URBAN HOUSEHOLD SAVING BEHAVIOR: A CASE STUDY OF KENYA.

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This Research paper is my original work and has not been presented for a Degree in another University.

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U.O.N   *NGUGI, W. R.*

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To My lovely sons Steve and Brian

and

My dear parents Robert and Mary

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ABSTRACT

Like many other developing countries, Kenya has faced problems in financing domestic investment. Despite a high proportion of GDP having been put into saving, Kenya has not met the investment finances fully. It has had to rely on foreign savings to supplement domestic resources. However, factors working on both demand and supply side of foreign savings have made the country put more emphasis on mobilization of domestic savings.

Saving is a complex socio-economic phenomenon. It is therefore necessary to understand the factors behind saving behavior. The main objective of the study is to examine the determinants of saving behavior of urban households in Kenya. Six towns are considered that is Nairobi, Mombasa, Kisumu, Nakuru and, Eldoret. An econometric study is carried out to test the explanatory power of various determinants of saving behavior and to see the effects of alternative policies that can be used in mobilizing savings. Due to data problems, the analysis lays greater emphasis on financial savings.

Using OLS technique, savings functions for urban households are fitted at urban center level. From the empirical work the following conclusion are arrived at: income is an important variable in savings function for urban households where saving

is a decreasing non-linear function of income; education and number .of income contributors play insignificant role in explaining variations in financial savings, movement towards equitable distribution of income means increasing financial savings thus aggregate savings and, reducing family size will leave more income for saving purpose.

From these results various policy implications are drawn. First, with the population control policy the country will achieve a lot in mobilizing domestic personal savings in urban areas. Secondly, it is necessary that the government ensures equitable distribution of income in urban areas. Thirdly, although the effects of education policy may be indirectly felt on saving, education policy will not exert direct effect on savings.

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CHAPTER 1

INTRODUCTION

1.1 Background

Savings play a vital role in determining the level of economic development. They provide the financial resources required in meeting investment costs. The formation of capital is one of the most important prerequisite to economic development, and in recent years mobilization of savings has become a frequent recommendation for development policies.

Since independence, Kenya has been able to sustain its economic growth with high rates of saving and investment (see table 1.1). A substantial proportion of Gross National Product (GNP) has been saved and used in financing gross investment. However, financing of economic development has posed a problem in Kenya like in many other developing countries. The domestic savings are not enough to meet fully the investment costs. This has led to reliance on foreign savings if planned investment is to be fully financed and high Economic growth rate maintained.

Though reliance on foreign savings helps in supplementing domestic resources, it leads to increasing external debt burden for developing countries. With a limited ability to service external debt, Kenya's prospects for increasing the inflow of foreign capital in future are very poor. With the easy choice of continuing to borrow from external source no long feasible, Kenya has been left with only one choice - to mobilize domestic resources if rapid economic growth is to be maintained in

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future. To do so Kenya will have to take policies that aim at increasing national savings and improving the allocation of financial resources to productive resources.

As is noted in the 1979/83 Development Plan, to maintain high rates of domestic savings not only should we have effective management of government budget but also households and business sector should share in the task. Studies that have been done in Kenya and in other developing countries have shown that; one, personal savings comprise a substantially large share of National savings and secondly ,rural households have higher potential to save compared to urban households, Mwega 1990. However, increasing the overall level of personal savings is a difficult task because there are various social, economic and demographic factors that affect the ability and willingness of households to save. Understanding how these factors affect the personal savings behavior is necessary if mobilization of personal savings is to be met successfully.

Table 1.1: Investment and Saving rates, 1965-1987

%GNP at current prices	1965/69	1970/74	1975/79	1980/81	1985/87
Gross Investment*	19.7	25.4	24.5	25.3	23.5
Foreign savings	3.2	7.4	7.0	7.0	5.2
Gross National Saving	16.5	17.9	17.5	18.3	18.3

source:Development Plan 1989/93

* Calculated as a percentage of total investment to total GNP.

1.2 The Research Problem.

From the previous section it has been observed that Kenya has been able to save a substantial proportion of her GNP. The savings have been used to finance (though partly) gross

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investment. Despite domestic savings rate having an upward trend, investment has exceeded the domestic savings leading to a widening saving-investment gap. On the other hand, reliance on foreign savings has led to external indebtedness and left the country with only one alternative -to mobilize more domestic resources. The rural households sector has proved to be a better source of maintaining high levels of domestic savings. However, we notice that the rural area is not wholly monetized. Though with high potential for saving, some of these savings are kept in-kind rather than in cash form(see table 6). Such savings are not easy to put into productive use. This implies, that only a small proportion can be used for investment purposes out of the total rural savings. In looking at the savings problem, it is necessary to consider not only the volume and rate of saving, but also to ensure that a high and rising marginal rate of saving is expressed in a rising proportion of savings in financial form.

Again though the urban areas take a small proportion of the total human resources (see table 1.5), problems of urbanization are already with us. There is need for a large amount of capital to help in providing enough basic requirements to the growing urban population. It is therefore necessary to investigate alternatives for encouraging urban savings and channelling them to help in financing urban dwellers requirements.

Urban areas are not homogenous. There are differences for example in income levels (see table 1.2), cost of living and even distribution of income within the towns (see Fig 1)

Average propensity to Save (APS) varies among the towns ranging between 0.009 to 0.106 among the major towns to be considered in this study (see table 1.2). If this is the case then, it may imply differences in measures that can be used in mobilizing urban household savings at town level.

Again studies that have been done in Kenya (as will be clear from the literature review) have looked at urban sector savings function, considering one or more centers together. No study have tried to model savings function for urban centers separately- of which would be suitable for comparison purposes. The present study tries to fill the information gap by fitting urban household savings function at urban center level. The study will take the following Kenya's major towns: Nairobi, Thika, Mombasa, Eldoret, and Nakuru.

Table 1.2 Total Monthly Income, Total Monthly Savings and Average

		Propensity to Save (APS) by Town	
	Total Income	Total Saving	APS
Nairobi	809,566	85,850	0.106
Mombasa	526,412	27,391	0.052
Kisumu	223,920	1,923	0.009
Nakuru	177,676	12,467	0.070
Eldoret	76,504	2,304	0.030
Thika	73,559	3,400	0.046

Source: Calculated from Urban Household Budget Survey (UHBS) 1982/83 data collected by CBS.

1.3 Savings and investment trends in Kenya and in other Sub-Saharan countries.

Kenya's savings performance since independence has been very good. At present it is able to save almost one-fifth of total GNP. From table 1.1 during the period 1965-1987, Kenya

experienced upward trends in the overall investment and saving rates though with fluctuations from period to period. The investment rate increased from 19.7% in 1965/69 to 23.5% in 1985/87 while domestic saving rate increased from 16.5% in 1965/69 to 18.3% 1985/87. Between 1970/74-1975/79 investment and saving rates declined from 25.4% to 24.5% and from 17.9% to 17.5% respectively. Since domestic savings cannot meet the total costs of investment, Kenya has had to rely on foreign savings as a supplement. The ratio of foreign savings to GNP almost doubled during the period 1965/69 to 1970/74. But after that period there has been a decline in relative foreign savings injected in our economy. This implies that though in the early years after independence there was a massive inflow of foreign resources, there are poor prospects of such trends in future. This can be explained by both demand and supply factors. On the demand side we have one, external debt problem. High dependence on external resources inflow may result in an unsustainable external debt situation. In Kenya, as is noted in the 1979/83 Development Plan, by the year 1979, 22% of the foreign exchange earnings from the exports were required to service debt. It was assumed at that time that Kenya's capacity to borrow was nearly exhausted taking 25% as the limit.

Secondly, heavy reliance on external finance leads to increased external socio-political dependence of developing countries on creditors since the capital inflows are tied and come with policy conditionalities. On the supply side, there has been a general decline in net concessionary capital inflows from the

Western Industrialized countries, and the trend may continue with the opening up of the Eastern Europe economies.

Comparing Kenya with other Sub-Saharan countries in the period 1965/87, almost similar trends in savings and investment rates have been observed. Sub- Saharan countries have been able over the years to save a substantial proportion of their Gross Domestic Product (GDP) and to use the resources in financing their domestic investment. Like many other developing countries with a gap between the domestic resources and investment, they have relied on foreign savings to supplement domestic resources in order to meet planned gross investment fully. However, there are differences in performance over the years among the countries (see table 1.3). Some countries like Kenya and Cameroon,have shown an upward trend in both saving and investment rates (though with domestic savings rates being lower than gross investment); while others like Tanzania and Ethiopia have shown worsening condition. Tanzania has shown a decline in saving and investment rates, while Ethiopia has had increasing investment rates with declining domestic saving rates implying heavy reliance on foreign savings. The differences in performance may be explained by the political, economic and climatic conditions facing the countries.

Table 1.3 Comparative Domestic Saving and Investment Rates 1965-87

	GDI/GDP			GDS/GDP		
	1965/73	1973/80	1980/87	1965/73	1973/80	1980/87
Kenya	22.6	26.2	25.2	17.2	16.4	18.3
Tanzania	19.9	23.9	18.7	17.1	13.6	9.0
Ethiopia	12.8	9.8	11.7	11.0	6.9	4.9
Malawi	20.0	29.7	19.0	*	10.7	17.0
Cameroon	16.9	21.8	22.4	*	16.2	18.2
Zambia	31.9	31.4	18.4	39.1	27.0	8.1

source:World Bank World Development Report 1989
   GDI/GDP - Investment rate
   GDS/GDP - Savings rate   *- data not available

1.4   Financing Gross Investment

Domestic investment can be financed through domestic savings and inflow of capital from abroad (that is other people's savings). Domestic saving is undertaken by companies (through undistributed profits and depreciation allowances) ; by Government (through excess of current receipts over recurrent expenditures) and by household (through personal savings). Some savings are directly invested by the savers while others pass through financial institutions such as savings banks and securities markets. On the other hand international capital may enter as direct foreign investment or loans.

