A micro-econometric analysis of the determinants of Households Saving Behavior in Uganda- A Multinomial logit modelling approach

Kurayish Ssebulime (kssebulime@outlook.com)
National Planning Authority
Hennery Sebukeera
National Planning Authority
Francis Wasswa
Makerere University

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Abstract

Households have a number of saving choices to make and each of their choices has profound implications for the economy and for their standards of living. To investigate the determinants of household choice of saving mechanism, the multinomial logit model is applied. The main conclusion of this paper is that, employment status, household size, household monthly expenditure, education level, age of the household head, residence of the household, and marital status are significant determinants of household saving behavior in Uganda. It is thus recommended that, policy measures for ensuring financial inclusion should take cognizant of the differences in socioeconomic household characteristics like residence of households with regard to rural and urban based households. Further, increasing the level of education is critical for enhancing financial knowledge and is critical for enhancing adoption of formal saving mechanisms. Targeted policy actions to enhance financial knowledge should be critical in enhancing financial inclusion.

JEL: D13; D14, D15

1.0 Introduction

This paper analyses the determinants of household saving behavior in Uganda using the 2016/17 National Household Survey data (Uganda Bureau of Statistics, 2017). The paper uses a multinomial logit model to determine the determinants of household saving decisions in Uganda. Households are expected to have a number of saving choices to make and each of their choices has profound implications for the economy and for their standards of living. Overall, saving in formal financial institutions is the most desired saving decision in order to enhance the development role of financial intermediation and monetary policy transmission(Ngalawa, 2018). Non-the-less, even with the increased presence of financial institutions and platforms, households have continued either not to save or use informal saving mechanisms (Sawuya, 2018).

At a Macro level, household savings are a major component of domestic savings. Uganda is one of the fastest growing countries in sub-Saharan Africa in the past decade or so though the recent growth path may not be enough to achieve middle-income status and substantial poverty reduction by the end of the decade which is the country's overarching ambition (NPA, 2016). Yet still, the country has lower levels of domestic savings (Sebukeera, 2014). Policy choices to address some of these shortcomings could make a difference in whether the country follows the path of sustained growth or follows other countries where growth upturns later dissolved out. Among the policy choices is to increase the level of domestic savings to bolster domestic investment and bring about reduction in unemployment rate and poverty as well as increase in the provision of social and economic amenities.

At a micro level, it is first important to understand individual choices and preferences as essential for understanding of household saving behavior. Even when the individual is the primary focus of analysis in saving decisions, it is equally necessary to acknowledge the fact that the household is the most important aspect of life for many individuals. This paper therefore uses a household as the primary analysis unit.

The absolute Income Hypothesis by Keynes, (1936), suggests that savings by households are that part of income that remains after household consumption. Indeed, for long, economic theory recognizes the critical importance of domestic savings and in particular household savings as a prerequisite for attaining the desired economic transformation. Savings are critical in the process of stimulating investment. Initial work on the role of savings in economic transformation is seen in the works of the Harrod -Domar model where household savings and the capital –output ratio are the drivers of economic growth (Easterly, 1997).

Given the critical importance of savings and in particular household savings in the process of economic transformation, a number of previous research papers have investigated the determinants of domestic savings and in particular household savings. Indeed, studies including; Kasongo & Ocran, (2007), Syden, (2014), and Sawuya, (2018) among others have presented the various determinants of household savings. However, there continues to be a research gap on the determinants of household saving decisions especially for Uganda. This paper analyses the determinants of household preferences for different saving mechanisms including formal and informal channels using recent data of the Uganda National Household Survey of 2016/17.

Therefore, this paper studies household saving behavior in Uganda with particular focus on the factors that influence the choice between formal and informal saving mechanisms. In particular, study examines the impact of household social [4]characteristics on the choice between informal and formal saving mechanisms and also examines the impact of household economic [5]characteristics on the choice between formal and informal saving mechanisms.

[4]The social characteristics of a household include; the residence (rural/urban), sex of household head, household size, marital status, and age of the household head.
[5]The economic characteristics of a household include; employment status of household head, average monthly household expenditure, and education level of the household head.

