RESEARCH ARTICLE

DETERMINANTS OF LOW INCOME HOUSEHOLD SAVINGS IN KENYA: A SURVEY OF MATHARE SLUM

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ABSTRACT

This study was conducted on households among the poor in the slums of Mathare, in Nairobi, Kenya to determine the effect of age, education, income and household size on savings. Savings in the country is low and this true especially among the poor as noted in development framework, the Kenya Vision 2030 [a]. The study employed survey design and SPSS for analysis of data. The findings indicated that gender, age and income influence saving, but education and household size influence is insignificant. The study recommends that saving policies be aimed at promoting saving among the poor, women, and the young.

INTRODUCTION

This study discusses the major determinants of household saving among urban Kenya's

The national savings was at 17% in 2007 with projection of increase to 30% in 2012. Low income earners Kenya's development road map dubbed the vision 2030 stipulates that by the year 2030, Kenya shall be a middle income country. One of the ways of achieving this is to encourage saving among the Kenyan households because this contributes to national economic growth. As means to provide suggestions on policy framework to achieve this broad objective, primary data on the urban households from all sub locations in Mathare slums was taken with a view to evaluate factors affecting the saving trends among this group of people who account for the highest number of urban residents. Five major determinants considered include age, gender, level of education, household size and household income. According to the most recent data, the world saving rate average is 18.64% (Mwega *et al.,* 1990). However, the world saving has declined steadily since the 1960s (Loayza, 2000)[b]. Kenya has been able to invest a substantial portion of its national income since independence in the early 1960s and current with a saving rate of 14.70% (Mwega *et al.,* 1990). The country invested on average 23.7 percent of Gross National Products (GNP) in 1965-1985 according to official estimates (Mwega *et al.,* 1990). This investment was largely financed from domestic savings which comprised an average of 16.7 percent of GNP in that period, leaving an average resource gap of 7 percent of the GNP to be financed from external sources (Mwega *et al.,* 1990).

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With an increasing saving disparity across developing regions. Savings rates have declined steadily in Sub-Saharan Africa remained stagnant in Latin America but doubled in East Asia. In the former socialist economies, the savings rates have declined sharply since the early 1990s

This resource gap has been expanding over time from 3.2% of the GNP in 1965-1969 to 7.5% in 1970-1974 to 7.8 percent in 1975-1974 and to 9.5 percent in 1980-1985. As a result, the country has increasingly relied on external resources to finance its capital formation. Such an increasing reliance on foreign capital may pose risks to the economy in the long run. One risk is the danger that any perception by foreigners of political and/or social instability, corruption, and declining rule of law may lead to the out flow of the foreign capital leading to macroeconomic instability.

Age

Dynan *et al.* (2006) analysis which was based on household level data suggests that population ageing has had a material effect on the pattern of the household aggregate saving rate over time. The consumer expenditure survey and the time series data were both used to account for the demographic effects on the household aggregate saving rate. The time series data was also used to estimate the demographic effects on the household aggregate marginal propensity to consume out of disposable income. Kibet and Ouma et al. (2009) has found that age is negatively correlated with saving, such that, older people save less and the younger save more. A study conducted by Attanasio and Székely (1998) showed that the relationship between age and saving is non-linear. Krueger (2004) reviewed the basic life cycle theory of saving to obtain predictions for household aggregate savings in societies that undergo an ageing process like the one predicted for all major industrialized countries in the near future. According to his findings, longer expected life and cetris peribus increases individual aggregate savings. With this study the author

sought to investigate if age is a major determinant of the pattern of savings in the poor households in urban slums of Mathare community.

Gender

This study analyzed the propensity of a female respondent to save more compared to the male counterpart in the mentioned locality with an aim of advising the decision makers on the influence of the gender factor in improving the saving pattern of the concerned. This study is necessitated by the fact that the previous research differed on the effects of gender on savings due to prevailing social environments. Female-headed household in the United States suffer from lower levels of asset ownership than their male-headed counterparts (Convey and Ryvicker, 2006). This gap remains after controlling for the lower incomes of female heads. Ghosh and Pain (2002) using two models [c] analyzed the effect of gender on savings rate and savings in a group of developed countries. They concluded that aggregate female share of total wages and growth of per capita income has a critical influence on savings. Therefore, even if the relative wages remain constant, higher incidences of women getting employment increases their outside options, leading to increased bargaining power that exerts a positive influence on the national savings.

These models are (1) Individual saving behavior model for non-pooled savings households and (2) Nash co-operative household bargaining model for pooled savings households.