Kenya's performance with domestic savings sources has been as follows: During the first decade of independence, the Basic Economic Report 1974 pg 6 noted that, household savings amounted to 10% of personal disposable income while corporate savings (depreciation allowance), contributed 30% of the total domestic savings. The public sector had also been able to do well with successful fiscal policies. In 1976 (during the second decade of

independence) household savings represented 35.8%, public sector savings 10.6% and business savings 41.9% of the total domestic savings(Development Plan 1974/78 pg 1660).

Considering the proportion of savings to GNP, although the private sector has higher savings rates compared to public sector rates, it has been facing ups and downs during the period 1965-1984. The rates declined from 16.7% in 1965/69 to 13.7% in 1975/79. The situation improved however to 16.9% in 1980/84(Sessional Paper No.1 1986 pg 15). Such trends were achieved through cooperatives ; special savings programmes like ensuring the Post Office Savings Bank plays a greater role in initiating the vast non-banking public into the banking habits and tapping the savings of low and middle income groups. Again the government has ensured higher positive rates of interest as an incentive to attract more financial savings(Development Plan 1979/83 pg 93-94).

1.5   The Widening Gap

Despite the good performance in domestic saving rates , Kenya has not been able to finance her investment fully. She has relied on foreign savings to supplement domestic resources. With investment level being higher than savings, this has resulted in a widening saving-investment gap. The share of foreign savings in total investment finance has been increasing over the years. But the amount of foreign resources injected into our economy is declining such that future prospects of relying on foreign savings are very slim. During the period 1983-88, the share of domestic savings in total investment financing declined from 82%

in 1983 to 67% in 1987 then increased slightly to 69% in 1988 (see Table 1.4).

Table 1.4 Share of Domestic Savings in the Gross Fixed investments 1983/88

YEAR	Proportion of domestic savings as % of total finance
1983	82
1984	77
1985	70
1986	88
1987	67
1988	69

Source: Various Development Plan issues

Although foreign savings help in supplementing domestic resources thus ensuring that a higher investment rate is maintained in the economy, they lead to increased external indebtedness. In Kenya external debt has today outstripped the export earnings, while the ratio of debt service charges to export earnings has had an upward trend over the years except for 1974 (see table 1.5). In the 1979/83 Development plan, it is noted that, though it is right to use the nation's borrowing capacity to promote development, Kenya's capacity is limited by the ability of the nation to service external debt. And, it seems now the easy choice of continuing to borrow from external sources is no longer feasible. Unless domestic resources including the foreign earning are used to support a larger part of the cost of development , then the pace of development will slow down. This has left the country with a much harder choice to make; either to have a much slower rate of growth or to make every conceivable effort to mobilize the nation's resources in a major domestic development effort. The Government has chosen the

latter course of action. Again; in the 1979/83 Development plan with the theme "Mobilization of Domestic Resources", its noted that the government can achieve this through not only effective management of her budget but also through household and business enterprises sharing in the task. The household should allocate a smaller proportion of their income to consumption and a larger share to savings. Also, the 1974 Basic Economic Report on Kenya noted that the prospects of greater savings by the government and corporations are rather uncertain. Therefore the task is left to the household sector.

Table 1.5 External Debt and Debt Service charges 1964-1987

	1964	1972	1974	1978	1982	1987
A*	56.70	52.70	38.20	40.90	97.90	162.90
B**	1.65	3.61	2.41	5.26	11.69	18.38

source: 1989/93 Development Plan pg 15
     A*____ Ratio of external debt to export of goods and services.
     B**___ Ratio of debt service charge to export earnings.

1.6 Some Characteristics of Urban Areas

From the previous section, it is clear that; the household sector contributes substantially to the total domestic saving and that future hopes of maintaining high levels of domestic savings depends on mobilization of savings from this sector. The household sector is made up of two sub-sectors; the rural household and urban household sub-sectors. In this section, we examine the characteristics of urban areas. Kenya has experienced rapid urban growth since independence in terms of population size and number of urban centers(see table 1.5). This

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is attributed to among other things; rural-urban migration and expansion of urban centers boundaries.

Table 1.6   Urban Population Growth and Number of Centers with >2000 Persons

Year	Urban Population as % of the Total Population in Kenya	Urban centers
1948	5	17
1962	8	34
1969	10	48
1979	15	91

source: 1979 Population Census Report on Urban Population Vol 3 pg 2

Among other factors that characterize the urban population we have one, it is composed mainly of the working age population. This would imply that the proportion of age population under 15 years to total population is very small in urban areas. Secondly, most of the highly educated population in Kenya is in the urban areas. For example Nairobi in 1979 had 28% of its population aged 15 years and over who had at least completed Form 1 and over.

Comparing urban sector with the rural sector, we notice that the former is a high income area. However, despite the high income earning opportunities, the level of savings is very low. Previous studies in Kenya and in other developing countries have shown that rural population save more. The APS of rural sector in Kenya ranges between 0.127 and 0.366 while for urban sector it ranges between -0.050 and 0.181. Also the MPS have shown to be greater in the rural areas than in urban areas. This concludes that the rural sector has a higher potential to save than the urban sector. However looking at the savings

composition for rural areas we find that a big proportion is in-kind form(see table 1.6).

Table 1.7   Income Expenditure and Savings (cash & kind) of Rural Household (Kshs)

	Kind		Cash		Total	
Average monthly income	396	48%	433	52%	829	
Average expenditure	191	36%	336	64%	527	64%
Average savings	205	68%	97	32%	302	36%

Source: Economic survey 1988
% in column 1&2 are calculated as ratios to totals in column 3.
% in column 3 are calculated as ratios to totals in row 1 of the same column.

1.7   Objectives of the study

1:    To study the various factors influencing household savings behavior.

2:    To determine the relative importance of these factors across the towns.

3:    To make a comparison across the towns to the nature and strength of relationships.

4:    On the basis of the above (2-3), make policy recommendations on alternative ways of encouraging urban savings in future planning.

1.8   Significance of the Study

Country - wide the cost of investment is increasing each year. For example, according to Sessional Paper No.1 of 1986 the average price of investment was increasing at annual rate of 3% reducing the real value of savings. By increasing the savings rate then it will be possible to maintain the real value of savings and thus cover the cost of investment.

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Kenya like many other developing countries aims at reducing the reliance on foreign savings and foreign indebtedness. Doing a study on household sector (bearing in mind that it takes a proportion of the total domestic savings),it will be possible to tell the extent to which the investment savings gap could be closed.

Again the study will consider the urban savings function at urban center level. This will help the policy makers in making a decision as to whether planning for mobilization of urban resources should consider different policies or different dosages of policies at urban center level.

1.9 **Organization of the rest of the paper**

Theories on determinants of savings behavior and their empirical test are discussed in Chapter 2. Chapter 3 contains the model to be estimated, description of the data and description of the area of study. Results on estimated models are discussed in Chapter 4. Lastly, conclusions and recommended policy(ies) are in Chapter 5.

2.1 Introduction

The literature is divided into two parts: theoretical and empirical literature. Theoretical literature looks at the various savings models that have been developed. Empirical literature concentrates on studies that have been done on developing countries to test the models. It is divided into two sub-sections: studies on developing countries and specific studies done on Kenya.

2.2 Theoretical Literature

Modern savings models have been tested in developing countries. Among these models include: the Keynesian absolute income hypothesis ; Duesenberry's relative income hypothesis ; Friedman's permanent income hypothesis and Modiglian-Brumbery life-cycle hypothesis.

The Keynesian Absolute Income hypothesis

Keynes (1936) concluded that there is a fairly stable relationship between consumption and current income. He acknowledged other factors like wealth, interest rates and distribution of income but he dismissed their importance and concentrated on current income.

In explaining the relationship between consumption and income he invoked the "fundamental psychological law" which states that men are disposed as a rule and on average to increase their consumption as their income increases but not as much as the

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increase in their income (pg 96). According to Keynes MPS exceeds APS, and MPS increases at higher levels of income.

Friedman's permanent income hypothesis

Friedman (1957) made a distinction between measured income (income actually received) and permanent income (income on which consumers actually base their consumption). According to Friedman consumption depends on permanent income, rate of interest or set of interest at which the consumer unit can borrow or lend, non-human income to wealth ratio and tastes and preferences. The MPS out of transitory income is higher than that of permanent income, implying that the individual consumer does not consume transitory income but relies on the past behavior as determinant of consumption spending thus saving all his transitory income.

The relative income hypothesis

After the second world war there were efforts to reconcile the cross section observations of the household saving ratio and the relative constancy of aggregate personal savings ratio overtime. The earliest explanation was provided by the Duesenberry(1949) relative income hypothesis.

According to the hypothesis, at any point in time the propensity to save by an individual can be regarded as a rising function of his percentile position in the income distribution. Again aggregate savings ratio is independent of absolute level of aggregate income over time though it may depend on income distribution. Therefore the division of income between

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consumption and savings depend on the individual relative rather than absolute income.

