Determinants of Investment at the Individual Level: Evidence from SACCOS in Mbeya District, Tanzania

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***Abstract*- Investment is the corner stone for economic growth and development. Poor countries experience a scant growth of their economy simply because of minute investment at the individual to national level. In these less developed economiesinvestment has been hampered by insufficient capital to support a viable business enterprise. External financing is required to reverse this trend. Experience shows that the provision of credit is the preeminent way to increase capital for investment. There have been several credit providers in developing countries namely, the formal, semiformal, and informal sources. While the formal and semiformal sources dominate in urban areas, the informal ones seem to dominate in rural areas. Many of the formal sources require credit to be secured by tangible assets. Unlike other credit lines like banks, credit from saving and credit cooperative (SACCOS) are issued without delay because credit worthiness can be established easily. These SACCOS normally operate within the premises of members and are well positioned to serve poor people both in urban and rural areas.This study was conducted to assess the determinants of investment at the individual level. Multistage and simple random sampling techniques were used to select the study area and respondents. The sample includes 239 SACCOS members and 241 non members. Data analysis employed both descriptive statistics and Ordinary least square regression methods. The study examines achievement differences in terms of the investment level achieved by SACCOS and non SACCOS members in order to determine the attributed factors to their success. The study provides sufficient evidence to support the proposition that acquisition of credit is important for investment at an individual level at P<0.001.**

Key Words: **Determinants, Investment, SACCOS, Credit, Tanzania.**

I. INTRODUCTION

1.1 Determinants of Investment

Investment is as an activity can be undertaken for the purposes of acquiring assets with expectation of earning more returns in the future. Several factors seems to affect the level of investment, these includes levels of returns, business expectations, market access and access to finance (Hardwick *et al.,* 1999).Other studies have shown that scheme of financing, housing value, social capital, demographic characteristics such as age, sex, education, household size and past experience play a significant role in determining investment opportunities (Michaelides *et al.,* 2005). Scheme of financing has been found to have a significant effect on determining the kind of investment an individual could attain (Qin and Ndiege, 2013; Magali, 2013; Petersen and Rajan, 1994 and Beck *et al.,* 2005).

These scholars argue that when access to finance is enhanced many investment opportunities which were once dormant become potentially accessible. The role of financial access in providing capital for investment purposes has been the central features of a modern financial system. Poor individuals just like poor countries need external financial support for immerse investment which can produce desired output for the wellbeing of the individual and the nation at large. This is because it is through worthy investment starting at household level to national level, an economy may experience growth.

II. LITERATURE REVIEW

2.1 The Life Cycle Theory Of Saving

The life cycle theory of saving begins with the assumption that consumption needs and income are uneven at a range of points in the life cycle. Younger people tend to have a consumption need that exceed their income, in the middle years individual spends less than its income, partly to repay earlier debts and partly to strengthen investments (Hardwick *et al*., 1999).Finally, in retirement, incomes gradually decline and individuals consume out of previously accumulated savings. They indexes a hump shaped like curve of saving and income generation.

2.2 Permanent Income Hypothesis

The permanent income theory considers consumption at the individual level (c_t) as a constant fraction $(k)$of the permanent income(y_t^p). The fraction of consumption to permanent income $[k(\emptyset)]$ is defined as an implicit function, which depends on the marginal cost of finance, individual preferences and the level of wealth, equation (1) depict the relationship.

$$c_t = k(\emptyset) \quad (1)$$

Consumption is direct related to income; The permanent income theory is regarded to be consistent with the argument

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of the life cycle theory of saving. From equation (1) we know that the level of investment depends on the benefit and cost of additional capital. The benefits associated with additional capital depend on the future marginal product of capitalMPk^f. The cost associated with additional capital is the real cost of using capital.

