



**EFFECT OF ROSCA MICRO-SAVINGS ON THE WELFARE OF *BODA-BODA* MEMBERS IN EMBAKASI SUB-COUNTY**

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**ABSTRACT**

*This study investigated the effect of ROSCA Micro-Savings on the welfare of Boda-Boda members in Embakasi Sub-County. The study was guided by Grameen Bank Lending Model. Cross-sectional research design was used in this study. The target population comprised of boda-boda ROSCA members with an accessible population of 653. Samples of 248 respondents were drawn from the study population using stratified random sampling technique. The study used structured questionnaires for data collection. A pilot study was conducted before the main study to determine the reliability and validity of the questionnaire. Validity of the questionnaire was determined through content validity test, while reliability was tested using the Cronbach alpha coefficient. Data processing and analysis was facilitated by the Statistical Package for Social Sciences version 23. It encompassed both descriptive and inferential statistics. Descriptive statistics such as means, standard deviations and variance were used. Inferential statistics was in form of Pearson's correlation coefficient. Data was presented in form of frequency tables. The study found that micro-saving services has a significant positive relationship with welfare of members. The study indicated that affordability and convenience of micro-saving services had increased income levels and increased expenditure on health and education. From the study findings, the researcher recommended that the government should enact policies that would increase participation in informal financial institutions through scaling up financial literacy programmes, and extending informal financial institutions outreach to people with low-incomes. Finally, policy should address training programs to ensure they are more appropriate to the clients' needs, and should be conducted regularly by qualified institutions/personnel.*

**Key Words:** Effect, Welfare, Micro-savings, Boda-Boda

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## INTRODUCTION

In many developing countries, credit shortage has been the subject of debate in the economic development literature (Fadiga & Fadiga, 2003). The deterioration of many economies in Sub-Saharan Africa over time has severely affected formal financial institutions (FFI). These institutions function through the direct involvement of the government, including; central banks, commercial banks, saving banks, mortgage banks and insurance companies. It has been contended that the conventional financial sector will advance savings and investment, extend opportunities for credit and alleviate poverty. Instead, what has been observed is that these institutions have seriously come short of the projection, as they have made things even harder for people with low-incomes. According to Huye (2002), formal financial institutions such as banks and MFIs, do not mostly serve people with low-income. They are less accessible to these groups of people because they cannot afford the physical collateral attached. Additionally, they do not recognize the importance of household savings as they require some literacy and credit history (Fadiga & Fadiga, 2003). The financial exclusion experienced has been greatly ascribed to poverty. Thus, the poor are considered risky clients by conventional banks mainly because they neither have financial collateral to present to banks as security nor credit history or certain income sources (Rutherford, 2000). This results in majority being unable to access funds in order to meet their financial needs.

For any given economy to achieve economic growth, it is vital that there are enough savings and investments that can foster such growth. Therefore, the access to financial services for the majority of the people should be of main interest to any government pursuing faster economic growth (Hanna, 2012). According to Adebajo (2010), income generation enhances economic sustainability and alleviates poverty levels in a society, since increased income captivates development. Increasing the rate of economic

growth depends heavily upon an efficient financial market that ensures financial resources required for investment, i.e. both mobilized and channelled, meet the demand (Yaron, 1994). It is for this reason that many financial institutions have cropped up to provide avenues for savings and provision of credit. Individuals and groups have developed their own informal mechanisms by forming local associations and groups that are self-initiated, self-managed, and unregistered, so as to meet their demand for financial services and essentially improve their livelihood and/or living conditions. The establishment of the informal financial institutions was to enable buffer the consequences of the formal financial institutions on the socio-economic wellbeing of people. These institutions are a creation of the local people aiming at making credit facilities more accessible to the people in order to help solve their socio-economic problems (Gulong, 2012).

In Sub-Saharan Africa (SSA), the informal finance system is thought to mediate a significant number of financial transactions (of both deposits and loans). Further, it has been documented that in general, informal loan repayments remain high compared to formal ones, mainly because of the personal nature of the finance and credit transactions which are largely conducted on the basis of the trust and intimate knowledge of customers (Von-Pischke, 1992; Kashuliza, 1993; Bagachwa, 1995). There is a wide range of informal finance and credit arrangements in SSA countries, ranging from transactions which are largely social and personal, to those which are partially commercial and impersonal; credits between friends and relatives, money lenders, shop owners and traders and the now prevalent group of rotating savings and credit associations (ROSCAs).