The life - cycle hypothesis

Modigliani postulated that individuals adopt a planning horizon for their life time consumption. It is assumed that individuals attempt to spread their life time consumption evenly over their life's by accumulating enough savings during their earning years to maintain the consumption standard. Thus Modigliani postulated a hump savings function.

A stationary population and income would have no aggregate net personal savings as the dissaving of the retired would exactly offset the saving of the employed. A society on the other hand with growing population and per capita income has positive aggregate net personal saving as the working population tends to be higher than the retired population. The higher the current income therefore the larger the savings necessary to maintain individual consumption in retirement.

To conclude from these hypotheses, saving is a function of various factors including ; wealth, income, growth of the economy, income distribution and demographic factors. From the above theories individual saving behavior is influenced by economic, social and demographic factors.

2.3 Empirical Literature

2.3.1 Empirical studies on developing countries

In this section we look at empirical tests of the various factors postulated by the above economic theories to influence savings behavior.

Income

In testing for current income, studies have shown that savings respond to variations in current income but there is more variation of the results on developing than on developed countries. Hence the need to include other variables besides current income to adequately explain and predict the household behavior.

Kuznets (1960) with a cross sectional data of 70 countries sub-divided into seven categories according to per capita, concluded that there is a tendency to have higher saving ratio the higher the per capita income but not consistently. He also related personal savings to personal disposable income and found that they are positively correlated. He concluded that personal savings are not important in the overall net domestic savings in lower per capita income countries as compared to higher per capita countries.

He was supported by Houthakker who found per capita personal savings to be proportional to per capita disposable income and Johnson & Chiu(1968) who found the same results using cross-section data for 30 countries both developed and developing countries. Majority of the results showed a positive correlation between saving and income but only two cases yielded significant results. On the other hand only five countries showed negative

intercept with two significant. The results suggested that saving is a proportion of income.

In his study, Leff(1968) found Brazilian APS to be constant instead of increasing for the period 1939-1960. Hollis and Chenery (1970) found MPS for 16 Latin American countries to be between 0-0.03 but these results did not indicate that MPS is uniformly greater than APS. Therefore Keynes assumption of 0<MPS<1 holds for developing countries, and current income is statistically significant determinant of savings.

Empirical test of permanent income have shown divergency between Marginal Propensity to save from transitory income(MPSt) and Marginal Propensity to save from permanent income(MPSyp). Studies have supported the hypothesis where MPSt is positive and greater than MPSyp but not one(MPSyp < MPSt but not = 1).

Williamson (1968) using a three year moving average of actual income as a proxy for permanent income, studied 8 Asian countries and found significant results where MPSyp ranged between 0.20 - 0.29 and MPSt between 0.37 - 1.12.
Friend and Taubman (1968)studied 21 countries and found MPS_{yp} to be 0.065 and MPSt to be 0.451. Also Ramanathan (1968) saw MPS_t to be positive and significantly below one in Delhi, India. He used mean current income as a proxy for permanent income, where households are classified into homogenous groups then their mean income is used as an estimate of permanent income.

Betacourts(1971) used cell approach on Chile with 6200 household. In this approach it is assumed that a household expected income in X years is the same as income for similar household with a head of X years old. He tested permanent income against absolute income by comparing total within group and between group consumption function. He found the permanent income hypothesis strongly supported. However the hypothesis that MPCyp is constant was rejected but with some uncertainty.

Although various proxies have been shown to be significant, the studies have used current or past behavior instead of expected income because the latter is not observable.

Demographic factors

Among the factors that have been tested include age of the household head, education of head of household dependency ratio and household size.

Kelley and Williamson (1968) in Indonesia regressed per capita household savings on per capita household income for five household age groups. They found significant relationships for age cohort 40-49 years. MPS increased with age of head of household for age cohort 20-29 years and 60-69 years from 0.046 to 0.060 respectively. But they suggested modification of life cycle model if it is to be applicable in developing countries. The model assumption of temporary constant per capita consumption and strong retirement motive for saving are not tenable within the environment of extended family.

Although demographic factors influence or seem to be important variables in savings function, they are largely unexplored in the study of developing countries savings behavior.

Wealth

Although wealth has long been thought to affect consumption, its test has been limited by its definition. Various factors have been used as proxies of wealth. Wealth and income are highly correlated and this gives rise to estimation problems in empirical studies.

Kelley and Williamson(1968) found Indonesian farmers' MPS and APS rising with greater land ownership suggesting presence of positive interaction between wealth and income.

Ramanathan(1968 & 1969) supported them with similar results for India. He incorporated wealth defined as household net worth into the saving function directly, in the form of a wealth - income interaction term and through the normal wealth hypothesis of Crockett and Friend(1967) which postulates that saving depend on the difference between actual wealth and normal wealth. The findings supported the hypothesis particularly when the households are classified by occupation and age. The wealth coefficient and interaction coefficient were significant and had the positive and negative signs respectively.

Snyder(1971), used a linear probability model to analyse the decision to save or not among 300 West African households. He defined wealth in terms of an index of housing characteristics

and consumer durable ownership. Wealth families were found to be more significantly likely to save.

Friend and Taubman (1966) used target savings model where asset holdings is crucial to saving behavior. Past savings were used as proxy for wealth. He found past savings highly significant and with a negative sign. The results were supported by Choudhury (1968). He used household assets as a proxy. Then results were significant with a negative sign. Williamson found similar results testing wealth stock adjustment model of Lydall and Spiro.

Other factors

Among other variables that have been tested in developing countries include: number of earners in household; education level of household head; family structure; source of income; locality; income distribution and land ownership.

Gupta (1970), Jones(1960) and Choulhury(1968) classified household into rural and urban and found MPS for urban areas higher than the rural areas in India. MPS tend to increase with per capita income. Gupta suggested that redistribution of income from rural to urban will lead to higher aggregate savings.

In Sierra Leone Snyder(1971) found similar results. But such strange results could be attributed to by the underestimation in the rural income and not consumption leading to low figures of savings.

In testing for different distribution of income, Houthakker (1960) classified income into property and labour income and used international data. His results were that savings out of employment income tend to be zero implying that property income explains more of the variations in savings function.

Williamson(1968) applied the same method as Houthakker to six Asian countries and found strong disparities out of labor and non-labor income.

Kelley and Williamson (1968) looked at the role of income distribution differently. They classified the sample into entrepreneurs and non- entrepreneurs. Comparing the saving behavior for each group they found as expected entrepreneurs have the highest savings potentials.

Looking at the family structure, we are concerned about the extended and nuclear family. Synder (1971) in his study in Sierra Leone, found the nuclear family saved more than the extended family. With the extended family, income is distributed to many limiting the amount set aside for saving.

Blumenthal argued that saving ratios will differ with the same income and age of household head due to differences in the number of earners. The relationship may be positive or negative. For the former, with an extra earner the family will remain accustomed to the former levels and save the extra income. For the latter,

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Eizenga (1961), on the other hand argued that with more earners, the family's vulnerability in cases of sickness and old age is reduced, and therefore need smaller reserves of saving.

Singh, Gupta, and Singh(1978), studied Hissar district in India. They grouped the data into five categories based on household holding. MPS and APS were higher on large sized farms than small sized farms.

2.3.2   Empirical studies on Kenya

Studies done on Kenya include both on rural and urban households. They have used Budget Survey data and generally carried out cross-sectional analysis. Various factors have been considered as influencing the savings function.

Among the studies done for the urban areas include Kamau (1973), was interested in seeing the impact of Africanization policy on household savings in Kenya after independence 1963; Lillydhal (1976) testing the impact of socio-economic and demographic factors on the level and composition of household savings; Massell and Heyer (1967) looking at the relationship between household expenditure pattern and other major variables in predicting urban household demand and finally Vandermoortele and Hoeven (1982) testing the hypothesis that household consumption is influenced by a series of variables.

Lillydhal (1976) fitted a savings model for the urban areas covering Kisumu, Nairobi and Mombasa. She used 1968/69 Kenyan household budget survey data with 1146 households. The following

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variables were included: income, education, age of household head, number of adults in the household, land ownership, tribal status, and extended family. The results were APS 1.3% and MPS at mean 22.8%. Income was the most significant factor in savings function but with a nonlinear relationship; extended family has a depressing effect on savings; tribal status, adults in household and children have little impact on savings while age of household head, education of household head and land ownership were insignificant. Although she just considered the first step of identifying the determinants of household saving in a single equation framework, her saving equation was well fitted with the variables explaining 72% of the variation in savings.

Kamau (1973) conducted a study in Nairobi to determine the effects of Kenyanization on personal saving. He took a sample of 1052 huoseholds. He found remarkable differences in holding of financial assets by African Asian and Europeans. Africans prefered savings account with 55% and current account 32% of the total sample. He also looked at the motives for saving. Education of children was the most frequently mentioned motive among the Africans.

Massell and Heyer (1967) found almost similar results. Their study however covered only Nairobi. They found income and household size to be statistically significant, education not significant in most cases with only one significant equation out of 26 estimates, and land ownership (used as a measure of wealth) not significant also.

Vandermoortele and Hoeven (1982) also fitted a saving model for the urban areas. They used the 1977 Urban Food Purchasing Survey data collected by the Central Bureau of Statistics(CBS). Households were divided into homogenous groups in order to measure the influence of the various factors on the household consumption. They used linear expenditure system technique. They found MPS of 0.666 and an APS of 0.50 indicating that the urban household are dissavers. There was a positive correlation between income and household size. APS increased with occupational status and education level. The limitation of this study is that the results depend on the partitioning of household population and on commodity classification. Taking a different classification may yield different results and it might not be possible to compare the results. Again the study did not consider the significance of the variables only the correlations were dealt with. The results were similar to those of Otundo (1982)who did a similar study using the same data and estimation technique.