Floro and Seguno (1999) conducted a study in the USA to investigate the hypothesis that shifts in women's relative income, which affects their bargaining power in the household, have discernible effects on household saving and by extension on household aggregate saving due to differing saving propensities by gender. They developed an analytical framework for pooled and non-pooled savings households to examine why women and men's saving propensities may differ and how a change in women's wage earnings relative to men's influences household savings which constitutes a significant component of gross domestic saving. They conducted an empirical analysis using panel data for a set of 20 semi-industrialized economies, covering 1975-95. Their results indicated some measures of women's discretionary income and bargaining power increase, household aggregate saving rates rise, implying a significant effect of gender on household aggregate savings. The findings demonstrated the importance of understanding gender relations at the household level in planning for savings mobilization and in the formulation of financial and investment policies.

Female-headed household in the United States suffer from lower levels of asset ownership than their male-headed counterparts (Convey and Ryvicker 2006).

However, Convey and RyVicker (2006) study used longitudinal, intergenerational data from the Panel Study of Income Dynamics. Theresearch strategy was carried out in the following manner: data was analysed from the Panel Study of Income Dynamics (PSID) interview years of 1984-1989. Those families who responded in 1984, 1988, and 1989 were included in the analysis. The variables included in the analysis were: net worth, gender of household head, family structure, permanent income, parental income and net worth, parental death and inheritance, race, age, occupational prestige and employment status, education and savings. This gap remains after controlling for the lower incomes of female heads. After controlling for a number of other demographic and socio economic factors (not just income) the findings suggest that female-headed households demonstrate lower wealth levels than male-headed counterparts. Yang (2012) determined the causes for the high savings rate in china. Yang in his study concluded that because of the cultural preferences for a boy child, the ratio of boys to girls have led to competition among the men for ladies stimulating households with a son to save and to accumulate wealth to gain a competitive advantage in the marriage

market. Yang (2012) used provincial data (1928 to 2006) to test the effect of sex ratio imbalance on household savings. They show that the imbalanced sex ratio significantly increases household savings, with approximately 68 percent of the increase in rural savings rate and 18 percent in the urban rate attributed to the rise in the sex ratio.

Level of education

Solomon (1975) determined the relationship between education and savings behavior. He reviewed existing savings and consumption function theories with the aim of seeing how education might be a factor in these theories. He has done these using empirical estimates of savings functions. Guided by his hypothesis that the growth in savings results from higher education attainment thus contributing to the growth of the income and wealth of the society, his results indicated that both average and marginal propensities to save tend to rise with the schooling attainment of the family head, ceteris paribus. Japelli and Padulla (2011) assessed the relationship between the level of education and savings. He did this using a cross-country aggregate from a score in math and self-assessed mathematical ability measure available in the Survey of Health, Ageing and Retirement in Europe. The results that he came up with implied that countries that exhibit higher financial literacy also have higher saving rates thus indicating a strong link between financial literacy and wealth accumulation. Chanda (2005) explored the rising returns to human capital investment on the personal savings rate. According to his analysis over the past two decades, the return to college education has increased relative to high school education. Stylized facts suggest a negative relationship between returns to education and savings rates across most of the past century and also a negative relationship between education spending and savings rates across Organisation for Economic Co-operation and Development (OECD) member states. These authors have used empirical or secondary data from industrialized countries. This study was based on primary data and communities with poor education backgrounds.

Family size

Davies (1988) investigated the relationship between family size and saving. The steps in which he has taken to do so are: the integration of models incorporating family size effects with a standard inter temporal production mode, preparing for illustrative calculations by working out the details for the model in the case of isoelastic inter temporal preferences and Cobb-Douglas household production and finally using the results of his calculations to make his own conclusion. He concluded a negative relationship between the two [e]

Income

In a study by Meyers and Lee (2003), savings amounts are found to be positively associated with household earnings where income generation alone is challenging for heads of households participating in low-wage employment markets. When combined with circumstances typically associated with unstable markets such as, fewer benefits and limited chances for job promotions, saving is even more difficult for low-income families. Loayza et al. (2000) reported that purely redistributive policies can have an impact on aggregate saving-for example, public transfers to the poor financed by taxes on the rich will reduce total saving if the former have a higher propensity to spend than do the latter. Duflo (2003) estimated cash pensions paid to elderly men and women in South Africa. She estimated that 53% of transfers to women were saved, compared to 50% of non-pension income. Attanasio and Borrela (2006) also estimated that recipients of the family's en Accion conditional transfer program in Colombia saved 50% of transfer

That family size reduces household aggregate saving and generates substantial dissaving. He has used the life cycle model to analyse the relationship between family size and saving behavior. Based on the life cycle model that he has used the larger the family size, the lower the household saving

Critique of the Existing Literature and the Research Gaps

The available literature covers monetary savings among rural households. Currently research conducted on household saving in Kenya was on rural and specifically Nakuru district. It was necessary to establish whether other households in different set ups such as urban areas behave the same. Moreover even in urban regions there exist different sub populations with different social characteristics. It is therefore justifiable to carry out this study to establish whether the factors that determine savings among this group are the same as the groups already reported on. There is currently no published works on the determinants of savings of low income urban household in Kenya. Existing literature is mostly about household savings in other countries.

