INCOME DISTRIBUTION IN KENYA

by

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

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This research paper has been submitted for examination with our approval as University Supervisors.

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A B S T R A C T

Title: Income Distribution in Kenya.

This study represents an effort to investigate the trends in income distribution in Kenya since independence. A variety of indicators were used to test whether racial, interpersonal, Provincial and rural-urban inequalities have worsened since independence. From the paper it appears that racial, Provincial and interpersonal inequalities have improved, although the improvement in interpersonal inequality appears to be gradual. Rural-urban inequality appears to have worsened since independence. From the results of an international comparison it clearly emerges that apart from Rhodesia, which is a special case, Kenya's income distribution is the worst among independent African countries.

A C K N O W L E D G E M E N T S:

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INTRODUCTION AND BACKGROUND

In the late 1960's and early 1970's the literature on development economies suggests a shift from emphasis on some aspects of development economics to more emphasis on others. There was disillusionment in development economics as many economies, especially developing economies, continued to experience increasing unemployment and worsening income distribution. There were attempts to redefine the concept of development so that it could incorporate, such factors as poverty, unemployment and inequality. From past experience economists had come to realise that economic development was not synonymous with growth. In other words the supposed "trickle down effect" of economic growth had failed to work in most economies, especially developing economies. Kuznet's hypothesis that inequality tends to widen in the early stages of development, with a reversal of this tendency in later stages was reinforced as developing economies continued to experience rapid economic growth simultaneously with "the rich getting richer while the poor got poorer". Because of the experience of the past many researchers now began to turn away from the former preoccupation with growth to investigate the problems of unequal income distribution and employment in low-income countries.

In the 1960's, the literature dealing with Kenya's objectives as spelled out in various government documents (Examples, Kenya, Development Plans, sessional Papers and especially sessional paper on African socialism) concentrated on higher production, higher incomes and increased consumption. There was little concern for their distribution. More evidence to show that there was little concern with the distribution of income is spelled out in sessional paper No. 10 of 1965, entitled "African socialism and its application in Kenya. The quotation reads:

> "The ultimate objective of African socialism are clear ..... The most important of these policies is to provide a basis for rapid economic growth. Other immediate problems such as Africanisation of the economy, education, unemployment, welfare services, and provincial policies must be handled in ways that will not jeorpadise growth" (1)

Clearly the most important goal was growth, for it was wrongly believed that growth was a "cure for all".

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(1) Sessional Paper on African Socialism, (45)

Since the attainment of independence the economy of Kenya had been growing at a rapid rate (2) much faster than in most of the developing countries in Africa and elsewhere. Kenya's growth had been notably strong in agriculture, particularly in small-scale sector, as well as in industry and services. Yet unemployment and gross inequality continued, and in some respects may even have increased. This is what led economists and policy makers to think and act more seriously as far as development of Kenya was concerned. The first conscious and serious effort to shift emphasis from growth to more concern with distributioal aspects stem from the ILO Reports (3) and sessional Paper on employment (4).

The 1970 - 74 and 1974 - 78 Development Plans reflect conscious concern on distribution of income. The 1970 - 74 Development Plan states that "the fundamental objective of the government related to rural development strategy is to secure a just distribution of the national income, both between different sectors of the country and between individuals". The Plan acknowledges that there are inequalities of income between a small number of highly remunerated inviduals on the one hand-large-scale farmers, people in business, politics, the civil service, and certain professionals - and the great mass of the people on the other hand. Inequalities were believed by many people to stem from the colonial period while many people also believed that inequalities could not be eliminated overnight. The plan spells out government efforts to reduce income inequalities as follows: The higher income groups would contribute increasingly by way of taxation; rural development would be launched to raise the standard of living of the poor in the rural areas. Hence the government would follow a policy of simultaneously levelling downwards, and levelling upwards.

Government policy and strategies are put on paper and what is "preached" is not necessarily what is practised". Pregnant point. Although there was still continuity with earlier strategies, a significant change of emphasis was noticeable in the 1974 - 78 Development Plan, towards equity and employment objectives, and away from the pursuit of growth for its own sake. Compare the quotations from sessional Papers on African Socialism earlier on with the following one from the 1974 - 78 Development Plan:

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(2) Up until 1973 when global inflation set in.

(3) ILO Reports, (II)

(4) Sessional Paper on Employment (48)

"Improved income distribution and greater employment - the primary objective of this plan - can be achieved only if economic growth occurs at a greater rate than hereafter."(5)

The above quotation not only reflects a shift of concern towards more equity but it also introduces the idea of redistribution through growth, a dynamic policy, as opposed to the static approach which is not so popular among some sections of society.

Some authors, however, although they accept that a shift from emphasis on growth to emphasis on income distribution is necessary, do not believe that there has been any genuine shift in Kenya. A look at Colin Leys (6) writings suggests that he feels strongly that there has been no genuine shift to more concern on income inequality. Colin leys goes on to question the view held by some people who regard Kenya as a leading example of successful "development" and modernisation in Africa.

If we take it that there has been a shift towards more concern on income inequality then we would expect some improvement in the degree of income inequality. Afterall, government documents (especially the Development Plans) are full of strategies and policies which are aimed at reducing the degree of income inequality. And yet, often we hear people talking about "the rich getting richer and the poor getting poorer in Kenya". Is this a justifiable statement? This seemed a vague and very ambiguous statement and it is this which stimulated an interest in a study of income distribution in Kenya. We do not promise to come out with the right answers. All we can hope to do is to summarise and bring together evidences with which one can attempt to refute or support statements such as the one quoted above.

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(5) Kenya Development Plan, 1974 - 78, (47) P. 148

(6) Colin Leys, (50) and (51).

CHAPTER I

DESCRIPTION OF PAST STUDIES

At independence Kenya inherited an economy which was poor in average per capita income and in which income and wealth were unevenly distributed. Per capita income among the African population was no more than £ 20[1] or $ 50 a year, much of it concentrated in the urban areas. There were wide disparities of income, some of which were conspicuous and politically unacceptable, and which held potential dangers. Other conspicuous problems were the concentration of economic power and wealth in the hands of non-citizens; large-scale European farms and estates; the predominance of Asian traders in the rural areas; and the overwhelming dependence of the civil service administration on expatriate officers. Racial imbalance was therefore obvious at independence but the manifestations of skewed income distribution were to be found everywhere. The urban areas were far ahead of the rural areas in their standard of living and amenities, and even within the rural areas themselves, there were marked differences in living conditions. Some of the people in the high potential areas of the highlands were starting to enjoy reasonable living standards, while at the other extreme, those in the Northern Province of Kenya were still fighting a harsh environment, at a bare subsistence level, with very primitive and inadequate services.

Within the towns, again, Kenya had inherited one of the most skewed wage structure in the World[2], where some skilled workers were paid about ten times the wages of the unskilled workers. Yet, even the unskilled urban workers seemed to enjoy more benefits than the majority of the rural population.

The above short description of the situation in Kenya at independence should make it clear that not only were interpersonal, racial and regional (rural-urban) inequalities obvious but a reality. This chapter is aimed at reviewing some of the studies which have been done on these aspects of income distribution in Kenya.

Racial inequality was an obvious fact in Kenya right from the colonial days. The ILO Mission Report [3] recognises the fact that by 1960 racial inequality was deeply embended within the Kenyan economy. The ILO Mission Report estimated that by 1960, less than 4,000[3] European farmers still

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(1) Source: Kenya: Into the Second Decade, (1) P.3

(2) See for example ILO Report (II), P.88, and Kenya: Into the Second Decade, (1) P.16.

(3) ILO Report, (II)

owned some three million Hectares of the best lands - four fifths of the total area of the country with reasonable and reliable rainfall. Europeans still dominated agricultural production, according to the Report, through African production of cash crop was now moving ahead fast, particularly in areas where consolidation and registration of land holdings had taken place.

The ILO Mission Report [4] estimated that in 1961 the average earnings of the 22,000 Europeans in wage employment were over £1,300 compared with those of 38,000 Asians of just over £500, and that of an estimated 530,000 Africans of about £75. In 1970, the average earnings by race, as estimated by the same Mission Report [5] was as follows: The average earnings of an estimated 14,000 Europeans in wage employment was over £2,200 while that of an estimated 30,000 Asians in wage employment, was estimated at about £960. For the estimated 601,000 Africans in wage employment, estimated average earnings was just over £180. Hence although there was still racial inequality as far as earnings in wage employment were concerned, the situation had improved substantially. For example, in 1961 the ratio between the average earnings of Africans and Asians was 1:6.66 and that between Africans and Europeans was 1:18.18. In 1970 the ratio between the average earnings of Africans and Asians was now 1:5.28 while that between Africans and Europeans was 1:11.71 [6]. One thing which is clear is that Kenyanisation of jobs and Africanisation of businesses and land, have certainly played an important role in reducing or offsetting racial inequality in Kenya since independence.

For the agricultural sector Dirk Bergschlosser [7] estimated that in 1964 the average income for European employees on large farms was about £1,500 per annum while he estimated the average earnings for African labourers on small farms to be about £35 per annum - hence the average European employee on a large farm earned an average about forty times the average labourer on a typical small farm.

Also in the same year, racial breakdown of jobs requiring university or higher education, revealed that out of 6,485 [8] positions surveyed, 23% were held by Africans, 27% by Asians and 50% by Europeans. The survey also

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(4) ILO Report (11), table 29, P87.

(5) Ibid. Table 29, P87.

(6) Calculations were based on ILO Report, (11), table 29, P.87.

(7) Dirk Berg-Schlosser (2).

(8) Source. Rothchild, D. (12)

revealed that Africans only held 2% of the highest level positions in the leading banks and motor firms, and less that 6%[9] of the town planners, lawyers, doctors, engineers, surveyors and similar professional men, were Africans. Such a situation of unequal distribution of key skills must have inevitably given rise to significant racial income inequality. In 1968, Rothchild found racial inequalities as far as earnings were concerned in Kenya's Public service. 51% of Europeans earned between £1,200 - £2,399 per annum while 37%% earned more than £770 per annum. For the Africans, he estimated that 88% earned up to £359 per annum. The author also held the view that racial disparity in annual earnings were only slightly less extreme in private industry and commerce, although he did not have data to back his view.

House and Rempel [10] estimated that in 1968 the average earnings of the Europeans in the manufacturing sector was about seven times more than that of the Africans. The average wage for Europeans was estimated at Shs 2,821 per month while that of the Africans was estimated at Shs 380 per month. If we take into considerations that the Africans employed in the manufacturing sector far exceeded the Europeans then the disparity looks even worse.

The World Bank Country Economic Report [11] also found extreme inequality in the composition of racial earnings. The Report estimated that in 1971 about 63%[12] of European employees and 27% of Asians employees earned wages exceeding £1,200 per annum. The proportion of African employees earning such high wages was estimated at a little more than 1%[13]. Average wage of Europeans was estimated at £2,500 per annum, that of Asians at £370 per annum while that of the Africans was estimated at only £190[14]. Hence even as late as 1971 the average earnings of a European was more than thirteen times that of an African employee but this represented an improvement since independence.

One year after independence Dirk Berg-Schlosser[15] estimated that farmers in the low-density schemes received at least double the income of the farmers in the high-density schemes. The average income for about 64% of the farmers who existed on a subsistence level was estimated at £65 per annum on average. The average income of the highest group of African males in the modern wage sector (about 1,150 people) was estimated to be more than fiveteen times that of the overwhelming bulk of the working African male

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(9) Ibid
(10) House and Rempel, (7)
(11) Kenya: Into the second Decade (1)
(12) Ibid. P.184
(13) Statistical Abstract, 1972, Table 233
(14) Source: Ibid, Table 219 and 228
(15) Dirk Berg-Schlosser (2)

workers (about 1,000,000 in 1964 in the modern sector). The picture looked more distorted when the above figures were multiplied by the average household size in each income group. Differential birth rates and smaller size of urban households make even greater divergencies in the per capita income.

In the civil service the author also found that earnings varied. In 1964 he found that earnings ranged from more than £3,500[16] per annum for Ministers and Permanent secretaries to an average of £70 per annum for the ordinary peasant. This created a ratio of fifty to one between the highest and lowest strata for Kenya in 1964, a figure rarely matched in any industrial country. If Asian and European earnings were added to this picture the difference would have looked even worse. Dirk Berg-Schlosser also attempted to construct a lorenz curve for income distribution in Kenya in 1964. It is important to note that the author only dealt with the modern formal sector. The estimated Lorenz Curve for income distribution in Kenya in the Modern formal sector, is shown on figure 11, while the estimated shares of income going to various income groups is shown on table 1. From the table we note that the poorest 20% received about 10% of the income while the richest 10% received about 39% of the income. From figure 1 we note that the curve is away from the diagonal (line of equality) hence inequality is there. The gini coefficient for income distribution was estimated at around 0.40 which suggests moderate inequality.

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(16) Salary Review Commission, 1967, Government of Kenya.