There is evidence of extensive and increasing use of informal sector financial group mechanisms in Kenya (Johnson, 2002). Apart from saving at home, ROSCAs are maybe the most dominant and popular forms of informal saving institution in the world (Arderner, 1996). ROSCAs are popular among the

poor and in fluctuating economic conditions, but they also thrive in some relatively affluent economic strata (Ardener, 1996). Rotating savings and credit associations are among the oldest and most prevalent savings institutions found in the world and play an important role in savings mobilization in many developing economies (Gugerty, 2003). They have their roots in the traditional mutual guarantee system. ROSCAs are especially popular in East Africa (Rutherford, 1999). However, the actual number of ROSCAs in Kenya is not known, (Kibaara, 2006). ROSCAs are ideal systems for disciplined saving towards a specific goal, particularly if the goal is cyclical or recurrent. However, the cyclical nature of ROSCAs tend to make them poorly equipped to respond to the need to store money for the short term, the need to build up larger sums of money, the need to meet unpredicted emergency needs and changes in ability of the members to save (either due to reduced capital due to issues or an increased ability due to a windfall). A study by Siwan et al. (2003) in Kenya, shows that ROSCA's face two major challenges; irregularity in contributing and the element of negotiability that these systems allow which enables powerful individuals to manipulate the groups to their personal advantage. Also, a few powerful community members take advantage of the weak systems; by quickly setting up a group, collecting funds from other members, taking big loans for themselves and defaulting to pay.

### **Statement of the Problem**

Chapter IV Section 55 of the new constitution promulgated in 2010 stresses affirmative action programs to ensure that youths have access to relevant advocacy and training. It also emphasizes that youths should have opportunities to associate, be represented and participate in economic, social, political and other spheres of life. Moreover, the bill stresses that the state shall take action to ensure that the youth have access to employment. This new dispensation created a favorable condition for microfinance institutions and the government to roll out credit facilities towards youth

empowerment. In this spirit, the government zero-rated taxes on the motorcycles hence boosting the *boda-boda* business.

Majority of the operators of motorcycle taxi business (*boda-bodas*) hail from poor Kenyan population (Starkey, 2016). The fast-growing sector has brought about multiple political, social and economic interests and conflicts. To this effect, the Kenyan government urged operators to form SACCOs in order to bring back sanity in the sector, to foster economic growth of the members. However, SACCOs brought about challenges in management, and this forced operators to form ROSCAs which were very informal hence easy to run. According to Motorcycles Assemblers Association of Kenya (MAAK, 2015), *boda-boda* business pumps 200 million into the economy daily, thus points to a proper economic activity that has the opportunity of improving the welfare of many youths in Kenya. However, many of the individuals in the enterprise seem not to be reaping the benefits as much because of challenges they face in accessing finance. Fatoki and Odeyemi (2010) studies have shown that demographic factors such as; size, ownership type, age and sector influence the access to finance.

Studies conducted in Kenya have largely focused on motorcycle taxi operators in towns, for instance, Mbugua (2011) in Thika town, Chepchieng' (2011) in Kitui, Kayi (2007) in Nairobi city, Nyachieo (2013) in Kitengela township, Alando and Scheiner (2016) in Kisumu town and Nyachieo (2015) in Kisumu town, with many focusing on economic growth and employment opportunities. However, analysis of how benefits from *boda-boda* business is influencing the wellbeing of the operators still persists as a knowledge gap. Moreover, research shows that ROSCAs are a preferred method of saving by Kenyans, yet majority of these institutions are not registered. This implies that the affairs of the associations are not monitored by external parties. The research will thus show the effect *boda-boda* ROSCAs have on the welfare of members in Embakasi sub-county.

## Study Objective

The objective under study was to investigate the effect of ROSCA micro-savings on the welfare of *Boda-Boda* members in Embakasi sub-county.

## LITERATURE REVIEW

### Grameen Bank Lending Model

Microfinance fills the gap between supply and demand for credit access by poor people. It is a wide range of financial services that an institution can offer beyond credit, such as; marketing, training, insurance programs, saving advice, legal support, health, education, etc. The Grameen bank lending model has proven to be the most successful model discussed around the world. According to Professor Yunus, credit is seen as an advanced tool that will be consequential in eradicating inequalities that trap the poor in a poverty cycle and for releasing the inherent capacities in people. Thus, it reinstates social power to some extent, which has been denied to the poor because they lack collateral. Grameen-credit is based on the premise that the poor have skills that remain 'unused or under-utilized' (Yunus, 2004b), and the speculation that it is societal institutions and policies that create poverty.