2.0 Household Saving Behavior In Uganda

For Uganda, savings are an important determinant of both individual and national wellbeing. First, individuals and households have varying perceptions of savings and make varying choices when deciding on saving decisions. Households must decide whether or not to save. When they save, they must also decide on which saving mechanisms to use and there a number of factors that are likely to influence these decisions.

With regard to perceptions, households in Uganda perceive savings as putting part of their monetary earnings in a special place within the home, planning spending such that money lasts through a given period, or putting money into an activity to yield returns. With regard to household saving perceptions, 40 percent of Ugandan households perceived savings as putting money in a special place or account for the money to be safe, 32% perceive savings as "putting money in an activity or somewhere so that it can yield returns(National Planning Authority, 2017).

With regard to household saving savior, we analyze the decisions households have to make with regard to the choice of saving mechanism. Households choose amongst a number of saving mechanisms including both formal and informal saving mechanisms. The choice of savings mechanism has important micro- and macroeconomic implications. The formal savings mechanisms include saving with a commercial bank, Microfinance Deposit Taking Institutions (MDIs), Micro Finance Institution (MFI) and Savings and Credit Cooperatives (SACCOs). Informal savings mechanisms include keeping money at home in a secret place, with Village Savings and Loans Associations (VSLAs), Rotating Savings and Credit Associations (ROSCAs)/Merry – Go Rounds, mobile money among others (Uganda Bureau of Statistics, 2017).

For Uganda, according to the National Household Survey of 2017, Informal saving mechanisms are the most preferred with keeping money at home/secret place is the most commonly used mechanism for saving (33%) followed by saving with VSLAs (16%). Only 8% were using commercial banks as savings mechanisms. Therefore, it is important to know what factors influence the choice of saving mechanism by households in Uganda which is the overall objective of this paper.

3.0 Literature Review

3.1 Theoretical literature

The theoretical literature presented examines how households decide on saving part of their income. The study is underpinned largely by the permanent income hypothesis. The major implication of the Permanent Income Hypothesis for this study is that, different households are likely to exhibit differences in saving behavior majorly due to differences in transitory income. A study by Ddumba & Obwona, (1998) identified that, self-employed persons are likely to have a higher transitory proportion of their income than salaried workers and thus are likely to have different saving behavior .

First, it is important to trace the theoretical foundations of household saving behavior. Much of the studies on household savings begin with the work of the Keynesian theory of Absolute Income Hypothesis of 1936. Keynes considered savings as the difference between household income and household expenditure. According to Keynes, households tend to increase their consumption as income rises, but not by as much as the increase in income hence what remains is the household savings (Santos Alimi, 2013). This implies a positive linear relationship between household income and household savings. Therefore, $S = Y - C$, where S is the household savings, Y is the household income and C is the household consumption. Therefore, this theoretical expression simply implies that, the level of household income is likely to influence the level of household saving (Zakaria & Zakaria, 2008).

The Permanent Income Hypothesis (PIH) provides more insights about household saving behavior (Campbell & Mankiw, 1990). The theory assumes that household consumption depends largely on permanent income and thus any transitory income realized by the household is likely to form household savings. According to the theory, a rational household maximizes utility through consumption decisions. Therefore, household whose consumption at time t, Ct, depends on its permanent income Yp, will have consumption (Ct) = aYp. Where Yp is permanent income and a is the marginal propensity to consume. Therefore, household consumption depends largely on the income the household expects to earn in the long run. The household additional consumption out of its permanent income will largely depend on the long run interest rate and stock of wealth. Therefore, the income of a household (Y) is composed of permanent income (Yp) and transitory income (YT). Therefore, variations in household consumption are mostly influenced by transitory income since not all transitory income is actually saved.

Therefore, we could conclude from the permanent income hypothesis that, consumption in a current period is dependent upon the consumption in the previous period and long run average income (permanent income). This assumption can help in predicting the level of household savings. Nonetheless, previous studies that have attempted to study savings behavior using the permanent income hypothesis have taken the form of:

$$S = \beta_0 + \beta_1 Y_p + \beta_2 YT$$

Accordingly, it is that portion of transitory income that creates variations in household saving behavior. The Factors that are likely to create variations in transitory income may include nature of employment (industry type, self-employment, salaried workers), residence, education level of household head among others.