Otundo (1982) and Vandermoortele and Hoeven (1982) carried out studies in the rural area using the Integrated Rural Survey 1 of 1974-75. Otundo tested the hypothesis that marginal propensity to consume is higher in rural areas than urban sector and that marginal food budget for food is higher than that for non-food in rural areas. Following the same method as they did for the urban areas they had the following results. The MPS were 0.458 and 0.549 for Otundo and Vandermoortele and Hoeven studies respectively. The differences may be due to differences in classification of commodities where Otundo did not get access to

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disaggregated data but used food and non food classification while the other study used more disaggregated commodities.

Massell (1967) analyses the determinants of expenditure by rural household in central province of Kenya. He used Budget Survey data conducted by a U.N team for the Kenyan government in 1963. The sample size was 836 households. He also classified commodities. He noted that there are important differences in expenditure pattern from one district to another apart from the household size and total expenditure. He took district variable but classification by district was only significant for 1 non food item. The other results were that income was most significant variable, household size and acreage were only significant in three out of 18 estimations while education was significant in 7 estimations. Although this study noted the differences in the district's consumption pattern, it did not try to see where there is any significant differences among their consumption functions.

2.4 Overview of the literature

From the reviewed literature, a wide range of factors affecting the savings behavior have been reviewed. Income has been shown to be a significant variable in the savings function in studies done on Kenya like on many other LDCs. Studies done on Kenya's urban areas have attempted to look at the relationship between various factors and savings using various statistical techniques. However,they have used outdated data. The present study tries to update the studies using the 1982/83 UHBS data using OLS technique.

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Again, previous studies have looked at urban areas in general thus coming up with a savings model for the urban area as a whole. Differences in urban areas at urban centre level have been noted. It is the aim of this study to model the urban saving function at urban centre level and see whether there are any differences between them.

CHAPTER 3
METHODOLOGY AND DATA

3.1 Introduction

The chapter is divided into two major parts. Part one covers the model to be estimated and the hypotheses to be tested. Part two contains the description of data and, a brief description of the areas of study.

3.2 Methodology

3.2.1 Model specification.

From chapter two various determinants of saving behavior have been discussed. They are social, economic, and demographic factors. Some of these variables are considered in the present study, depending on the availability of data. The urban household saving model estimated in this study is as follows:

$$S = f[\ Y\ INCCON\ HHS\ EDUC\ YDS\ U\ ].$$

S	Household Savings in Kshs.
Y	Household Monthly income in Kshs.
INCCON	Number of contributor in the household.
HHS	Household size (total number of adults & children).
EDUC	Education level attained by the head of household measured in terms of number of years in school.
YDS	Income distribution measured in terms of diversion from the equality line (Gini Coefficient of every town).
U	Random error term capturing effects of other variables not included in the model

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but are thought to influence saving
behavior.

3.2.2 ⚹ __Brief Discussion of Variables in the Model.__

(i)   Savings

In defining saving as a residuals - that part of income that is
not consumed, an element of sacrifice is implied. An individual
sacrifices his present consumption in order to increase future
consumption. Thus given income, then savings will be equated to
Y-C - where Y is income and C total consumption. On the other
hand savings could be looked at as an increase in net worth or
assets in general. This implies that there is a change in
individuals' accumulated assets.

In the present study savings are defined in terms of assets,
that is, financial savings including only savings deposits. Due
to data limitations it is not possible to widen savings
definition. It is true that aggregate savings include both
financial and non-financial savings. Also the former is composed
of more items and not just savings deposits. Again savings is a
stock variable and not a flow variable. Using UHBS 1982/83 as
the source of information, various problems were encountered in
defining savings. One, there was no information on total income
of household. This would have helped in defining saving as a
residual, that is, Y - C where Y is the total income and C total
consumption, thus capturing aggregate savings. Only total
expenditure data is available.

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Two, though savings deposits are given, this is just part of the total financial and aggregate savings. There is no information for example on cash savings - accumulation of liquid assets-held by households and other financial assets that individual hold their savings in. From the literature, Kamau (1973) has shown that majority of the people hold there savings in terms of savings deposits. Taking this into consideration then we can assume in this study that savings deposits is a proxy for the total financial assets.

Three, despite the fact that there is data on financial savings, we can not consider saving as a stock variable directly without making some assumptions. It is not possible to tell how financial assets changed from the previous period. The only information available was on financial assets held during for the period of the study. The present study assumes that the available data, gives the amount of financial savings that individuals put in banking system during the period, thus the change in financial assets. Again the information is on monthly basis. The question to answer in this study is what influences the average monthly savings for the households?

(ii) Income
Total income is defined as in the Urban Household Budget survey(UHBS) 1982/83. Income is defined as approximately equal to savings plus consumption $(Y = C + S)$. In defining income, the latter used the expenditure approach and the following items were considered in broader terms; Food, drinks and tobacco; minor goods e.g. clothing footwear and utensils; major goods or

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durables; regular expenditures e.g. electricity and water bills, rent, school fees, and medical fee; saving deposits, loan servicing, miscellaneous expenditure, and transfers outside the household.

The argument is that income and expenditure information provide two alternative ways of estimating consumption and welfare. The use of income data has disadvantages in situation where considerable amount of consumption are derived from own production transfers or where there are considerable variation in prices.

Income has ben shown from the literature to be an important determinant of aggregate savings. The higher the income the higher the aggregate savings. Decomposing savings into financial savings and physical capital, we may find income influencing the two types of savings differently. For example if an individual is to consider the returns from different assets, it is possible to have a negative or positive relationship between savings deposits and income. From observation, some individuals accumulate savings in the bank to raise enough resources to meet a certain need - target savers. In this case it is possible that with an increase in income there will be a decline in savings since the individual can raise the finances more easily without putting money in the bank. This will thus imply a negative relationship between income and savings deposits.

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(vi) Income contributors

From the literature this variable may influence aggregate savings positively or negatively. For the former situation it happens when the family remains accustomed to the former levels of income with extra earner. Positive savings may be due to increase in financial savings and / or non-financial savings. An increase in number of income contributors may imply shifting responsibilities away from the head of household (see below section iv). This lessens the burden and leaves the household head with more extra income. The extra income may be put into savings through various modes. for example purchasing a piece of land or increasing savings deposits. However, putting the extra income in form of physical capital is a more likely possibility. The other case is where the family becomes vulnerable to cases of sickness and old age with an extra income earner such that very little of total household income is saved.

(iv) Household size

The head of household has the responsibility to maintain and care for the family in terms of food, clothing, shelter, school fees and others. It can be argued that the larger the household size the more the family demands and the higher the expenditure level. This implies that increasing family expenditure leaves very little for saving out the total income (if $Yd - C = S$ then the higher the C the lesser the S: where Yd- is the disposable income, E- is the expenditure and S- Savings). On the other hand additional member may mean increasing future consumption - by foregoing present consumption - needs as larger savings are needed for bride price etc. I would expect that the number of

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individuals in a household to affect aggregate savings and financial savings in the same way.

(iii) Education level attained by head of household:
A well educated person is considered to have an increased awareness of investment opportunities. Thus we expect such an individual to save more. For the aggregate savings then the more the number of years in school the higher the savings level. We have seen that savings could be in various forms of assets. If an individual were to consider the returns from the various assets then depending on which one has the highest return then an individual may choose the type of assets in which to accumulate savings depending on assets' returns. Again if we assume that a well educated individual is aware of the investment opportunities we find such an individual may prefer to have physical capital than financial savings or save through hoarding.

(v) Income Distribution
Saving propensities tend to differ among household. Thus we expect that aggregate savings will vary depending on income distribution among the households. Keynes postulated that income distribution causes variations in saving behavior, however, he did not give it much emphasis.

Some theories of development especially those of classical economists, for example Classical theory, Adam Smith's theory, and Ricardian theory emphasis that only property owners save in an economy. Workers do not save since their income tend to be

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equal to the amount for subsistence of laborers. They therefore suggest that a right - ward skewed income distribution leads to higher aggregate savings. However, it is possible that total savings increase due to an increase in savings deposits or physical capital. From observation the few higher income earners increase their physical capital or cash holding relative to savings deposits or conspicous comsumers. Thus we expect that with inequality aggregate savings will increase but savings deposits are declined compared to other assets. Various proxies for income distribution have been used for example occupation groups. In the present study income distribution will be captured by the Gini-Coefficient for different towns.

3.2.3 Hypotheses to be Tested

1. Income is expected to be either negatively or positively related to savings deposits. From economic theory Marginal propensity to save (MPS) is less than one and positive i.e. $0 < dS/dY < 1$ for aggregate savings. The hypothesis to be tested is as follows;
    H_0: $b_1 = 0$

    H_a: $b_1 \neq 0$

2. Income contributor sign is expected to be negative. The hypothesis to be tested is;
    H_0: $b_2 = 0$

    H_a: $b_2 < 0$

3. Household size can have a negative or positive relationship with savings. The hypothesis to be tested then is;

H_0: $b_3 = 0$

H_a: $b_3 \neq 0$

4. Education level of the head and savings are expected to be either negative or positively related to savings. Thus we expects to the direction of relationship from the estimations. The hypothesis to be tested then is;

H_0: $b_4 = 0$

H_a: $b_4 \neq 0$

5. Income distribution variable is expected to be negatively related to savings. So that the higher the level of inequality- the larger the value of Gini-Coefficient- the lesser the financial savings. Thus the hypothesis to be tested is as follows;

H_0: $b_5 = 0$

H_a: $b_5 < 0$

3.2.4 Estimation Procedure

Econometric study is conducted to achieve objectives set in chapter 1. Such a study helps in testing the explanatory power of economic theories in chapter 2 and to make decision as to how well these theories explain the observed behavior of saving - the economic unit. Also it is possible to compare the effects of alternative policy decisions (Koutysoyiannis, 1977. pg 8).