Table I

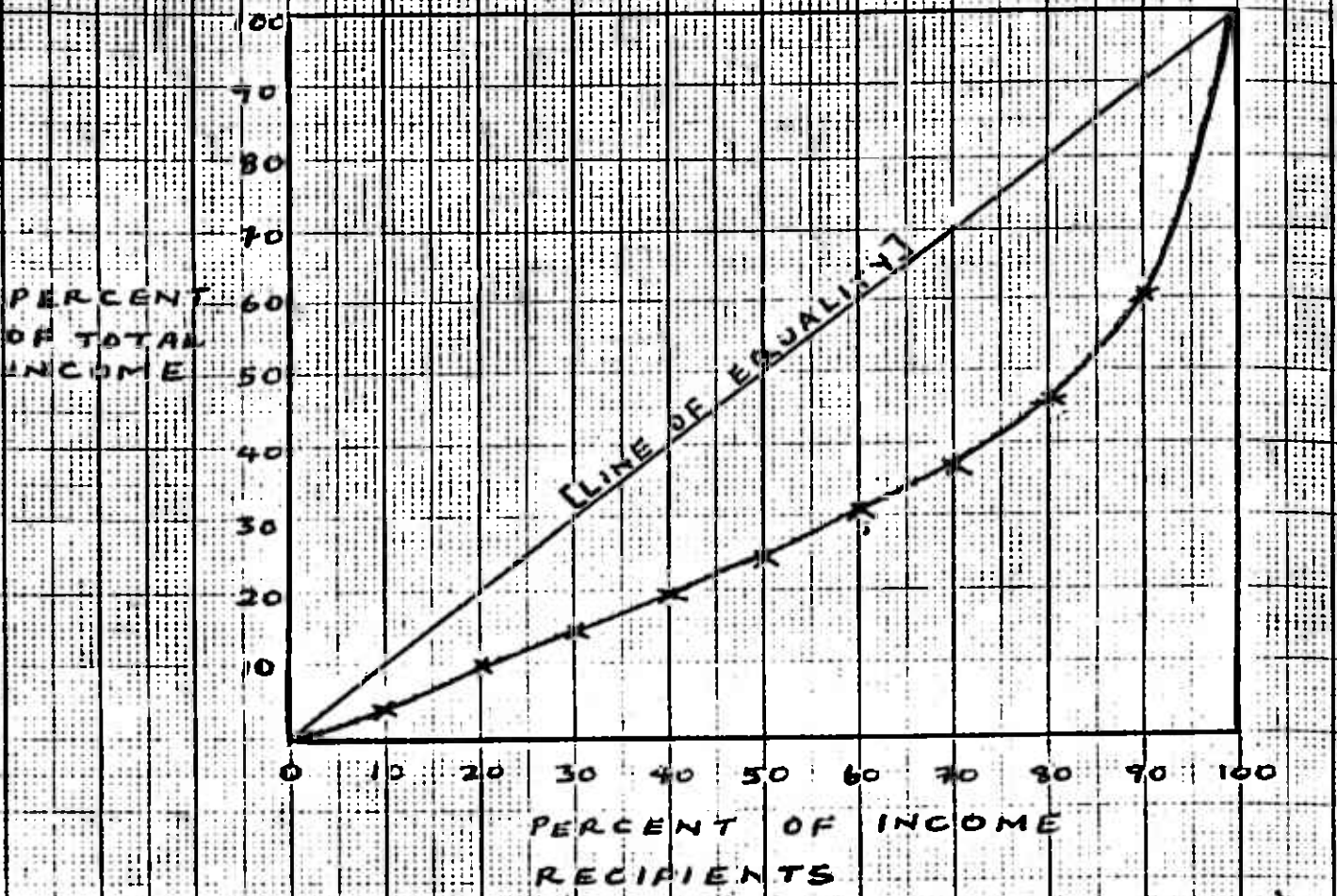
ESTIMATED SHARES OF INCOME GOING TO THE VARIOUS INCOME GROUPS (196

Income Group	Share of total Income (per cent) 1964 (a)
Poorest 20%	10.0
Poorest 60%	31.2
Highest 10%	38.90
Highest 20%	54.90

Source: Dirk Berg-Schlosser (2)

FIGURE 1

ESTIMATED LORENZ CURVE OF INCOME DISTRIBUTION IN KENYA [1964]



Dirk Berg-Schlosser makes some highly optimistic projections of labour force and employment opportunities, and he comes out with marked discrepancies which seemed to indicate increasing income differentials over time. He projects unemployment of about 913,000[17] unemployed in 1964 to 1,224,000[18] unemployed in 1985. He also predicts that the wage earner - salariat gap would widen with time. According to the Report of the salaries Review Commission (1967) it was estimated that a Permanent secretary earned about twenty four times more than a member of the surbodinate staff in Nairobi, and that a University graduate about seven times more as most subbodinate staff. These ratios, as already mentioned, were the highest in the World and the gap was expected to widen due to automatic "built-in" incremental annual increases in the salary scales.

In the same year D.P. Ghai[19] estimated that there were about 41,000 members of salariat[20], comprising about 7% of recorded employment in the modern sector of 589,000 and they received 44% of total employment income. He also came to the same conclusion as Dirk Berg-Schlosser[21] that income distribution in the public sector was highly skewed for the year 1968. He estimated that a university graduate's starting salary was also about seven times that of surbodinate staff. Fringe benefits and automatic annual salary increments seemed to reinforce the differentials.

For the year 1967 Adelman and Morris[22] found a highly skewed income distribution in Kenya. Their data was compiled from tax returns, income. expenditure studies and national census; and they estimated that the poorest 60% of the income recipients only received about 21%[23] of total income while the highest 5% received about 22% of total income. The highest 20% were estimated as receiving about 64% of total income. If we compare the situation with that of 1964 (Dirk Berg-Schlosser) then income distribution had worsened.

House and Rempel[24] found significant relative differences among occupational wages in the private and public sector. One interesting conclusion from their study was that in general the relative differences among occupational wages in the public sector were smaller than those in the private sector. In particular, for the category of "unskilled workers",

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(17) See Dirk Berg-Schlosser (2), Figure 2.
(18) Ibid. Figure 4
(19) Ghai, D.P. (3)
(20) See Green, R.H. (4) for definition of salariat.
(21) Dirk Berg-Schlosser (2)
(22) Adelman and Morris (5)
(23) Ibid, table I
(24) House and Rempel (6)

where the majority of workers are found, in both absolute and relative terms, the public sector seemed to pay much more than the private sector. Interindustrial differences in earnings were also found to be very large and were a function of the inter-occupational differences as well as the occupational make-up of the industry. Average earnings in 1968 ranged from Shs 119[25] per month for those who worked in agriculture to Shs 1,753 for those who worked in industries which dealt with "products of petroleum."

From their study of the Kenya Manufacturing sector House and Rempel[26] concluded that the available evidence of the manufacturing sector indicated considerable dispersion among industries in wages paid and that the dispersion was especially evident for skilled workers. Occupational range varied from Shs. 166[27] per month for unskilled workers to Shs.2,304 per month for executives and managers. Lowest three occupational categories, accounting for 74% of the enumerated employees, received less than the average wage of Shs.402 per month. Wide range of wages paid in the manufacturing sector was indicative of the structure of earnings in Kenya and the wage structure was an important determinant of the distribution of income and the allocation of labour among occupations, industries and regions.

One of the most comprehensive studies on income distribution in Kenya has been done by Morrison[28], a World Bank staff member. His coverage was national while his data came from secondary sources. He used a variety of assumptions and estimating procedures to arrive at a "first approximation" of the size distribution of income in Kenya. From his results it would appear that for the year 1969, there was considerable unequal distribution of income in Kenya. The results are summarised on table 2 while the estimated lorenz curve for the income distribution is shown on Figure 2. From table 2 we note that while the poorest 20% get 3.8% of the income, the richest 20% get 68% of the income. The gini index for the estimated income distribution was estimated at 0.60 which suggests a high degree of inequality.

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(25) Ibid. Appendix (ii)
(26) House and Rempel, (7)
(27) House and Rempel. (7)
(28) Morrisson, C. (9)

Table 2

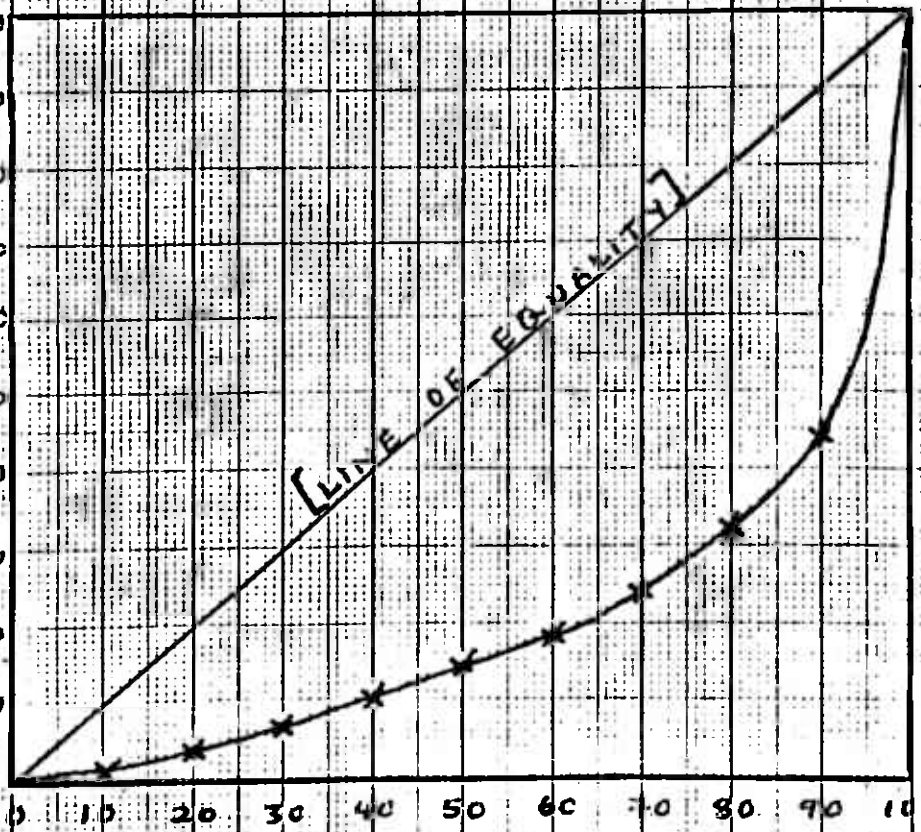
ESTIMATED SHARES OF INCOME GOING TO THE VARIOUS INCOME GROUPS (1969)

Income group	Shares of total Income (Per cent) 1969
Poorest 20%	3.8
Poorest 60%	18.5
Highest 10%	56.3
Highest 20%	68.0

Source: Morrisson, C (9)

FIGURE 2.

ESTIMATED LORENZ CURVE OF INCOME DISTRIBUTION IN KENYA [1969]



The ILO Mission Report [30] has gone a long way in exposing poverty groups and the problem of income distribution in Kenya. The mission assembled alot of data from various sources. Although the coverage is urban rather than national, figures in the ILO Mission's Report (especially table 25, page 74) are also broadly consistent with Morrisson's estimates for the same year. The report states that most of the households in Kenya fall into the low-income group and have incomes below £120 a year. They include unskilled employees in the formal agricultural sector; all employees on small holdings and in the rural and urban non-agricultural enterprises of the informal sector; lowest paid one fourth of employees in the urban formal sector; most of the self-employed in the urban informal sector; and the majority of smallholders and pastoralists in semi-arid and arid zones. On top of the scale, the mission identifies a small group with incomes of £1,000 a year and above. They include owners of large and medium-sized non-agricultural enterprises; big farmers, rentiers, independent professional people, and holders of high-level jobs in the formal sector. So it appears that in 1969 the highest-income group received at least eight times the income of the lowest-income group.

For urban households the Mission estimated that the share of income received by the bottom 25% of households was under 6% [31] of total urban household income while also evidence and data on rural employment [32] tended to indicate that concentration of income in the rural areas was likely to be nearly as great, if not greater. The Mission notes that among Africans, the spread between the top and bottom and the share of income received by the top percentiles may have increased mainly as a direct consequence of Kenyanisation in jobs and land, and that overall personal distribution of income does not appear to have moved to any substantial degree in an egalitarian direction. The Mission points to such groups as a great majority of smallholders, employees in the rural areas, the urban working poor, and the urban and rural unemployed, who seemed to have not benefited much from growth since independence.

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(30) ILO Report, (11)

(31) Source: ILO Mission Report, (11) P.76

(32) For example, in 1969 the ILO Mission estimated that only about 15% of the potential rural labourforce were engaged in regular wage-earning activities in the rural areas and that a further 5% found casual employment there.

Literature on regional (rural-urban) inequality is not scarce in Kenya. However, most of it is scattered and collecting time series data is one of the most difficult undertakings. One year after independence Rothchild[33] found regional disparities in primary and secondary education, with Central Province far ahead of the others while North Eastern Province lagged far behind. Dirk Berg-Schlosser[34] also came out with similar conclusions as far as education was concerned. He found a predominance of Kikuyus in the field of education as reflected by the strength of their representation in government offices and other public services. Since the Kikuyu's homeland is the Central Province the author then was justified in concluding that the Province was on the lead in education, for the year 1964. The author also estimated that the unskilled industrial worker earned about double[35] the subsistence farmer in the same year. However, one must bear in mind that such a comparison is not very meaningful and no unambiguous conclusion can be based on it due to such factors as problems associated with evaluation of subsistence income, life-style differences. Also certain mechanisms do exist which narrow the rural-urban income gap, e.g. migration back and forth, extended family system, remmittances.

The author takes the "value-added" per employee in agricultural vis- a - vis the same figure in the non-agricultural sector to be an indication for the real income per employee in these sectors. "Value added" in agriculture seemed to coincide with actual income, especially among small-scale farmers and subsistence farmers. For the non-agricultural sector, "valwe added" included wages, salaries, profits and interests, at the income side. The estimates of the "valve added" were confirmed by subsequent economic surveys. Projections of the development of "valwe added" in the two sectors tended to show that the gap which existed was likely to widen even more.[36]

Jennifer Sharpley[37] computed the domestic terms of trade between the agricultural and non-agricultural sectors. She defined the agricultural

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(33) Rothchild, D. (12)

(34) Dirk Berg-Schlosser, (2)

(35) Estimated income of unskilled industrial worker by author was £125 while that of a subsistence farmer was estimated at £65 p.a.

(36) See Dirk Berg-Schlosser, (2) Figures 5, PP. 27 - 28

(37) Sharpley, J. (23) table I.

sector to include all activities in the non-monetary sector (including the construction of traditional dwellings) plus the following group in the monetary sector: agriculture, forestry, fishing and government agricultural services. Wherever possible, transport, distribution and agricultural processing activities were treated as part of the non-agricultural sector. Also included in the non-agricultural sector were all financial, government and foreign activities.

The domestic terms of trade is an index which indicates relative changes in the agricultural prices received by the farmer and the non-agricultural prices paid by the farmer. Table 3 below shows Jennifer Sharpley's results. From the table we note that the terms of trade follows

Table 3

DOMESTIC TERMS OF TRADE: (AGRICULTURAL VERSUS NON-AGRICULTURAL SECTORS).