Then it follows that when $MPk^f > uc$ where uc is the cost associated with additional capital,a firm experience an increase in earnings when more capital is added;especially a point where marginal benefit is greater than marginal cost. A firm maximize return on investment when $MPk^f = uc$ (marginal product of capital is equal to the cost of using capital), so that any change in MPk^f will also bring a change in uc.

A rational investor as proclaimed by this neoclassical theory will keep on intensifying investment where the expected rate of return on the investment as additional units of investments are made, exceed the cost of capital. This hypothetical relationship was tested using the multivariate linear regression to identify the specific factors that affect the level of investment at individual levels using business return, market access, frequency of credit acquisition, demographic characteristics such as age, past experience, sex and education as explanatory variables.

III. METHODOLOGY

In assessing the determinants of investment at the individual level, a cross sectional design was used.The population included SACCOS members and non SACCOS members located in the same areas where sampled SACCOS are found. Multistage random sampling was used to select the study area, followed by purposive sampling and simple random sampling to select the respondents.The Collected information was analyzed using Statistical Package for Social Science (SPSS) and STATA. Empirical evidence was obtained basing on the hypothesis of the study.

3.1. Modeling the Determinants for Investment

Recalling the permanent income theory, where permanent consumption is proportional to permanent income, and which isthe fraction of consumption to permanent income $[k(\emptyset)]$ is an implicit function which is influenced by the cost of capital, individual preferences and taste (Parker, 2010).But individual preferences and taste also depends on demographic characteristics such as age, sex, household size as realized from the life cycle theory (which focus on variation in earning over a finite lifetime), the permanent income theory(which stress on the variation in income/wealth over an indefinite horizon) and the Keynesian theory of consumption (Parker, 2010).

This paper consider investment as the purchase of items of value with a specific utility which are not for current consumption but for generating future returns. The level of investment is thus the total monetary value of all goods and services for sale or delivery. In the light of the specified theories the level of investment is estimated linearly as illustrated below;

$$\boldsymbol{Y_{i,t}^{n}} \sum_{i}^{J} \boldsymbol{G_{nt}^{i,j}} \boldsymbol{P_{nt}^{i,j}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Where; G = type of goods and services for selling, P = the real price of goods and services, for individual (n), i ….j type of goods and services and t = time period, where $\boldsymbol{Y_{i,t}^{n}}$is the total capital invested in the business.

$\boldsymbol{Y_{i,t}^{n}} = \sum_{i}^{J} \boldsymbol{G_{nt}^{i,j}} \boldsymbol{P_{nt}^{i,j}}$ = f (individual characteristics, return from investment/earnings/profit, market access, access to finance) + ε …….. (3)

But we know that consumption is direct and linearly related to income/earnings; and so do the level of capital stock that allows firm to earn the expected profit, but since firms maximize return on investment when $MPk^f = uc$ (marginal product of capital is equal to the cost of using capital). Any factor affecting the equilibrium point will affect the level of investment, thus this study use the selected covariate to deduce which among the explanatory variables are the most important determinant of investment at the individual level. The empirical testing will enable to understanding the achievement differences in the level of investment existing between SACCOS members and non members.

The hypothetical relationship is thus modeled in multivariate linear regression to identify the exogenous stimulus that affect the level of investment at individual levels using return to investment, market access, frequency of credit acquisition, individual characteristics such as age, household size, sex,marital status, size of the house where respondent lives; and whether it is own house or rented, years of schooling, and membership dummy variable as explanatory variables (x_1, x_2, x_3,…..x_n), such that;

$$\boldsymbol{Y_{i,t}^{n}} = \beta_0 + \beta_1 X_1 + \beta_2 V_2 + \beta_3 T_3 + \beta_4 M_4 \varepsilon_i \ldots\ldots\ldots\ldots\ldots \quad (4)$$

Where:

$\boldsymbol{Y_{i,t}^{n}} = \sum_{i}^{J} \boldsymbol{G_{nt}^{i,j}} \boldsymbol{P_{nt}^{i,j}}$ is the total capital stock that allows firm to earn the expected profitfor the ith sample observation and $X_1, V_2, T_3 and M_4$ are the explanatory variables pertaining to the ith observation.