Another important theory about saving behavior is the life-cycle saving hypothesis developed by Brumberg, 1954 and Friedman, (1957). The theory indicates that people will work to accumulate their wealth until retire and will not accumulate more wealth after retirement age. Shorrocks A. F, (1957) extended the model to include income, age, risk and return as saving decision factors.

3.2 Empirical literature

A number of previous empirical studies have attempted to examine the factors influencing household saving behavior with some focusing mainly on developing countries. This section presents empirical literature on the factors that are likely to influence savings behavior of households. A number of previous studies have identified the level of education of the household head as an important determinant of household saving behavior. The level of education is directly linked to household earning potential and increased exposure to financial information. Therefore, education has the ability to influence the saving behavior of households. Most educated households are expected to choose formal saving mechanisms over informal saving mechanisms (Sawuya, 2018). Spring (2009) reported that, households tend to reduce level of savings in the short run as they progress upwards in level of education for Mexico as education expenditures tend to increase with the level of education. This does not mean that with higher education, households tend to choose not saving to informal and formal saving mechanisms. Households are expected to choose informal and formal saving mechanism over not saving in the long run as their earnings rise with higher education attainment.

Sex/Gender of the household head is another important determinant of household saving behavior. Most of the previous studies present female household heads as having more saving supportive behavior compared to male headed households. Such studies include Floro & Seguino, 2008 and (Rehman, Bashir, & Faridi, 2011). The age of the household head is another important factor likely to determine household saving behavior in Uganda. Individuals of working age population tend to save more than those outside the working age population. In particular, the paper by Suppakitjarak & Krishnamra, (2015) identifies that individuals tend to save more during working age and tend to save less as they approach or during retirement age. These findings need to be tested for Uganda majorly due to existence of undeveloped social security mechanisms to support mobilization of savings during retirement age. Only a small proportion of salaried workers are covered by the current social security arrangements.

The employment status of the household head is another important determinant of household saving behavior (Dolphin, 2009). Salaried earners are likely to save more with formal saving mechanisms than self-employed individuals. Individuals that depend largely on subsistence farming are likely not to save. The study by Mpiira et al., (2013) emphasized the role of the type of occupation as a major determinant of saving behavior. The study identifies that stable earning positively influence participation in formal saving mechanisms like SACCOs. Individuals with more stable earnings include salaried workers and those earning rental income. The residence (rural/urban) of the household determines household savings behavior.

The study by Sawuya, (2018) households in urban residences were likely to save more than rural based households. Urban based households are likely to have more access to formal saving mechanisms like commercial banks than rural based households. Therefore, residence is a critical determinant of household saving behavior. Other factors that have been identified through empirical literature include; marital status (Fernández-López, Otero, Vivel, & Rodeiro, 2010) and household size (Abdelkhalek, Arestoff, El, De Freitas, & Mage, 2010). Married couples are likely to be more concerned about their wealth status and they tend to choose to hold a significant proportion of their wealth as savings. They are also more likely to prefer formal saving mechanisms that are likely to secure shared saving instruments. Larger household size tends to erode away household savings due to larger household expenditure.

In summary, a review of theoretical literature shows that, the theoretical foundations of household saving behavior are entrenched in the Permanent Income Hypothesis. Household saving behavior varies majorly due to factors that are likely to affect transitory income of households. Therefore, the microeconomic foundations of household saving behavior have strong theoretical underpinnings. A number of empirical studies have also identified the factors that are likely to determine household saving behavior. Among the factors identified include; employment status of household head, education level, residence, age, marital status, sex/gender of the household head and household size. Therefore, this study seeks to investigate whether these factors significantly determine household saving decisions in Uganda.

4.0 Theoretical And Empirical Methodology

4.1 Theoretical framework

In order to examine the determinants of household saving decisions, we build a theoretical framework in line with the Permanent Income Hypothesis (PIH). The paper extends the model presented Campbell & Mankiw, (1990). The model presents household consumption as a function of permanent income. Therefore;

$$C_t = aY_p \dots\dots 1$$

Where, $C_t$is the household consumption at time t and Yp is the household permanent income.

