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ABSTRACT

This study is concerned with old-age poverty in Kenya. It is also concerned with strengthening and developing social pension programs for the elderly. In this study, we develop precise socioeconomic and demographic profiles of the elderly in Kenya from the viewpoint of providing policy-makers with information that may be useful in the reform and expansion of the pension system. It also analyzes the impact of current pension systems on poverty among elderly and national poverty. Further, the current study evaluates the potential effects that alternative policies and targeting alternatives may be expected to have on poverty within the country.

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EXECUTIVE SUMMARY

Protecting the elderly from the risk of poverty is a central challenge in any developing country. Although Kenya has a relatively small proportion of its current population over the age of 55, these individuals and the members of their households remain among the most vulnerable members of the society. The poverty rate among older persons is, by any of the standard measures, greater than that of the population at large, and poverty rates of the elderly increased between 1994 and 1997, the period for which there is household survey data available. In 1994, 44% of persons over the age of 55 reported incomes below the official poverty lines compared to 37% of the total population. The differential is even greater than these numbers suggest because the elderly are included in the overall numbers. In 1997, the poverty rate for the elderly was nearly 50%, compared to 45% overall. In addition, the severity and depth of poverty were greater among the elderly.

The consequences of these poverty rates have a variety of secondary consequences. The high rates of grandparents caring for children resulting from the HIV/AIDS epidemic exposes children to the consequences of old age poverty. A higher proportion of children living in elderly headed households were poorer than for the broad society, and children living in these households had lower rates of school attendance than others. This is likely to have become an issue of even far greater significance in the nine years since the last Welfare Monitoring Survey, as the epidemic has spread.

The current pension system in Kenya is very limited, with only about 3% of the elderly population reporting the receipt of any pension income. A variety of measures indicate that the current system provides benefits mainly to the better educated and higher income groups, and current pensioners show advantages in terms of assets accumulation, land ownership and other attributes likely to be a reflection of this. However, the current pension system also provides meaningful poverty alleviation to some of its beneficiaries as follows:

- The poverty headcount would be 5.5 percent higher for older people (55+) and 4.5 percent higher for elderly people (60+) if pension income is removed from total income and there are no offsetting changes. However, the impact of pensions on national poverty appears to be relatively small; the headcount ratio for Kenya as a whole would rise by 1.6 percent under the same circumstance.

- The impact of the current pension program is far stronger for the poverty gap index and the severity of poverty index. The average poverty gap measures would be 17.1 percent larger for elderly over 55 and 14.6 percent larger for those over 60 if pension income is removed. The impact of pensions on severity of poverty among elderly is stronger.

- Existing pension arrangements diminish the probability of poverty in elderly headed households when other factors are controlled for through a multivariate regression analysis to capture the conditional effects of pension programs on the probability of being poor in the elderly headed households. The results showed that belonging to a household with a pension recipient reduces this probability by 17.1 percent for the sample of households headed by 55+ and by 20.9 percent for the sample of households headed by 60+.

These findings suggest that an expansion of the current mandatory pension system for formal sector workers, the National Social Security Fund, and voluntary occupational schemes, if properly undertaken, could provide meaningful poverty protection.

A complementary approach would be the introduction of a non-contributory social pension that would provide benefits to persons over the age of 55 or 60. A benefit of 20% of the current per capita national income would cost about 1% of GDP. Expanding this to 50% of per capita GDP would raise the cost proportionally to just above 2% of GDP. This represents a sizable but feasible portion of current tax revenues that are now just above 20% of GDP.

If a pension program provided cash transfers to all elderly 55 years old and over, there would be about 1.5 and 1.7 million beneficiaries in 1994 and 1997, respectively. Such a program would have a major impact on poverty rates and levels for the elderly as well as important overall effects on poverty in Kenya. An average benefit of 20% of per capita GDP (calibrated for urban and rural differences on the cost of living) with a cost of 1% of GDP would reduce poverty rates of the elderly between 13% and 19% depending on the age of eligibility (55 or 60) and the year for which the simulation is conducted. This would reduce children's poverty rates by 1.2% to 2.1% and the overall national poverty headcount by 2.2% to 3.1%. Further evaluation of such a policy indicates that:

- A universal pension given to every elderly aged over 55+ or 60+ will direct benefits primarily to poor people, but the impact of the pension program might be enhanced if the program is carried out in the rural areas. This universal program for elderly in rural areas may be more cost effective because it can avoid administrative costs in identifying a target group based on income or any other criteria that selects a small subgroup of elderly for such a program.

- Targeting elderly working in the informal sector would be more pro-poor relative to other elderly people who are working in agricultural or construction sectors. The results revealed that giving pensions to unemployed elderly do not result in a pro-poor outcome.

- Pensions given to elderly headed households living with children under 15 years old would be highly pro-poor, benefiting the poor much more than the non-poor.

1 BACKGROUND AND PURPOSE OF THE STUDY

1.1 ECONOMIC AND SOCIAL CONDITIONS IN KENYA

Kenya exhibits social and economic indicators that are typical of many developing countries in the region, making it a good case study for the consideration of the dynamics and potential effects of reform initiatives directed at addressing poverty and income support in old age. Although the level of overall economic development remains above that of many of the other countries in Sub-Saharan Africa, Kenya has, over the past decade, lost some ground in overall development and key social indicators. This is related both to high rates of population growth typical of the region and also to a loss of momentum in overall economic development.

According to the most recent census that was conducted in 1999, Kenya had a population of 28.7 million. Population growth has been relatively high and the total population is projected to have increased to 33.8 million in 2005. The country has a well diversified economy

with the service sector accounting for about 61 percent of total gross domestic product (GDP). Agriculture and manufacturing sectors are the next significant contributors to GDP, accounting for 25 and 14 percent, respectively.

FIGURE 1.1

Per capita GDP in Kenya
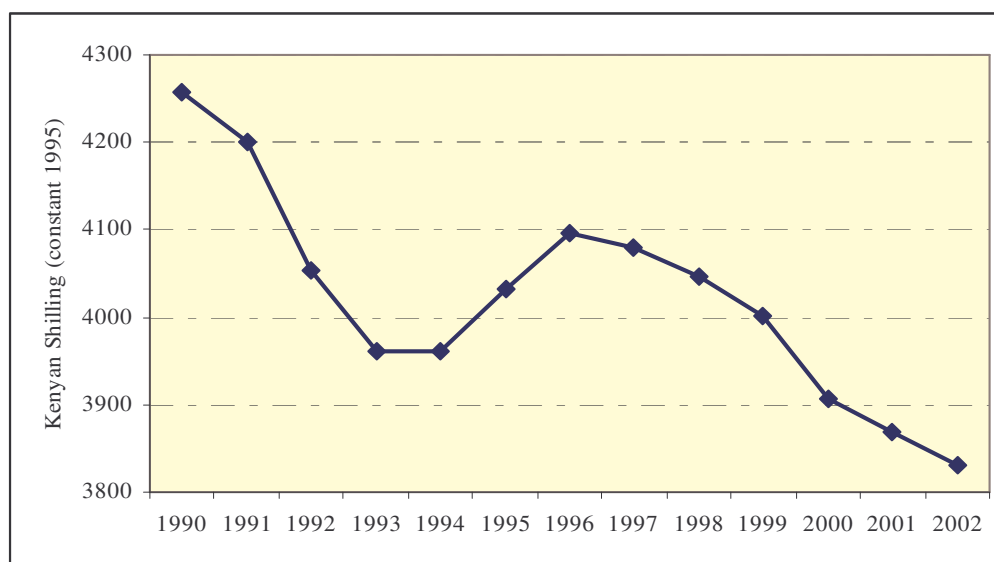
Source: World Development Indicator 2004

The Kenyan economy has experienced a sustained period of uneven growth since the early 1990s. Despite nominal GDP growth over the period, due to rapid population increases, Kenya has exhibited a downward trend in output per capita. Annual per capita GDP growth has declined from 4.7 percent in 1990 to below zero by the year 2000 (see Figure 1.1). There have been improvements since 2002, rising to 1.8 percent in 2003 and 2.7 percent in 2004. The economic decline has been aggravated by severe adverse shocks. Kenya was hit by two major droughts in 1992-93 and late 1997, the El Nino floods in early 1998, and another drought in 2000.

The low growth rates of economic growth and several other factors have resulted in a decline in formal sector employment, which now comprises only 25 percent of the total labor force, with the remaining 75 percent engaged in the informal economy or unemployed (Labor Force Survey, 1998-1999). The labor force participation rate is 73.6 percent for the population aged 15-64 years old. The participation rate is higher for men, at 74.7 percent, compared to 72.6 percent for women. Those in formal and regular informal employment are estimated to be 10.5 million, of which 5.4 million are male and 4.6 million are female.

Table 1.2 presents some important social indicators for Kenya derived from the same population survey data used to examine the pension system. While primary school enrollment rates have improved substantially, secondary school enrollments rates remain at 1993 levels. The prevalence of child malnutrition has declined, but child mortality rates rose significantly between 1993 and 2003. In 2003, the infant mortality rate reached 78 deaths per 1000 live births. The under-five mortality rate, however, was 114 deaths per 1000 live births. This indicates that 1 in every 9 children born in Kenya die before celebrating their fifth birthday. Infant and under-five mortality rates have increased by 30 percent between 1989 and 2003, with infant mortality rates increasing from 60 to 78 deaths per 1000, and under-five mortality

rates increasing from 89 deaths per 1000 to 114 deaths per 1000 in the same period (HDS, 2003). Life expectancy was calculated to be 52.8 years for males and 60.4 years for females based on the 1999 Census. This dropped from 57.9 years for men and 65.9 years for women in 1989, largely due to the AIDS epidemic. The increases in mortality rates provide a key indicator of the challenges Kenya currently faces in its social development.

The age structure of Kenya's population is very similar to that of the larger Sub-Saharan region. The population of Kenya is generally young, with 42.9 percent under 15 years old in 2000. Persons over 60 years old comprised only 3.8 percent of the total population. However, the projections given in Table 1.3 show that the percentage of elderly in 2050 will be 12.7 percent of the total population (about 20 percent of the working age population).

TABLE 1.2

Social indicators in Kenya

Social indicators	1993	1998	2003
Gross enrollment rates (*%*)			
Primary (6-13 years)	75.6	85.5	90.1
Secondary (14 - 17 years)	76.8	75.1	77.4
Infant mortality (1,000 live births)	73.8	78.6	82.4
Stunting prevalence (*% of population*)	33.3	33.0	30.9

Source: Demographic and Health Surveys, 1993, 1998, and 2003.

TABLE 1.3

Structure of population in Kenya

% shares of population	2000	2025	2050
Children	42.9	31.0	23.0
Adults	53.3	64.0	64.3
Elderly	3.8	5.0	12.7
Total population	100.0	100.0	100.0

Source: U.S. Census Bureau, International Data Base.

1.2 THE KENYAN PENSION SYSTEM

The Kenyan pension system has four main components: (i) the National Social Security Fund (NSSF); (ii) the Civil Service Pension Scheme; (iii) privately managed occupational retirement schemes; and (iv) individual retirement products sold by financial institutions. Overall, the system is estimated to cover about 15 percent of the labor force and to have accumulated assets of about 18 percent of GDP.

The National Social Security Fund (NSSF) is designed to cover all formal sector workers in firms with 5 or more employees. It does not include the mainstream public servants. The total labor force is about 7 million workers. Currently, the NSSF has about 1 million active members. The various public pension schemes cover about 600,000 and private occupational schemes operate 250,000 members' accounts. This leaves about 5 million workers without any form of coverage, of which at least half a million of them are at or near retirement age.

The NSSF ostensibly provides old age benefits, survivor benefits, invalidity benefits, withdrawal benefits and emigration grants. However, levels of contributions and earnings credited to these accounts are very low and there is no mechanism to pay lifetime annuities, which severely limits the capacity of the system to provide meaningful levels of old age income. An employee with a 30-year career history would accumulate no more than KShs 144,000 in contributions. An administrative interest rate on contributions is set a 2.5 percent, which is considerably lower than the interest rate on government bonds. As a result, there is no incentive to participate and participants have an incentive to withdraw all balances as early as possible to earn the higher market interest rate. The consequences of this structure are seen in the distribution of benefits paid by NSSF, with only 27 percent of old age benefits paid after the age of retirement.

The civil service staff pension scheme (CSPS) covers civil servants, the judiciary employees, military personnel, the armed forces, members of the parliament, and teachers (excluding university teachers). There is a main scheme that provides various benefits including old age pension, injury and compensation, survival benefits, dependency pension for a period of 5 years after the death of the pensioner, disability pension (military only) and gratuities, in the form of lump sums, when no eligibility is reached. There is also a widow and child pension fund in which only male government employees can participate, and for which contributions are set at 2 percent of the basic salary.

As of September 2003, the total number of beneficiaries under the CSPS was estimated at 125,000. Current expenditure is estimated at KShs 12.5 billion (4.7 percent of the government's budget) for 2004. This scheme is clearly very costly and helps only very few retired civil servants, who are by no means poor.

The third category of pension schemes is the occupational staff retirement benefit schemes (ORBS), which are voluntarily established by employers for the benefits of their employees. These schemes are funded through contributions from employers and employees. These schemes cover about 1.65 percent of the total work force. Under these schemes, most employees could withdraw their benefits much before retirement, which results in paltry benefits for them to live on during their retirement. These schemes do not help much in alleviating old age poverty.

Finally, the fourth category of pension schemes is the individual retirement schemes (IRBS), which are run by corporate institutions, commonly by the insurance companies. These schemes are open to the general public and are convenient channels of retirement benefits savings for those in employment but whose employers have not established occupation schemes for them, those in self employment and those who wish to make additional voluntary contributions. In cases where employers are not able to establish independent occupation schemes due to a small workforce, employers are encouraged to put their employees in the individual schemes. These schemes are voluntary and their coverage of the work force is negligible.

1.3 PURPOSE AND OBJECTIVES OF THE STUDY

As outlined above, a large proportion of the elderly in Kenya remain at significant risk of poverty. Many are unable to work due to age or disability, or if working, do so under stressful conditions. They suffer from greater incidence of sickness and usually have below average educational attainment. There is an emerging consensus about the need for developing

countries to strengthen and develop social protection policies and programs in response to economic crises and rising vulnerability among the elderly (Asian Development Bank 2001, World Bank 2001, United Nations 2002).

The initial step in assessing an appropriate design and implementation path for the potential enhancement of the social protection system in Kenya to address the prevalence and consequences of old age poverty is to develop a description of the extent and characteristics of poverty among the elderly. This provides a baseline for the assessment of the magnitude and dynamics of income among the elderly and the basis to evaluate possible outcomes in relation to poverty and assess the anticipated effects of various reform initiatives within this framework.

Although the primary objective of any pension system is to provide income support in old age, pension systems can achieve a range of other outcomes. Since conflicts and HIV/AIDS in Sub-Saharan Africa have increased the probability of death among prime age adults, elderly are increasingly becoming care takers of grandchildren. Old age pensions can also have a substantial impact on the well-being of children. Targeting resources for the elderly can also achieve the main objective of broader poverty alleviation. Furthermore, a well designed pension system may also help in the development of financial markets.

Few studies have systematically analyzed the poverty situation among the elderly in Kenya. In addition to providing estimates of poverty levels among the elderly for several alternative measures related to the incidence and depth of poverty, the study analyzes non-monetary dimensions of old-age poverty based on the following indicators:

- Self-reported incidence of sickness

- Incidence of treatment when sick

- Utilization of different health facilities

- Asset holdings

Since a large proportion of elderly live in extended families, the income received by the elderly has an impact on poverty among other members of households, and particularly children. Particular attention is, therefore, given to evaluating the impact of the pension system on the well-being of children.