β_1 ,β_2 , β_3 and β_4 are the partial effects of explanatory variable on the explained variable (estimates).

- X_1= is a vector of individual and demographic characteristics; which are thereturns / earnings from investment per month, household size, marital status, sex, years of schooling and the house where respondent lives whether it belongs to him/her or rented, age of the individual and past experience in business)
- V_2= a dummy variable that stands for locationas a proxy for market access; 1 for rural area and 0, otherwise.
- T_3 = frequency of credit acquisition from SACCOS

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- M_4=membership dummy variable which is equal to 1 for SACCOS members and 0
- for non members.
- ε = the error term expressing the difference between the regression equation and observations with mean E [ε_i] = 0 and variance VAR [ε_i] = σ^2.

IV. RESULTS AND DISCUSSION

4.1. Empirical Evidenceon the Determinants for Investment

OLS regression was employed in the study in order to test the hypothesis that seeks to find out whether there are differences in achievement in terms of the level of investment which the SACCOS members and non members achieved. The findings in Table 1reveal that the responding variables have well explained the response variable by 45.2%. The Durbin-Watson value of 1.804, which is closer to 2, shows that the stochastic is serially independent meaning that the disturbance occurring at one point of a set of observations is not correlated with any other disturbance occurring at another point of the set of observations. The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity for the fitted values gives a chi-square of 0.01 at the probability level of 0.9199 which is not significant. This allows accepting the null hypothesis of homoskedasticity. This means the estimated variance of the residues from regression does not depend on the values of the independent variables, therefore no heteroskedasticity.

The findings in Table 1 reveal further that the mean variance inflation factor (VIF) to be 1.59 which indicates the absence of the problem of multicolineality in the fitted data. The resultant regression coefficients were as follows.

The regression coefficient for the frequency of loan acquisition acquired a positive sign as hypothesized; this shows that SACCOS credit speed up investment atthe individual level. The coefficient was significantly different from zero at 1% level of significant.Meanwhile the membership dummy variable acquired positive sign and reveals a strongly significant influence of access to credit on the amount of investment that can be achieved by an individual member. This shows that there is a significant difference in the level of investment that can be achieved by the individual SACCOS member when compared with the non members. This conforms to Keynesian theory of investment that supports the existence of a positive relationship between finance and investment. The findings are in consistent with those of Kaboski and Townsend (2005), King and Levine (1993) who also observe positive relationship between the level of investment and access to credit.

With respect to the age of the respondent, the findings show that the regression coefficient that stands for the square of the age of the respondent acquired a negative sign implying that the level of investment acquire non linear relationship, in particular when the individual becomes so old/ after retirement. The square term of age was significant different from zero at $P < 0.05$ level of significance indicating that the effect of age is indeed non linear after retirement. This support the life cycle hypothesis that contend that the retirees/old people invest little because of the depleting wealth which was accumulated during their active working life time. The findings provide sufficient evidence to support the theory that insisted retired people face a declining ratio of investment capital (Hardwick, 1999; Ceritoglu, 2009). Because as individual ages they become less active and they cannot work and invest as much as they did when they were at their middle age period of their life cycle.

Moreover, the findings show that males invest more than is the case with females; this is particularly true due to the fact that females have more workload that tend to affect the availability of capital for investment purposes, and if they manage to invest they end-up investing in petite businesses.This is because males are the head of the families and thus all the family resources are under their dominion; being committed borrowers, they can do much bigger business, earn more and purchase some assets.

The results indicate further that the amount of earningsper month has significant positive influence on the level of investment. This means that when an individual earns more from the business, the possibilities of expanding and intensifying the investment increases in order to earn even more and more. The regression parameter "lnearning" was significant at 1% level of significance, implying that better paying businesses have a positive influence on the level of investment which can be achieved by an individual entrepreneur. The findings conformto those of Michaelides *et al.,* (2005) who also observe positive linear relationship between investment and business returns.