Therefore, it can also be appreciated that, the income of a household (Y) is composed of permanent income (Yp) and transitory income (YT).

$$Y = Y_p + Y_T \dots\dots 2$$

Since households tend to save what remains after consumption and that their consumption depends more on permanent income, variations in savings are explained by differences in transitory income. Therefore, savings behavior using the permanent income hypothesis have taken the form of;

$$S = \beta_0 + \beta_1 Y_p + \beta_2 YT \dots\dots 3$$

There a number of factors that are likely to influence variations in transitory incomes of households and hence determine variations in household saving behavior. These include; the education level of the household head, marital status, residence of the household, status in employment of the household age, the sex/gender of the household age among others.

4.2 Empirical model

In order to investigate the determinants of household choice of saving mechanism, the multinomial logit model is applied. The multinomial logit model is preferred for this study since a household is faced with more than two choices among saving mechanisms. The household may choose not to save, to save in an informal financial institution or to save in a formal financial institution. Therefore, saving mechanism is considered as the dependent variable of the study with three categories and seven (7) independent variables that are likely to influence household choice of saving mechanism are considered.

In order to identify the factors determining household choice of saving mechanisms, the paper assumes that, for the study period, households are rational and choose among the available mutually exclusive saving mechanisms to maximize their utility. In the same way as (William H. Greene, 2003), suppose for the i_{th}household faced with j choices, assume the utility choice j as:

$$U_{ij} = Z_{ij}\beta + \in_{ij} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

When the household makes choice j in particular, then we assume that, $U_{ij}$is the maximum among the j utilities. Where J = 1,2,3 for not saving, informal saving mechanism and formal savings mechanism respectively. Therefore, the emperical model is derived by the probability that choice j is made, which is: Prob (Uij > Uik) for all other k ≠ j.

The multinomial logit model is preferred since it can allow for estimating a set of coefficients βj corresponding to each saving mechanism as illustrated;

$$\Pr\left(S = \frac{j}{x}\right) = \frac{e^{\beta jxi}}{\sum_{j=1}^{3} e^{\beta kxi}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 5$$

To identify the model, we impose the normalization by considering the parameter vector associated with “not saving mechanism” category as zero (β1 = 0). So, the remaining coefficients βj measures the change relative to the base group of “not saving”. Where, Pr is the probability of a particular saving mechanism being preferred by a household, i denotes the indexes of the households; j represents the three nominal unordered saving mechanisms.

The empirical model can now simply be written as follows;

$$S_{ij} = \beta_0 + \beta_1 Age_i + \beta_2 Emp_i + \beta_3 Educ_i + \beta_4 Resd_i + \beta_5 Sex_i + \beta_6 Marit_i + \beta_7 Hsize_i + \beta_8 Mexp_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$

Where:

S_{ij} = The dependent variable reflecting household saving mechanisms. The saving mechanisms are such that; 1=Not saving; 2= Informal Saving mechanism; and 3=formal saving mechanisms.

B0, β1, β2, β3, β4, β5, β6, β7 and β8 are the coefficients of each independent variable respectively. These coefficients will not represent the impact of the variable on the dependent variable in terms of magnitude or size. Thus, marginal effects are used to interpret the results of multinomial logit model effectively and these effects show the probabilities of occurring the dependent variable with respect to the changes in each explanatory variable.

From the model, the explanatory variables of the study include:

$\mathrm{Age_i}$ = Age of the household head
$\mathrm{Emp_i}$ = Employment status of the household head
$\mathrm{Educ_i}$ = Education level of the household head
$\mathrm{Resid_i}$ = residence of the household (rural or urban)
$\mathrm{Sex_i}$ = Sex of the household (male or female)
$\mathrm{Marit_i}$ = Marital Status of the household head
$\mathrm{Hsize_i}$ = Household size
$\mathrm{Mexp_i}$ = Monthly expenditure of the household

Table 2
Variable Definitions

Variable	Variable Definition
Saving Mechanism	**Dependent Variable**
Not Saving	= 1 if household is not saving
Informal Saving	= 2 if household uses informal saving mechanism
Formal Saving	= 3 if household uses formal saving mechanism
	Independent Variables
Sex of household head	= 1 for male and 0 otherwise
Age of household head	= Age in years of the household head
Employment status of household head	= 1 if subsistence worker; 2 if self-employed; 3 if paid worker;
Marital Status of household head	= 1 for married, 0 otherwise
Residence	= 1 if urban and 0 otherwise
Monthly HH Expenditure	= Household expenditure per month in Uganda Shillings
Highest Education level of household head	= 1 if no formal education; 2 if some primary; 3 if completed primary; 4 if some secondary; 5 if lower secondary; 6 if higher secondary; 7 if diploma; 8 if degree
Household Size	= Number of people in a household