The second purpose of the study is to evaluate (within the very significant limitations imposed by the data) the nature of pension receipt among the current elderly. This provides some insights into the extent to which the current pension system provides meaningful income support to the elderly and the effects of pension benefits on poverty.

A major limitation of this analysis is that the comparison of the relative impact of various sources of pension income is not possible due to the lack of information on employment history among the elderly. Nonetheless, based on available dataset, the study constructs estimates of the contribution of pension programs in Kenya to reducing the incidence and intensity of poverty among older people and their households. This study also provides estimates of the effect of pension programs on the probability of being poor in these households.

The third purpose of the study is to provide an in-depth evaluation of the potential costs and consequences of introducing a non-contributory social pension in Kenya and the effect of alternative designs for such program on its outcomes. Using the baseline poverty data for the

elderly, estimates are developed for the cost and projected results for several possible designs of such a system in terms of the size of the benefits provided and the eligibility for participation. These include varying the benefit level from between 20 and 50% of per capita GDP, limiting benefit eligibility to age 55 or 60, and different approaches to targeting benefits in the lowest income groups in comparison to universal age related eligibility. The study evaluates these design parameters by estimating their projected effects on the reduction among older people, as well as at the national level in relation to their estimated costs as a share of GDP.

2 DATA SOURCES AND METHODOLOGY

2.1 DATA SOURCES

The Welfare Monitoring Surveys (WMS) are the main sources of data for measuring poverty in Kenya. This study utilizes the unit record data from 1994 and 1997 WMS. The 1994 WMS was launched in June/July 1994 and covered 47 districts including urban and rural clusters. It captures information from approximately 10,860 households (consisting of 59,183 individuals). The survey provides data on education, income and household expenditures organized into separate modules. The 1997 WMS was carried out between March and May 1997. This survey was not as comprehensive as the 1994 survey in terms of both coverage and scope. Some of the districts included in the 1994 WMS were not covered in the 1997 WMS because of security conditions in some areas of the country at that time. The districts which were omitted from the survey were generally the poorer ones, which are also those that are more prone to droughts.

Although the analysis is presented utilizing both 1994 and 1997 surveys, the results are not strictly comparable because different survey methodologies were used in collecting the data. Some of the methodological differences in the two surveys are explained in the second report of "Poverty in Kenya" published in June 2000 by the Ministry of Finance and Planning. In this context, conclusions about poverty trends emerging from the two surveys must be interpreted with care. However, many results about the impact of elderly pensions on poverty emerging from the two surveys were found to be sufficiently robust to support the more general policy observations that are derived from them.

2.2 DEFINING POVERTY LINES IN KENYA

Poverty lines define, in monetary terms, the minimum subsistence requirements for households of different size and composition. A household is classified as poor if its per capita consumption is less than its per capita total poverty line. The total poverty line is defined as the sum of the food and non-food poverty lines.

The official food poverty line in Kenya is derived in a way that meets the subsistence caloric requirements based on the FAO/WHO recommendations of 2,250 calories per day per adult. To compute the food poverty line in monetary terms, a food basket which provides the minimum required calories for the population is constructed and given a value. The official food basket in Kenya consists of 17 food items that provide 2,250 calories per day per adult. This food basket takes into account the consumption patterns of the Kenyan population. The cost of this basket calculated at 1994 and 1997 prices provides the food poverty lines for 1994 and 1997.

The food poverty lines were estimated as follows:

- Rural areas in 1994 – KShs 703 per adult per month

- Urban areas in 1994 - KShs 875 per adult per month

- Rural areas in 1997 – KShs 927 per adult per month

- Urban areas in 1997 – KShs 1,254 per adult per month

In addition, adjustments need to be made to account for the basic non-food requirements of the population. The non-food component in Kenya is calculated using the non-food household spending for households within the range of the food poverty lines (defined as -20% and +10% of the food poverty line). The non-food poverty lines are estimated separately for rural and urban areas. The non-food poverty line for the rural areas does not include expenditures on rent (because the majority of households own their houses) but the non-food urban poverty line does include housing rents.

The total poverty lines are obtained by summing food and non-food poverty lines. The total poverty lines for Kenya are as follows:

- Rural areas in 1994: 978 KShs per adult per month

- Urban areas in 1994: 1,490 KShs per adult per month

- Rural areas in 1997: 1,239 KShs per adult per month

- Urban areas in 1997: 2,648 KShs per adult per month

It is important to note that the Consumer Price Index (CPI) in Kenya increased by 23.06 percent between 1994 and 1997. However, as shown above, the official rural and urban poverty lines increased by 26.69 and 77.72 percent, respectively between 1994 and 1997. Poverty estimates that are most readily comparable between two periods would usually be expected to increase in a manner that is far more consistent with the increase in the CPI. This is clearly not the case for the official poverty lines. Although there may be a variety of reasons why this might occur, it makes comparison of poverty rates more difficult to interpret because some changes in the level of poverty may be affected significantly by this differential in the measurement criteria rather than by changes in the incidence of poverty. The analysis that follows is based on the official poverty levels in order to remain consistent with the official levels, and therefore, to be useful for policy analysis within Kenya. However, this important caveat must be kept in mind when interpreting the results shown.

2.3 ADJUSTING POVERTY LINES FOR HOUSEHOLD COMPOSITION

A key issue in refining poverty estimates is to adjust for differences among households with respect to their compositions. Households with a different size or age composition should have a different poverty threshold. To address this problem, an adult equivalent scale is used to derive poverty levels by household size and composition. The adjustment scale was developed by Anzagi and Bernard (1977). In this adjustment, children in the age group 0 to 4 years old are estimated to be equivalent to 0.24 of an adult and children in the age group 5 to 14 years old are assigned a weighting of 0.65 of an adult. All persons 15 years old and over are treated as adults.

The application of the weighting scale is illustrated below. Suppose the ith household has a_i children in the age group 0 to 4 years old, b_i children in the age group 5 to 14 years old, and c_i adults in the age group 15 years old and older. This household will have ($0.24a_i + 0.65b_i + c_i$) equivalent adults. Thus, the per capita monthly poverty line for the ith household will be given by:

$z_i = 978.27 (0.24a_i + 0.65b_i + c_i)/n_i$, if the ith household is located in rural areas

$= 1,489.63 (0.24a_i + 0.65b_i + c_i)/n_i$, if the ith household is located in urban areas

The second step in the adjustment addresses the economies of scale that operate in large households. Larger households will have a lower per capita poverty line than smaller households because they can enjoy the same level of welfare for their members with lower per capita income. This adjustment was done by means of an economies of scale parameter θ, which takes a value one when there are no economies of scale, implying that all goods consumed by households are private goods. The parameter θ takes value 0, when all goods consumed by households are public goods, implying that goods can be shared by household members without affecting their enjoyment. When household members share the use of public goods, the per capita consumption or income required to maintain a given level of utility will be lower. The larger the household, the greater will be the scope for it to economize on consumption.

To make an adjustment for economies of scale, one needs to select a reference household size for which adjustment for economies of scale will have no impact, irrespective of what value of parameter θ is chosen. A household with four members (consisting of husband, wife and two children) may be regarded as a typical household. Therefore, a reference household size of 4 is used in the analysis.[1] Hence, the per capita poverty line adjusted for economies of scale is given by (Deaton 1998):

$$z_i^* = z_i \left(\frac{4}{n_i} \right)^{1-\theta}$$

When the household size n_i is equal to 4, $z_i^* = z_i$, implying that for the reference household of size 4, there is no impact of economies of scale. When θ is equal to 1, then also $z_i^* = z_i$, suggesting that when all goods are private goods, the per capita poverty line z_i will be an appropriate measure of household welfare. When θ lies between 0 and 1, then the ratio $\frac{z_i^*}{z_i}$ declines monotonically with n_i, as shown in Figure 2.1. Ideally, one should estimate the parameter θ from consumption patterns of the households, which unfortunately, faces serious methodological problems in practice. For this study, the parameter θ is assumed to take a value of 0.75, which is generally considered to be reasonable for developing countries.[2]

FIGURE 2.1

Per capita poverty line adjusted for economies of scale
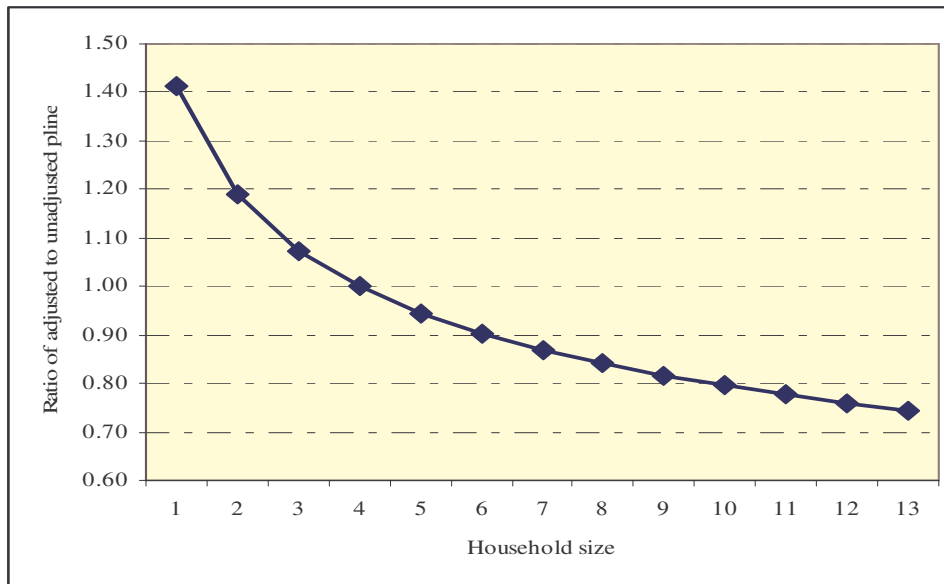
Source: Authors' calculation

With regard to economies of scale, it is often argued that their extent depends on the shared goods within the households, or the household public goods. For instance, if all goods are private in consumption, costs should rise in proportion to the number of people in the household. On the other hand, if all goods are public, then costs are unaffected by the number of people in the household. In developing countries, the most important good in a household's consumption is food, which is a private good. The scope for economies of scale is therefore small, and θ is unlikely to be lower than 0.75.

2.4 HOUSEHOLD WELFARE

Having determined the poverty lines for households of different size and composition, the next step in the measurement of poverty is to specify the household welfare measure. This study utilizes the per capita household expenditure as a measure of household welfare. Many countries use per capita income as a measure of household welfare, but there seems to be a general consensus that per capita household expenditure is a better measure of household welfare than per capita income.

Households from various regions of the country face different prices for commodities. It is obvious that people living in cheaper regions enjoy a higher standard of living with the same disposable income (or expenditure) than those living in expensive areas. Therefore, regional price deflators are used to adjust for differences in regional costs of living. Fortunately, these price deflators are available for eight regions in Kenya for the years 1994 and 1997 (Table 2.1). The reference region for these indices is Nairobi, which provides a basis for comparing costs of living in other regions. For instance, the index value for the Central region is 0.91, which means that the cost of living in the Central region is about 9 percent lower than that in Nairobi. The only region, which is more expensive than Nairobi is the Northeastern region, which has a 5 percent higher cost of living.

One can obtain the real per capita expenditure by deflating nominal per capita expenditure by the cost of living indices given in the first two columns of Table 2.1. This procedure will express the standard of living in each region in terms of the cost of living prevailing in Nairobi. But the official poverty lines have been specified for Kenya, suggesting that applying per capita expenditure at Nairobi prices on the national poverty lines will underestimate poverty at the national level (because Nairobi has a higher cost of living). The correct procedure will be to calculate real per capita expenditure in terms of the national cost of living. We have computed the national cost of living indices equivalent to 0.93 and 0.95 for 1994 and 1997, respectively. Normalizing the regional cost of living indices by the national cost of living index gives the regional cost of living indices in terms of national price. The results are presented in the last two columns of Table 2.1. Deflating per capita nominal expenditure by the cost of living indices in the last two columns of the table provides the real per capita expenditure in terms of national price. This procedure ensures that the average per capita real expenditure is exactly equal to the average per capita nominal expenditure.

TABLE 2.1
Regional costs of living indices

Provinces	Index (Nairobi = 1)		Index (Kenya = 1)	
	1994	1997	1994	1997
Nairobi	1.00	1	1.07	1.05
Central	0.91	0.91	0.97	0.95
Coastal	0.97	0.96	1.04	1.01
Eastern	0.93	0.96	0.99	1.01
Northeastern	1.05	0.98	1.13	1.03
Nyanza	0.89	0.97	0.96	1.02
Rift Valley	0.91	0.93	0.98	0.98
Western	0.93	0.96	0.99	1.01
Kenya	0.93	0.95	1.00	1.00

Source: Authors' calculations from the 1994 and 1997 WMS.

2.5 WHO ARE THE ELDERLY?

There is no consensus regarding what constitutes old age. In general, the concept is derived from perceptions about the capacity to remain self-sustaining and economically active. A closely related perspective is one that perceives old age as the beginning of a period of heightened vulnerability to economic or health risks. The literature suggests that being old can occur at different chronological ages that are defined by the socio-cultural milieu, or even by the specific context of sub-groups within society. Economic conditions also play a role in terms of the type of work that can be carried out, the availability of health facilities and other support infrastructure, and the existence of insurance and financial markets that permit savings for the future.

To try to bind the reasonable estimates of old age in relation to the expected age in which formal sources of income support will be required to sustain an individual, this paper considers two alternative definitions of the elderly. These are:

- **55 years and over (55+):** In Kenya, old age benefits are currently paid at the retirement age of 55. Many of the existing occupational schemes and the National Social Security Fund currently have retirement age set at 55. Thus, this age cutoff reflects the current contributory pension system in Kenya. 5.8 percent and 6.9 percent of the total population belonged to this age group in the 1994 WMS and the 1997 WMS, respectively.

- **60 years and over (60+):** When 60 is used as alternative definition of the onset of old age, 4.1 percent of the population were estimated to be elderly in the 1994 WMS and 4.9 percent in the 1997 WMS. Increasing the age cutoff point might be appealing for a universal pension program in terms of the government's fiscal impact and affordability of the scheme. If coverage is targeted at small numbers of elderly, universal pension benefits are likely to be more adequate and generous compared to the benefits covering large numbers of elderly.

2.6 POVERTY INDICATORS

To estimate the impact of transfers on poverty, this study utilizes three measures of poverty – incidence, depth, and severity. These are described according to the general class of Foster-Greer-Thorbecke (1984) poverty measures (See Box. 2.1). The incidence of poverty is measured by the headcount ratio, which simply estimates the percentage of population that lives below the poverty line. The depth of poverty is estimated by the poverty gap ratio. The poverty gap ratio is defined as the average distance below the poverty lines as a proportion of that line, where the average is formed over the entire population, counting the non-poor as having a zero poverty gap. Thus, the sum of poverty gaps (aggregated across all individuals) reflects the minimum amount of consumption that needs to be transferred to bring all the poor up to the poverty line.