On the other hand, the regression parameter that stands for location effect as a proxy for market access, acquired a negative sign as it was hypothesized; however, the coefficient was not significant. This implies that the level of investment between the rural and urban people is not different at an individual level. The regression coefficient attached to years of schooling indicates a positive significant effect on the level of investment, the variable was significant different from zero at $P < 0.001$ meaning that educated individuals are more likely to invest in a much larger levels of investment compared to those with lower education.

The regression coefficient attached to household size acquired negative sign as it was expected revealing an existence of negative relationship between the number of individuals living in a given house with the level of investment at which the individual can achieve. A large household size reduces the amount of funds that can be located for investment because of the task of managing the large number of individuals. World (2005) observe similar findings that large household size affect the level of investment and ultimate the wealth status of the individual entrepreneur.

The regression parameter that stands for the size of the house the respondent lives (number of rooms) acquired positive sign even though not significant from zero, meaning that size of the house has little influence when it comes to investment level one can attain. This further show that social status has little influence on the level of investment one can reach, an investor with a high level of investment because of

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personal preferences can choose to live in a two bed room flat while another one with low level of investment can live in a bungalow due to individual consumer preferences.

Marital status of the individual in particular married versus single acquire positive sign as well as widow versus single show negative sign as it was hypothesized while divorced versus single indicates a positive sign. The coefficient were not significant different from zero revealing that marital status has no effect in terms of the level of investment attained by the individual entrepreneur probably what is keen of value are the age, returns from business, acquisition of credit, sex and household size of the individual.

Table I: Determinants for investment level at individual level (OLS Regression results). Dependent variable = total amount of capital invested in the business

Explanatory variable	Coeffic ient	Std Error	t- value	P[|Z|>z]	VIF
Household size	-0.056	0.028	-1.99	0.046**	1.20
D1gender	-0.438	0.131	-3.35	0.001***	1.30
Years of schooling	0.124	0.022	5.57	0.000***	1.14
Frequency of credit	0.346	0.116	2.98	0.003***	2.19
Yes versus No	0.435	0.150	2.90	0.004***	2.21
Initial earnings	0.481	0.051	9.43	0.000***	1.28
Age square	-0.281	0.130	-2.16	0.031**	1.41
Number of rooms	0.056	0.034	1.64	0.101	1.33
Rural versus Urban	-0.015	0.124	-0.12	0.906	1.16
Married vs single	0.140	0.208	0.674	0.501	2.31
Divorced vs single	0.043	0.336	0.128	0.898	1.43
Widow vs single	-0.097	0.295	-0.330	0.742	2.07
Cons	7.442	1.168	6.37	0.000***	

Source: own survey, 2012

V. CONCLUSION AND RECOMMENDATIONS

This paper aimed to examine the determinants of investment at the individual level by investigating achievement differences in terms of the investment level achieved by SACCOS members and non members. The study provides sufficient evidence to support the proposition that acquisition of credit matters al lot for investment at an individual level; the reason behind this is that the acquisition of credit is like an enhanced income to the client, making it possible for him/her to utilize production resources which would otherwise not have been used if credit was not at all available.

Furthermore, the findings indicate that good returns promote more investment, making the investor expand his/her investment thus increasing the level of investment. The findings also reveal that the level of investment is slightly influenced by location at the individual level; other factors like household size, sex, level of education, access to creditand business returns are more important.

The study recommends that more resources should be disbursed to the Department of Cooperatives located in the Local government in order to smooth the process of disseminating desired knowledge about SACCOS that can open the way for the formation of more SACCOS and even motivating undecided entrepreneurs to join these credit associations. This will help even the disadvantaged groups such as females to get more involved in lucrative investment.

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