(1964 = base year)

Year	Terms of Trade
1964	100
1965	92.3
1966	90.9
1967	89.9
1968	87.3
1969	88.6
1970	94.8
1971	87.8
1972	95.0

Source: Sharpley, J. (23) table 1.

two trends. From 1964 to 1968 the domestic terms of trade has a downward trend which suggests that the agricultural sector was loosing. From 1969 to 1972 the domestic terms of trade has a tendency to improve (an upward trend) as far as the agricultural sector was concerned. However, the index for 1972 was still lower than that of 1964, so any real improvement is probably ruled out.

Between 1960 - 1966 D.P. Ghai[38] estimated that the average incomes of farmers rose at about half the rate of unskilled urban workers. His estimates were no doubt subject to a considerable margin of error but nevertheless, they do reveal marked income differentials between the urban and the rural people.

The ILO Mission[39] has assembled some very relevant data which helps to identify poverty groups. Table 4 represents such data. It confirms that statutory minimum wages in urban areas are well above the incomes of all groups in the rural areas except for the more prosperous smallholders and the average owner of non-agricultural enterprises. From table 4 the earnings of the self-employed in the informal sector also appear to be well above those of all wage employees in the rural sector except those of employees of large farms, to which they are comparable. The data leaves us with no doubt that there are tremendous earnings differentials between the urban and rural areas and people.

Other data collected and analysed by the ILO Mission indicate enormous regional disparities. The preponderant share of urban, and especially of Nairobi within the urban areas, in formal sector activities is clearly demonstrated in the report. A high proportion of output and income is shown to be generated in a few districts located in Central, Coast, Rift Valley, Nyanza and Western Province. Other districts in these provinces, as well as most of Northern and North Eastern Provinces have a disproportionate share in total economic activities. Table 28, page 78-79 of the ILO Report gives one indication of regional disparities of income. The disparities in the level of economic development by regions are further intensified by provision of public, social and economic services. Data in the ILO Report (tables 101, 102, 103, 104 and 105) show that the percentage of total population in primary school varies widely between Provinces and districts. Even greater disparities are found in the provision of secondary

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(38) D.P. Ghai (3)

(39) ILO Mission Report, (11)

Table 4

AVERAGE[1] INCOME OF SELECTED GROUPS IN RURAL AND URBAN AREAS, 1969

(£ PER ANNUM)

	ADULTS	MEN	WOMEN
RURAL			
Wage Employment[2]			
Large farms[3]	68	73	46
Small farms[3]	38	41	34
Non-agricultural enterprises[4]	45	47	34
Self-employment			
small holders[3]	113	...	...
Owners of non-agricultural enterprises[4]	130	...	...
Urban			
Wage employment[2]			
Formal sector, Nairobi[3]	443	471	297
Statutory minimum wage in the formal sector, Nairobi[3]	...	106	84
Informal urban[5]	40	...	...
Self - employment			
Informal urban[5]	60	...	...

Notes:

... = Not available.

1. There are often wide variations in earnings around the averages shown. This applies particularly to smallholders.
2. Regular employees.
3. Source. Statistical abstract and economic survey, 1969, 1970.
4. Source: Survey of non-agriculture rural enterprises, 1969.
5. ILO Mission's estimate.

Source: ILO Report. Employment, Income and equity (ii). Table 27, P.77.

schools. Wide differences also exist in the availability of other services such as water, electricity supply, roads and health services.

For the year 1970, table 48, page 201, of the ILO Report shows that wide differences did exist with respect to availability of schooling. If the provincial figures are broken down further disparities emerge between districts. From the table it is clear that all the semi-arid and arid areas have very low rates, not only in the North Eastern Province but also within drier areas of Coast, Eastern and Rift Valley Provinces.(40) From the same table we see that the imbalance of health services is also matched by an even more unequal distribution of medical personnel.(41) Tables 45, 46 and 47 of the ILO Report show some interesting facts which are seldom discussed. The data makes it look obvious that enrolment in primary and secondary schools for the females falls far short that of males. The Report emphasises the importance of parity, especially in basic education, as it will enable women to play a fuller and more effective role in society and the economy as a whole.

Studies have been done which deal with the whole question of the impact of government expenditure on redistribution of income at the regional level. They all seem to reach the same general conclusion that with some significant exception, the really backward regions seem to receive a very low share of government share of social and economic services such as education, health, roads, extension services and training. Killick, T.(42) estimated high spearman's rank coefficient of correlation between motor vehicles per 1000 of population and hospital beds per 1000 of population in the provinces, and also high spearman's rank coefficient of correlation between motor vehicles per 1000 of population and government expenditure per capita in the Provinces. Motor vehicles were assumed to provide the most general indicator of relative development in the provinces. The high spearman's rank coefficient of correlation estimated by Killick suggest a close association between government spending patterns and regional inequalities and this is consistent with the findings of other studies. The most important of these studies is Nyangira's(43) investigation of relative modernisation and public resource allocation. He found a strong statistical relationship, at the district level, between the level of modernisation and the allocation of public resources-a

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(40) See also Technical paper No. 24, ILO Report, (11), for further details.
(41) For further details, see ILO Report (11), Chapter 12.
(42) Killick, T. (10), especially table 2
(43) Nyangira, N. (52)

relationship, he suggests, which runs from the former to the latter. Less powerful but still significant, he found resource allocation to be statistically associated with certain political variables, the most important of which was the number of ministers and assistant ministers originating in each district.

As far as local government expenditure is concerned, the ILO Report and World Bank country Economic Report even go as far as suggesting that the impact of local government expenditure has been to widen rather than to reduce inherited discepancies among the Provinces. In 1968 two country councils in the North Eastern Province were able to spend only £0.6[44] per capita on all services while average per capita expenditure by more prosperous councils in the Central Province was £2.2[45] in the same year.

Although evidence on the pattern of central government expenditure is hard to find and also fragmented when available, the few indicators which do exist do not seem to show any redistributive tendency. Data collected by the World Bank Country Economic Report (Table 36, page 251) shows that 65% of total expenditure on housing in 1970 was in Nairobi, and this was spent on middle and upper income housing. Data on table 37, page 251, of the same report reveals that the Provinces in 1968 which had more than their "share" of school places had either retained or increased their share by 1972. On the other hand those Provinces which had less than their "share" in 1968 had (with one exception[46]) lost further ground during the four years. Although this is fragmented data and evidence and though other factors[47] in the past have compensated for the continuing emphasis on the more developed areas, it is further indication towards the conclusion reached by other studies that the pattern of public expenditure has not been effective as a major tool for narrowing regional income disparities.

Killick[48] has assembled data (table 2, page 15) which show economic indicators by Province. From the data wide inequalities are apparent although the figures conceal the additional fact that there are big intra-regional differences. Nairobi, as usual, emerges as the most highest developed

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(44) Kenya: Into the Second Decade, (1) P. 192

(45) Ibid.

(46) Exception was Western Province

(47) Example: The remission of school fees in some of the poorest areas of Kenya.

(48) Killick, T. (10)

region, while Nyanza, Western and North Eastern Provinces appear relatively underdeveloped. High spearman's rank coefficient of correlation[49] suggests a close association between government spending pattern and regional inequality and this is consistent with similar views expressed by the ILO Mission Report and the World Bank Country Economic Report.

From Kinyanjui's[50] study it is clear that educational resources (benefits) were being distributed in favour of the economically and politically powerful districts and Provinces in the country. The stratification of schools at Primary and secondary levels also appear to perpetuate income inequality in society. Data[51] presented in this study for 1968-70 show that the urban areas are far ahead of the rural areas in term of educational attainment and services while similar data[52] shows that the districts in the Central Province were far ahead of other districts as far as educational attainment and services were concerned.

As for earnings and modern sector employment, studies show wide disparities. House[53] found high degree of disparity in earnings per worker in the Provinces from 1963 - 70. Nairobi and Mombasa were clearly on top[54]. Data in table 1 demonstrates imbalances between the distribution of employment and modern sector employment in 1970. Nyanza, Western and Eastern Provinces appeared to fair badly, while Nairobi and Mombasa, accounting for 14% of total population claimed 38%[55] of modern sector employment. Nyanza, Western and Eastern Province accounted for 48% of total population but only 16% of modern sector wage employment.

Another study by House and Kempel[56] also found wide variations in earnings among the Provinces of Kenya in 1968. Nairobi and Mombasa were once again found to be dominant and lead both in the levels of earnings and size of modern sector employment. Districts such as Tana River, Siaya, Baringo and E. Marakwet, not only experienced low average earnings but also low employment rates.

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(49) For example. Spearman's rank coefficient of correlation computed by Killick between motor vehicle per 1,000 of population in each Province and government expenditure per capita was 0.93.
(50) Kinyanjui, K. (13)
(51) Kinyanjui, K. (13), Tables 1 and 3
(52) Ibid. Table 3, P 11.
(53) House, J.W. (14)
(54) Ibid. Table 2, P 364 and Appendix table 1, P 376
(55) Ibid, table 1
(56) House, J.W and Rempel, (6)

Coefficients of variation[57] calculated by the authors were very high and were indicative of the high degree of regional inequality. The authors found greatest inequality in earnings to be in the private sector when casual workers were excluded. When the public sector was included together with casual workers the authors found a dramatic rise in relative earnings of the low-range districts and a sharp fall in the unweighted coefficient of variation.[58] However, after taking account of the relative numbers in the districts, the overall degree of regional inequality in average earnings still remained very high.

Arne Bigsten[59] found that Nairobi completely dominated in the manufacturing sector from 1967 and that the concentration of Nairobi of manufacturing was parallelled by a similar concentration of other services. In 1970 the author estimated that about 84%[60] of the value of all private buildings completed, in main towns was located in Nairobi. The author has attempted to estimate the annual growth of Regional value added from 1967-82 and from the results (Table XLL3) Nairobi seemed to have the fastest growth throughout, while Eastern, North Eastern and Nyanza and Western Province were slow growers. The latter provinces were also those with the lowest per capita incomes. Similar attempts to estimate total employment by regions ended up with a similar picture. Nairobi, as usual, was on top, followed by Central Province while North Eastern Province was at the bottom end. Estimates of the structure of production by region (Table X11.12) showed that Nairobi increased its share by as much as 8% from 1967. That is, in 1967 the share of Nairobi in total production was 35.7% while in 1982 it was estimated at 44.0% hence an increase in the share of over 8 percentage points. From table X11.13 Nairobi is clearly seen to be far ahead of the rest of the country as far as projected per capita income was concerned. The author found the absolute gap to increase over time, in spite of the fact that Nairobi's population was increasing fast. Eastern and Western Province were found to have a slow growth in per capita income. The relatively positive development of North Eastern Province found by the author could be due to the slow increase in its population.

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(57) For the magnitude of the Coefficients of variation see House and Rempel, (6), Table 2, P.6.

(58) Ibid.

(59) Arne Bigsten (15). The reader is warned that the study is only a first draft and hence the results are only preliminary. Therefore alot of weight should not be given to these results. Estimation was also done indirectly using an Input - Output Model.

(60) Source: Kenya. Economic survey, 1972(33), P.108

Coefficients of variations and gini coefficients estimated by the author among Provinces from 1967 - 82 suggested wide and increasing regional inequality[61]. Results of estimated Theil - index of inequality also revealed that inter-regional inequalities make up the largest share of total regional inequality and that its share was further increasing[62].

Production - wise, there is also evidence that some areas are too far ahead of the others, Data assembled by Heyer[63] show that the share of small farms in gross marketed output has risen impressively. For example the share rose from 18% in 1954 to 55% in 1975. However, the author cautions that the major contribution to the growth of marketed output in the 1960's came from the highland areas, while the lowlands contributed little. The author goes on to caution that many of the drier areas may have deteriorated during the period of rapid overall growth, as evidenced by severe famines in these areas. Data[64] on table 1, Page 196 show wide differences in marketed output per head among smallholders farming districts in 1969. Central Province was on the overall lead followed by Eastern Province.

The studies described so far demonstrated that there is inequality among the Provinces in Kenya. Even within the Provinces and districts the few studies which have been done suggest also that there are apparent inequalities here as well. Webley and Kimetowicz[65] found that there were great differences in average household income between the districts in the Central Province of Kenya, in the year 1963/64. The authors found the incomes of Kiambu and Nyeri to be very similar and were two or three times that of Fort Hall, Embu and Meru[66]. Modal income of Kiambu was found to be approximately twice that of Meru. The authors also found the variability of income between districts to differ considerably. Computed standard

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(61) Arne Bigsten, (15), Table X11.17
(62) Ibid. Table X11.18
(63) Heyer, J. et al. (16), Table 15, P89
(64) Ibid.
(65) Kimetowicz and Webley (17)
(66) N.B. Embu and Meru are no longer in Central Province but in Eastern Province.

deviations were found to be highest in Kiambu and the standard deviation for Kiambu was estimated at approximately one and a half times as high as that of Meru which had the smallest standard deviation. Nyeri, whose average income was nearly as high as Kiambu, had a small standard deviation than Kiambu. The coefficient of variation was highest for Fort Hall, Embu and Meru, the three then poorest districts of Central Province, compared to that of Kiambu or Nyeri, which suggested that relative variability of income was higher in poorer districts. Computed gini Coefficients (67) by the authors, for the districts in Central Province showed considerable differences in degrees of inequality of income distribution between districts. Nyeri, whose coefficient of variation was found to be lowest, also had the lowest gini coefficient of concentration, indicating that incomes are less unequally distributed here than in the other districts. Kiambu had the highest gini coefficient inspite of the fact that its coefficient of variation was lower than that of Fort Hall, Embu or Meru. (This demonstrates the danger of using a single index to show inequality). On the other hand Fort Hall, which had the highest coefficient of variation, had the second lowest gini coefficient. The results for Embu and Meru were in line with their coefficients of variation.