The severity of the poverty measure is the mean of the squared proportionate poverty gaps. Unlike the headcount ratio and the poverty gap ratio, it takes inequality among the poor into account. The severity of the poverty measure is sensitive to the distribution of consumption among the poor because weights in the calculation are more heavily assigned to those whose consumption falls further below the poverty line. Hence, the severity of poverty index is more sensitive to changes in the welfare of the ultra-poor than of the moderately poor.

BOX 2.1
Foster-Greer-Thorbecke Poverty Measures

The FGT poverty measure can be defined as: $P_\alpha = \int_0^z \left(\frac{z-x}{z} \right)^\alpha f(x)dx$

where z is the poverty line, x is income, and α is the parameter of inequality aversion. When the headcount ratio is used as the poverty measure, $\alpha = 0$. For $\alpha = 1$ and 2, P_α measures the poverty gap ratio and the severity of poverty, respectively.

2.7 POVERTY SIMULATION

The study simulates several alternative designs of a non-contributory social pension system for the elderly. These are intended to illustrate the relative effects of alternative program design and associated costs on poverty reduction. Outcomes are estimated not only for the elderly, but also for national poverty.

To evaluate the potential impact of a social pension, several alternative designs for such a program were used:

- The average benefit level is fixed at 20 percent of national per capita GDP. Since the costs of living in rural and urban areas are substantially different, we calculate the rural and urban benefit in proportion to the official poverty lines in each area so that the average pension per beneficiary at the national level is equal to 20 percent of per capita GDP.

- The study also evaluates alternative scenarios in which a similar calculation is done that sets the average benefit at 35 and 50 percent of per capita GDP. These scenarios are, of course, expected to have greater poverty reduction but, at the same time, will be more expensive. In order to compare these alternative scenarios, we calculate an index of efficiency, which is defined as the ratio of the percentage reduction in national poverty to the total cost of a program.

In the poverty simulation approach, it is assumed that pensions given to the elderly are pooled within families and distributed to each member so that every member enjoys the same level of welfare. It is further assumed that all the pensions received by the families are spent on consumption goods. The benefits received by the families are added to the family's total consumption expenditure. When divided by household size, this gives per capita family expenditures after the pension. Resulting changes in poverty levels are derived using the per capita family expenditure after the receipt of the pension, compared with the poverty estimates based on the family's per capita expenditure before the pension.

3 A PROFILE OF THE ELDERLY IN KENYA

3.1 WHERE ARE THE ELDERLY?

A normal age structure for Sub-Saharan African populations includes a large proportion in the age group 0-14, which gradually diminishes in the subsequent age groups. Kenya is a typical example of this distribution. The proportions of both women and men decline with increasing age, reflecting the comparatively young age structure of the Kenyan population (Figure 3.1). Slightly less than half of the population is under 15 years of age, whereas only 4-5 percent are above 60. The distribution of population by age changed very little over the 1994-1997 period.

FIGURE 3.1

Structure of population in Kenya
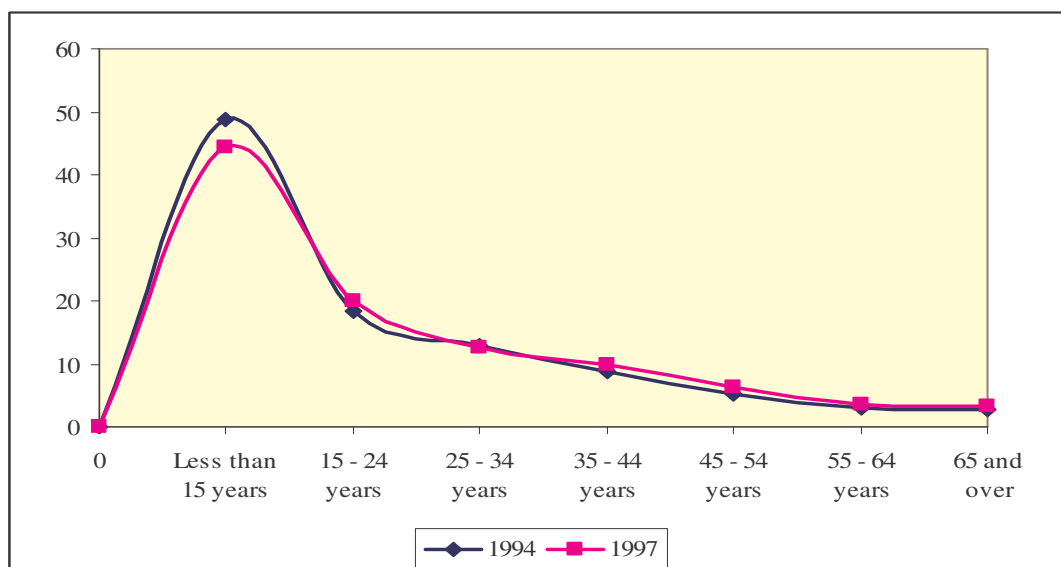
Source: Authors' calculations from the 1994 and 1997 WMS.

Table 3.1 presents the percentage of the elderly population within households in Kenya. The elderly defined as above 55 years of age increased from 5.81 percent in 1994 to 6.92 percent in 1997. The figure declines to 4 – 5 percent when the elderly population is defined as those above 60 years of age. The table also suggests that a greater percentage of the elderly population lives in rural areas. Moreover, over the period 1994 – 1997, there had been a clear shift of the elderly population, steadily moving away from urban areas and toward rural areas. Another result emerging from the table is that older people reside relatively more in poor households compared to non-poor households, although the proportion of elderly living in non-poor households had increased over the years. In general, a greater percentage of older people live in rural areas than in urban areas, and in poor households than in non-poor households.

TABLE 3.1

Percentage of elderly within households

Household types	1994	1997	Change
	55 years & older		
Rural households	6.41	7.74	1.33
Urban households	2.62	2.47	-0.15
Poor households	7.01	7.57	0.56
Non-poor households	5.11	6.38	1.27
All households	5.81	6.92	1.11
	60 years & older		
Rural households	4.57	5.62	1.05
Urban households	1.71	1.14	-0.57
Poor households	5.07	5.60	0.53
Non-poor households	3.56	4.36	0.80
All households	4.12	4.92	0.80

Source: Authors' calculations from the 1994 and 1997 WMS.

Table 3.2 indicates the number of elderly persons within the various categories of households that are associated with the percentages. While those 55 years old and over increased from 1.54 million in 1994 to 1.76 million in 1997, the number of people above 60 rose from 1.09 and 1.25 million, in 1994 and 1997 respectively. The table suggests that the absolute number of elderly in urban areas as well as in non-poor households declined over the three year period.

TABLE 3.2

Number of elderly population (in millions)

Household types	1994	1997	Change
	55 years & older		
Rural households	1.43	1.66	0.23
Urban households	0.11	0.10	-0.01
Poor households	0.69	1.05	0.37
Non-poor households	0.85	0.73	-0.11
All households	1.54	1.76	0.23
	60 years & older		
Rural households	1.02	1.21	0.19
Urban households	0.07	0.05	-0.03
Poor households	0.50	0.78	0.28
Non-poor households	0.59	0.50	-0.09
All households	1.09	1.25	0.16

Source: Authors' calculations from the 1994 and 1997 WMS.

Table 3.3 presents the distribution of the elderly population in 8 major provinces. ***The Nyanza province was the most populous province for the elderly in both years 1994 and 1997. On the other hand, the least populous province was the Northeastern province. The table suggests that there has been a structural change in the elderly population over the years, moving away from the Rift Valley and migrating into the Central province. This shift in population may be related to employment opportunities.***

TABLE 3.3

Population share of elderly by provinces

Regions	55 years & over			60 years & over		
	1994	1997	Change	1994	1997	Change
Nairobi	3.6	2.5	-1.2	3.7	0.8	-2.9
Central	6.0	19.0	13.0	5.4	20.4	15.0
Coastal	7.9	6.8	-1.1	7.0	6.4	-0.6
Eastern	19.4	17.8	-1.6	19.6	18.0	-1.6
Northeastern	2.0	0.1	-1.8	2.2	0.1	-2.1
Nyanza	23.7	22.1	-1.6	23.3	22.9	-0.4
Rift Valley	22.5	18.1	-4.4	22.9	17.6	-5.4
Western	14.9	13.6	-1.3	15.9	13.8	-2.1
Kenya	100.0	100.0	0.0	100.0	100.0	0.0

Source: Authors' calculations from the 1994 and 1997 WMS.

For instance, the Central province is dominated by commercial farmers. This feature of the province can be attractive for both retirees starting commercial farming and for elderly seeking for employment. On the other hand, Nyanza province has a high percentage of subsistence farmers. Pastoralism is prevalent in certain districts in the Rift Valley, Northeastern and some parts of the Coastal and Eastern provinces. Pastoralist activities are conspicuously absent in high population density districts in Central, Western, and Nyanza provinces. This is because of a declining land area that could possibly be suited for grazing, increased agricultural activities and growing population (CBS, 1996). Pastoralist activities are often affected by droughts, resulting in frequent famine as a result of the loss of livestock. There were three major droughts that hit the economy in the past decade. This natural disaster might be a factor that has caused the shift of the elderly population in Kenya over time, moving away from the Rift Valley province.

3.2 POVERTY AMONG THE ELDERLY

Using the official poverty lines adjusted by economies of scale, Table 3.4 shows that ***the prevalence of poverty at the national level was 37.09 and 45.34 percent in 1994 and 1997, respectively.*** This implies that around 37 and 45 percent of Kenyans, in 1994 and 1997 respectively, could not achieve the minimum expenditure to acquire the basic food and non-food items. Overall, the percentage of poor individuals had jumped by 20.08 percent over these three years. There had been a less dramatic increase in the other poverty measures. In fact, the severity of the poverty index fell by 2.11 percent over the period. [3]

In comparison, the elderly suffer far greater poverty. Those over 60 suffer particularly higher poverty. This suggests that the elderly population in Kenya hasa standard of living that is far worse than the national average.

TABLE 3.4
Poverty estimates among the elderly

Poverty estimates	1994	1997	Percentage change
Elderly 55 years & over			
Percentage of poor	43.74	48.92	11.18
Poverty gap ratio	15.66	16.85	7.29
Severity of poverty	7.76	7.57	-2.53
Elderly 60 years & over			
Percentage of poor	44.98	50.85	12.26
Poverty gap ratio	16.33	17.53	7.12
Severity of poverty	8.19	7.91	-3.48
Total Population			
Percentage of poor	36.63	45.04	20.67
Poverty gap ratio	12.39	14.07	12.72
Severity of poverty	5.87	5.86	-0.07

Source: Authors' calculations based on the 1994 and 1997 WMS.

Although Table 3.4 presents elderly poverty at the individual level, it will also be useful to know the extent of poverty in elderly headed households. Table 3.5 presents the estimates of poverty among all individuals living in elderly headed households. ***This shows that poverty in***

elderly headed households is more severe than in non-elderly headed households. This conclusion holds in both years, but the gap between the two types of households narrowed down in 1997. These results suggest that targeting any type of social program, including the expansion of pension coverage or the provision of a social pension to elderly headed households would benefit the poor more than the non-poor.

TABLE 3.5

Poverty among elderly headed households

Poverty estimates	1994	1997	Percentage change
Elderly headed 55 years & over			
Percentage of poor	47.54	49.55	4.13
Poverty gap ratio	17.39	16.91	-2.83
Severity of poverty	8.69	7.47	-15.11
Elderly headed 60 years & over			
Percentage of poor	49.20	51.89	5.34
Poverty gap ratio	18.34	17.91	-2.38
Severity of poverty	9.33	7.95	-16.00

Source: Authors' calculation based on the 1994 and 1997 WMS.

A second important element in considering programs of old age income support is the potential effect on other groups, most notably children. The poverty status of children living in elderly headed households is shown in Table 3.6 At the national level, 37.29 and 46.02 percent of children less than 15 years old in 1994 and 1997, respectively, were not able to meet the minimum expenditure to acquire the basic food and non-food items.

As expected, *poverty among children living in elderly headed households is much higher than poverty suffered by children on average. Poverty is even more prevalent among children living in households headed by people who are 60 and over. This suggests that a policy scheme of giving pensions to elderly headed households could also be very effective in reducing poverty among children.*

TABLE 3.6

Poverty among children less than 15 years of age

Poverty estimates	1994	1997	Percentage change
Children living in elderly headed households 55 years & over			
Percentage of poor	49.82	51.54	3.39
Poverty gap ratio	18.51	17.40	-6.15
Severity of poverty	9.23	7.63	-19.03
Children living in elderly headed households 60 years & over			
Percentage of poor	51.75	54.59	5.34
Poverty gap ratio	19.75	18.48	-6.64
Severity of poverty	10.07	8.13	-21.40
All children			
Percentage of poor	36.88	45.74	21.53
Poverty gap ratio	12.52	14.21	12.64
Severity of poverty	5.92	5.91	-0.07

Source: Authors' calculation based on the 1994 and 1997 WMS.

3.3 ELDERLY AND CHILDREN

According to the 1994 and 1997 WMSs, there are a significant percentage of households headed by elderly who are living with children under the age of 15. For example, 21.5 and 14.5 percent of total households were identified as elderly headed households living with children in 1994 and 1997, respectively. This type of household exists partly because working age adults migrate to the cities, leaving children behind with elderly in rural areas. Moreover, due to the AIDS epidemics, the members of the so-called "skip generations", in which working age adults are missing, are growing rapidly in Sub-Saharan Africa. This has led to increasing attention paid to the role of grandparents in caring for grandchildren (Williams and Tumwekwase, 2001).

To date, reliable empirical research about these issues in the African context remains scant due to the non-availability of data. However, an on-going WHO study of 685 households affected by AIDS and containing older people in Zimbabwe found that in 84 percent of cases, elderly were the main care givers for orphans and children with AIDS (WHO, 2002). The study addresses the financial problems faced by these elderly, including the loss of remittances and other financial support, a lack of food and clothing, the high cost of medical fees during illness, an inability to pay school fees for orphans, a loss of economic support and diminished livelihood opportunities. In this context, pensions for the elderly could be of great importance. Pension income is usually likely to be pooled within households, and younger members have been demonstrated to benefit from it.

Table 3.7 illustrates one of the main effects of elderly caring for children by examining the school attendance of children from elderly headed households. School-age children are defined as those aged between 6 and 17, which corresponds to the current Kenyan education system: primary school-age is between 6 and 13, while secondary school-age is between 14 and 17.

TABLE 3.7

Percentage of school-age children attending school

Household types	1994	1997	Difference
Elderly headed 55 years and over	75.81	83.67	7.86
Elderly headed 60 years and over	73.40	82.16	8.76
All households	77.38	84.98	7.60

Source: Authors' calculations from the 1994 and 1997 WMS.

There are over 9 million children who belong to the age-group of 6-17. Our estimates show that almost 77 - 85 percent of these children attended school in the period 1994-1997 (see Table 3.4). ***School-age children from elderly headed households, however, have attendance rates that are below the national average. Their school attendance is particularly lower for households headed by elderly over 60 years old.*** The study attempted to investigate potential reasons why children living in elderly headed households have a poorer school attendance. Figure 3.2 shows reasons for not attending school for children living in households headed by persons 60 years old and older.

As can be seen from Figure 3.2, ***children living in elderly headed households do not attend school because of expensive tuition fees, which accounts for 35.1 percent of the children not attending school, whilst it is the reason for not attending school for 29 percent***

children living in other households. This suggests that ***children living in elderly headed households suffer greater financial hardship compared to those living in non-elderly ones.*** "Other" as a reason other than the specific six reasons, is the next highest cause after fees cited by the children for not completing the education cycle. The children who responded no interest as a reason for not attending school is also significant, at 8.8 percent and 9.8 percent for those living in elderly headed and non-elderly headed households, respectively. Marriage and pregnancy are also more often cited causes than failed exams or illness.