However, microfinance institutions frequently operate in an environment with no possibility of collateral and imperfect information about borrowers' riskiness. Considering the underinvestment problem in credit markets highlighted by Stiglitz and Weiss (1981), the past literature on microfinance demonstrates how this tool can overcome asymmetric information between lenders and borrowers which represents the main cause of adverse selection in the credit market. Ghatak (1999), Van Tassel (1999), Armendariz de Aghion and Gollier (2000) analyze how microfinance can mitigate asymmetric information in order to overcome the adverse selection problem. They highlight that microfinance brings back safe borrowers in the market, through

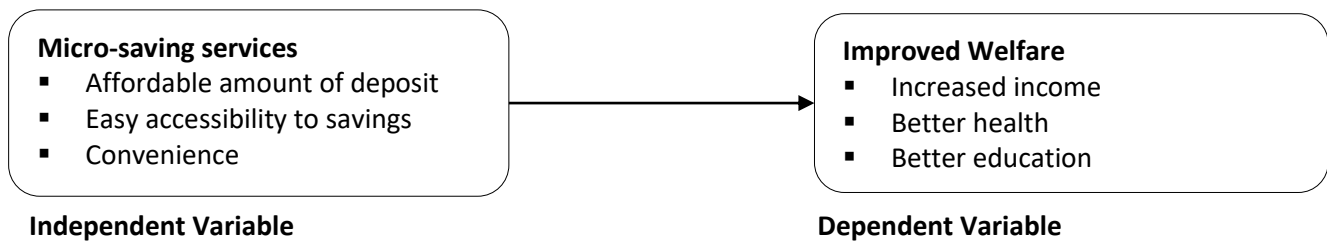
joint liability, which essentially means that each member puts pressure on the others to meet the loan repayment schedule. The group sanction helps to reduce defaults among members since all members of the group are liable for default.

Yunus argues that the key to microfinance was to design loan products that meet needs of the poor. This, he explained saying that the poor will more likely utilize the funds for income generating activities and lift themselves also out of poverty. When Grameen Bank claims to have 'revolutionized' banking, easily the most important aspect of that 'revolution' is giving credit without demanding collateral. By effectively eliminating collateral requirements, it has developed a banking system based on mutual trust, accountability, participation and creativity (Nyakambi, 2014).

Grameen Bank embraces a group-lending methodology in order to create peer pressure that substitutes for collateral. Collaterals are normally pledged as a means of separating good risks from bad risks. In the case of low-income or poor borrowers who have no collateral to offer, group lending is an effective substitute to separate good borrowers from bad borrowers in that it deals with adverse selection and brings similar types of groups together. The Grameen Bank lending model is used to explain the basic concept under which informal financial institutions such as ROSCAs operate on, in order to ensure access to financial resources by people with low incomes.

As regards this study, the researcher found this theory useful in explaining the idea behind ROSCAs which is self-support for the very poorest by means of accessing loans under favorable terms. The theory explained how ROSCAs help create both social and financial preconditions that enable the poor to access finance based on group performance. The model also showcased how ROSCAs provide social development inputs to the poor so as to make them individually and socially accountable.

## Conceptual Framework



**Fig 1: Conceptual Framework**

### Empirical 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 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.

Koehn (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.

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.

Ouma and Ogaga (2015) analyzed the effects that micro-credit facilities and institutions have on household welfare in Suna East Sub-County. The focus of the study was on the beneficiaries who were given loans by five selected microfinance institutions. A sample size of 306 households was obtained for the study by using Morgans' table, 1970. Questionnaires were used for data collection from the respondents. The association between the variables was ascertained using multiple regression analysis. The findings confirmed that micro-credit plays a role in positively improving the overall living standards of the respondents through improved income, diet patterns, health and education. The recommendation of the study was that emphasis should be placed on the significance of micro credit services on improving household welfare and that the credit availability and accessibility should be increased.

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.

Sandsor (2010) argues that meeting to socialize is, clearly, another example of the social role that a ROSCA can play. The social gain from joining a ROSCA need not only be friendship. ROSCAs can contribute to members' reputation and network, as well as being a source of information and help beyond the economic help that ROSCAs provide. The obligation on members of a ROSCA to meet to pay their contribution may provide justification, structure and discipline to their social gatherings. But because the social element is elaborated, and because its expense may even account for a significant part of the funds collected, we should not overlook the fact that socializing may have a cost-effective benefit. Ardener, (1995) argues that members may receive considerable economic returns apart from ROSCA cash. From other members they may get valuable information on a wide range of topics, advice on many issues or unpaid labor, and so forth.