Recently there has been some studies on intra-district inequalities, notably the work of Lamb (68), Cowen (69) and Hunt (70). All suggest high inequalities within small communities, and Cowen shows some of the changes which have taken place over time. Cowen's figures for a small part of Nyeri showed that 30% of the tea producers received 70-76% of the income from tea while 30% of the dairy producers received 64-68% of the income from dairying. The data suggests moderate income distribution but it could possibly be biased because the samples were relatively small, while the area was not necessarily a true representation of the population. Also other products which are produced for subsistence and which are exchanged via barter have been ignored. Nevertheless, and despite the possible bias the study does demonstrate that there are inequalities even in small communities in the rural areas.

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(67) Kimetowicz and Webley, (17), table 4, P.12
(68) Lamb, G.R. (18)
(69) Cowen, M. (19)
(70) Hunt, D. (20)

Arne Bigsten [71] also found significant inequalities within regions. In 1967 he found that 98% of the manufacturing industry of the Coast was located in Mombasa; that more than two thirds of the manufacturing industry in Rift Valley Province was located in Nakuru and Eldoret; and that about 55% of that in Nyanza was located in Kisumu. The author also attempted to estimate inequality among sectors within a region (intraregional). Results of table X11.19 suggests that inequalities increase most within the least developed regions. The author found that inequalities within all regions, except Nairobi and Mombasa, were increasing from 1967. The author's computations, however, are very partial as he only looks at the modern sector. Nevertheless, they do point that inequality within regions is high and hence not to be neglected.

Heyer, [72] has summarised the current position since independence. She believes that Kenyanisation has certainly changed the racial pattern of inequality, but that the inequality still remains with respect to interpersonal and regional as well as rural - urban inequalities. Kenyanisation, the author claims, has amounted to the replacement of Europeans and Asians by Africans and few fundamental changes have been made to restructure the economy. She also believes that much of the old system of inequality has been retained since independence. Although there has been some changes as in the breaking up of large farms into small-holder settlement schemes, the author believes that Africanisation, if anything, has tended to increase the privileges associated with these positions. In the public sector, Heyer attributes widening differentials to the increased political power of the civil servants and the relative scarcity of skills, especially in the early stages of the Africanisation programs. The author finally cautions that unless policies are drastically changed "it's clear that the benefits may never trickle down to all sectors of the Kenyan population".

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(71) Arne Bigsten, (15). The reader is once again warned that these results are only preliminary and subject to revision, so alot of weight must not be given to the results.

(72) Heyer, J. et al. (16)

The literature covered provides evidence of racial, interpersonal, regional and rural - urban inequalities. This need not bother us too much as it's a widespread phenomenon, especially in developing countries. One gets the feeling that racial inequality has probably dimished since independence. This could probably be due to certain government programmes after independence. As far as interpersonal, regional and rural - urban inequalities are concerned a survey of the literature gives one the feeling that these have probably not diminished since independence. This could be due to the fact that since independence there has been little attempts to change the economic structure which existed prior to independence. Examples, salary structure; emphasis on development of some areas, especially urban areas, the mode of production, exchange rate system which makes availability of capital relatively cheaper, remuneration of labour etc. It is hoped at the end of this paper to confront the literature with some of the findings of the paper.

From the literature one does not get a feeling as to whether interpersonal or regional and rural - urban inequality is the more serious problem. This is a sad affair as this issue is important as far as national policies are concerned. Finally we would like to suggest that inorder to reduce interpersonal, regional and rural - urban inequalities, not only will a change in the economic structure be necessary but also changes in social, political and cultural institutions, as well as changes in people's beliefs, values, and attitudes.

CHAPTER 2:

SOURCES, MEASUREMENT AND METHODOLOGY.

SOURCES:

This study utilises secondary sources rather than primary research data. As far as possible sources for all data will be given. It is perhaps best to warn the reader that income distribution data are notoriously deficient and the many sources of error affecting them should be well known. These sources of error may be broadly grouped into three categories:-

(i) There are a number of conceptual and definitional problems in measuring income inequality and available surveys do not display any uniform practice in hardling these problem. For one thing the concept of income that is relevant for the study of inequality is not easy to define uniquely. It should obviously include subsistence income (valued appropriately) and the case can even be made that it should refer in some sense to 'permanent' income, smoothing out both life cycle variations as well as purely stochastic variations around the life cycle. There are also obvious problems associated with inequality measures using money incomes for groups facing very different price levels.

(ii) There are well known sampling problems which limit reliability of measures of income inequality based on survey data. These problems are aggravated by the fact that many of the available surveys on which inequality measures are based were not originally designed to provide reliable measures of income inequality.

(iii) Finally, quite apart from sampling errors, there are non-sampling errors that are particularly serious in measuring income distribution. It is well known that response bias may lead to intentional understatement of incomes at the upper end of the income range and there may also be overstatement at the lower end. More generally, it is widely recognised that surveys which include only a few questions on income are likely to elicit highly inaccurate statements about actual incomes from most people.

The data we will use will undoubtedly be subjected to all these limitations and the result is that our estimates of income distribution will be subjected also to substantial measurement error. In defence of the use of such data, we can only say that this study is not responsible

for the accuracy of published or otherwise data used and that the data used were the'best' we could find.

MEASUREMENTS:

The measurement of income inequality is a complex issue. No single measure is adequate to summarise all the important factors in a distribution. The use of multiple measures is recommended by the experts, the choice among them depending on the aspect of ineuqlity in which one is most interested. If for example, relative inequality (inequality in the low range of income) is important, one would chose the standard deviation of the logs of the income. If absolute inequality (inequality over the entire range) is the issue, the gini coefficient is more appropriate. Finally, if relative inequality in the high or medium range is more important and is the issue, then the Theil Information measure should be used.

What follows now is a brief description of some inequality indexes but the list is by no means exhausted.

THE COEFFICIENT OF VARIATION.

Measures of income distribution involve measurement of dispersion. The standard deviation is therefore a natural choice as a measure of income inequality. Inorder to account for nonidentical mean incomes in different distributions the standard deviation of the incomes is divided by the mean to give the Coefficient of variation. The Coeffieicnt of variation according to studies carried out by Champernowne[1] is very sensitive to inequality that is due to extreme relative mealth and this measure could therefore be of interest in a country like Kenya. However, Sen[2] has criticised this measure on the grounds that it is based on an arbitrary squaring procedure and only measures income differentials vis-a-vis the mean. The coefficient of variation can be expressed as follows:-

$$\text{Coefficiento of variation} = \frac{(S)100}{\bar{X}}$$

Where:

$\bar{X}$ refer to the arithmetic mean of the incomes; S refer to the standard deviation of the incomes.

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(1) Champernowne, D.G. (37)
(2) Sen, A. (38), P.25.

Another critism of the measure is that unless the distribution of income in each group is assumed to be normally distributed then the measure will be a biased estimate of skewness.

STANDARD DEVIATION OF THE LOGS OF INCOMES:

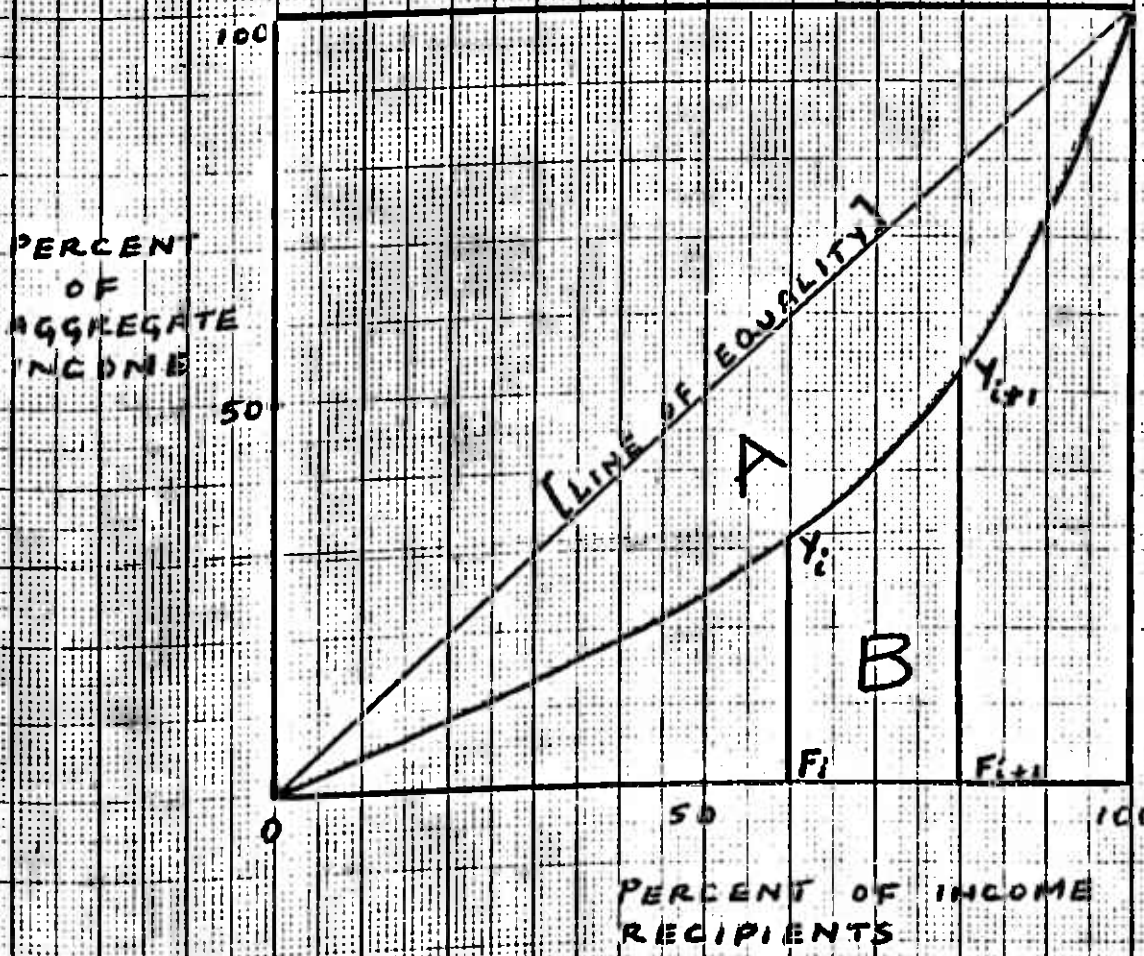
A distribution is lognormally distributed if the distribution of the logarithms of the variables is normal. The measure of inequality suggested by the lognormal distribution is the standard deviation of the logarithms of the incomes. As a measure of dispersion the standard deviation of the logs of incomes incorporates both skewness and variance. It is independent of the mean and thus of the level of income and can be used for comparing two distributions. The standard deviation of the logs of incomes also has decomposition properties i.e. total income inequality can be decomposed into its various components. A high standard deviation of the logs of incomes implies both high variance and a high level of skewness. Because of the properties of logarithms, the standard deviation of the logs of incomes focuses on the distribution of income over the wider range of low and middle income, discounting inequality in the high income levels. Another critism of this measure of inequality is that it does not meet the Pigou-Dalton criterion, which says that a transfer from a richer to a poorer person should always reduce the inequality measure.

GINI COEFFICIENT:

This measure is especially useful if the purpose of the study of inequality is well defined with respect to a certain group of the population or if the purpose of the study is to investigate inequality over the entire range i.e. absolute inequality. For a view of inequality with respect to all income groups, the cumulative distribution of income is usually plotted as the lorenz curve and is described by the gini coefficient of concentration. The gini index is defined as the proportion of the total area under the diagonal that is between the diagonal and the lorenz curve (see diagram 1)

DIAGRAM I

LORENZ CURVE OF INCOME DISTRIBUTION



The relationship can be expressed as follows (using the notation on diagram.)
Let G = Gini Index

$$G = \frac{A}{A+B} = \frac{\text{Area between curve and diagonal}}{\text{Area under diagonal.}}$$

Since the cumulative percentages add up to 100, the area in the entire square is 1, and the area under the diagonal is ½. Hence the expression above can be written as follows:

$$G = \frac{\frac{1}{2} - \text{Area under curve}}{\frac{1}{2}} = 1-2\ (\text{Area under curve})$$

If we assume that the curve between any two points is approximated by a straight line, the area for any segment of the curve can be expressed as follows (refer to diagram for the notations):

$$\text{Area under curve} = (F_{i+i} - F_i) \quad \frac{Y_i + Y_{i+i}}{2}$$

When summed over all intervals, the area under the curve is:

$$\sum_{i=1}^{n} (F_{i+1} - F_i) \quad \frac{(Y_i + Y_{i+i})}{2}$$

If we now substitute in the expression for the formula we get :

$$G = 1-2 \sum_{i=1}^{n} (F_{i+1} - F_i) \quad \frac{(Y_i + Y_{i+1}}{2}$$

$$G = 1- \sum_{i=1}^{n} (F_{i+1} - F_i)\ (Y_i + Y_{i+1})$$

$$G = 1- \sum_{i+1}^{n} F_{i+1} Y_{i+1} - F_i Y_i + F_{i+1} Y_i - F_i Y_{i+1}$$

Where $F_i\ Y_i$ ranges from 0 to 100, the expression $F_{i+i}\ Y_{i+1} - F_i\ Y_i = 1$ (1)

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(1) For prove, see Miller, H.P. (36), p.276.

Since $F_n Y_n = 100\%$ in this case, the net result is that $F_n Y_n - F_o Y_o = 1$. Therefore, the computation of the gini index can be made by inserting the proper values in the expression $F_{i+1} Y_i - F_i Y_{i+1}$. For a demonstration of the calculation the reader should refer to Appendix table 2.

The gini index is satisfactory if the number of population groups is for example, eight or more. The index ranges from zero (total equality for any size distribution) to one (total inequality). It compares every pair of incomes and is therefore a very direct measure of inequality. It is also free of the assumption with respect to the form of income distribution. According to studies by Champernowne[2] the gini coefficient was found to be most sensitive to inequalities among the less extreme incomes which would be a drawback compared to the coefficient of variation, but on the other hand it does not have the disadvantages of the coefficient of variation. The gini coefficient of concentration has several disadvantages: It can be characterised as a rank - order - weighted sum of different person's income shares. This implies that the sensitivity of the coefficient to a transfer between two persons depends on the number of people between them on the income scale rather than on the income difference. The coefficient also can not be decomposed in any simple manner. For example, in investigating household inequality one would like a measure of inequality which is decomposable in a consistent way into one component that is due to inequality between households and one component that is due to inequality within households.