FIGURE 3.2

Reasons for children not attending school
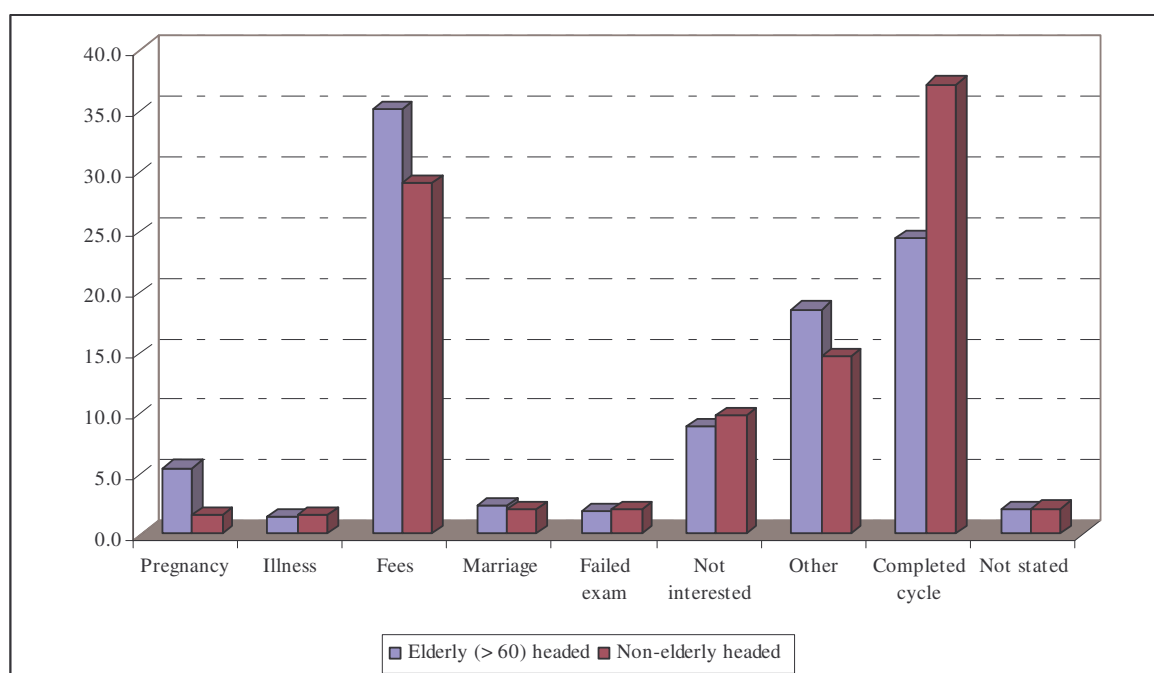
Source: Authors' calculations based on the 1994 WMS.

(Note: "Not stated" cases refer to the children who do not attend school and fail to give a reason)

3.4 HEALTH STATUS OF THE ELDERLY

Health policies and strategies in Kenya are geared towards reducing the incidence of disease and improving the health status, and thus, the quality of life of the general population (Ministry of Finance and Planning, 2000).

Table 3.8 presents the incidence of sickness among older people, children and Kenyan people. As expected, ***elderly, particularly those who are over 60 years old, have a higher incidence of sickness than the average for the population or for children. Interestingly, the incidence of sickness among the Kenyan population fell significantly between 1994 and 1997. This is true not only for the elderly but also for children.***

Figure 3.3 shows various types of sickness suffered by elderly people. ***Over 40 percent of the incidence of sickness was caused by fever or malaria, followed by cough or cold. The incidence of vomiting or diarrhea was also a significant contributor to the elderly who fell sick in 1994.***

TABLE 3.8

Incidence of sickness

	1994	1997	Difference
Elderly 55 years & over	34.73	24.28	-10.45
Elderly 60 years & over	36.44	25.72	-10.72
Children under 15 years	23.82	15.75	-8.07
Total population	23.63	15.56	-8.07

Source: Authors' calculations from the 1994 and 1997 WMS.

FIGURE 3.3

Proportion of elderly population by incidence of sickness
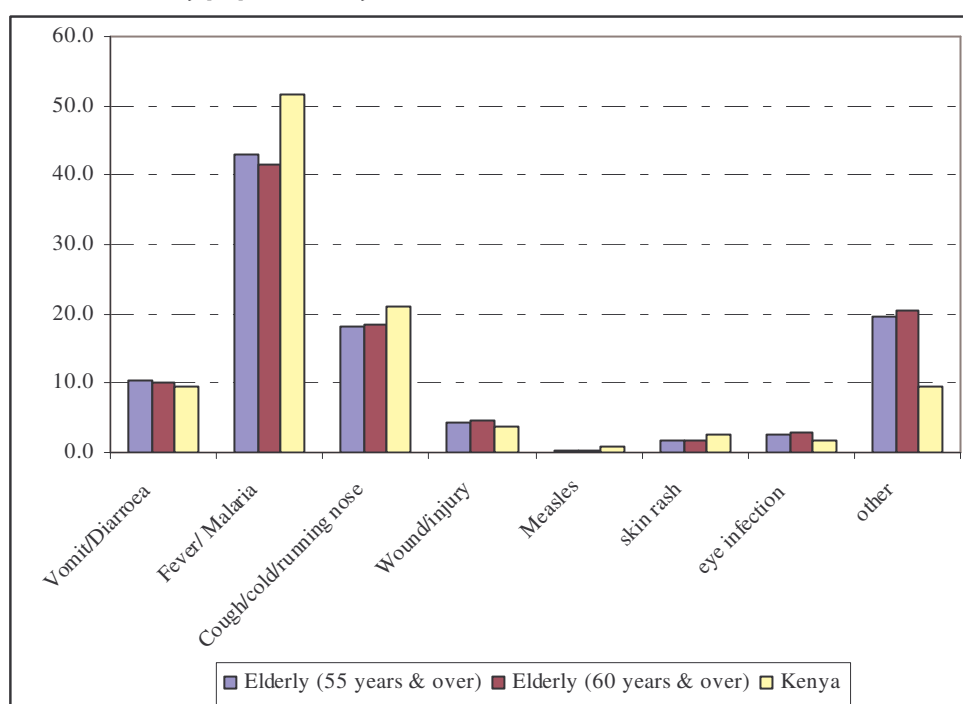
Source: Authors' calculations based on the 1994 WMS.

In response to various sicknesses, the study looked into the incidence of receiving treatment when sick. Table 3.9 presents some results from this analysis. In 1994, more than 96 percent of sick people sought treatment. The corresponding figure dropped by almost 6 percentage points in the subsequent survey period. Relative to the national average, an even greater proportion of children sought treatment when they were sick. This is, however, not true for older people in Kenya. ***Although elderly people have a higher incidence of sickness than the national average (Table 3.8), their incidence of receiving treatment is far lower than the national average.*** Surprisingly, the incidence of treatment fell over the period. This may be due to factors such as the unaffordability of getting treatment, the poor quality of health care, the unavailability of health facilities, the nature of the illness (e.g. not seriously ill enough to seek treatment), or other related factors. Having noted that the majority of sick people seek some sort of treatment, the study next investigates the types of health facilities utilized by the sick. Figure 3.4 shows the types of health facilities utilized by sick elderly.

TABLE 3.9

Incidence of treatment when sick

	1994	**1997**	**Difference**
Elderly 55 years & over	90.77	82.46	-8.31
Elderly 60 years & over	89.84	81.90	-7.94
Children under15 years	97.04	92.28	-4.76
Total population	96.32	90.36	-5.96

Source: Authors' calculations from the 1994 and 1997 WMS.

Nationally, the majority of the elderly prefer private treatment: 73 percent of the elderly utilize pharmacies and another 11 percent utilize public or private dispensaries. For those under 60, the most frequent action when sick is also to visit a pharmacy (74 percent), followed by consulting a dispensary (12.4 percent). Attending a health centre or hospital is more common for the non-elderly group compared to the elderly one.

The 1994 WMS shows that nationally, 10.16 percent of the elderly over 60 who are sick do not receive treatment. The corresponding figure increased to 19.10 percent in 1997. For the whole population, the figures for not getting treatment when sick were 3.68 and 9.64 percent in 1994 and 1997, respectively. In addition, the figure for not receiving treatment among the non-elderly is only about 3.1 percent. Of the elderly who required medical attention, they did not visit a government health facility due mostly to non-availability of drugs (53.9 percent), too far (15.2 percent), and other reasons (16.3 percent). For the non-elderly group, the reasons for not utilizing a government health facility show a similar pattern.

FIGURE 3.4

Proportion of elderly population by utilization of health facilities
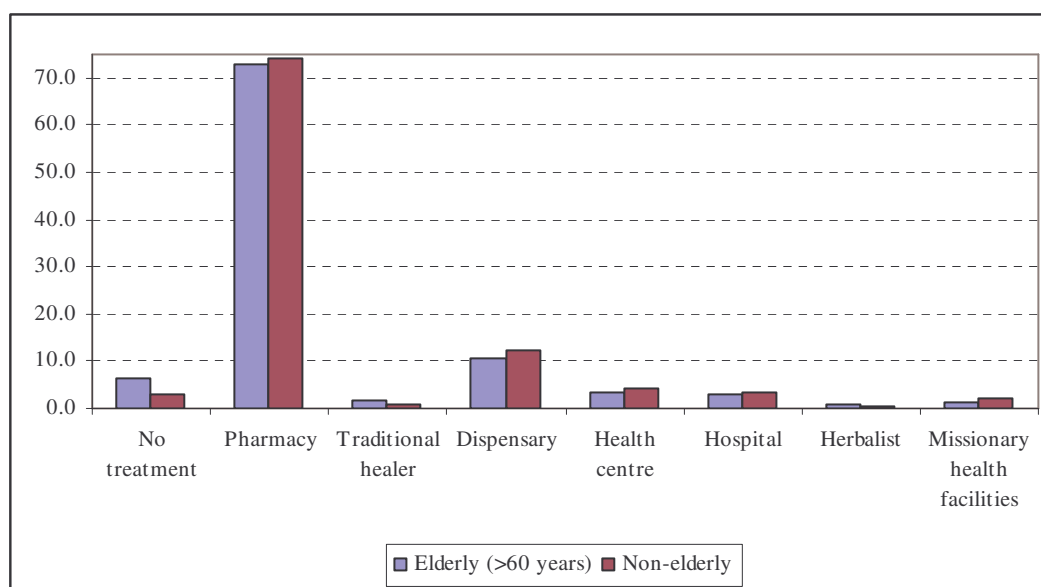
Source: Authors' calculations based on the 1994 WMS.

FIGURE 3.5

Reasons for not visiting a government health facility
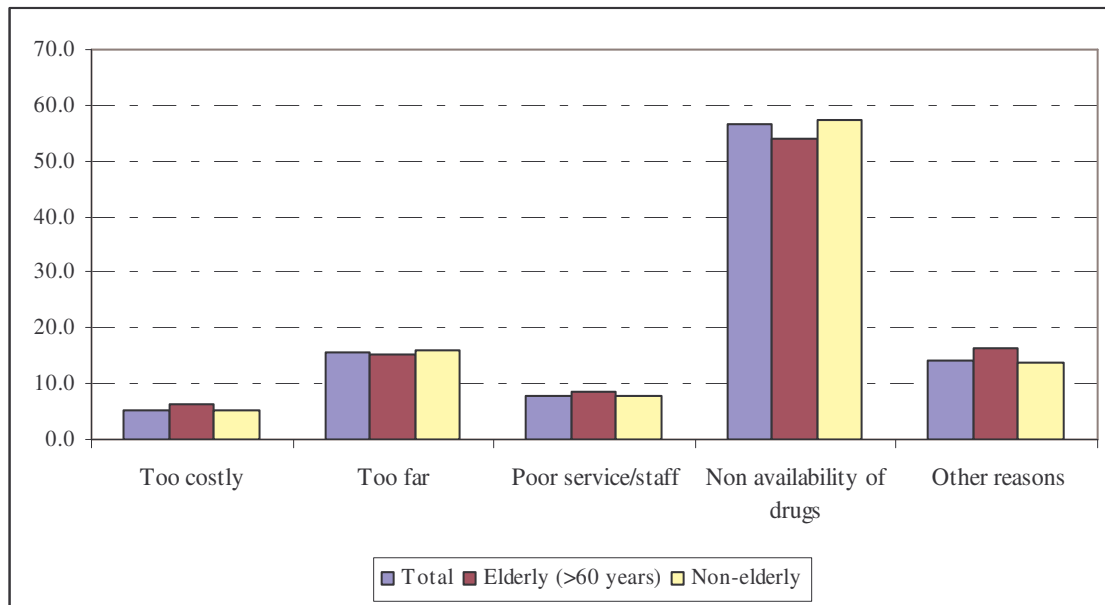
Source: Authors' calculations based on the 1994 WMS

4 THE ELDERLY AND RECEIPT OF PENSION INCOME

4.1 WHICH ELDERLY ARE RECEIVING PENSIONS?

There is very limited information available to support analysis of the patterns of pension receipt by the elderly. Specific questions on pension income were only included in the 1994 WMS. More importantly, although the 1994 WMS contains data on pensions as a source of income, it does not have any information regarding whether these are public or private pensions; whether these are old-age pensions or other types of benefits such as disability pensions; and whether these are contributory or non-contributory. *According to the 1994 WMS, only 0.2 percent of the Kenyan population reported receipt of any form of pension income in 1994, representing a very low coverage rate by any standard. While 3.1 percent of elderly over 55 in Kenya reported receipt of pension income, 90 percent of the beneficiaries in this age group were male.*

Figure 4.1 presents the age distribution for individuals who report the receipt of pension income. This shows that 75.4 percent of those who receive any forms of pension were aged 55 and over. Around 32 percent of pensions belong to the age-group of 65 years old and over. A similar trend emerges in both urban and rural areas. Of the total number of recipients, 86 percent of them lived in rural areas and the remaining 14 percent in urban areas. It is interesting to note that 26.2 percent of total pensioners in urban areas belong to the young age-group of 25-34 years of age. These statistics suggest that there is a mixture of income sources reported as pensions, with some portion likely to be derived from disability or other types of benefits.

Overall, our findings suggest that pensions mainly refer to old-age benefits, but no further information is available regarding the source from which these are derived, whether these pensions were public/private or contributory/non-contributory. Based on the 1994 WMS, it is

not possible to determine whether the old-age pensions stemmed from employment because there is no information available on pension recipients' employment history.