4.3 Data Sources

All the data used in the study was obtained form the Uganda Bureau of Statistics (UBOS). The study uses the Uganda National Household Survey Data, 2016/17 to obtain the data for all the study variables.

5.0 Presentation And Discussion Of Results

5.1 Descriptive statistics

Results in Table 3 are the descriptive statistics of the study variables, the results of the multinomial logit model for the factors that determine household saving behavior and the discussion of the results.

Table 3
Summary Descriptive Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
Saving Mechanism	14,922	1.919381	0.4180768	1	3
Residence	15,636	0.3246355	0.4616577	0	1
Employment Status	14,060	1.968492	0.7694206	1	3
Household expenditure	15,636	546138	634596.5	16918.86	2.05e + 07
Education level	15,454	3.061861	1.783733	1	8
Age of household head	15,636	42.59728	15.79794	11	110
Marital Status	15,636	0.6935917	0.4610161	0	1
Sex	15,636	0.692056	0.4616577	0	1

Table 3.1 highlights the descriptive statistics pf the study variables. It presents the number of household observations (Obs), the mean, standard deviation, minimum and maximum values of the study variables. As observed, the dependent variable saving mechanism has a minimum value of 1 for not saving and maximum value of 3 for formal saving mechanism.

5.2 Correlation

Table 4 presents the results of the pairwise correlation coefficients for the study variables. The results show that, saving mechanism is positively related to Sex of the household head, employment Status of the household head, the household monthly expenditure and education level of the household head. The results also show that at least all variables have correlation coefficients below 0.5.

Table 4
Pairwise Correlation Coefficients

c	Saving Mechanism	Sex	Employment Status	Household size	Household expenditure	Education level	Age of household head	Residence
Saving Mechanism	1.00000							
Sex	0.0717*	1.0000						
Employment Status	0.0956*	0.1320*	1.0000					
Household size	-0.0001	0.1588*	-0.1764*	1.0000				
Household expenditure	0.1695*	0.0784*	0.1083*	0.2475*	1.0000			
Education level	0.2349*	0.1951*	0.3502*	-0.0856*	0.3065*	1.0000		
Age of household head	-0.1013*	-0.1623*	-0.2795*	0.1296*	0.0600*	-0.2530*	1.0000	
Residence	0.1056*	-0.0467*	0.3012*	-0.1394*	0.1785*	0.3149*	-0.1203*	1.0000

5.3 Presentation and Discussion of Empirical Results

This section presents the empirical results of the study. The section presents the multinomial logit results of the study. The dependent variable of saving mechanism is conceptualized into three outcomes namely; not saving, informal saving mechanism and formal saving mechanism. The household is thought to be rational and chooses from among the three (3) outcomes to maximize household utility. Table 5 presents the marginal effects of the multinomial regression model. The marginal effects present the percentage point change in the probability of observing a given outcome of the dependent variable given a unit change in the independent variable.

Table 5
The Multinomial Logit Results (Marginal Effects)

Variable	Outcome1: Not saving	Outcome2: Informal Saving	Outcome3: Formal Saving
Sex	-0.0032329	0.0071243	-0.0038915
Employment Status	0.0172647***	-0.0325584***	0.0152937***
Household size	0.0056559***	-0.0032834***	-0.0023725***
Household Monthly expenditure	-1.44e07***	1.33e-07***	1.08e-08***
Education level	-0.0261124***	-0.0130964*	0.0097203***
Age of household head	0.0010216***	0.0010216***	0.0002205*
Residence	0.0170147***	-0.0411144***	0.0240997***
Marital Status	-0.0261124***	0.0217505***	0.0043619
No. of observations	13,303	13,303	13,303
Prob > chi2	0.0000	0.0000	0.0000
Pseudo R2	0.0882	0.0882	0.0882
**significance at 10%; ** Significance at 5%; ***significance at 1%*			

Table 4.5 presents the results of the study as regards the determinants of household saving behavior. From the table, it can be observed that, employment status, household size, household monthly expenditure, education level, age of the household head, residence of the household, and marital status are significant determinants of household saving behavior. The results of the sex of the household head were not significant for all outcomes of saving behavior.