Theil's Index

This index is particularly useful for handling grouped as well as raw data and for providing explanations for the degree of income inequality. This inequality index is hence sometimes called "information" theory index and in devoted by:

$$\sum_{i+1}^{n} Y_i \text{ Log } \frac{Y_i}{X_i}$$

Where:

Y_i refer to the income share of group i.

X_i refer to the population share of group i

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(2) Champernowne, D.G. (38)

When per capita income in all classes is the same, $\frac{Yi}{Yi}$ is unity for each group and thus log $\frac{Yi}{Xi}$ is zero, giving the index a value of zero. When all income is attained by one individual or group, the index assumes a value of log N, where N is the number of individuals or groups. This measure of inequality is (like the standard deviation of the logs.of income and the gini index) free of the assumption with respect to the form of the income distribution. Moreover, because of its aggregative properties, this measure of inequality is particularly useful in that it permits decomposition of the total income inequality into its components. Theil's index, meets the Pigon-Dalton criterion and its value does not change when all incomes are multiplied with the same factor. Some people have pointed out that the index is not invariant with respect to changes in the population, which is a problem if one wants to compare inequality at different points in time in a growing population. This is, however, surmountable if we make a normalisation, that is, we compare income and population shares, rather than the actual sizes.

Most studies dealing with income inequality will deal with at least one or the other of the four indices mentioned. Other measurements of inequality which could be used but are rarely used include the ratio of the geometric mean of the incomes to the arithmetic mean of the incomes, the ratio of the harmonic mean of the incomes to the arithmetic mean of the incomes.

There are in addition diagrams which are particularly useful for depicting income distribution. They include the Loreng curve, the Pareto Curve, the People curve and the Income curve. The Loreng curve is by far the most widely used and familiar. It shows the graph of G(X)/X plotted againts F(X)/N where:

N refer to the total number of persons.

X refer to the total income

F(X) refer to the number of persons with incomes not exceeding X.

G(X) refer to the total income of these F(X) persons.

In short the Loreng curve plots the cumulative percentage of income recipients on the horizontal axis and the cumulative percentage of total income received by the recipients. The curve extends from the origin (0, 0) to the point (1, 1) and the gini coeffieicnt is the measure of concentration associated with the Loreng curve. A loreng curve is shown on diagram 1 at the beginning of this chapter.

Due to the difficulties associated with the selection of good indices of inequality we will set forth some criterion which will help in selecting "good" indices of inequality.

(1) Familiarity and convenience for computation or estimation from statistics in a readily available form.

(2) Impartiality between persons, in the sence that they depend only on the frequency distribution of incomes and not at all on the order in which the individuals are ranked within the distribution; and thus not at all on the association of income with other characteristics such as wealth, power, political advantage, race or health. From some points of view such impartiality would be regarded as a disadvantage but for the purpose of a statistical study it allows immense simplification.

(3) Invariance with respect to the number of persons receiving the incomes. More precisely, the index should according to the criterion, be unaffected if we keep the proportionate distribution of persons along the income scale unaltered, even if we increase or decrease the total number of persons.

(4) Invariance with respect to uniform increase (or decrease) of the size of income i.e. the index should be unaffected if each income is altered by the same proportion.

(5) Pigou - Dalton efficiency. This criterion requires that if the distribution is modified by altering two incomes only so as to leave their total unaltered, then the index concerned must be increased, unchanged or decreased, according to whether the absolute difference between the two incomes is increased, unchanged or decreased. Also any Pigou - Dalton efficient index will always rank one distribution A as more unequal than another, B, if no point of A's Loreng curve lies between the diagonal and B's Loreng curve, but at least one point lies outside B's Loreng curve.

(6) The index should range from zero to one. This requires that the index take the value of "zero" for all distributions in which every income is equal and that in the limit as the number of incomes increase while one man always gets all the income, the index should tend to the value "one".

(7) Suitability as a specialist measure of one particular aspect of inequality in distinction from the others.

Since we would like to measure income inequality over the entire range of incomes (absolute inequality) and with the form of data available, and also the fact that the gini coeffieient of concentration seems to satisfy

most if not all the criterion we have set forth as indicative of a "good" index of inequality, then the gini coefficient of concentration will be used as the major index to measure inequality. Other concentration ratios will be used as it becomes necessary.

Methodology:

Whenever possible, depending on the format of the available data, concentration ratios will be computed and the possible trends in these ratios studies over time. In order to analyse Provincial (Regional) data certain indexes will be formulated. These will facilitate the analysis of the distribution of the variables being examined. In computing these indices, the national and Provincial population will be taken into account. A general formula for computing the Provincial indices (Pi) can be expressed mathematically as follows:

$$P_i = \frac{X_{iv} \times 100}{\sum_{i=1}^{n} X_{iv}} \Big/ \frac{X_{ip}}{\sum_{i=1}^{n} X_{ip}} \times 100$$

Where:

X_{iv} represents the variable under consideration in the i^{th} Province.

X_{ip} represents the population in the i^{th} Province.

By substituting for V in the general formula for instance e (enrolment), one can compute the relevant Provincial inded.

Example: Provincial school enrolment index (P_e).

$$P_e = \frac{X_{ie} \times 100}{\sum_{i=1}^{n} X_{ie}} \Big/ \frac{X_{ip} \times 100}{\sum X_{ip}}$$

For the Provinces concentration ratios will also be computed over time. Testing our hypothesis will then depend on the trends in the ratios computed. Where there are no marked trends in the ratios the test will be declared inconclusive. In some cases it may not be possible to compute concentration ratios due to the nature of the data. As far as possible, with this kind of situation, attempts will be made to find alternative ways of investigating the possible shift of inequality.

CHAPTER 3

DATA: REMAINING GAPS AND RESEARCH NEEDS:

To pursue a policy of redistribution through growth the data requirement is different from data required to do a study on income distribution. Redistribution through growth policy necessitates the identification of poverty groups. Hence the first priority is a clear identification of poverty groups and their economic and social characteristics. For this purpose the basic requirement is for a statistical framework within which a range of survey results can be set.

The essential unit of the statistical framework should be the households, with information on the socio-economic characteristic of each member, income, assets and consumption. Although the extent to which data can be collected will vary widely among the countries, the following is a basic list which should be within the capacity of most statistical offices:

(i) The composition of households: At a minimum, one wants the following types of information about all family members (with appropriate definitions of "family" to reflect the prevailing customs): age, sex, relevant ethnographic data, migrant status, region, educational level, rural/urban residence, and the role within the family unit.

(ii) Family income and consumption: These data will provide basic information on the family's ability to subsist and can be related to institutional norms. Knowledge of income flows within the the extended family will be useful when framing policy which affect specific family members - for example, workers in urban areas who remit payments to rural relatives. It is important to record the source of the income, distinguish among the income from wages, profits, rent, transfers and remittances, and self-employment income, and also distinguish between monetary and non-monetary income sources. Direct taxes and subsidies should be included too. In collecting consumption data, it is useful to define consumption categories in the households surveys and production as defined in the national accounts, input-output matrices and also surveys of firms and farms. Price data should be collected as well as quantity data on consumption.

N.B such a way that it is easily possible to map to and from consumption categories in the

(iii) Onwnership of, and access to, assets and the institutional characteristic of income recipients: Here we have in mind both physical and human capital (education and skills) as assets. Both play a role in determining the intergenerational transmission of inequality. Land ownership patterns are a vital determinant of income levels in a poor country. Institutional data should cover

land tenure status, housing conditions, and rudimentary data on access to publicly provided goods and services such as health, education, pure water, extension services, etc.

(iv) Workplace data: These should also be gathered, with questions designed to elicit information about the role of each family member in the labour market. At a minimum, information is required on the sector of the economy, basic occupational class of family workers, how much and at what rate they work per week, in what season, at what skill level and how near home they work. A particular need is to ensure that data on individuals can be linked to similar data on the other members of the family.

The above data, if available, would yield much information about the general characteristics of the poor but it tells us little about the behaviour of the poor both as producer and consumer. The following data requirement, although they may overlap with the previous data requirements, should reveal a great deal about the poverty groups as producer - consumer units, linked with the rest of the economy:

A. Small farms:

Family composition and size; land area and quality, tenure status and region;

output level and structure, marketing and marketing access; input structure, with special attention to the distinction between inputs supplied by the family, by the households, and by the nonfarm sector;

nonfarm activities (householding, services, etc);

rents, interests, dividends and taxes; transfer payments and receipts;

access to, and use of, public goods and services for production and consumption;

consumption patterns, with particular attention to consumption out of own production and the extent to which nonfood items are produced by small - scale cottage sector.

B. Urban small-scale Household Enterprises:

The coverage would be similar for A (with appropriate changes in terms and definitions, of course). On the production side, the main emphasis should be on obtaining a clear picture of the technology employed and the kind of firms and households from which inputs are purchased and to which outputs are sold.

The above data should enable the identification of poverty groups and so a policy of redistribution through growth may be pursued. Although the volume of data looks great, it is possible to collect using a well-designed household questionnaire of moderate length.

Published economic statistics which are used for income distribution investigations refer, with few exceptions, to the output of the organised "enumerated" or formal sector. There are few statistics dealing with the informal sector (employment and earnings by occupation, types of activities engaged in, risks involved, employment potential, racial distribution of income and employment, home areas of the people earning their living in the informal sector), and this is a serious problem as the informal sector does seem to provide employment and a source of income to many people.

Information on subsistence agriculture is also inadequate. Approximation of subsistence activities, which is the usual practice, is not enough in a country where a large part of all types of activities, not merely farming, but also secondary production (milling maize, making clothes, building houses) and tertiary services (hair cutting, laundering, transportation, marketing) are carried out either within the family on the basis of simple barter or in other ways not enumerated.

There is need for additional data on household and individual incomes and especially from other sources, such as rent, self-employment, interest, dividends, profits pensions, grants, etc. Coupled with this is the fact that there is very little data on the distribution of wealth. One would have thought that the recent introduction of the capital - gains tax in Ken would have made data on distribution of wealth available but this has not been the case. Information on unenumerated small - scale enterprises, especially in manufacturing and services is also lacking. Data available at present refer mainly to large farms employing over 50 workers. Regular statistics covering such matters as value - added, average earnings, capital stock, capacity utilisation and employment for firms occupying from 5 to 10, 11 to 20 and from 21 to 50 employees or such other persons are needed.

Statistics on education which are available are significantly more complete for formal education than for informal education and for maintained than for unassisted institutions. Data available on the cost of education are inadequate and no solid studies exist on the relative costs of education between primary, secondary and higher education, between rural and urban institutions, between comprehensive and general secondary education, between vocational and academic education, or between vocational on-the-job training and the formal education system.

There is need for a finer breakdown of occupations. For example, data on employment by occupation contained in Employment and Earnings in the Modern sector[1] merely tells us the number of people employed as professionals.

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(1) Republic of Kenya. Ministry of Finance and Economic Planning, CBS. (30)

We need a breakdown of the professional groups, for example, lawyers, doctors, scientists, teachers (university, secondary and primary), architects etc. Clerical workers should be divided into various types, so should technicians, skilled manual workers and the unskilled.

More data on the distribution of social amenities between provinces as well as between urban and rural areas are needed. Examples, water facilities, adult education centres, health clinics, housing, roads, markets, transportation facilities, availability of credit and extension services to the farmer, government expenditure in the provinces as well as in the rural and urban areas. More data are needed which will reveal the impact of government expenditure on provincial inequality and also show whether there is any causation between government expenditure and development of a region. Data on examination results by type of schools in each province as well as data on famine relief in the provinces could also be useful if available. Information on average incomes of people in each province from more sources other than employment in the modern sector would also be helpful.

For the rural areas there is little data on the distribution of income and the sources of the income. The available studies deal with fairly small areas (cowen[2], Lamb[3] and Hunt[4]) and there is need for data covering wider areas and more sources of income. There is little information of remittances of incomes from urban to rural areas and this is of importance as far as distribution of income is concerned.

There is need for data on racial distribution of wealth while the need for racial distribution of income from other sources (self-employment, rent, profits, interest, pension, gifts, etc) should not be forgotten.

The present weaknesses of the available statistics stem from several reasons: the concentration of research effort, in response to the concern of policy markers, with increasing total output rather than with distribution of income; the subsequent focus on the modern sectors of developing economies and on the obstacles to their more rapid development; the fact that statistical systems and theoretical apparatus borrowed from Advanced Countries are more suited to the analysis of organised sectors than to the poverty groups in the economy.

Reorientation of policy and planning towards poverty requires a reorientation of the priorities and in certain respects, the practices of statistical

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(2) Cowen, M.P. (26)
(3) Lamb, G.R. (25)
(4) Hunt, D.M. (27)

offices. Statistical offices must then collect new series of socio-economic data, give increased attention to agricultural statistics, and finally give more attention to the informal sector. These new data can be used in formulating and evaluating new poverty-focused programs. The range and detail of the data required mean that they will be drawn from many sources, both within the government and outside; in a variety of operational and research institutes.

If we accept that distributional objectives should be treated as an intergral part of development and growth strategy, then this implies a significant reorientation of development research. There are several areas which should be given priority: First, there is need for research on poverty and unemployment. There is a great need to be able to identify poverty groups so that government policy and action may be directed to these groups. Research on unemployment is also necessary as we need to know the rate at which unemployment is growing so that appropriate action can be taken. Research should then concentrate on the definition of relevant socio-economic groups, on their production, savings and consumption activities, and on the inter-relationship among the groups. Studies which identify groups will provide basis for an integrated analysis of growth and distribution. There is need for research to focus and explore the mechanism of leakage between different groups and the relationship between reducing leakage and efficiency in GNP terms. This is because the effectiveness of policy measures and government investment programs in alleviating poverty is greatly affected by the leakage of benefits to people other than the intended recipients. The question of access to both privately and publicly supplied assets and services also needs to be given priority in research. This will no doubt involve the study of functions of markets and the ownership of resources. On the question of publicly supplied goods and services this will involve studying non-market allocation through the budget with the objective of improving the access of poverty groups to public goods. Lastly, it is important to note that reorientation of research alone will not go a long way in alleviating poverty. Sustained political commitment is also necessary. Research provides data and evidence and also demonstrates the effectiveness of certain action and in this way gives the policy makers some useful tools to work with.