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There are various methods for measuring the relationship between economic variables. The present study uses Multiple Regression analysis and Ordinary Least Square (OLS) technique. This implies that the models are single equations and multi variate where the study limits it self to the first step of identifying the determinants of household saving in a single equation framework.

The equations are fitted for urban areas separately. However since this models cannot capture the income distribution variable then a model capturing all the urban areas is estimated. Thus there is a total of seven equations estimated in this study.

The study also uses Analysis of Variance (ANOVA) a statistical method developed by R.A Fisher. The later is used in connection with the Chow Test that will be used in order to meet the third objective of the study.

3.3 **Data**

3.3.1 **Data source and type**

The study uses a cross-section Family Budget data. The information is contained in Urban Household Budget Survey (UHBS) 1982/83, carried out by Central Bureau of Statistics (CBS) - (APPENDIX II gives data for six urban centres and for the variables extracted). This is the most recent household survey for urban areas. A total of 34 Urban towns were considered in this survey. The main objective of this survey was to provide basic information on patterns of expenditure and consumption of different socio - economic groups. The National Sampling Frame constructed as part of the National Sample Survey and Evaluation

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Programme(NASSEP) was used. The latter is a sample of household
achieved through two stage sampling. In the first stage we have
selection of cluster and in second stage a selection of
household within that cluster.

Table 3.1   Number of clusters and household by town

Town	Clusters	Households
Nairobi	60	588
Mombasa	24	280
Kisumu	10	161
Nakuru	8	117
Thika	4	66
Eldoret	4	65
Others*	40	763
Total	150	2040

Source: NASSEP 1980/84
* Others include 28 small urban centers
A total of 150 clusters were considered with a total of 2040
households. This sample is equivalent of 3% of the total urban
population(see table 3.1)

Sample selection was accomplished by randomly selecting
Enumeration Area(EA) using the 1979 Population Census. EAs were
selected using probability sampling proportionate to town sizes
in terms of expected cluster of an average of 100 households.
Then sample size was allocated to towns taking account of
expected reliability work and population of the town. Six big
towns Nairobi,Mombasa, Kisumu, Nakuru, Eldoret, and Thika came
into the sample with certainty. Other towns were grouped by
Province and selection from them effected using probability
sampling proportionate to size.

3.3.2 Data limitations

The limitations of the data as a base for this study are as
follows: Despite the fact that it is the most recent data for

urban households it is outdated. This is because 10 years have elapsed since the information was collected and there may have been some changes during the period that would affect the information. On the other hand it forms a good base for other urban budget surveys and for comparison of other studies based on such surveys.

There is limitation of variables. Very few of the variables can be used for this study. For example information on age of the head of household, a major variable in testing Life-Cycle hypothesis is totally missing in this survey. Household size is given in total. There is no break down of the household composition.This makes it even impossible to test the economies of scale factor in consumption as household size increases, that is, a decrease in the additional expenditures on each subsequent family member (Henderson 1940-50).

3.3.3 **Data base used in this study**

The extraction of this data was done using the Aerial+Plus Micro Computer Programme. However to analyze the data some modifications were made to the original data(see table 2). Micro TSP Version 4.1C by David M.Lilien (1984) was used in analysis of data. To use the latter programme some households with missing information on households composition and other socio-economic information were eliminated or termed as invalid observation for this study. The reason for this is that the programme does not take care of missing information. And also including them may bring biases on the results. Due to many

households having missing information about half of the total observations were lost in the process.

Table 3.2   Household Covered by Towns

Towns	Original size	Present sample size
Nairobi	588	217
Mombasa	266	166
Kisumu	161	76
Nakuru	117	67
Thika	66	44
Eldoret	179	39
Total	2040	609

3.4   Description of areas of study

The study will take the six major towns in Kenya namely: Nairobi, Kisumu, Eldoret, Mombasa, Nakuru and Thika. In Kenya, majority of the existing urban centers originated during the colonial era. At that time, urban centers were located along the railway line which was by then the central transportation net work. Among such centers of the colonial development strategy include: Nairobi, Kisumu, Mombasa and Nakuru. Others like Thika evolved as a result of opening up of the productive highlands.

Nairobi is the capital and largest city in Kenya. It is also the location of most of the government offices and other international organizations offices.

Mombasa is situated in Coastal Province and it is the provincial and district headquarters. It has a unique location as a major East Africa port contributing immensely towards the economy of the country.

Kisumu is Kenya's chief port on Lake Victoria. It is a railhead for products from Mombasa destined for Uganda, Northern Tanzania, and Zaire.

Thika is in Kiambu district (a leading district in urbanization in Central Province). Thika has experienced rapid growth as a satellite to Nairobi attracting the over spill of industries from Nairobi. Together with Eldoret they are the leading textile industrial towns.

Considering the population size Nairobi takes the highest proportion of urban total population (see table 3.3).

Table 3.3 Population size of urban centers by selected towns.

Urban Center	Total population 1979 Census	
Nairobi	827,775	(35.70)
Mombasa	341,148	(14.70)
Kisumu	152,643	(6.60)
Nakuru	92,851	(4.00)
Eldoret	50,503	(2.20)
Thika	41,324	(1.80)
Total	1,506,244	(65.00)

Source: 1979 Population Census Report Vol 111 Proportion of the total urban population for each town are given in the parentheses.
Last row given the total population of the six towns.

CHAPTER 4

EMPIRICAL ANALYSIS

4.1 Introduction

The chapter constitutes the findings from the data. The analysis is conducted at two level: Descriptive and regression analysis. The former gives the socio-economic characteristics of urban population. The regression part gives the results of the fitted urban saving models. The first part of the chapter cover the descriptive analysis.

Part two which covers the regression analysis is divided into four sections; in section one regression equations for the various towns are presented. Section two we have the interpretation of regression results in section one. In an effort to meet the third objective of the study Chow test is conducted between the various towns in section three. Section four models the total urban area saving behavior including the extra variable that was not taken care of by the single town equations. This urban model also serves as a way of identifying the determinants of urban saving behavior.

4.2 Socio-economic characteristics of the urban households.

Income distribution is one of the indicators of country's economic progress. Kenya's aim has been to ensure that there is some equity in income distribution since independence, however this has not yet been achieved. The Government still struggles to meet the underlying objective by trying to reduce the level of inequality further. While disparities between the urban and

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rural areas are very clear and the government is trying to reduce the gap through rural development programmes, inequality among the urban centers seem not to have assumed great emphasis.

From the sample surveyed in this study it is clear that there are differences in income distribution as far as urban centers area concerned. The Gini-Coefficient - a measure of inequality - in urban areas considered in this study range between 0.63 and 0.42 in Kisumu and Eldoret respectively (see table 4.1).

To calculate the gini coefficient the following steps were followed:

(i) For every town, the observations were arranged in ascending order according to income and grouped into deciles.

(ii) For every decile, total income was calculated as a percentage of the total town income. The results of this are as presented in Table 4.2.

(iii) The results were later presented in a line graph using a graph paper coming up with lorenz curves for each town(see Fig 1).

(iv) To get the gini - coefficient, the area between the lorenz curve and the equality line was estimated using the counting square method and given as a percentage of the total triangle area.

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FIG. 1:   LORENZ CURVES

POPULATION PERCENTAGES

KEY:
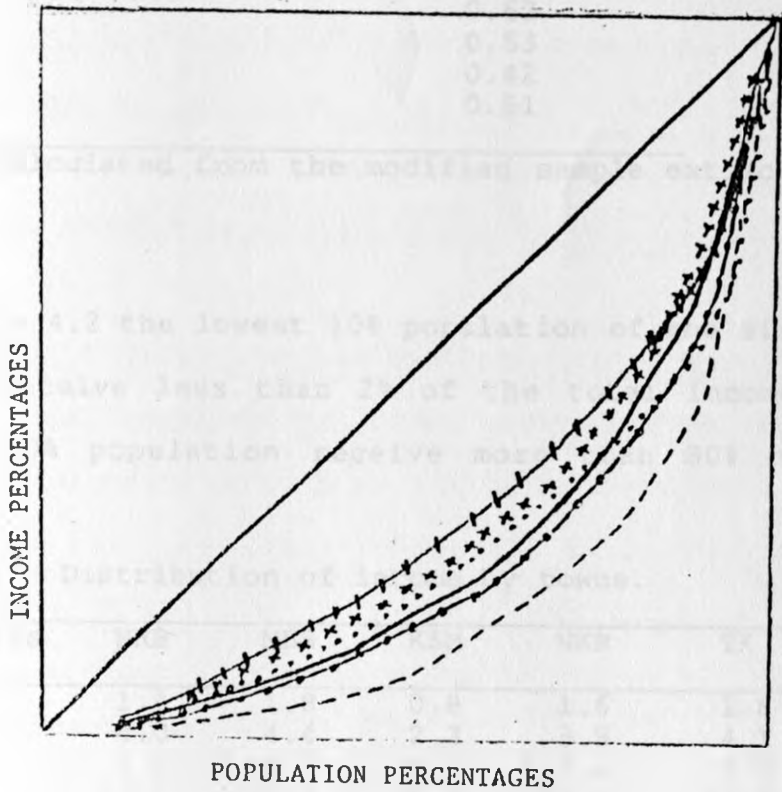
-I-I-   Eldoret
-•-•-   Thika
- - -   Kisumu
———   Nairobi
x x x   Mombasa
• • •   Nakuru

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Table 4.1 Urban Centers Gini Coefficients.