## **METHODOLOGY**

This study adopted a cross-sectional research design. The study employed a quantitative approach. The design is a type of descriptive study that analyzes data at a specific point in time, in order to determine the relationship between variables. The study targeted 653 members from the 66 registered ROSCAs in the area of study. These respondents were selected through stratified random sampling technique. Here, a sample size of 248 respondents were selected by applying the Yamani Taro (1997) mathematical formula. A structured questionnaire was used as the data collection tool. The questionnaire consisted of both open and closed-ended questions and was divided into the main parts of investigation/objectives except the first part which captured demographic characteristics of the respondents. Collected data was cleaned, coded and then analyzed by both descriptive and inferential statistics using the Statistical Package for Social Sciences (SPSS) version 23. Findings were presented in frequency tables, pie charts and bar graphs.

## **FINDINGS**

### **Effect of Micro-Savings on the welfare of *Boda-Boda* members**

This section focuses on the descriptive statistics, factor analysis and inferential statistics which encompasses correlation and multiple regression analysis for micro-saving services. The findings are highlighted in the subsequent sub-sections.

### **Descriptive Statistics on Micro-saving**

The researcher sought to establish the respondents' level of agreement/disagreement with various statements in regard to the effect of ROSCA Micro-Savings on the welfare of *Boda-Boda* members.

**Table 1: Micro-Saving Services on the Welfare of members**

Variable	Mean	Std. Deviation
The initial deposit requirements are affordable to members	3.65	0.54
The size of monthly deposits is affordable to members	3.96	0.43
Small regular deposits lead to capital accumulation for future investments	3.86	0.49
It is easy to make contributions	4.07	0.36
Saving withdrawal procedures are easy	3.90	0.45
Easy access to savings helps members deal with emergencies	3.89	0.47
There is no extra fees charged on saving services	3.42	0.57
Savings are made in small regular deposits	4.11	0.32
Close proximity to ROSCA makes saving easier	4.00	0.39

**Key Mean: Strongly Disagree=1.00-1.79; Disagree=1.80-2.59; Neutral=2.60-3.39; Agree=3.40-4.19; Strongly Agree=4.20-5.00**

Results in Table 1 revealed that the respondents agreed that the deposit requirements were affordable as well as the size the size of monthly contributions. The study further established that respondents found it easy to make contributions because of the close proximity. The respondents also reported that there were no extra charges levied on the saving services. The results concurred with findings from a study conducted in Papua Guinea and India by Sukhdeve (2008) who found that the use of micro-saving services was more prevalent in low-income households because of easier access and convenience. Furthermore, the

findings agreed with Brau and Woller (2004) who argued that informal financial institutions are easily approachable with friendly services to business start-ups and people with low-incomes, even though they suffer from financial instability in the long run.

#### Factor Analysis for Micro-saving Services

Factor analysis seeks to reduce the items of Likert scale into few components which retains most of the information in the whole data set. The study adopts Principal Component Analysis (PCA) to carry out factor analysis process. The findings of the analysis are as highlighted in Table 2 below.

**Table 2: Rotated Component Matrix for Micro-Saving services**

	Component		
	Affordable Deposit	Easy access	Convenience
The size of monthly deposits is affordable to members	<b>.876</b>	.000	.037
The initial deposit requirements are affordable to members	<b>.782</b>	.143	-.054
Small regular deposits lead to capital accumulation for future investments	<b>.777</b>	.157	.015
Easy access to savings helps members deal with emergencies	.157	<b>.918</b>	-.036
Saving withdrawal procedures are easy	.252	<b>.903</b>	-.007
It is easy to make contributions	.042	<b>.673</b>	.218
Savings are made in small regular deposits	.059	-.015	<b>.885</b>
Close proximity to ROSCA makes saving easier	.060	-.039	<b>.826</b>
There is no extra fees charged on saving services	-.006	.306	<b>.817</b>

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.



Results in Table 2 showed that, all nine items predicted to have an effect on micro-saving services, loaded highly on the three variables; affordable deposit, easy access and convenience. This implied that deposit, access and convenience are valid indicators for micro-saving services as was predicted in the conceptual framework for the study. The findings were consistent with Gardial (2004) who argue that savings is a critical service for entrepreneurs who want secure and convenient deposit services that allow for small transactions

and offer easy access to their funds. ROSCAs offer minimum entry requirements and hence, attract membership from low-income groups and thus, enable customers to save small quantities of money and not be charged for the service.