CHAPTER 4:

The purpose of this chapter will be the testing of the following hypotheris:

(i) that racial inequality has worsened since independence.

(ii) that interpersonal inequality has worsened since independence.

(iii) that Provincial and Rural-urban inequality has worsened since independence.

Various indices and coefficients will be computed over the years and they will be used to test the hypothesis. As far as possible the data used will be discussed.

Hypothesis I

"that racial inequality has worsened since independence".

In Kenya there are three major races, that is, the Africans, the Asians and the Europeans. The Africans are by far the majority, and before independence they were denied many chances to live a good life such that the other races, and especially the Europeans, enjoyed most if not all the benefits. Hence racial suppression tended to create racial inequality.

The hypothesis will be tested by examining employment and earnings data in the modern sector. The modern sector is defined as the entire urban sector, the entire public sector, large-scale farms and other large-scale enterprises such as jam saw mills and mines, located outside towns. The data was derived from the Annual enumeration of employees and self-employed persons and though attempts were made to include data of unorganised and "informal activities", the coverage was not complete.

An employee is defined as a person who works under a written or oral contract of service and receives a wage or salary while earnings include regular wages, other cash payments, such as overtime, housing and other allowances, cost of rations including meals given to employees, the value of passages paid by the employer, the value of uniforms, clothing, bedding etc. and the value of housing if provided by the employer. Employment figures used will include apprentices, casual employees, part-time workers and directors and partners not serving on a basic salary contract, as from 1968. Self-employed persons and family workers who do not receive regular wage or salary are not included in the data. Finally an "occupation" has been defined such that an occupation identifies a type of "job" or "position" held by an individual worker. Workers whose principal tasks are identified may be considered as having the same type of "job".

Table I shows the shares of Africans, Asians and Europeans in wage employment in the modern sector, for selected occupations. Occupational

TABLE I

SHARE OF AFRICANS, ASIANS AND EUROPEANS IN WAGE EMPLOYMENT*
IN SELECTED OCCUPATIONAL GROUPS

		Per cent of Total			Total
		Africans	Asians	Europeans	
1968	Occupational group I[a]	38.0	30.0	32.0	30,881
	Occupational group II[b]	79.0	15.0	6.0	107,050
1969	Occupational group I[a]	42.0	30.0	28.0	33,335
	Occupational group II[b]	84.0	13.0	3.0	123,206
1970	Occupational group I[a]	45.0	30.0	25.0	35,000
	Occupational group II[b]	87.0	10.0	3.0	141,766
1971	Occupational group I[a]	49.0	26.0	25.0	35,152
	Occupational group II[b]	89.0	8.0	3.0	157,535
1972	Occupational group I[a]	45.0	28.0	27.0	27,734
	Occupational group II[b]	86.0	9.0	5.0	151,466
1973	Occupational group I[a]	53.0	23.0	24.0	29,039
	Occupational group II[b]	90.0	7.0	3.0	157,940

Notes: a - occupational group I include those occupation which require highly - skilled personnel. The posts included are directors, top - level administrators, professionals, executives and managerial posts.

b - occupational group II include those occupations which require high - level and middle - level skills. The posts included are technicians, works managers, workshop foremen and other supervisory personnel, teachers, secretaries, stenographers and typists, clerks, book - keepers, cashiers and book - keeping clerks.

Source: Appendix table I

* Excludes casual employees.

Table 2

EMPLOYMENT[1] AND EARNINGS IN THE MODERN SECTOR BY RACIAL GROUPS

(1961 - 1974)

Year		1 Wage Bill (£ million)	2 % of Total	3 Employment ('000)	4 % of Total	5 Average Earnings(£)	6 Ratio
1961	Africans	40	45	530	90	75	1
	Asians	19	21	38	6	500	6.66
	Europeans	30	34	22	4	1,364	18.18
		89	100	590	100		
1962	Africans	42	47	524	90	80	1
	Asians	19	21	36	6	528	6.60
	Europeans	28	32	20	4	1,400	17.50
		89	100	580	100		
1963	Africans	46	49	482	89	95	1
	Asians	21	23	39	7	538	5.66
	Europeans	26	28	18	4	1,444	15.20
		93	100	539	100		
1964	Africans	60	57	522	91	115	1
	Asians	21	20	37	6	568	4.93
	Europeans	24	23	16	3	1,500	13.04
		105	100	575	100		
1965	Africans	67	58	528	90	127	1
	Asians	23	20	38	7	605	4.76
	Europeans	25	22	16	3	1,563	12.30
		115	100	582	100		
1966	Africans	78	61	530	90	147	1
	Asians	24	19	43	7	730	3.79
	Europeans	25	20	13	3	1,733	13.08
		127	100	583	100		

Year		1 Wage Bill (£ Million)	2 % of Total	3 Employment ('000)	4 % of Total	5 Average Earnings (£)	6 Ratio
1967	Africans	83	61	545	91	152	1
	Asians	27	20	37	6	730	4.80
	Europeans	26	19	15	3	1,733	11.40
		136	100	597	100		
1968	Africans	93	64	559	92	166	1
	Asians	27	18	32	5	844	5.08
	Europeans	26	18	15	3	1,733	10.43
		146	100	606	100		
1969	Africans	101	66	582	93	174	1
	Asians	26	17	31	5	839	4.82
	Europeans	26	17	14	2	1,857	10.67
		153	100	627	100		
1970	Africans	110	65	601	93	183	1
	Asians	29	17	30	5	967	5.28
	Europeans	30	18	14	2	2,142	11.71
		169	100	645	100		
1971	Africans	126	67	650	94	194	1
	Asians	28	15	27	4	1,037	5.34
	Europeans	35	18	14	2	2,500	12.88
		189	100	691	100		
1972	Africans	147	71	682	95	216	1
	Asians	26	13	25	3	1,040	4.81
	Europeans	34	16	13	2	2,615	12.10
		207	100	720	100		
1973	Africans	N.A	-	732	96	N.A	-
	Asians	N.A	-	20	3	N.A	-
	Europeans	N.A	-	10	1	N.A	-
				762	100		

		1 Wage Bill (£ Million)	2 % of Total	3 Employment ('000)	4 % of Total	5 Average Earnings	6 Ratio
1974	Africans	N.A	-	798	96	N.A	-
	Asians	N.A	-	20	3	N.A	-
	Europeans	N.A	-	9	1	N.A	-
				827	100		

Notes: 1 - In 1970 some self - employment was included, but little if any, in the informal sector.

Source: Statistical Abstracts, CBS, Ministry of Finance and Planning, 1970, 1973 and 1975.

group I include posts which require high-level man power, while occupational group II include posts which require middle-level man power. From table I we note that the share of Africans in wage employment in occupational group I was 38% in 1968 and the share has a rising trend. For the same occupational group the share of Asians was 30% in 1968 while for Europeans it was 32% in the same year. The shares of Asians and Europeans decrease over the years as can be noted on table I. For occupational group II, the shares of Africans was 79% in 1968 and there is a rising trend up to the last year considered. For Asians and Europeans the shares were 15% and 6% respectively in 1968 and these have a falling trend. This then suggests that the position of the Africans relative to the other races was improving in this respect.

Information on table 2 tells us about employment and earnings in the modern sector by racial groups. From column 2 we note that the share of Africans in the total wage bill was 45% in 1961 and it has a rising trend up to 1972. For the Asians there is no trend from 1961-1967, but then from here onwards there is a falling trend. For the Europeans their share was 34% in 1961 and there is a falling trend from 1961-1972. From column 4 we note that there is no trend in the shares of Africans in wage employment from 1961-1968, but then from 1969 to 1974 there is a rising trend. For the Asians, their share of wage employment has no marked trend, and neither does the share of Europeans. Column 6 gives us the ratios of average earnings between the three races. Between Africans and Asians the ratio has a falling trend from 1961-1966 and fell from 1:6.66 to 1:3.79, but then from 1967 onwards there seems to be no marked trend. Between Africans and Europeans there is a falling trend from 1961-1975 but then there is no more trend from here onwards.

Whenever we have observed any trend, for data contained in table 1 or table 2, the trends suggest a reduction in racial inequality. Absence of any trend does not allow one to make any worthwhile conclusions, but nevertheless, due to Kenyanisation of jobs, businesses and land, it is almost certain that racial inequality has diminished since independence. Since independence the Kenya government has placed emphasis on Africanisation of jobs and businesses. Various tools have been used to accelerate the Africanisation programme. In the public sector, the government has gone a long way in its Africanisation programme. Training programmes have been intensified so that Africans may acquire the necessary skills to take over from Non-Africans. At the present many of the top posts in the public sector are held by Kenya Africans. The government has also insisted on Africanisation in the private sector by denying work permits to Non-Kenyans. In business Africans have also taken

over many businesses and especially those run by Asians. In the rural areas the Asians have for a long time now been denied the chance to trade in some items so as to give the locals a chance. The Ministry of Commerce and Industry is responsible for issuing quit notices to Non-Kenyans in various trades and occasionally it does issue the quit notices as the need arises. Financial institutions have also helped by lending money to Africans to purchase businesses. Also since independence Africans have purchased farms which belonged to expatriates with loans from various sources, and this is especially evident in the white highlands. These evidences then point on the direction of less racial inequality hence the hypothesis that racial inequality has worsened since independence is rejected.

Hypothesis II

"that interpersonal inequality has worsened since independence"

To test this hypothesis we will start by examining estimated size distribution of income for 1969, the gini coefficients for income distribution in the modern sector and the ratios of relative salary rates in the Kenya civil services. Finally we will examine income distribution in the rural areas and also the development of smallholder agriculture.

For the year 1969 Morrisson [1] has estimated the size distribution of income in Kenya. The coverage was national and a variety of assumptions and estimating procedures were employed by the author [2]. Secondary sources rather than primary research data were used. The estimates are shown on table 3 and they reveal a rather extreme degree of inequality but the estimates could possibly be biased in this direction. If one takes into

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(1) Morrisson, C. (9)

(2) Example: (a) He assumed that the distribution of wages in the traditional sector was similar to that in the modern sector, for lack of data.

(b) As the author had no statistics on the distribution of income from private enterprises in the traditional sector, excluding agriculture, he used a distribution comparable to that observed in other countries.

Table 3

ESTIMATED SIZE DISTRIBUTION OF INCOME IN KENYA, 1969.

Decile	Per cent of Total Income	Cummulative share
	(1)	(2)
1st	1.8	1.8
2nd	2.0	3.8
3rd	2.6	6.4
4th	3.6	10.0
5th	4.0	14.0
6th	4.5	18.5
7th	5.2	23.7
8th	8.3	32.0
9th	11.7	43.7
10th	56.3	100.0

Bottom	10%	1.8
Bottom	40%	10.0
Top	10%	56.3
Top	20%	68.0

The gini coefficient for this distribution is about 0.60(a)

Source: Morrissen, C. (9)

Notes: (a) = estimated by Morrissen, C. (9).

FIGURE 1

LORENZ CURVE OF ESTIMATED INCOME DISTRIBUTION IN KENYA, NATIONAL COVERAGE [1969]

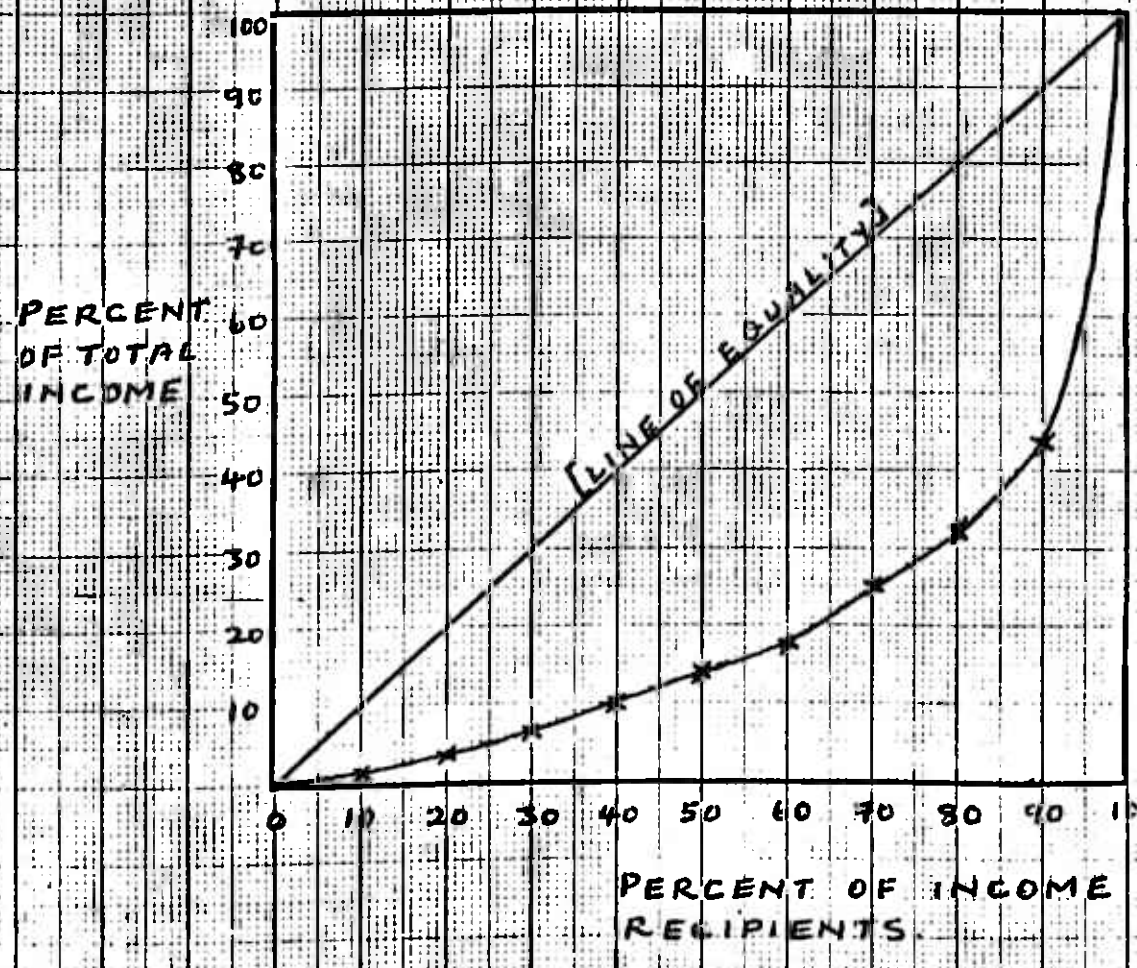

Table 4

GINI COEFFICIENTS FOR INCOME DISTRIBUTION IN THE MODERN SECTOR (1963-1974)

Year	Gini Coefficient
1963	0.598
1964	0.590
1965	0.591
1966	0.591
1967	0.590
1968	0.604
1969	0.600
1970	0.618
1971	0.598
1972	0.596
1973	0.594
1974	0.569

Source: Appendix table 2

account the effects of the extended family system practices and a variety of traditional obligations, then the distribution might turn out to be less skewed. Nevertheless, Morrisson's estimates are the best available so far for Kenya. His results seem to be broadly consistent with other studies[3] on the same subject. If we look at table 3 we note that the bottom 10% of the income recipients only receive 1.8% of the income while at the top end the top 10% receive about 56% of the income. The bottom 40% only receive 10% of the income while the top 20% receive about 68% of the income. This is inequality of a high degree as it stands. If we now look at figure 1 we see that the Loreng curve is far away from the diagonal, the line of equality. The estimated gini coefficient of concentration for income distribution for 1969 was 0.60 which suggests high degree of inequality.