Towns	Gini coefficients
Nairobi	0.46
Mombasa	0.44
Kisumu	0.63
Nakuru	0.53
Eldoret	0.42
Thika	0.51

Source: Calculated from the modified sample extracted from UHBS 1982/83

From Table 4.2 the lowest 10% population of the six major urban centers receive less than 2% of the total income, while the highest 10% population receive more than 30% of the total income.

TABLE 4.2   Distribution of income by towns.

Percentiles	NRB	MBS	KSM	NKR	TK	ELD
10	1.4	1.8	0.8	1.6	1.8	1.8
20	4.0	4.4	2.3	3.9	4.1	5.9
30	7.3	10.6	4.2	7.2	7.7	11.0
40	11.1	15.4	6.4	10.8	12.9	17.1
50	16.4	21.2	9.9	15.6	19.1	24.4
60	22.8	28.8	15.0	20.8	26.1	30.9
70	31.3	35.2	22.0	31.0	33.7	40.3
80	43.8	48.3	31.6	43.0	41.8	50.2
90	63.1	67.5	46.3	53.5	53.9	64.0
100	100.0	100.0	100.0	100.0	100.0	100.0

Key: NRB- Nairobi,MBS-Mombasa, KSM-Kisumu, NKR-Nakuru, TK-Thika, ELD-Eldoret.
** The sample for every town was arranged in ascending order according to income. For every population percentile the total income was calculated as a percentage of the total town income.Then cumulative percentages were calculated.

This implies that urban areas have a skewed distribution of income. This is true for all the urban centers, but Kisumu shows greater inequality compared to the other towns. 10% of highest decile in Kisumu receive more than 50% of the total income. These results differ from those of ILO using the 1969 Census(ILO

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1972). The latter found out that Mombasa had more inequality compared to Nairobi and Kisumu.

Table 4.3 gives the proportions of income that goes to saving. There are variations among the towns on the amount of total income that is saved. This ranges between 5.3% and 18.5% in Nairobi and Eldoret respectively.

We find that Eldoret has the most equalities but relatively low savings rate compared to other towns. This implies that, although people take nearly the same proportion of income, savings are very low. This runs parallel to what the classical economist who argue that inequality does increase the levels of aggregate savings. Thus to some extent the results support classical economist.

Table 4.3: Average monthly Income and Savings Rate per month by Towns.

Town	Average income	Average savings rate[*]
Nairobi	1959	0.139
Mombasa	2024	0.050
Kisumu	2027	0.015
Nakuru	2105	0.069
Thika	1325	0.050
Eldoret	1234	0.021

Source: Calculated from modified sample UHBS 1982/83
* Calculated as a ratio to total monthly income.

From Table 4.4 it is clear that the highest proportion of urban population is in the low income group. More than half of urban households receive less than 2000 Kshs per month. This can be attributed to the following: One of the reasons why people migrate to urban areas is to seek for better paying job. However, in Kenya like in many other developing countries the

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growth rate of job opportunities in modern sector is very low compared to demand for them. This means that many of the migrants end up being absorbed in the informal sector - a low income sector compared to the modern sector.

Table 4.4 Proportion of household by income group and town.

	0-1999	2000-3999	4000-5999	6000-7999	80000+	Total
Nairobi	71.5	16.6	5.1	4.5	2.3	100
Mombasa	66.0	20.5	7.9	4.9	0.7	100
Kisumu	68.0	20.0	6.0	0.0	6.0	100
Nakuru	73.0	13.0	9.0	1.0	4.0	100
Thika	87.1	6.5	0.0	3.2	3.2	100
Eldoret	87.2	12.8	0.0	0.0	0.0	100

Source: Calculated from the modified sample.

One of the conclusions reached by CBS using the 1979 Census of the urban population is that urban population is highly educated. The present study supports this conclusion where from the sample about a third of the household heads have at had at least 9 years of education(see table 4.5). Kisumu has the highest percentage of illiterate heads of household. The above can be explained by the fact that highly educated people tend to have a higher propensity to migrate than those with no education due to high prospects of getting a job in the modern sector.

Table 4.5 Proportion of household by education level attained by household head and by town.

	No.of years in school			
	00	01-08	09-14	15+
Town				
Nairobi	5.5	50.2	38.8	5.5
Mombasa	16.9	50.0	31.3	1.8
Kisumu	28.9	39.5	27.6	4.0
Nakuru	4.5	58.2	29.8	7.5
Thika	20.5	47.7	31.8	0.0
Eldoret	7.7	51.3	41.0	0.0

source: calculated from the modified sample.

Distribution of urban household sizes differ across the towns.
On average, Kisumu has the largest average household size among
the six towns(see table 4.6),with majority of its households
having 5-8 members. For Nairobi more than half of its households
have more than 3 members. CBS findings using the 1979 Census
were that majority urban households are single. From the present
study, this is only true for Mombasa, Nakuru, Thika and Eldoret.

Table 4.6 Percentage of households by Household Size and by Town

	Household size					
	1	2	3-4	5-8	9+	average hhs
Town						
Nairobi	21.9	13.8	25.2	31.9	7.1	4.08
Mombasa	37.2	18.9	14.0	25.6	4.3	3.15
Kisumu	5.2	16.9	23.3	42.9	11.7	5.09
Nakuru	26.9	19.4	22.4	23.9	7.4	3.57
Thika	45.5	9.1	18.2	20.5	6.8	2.95
Eldoret	61.5	15.4	12.8	28.2	10.3	3.18

Source: Calculated from the modified sample.

There are also differences between towns on the number of income
contributors per household. In Nairobi, Nakuru, and Kisumu, many
households have two income contributors. Other towns have a
higher proportion of households with one income contributors(see
table 4.7).

Table 4.7 Proportion of Households by income contributors
cohorts and by town.

	Income contributors				
	1	2	3	4+	average inccon
Town					
Nairobi	36.6	46.3	13.9	3.2	2.22
Mombasa	48.2	39.8	7.8	4.2	1.67
Kisumu	23.7	47.4	18.4	10.5	2.22
Nakuru	51.5	36.4	7.6	4.5	1.65
Thika	75.0	20.5	4.5	0.0	1.30
Eldoret	76.9	20.5	2.5	0.0	1.26

source: Calculated from the modified sample.
          Inccon - Income contributors.

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In summary, the following are the socio-economic characteristics of urban population:

(i)   Income distribution is very highly skewed to the right in urban areas. The Gini-Coefficient ranges between 0.63 and 0.42 for the major six towns in Kenya.

(ii)   More than half of urban population is earning less than 2000 Kshs per month.

(iii) Saving rate vary across the towns ranging between 0.23 and 0.14 across the towns.

4.3 Regression Analysis

4.3.1 Estimation Results of the Models by towns

Results of the fitted savings models by towns are as presented on table 4.8.

Table 4.8 Estimation results by town

Variable	Town					
	Nairobi	Mombasa	Kisumu	Nakuru	Thika	Eldoret
C(constant)	172.05	108.15	44.67	183.90	8.78	40.60
	(1.30)	(1.71)*	(1.10)	(2.36)*	(0.18)	(1.17)
Y	-0.30	-0.14	0.01	-0.12	0.08	-0.03
	(-3.9)*	(-4.32)*	(1.03)	(-4.05)*	(2.43)*	(-1.12)
Y2	2.7D-05	2.2D-05	-5.6D-05	8D-06	1.6D-5	3.5D-06
	(22.0)*	(5.25)*	(-1.10)	(4.66)*	(4.9)*	(0.75)
INCCON	102.3	78.4	-9.47	4.29	-21.56	-0.67
	(2.23)*	(2.22)*	(-0.61)	(0.14)	(-0.65)	(-0.05)
HHS	-41.11	-17.57	-5.59	-8.66	-4.86	-0.89
	(-2.91)*	(-1.46)	(0.92)	(-0.95)	(-0.73)	(-0.30)
EDUC	-4.35	-7.74	3.45	-17.14	9.47	-1.62
	(-0.33)	(-0.95)	(0.82)	(-2.11)	(2.35)*	(-0.44)
EDY	0.019	0.005	0.0003	0.013	-0.013	0.003
	(2.98)*	(1.62)	(0.29)	(4.32)*	(-5.56)*	(1.05)
R2	93.9	45.5	10.9	91.1	82.7	27.0
F-STAT	141.600	17.200	4.500	50.300	16.600	0|340
F 0.05	2.100	2.180	2.250	2.250	2.250	2.420
T 0.05	1.645	1.658	1.671	1.671	1.671	1.697

*   significant at 5% level

The regressions were carried out using the Micro-TSP 4.1c Programme and OLS estimation technique. The models include all the variable presented in chapter 3. These are: Income (Y Y^2),

Income contributors (INCCON), Household size (HHS), Education of the head of household (EDUC), and Education -income interaction (EDY). The equations estimated include other statistical results. These are the F-statistic (F) a measure of significance of the fitted model, R^2 the coefficient of multiple determination and the t-statistic given in parentheses for every coefficient as a measure of the significance of individual explanatory variable. For the results the assumptions of OLS are assumed to hold in the present study thus no econometric problems will be looked at.