RESEARCH METHODOLOGY

Research design and instruments

The research adopted a survey design. The survey design is preferable for this kind of research because it is critical in determining the quality of the research. To accomplish this design a structured questionnaire was used. The questionnaire sought to find out the gender, age, position in household, marital status, level of education, occupation, and size of household of every respondent.

Data collection and processing

The current study obtained data by administering the questionnaire to the respondents the respondents were requested to fill the questionnaires by themselves the target population was urban households from all sub locations in Mathare slums. Based in the 2009 population census, Mathare was subdivided into 298 enumeration areas. Each enumeration area having approximately 100 households of which sample of ten (10) households were administered questionnaires in each enumeration. The total samples used in this study were therefore 100 household. As all enumeration areas have similar characteristics, one enumeration area was selected at random and data was collected from the households in that enumeration area. Data collected was analysed using the statistical package for Social Sciences (SPSS). The Data was analysed using a logit model where the dependent variable Y is a dichotomus (0/1) indicating the category of the respondent (0=No saving 1=saves). The model used was logit:

$$(p)=\log(p/1-p)=\beta_0+\beta_1 X_1+\varepsilon \text{ translating to } P=e^{\beta_o+\beta_1 X_1+\beta_2 X_2}+ ....$$
$$\beta_K X_{K/1+e}^{\beta_o+\beta_1 X_1+.........\beta_K X_K}+\varepsilon.$$

Where p is the probability of being a saver, x_1 is the age, x_2 is the gender, x_3 is the household size, x_4 is the level of education, x_5 is the income and βi is the coefficient of Xi (i=1,2,3,4,5). For modelling purposes those saving below 20% of their income were coded 0 and those saving more than 20% of their income were coded 1. This is based on online information on average recommended savings.

RESEARCH FINDINGS AND DISCUSSIONS

The relationship between the age of the respondents and the level of saving

The study found out that 66% of the youth [f] was saving between 0-20 percentages of their total income. 34% of the same age group were saving more than 20 percent of their income (Table 1). A similar trend can be observed with the older group where majority of the respondents above the age of 35 were saving 76% percentage of their income while few (24%) were saving more than 20 percent of their income.

Percentage savings and the level of education

It was noted that those with primary school level of education tend to save less with 90% of such individuals saving between 0-20 percent

while 9.1% saved over 20%. This is in contrast to those with secondary school education where 64.9% saved between 0 or 20% while 35.1% saved above 20 % of their income and those with post secondary school education where 72.7% saved between 0 or 20% and 27.3% saved above 20% (Table 2). These are the people between the age groups of 18-35 years old who were interviewed in the region

This implies that those with secondary education save more than either those with only primary school education or those with post secondary education. It also implies that those with post secondary school education save more than those with only a primary school education but not secondary.

Table 1. The age of the respondents and percentage savings

Age. (years)	Percentage savings	
	0 to 20%	above 20%
18-35	66	34
Above 35	76	24
n=87		

Table 2. The relationship between the level of education and the percentage savings

Education	Percentage savings	
	0 to 20%	above 20%
Primary	90	9
Secondary	64	35
Post secondary	72	27
n=90		

Influence of the household size on the saving pattern

The findings from the study indicate that the households with 4-5 members registered a majority between 0-20 percent of 72.9% while only 27.1% saved over 20%. This is in contrast to 1-3 member households where 68.2% saved below 20% (between 0-20%) while 31.8% saved over or above 20% of their income (Table 3). This is also in contrast to more than 5 member households where 66.7% saved below 20% while 33.3% saved 20% of their income. This implies that households with 5 members and above save more than either 1-3 member households or 4-5 member households. It also indicates that 1-3 member households save more than 4-5 member households.

Table 3. Household size as a determinant of the percentage savings

Household Size	Percentage savings	
	0 to 20%	Above 20%
1 to 3	68	32
4 to 5	72	27
More than 5	66	34
n =90		

Variation in the percentage of savings between genders

Results presented in Table 4 shows that 87% of females saved between 0-20 percent while only 13% saved over 20%. This is in contrast to males where 44% saved below 20% while 56% saved above 20% of their income.