### Descriptive Statistics on Micro-saving Services Components

This section focuses on the descriptive statistics for each component extracted in factor analysis as presented in Table 3.

**Table 3: Descriptive Statistics on Micro-saving services Components**

	Mean	Std. Deviation	N
Affordable Deposit	3.95	.38	210
Easy Access	3.82	.46	210
Convenience	3.84	.43	210

**Key Mean: Strongly Disagree=1.00-1.79; Disagree=1.80-2.59; Neutral=2.60-3.39; Agree=3.40-4.19; Strongly Agree=4.20-5.00**

Results in Table 3 indicated that majority of the respondents agreed on all the statements that relate to their opinion on micro-saving services in their ROSCAs. For instance, the respondents reported with the highest mean score that the deposits required in their ROSCAs were affordable. Furthermore, majority of the respondents reported that close proximity made it convenient to make saving in their ROSCAs. These findings were in line with Nahamya, et al., (2013) whose study in Uganda underscored the major role micro finance service

delivery play on the growth of MSEs. The study found that the types and flexibility of the saving regime determine the success of many micro-finance institutions and their contribution to the members wellbeing.

### Correlation between Micro-Saving Services and Welfare of Members

Correlation analysis was conducted to establish the relationship between the independent variable and dependent variable.

**Table 4: Correlations between Micro-saving services and Welfare of members**

		Health	Education	Income	Affordable deposit	Easy access	Convenience
Health	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	210					
Education	Pearson Correlation	.071	1				
	Sig. (2-tailed)	.304					
	N	210	210				
Income	Pearson Correlation	-.047	.009	1			
	Sig. (2-tailed)	.500	.894				
	N	210	210	210			
Affordable deposit	Pearson Correlation	.119**	.184**	.198**	1		
	Sig. (2-tailed)	.016	.008	.035			
	N	210	210	210	210		
Easy access	Pearson Correlation	.129**	.168**	.142**	.326**	1	
	Sig. (2-tailed)	.028	.015	.017	.000		
	N	210	210	210	210	210	
Convenience	Pearson Correlation	.265**	.200**	.136**	.069	.001	1
	Sig. (2-tailed)	.019	.004	.049	.323	.985	
	N	210	210	210	210	210	210

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Results of the correlation analysis in Table 4 indicated a direct significant relationship between the independent variable indicators affordable deposit, easy access and convenience and the dependent variable indicators; income, health and education. Generally, these findings show that a relationship exists between micro-savings services and member’s welfare. The results are in agreement with Galor and Zeira (2012) who found that informal financial groups offer the intermediation function of the financial system, whereby members gaining better access to saving services enables them to pull themselves out of poverty by investing in human capital accumulation, thus improving aggregate welfare. Similarly, the

argument is supported by Morduch (2007) who argues that with savings, households can build up assets to use as collateral, smoothen seasonal consumption needs, self-insure against major shocks, and self-finance investments.

**Regression Analysis between Micro-Saving Services and Welfare of members**

The researcher conducted multiple regression analysis to establish the influence of micro-saving services represented by the indicators; convenience, access and deposit on welfare which is represented by indicators income, education and health. The findings are indicated in Table 5 below.

**Table 5: Regression Coefficients between Micro-saving services and Welfare of members**

Independent	Model 1			Model 2			Model 3		
	Beta	t	Sig.	Beta	t	Sig.	Beta	t	Sig.
(Constant)	4.608	3.731	.000	6.160	3.678	.000	5.918	3.058	.000
Affordable deposit	.306	1.471	.001	.193	1.460	.002	.250	1.795	.000
Easy access to savings	.180	1.223	.007	.140	1.055	.006	.146	1.094	.021
Convenience	.159	0.318	.014	.136	1.008	.019	.169	1.171	.004
<b>Dependent</b>	<b>Income</b>			<b>Health</b>			<b>Education</b>		
Adjusted R – squared	0.20			0.12			0.15		
Std. Error	0.30			0.40			0.33		
F – ratio (3, 209)	17.99			21.13			19.30		
Prob. > F	0.00			0.00			0.00		