FIGURE 4.1

Proportion of individuals receiving pensions by age group
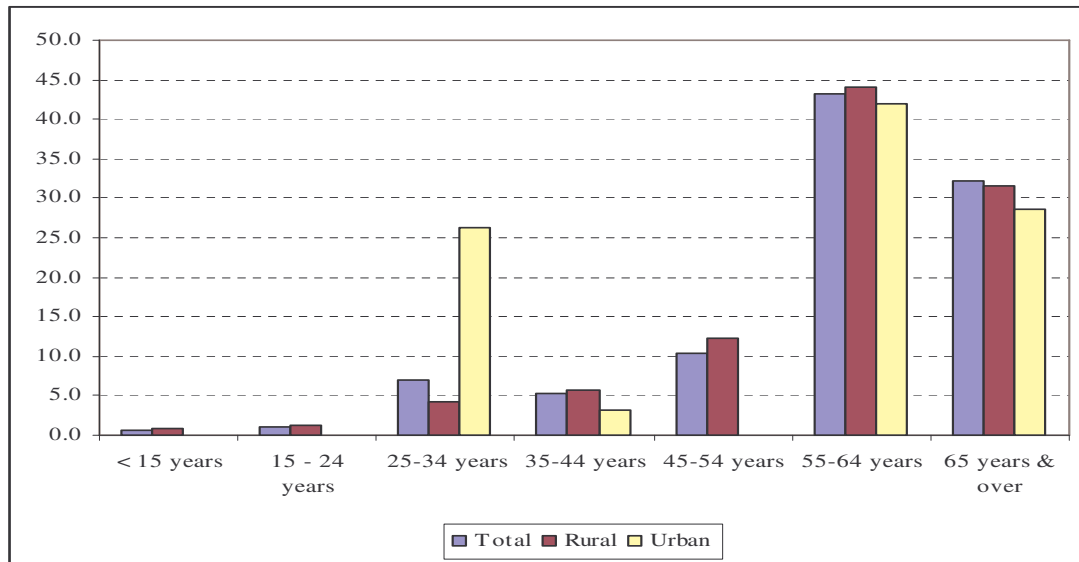
Source: Authors' calculations based on the 1994 WMS.

The study also looks into the distribution of pension beneficiaries in 8 major regions. *By and large, people who received pensions lived in Western (24.5 percent), Nyanza (22.6 percent), and the Rift Valley (17.8 percent) provinces. This regional pattern is similar for male pensioners. For females, there is an extremely high concentration in the Nyanza province (49.3 percent).* These findings are displayed in Figures 4.2 and 4.3.

FIGURE 4.2

Proportion of pensioners by regions
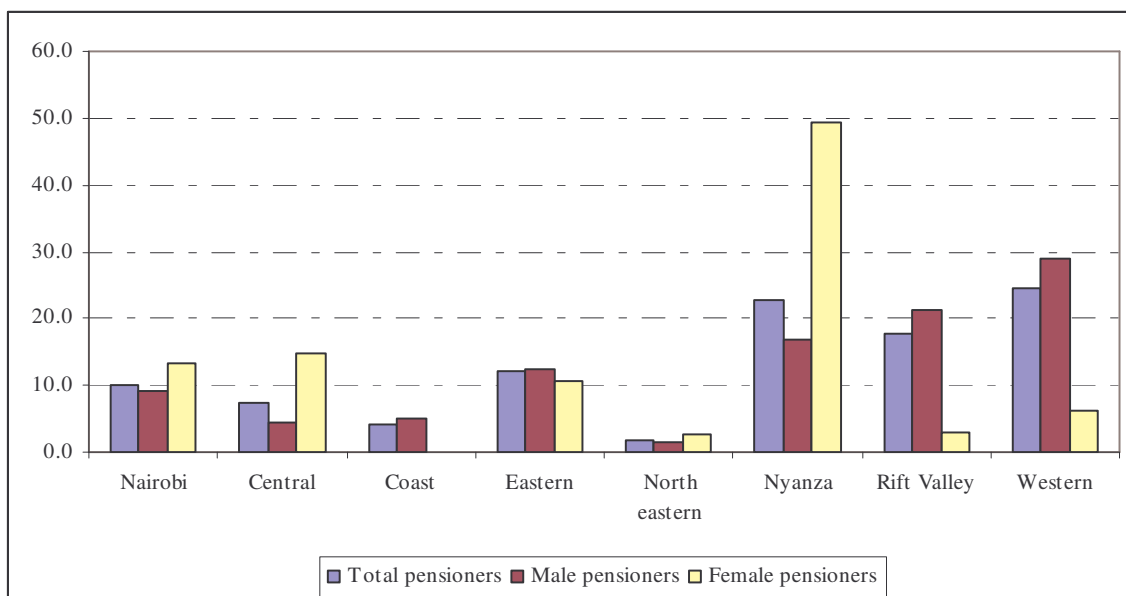
Source: Authors' calculations based on the 1994 WMS.

FIGURE 4.3

Proportion of elderly pensioners by regions
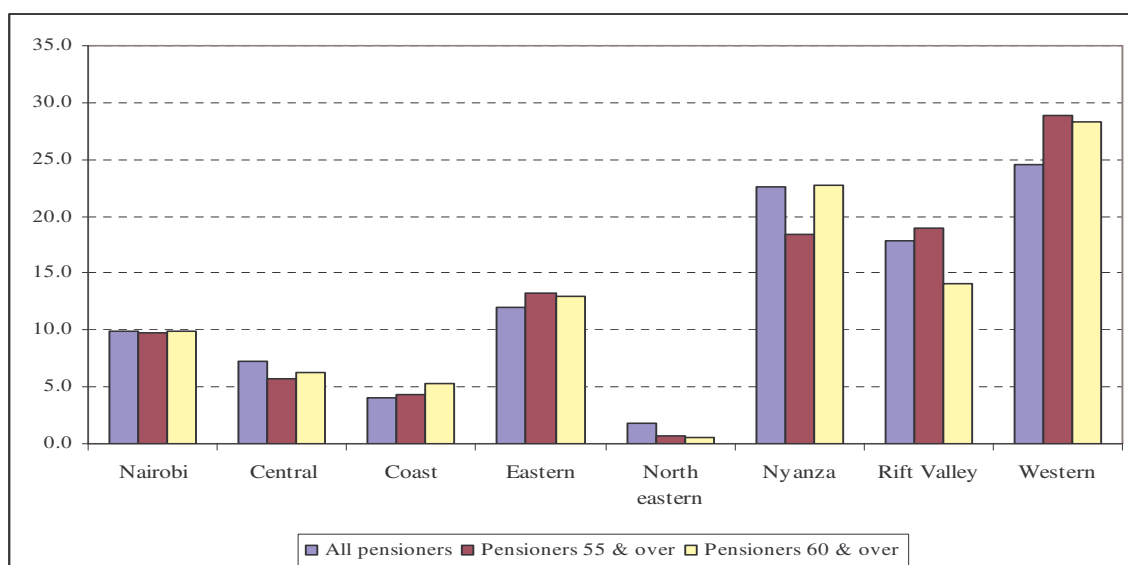
Source: Authors' calculations based on the 1994 WMS.

4.2 SIZE OF PENSION PAYMENTS

Table 4.1 presents average monetary values of pensions received per month. These figures represent weighted average of per capita monthly pension. On average, pensioners belonging to the age group of 55+ received 1,585 KShs per month in 1994, which is equivalent to US$ 28 at the July 1994 exchange rate. This figure accounted for 46 percent of per capita monthly income for those pensioners over 55 years old. For all pensioners, the monthly pension payment appears to be a significant source of income.

TABLE 4.1

Actual amounts of pensions for the elderly

	All pensioners	Pensioners 55 years & over	Pensioners 60 years & over
Kenya			
Number of pensioners	65,815	49,616	32,791
Amount of monthly pensions (KShs)	1,481	1,585	1,329
(US$, July 1994)	(US$26)	(US$28)	(US$24)
Share of pensions in total income (%)	**46.9**	**46.0**	**34.0**
Rural			
Number of pensioners	57,310	43,607	28,398
Amount of monthly pensions (KShs)	1,237	1,262	1,016
(US$, July 1994)	(US$22)	(US$22)	(US$18)
Share of pensions in total income (%)	**61.5**	**60.6**	**53.2**
Urban			
Number of pensioners	8,505	6,009	4,392
Amount of monthly pensions (KShs)	3,226	4,075	3,513
(US$, July 1994)	(US$57)	(US$73)	(US$63)
Share of pensions in total income (%)	**29.3**	**30.2**	**20.5**

Source: Authors' calculations based on the 1994 WMS.

In urban and rural settings, the actual amounts received by the urban pensioners are substantially greater than those received by the rural pensioners. However, as shown in the table, the majority of pensioners are living in rural areas, not in urban areas. Moreover, our results also show that pensions contribute to per capita total income by 60.6 percent and 52.2 percent for pensioners over 55 and over 60, respectively. This suggests that pension plays a critical role for the elderly recipients living in rural areas in particular.

4.3 EMPLOYMENT STATUS OF PENSIONERS

The results presented in Table 4.2 indicate that ***pensions were given largely to those currently employed in agriculture and unpaid family work.*** Note that by definition, unpaid family workers are treated as unemployed in the 1994 WMS. ***For elderly pensioners over 60, 80 percent of them were engaged in the agricultural sector. Another 10 percent of the pensioners were employed in unpaid family work.***

TABLE 4.2
Employment status of pensioners

	All pensioners	Pensioners 55 & over	Pensioners 60 & over
Public sector	3.4	2.5	3.8
Formal sector	4.5	-	-
Informal sector	5.1	4.3	2.8
Casual labor	0.4	0.6	0.9
Unpaid family labor	6.2	6.5	9.9
Agricultural sector	78.1	84.4	80.1
Other	2.3	1.7	2.5
Total	**100.0**	**100.0**	**100.0**

Source: Authors' calculations based on the 1994 WMS.

Although a major proportion of pensioners were found working primarily in the agricultural and informal sectors, they were mostly able to read and write. 79.1 percent of elderly pensioners over 55 were literate. By contrast, only 26.9 percent of the non-pensioners in the same age group were literate. ***In short, the educational level among pensioners is higher than among non-pensioners.*** This sharp contrast indicates that the pensions to which the elderly had access are likely to be contributory rather than non-contributory. In Kenya, pensions have been paid only to those who used to be employees in formal employment but exclude mainstream public servants. This suggests that retired elderly with any formal pension are likely to be more educated.

FIGURE 4.4
Literacy status of elderly pensioners
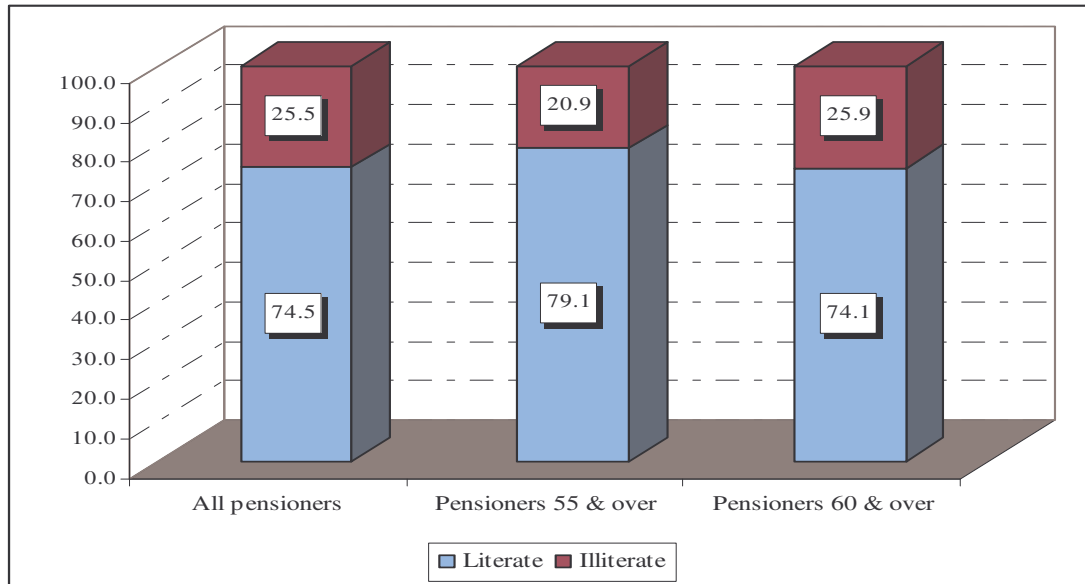
Source: Authors' calculations based on the 1994 WMS.

4.4 PENSIONERS LIVING WITH CHILDREN

In Kenya, the major roles of older people can be identified as: child care givers for employed family members with children; and care givers for sufferers of terminal disease and their dependants (as the prevalence of AIDS escalates, this role is set to become increasingly prominent). According to Burman (1995), pensions given to elderly women in South Africa played an important role in the welfare of the household. Similarly, Ardington and Lund (1995) also found that pensions played an economic and social role, making a substantial difference in the living standards of African households.

Figure 4.5 presents the percentage of elderly pensioners living with children under 15 years of age, children of primary school age (6 – 13 years), and children of secondary school age (14 – 17 years). As can be seen, ***far more than half of the elderly pensioners are indeed living with children. 3 percent of the pensioners 55 years old and older were estimated to be living with children under 15 years old but without a working adult (aged between 18 – 54 years) in the household. For these elderly headed households without a working adult, pensions play a significant role in the welfare of the household members, including children.***

FIGURE 4.5
Proportion of elderly pensioners living with children
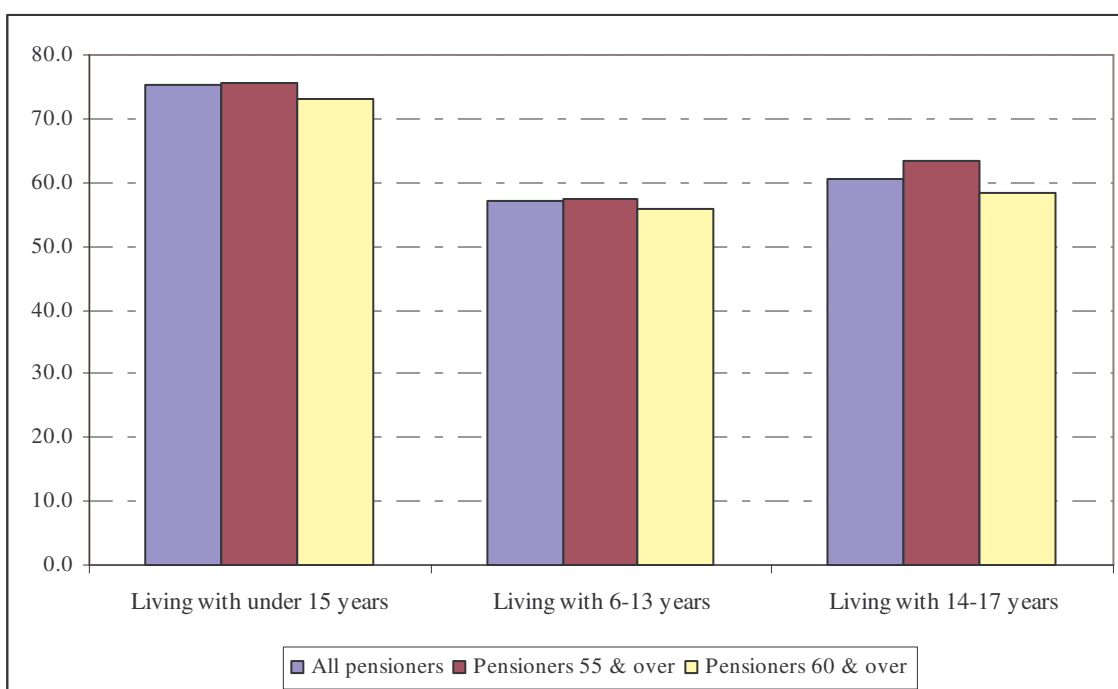
Source: Authors' calculations based on the 1994 WMS.