Table 4. Percentage savings and respondents gender

Sex	Percentage savings	
	0 to 20%	Above 20%
Female	87	13
Male	44	56
n =90		

The variation of the percentage savings among the different income earning levels

Ninety percent (90.9%) of respondents of the first income level saved between 0-20% of their income and the rest 9.1% saved above 20%. For respondents of the second income level, 75% of this income

group saved between 0-20% of their income and the rest 25% saved above 20%. The results of the respondents of the third income level indicated that 0.8% of the income group saved 0-20% of their income while the rest 29.2% saved above 20% of their income. Findings from the respondents of the fourth income level earning kshs 20,000 and above showed that 23.1% of this income group saved 0-20% of their income while the rest 76.1% saved 20% of their income and above. The income level as a determinant of the percentage savings is presented in Table 5.

Table 5. Percentage savings and income level

Earnings	Percentage savings	
	0 to 20%	Above 20%
Ksh 5000-10000	90	10
Ksh 10000-15000	75	25
Ksh 15000-20000	70	30
Above 20000	23	77
n=90		

Table 6. Regression Results from SPSS the logistical regression results are presented in the table below

Variation source	B	S.E	OR	Sig
Gender	-2.79	.87	.06	002*
Income				.025*
Income	-4.59	1.52	.01	.002*
Income	-2.37	1.11	.09	.033*
Income	-1.84	1.00	.16	.068*
Edu level				.742
Edu level	.72	1.55	2.19	.613
Edu level	-.32	.87	.68	.659
age_cat2(1)	3.21	1.47	24.56	.029*
hh_size				.295
hh_size(1)	-.21	1.25	.807	.863
hh_size(2)	-1.45	1.29	.24	.260
Constant	1.19	1.19	3.28	.318

The study revealed that gender significantly influenced savings at 5% level of significance. Gender was measured by a dummy variable 1 for female and 0 for male. It had a negative and significant coefficient implying that males save more than females. Women were 16 times less likely to save compared to men. (Wald=9.948, P=0.002, OR=16).The results agree with those of Kibet (2009) who found that gender had a positive impact on saving in rural households of Nakuru. This study also shows that age significantly influenced savings between youths and those above 35 years. Thirty three point nine percent of youths and 24.9% of those and above 35 years saved over 20% of their incomes, respectively. While 66.1% of youth and 76% of those above 35 years saved between 0-20% respectively (Table 6). Age had a positive and significant coefficient implying that youths are 24 times more likely to save than older people above 35 years (Wald (1)=4.777, P=0.029, OR=24.56). Age had a negative influence on savings in rural communities of Nakuru (Kibet 2009), where saving among adults population diminishes with age which corraborated with Romm and Wolny (2012) report that later retirement ages have the effect of decreasing aggregate household saving rates. The findings also show that income significantly impacts on savings. Income had a negative and significant coefficient implying that the lowest income group was 10 times less likely to save than the highest group under this study. (Wald (1)=9.148, P=0.002,OR=10).

This confirms the findings of Meyers and Lee (2003) that found savings to be positively correlated with household earnings, income generation being challenging for heads of households participating in low-wage employment markets and the difficulty of saving in socio-economic environments with fewer benefits and limited chances for job promotions. Farhan and Akram (2008) report the existence of long-run equilibrium between income level and saving behaviour and there is the evidence suggesting that the life cycle model pertains to explaining savings behaviour in Pakistan. A key finding of the report

found that in short and long-run, a one percent rise in income level increases savings by 1.82% and 5.14 percent, respectively. The rest of the variables (education and household size) were found to be insignificant in explaining household savings.

Conclusions

This paper assessed five factors which are associated with savings among the poor in the slum. Age, income and gender were found to have a great influence on the savings of the section of the society assessed. Though education level and household size were observed to contribute to varied level of savings, their influence on the amount of individual's savings was determined to be insignificant.

Recommendations

This study recommends that saving policies be aimed at promoting saving among the poor, women, and the young. On gender, the Kenya government program administrators can offer incentives to improve the quantity and quality of mainstream financial services available to low income female headed households this financial system should be given priority as stipulated in the vision 2030. For example they can fund grants for organizations tailored to this population. Secondly, Individual Development Accounts can be introduced to encourage female low income earners to become regular savers. Concerning the age, state should put in efforts to increase or supplement low earnings can make young low income families among the youth more financially secure as well as free up some of their income for savings and asset accumulation. This can be done with the implementation of various local initiatives, including establishing government earned income tax credit, income vouchers if income taxes are nonexistent and raising the income tax threshold. Among the poor, tax relief can be considered in order to broaden saving and investment among the low income households. The saving level among the poor can also be improved by implementing policies that improve productivity and income of households. For example institutions that are involved in development projects need to focus on improving the business environment of low income households. Such decisions include improvement in the transport and communication infrastructure as stipulated in the county's Vision 2030 roadmap.

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