Table 4 shows the gini index from 1963 to 1974 for income distribution in the modern sector. The modern sector has already been defined in the text. Most of the data used was derived from the Annual Enumeration of Employees and self-employed persons. Only regular employees in the modern sector were covered. Due to lack of data, much of the activities and incomes in the informal sector were not incorporated in the estimation. The gini index were estimated by inserting the proper values in the expression $F_{i+1} Y_i = F_i Y_{i+1}$, where F_i refer to the cumulative percentage of group i; and Y_i refers to the cumulative percentage of aggregate income received by group i. From table 4 we note that the gini index was 0.598 in 1963 and up to 1967 the index has a falling trend. The index was 0.590 in 1967. From 1968 to 1970 the index seems exceptionally high and especially for 1970 when it stood at 0.618. From 1970 to 1974 the index has a falling trend. Thus on the whole the index has a falling trend from 1963 to 1974. This then implies that in the modern formal sector of Kenya the estimated size distribution of income has tended to become slightly less unequally distributed.

From table 5 we see the ratios of relative salary rates in the Kenya civil service. The rates were calculated from the minimum limit of each salary scale for each grade. Time periods were governed by the period of

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(3) Adelman and Morris (5) estimated shares going to the poorest 60% similar to the Morrisson results.

Table 5

RATIOS OF RELATIVE SALARY RATES (SURBODINATE STAFF = 1.00) IN THE KENYA GOVERNMENT CIVIL SERVICE.

Year	Clerical Executive/ SubProfessional		Professional/ Administrative	Superscale Administrative Professional
	(1)	(2)	(3)	(4)
1964-67	3.6	7.5	10.4	22.5
1967-71	2.6	5.1	11.4	24.5
1971-75	2.4	5.9	9.8	14.8
1975-76	2.1	4.7	7.4	14.2

Source: Cowen, M. and Kinyanjui, K. (21), P12

Table 6

RATIOS OF RELATIVE SALARY RATES BETWEEN GROUPS IN THE KENYA CIVIL SERVICE

Year	Clerical and Executive/sub Professional.	Executive Subprofe-ssional and Profe-ssional/Administrative.	Professional/Admini-strative and Super/ scale Administrative Professional
	(1)	(2)	(3)
1974-67	1:2.08	1:1.38	1:2.16
1967-71	1:1.96	1:2.23	1:2.14
1971-75	1:2.45	1:1.66	1:1.51
1975-76	1:2.23	1:1.57	1:1.91

Source: Cowen, M. and Kinyanjui, K. (21), P12.

change in scales following the report of a salaries Review Commission. The data covered all civil servants while categorisation was derived from various salaries Review Commission. From column 1 we note that the ratio of relative salary rates between clerks and subordinate staff has a clear downward trend. On the whole all the ratios between various categories of civil servants and surbodinate staff have a falling trend. This would tend then to suggest a reduction in inequality as far as civil servants are concerned. If we turn now to table 6 we note from column 1 that the ratio of relative salry rates between clerks and Executive/Subprofessionals was 1:2.08 in 1964-67 and 1:2.23 in 1975-76. This suggests a shift towards more inequality between these two categories of civil servants. However, if we look at column 2 and 3 of the same table we see a downward trend in the ratios of relative salary rates between Executive/subprofessional and Professional/ administrative and also Professional/Administrative and Superscale Administrative Professional. This suggests a reduction in inequality between these categories of civil servants. On the whole, data contained in table 5 and 6 suggests a reduction in inequality.

Studies which reveal the nature of income distribution in the rural areas are few. The few studies which have been undertaken suggest varying degrees of inequality. Studies by Lamb[4] in Murang'a and Cowen[5] in Nyeri reach the same general conclusion about the distribution of the gains from coffee, tea and dairy sales. Sales of tea and milk were based from two sublocations in Nyeri District. Over 1971/72 the sale of these two commodities accounted for about 90% of all marketed output in the two sublocations. Sales of coffee were based on three of twelve factories in Gatanga Location, Kandara Division, Murang'a District. Coffee sales also accounted for about 90% of all marketed output in the area. The gini coefficients calculated from the Loreng curves drawn by Cowen[6] are shown below:

Table 7

QUALITY OF MILK, TEA AND COFFEE SALES

	Milk (Magutu)			Tea (Magutu)			Coffee (Gatanga)	
	1964	1970/71	1975	1965	1970/71	1975	1968/69	1975/76
Gini Index	0.52	0.49	0.52	0.60	0.53	0.46	0.62	0.52

Source: Cowen, M. and Kinyanjui, K. (21)

(4) Lamb, G.B. (18)
(5) Cowen, M. (19)
(6) Ibid.

From table 7 we note that in the case of milk the gini coefficients suggest that thereis no movement towards less or more inequality. In 1964 the gini index was 0.52 and it dropped to 0.49 in 1970/71. However, in 1975 the gini index rose to 0.52. For tea and coffee the gini coefficients have a falling trend which suggests that the distribution of income from sales of these products has shifted towards less inequality.

Tea, coffee and dairy production are very dominant in the total value of output marketed from districts such as these, and the inequalities with respect to these products are undoubtedly significant, and except for milk, there is a tendency for inequality to decrease. One needs, however, to beware of the danger associated with generalisation from such studies. The areas considered were relatively small, while the samples taken were not necessarily a good representation of the population. Also many products which are produced for subsistence and also some products which are exchanged via barter were not included and these are a substantial proportion of the total. So any inferences made could possibly be biased. In fact if we take the above factors into consideration then inequality might not be as high. Nevertheless, the gini indexes do suggest that there is a shift towards less inequality in the case of tea and coffee and this is what is of primary importance to us.

If we now look at coffee production between the big estates and smallholdings as shown on table 8, we note that in 1964 the share of smallholders was just over 40% while the highest share was recorded at 60% in 1967. From 1964 to 1967 the share of smallholders has a rising trend and although the shares move up and down from 1967 onwards the share of smallholders appear to have risen substantially from 1964 to 1975. In 1964 the share of smallholders was 40.09 of the total while in 1975 it had risen to 52.87% of total.

Information on development of smallholder tea as shown on table 9 reveals a substantial improvement in the share of smallholders. In 1965 out of a total of 24,433 Hectares, the share of smallholders was only 21% of the total. In 1974 60,684 hectares were under tea and the smallholders' share was now over 56% of total. From 1965 to 1974 the share of smallholders has a marked upward trend. If we now turn to numbers we note that up to 1965 the number of smallholders engaged in tea growing had risen by about two times to 48,443 and up to 1974 the number of smallholder tea growers had reached 90,135, hence from 1965 to 1974 the number of smallholder tea growers had more than trebled. Although we do not have figures for the total number of tea growers in the country for the years considered we believe that availability of this data would not change the conclusion that the number of small-

holder tea growers has increased substantially, even if we relate it to the ruralpopulation. On the whole data on table 9 suggests a marked improvement as far as the smallholder is concerned, and hence a shift towards less inequality over the years.

Table 8

COFFEE PRODUCTION (1963-1974)
('000 METRIC TONS)

Year	Estate Produotion	Small-holding Production	Total Production	Share of Smallholders
1964	24.8	16.6	41.4	40.09
1965	23.1	16.2	39.3	41.22
1966	28.4	28.5	56.9	50.08
1967	19.2	28.8	48.0	60.00
1968	18.8	20.8	39.6	52.52
1969	26.8	25.6	52.4	48.84
1970	27.9	30.4	58.3	52.14
1971	31.5	28.0	59.5	47.05
1972	34.2	27.8	62.0	44.84
1973	35.1	36.1	71.2	50.70
1974	30.8	39.3	70.1	56.06
1975	31.2	35.0	66.2	52.87

Source: Republic of Kenya; Economic survey (33), 1969 and 1976.

Table 9

DEVELOPMENT OF SMALLHOLDER TEA (1964-74)

	Hectares at end of Year.	Total	Per cent of Total	Number of growers at end of year.
1964	-	-	-	-
1965	5,133	24,433	21.00	22,343
1966	6,479	27,179	23.83	29,693
1967	8,424	29,124	29.12	32,599
1968	10,772	32,172	32.17	37,953
1969	13,409	35,209	38.08	42,593
1970	16,229	40,029	40.54	48,443
1971	19,230	43,030	44.68	53,400
1972	26,228	50,028	52.42	66,897
1973	30,895	56,395	54.78	79,314
1974	34,384	60,684	56.66	90,135

Source: Republic of Kenya. Economic survey (33). 1975 and 1976.
Republic of Kenya. Statistical Abstract (29). 1974 and 1975.

Table 10

QUANTITY OF MAIZE DELIVERED TO THE MAIZE AND PRODUCE BOARD.
(Numbers of 200 lbs or 90Kgm bags)

	Delivered from Large Farms in Former Scheduled Areas (Million Bags)	Other (Million Bags)	Total (Million Bags)	% of Total Deliveries from large Farms	% of Total Deliveries from small Farms
June 1963	1.195	1.038	2.23	54	46
Sept.1969	1.362	1.881	3.243	42	58
Sept.1970	1.048	1.104	2.152	49	51
Sept.1971	1.131	1.534	2.666	42	58
Sept.1972	1.161	3.049	4.210	28	72
Sept.1973	1.584	2.497	5.081	51	49

Source: Maize and Produce Board, Unpublished data.

Table 11

GROSS MARKETED OUTPUT FROM LARGE AND SMALL FARMS. 1964-75

	Large Farms		Small Farms		Total	Share of Small Farms
	K£'m	Annual change (Per cent)	K£'m	Annual change (Per cent)	K£'m	Per cent
1964	35.8	-4.0	24.6	16.6	60.4	40.7
1965	33.3	-7.0	23.8	-3.3	57.2	41.6
1966	36.0	8.0	32.7	37.4	68.8	47.5
1967	32.9	-8.6	34.1	4.3	66.9	51.0
1968	34.4	4.9	35.8	5.9	70.2	51.0
1969	37.9	10.2	38.3	7.0	76.2	50.3
1970	41.2	8.7	44.2	15.4	85.4	51.7
1971	42.1	2.1	44.6	0.9	86.7	51.4
1972	50.3	19.4	55.6	24.8	105.9	52.5
1973	60.0	19.2	63.3	13.8	123.3	51.3
1974	73.4	22.3	75.0	18.5	148.4	50.6
1975*	70.8	-3.5	87.5	16.7	158.3	55.3

* Provisional.

Source: Republic of Kenya, Economic survey, 1970 and 1976.

Table 10 shows the shares of total maize deliveries to the Maize and Produce Board from small farms from 1963 to 1973. The lowest share was in 1963 while the highest share was in 1972. On the whole the shares of smallholders has increased over time and it is most likely that the share of smallholders increased even faster from 1973 given improved weather conditions in the latter half of 1974 and early 1975 in the principal maize growing areas of Western Kenya. This would then tend to suggest a movement towards less inequality.

If we now turn to gross marketed output from large and small farms as shown on table 10, we note that the share of small farms was 40.7% in 1964. From 1964 to 1968 the share of small farms has a clear upward trend. From 1969 onwards the share moves up and down and in 1975 the share stood at 55.3% which is a significant rise. If we compare the share of smallfarms in 1964 of only 40.7% and that in 1975 of about 55% then the jump is fairly significant hence this suggests a shift towards less inequality.

The data examined provides some evidence towards the conclusion that interpersonal inequality has shifted towards less inequality so that the hypothesis that interpersonal inequality has worsened since independence is rejected.

Hypothesis III

"that Provincial and Rural-Urban inequality has worsened since independence"

In Kenya inequality between regions dates back to pre-independence days. It is intended here to test whether inequality between the eight Provinces in Kenya has worsened since independence, and also part of this test will include testing whether rural/urban inequality has worsened since independence. Major tools to be used include concentration ratios and Provincial indices. Concentration ratios will be computed using the following formula:

$$\text{concentration ratio} = \sqrt{\sum r_i^2 \text{ ----- } r_n^2}$$

Where:

r_i refer to proportion of the variable in question of Province i from the national total.

