282.

Heyer, A. and Kings, M. (eds). (2015). Kenya's financial transformation in the 21st century. Nairobi, Kenya: FSD Kenya.

Horowitz, J. L., (1994). Advances in random utility models; A report of the workshop on advances in random utility models; Duke invitational symposium on choice modeling behaviour.

Johnson, S., Malkamaki, M. and Nino – Zarazua. (2009). The role of informal financial groups in extending access in Kenya: FSD Kenya. Nairobi

Kibuuka, L.E. (2006). Informal finance for the middle and high income individuals in South Africa: A Case study of high budget "Stokvels"in Pretoria. Pretoria: University of Pretoria.

Klonner, S. (2003).Rotating Savings and Credit Associations with Risk Averse Participants, International Economic Review, 44(3): 979-1005.

Koech, H. H. (2012).The role of informal credit schemes in mobilizing funds for micro-enterprises in Kenya: Kenyatta University. Nairobi.

Lewis, R. J., Villasenor, J.D., and West, D. M. (2017). The 2017 Brookings Financial and Digital Inclusion Report: Building a secure and inclusive global financial ecosystem. Washington D.C.

Marshak, J. (1960). Binary choice constraints on random utility indicators; in Stanford symposium math methods, social science (K. Arrow. Ed). Stanford University Press: Stanford California.

Mbuthia, A. (2012). Households' Savings Decisions in Kenya. Kenyatta University. Nairobi.

McFadden, D. (1975). Independence, structure and simultaneity in transportation demand analysis: Working paper on urban travel demand forecasting project. Institute of transportation studies: University of California, Berkely.

Mckinon, R. I. (1973).Money and Capital in Economic Development. Washington D.C: Brookings Institutions.

Mohammed, Y. et al, (2014). Social – Economic Impact of Informal Financial Sector and Inclusive Growth: Empirical Evidence in North Central – Nigeria. Abuja: Red fame publishing.

Mungiru, J. and Njeru, A. (2015).Effects of Informal Finance on the Performance of Small and Medium Enterprises in Kiambu County. Jomo Kenyatta University of Agriculture and Technology (JKUAT). Nairobi.

Mwangi, W.I. & Ouma, S.A. (2012). Social Capital and Access to Credit in Kenya. American Journal of Social and Management Sciences, Vol. 3 (1), ISSN Online: 2151-1559,

Republic of Kenya. (2010). Bank Supervision Annual report, 2017: Central Bank of Kenya. Nairobi: Government Printer.

Republic of Kenya.(2013). Statistical Abstract. Nairobi: Government Printer.

Republic of Kenya. (2013). FinAccess National Survey 2013: Profiling developments in financial access and usage in Kenya.Financial Sector Deepening FSD. Nairobi: Government Printer.

Wawire, N., and Nafukho, F. (2010).Factors Affecting the Management of Women Groups" Micro and Small Enterprises in Kakamega District, Kenya. Journal of European Industrial Training, 34(2).

Zaman, H.(1999). Assessing the Impact of Micro-credit on Poverty and Vulnerability in Bangladesh. World Bank Policy Research Working Paper No. 2145.

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 effects of utilization of IFS on socio – economic status

logit PERCINDV GDR AGE ED HHS sqrCRTFFI sqrCRTIFI TYPEXP INCIMP FAVL GENPERC PRED

Logistic regression		Number of obs	=	364
LR chi2(11) = 179.34		Prob > chi2	=	0.0000
Log likelihood = -94.127328		Pseudo R2	=	0.4879

PERCINDV	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
GDR	.3755573	.4262905	0.88	0.378	-.4599568	1.211071
AGE	-.0227097	.0166893	-1.36	0.174	-.0554202	.0100008
ED	.3579594	.2362439	1.52	0.130	-.10507	.8209889
HHS	-.0574774	.0956106	-0.60	0.548	-.2448706	.1299159
sqrCRTIFI	.0136947	.0053974	2.54	0.011	.003116	.0242734
sqrCRTFFI	-.0005879	.0019803	-0.30	0.767	-.0044692	.0032934
TYPEXP	.051106	.1575935	0.32	0.746	-.2577715	.3599835
INCIMP	2.176203	.654369	3.33	0.001	.8936638	3.458743
FAVL	2.34714	.8115542	2.89	0.004	.7565234	3.937757
GENPERC	1.749129	.3988661	4.39	0.000	.9673655	2.530892
PRED	6.311907	1.779958	3.55	0.000	2.823254	9.80056
_cons	-5.575161	2.071538	-2.69	0.007	-9.635302	-1.515021

Marginal effects after logit

y = Pr(PERCINDV) (predict)

   = .95475678

variable		dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
GDR*	|	.0161261	.01901	0.85	0.396	-.021129	.053381	.46978
AGE	|	-.000981	.0008	-1.23	0.220	-.002549	.000587	39.4945
ED	|	.0154625	.01123	1.38	0.168	-.006538	.037463	3.28846
HHS	|	-.0024828	.0042	-0.59	0.554	-.010714	.005748	5.04121
sqrC~IFI	|	.0005916	.00017	3.44	0.001	.000255	.000929	91.1013
sqrC~FFI	|	-.0000254	.00009	-0.30	0.766	-.000193	.000142	82.7173
TYPEXP	|	.0022076	.00676	0.33	0.744	-.011045	.01546	3.26374
INCIMP*	|	.139734	.07125	1.96	0.050	.00009	.279378	.642857
FAVL*	|	.0791873	.03704	2.14	0.033	.006583	.151792	.304945
GENPERC*	|	.1311881	.06126	2.14	0.032	.011123	.251253	.813187
PRED	|	.2726509	.12134	2.25	0.025	.034823	.510478	.563187

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