With regard to Marital Status of the household head, the results in Table 5 indicate that, when the marital status of the household head is married, it reduces the probability of not saving by 0.026 percentage points. Further, when the marital status of the household head is married, it increases the probability of saving in informal mechanisms by 0.0217 percentage points. When the marital status of the household head is married, it increases the probability of choosing formal saving mechanisms by 0.00436 percentage points. These findings on marital status and saving behavior of households are in line with Fernández-López et al., (2010) that identified marital status as a significant determinant of saving behavior. Married couples are likely to be more concerned about their wealth status and they tend to choose to hold a significant proportion of their wealth as savings. They are also more likely to prefer formal saving mechanisms that are likely to secure shared saving instruments. Formal saving mechanisms offer compatible saving options for married individuals like shared savings account and are likely to be most preferred (Fernández-López et al., 2010).

From Table 5, when the residence of the household is urban, it increases the probability of not saving by 0.0170 percentage points. Further, when the residence of the household is urban, it reduces the probability of saving with informal mechanisms by 0.041 percentage points. When the residence of the household is

urban, it increases the probability of saving with formal mechanisms by 0.024 percentage points. The findings on residence and household saving mechanism are consistent with Sawuya, (2018). Households in urban residences were likely to save more than rural based households. Urban based households are likely to have more access to and information about formal saving mechanisms like commercial banks than rural based households.

Concerning age of the household head and saving mechanism, results from Table 5 indicate that, when the age of the household head increases by one unit, it increases the probability of not saving by 0.001 percentage points. When the age of the household head increases by one unit, it increases the probability of saving in informal mechanisms by 0.00102 percentage points. When the age of the household head increases by one unit, it increases the probability of saving with formal mechanisms by 0.0002205 percentage points. The results on age of household head and saving mechanism are consistent with findings by Suppakitjarak & Krishnamra, (2015) that identifies that individuals tend to save more during working age. Therefore, individuals are expected to prefer saving with formal mechanisms as they progress in age. With progress in age, individuals are expected to have more information about existence of saving mechanisms and their earnings are expected to increase.

With regard to education level of the household head, Table 5 indicates that, when the education level of the household head increases by one unit, the probability of the household not saving reduces by 0.0261 percentage point. when the education level of the household age increases by one unit, the probability of the household saving with informal mechanisms reduces by 0.01309 percentage points. When the education level of the household head increases by one unit, the probability of the household saving with formal mechanisms increases by 0.00972 percentage points. The results on education level of the household head are consistent with Sawuya, (2018) and Spring (2009). Most educated households are expected to choose formal saving mechanisms over informal saving mechanisms. However, individuals tend to reduce level of savings in the short run as they progress upwards in level of education as education expenditures tend to increase with the level of education.

The results on monthly household expenditure and savings mechanisms as shown in Table 5 indicate that, when household monthly expenditure increases by one unit, the probability of not saving reduces by 1.44 percentage points. When household monthly expenditure increases by one unit, the probability of saving with informal mechanisms increases by 1.33 percentage points. When household monthly expenditure increases by one unit, the probability of saving with formal mechanisms increases by 1.08 percentage points. Generally, these findings on household expenditure and saving mechanism are reflective of the earning potential of households. In line with the permanent income hypothesis, households are expected to increase their expenditure only if there is an increase in transitory income. This implies that households' expenditure increases with increases in income and so the ability to save more also increases (Campbell & Mankiw, 1990). As household incomes, expenditures and savings increase, the preference for formal saving mechanisms increases over informal mechanisms.