4.5 ASSET OWNERSHIP AND HOUSING AMENITY OF ELDERLY PENSIONERS

Table 4.3 compares the asset holdings of elderly people receiving pensions with the asset ownership of those without access to pensions. The results reveal that elderly-headed households with pensions tend to own large land parcels, and it was observed that most households own no land or little land, seriously disadvantaging their ability to earn a livelihood. Land holding is defined as land owned or operated by a household used either for crops or livestock rearing. ***In terms of mean land holding size, the difference between the elderly-headed households with and without pensions seems to be significant – nationwide, the mean total land holding size for the elderly with pensions is around 10 acres, while for those without pensions is slightly higher than 7 acres.***

TABLE 4.3
Asset holdings of elderly pensioners

		Elderly with pensions		Elderly without pensions	
	Kenya	**55 years & over**	**60 years & over**	**55 years & over**	**60 years & over**
Mean land holding sizes (Acres)	4.70	10.30	10.60	7.10	7.30
Access to car (%)	0.61	0.00	0.00	0.58	0.31
Access to radio/TV (%)	2.60	5.27	4.60	1.54	1.41
Access to life insurance (%)	2.89	4.51	6.62	1.12	1.08

Source: Authors' calculations based on the 1994 WMS.

Ownership of certain assets is considered as an indication of a household's socioeconomic status, which can, however, be region or community specific (like housing), and may also be based on tastes and preferences. However, ***the 1994 WMS shows that more of the elderly receiving pensions own each of the asset categories than the elderly who do not have access to pensions.*** As expected, cars are owned by a very small proportion of people in Kenya. The elderly without pensions tend to have more access to cars than their counterpart elderly. Radios and TV sets are more commonly owned assets compared to assets like cars. This may not only be a reflection of affordability, but also the practicalities of daily life. On average, elderly having access to pensions own more radios and TV sets than those without pensions. In the case of life insurance, 2.89 percent of the population in 1994 had life insurance. ***Of the elderly, there is a wide margin in the ownership of life insurance between those with and without pensions, with a higher proportion of the elderly with pensions (particularly 60 years old and older) owning the asset in question.***

FIGURE 4.6

Proportion of elderly having access to housing amenities
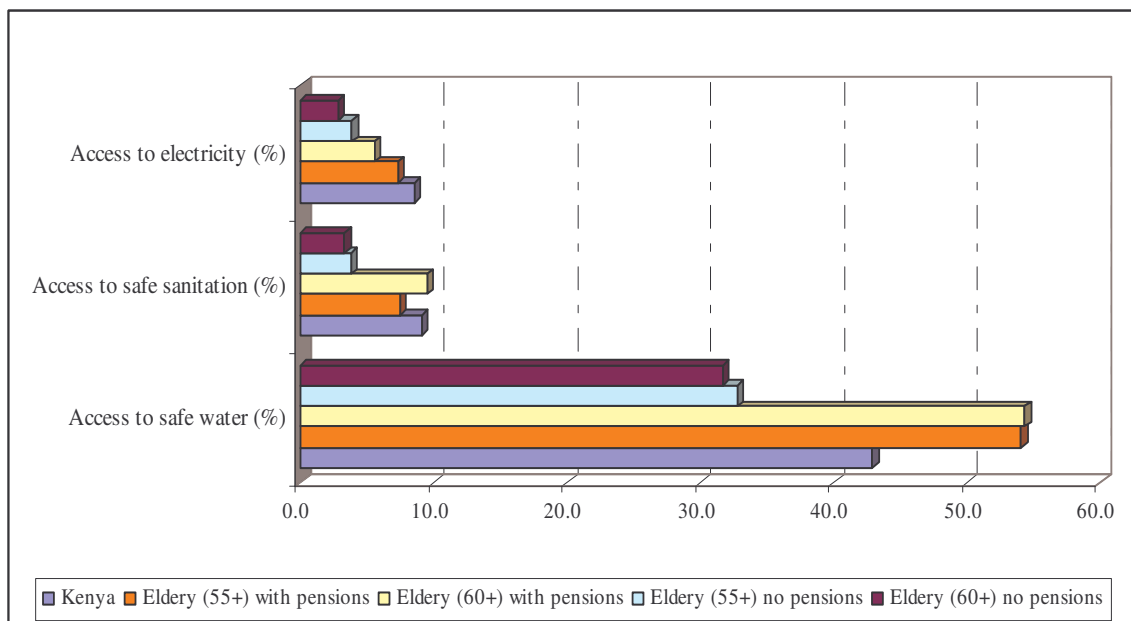
Source: Authors' calculations based on the 1994 WMS.

Note: Safe sanitation includes V.I.P. latrine, W.C. and flushing toilets and unsafe sanitation includes pit, bucket and no toilets.

Housing is a basic need of the population and contributes significantly to better living standards and household welfare. The quality of housing may be defined by the accessibility of various housing amenities such as safe sanitation, safe drinking water, electricity, and so forth.

Water scarcity accentuates poverty by directly limiting people's access to a basic necessity and by indirectly limiting access to food and employment. From a gender perspective, the burden of inadequate and unsafe water and poor sanitation is borne by women and girls who have to fetch water for domestic use, irrigation and livestock. This reduces the opportunity for women to participate in the formal labor markets. Improving access to water will also have the benefit of freeing up time and energy for girls to attend school. When access to water and sanitation is suboptimal, levels of disease, mortality and morbidity in a population are likely to be high.

Safe water includes piped water, water from boreholes and water from protected springs and wells. On the other hand, unsafe water includes unprotected wells and springs, rainwater, lakes, rivers, ponds, etc. ***At the national level, the proportion of elderly-headed households who have access to safe water is higher for the households receiving pensions than for those without pensions. Similarly, compared to elderly-headed households without pensions, a higher proportion of elderly-headed households with pensions have access to safe sanitation and electricity. These findings suggest that elderly-headed households receiving pensions tend to have a better quality of living standards than those without pensions.***

On the whole, the limited pension system of Kenya appears to provide a meaningful source of income support for the small proportion of elderly persons that receive benefits. Those who report pension receipt indicate far better living conditions and asset accumulation than others. This is likely to be largely a function of access to pension only by the highest income groups, most notably civil servants, but also indicates some positive effect of pension receipt on living standards. Persons living in urban areas indicate much higher levels of pensions, but there are more persons in rural areas who report receipt of these benefits. Although there is no reliable way to draw further inferences about the sources of this pension income, the pattern observed in the very limited data would be consistent with income derived from formal sector employment in either the public or private sector. It is interesting to note that the largest proportion of elderly pensioners live in rural areas and continue working, which suggests that there are many who receive minimal income and perhaps return to rural areas after earning a pension through urban employment, but that these benefits are insufficient to support withdrawal from the labor force.

5 THE IMPACT OF PENSION RECEIPT ON POVERTY STATUS

5.1 DO CURRENT PENSIONS RAISE RECIPIENTS OUT OF POVERTY – *EX-POST* ANALYSIS

One way to provide some insights into the value of pension receipt in relation to the risk of poverty is to compare poverty measures computed using full household income against the same poverty measure, excluding the pension income. This is equivalent to evaluating the effects on poverty of withdrawing the pension benefit. This is an imperfect estimate of the incidence of the pensions on poverty because it does not account for second order effects following the withdrawal of the pension benefits. Second order effects could work to ameliorate the impact on poverty, but they could also compound it. To the extent that the withdrawal of the pension benefit encourages household members to pursue additional income generating activities, ignoring second order effects would lead to overestimating the impact on poverty of withdrawing pension programs. On the other hand, to the extent that the pension income itself supports human capital investment or income generating activities, ignoring second order effects would lead to underestimating the impact on poverty from withdrawing pension programs. There is insufficient empirical evidence to predict the sign of net second order effects. Keeping this firmly in mind, the comparison yields a measure of the first order incidence of pension income on poverty for the sampled households.

TABLE 5.1

Impacts of pensions on poverty among the elderly

Poverty measures	55 years & over	60 years & over	Kenya
Headcount ratio	5.5	4.5	1.6
Poverty gap ratio	17.1	14.6	5.9
Severity of poverty	28.4	24.3	9.6

Source: Authors' calculations based on the 1994 WMS.

Table 5.1 shows that **the withdrawal of the pension income, in the absence of second order effects, would increase all three poverty measures calculated for elderly as well as for all individuals nationally.** The results indicate that withdrawing the pension income would lead to a 5.5 percent rise in the headcount ratio among people 55 years and over. The effects of withdrawing the pension benefit on the poverty gap and on the severity of poverty among the elderly poor are much greater. While excluding the pension income would lead to a rise in the poverty gap ratio among the elderly (55+) by 17.1 percent, the severity of poverty among the elderly would jump by 28.4 percent in the absence of the pension income. All in all, withdrawing pensions would have a relatively small effect on the headcount ratio, but a much larger effect on the poverty gap and on severity of poverty. The stronger effect from withdrawing pension income on the poverty gap than on the headcount ratio indicates that current sources of pension income are more effective in lifting the incomes of the poorest than for taking those just below the poverty line out of poverty. This suggests that the current pension system for formal sector workers, although small, is reaching persons within the lowest income groups.

5.2 PENSIONS AND THE PROBABILITY OF BEING POOR

As a second step in identifying the impact of current pension income on poverty a probit model was developed to evaluate the determinants of the probability that a household member living in a household headed by an elderly person will be poor. A multivariate setting enables the identification of the impact of having a pension beneficiary on the probability that household members are poor, having controlled for the influence of household and individual characteristics, as well as other income sources.

In a probit model, the dependent variable takes binary values 0 (when the household is non-poor) and 1 (when the household is poor). A household is defined as poor if its per capita consumption is less than its per capita poverty line (otherwise it is considered non-poor). A probit model estimates the probability of a household being poor conditional on a range of individual/household socioeconomic characteristics. We fitted the following model.

$$\Pr[P_{0i} = 1 \mid X_i] = \alpha_i + \beta X_i + \lambda' PS_i + \delta OS_i + \varepsilon_i$$

where X_i is a vector of household characteristics, PS_i is a dummy variable indicating the household receives a pension benefit, and OS_i is a vector of dummy variables indicating whether the household receives a range of income sources other than pension. The parameter of our interest is λ, providing an estimate of the impact of pension receipt on the probability of poverty among households headed by elderly.

The control variables included in the model reflect household characteristics, such as age, marital status, literacy and working status, which have been found to determine poverty in similar studies (Woolard and Leibbrandt 2001, Woolard and Klasen 2003, May 2000).

Similarly, household characteristics, such as the number of household members, whether the household is located in a rural area, and the gender of the household head are included. Income sources are entered as dummy variables indicating their presence within the household.

Table 5.2 reports on the estimates of the probit regression model for the households headed by elderly aged over 55 years and over 60 years. The model takes sampling weights and clustering into account. The reported parameters are marginal effects computed at the mean of the regressors. The probit regression results are in line with the observations about the incidence and level of poverty of the elderly presented earlier. Households headed by widowed elderly person over the age of 55 or 60 years are more likely to be poor. Members of larger elderly-headed households have a higher probability of being poor. Households headed by illiterate elderly are more likely to be poor. 60+ elderly headed households are likely to be poorer if they are located in rural areas. Elderly headed households receiving wages and salaries are less likely to be poor. This finding is also supported by studies like Woolard and Klasen (2003). Pensions have a significant negative impact on poverty probability in the elderly headed households. Members of households receiving cash transfers other than pensions are also less likely to be poor.

As regards the main parameter of interest, living in an elderly-headed household with a pension recipient reduces the probability of poverty. This is true for the sample of the households headed by elderly 55 years and older, and it is also statistically significant when the sample is limited to those households headed by elderly 60+. For the 55+ elderly sample, the marginal effect of pension receipt is to reduce the probability of poverty by 17.1 percent for the household. The marginal effect of pensions becomes 20.9 percent for the households headed by people 60 years old and older and is also statistically significant at 5 percent level. Perhaps of greatest interest, the marginal effect due to pension income is far larger compared to the marginal effects of wages and other transfers.

Some issues associated with this specification have been raised in the relevant literature and need to be considered with the results above (Dieden 2003, Diamond, et al. 1999). In a sense, income sources cannot be taken as exogenous to individual and household characteristics. For instance, some studies for South Africa have considered whether receipt of the pension encourages other relatives to co-reside with pensioners, as a means of avoiding poverty or destitution, or as an insurance against frequent unemployment spells or variable income (Edmonds et al. 2001). A complication arises from the juxtaposition of income source variables and variables indicating characteristics which may help determine the income sources of households, as is the case where a means test is applied for the determination of non-contributory pension entitlement. It can be argued that these issues are less important in the context of older people and their households. Particularly for older people themselves, it can be argued that whatever choices may have led to the presence of current income sources, these can be taken to be predetermined and irreversible. The labor supply effects of pension receipts, for example, are likely to be smaller for older people than for middle-age adults by an order of magnitude. Nonetheless, issues of endogenity remain important for other members of the household. Regarding the feedback effects of income levels on income sources, the model estimated in this study uses dummy variables indicating the presence of income sources rather than the amounts received.

TABLE 5.2

Probit regression results for the elderly [a]

Dependent variable is poverty indicator (poor = 1 and non-poor = 0)

Variables	Elderly 55 & over			Elderly 60 & over		
	Marginal Effect	Robust z statistics	Mean	Marginal effect	Robust z statistics	Mean
Married monogamous	0.341	1.88	0.56	0.375	1.81	0.53
Married polygamous	0.337	1.91	0.25	0.352	1.76	0.27
Divorced/separated	0.352*	2.00	0.01	0.364	1.92	0.01
Widowed	0.364*	2.13	0.17	0.415*	2.19	0.19
Members in household	0.014*	2.89	7.58	0.014*	2.33	7.40
Age	0.112	0.60	64.78	-0.045	-0.15	68.40
Age_square	-0.002	-0.58	4265.72	0.001	0.14	4736.06
Age_cube	0.000	0.57	285969.00	-0.000	-0.12	332310.00
Rural	0.070	1.01	0.93	0.180*	2.03	0.94
Illiterate	0.079*	2.29	0.60	0.087*	2.13	0.66
Female headed	-0.091	-1.72	0.22	-0.106	-1.59	0.21
Farmers & pastoralist	0.110	1.72	0.82	0.102	1.27	0.85
Unemployed	-0.048	-0.39	0.02	-0.018	-0.12	0.02
Pubic sector workers	-0.057	-0.57	0.03	0.118	0.89	0.02
Private sector workers	0.148	1.78	0.07	0.042	0.40	0.05
Wages & salaries	-0.115*	-2.86	0.77	-0.094*	-2.31	0.75
Pensions	-0.171*	-2.31	0.06	-0.209*	-2.11	0.05
Rent	-0.082	-1.26	0.07	-0.062	-0.89	0.08
In-kind transfers	0.031	0.91	0.28	0.031	0.76	0.30
Cash transfers	-0.073*	-2.28	0.43	-0.082*	-2.04	0.44
Number of observations	2364			1695		
Wald chi^2 (20)	59.70			51.88		

(a)The probit model and z statistics are estimated using population weight.

* Coefficient is statistically significant at the 0.05 level.

Source: Authors' calculations based on the 1994 WMS.

While exercising appropriate care, it is possible to interpret the parameters estimated by the model as reflecting a statistical association between the different sources of income on the one hand and poverty on the other, controlling for a number of household socioeconomic and demographic characteristics. The analysis strongly reinforces the earlier observation that, the current pension programs in Kenya, for the small minority of people who are able to derive some retirement income from them, have a strong and significant effect on reducing the probability of poverty among households headed by persons 55 years old and over. This provides strong evidence that the mandatory programs for the formal sector not only reinforce the economic advantages of higher income groups, but can also be successful in achieving

poverty alleviation among persons who would otherwise be expected to be poor when they become old. This provides important support for policy initiatives that would seek to expand access and coverage for these types of mandatory pension programs in Kenya.