Table 5 presented Ordinary Least Square (OLS) regression findings between micro-saving services and welfare of ROSCA members. The ANOVA (F-statistics) findings indicate that all the three models are statistically significant given their p-values which are less than 0.05. This implied that all three variables contribute to improved welfare. The study established that all three indicators for micro-saving services (affordable deposit, easy access to savings and convenience) had a direct significant relationship with welfare (income, education and health). These findings implied that belonging to ROSCA has a probability of enhancing a member's welfare through increase in income and better health. ROSCAs promote savings among the members which can be used to take care of family needs as well as investment to generate additional income for the family. As Levenson and Besley (1996) argues, the motives to save are increase in income, where ROSCA participation and ROSCA contributions increases household income. The findings were in agreement with sentiments from Galor and Zeira (2012) who found that informal financial groups offer the intermediation function of the financial system, whereby members gaining better access to saving services enables them to

pull themselves out of poverty by investing in human capital accumulation, thus improving aggregate welfare. The findings also conformed with the views of Rutherford (2000) who asserted that a small amount of savings in secure place provides resources to manage consumption needs, smooth irregular income, and cover expenditure of health and education.

### Hypothesis Testing

The study predicted a positive significant relationship between micro-saving services and welfare. A regression analysis using the OLS technique was used to assess if the relationship was statistically significant. The following null hypothesis was tested.

*H01: There exists no significant relationship between micro-saving services and the welfare of boda-boda ROSCA members.*

The results indicated that all indicators for micro-saving services had positive coefficients, implying a statistically positive relationship since the p value was less than the significance level (0.05). It was concluded that there exists a statistically significant relationship between micro-saving services and

welfare of members. Therefore, the null hypothesis was rejected and alternative hypothesis accepted.

### **Discussion**

The study established a positive and statistically significant relationship between affordable deposit and all welfare variables (income, health and education). The results implied that affordable deposits encourage members to save more. The savings in turn acts as a safety net for members and their households. Similarly, the study reports that easy access to savings affects member's income, health and education positively. Savings promotes investment which generates additional income for the members to improve their welfare through better education and health. In addition, the coefficient for convenience is positive and statistically significant for income, health and education. This implied that the processes involved in making contributions or savings are very convenient for members. Generally, these findings indicate that micro-saving services in the ROSCAs have a positive influence on member's welfare. These findings were consistent with Swain and Floro (2012) who argue that savings help micro borrowers to improve their welfare in terms of food security, better housing, education and health services. Furthermore, the findings are supported by Mwalughali (2013), whose study based in Malawi found increase in household income as a result of savings made in informal savings and credit groups.

### **CONCLUSIONS AND RECOMMENDATIONS**

The study findings showed that practically, like many financial institutions in the formal sector, ROSCAs provided participants with saving services necessary to smoothen their consumption cycles and take care of emergencies. ROSCA participants in this study were influenced into joining these informal groups because of affordability. It was observed that majority of the participants found it easy to make savings with their groups, and access money, in terms of withdrawal. In doing so, majority had managed to pay school fees for their children using ROSCA proceeds, and paid for medical expenses.

Factor analysis was performed to reduce the number of variables and relationships of extracted factors. They were then examined by means of correlation analysis. This was to enable summarizing of important information contained in the three variables based on their relative importance. Finally, F tests and regression analysis were carried out to examine the relationship between the hypothesis and the extracted factors. There was a correlation between constructs in the conceptual framework as measured by the instrument.

In this study, Principal Component Analysis (PCA) was used. Latent Root Criterion was used to determine the number of factors to be extracted and it was taken that only the factors having latent roots or eigen values greater than 1 were considered significant and selected. The exercise resulted in the extraction of three factors from the three variables as predicted in the conceptual framework. The inferential statistics revealed a weak positive relationship between the independent and dependent variables.

The hypothesis test established a statistically significant positive relationship between micro-savings and welfare of members. This implied that micro-savings are a vital intervention in ensuring welfare improvement among members of the informal financial institutions such as ROSCAs. The services are tailored in a way that makes it easier for members to utilize. For instance, affordable amounts of deposits and small regular savings that lead to capital accumulation for future investments, are just but a few of the features that made the service attractive to members of the groups. It was also noted that members felt that it was easy to access their savings, and this helped them to offset emergencies, household bills, etc.

Based on the conclusions above, the study recommended the following:

The government should invest more in informal financial institutions like ROSCAs in its welfare improvement programs. This is because, these

institutions possess the requisite ability to reach out to the poor who are the prime target for financial inclusion which will ultimately lead to improved welfare.

### **Suggestions for further study**

The study recommended the need to conduct a comparative study in other counties in Kenya, to

establish commonalities and differences that may exist, in order to shed more light on whether the effect of *boda-boda* ROSCAs on welfare of members is uniform across the country. This will help in policy formulation towards improving performance of *boda-boda* ROSCAs in Kenya.

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