The results in Table 5 also indicate that, when household size increases by one unit, it increases the probability of not saving by 0.00565 percentage points. When household size increases by one unit, the probability of saving with informal mechanisms reduces by 0.00328 percentage points. When household size increases by one unit, the probability of saving with formal mechanisms decreases by 0.00237 percentage points. The results on household size are consistent with Abdelkhalek et al., (2010). Larger household size tends to erode away household savings due to larger household expenditure out of a fixed income. The size of the household may also reflect the number of dependents rather than the number of employed workers in a particular household. This is expected for Uganda given the age structure that has a high youth bulge and dependency ratio of 97% (Uganda Bureau of Statistics, 2017).

With regard to employment status, results in Table 5 indicate that, when the employment status of the household changes by one level (from subsistence to self-employee and to paid worker), the probability of not saving increases by 0.0172 percentage points. Also, when the employment status of the household increases by one level the probability of saving in informal saving mechanisms decreases by 0.0325 percentage points. When the employment status of the household increases by on level the probability of saving in formal mechanisms increases by 0.01529 percentage points. The employment status of the household head is therefore an important determinant of household saving behavior and these findings are consistent with Dolphin, (2009). Salaried earners are likely to save more with formal saving mechanisms than self-employed individuals. Individuals that depend largely on subsistence farming are likely not to save. The findings are consistent with Mpiira et al., (2013) that emphasized the role of type of occupation as a major determinant of saving behavior. The study identifies that stable earning positively influence participation in formal saving mechanisms like SACCOs. Individuals with more stable earnings include salaried workers and those earning rental income.

6.0 Conclusions And Recommendations

This paper aimed at studying the determinants of household saving behavior. The paper aimed at establishing the impact of social and economic household characteristics on the choice between the various saving mechanisms. The dependent variable of saving mechanism was conceptualized into three outcomes namely; not saving, informal saving mechanism and formal saving mechanism. The independent variables of the study included; sex of the household head, employment status, household size, household monthly expenditure, education level, age of the household head, residence of the household, and marital status.

In order to investigate the determinants of household choice of saving mechanism, the multinomial logit model is applied. The multinomial logit model was preferred for this study since a household is faced with more than two choices among saving mechanisms. The household may choose not to save, to save in an informal financial institution or to save in a formal financial institution.

The results of the study indicated that, employment status, household size, household monthly expenditure, education level, age of the household head, residence of the household, and marital status are significant determinants of household saving behavior.

Therefore, it is recommended that, policy measures for ensuring financial inclusion should take cognizant of the differences in residence of households with regard to rural and urban based households. Further, increasing the level of education is critical for enhancing financial knowledge and is critical for

enhancing adoption of formal saving mechanisms. Targeted policy actions to enhance financial knowledge would also be critical in enhancing financial inclusion. Given the high percentage of persons saving with informal saving mechanisms, there is need for targeted policy actions to support informal saving mechanisms and incentivized approaches for formalization should be put in place.

10. Declarations

10.1 Availability of data and material

The study uses the Uganda National Household Survey Data, 2016/17 to obtain the data for all the study variables. All the data used in the study was obtained from the Uganda Bureau of Statistics (UBOS). The data used is available at the UBOS website at https://www.ubos.org/publications/statistical/23/. However, all data analyzed during this study are available on request from the corresponding author.

10.2 Competing interests

The Authors declare that they have no competing interest in this publication

10.3 Source of Funding

Not Available

10.4 Authors' contribution

SK is the main author of the manuscript, he initiated the research idea, undertook literature review, developed the theoretical framework, collected and analyzed the data. SH is a co-author of this manuscript. He refined the research idea, supported the theoretical underpinning of the research paper and supported the empirical data analysis and generation of policy implications. WF approved the research idea, supervised the research project and provided quality assurance of the manuscript. All authors read and approved the final manuscript.

10.5 Authors Details

SK is an economist and a practicing development planner at the National Planning Authority of Uganda. He is a PhD in Economics student at Makerere University Kampala and currently heads the department of manpower planning and development. He is a renown professional in research with strong bias in Monetary and Labour Economics. He is specializing in Labour economics and has a number of research projects in the pipeline. SH is a manager in charge of project and investment analysis at the National Planning Authority of Uganda and a PhD in Economics student at Makerere University Kampala. He is a talented investment analyst with strong bias in macro and microeconometrics, Monetary and Health economics. WF is a senior Lecturer at the School of Economics of Makerere University and a seasoned research fellow. He also works with the United Nations Development Program (UNDP) as a country economist.

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