6 THE DESIGN, COSTS AND IMPACTS OF A NON-CONTRIBUTORY SOCIAL PENSION

The foregoing analysis indicates the potential for the expansion of the mandatory pension system to provide meaningful poverty alleviation in Kenya. This inevitably leads to questions regarding the key design parameters that might be considered to achieve this. The concluding sections of the study examine some of the key issues relevant to one approach to achieving such an expansion, the introduction of a non-contributory social pension.

6.1 MEANS TESTING VS. UNIVERSAL AGE ELIGIBILITY

One of the primary issues in the design of any type of social program is whether the program under consideration will achieve poverty reduction that is greater than the alternative given the resources. This is substantially an issue of political economy that is well beyond the scope of this study. There are, however, some analytical questions that will inform such a decision.

A simple way of addressing this question is to compare "perfect targeting" or the theoretical optimum of providing benefits only to the poor with universal eligibility to assess whether a benefit available at an attained age rather than conditioned on economic status is substantially less "pro poor". In this section, we compare the poverty reduction impact of alternative pension programs with the impact one would expect from a similar pension scheme given to every elderly individual in the society using the Pro-Poor Policy (PPP) index proposed by Kakwani and Son (2005).

The PPP index, briefly explained in Box 6.1, compares the percentage poverty reduction that is obtained by a given policy – such as an old-age pension program – with the percent poverty reduction that would be obtained if all persons received an increase in income equivalent to the one provided by the policy or pension program being analyzed. If the PPP index is equal to 1, this means that the pension program performs just as well as a transfer of the equivalent amount of money given to everyone in the population (universal targeting). If the PPP index is greater than 1, it means that the program is achieving greater poverty reduction than the counter factual of targeting the same amount of money universally. For example, finding a PPP index equal to 1.2 for a given pension program suggests that the given program reduces poverty by 20 percent more than an equivalent universal transfer. The larger the index value, the more pro-poor the program is. If the PPP index is smaller than 1, the non-poor are the main beneficiaries of the program. When a program has a PPP index equal to 0.80, the program reduces poverty by 20 percent less than a universal equivalent transfer.

Table 6.1 presents the Pro-Poor Policy (PPP) index for Kenya's pension system. As can be seen from the table, the current pension program has a value for the PPP index less than 1. This supports the general observation that, although the pension system is successful in alleviating poverty among a meaningful proportion of those who receive benefits; in general, ***the pension system in Kenya benefits the non-poor more than the poor.*** Overall, the non-poor have greater access to the current pension program than the poor. Moreover, ***the benefits of the pension program flow to the ultra-poor even less than to the not-so-poor***, as indicated by lower values of the PPP index for the severity of poverty measure.

Perfect targeting may be defined as a situation: when only the poor receive all the benefits; and when benefits given to the poor are proportional to the income shortfall from the poverty line. Perfect targeting is the theoretically optimal policy for poverty reduction. In practice, it is not feasible to operate such a policy because: (i) the administrative cost is very high; and (ii) it is difficult to accurately obtain details of individuals' income or consumption, particularly in the countries where the informal sector might be very large. If the government in Kenya had succeeded in implementing perfect targeting, the PPP index would have been 2.56 for the poverty gap and 3.54 for the severity of poverty measure. Thus, the Kenyan pension program has a much lower value for the PPP index than the value that would have been attained with perfect targeting. This suggests that ***there is much scope for improving the targeting efficiency of the Kenyan pension program.***

Compared to countries in other regions, the PPP indices for perfect targeting are relatively small values: the indices under perfect targeting are 6.77 and 2.86 for Thailand and Vietnam, respectively (Kakwani and Son 2005). This may be due to the fact that poverty in Kenya is acute and widespread as compared to Thailand and Vietnam. The small values of the PPP index under perfect targeting imply that compared to a universal pension scheme, the relative gains of a pension program obtainable from the targeting method may be easily outweighed by practical difficulties and costs associated with a perfectly targeted pension program. It is well known that targeting, and perfect targeting in particular, carries high administrative costs and faces great difficulties in obtaining the necessary information on individuals' income or consumption expenditures.

TABLE 6.1

Pro-Poor Policy index of current pension system in Kenya

	Kenya	Total group PPP		Within group PPP	
		Rural	**Urban**	**Rural**	**Urban**
Poverty gap ratio					
All pensioners	0.73	0.80	0.24	0.73	0.58
Pensioners 55 years & over	0.74	0.81	0.21	0.73	0.49
Pensioners 60 years & over	0.71	0.78	0.28	0.70	0.67
Perfect targeting	*2.56*				
Severity of poverty					
All pensioners	0.73	0.81	0.18	0.73	0.46
Pensioners 55 years & over	0.69	0.78	0.09	0.70	0.23
Pensioners 60 years & over	0.67	0.76	0.12	0.68	0.31
Perfect targeting	*3.54*				

Source: Authors' calculations based on the 1994 WMS.

Table 6.1 also presents two types of PPP indices for socioeconomic groups. These are namely within-group PPP and total-group PPP. The within-group PPP index measures the pro-poorness of a program within the *k*th group. The total-group PPP index captures the impact of operating a program in the *k*th group on its pro-poorness at the national level. The total-group PPP index shown in Table 6.1 reveals that at the national level, the pension program is relatively more pro-poor in the rural areas than in the urban areas. Since the concentration of poor is higher in the rural areas, the impact of targeting the rural areas turns out to be more

pro-poor at the national level. Similarly, the within-group PPP index reports that the pension program is also relatively more pro-poor within the rural areas than within the urban areas. This suggests that **the pension program in Kenya is better targeted in the rural areas.** It is worth stressing that the targeting efficiency of a particular group should be judged on the basis of the total-group PPP index rather than the within-group PPP index.

This study has also calculated the PPP index in the hypothetical case of a universal pension program for the elderly. Suppose that every elderly person over 55 or 60 years old receives a non-contributory pension from the government. Is this scenario likely to be more pro-poor than the actual pension program? Using both the 1994 and 1997 WMS, Table 6.2 attempts to seek the answer to this question.

TABLE 6.2

Pro-Poor Policy index for universal pensions to elderly living in rural and urban areas

	Poverty gap ratio			Severity of poverty		
	Targeting			Targeting		
	All elderly	Rural elderly	Urban elderly	All elderly	Rural elderly	Urban elderly
1994						
55 years & over	1.03	1.07	0.39	1.08	1.14	0.35
60 years & over	1.04	1.09	0.26	1.12	1.18	0.22
1997						
55 years & over	0.93	0.97	0.33	1.01	1.05	0.38
60 years & over	0.95	0.97	0.40	1.03	1.05	0.49

Source: Authors' calculations based on the 1994 and 1997 WMS.

Table 6.2 presents the estimates of the PPP index for alternative pension scheme modalities calculated for the poverty gap and severity of poverty measures. The first modality of a pension program for which we calculate the PPP index is a fixed transfer of pensions to every elderly over 55 or over 60, irrespective of their poverty status. Estimates based on the poverty gap ratio for 1994 are 1.03 and 1.04 for the 55+ elderly group and the 60+ elderly group, respectively. These values are quite close to 1. The corresponding values for 1997 are slightly less than 1, but quite close to unity. This implies that targeting elderly is only slightly more effective than the same fixed amount being transferred universally. The second modality limits a given level of pensions to elderly living in rural areas. Results show that this is a more pro-poor policy option in the sense that it allows for a larger reduction in poverty as measured by the poverty gap and the severity of poverty. Moreover, our results indicate that **targeting rural elderly provides a slightly more pro-poor outcome than universal targeting.** The third modality we have considered is limiting the pensions to elderly living in urban areas. As shown in Table 6.2, this targeting scheme is not pro-poor. This indicates that **to have the maximum reduction in poverty in Kenya, targeting urban areas may not be a good policy option.**

The main message emerging from the analysis of PPP indices is that a given level of pension given to every elderly aged over 55 or over 60 will be pro-poor, but the impact of the pension program might be enhanced if the program is carried out in the rural areas. This universal pension program for elderly in rural areas may be more cost effective because it can avoid administrative costs in identifying a target group based on income or any other criteria that selects a small subgroup of elderly for such a program.

BOX 6.1

Pro-Poor Policy Index (PPP) index

Suppose *x* is the income of a person before transfer and *b(x)* is the benefit received by the person with income *x*, the percentage change in poverty (because of this benefit) can be written as:

$$\frac{d\theta}{\theta} = \frac{1}{\theta} \int_0^z \frac{\partial P}{\partial x} b(x) f(x) dx$$

We define a program to be pro-poor if the poor receive greater absolute benefits than the non-poor. It means that the pro-poor program should achieve greater poverty reduction compared to a counter-factual situation when everyone receives exactly the same benefit from the service.

Suppose that the average or mean benefit generated from the program is denoted by $\bar{b}$. The percentage change in aggregate poverty when the $\bar{b}$ amount is given to everyone is given by

$$\frac{d\theta}{\theta} = \frac{\bar{b}}{\theta} \int_0^z \frac{\partial P}{\partial x} f(x) dx$$

We define the pro-poor policy index as the ratio of actual proportional poverty reduction from the program to the proportional poverty reduction that would have been achieved if every individual in society had received exactly the same benefits (equal to the average benefit from the service). Thus, the pro-poor policy index is derived as

$$\lambda = \frac{1}{\bar{b}\,\eta\theta} \int \frac{\partial P}{\partial x} b(x) f(x) dx$$

where

$$\eta = \frac{1}{\theta} \int_0^z \frac{\partial P}{\partial x} f(x) dx$$

is the absolute elasticity of poverty: if everyone receives one unit of currency, then the poverty will change by $100 \times \eta$ percent.

The program will be called pro-poor (anti-poor) when $\lambda > 1$ (< 1). The larger the value of λ , the greater will be the degree of pro-poorness of the program. If, for instance, $\lambda = 1.2$, it means that the program will achieve 20% greater poverty reduction compared to a counter factual that everyone receives the same benefits. We can compute the pro-poor index for any pension scheme. A pension scheme will be pro-poor if the PPP index is greater than 1. We can also compute the PPP index for an ideal pension scheme, which allows us to compare the pro-poorness of the pension scheme with respect to an ideal pension scheme.

This study has also investigated alternative pension schemes. Table 6.3 presents the PPP indices for alternative elderly pension schemes. The results indicate that ***a pension scheme targeted at widowed elderly will deliver an anti-poor outcome, and similarly, pensions***

targeted at elderly living alone will be highly not pro-poor. However, a pension scheme targeted at elderly subsistence farmers or elderly pastoralist would result in a pro-poor outcome. The scheme targeted at elderly pastoralist would be more pro-poor compared to the scheme targeted at elderly engaged in subsistence farming. Similarly, targeting elderly working in the informal sector would be more pro-poor relative to other elderly people who are working in agricultural or construction sectors. Surprisingly, the results reveal that giving pensions to unemployed elderly do not result in a pro-poor outcome. These conclusions generally hold for both the 1994 and 1997 years.

TABLE 6.3

Pro-Poor Policy index for universal pension to vulnerable groups of elderly

Targeting	55 years & over	60 years & over
1994		
Elderly living alone	0.40	0.43
Widowed elderly	0.87	0.87
Subsistence farming elderly	1.32	1.35
Pastoralist elderly	1.69	1.73
Elderly headed with children	1.44	1.50
Elderly headed with children not attending school	1.66	1.71
Elderly living in the Coastal province	1.26	1.22
Elderly living in the Eastern province	1.42	1.49
Elderly living in the Western province	1.18	1.20
1997		
Elderly living alone	0.51	0.54
Widowed elderly	0.91	0.89
Unemployed elderly	0.94	0.96
Elderly employed in informal sector	0.95	1.42
Elderly working in construction industry	0.55	0.32
Elderly working in agricultural industry	0.91	0.91
Elderly headed with children	1.27	1.36
Elderly headed with children not attending school	1.35	1.47
Elderly living in the Northeastern province	0.80	0.63
Elderly living in the Western province	1.11	1.09
Elderly living in the Nyanza province	1.05	1.12
Elderly living in the Eastern province	1.14	1.14

Source: Authors' calculations based on the 1994 and 1997 WMS.

As presented in the table, ***pensions given to elderly headed households living with children under 15 will be highly pro-poor, benefiting the poor much more than the non-poor. What is more, pensions given to elderly headed households with children who are not attending school would be even more pro-poor.***

Finally, the PPP indices are calculated under the scenario of implementing elderly pension programs in different regions of Kenya. While in 1994 poor elderly were concentrated in provinces such as Coastal, Eastern and Western, they were found more in Northeastern,

Western, Nyanza and Eastern provinces in 1997. The results shown in the table suggest that *in both years, 1994 and 1997, targeting elderly living in the Eastern province would deliver a more pro-poor outcome relative to the other provinces.*

6.2 POVERTY SIMULATION RESULTS

The central issue in any system of non-contributory social pensions is the extent that it will result in poverty reductions. The following section provides an assessment of the impact of old age pensions on national poverty as well as on poverty among elderly and children. To assess the poverty impact, an *ex ante* poverty simulation has been carried out. The simulation exercise was done based on alternative scenarios that include a cash transfer of 20, 35, and 50 percent of per capita GDP to every elderly older than 55 or 60. These alternative scenarios were chosen in view of the efficiency of pensions in reducing national poverty, where efficiency is defined as the percentage change in poverty as a ratio of total costs of pensions or the cash transfer. Efficiency of pensions has been computed for alternative scenarios and will be discussed later in the section.

Providing social pensions to the elderly impacts their welfare as well as that of the other members of the household living with elderly. The simulations presented here assume that pensions given to the elderly are pooled within families so that every member enjoys the same level of welfare. We further assume that the pensions received by the families are spent on consumption goods. Benefits received by the families are therefore added to the family's total consumption expenditure, which on dividing by household size, gives per capita family expenditure after the pension. These poverty estimates are derived using the per capita family expenditure after the pension, which are then compared with the poverty estimates based on the family's per capita expenditure before the pension. A shortcoming of this type of simulation is that it does not take into account intra-household inequality in welfare.

6.3 PENSION BENEFICIARIES AND COSTING

We start by investigating the number of pension beneficiaries and the actual amount of pensions each beneficiary would be expected to receive under alternative budget scenarios. Additionally, the study also looks into the costs of implementing such pension schemes in terms of a share of GDP. All these elements are summarized in Table 6.4.

If a pension program had been designed to reach elderly 55 years old and over, there would have been more than 1.5 and 1.7 million beneficiaries in 1994 and 1997, respectively. Of those, 93-94 percent came from rural areas in that period. If the coverage of the pension program was reduced, the number of beneficiaries would be expected to fall. This is the case for a pension scheme, if designed for those older than 60.

In computing pensions given to each beneficiary, we should take into account the cost of living differences in rural and urban areas. If the costs of living differences can be adequately captured by the official rural and urban poverty lines, we can set pensions in proportion to the official poverty lines.