4.3.2 Interpretation of the Results

The F-statistic has a high value for all fitted equations and is significant at 5% level except for Kisumu and Eldoret town. It takes a value of 545, 22.1, 1.4, 102.7, 29.9, and 1.94 in Nairobi, Mombasa, Kisumu, Nakuru, Thika and Eldoret respectively. This suggests that there is significant relationship between the dependent and independent variables in all towns except for Kisumu & Eldoret. It implies that the explanatory variables do actually have significant influence on financial savings.

R^2 has a high value again in all the towns. This suggests that the explanatory variable explain 93.1%, 45.5%, 10.9%, 91.1%, 82.7% and 27% of the variations in saving in Nairobi, Mombasa, Kisumu, Nakuru Thika and Eldoret respectively.

Using the t-statistic to test for the significance of individual independent variable at 0.05 level of significance, the

following results were obtained. In Nairobi 5 out of 7, Mombasa 3 out of 7, Nakuru 5 out of 7 and Thika 4 out of 7 variables are significant including the constant term. In Eldoret and Kisumu all variables are insignificant.

Income is negative and significant in Nairobi and Mombasa - two major towns in Kenya. It indicates that as individuals income increases, financial savings decline. With a positive and significant Y^2, it indicates that the amount of savings deposits an individual keeps in the banking system decreases at a decreasing rate as income increases. This suggests that at higher income levels individuals prefer to increase their physical assets than financial assets. Nakuru also shows the same relationships. However, in Thika Y & Y^2 are positive and significant implying that at higher income levels savings deposits are much higher. The difference in town results may be explained by the availability of other forms of assets, or, differences in returns from different assets.

MPS and APS vary across the towns. MPS ranges between -0.090 and 0.016 in Nairobi and Thika respectively. On the other hand, APS ranges between 0.5% and 13.9% in again in Thika and Nairobi respectively. For Nairobi and Mombasa MPS is negative and APS positive. The results suggests that with increasing income by one unit there will be an increase in savings but the incremental savings decline. This implies that there is a diminishing MPS for savings deposits with an increase in income. On the other hand, the results suggests that MPS for non-financial savings is positive and therefore greater than for

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financial savings. For Nakuru and Thika both APS and MPS are positive suggesting that there are positive incremental savings deposits with an increase in income per month.

Table 4.9 MPS and APS by towns.

Town	MPS*	APS**
Nairobi	-0.090	0.139
Mombasa	-0.065	0.050
Nakuru	0.008	0.069
Thika	0.016	0.005

Source: Calculated from the Modified Sample
NB Only those towns whose equations were well fitted are included.
*- Calculated by taking the first derivatives dS/dY of the fitted savings function, with values at the mean(See APPENDIX I).
**- Calculated by the ratio of total savings to total income.

Income Contributors: There are differences in the relationship between this variable and savings across the towns. It is positive and significant in Nairobi and Mombasa, positive and insignificant in Nakuru and negative and insignificant in Thika. This suggests that the number of income contributors plays vital role in explaining variations in savings for urban households for the two major towns, while it plays a no role for the rest of the towns.

Household size: This variable is negative in all towns implying that the larger the household size the lower the savings level. However, it is only significant in Nairobi, in all other towns it is insignificant. The negative sign indicates that with an extra member in the household there is an increase in family expenditures such that very little income is left for saving

purposes. This reduces the amount of income put into savings in banking system.

Education of the household head: In Nairobi, education variable EDUC is negative and insignificant while the interaction variable is positive and significant. The former indicates that education does not play a vital role in explaining variations in saving. However, the latter indicates that as income increases education become an important explanatory variable in explaining variations in average monthly savings deposits for individuals. Nakuru has similar results as Nairobi pertaining to this variable. In Mombasa however, education play no vital role in explaining variations in savings. Different relationship is observed in Thika where education variable EDUC is positive and significant and EDY negative and significant. The former indicates that as the number of years in school increase, savings increase. But, the latter indicate that as income increases education exerts lesser and lesser impact on savings deposits. The results therefore give different relationships across the towns.

4.3.3 Test of equality between coefficients of models fitted for the urban centers.

One of the objectives of the study is to test whether there is any difference between the regressions fitted for the towns. This implies testing whether saving function for urban household does vary across the urban centers in Kenya.

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The APS and MPS have shown to vary across the towns. There is also differences in explanatory power of the dependent variables from one town to another as can be observed from the fitted equations. However, level of significance of the explanatory variables does not vary a lot across the towns.

The question to be answered in this section is; should we have different saving models for the urban centers or should we just fit one for urban areas since the difference between the urban centers saving model are insignificant? To answer the question Chow test is carried out between the urban centers models. Chow test is a test of the equality between coefficients obtained from different samples. The idea is to see whether the estimated relationship differ significantly in which case we conclude that the relationship is changing from one urban center to another. To achieve this then the following steps were followed:

1.   We pooled together two towns' samples at a time including only those equations with the same number of explanatory variables and significantly fitted. From this we computed 6 pairs of pooled functions and estimated their unexplained variations i.e. Σe^2_p.

2.   Regression analyses were performed on each sample in the pair separately and unexplained variations estimated. Σe^2_1 & Σe^2_2

3.   For each pair, unexplained variation are added together forming a total unexplianed variations. $\Sigma e^2_1 + \Sigma e^2_2$

4.   Residual variances in step 3 are subtracted from those in step 1 $\Sigma e^2_p - (\Sigma e^2_1 + \Sigma e^2_2)$

5. F^* ratio for each pair of towns is then calculated as follows:

$$F^* = \frac{[\, \Sigma e^2_p - (\Sigma e^2_1 + \Sigma e^2_2\,)\,]\,/\,k}{(\, \Sigma e^2_1 + \Sigma e^2_2\,)\,/\,n_1 + n_2 - 2k}$$

The results are as presented in table 4.10.

In order to come to a conclusion, the F^* in step 5 was compared to $F_{0.05}$ critical ratio such that if $F_{0.05} < F^*$ we accept that the two functions differ significantly.

Table 4.10 F-statistics calculated between the towns.

	NRB	MBS	NKR	TK
NRB		313	2.5	237
MBS			2.0	1.6
NKR				5.9

* $F_{0.05} = 2.01$

From table 4.10 only two pairs showed insignificant difference, that is, Mombasa & Nakuru and Mombasa & Thika. This indicates that savings function is stable between these towns. For the rest there is significant difference among the pairs implying that savings function is not stable across these towns. Thus we cannot generalize the nature of relationship between the equations fitted for the urban centre.

4.3.4 Regression Analysis for the total urban saving model.

From the previous section we saw that the savings model for urban areas is stable across majority of the town pairs. This

suggests that for policy analysis, policies can be generalized for total urban areas.

In this section, results of the model fitted for all urban centers(see table 4.11) are analyzed. The aim of fitting the equation is to include the variable that was not taken care of by the single town models. To capture this variable the gini-coefficient for every urban center was calculated. Also the model is fitted to form a base for policy analysis for the urban household savings mobilization, having seen that there is insignificant difference across the towns models.

Table 4.11 Regression results for the total urban model

Variable	Coefficient	t-stat
C(constant)	507.40	1.94
Y	-0.07	-1.69
Y2	1.56D-05	11.39
INCCON	110.29	1.63
HHS	-25.30	-1.87
EDUC	7.08	0.64
GINI	-1167.20	-2.34

R^2 = 51.1
F-stat = 91.1
$t_{0.05}$ = 1.645

The fitted total urban savings model indicates that there is a significant relationship between the dependent variable and independent variable, with an F-statistic of 91 and is significant at the 5% level of significance. Also the results suggests that the explanatory variable explains more than a half of the variations in savings with R^2 equal to 51%.

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With a negative and significant Y the results indicate that financial savings decline with an increase in income. However this decline is less pronounced at higher levels of income. Therefore the results suggests that financial saving is a decreasing non - linear function of income. Increasing monthly income means reducing the average monthly savings deposits. MPS is negative and APS positive taking the following values respectively -0.01 and 0.061. This suggests that although there are positive financial savings there is a decline in incremental savings with an increase in income.

The coefficient of income contributors is positive and significant at 5% level of significance. This implies that the number of income contributors in a household does play a vital role in explaining the variations in financial savings. The results however differ from the expectations.

Household size takes a negative sign and is significant. This indicates that as the family enlarges, expenditures increase leaving very little income for saving purposes.

Education variable is positive and insignificant. The results indicate that as the number of years in school increases there is an increase in financial savings but the influence is insignificant. This suggests that education plays no vital role in explaining variation in urban household financial savings.

The Gini coefficient variable takes unexpected negative sign and is significant at 5% level. This indicates that as the value of gini coefficient increases, the amount of financial

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savings decline. A high value of gini coefficient is an indication of more inequality. The sign of the results in this study suggests that as we move to more equitable distribution of income, financial savings increase.

CHAPTER 5

CONCLUSIONS AND POLICY IMPLICATIONS.

5.1 CONCLUSIONS

The results of the study were made possible by UHBS 1982/83 data collected by CBS. The data was intended to provides information on expenditure and income, only expenditure information for 34 urban centers covering 2040 households is available. As explained in chapter 3, only a sub-sample of the towns and households was taken for the present study. Again, only few variables were included in the study due to none availability of some crucial variables. Also income variable was not available as it had been scrapped off with some errors having been detected on income data. However, despite the data limitations, some important conclusions were arrived at.

The main objective of the study was to look at the various determinants of saving behavior of urban households, and to see whether they affect savings significantly. From the equations fitted for urban areas, income variable is negative and significant in all towns models except for Thika and Kisumu. In Thika it is positive and significant. Thus, from the above it is not possible to make a generalization as to the relationship between income and financial savings from the town models. However, we can generalize from the total urban model and say that financial saving is a decreasing non-linear function of income. At higher income levels financial savings decrease at a decreasing rate. Marginal propensity to save ranges between - 0.090 to 0.016 in Nairobi and Thika. However, it is negative (- 0.01) in total urban model. From this then we can conclude that,

since in theory MPS for total saving is less than one, increasing income by one unit reduces the incremental financial savings while incremental non-financial savings increase by a higher margin.   Thus for the urban huoseholds they prefer keeping their savings in physical form than in financial form.

Although very little has been said about the income distribution in the urban areas, this study has shown that there is a lot of inequality in urban areas. The gini-coefficient ranges between 0.42 to 0.63 among the towns considered. However, from the regression it is clear that an effort to reduce the inequalities in urban areas will significantly increase financial savings. Therefore distribution of income in urban areas must be considered in mobilizing personal savings.

In individual town regressions, the income earners variable take different signs across the towns and it is significant in only two regressions. However, the total urban area model show that there is a positive and insignificant relationship between income contributors and financial saving. Therefore we conclude the number of income contributors in urban households exerts insignificant influence on financial savings.

Household size is negative in all the towns and only significant in Nairobi. Considering total urban model this variable takes a negative sign and is significant, meaning that reduction of urban household sizes will exert considerable influence on financial savings.

Economist have hypothesized that the level of education of head of household influences aggregate saving behavior. However, education does not enter the financial savings models significantly. It takes a negative sign in total urban model but it is insignificant. We can therefore say that education of household head is insignificant in urban savings model.

5.2 **POLICY IMPLICATIONS**

Since independence Kenya's motto has been to ensure that all Kenyans are educated. There has been therefore a national policy to raise the literacy rate through free primary education, adult education and more admission to university colleges. However, such a policy will not influence the savings behavior of individuals. The effect however may be indirect through raising individual income.

The national policy of controlling population through limiting the number of children that a family has, will have significant effect on financial savings. Reducing family size will ease the burden on household heads and thus increase financial savings.

Again Kenya since independence has emphasized on equity in distribution of the national cake. Greater emphasis has been on rural - urban inequality and very little on inequality in urban centers. From the results of this study it is true that, income distribution play a vital role in determining variations in savings. The government should as well start thinking about the inequality among the urbanites. Such a policy will help a lot in mobilization of urban household savings.

Again in mobilization of urban savings it is necessary that the differences among the centers be taken into consideration.

APPENDIX I

MEAN VALUES OF THE VARIABLES BY TOWNS

Towns variable	NRB	MBS	KSM	NKR	TK	ELD
Y	1959	2024	2027	2106	1326	1234
Y1	1.150D+7	7.88D+6	2.00D+7	1.22D+6	4.70D+6	2.6D+6
INCCON	1.840	1.670	2.220	1.640	1.300	1.260
HHS	4.080	3.150	5.090	3.560	2.950	3.180
EDUC	8.500	6.890	5.780	8.410	6.340	7.430
EDY	21282	17155	19391	21729	9877	10145
SAVINGS	273.880	101.570	30.320	144.580	71.950	26.300

Source: Modified Sample.

APPENDIX   II

DATA

The following are the variables that were extracted

VARIABLE NAME	WIDTH
1. IDENTIFICATION	6
2. STRATA	2
3. TOTAL INCOME	2
4. NR. OF INCOME CONTR	2
5. OCCUPATION OF HEAD	2
6. EDUCATION OF HEAD	2
7. HH SIZE	2
8. SAVINGS DEPOSIT	5
9. IMPUTED RENT	5
10. OTHER LOANS	5
11. TRANFERS OUT	5
12. EDUCATION FEE	4
13. FOOD	5

RECORD LENGTH   49

RECORDS PASSED   1277

STRATA

1 NAIROBI

2 MOMBASA

3 THIKA

4 NAKURU

5 ELDORET

6 KISUMU

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65

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REFERENCES

Abraham, W.,Savings Pattern in Latin America. *Economic Development and Cultural Change* Vol 12 July 1964 377-91

Betacourt, R., The Normal Income Hypothesis in Chile. *Journal of American Statistical Association* LXVI June 1971 258-62

Bhalla Surgit, S., Aspects of Savings in Rural India : *Studies in Finance No.31 World Development Economic Department* 1976

Branson W.H., *Macro Economic Theory and Policy,* 2nd Edition. Harper and Row Publisher 1979

Burrows, J., *Kenya: Into the Second Decade,* The Hopkins University Press 1975.

Choudhury, U. D., Income, Consumption and Saving in Urban and Rural India. *Review of Income and Wealth* XIV March 1968 37-56.

Deaton, A., Savings in Developing Countries: Theory and Review.World Bank Economic Review. *Proceedings of the World Bank Annual Conference of Development* .1989

Duesenbery, J., *Income, Saving and the Theory of Consumer behavior.* Cambridge, Mass: Harvard University Press 1949.

Donald Snyder, Econometric Studies of Household Savings Behavior in Developing countries. A survey . *Journal of Development Studies,* Vol, X Jan 1974, 139-167

Eizenga W. *Demographic Factors and Savings* Northholland Publishing Co, Amsterdam, 1961

Friedman Milton, *A Theory of the Consumption function* Princeton University Press, 1957

Gupta, K., Dependency Rates and Savings Rate. Comment. *American Economic Review* LXI June 1971 469-71.

Hadjimatheou, G., *Consumer Economics After Keynes* Wheat sheafbooks 1987.

Henderson, A. M., The Cost of Family. *The Review of Economic Studies.* XVII 1949-50 130-50.

Houthakker, On Some Determinants of Savings in Developed and Underdeveloped countries in *Problems of Economic Development* Macmillian and Co., 1965.

ILO, *Employment, Income and inequality in Kenya*, Imprimeries Popularies Geneva Printer, 1972.

Johnson and Chiu, The Savings Income Relation in Underdeveloped and Developed countries . *Economic Journal*, June 1968, 321-3

Kamau, C., *The Effect of Kenyanisation on Personal Saving: Preliminary Report on Data Collection and Some Tentative Conclusion*. IDS No. 97 1973.

Kelley, A. C. & Williamson, J., Household Savings Behavior in Developing Economies Indonesia. *Economic Development and Cultural Change*, Vol XVI, April 1968 385-402

Kempe, R., Hope, Role of Savings in Financing Economic Development in Caribbean . *Saving & Development Quarterly Review* Vol 1 No.4 1982

Keynes, J.M., *The Theory of Employment Interest and Money*, Macmillian & Co., 1936

Koutsoyiannis, A., *Theory of Econometrics*, 2nd Edition. ELBS Macmillian.

Kuznets, S., The Share and Structure of Consumption. *Economic Development and Cultural Change*, Vol X, Jan 1962

Landsberger, M., The Life Cycle Hypothesis: A Reinterpretation and Empirical Test. *American Economic Review* LX March 1970 175-83.

Leff, N., Dependency Ratio and Savings Rates. *American Economic Review*, Vol LIX Dec 1969, 886-896

Lillydhal J.H., *Economic and Demographic Influence of Household Saving in urban areas*. Unpublished Ph.D. Thesis, 1976.

Massell, B., and Heyer, J., *Household Expenditure in Nairobi: A Statistical Analysis of Consumer Behavior*. University of Nairobi IDS, 1967.

Massell, B., *Determinants of Household Expenditure in Rural Kenya*. University of Nairobi, IDS, 1967.

Mead, D., Saving Investment and Analysis of Growth. *Economic Development and Cultural Change*, 12 oct 1963, pp 814-86.

Michael, L., The Life Cycle Hypothesis. A Re-interpretation and Empirical Test: *American Economic Review*, Vol LX, March 1970.

Mikesell,R.,and James, Z., The Nature of Savings Function in Developing Countries: A Survey of Theoretical and Empirical Literature. *Journal of Economic Literature*, Vol X1, March 1973.

Otundo,S., *Rural-Urban dualism and Consumption Behavior of Kenyan Household*, M.A., Thesis 1982.

Ramanathan, R.,Estimating the Permanent Income of a Household. An Application to India Data. *Review of Economic and Statistic*. L August 1968 90-101.

Ramanathan, Econometric Exploration of Indian Behavior. *Journal of American Statistical Association*, Vol 64, No.325, March 1969.

Republic of Kenya, *Development Plans*, Various Issues, Government Printer, Nairobi.

Republic of Kenya, *Economic Surveys*, Various Issues, Government Printer, Nairobi.

Republic of Kenya, *Sessional Paper No.1 1986 on Economic Management for Renewed Growth*, Government Printer, Nairobi, 1986.

Singh, G., Gupta, T.R., and Singh, B., Pattern of Voluntary Rural Savings in India, *Savings and Development Quarterly Review*, Vol 1 No.3,1978,.

Vandermoortele, J. and Hoeven,R., *Income Distribution and Consumption Pattern in Urban and Rural Kenya by Socio-economic Groups*, ILO World Employment Programme, Working Paper No. 38 1982.