Suppose the average pension per beneficiary is set at 20 percent of per capita GDP. Suppose further that PL_R and PL_U are the rural and urban poverty lines and a_R and a_U are the proportion of beneficiaries in rural and urban areas, respectively. Then the per capita pensions in rural and urban areas can be defined as:

$$Pension(\,rural\,) = \frac{PL_R \times (\,0.2 * pcGDP\,)}{a_R PL_R + a_U PL_U}$$

$$Pension(\,urban\,) = \frac{PL_U \times (\,0.2 * pcGDP\,)}{a_R PL_R + a_U PL_U}$$

Since the rural poverty line is lower than the urban poverty line, a beneficiary living in rural areas will receive a smaller pension than a beneficiary living in urban areas. It is also easy to see from the equations above that the average pension per capita will be equal to 20 percent of per capita GDP.

The results in Table 6.4 show that an elderly person over 55 living in a rural area would have received 248 KShs in 1994 and 360 KShs in 1997, whereas the elderly in an urban area would receive 377 KShs and 548 KShs in 1994 and 1997, respectively. As mentioned before, pensions given to an elderly person are assumed to be pooled within families and distributed to each member. As such, pensions per beneficiary divided by the size of the household lead to per capita monthly pensions, which are 14.94 and 25.63 KShs in 1994 and 1997 prices, respectively.

TABLE 6.4
Pension beneficiaries and costing, 20% of GDP per capita

	1994	**1997**
	Pensions for elderly 55 years & over	
Beneficiaries in rural areas	1,427,876	1,664,032
Beneficiaries in urban areas	108,341	98,387
Pension per beneficiary in rural areas (KShs)	248	360
Pension per beneficiary in urban areas (KShs)	377	548
Per capita pension per month (KShs)	14.94	25.63
Cost as share of GDP (%)	1.16	1.38
	Pensions to elderly 60 years & over	
Beneficiaries in rural areas	1,018,542	1,208,253
Beneficiaries in urban areas	70,810	45,534
Pension per beneficiary in rural areas (KShs)	248	363
Pension per beneficiary in urban areas (KShs)	377	554
Per capita pension per month (KShs)	10.57	18.20
Cost as share of GDP (%)	0.82	0.98

Source: Authors' calculations based on the 1994 and 1997 WMS.

In view of costing of alternative scenarios, Table 6.4 presents the costs in terms of the share of GDP if 20 percent of per capita GDP are given out to every elderly person over 55 in the form of old-age pensions. The results show that such a universal pension scheme would have cost 1.16 and 1.38 percent of GDP in 1994 and 1997, respectively. As expected, when eligibility is reduced to elderly over 60, costs fall to less than 1 percent of GDP per capita in both periods. For comparison, in India, the total expenditure on various safety net programs including old age pensions amounted to 1.5 – 2 percent of GDP. Brazil, Namibia and South Africa spend 1, 2, and 1.4 percent of GDP, respectively, on old-age pensions. Considering that

most Sub-Saharan countries have incomes much lower than low income countries in South Asia and Latin America, and given the competing demands on public spending from other equally priority sectors such as health and education, a level of 1.16 or 1.38 percent of GDP, equivalent to 20 percent of per capita GDP, for non-contributory social pension in Kenya is a significant amount. If the average benefit level is increased from 20 to 35 or 50 percent of GDP per capita, the share of GDP jumps to more than 2-3 percent (see Table 6.5). Although this may result in a significant poverty reduction, fiscal affordability remains an issue.

TABLE 6.5

Costing of alternative poverty simulations

	1994			1997		
	20% per capita GDP	35% per capita GDP	50% per capita GDP	20% per capita GDP	35% per capita GDP	50% per capita GDP
Elderly 55 years & over						
Pension per beneficiary in rural areas (KShs)	248	433	619	360	610	871
Pension per beneficiary in urban areas (KShs)	377	660	942	548	1303	1861
Per capita pension per month (KShs)	14.94	26.10	37.30	25.63	44.84	64.06
Cost as share of GDP (%)	1.16	2.03	2.91	1.38	2.42	3.46
Elderly 60 years & over						
Pension per beneficiary in rural areas (KShs)	248	434	621	363	622	889
Pension per beneficiary in urban areas (KShs)	377	662	945	554	1330	1901
Per capita pension per month (KShs)	10.57	18.51	26.46	18.2	31.90	45.57
Cost as share of GDP (%)	0.82	1.44	2.06	0.98	1.72	2.46

Source: Authors' calculations based on the 1994 and 1997 WMS.

6.4 IMPACT ON POVERTY

Table 6.6 presents the percentage reduction in poverty which results from a certain level of cash transfer given to every elderly person in Kenya. This table only deals with the impact on poverty of 20 percent of per capita GDP. Not only is the study concerned with the poverty reduction at the national level, but it also looks into the percentage change in poverty among elderly and children. The simulation results show that at the national level, the impact of pensions on the headcount ratio is significant and for elderly people, the impact on poverty is even greater. The poverty impact is substantially reduced when the eligibility age is increased from 55 to 60. This would be expected because of the population structure in Kenya in which the elderly population over 55 or 60 makes up only a small proportion of the total. What is more encouraging is that the impact of the pension on poverty reduction becomes stronger for the poverty gap ratio and the severity of poverty index. These findings suggest that ***the potential impact of the pension program should not be judged based merely on the percentage change in the headcount ratio. What is more important is that, as this study***

shows, a given level of pension would have a more significant impact on poor individuals living far below the poverty threshold rather than those clustered around the threshold. This point is further highlighted when it comes to poverty among elderly. Finally, as expected, the pension transfer leads to substantial reduction in poverty among elderly and also in non-negligible poverty reduction for children under 15 (at the national level).

TABLE 6.6

Percentage change in poverty reduction, 20% per capita GDP

Poverty measures	Pensions given to 55 years & over		Pensions given to 60 years & over	
	1994	**1997**	**1994**	**1997**
Impact on poverty among 55 years & over				
Percentage of poor	17.09	17.21	12.95	13.94
Poverty gap ratio	29.62	40.54	22.27	31.15
Severity of poverty	42.28	61.18	31.82	45.82
Impact on poverty among 60 years & over				
Percentage of poor	17.82	18.87	16.76	18.42
Poverty gap ratio	31.11	43.52	28.97	42.05
Severity of poverty	44.52	65.44	41.43	62.63
Impact on poverty among children under 15 years				
Percentage of poor	1.86	2.06	1.22	1.74
Poverty gap ratio	4.60	4.72	3.15	3.31
Severity of poverty	6.90	7.04	4.87	4.93
Impact on national poverty				
Percentage of poor	3.08	2.97	2.18	2.36
Poverty gap ratio	6.46	7.45	4.59	5.41
Severity of poverty	9.46	11.22	6.86	8.11

Source: Authors' calculations based on the 1994 and 1997 WMS.

6.5 EVALUATING EFFICIENCY OF PENSION PROGRAMS

This subsection is concerned with evaluating the relationship between the costs of different average benefit levels and their effectiveness in reducing poverty. The term 'efficiency' used here is defined as the percentage change in poverty as a ratio of the total costs of a pension program. This exercise enables us to identify a specific target group, which would lead to a greater reduction in poverty. The results of this analysis are presented in Table 6.7.

To begin with, consider the case of a benefit level of 20 percent of per capita GDP. It is clear from the results that *a reduction in the headcount index is more cost efficient if pensions are given to elderly over 60 rather than to elderly over 55.* As shown in Table 6.7, the impact on the headcount index does not present consistent results. That is, at higher levels of budget, targeting elderly over 55 was more cost efficient in 1994, whereas targeting elderly over 60 resulted in a more cost efficient outcome in 1997. Nevertheless, the results of cost efficiency for both the poverty gap ratio and the severity of poverty are more consistent. *These findings suggest that providing a social pension to the elderly 60 and over will be more cost effective in reaching the ultra poor.*

TABLE 6.7

Cost efficiency of pensions in reducing national poverty

Poverty measures	1994				1997			
	20% per capita GDP	35% per capita GDP	50% per capita GDP	20% per capita GDP to poor	20% per capita GDP	35% per capita GDP	50% per capita GDP	20% per capita GDP to poor
Elderly 55 years & over								
Headcount ratio	2.64	2.61	2.74	6.01	2.15	2.40	2.48	4.56
Poverty gap ratio	5.55	5.40	5.23	12.61	5.39	5.17	4.91	11.04
Severity of poverty	8.13	7.60	7.07	18.48	8.11	7.34	6.58	16.60
Elderly 60 years & over								
Headcount ratio	2.65	2.27	2.54	5.93	2.41	2.61	2.55	4.66
Poverty gap ratio	5.57	5.41	5.24	12.47	5.50	5.18	4.85	10.71
Severity of poverty	8.33	7.74	7.16	18.63	8.25	7.35	6.55	16.07

Source: Authors' calculations based on the 1994 and 1997 WMS.

Finally, the cost efficiency for targeting the poor elderly only is considered. For this purpose, it is assumed that every elderly person would receive a pension equal to 20 percent per capita GDP: while at 1994 prices, every poor elderly in rural and urban areas would receive 248 and 377 KShs respectively, at 1997 prices he/she (55 years old and over) would get 354 KShs in rural areas and 757 KShs in urban areas. According to the results in Table 6.7, targeting at the poor elderly would result in the maximum reduction in poverty at a given cost. In this respect, ***giving pensions to poor elderly is found to be most cost efficient. However, this targeting scenario does not take administrative costs into account that would be involved in identifying the poor. If taking account of administrative costs, the proportional reduction in poverty at a given cost may be smaller than the one presented in the table.***

7 CONCLUDING OBSERVATIONS

The foregoing analysis provides a general overview of the economic status of the elderly population in Kenya, a few observations about the outcomes of the current pension system that can be derived from the limited household survey data, and provides some preliminary assessment of several key issues that should be included in the consideration of approaches to expand and reform the pension system. The policy analysis is primarily directed at evaluating the costs, design and projected outcomes of providing a universal "demogrant" type social pension that would provide basic subsistence benefits to citizens reaching a specified retirement age.

This review of the status of the elderly in Kenya indicates a pressing need for some expansion of the sources of old age income support. Although Kenya exhibits high and increasing rates of poverty similar to much of the region, the elderly are at higher risk of poverty and suffer greater severity of poverty than the population at large and their status in regard to poverty have deteriorated in the period from 1994 to 1997 as can be measured by the Welfare Monitoring Survey (WMS). In 1994, the overall poverty rate in Kenya was 37%,

while for persons over the age of 55; it was significantly higher at 44%. The poverty gap ratio (the average difference of household incomes from the poverty line as a proportion of the poverty line) was 16% for the elderly compared to 12% for the general population. In addition, the severity of poverty (a measurement of status in relation to the distance from the poverty line) was also greater for the elderly. Perhaps most troubling, both the proportion of the population and the poverty gap ratio increased for the elderly between 1994 and 1997 as it did for the population at large.

Accentuating the consequence of low income levels, the elderly in Kenya exhibit greater needs for expenditures on critical services such as health care. The incidence of sickness among the elderly is far higher than the general population, yet they show measurably lower rates of receiving treatment.

Of equal importance from a broader policy perspective, and particularly in light of the HIV/AIDS epidemic in the region that has resulted in increasing numbers of children being cared for by grandparents, the low economic status of the elderly is associated with a higher prevalence of poverty and other social indicators for persons living in elderly headed households. More than one half of the people in households headed by a person over the age of 60 were below the poverty line in 1997, and 55% of children living in these households were below the poverty line compared to 45% of all children. Children in the care of the elderly indicate much lower rates of school attendance.

Despite the greater risk and associated social consequences of the low economic status of the elderly, the formal pension system in Kenya remains very limited. Only 3.1% of people over the age of 55 in 1994 reported the receipt of any pension income and 90% of these recipients were male.

The limited data precludes any ability to determine patterns for the sources of pension income. However, the household survey data does indicate that, although the current pension system primarily involves expenditures on higher paying urban occupations such as civil service, the mandatory NSSF and perhaps occupational schemes appear to have some meaningful effects in alleviating poverty among the few who receive any pension income. Simulating the withdrawal of pension income indicates that the poverty rate among the elderly who report its receipt would increase by 28% and the poverty gap would increase by 17%. Perhaps more significantly, an analysis of the characteristics of those who receive pensions indicates that, controlling for the characteristics of the household that are associated with the probability of poverty, the receipt of pension income is calculated to reduce the risks of poverty by 17% for households headed by a person over the age of 55 and by 21% for households headed by a person over the age of 60. This indicates the potential that the expansion of formal pension systems have, especially those with mandatory participation that can reach lower income workers, to achieve broad poverty alleviation among the elderly.

Another potential instrument to address poverty among the elderly is the introduction of broadly available non-contributory social pensions that would make a basic subsistence benefit available at a specified retirement age, usually 55 or 60 years of age in a setting such as Kenya. One of the threshold questions before considering such an approach is whether it represents an improvement on the current system in directing benefits towards individuals at the greatest risk of poverty. Applying a "Pro-Poor Policy Index" that measures the degree to which benefits are directed towards the poor concludes that, despite the finding that the current system alleviates poverty, it directs benefits towards the non-poor more than the poor.

The analysis also suggests that due to the prevalence of poverty among the elderly, there will be limited gains from means testing such a system relative to providing benefits for all at a specified age.

Several of the main design parameters of such a system can be considered in the context of basic information on income distribution and poverty levels derived from the household data. The key threshold question of affordability can be addressed by estimating the cost of such a system as a share of GDP. These estimates indicate that providing a benefit equivalent to 20% of per capita GDP would require expenditures of 1% of GDP, while a 50% of per capita national income would raise the cost to 2% of GDP. These costs should be considered in the context of a total revenue base of just over 20% of GDP in recent years.

Equally important to consider is the potential impact of such a program on poverty levels among the elderly, and more broadly, among the population due to the prevalence of multi-generational households in Kenya. Even a relatively minimal benefit of 20% of per capita of GDP (requiring an expenditure of slightly less than 1% of GDP or one Shilling of every 20 in tax collections) is estimated to have a significant impact on poverty levels. This is projected to lower the poverty rates of the elderly by 13% to 19%, depending on the age at which it was available, to lower poverty rates among children by 1.2% to 2%, and to lower the overall national poverty rates by 2.2% to 3.1%.

Related design considerations for any social pension system are the efficiency of expenditures and the manner in which benefits are targeted. The preliminary analysis indicates that, although substantial poverty reductions can be achieved at virtually any benefit level and age of eligibility, the greatest efficiency (unit of poverty reduction per unit of expenditure) by providing a modest benefit that is limited to the poor over the age of 60. In addition, there is some indication that targeting benefits to rural areas can enhance efficiency measures.

The various elements of the analysis combine to provide some important insights into the status of the elderly in Kenya and the need for the consideration of enhancements in the pension system. It is clear that the elderly demonstrate a considerable need for initiatives that can effectively address their high risk of poverty and that the benefits of such an effort will accrue to other segments of the society, most notably children. The current pension system disproportionately directs benefits to high income groups, but demonstrates a capacity to achieve meaningful poverty reductions if effectively expanded. The most direct method to address old-age poverty would be the introduction of a non-contributory social pension. Because the elderly proportion of the population is relatively low, this could be done at a feasible cost level. The high prevalence of poverty among the elderly does not require that such a program be extensively targeted but there are several parameters that could improve the cost efficiency at the margins.

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NOTES

1. The results are very robust to the choice of reference household size.

2. Initially, we were planning to make a further adjustment in the poverty line to take into account health expenditures, as these are likely to be higher among the elderly. We attempted this exercise using a regression model of health expenditure but we did not get significant results. As such, we dropped this idea of adjusting the poverty lines by the health expenditure of the elderly.

3. Since official poverty line has increased at a faster rate than the CPI, poverty estimates in 1994 and 1997 are not comparable.