Provincial indices will also be constructed using the following expressions

$$P_i = \frac{X_{iv} \times 100}{\sum_{i=1}^{n} X_{iv}} \Big/ \frac{X_{ip} \times 100}{\sum_{i=1}^{n} X_{ip}}$$

where: P_i = index of province i.

X_{iv} = represents the variable under consideration in the i^{th} Province.

X_{ip} = represents the population in the i^{th} Province.

The data to be utilised will include employment in the modern sector in the Provinces, average earnings by Province in the modern sector, primary school as well as secondary school enrolment by Province and also hospital beds and cots by Province. It was intended to standardise the Provincial figures, especially the data on education, with reference to the number of school-aged children at the relevant level but this was not possible as the data was only available for recent years. Nevertheless, we hope that standardising the figures by reference to provincial population will at least be a helpful alternative.

If we look at the employment index for the Provinces on table 12 from 1963 to 1974, we observe the following:

For Nairobi, which has the highest index, there was a marked down ward trend in the index. The index dropped from 6.62 in 1967 to 5.38 in 1974.

For Coast Province there is no clear trend in the index. The index for R. Valley has a downward trend.

Central Province has an upward trend.

Nyanza Province has a downward trend.

The index for Eastern Province has an upward trend.

The indexes for Western and N. Eastern Provinces have an upward trend.

In 1963 the index for Nairobi was about 27 times the index of Western Province whereas in 1969 it was about 22 times the index of Western Province. For the year 1973 the index of Nairobi was only about 16 times the index of Western Province. If we now look at the mean deviations of the index as shown on table 12 we note that the mean deviations have a downward trend from 1963 to 1973.

Table 12 PROVINCIAL EMPLOYMENT INDEX (MODERN SECTOR) 1963-1974

PROVINCE	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Nairobi	6.62	6.20	6.00	5.91	6.08	5.87	5.55	5.30	5.30	5.30	5.30	5.38
Coast	1.50	1.56	1.53	1.53	1.51	1.58	1.58	1.56	1.51	1.45	1.36	1.41
N. Eastern	0.09	0.13	0.12	0.13	0.15	0.16	0.18	0.20	0.20	0.20	0.21	0.23
Eastern	0.34	0.36	0.37	0.33	0.35	0.34	0.36	0.37	0.38	0.39	0.40	0.42
Central	0.92	0.95	1.00	1.08	0.95	0.97	0.98	1.00	1.10	1.10	1.06	1.07
R. Valley	1.46	1.44	1.43	1.40	1.39	1.40	1.41	1.42	1.38	1.36	1.41	1.26
Nyanza	0.42	0.38	0.38	0.37	0.38	0.36	0.37	0.37	0.36	0.36	0.35	0.37
Western	0.23	0.22	0.22	0.22	0.25	0.24	0.25	0.26	0.25	0.25	0.26	0.34
National	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mean Deviations	1.20	1.14	1.11	1.11	1.11	1.10	1.05	1.01	1.01	1.00	0.99	0.97

Source: Appendix table 4 and 5.

Table 13

CONCENTRATION RATIOS FOR DISTRIBUTION OF WAGE EMPLOYMENT IN THE PROVINCE, MODERN SECTOR, 1963-74

Year	Ratio
1963	0.451
1964	0.451
1965	0.448
1966	0.449
1967	0.451
1968	0.452
1969	0.447
1970	0.443
1971	0.446
1972	0.445
1973	0.449
1974	0.438

Source: Calculations based on appendix table 5.

Table 14

PROVINCIAL AVERAGE EARNINGS RELATIVES IN THE MODERN SECTOR
(NATIONAL AVERAGE = 1)

Province	Year					
	1968	1969	1970	1971	1972	1973
Nairobi	1.85	1.81	1.71	1.82	1.76	1.70
Central	0.58	0.61	0.65	0.67	0.63	0.64
Nyanza	0.68	0.69	0.85	0.80	0.79	0.81
Western	0.79	0.85	0.84	0.85	0.89	0.99
Coast	1.20	1.25	1.30	1.16	1.03	1.16
R. Valley	0.48	0.52	0.54	0.53	0.56	0.54
Eastern	0.66	0.66	0.66	0.59	0.89	0.92
N. Eastern	0.94	0.92	0.89	0.89	0.98	0.90
National	1.00	1.00	1.00	1.00	1.00	1.00
Mean Deviations	0.37	0.35	0.32	0.33	0.26	0.26

Source: Appendix table 6.

Concentration ratios for distribution of wage employment in the Provinces are shown on table 13. In 1963, 1969 and 1974 the concentration ratios were 0.451, 0.447 and 0.438 respectively. We note that on average the concentration ratio has a falling trend.

Data on employment in the Provinces in the modern sector provides evidence to conclude that Provincial inequality has improved in this respect.

Provincial average earnings relatives in the modern sector for the Provinces are shown on table 14. We note that Nairobi has the highest average earnings while R. Valley and Central are on the bottom end. For the Provinces average earnings behave in the following manner:

For Nairobi average earnings relative to the national average have a falling trend from 1968 to 1973. In Coast Province the average earnings relative to the national average have a rising trend only from 1968 to 1970.

For North Eastern Province average earnings relative to the national average have a falling trend from 1968 to 1971.

In Western Province average earnings relative to the national average have a rising trend.

For Eastern, Nyanza, Central, and Rift Valley Provinces, the average earnings relative to the national average have a rising trend from 1968 to 1973.

A brief look at the mean deviations as shown at the bottom of table 14 shows a downward trend. The mean deviation was 0.37 in 1968 and it had dropped to 0.26 in 1973, a substantial decline. Hence data on average earnings in the Provinces suggest a movement towards less Provincial inequality.

As far as primary school enrolment is concerned we note from table 15 that Central Province, Western and Eastern Provinces have the highest indices respectively. The lowest is North Eastern Province. In the Provinces the index behaves as follows:

For Central Province the index is almost constant from 1968 to 1973.

In Western Province the index has a downward trend from 1964 to 1968 and the index then moves up and down from 1969 to 1974.

For Nyanza the index has a downward trend.

In Eastern Province the index has a rising trend.

For Nairobi the index has a rising trend from 1964 to 1967 while from 1969 to 1973 the index has a falling trend.

For Rift Valley the index has no clear trend but the index did rise from 0.70 in 1964 to 0.77 in 1973.

In Coast Province the index has an upward trend from 1963 to 1969 and the from here onwards the index is more or less steady.

For North Eastern Province the index has an upward trend.

From table 15 we note that the index of Central Province was over fifty times the index of North Eastern Province, where in 1969 the index for Central Province was only about fourteen times the index for North Eastern Province. In 1973 the index of Central Province was only about nine times higher than the index of North Eastern Province. Also we note that the index for North Eastern Province rose from 0.03 in 1964 to 0.17 in 1973, hence an increase of over five times the 1964 figure.

The mean deviations for the provincial enrolment index at primary school level are also shown on table 15. We note that the mean deviation has a downward trend from 1964 to 1968 and from 1969 it has an upward trend. If we now look at the concentration ratios of primary school enrolment from 1964 to 1974 we note that in the first half of the period the ratio has a falling trend whereas in the latter half the ratio has a rising trend. So if we look at the mean deviations and the concentration ratio we get a similar picture and hence similar conclusions, that is, inequality as far as primary school enrolment is concerned, was on the decline from around 1964 to about 1968 but then from here onwards the movement was reversed i.e. there was now a movement towards more inequality as far as provincial primary school enrolment is concerned.

Provincial enrolment indices at secondary school level in the Provinces are shown on table 17 and we note that Nairobi and Central Provinces have the highest indices respectively. North Eastern Province has the lowest index. The index behaves as follows in the Provinces:

For Nairobi there is a definite downward trend in the index.

In Central Province there is no definite trend in the index but the index does drop from 1.69 in 1964 to 1.57 in 1973.

For Coast Province there appears again to be no trend in the index but the index drops in 1973.

In Western Province the index has no marked trend.

For Nyanza Province the index has an upward trend.

For Rift Velley the index has a definite upward trend.

In North Eastern Province the index has a marked upward trend.

Table 15

PROVINCIAL ENROLMENT INDEX AT PRIMARY SCHOOL LEVEL, (1963-1973)

PROVINCE	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Nairobi	•	0.93	1.04	1.08	1.04	0.99	1.01	0.90	0.90	0.86	0.84
Coast	•	0.63	0.66	0.66	0.67	0.69	0.70	0.68	0.67	0.67	0.66
N. Eastern	•	0.03	0.03	0.07	0.06	0.08	0.11	0.14	0.14	0.14	0.17
Eastern	•	0.92	1.11	1.11	1.14	1.14	1.21	1.17	1.19	1.18	1.19
Central	•	1.60	1.53	1.56	1.58	1.60	1.59	1.60	1.60	1.60	1.61
R. Valley	•	0.70	0.79	0.69	0.72	0.71	0.74	0.71	0.76	0.75	0.77
Nyanza	•	1.00	0.84	0.96	0.90	0.95	0.83	0.84	0.83	0.82	0.82
Western	•	1.36	1.22	1.12	1.11	1.00	1.10	1.17	1.08	1.14	1.10
National	•	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mean Deviation	•	0.34	0.32	0.31	0.31	0.29	0.32	0.34	0.32	0.34	0.33

Source: Appendix tables 4 and 7

Table 16

CONCENTRATION RATIO OF PRIMARY SCHOOL ENROLMENT 1964-1974

Year	Ratio
1964	0.418
1965	0.415
1966	0.414
1967	0.415
1968	0.417
1969	0.414
1970	0.416
1971	0.418
1972	0.418
1973	0.417
1974	0.416

Source: Appendix table 7

Table 17

PROVINCIAL SCHOOL ENROLMENT INDEX AT SECONDARY SCHOOL LEVEL.

PROVINCE	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Nairobi	N.A	•	5.48	6.06	4.86	4.23	3.89	3.53	3.13	2.93
Coast	2.63	•	1.24	1.00	1.02	1.06	1.08	1.12	1.04	1.02
N. Eastern	0	•	0.03	0.04	0.05	0.05	0.05	0.07	0.08	0.09
Eastern	0.65	•	0.53	0.56	0.63	0.69	0.79	0.80	0.84	0.82
Central	1.69	•	1.53	1.37	1.47	1.53	1.50	1.50	1.51	1.57
R. Valley	0.67	•	0.50	0.56	0.59	0.59	0.60	0.63	0.63	0.64
Nyanza	0.78	•	0.54	0.60	0.66	0.70	0.67	0.67	0.70	0.67
Western	0.94	•	0.97	0.84	0.87	0.84	0.84	0.86	0.93	1.01
National	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mean Deviation	•	•	0.96	0.98	0.82	0.74	0.69	0.64	0.56	0.54

Source: Appendix table 4 and 8

Table 18

CONCENTRATION RATIO AT SECONDARY SCHOOL LEVEL IN THE PROVINCES.
(1966-73)

Year	Ratio
1966	0.409
1967	0.416
1968	0.402
1969	0.397
1970	0.397
1971	0.394
1972	0.392
1973	0.394

Source: Appendix table 8

Table 19

PROVINCIAL HOSPITAL BEDS AND COTS INDEX

PROVINCE	1970	1971	1972	1973	1974
Nairobi	4.55	4.47	4.72	4.80	3.47
Coast	1.40	1.26	1.07	1.20	1.04
N. Eastern	0.55	0.30	0.44	0.61	0.71
Eastern	0.86	0.79	0.89	0.78	0.93
Central	0.93	1.07	0.99	1.05	1.24
R. Valley	0.88	0.93	0.80	0.84	0.87
Nyanza	0.56	0.52	0.50	0.49	0.50
Western	0.69	0.61	0.82	0.69	0.80
National	1.00	1.00	1.00	1.00	1.00
Mean Deviation	0.69	0.71	0.67	0.71	0.49

Source: Appendix 4 and 9

Table 20

CONCENTRATION RATIOS OF PROVINCIAL DISTRIBUTION OF HOSPITAL BEDS AND COTS (1970-74)

Year	Ratios
1970	0.395
1971	0.398
1972	0.395
1973	0.396
1974	0.391

Source: Appendix table 9

From table 17 we also note that the index for Nairobi was about one hundred and eighty times higher than that of N. Eastern Province, whereas in 1969 it was about eighty four times higher. For the year 1973, however, the index for Nairobi was now only about thirty two times higher than that of N. Eastern Province. We also note that the index for Nairobi has dropped from 5.48 in 1966 to 2.93 in 1973, whereas the index for North Eastern Province has risen from 0.03 in 1966 to 0.09 in 1973 i.e. it rose by about three times the 1966 figure.

If we look at the mean deviation of Provincial school enrolment at secondary school level as shown on table 17, we note that there is a clear downward trend, which suggests less inequality. Looking now at the concentration ratios at secondary school level in the Provinces which are shown on table 18 we note that the ratio was 0.409 in 1966 and 0.397 and 0.394 in 1970 and 1973 respectively. The ratio has a falling trend from 1966 to 1973.

The data on Provincial secondary school enrolment seems to suggest a movement towards less inequality in this respect.

Turning now to table 19 we note that Nairobi and Coast Province have the highest hospital beds and cots indices respectively, while North Eastern Province has the lowest index. The index in the Provinces behaves as follows:

For Nairobi the index has no definite trend but it dropped from 4.55 in 1970 to 3.47 in 1974.

In Coast Province the index has a downward trend.

For Central Province the index has an upward trend.

In Rift Valley the index has no trend.

For Eastern Province the index has no marked trend but it rose from 0.86 in 1970 to 0.93 in 1974.

For Western Province the index has no trend. However, it rose from 0.69 in 1970 to 0.80 in 1974.

In Nyanza Province the index has a downward trend.

For North Eastern Province the index has an upward trend.

Still looking at table 19 we note that the index for Nairobi was about eight times higher than the index of Nyanza Province in 1970. In 1972 the index for Nairobi was now about nine times higher than the index of Nyanza. For 1974 the index for Nairobi was about seven times higher than the index of Nyanza. We also note that the index for Nyanza, which has one of the lowest indices, dropped from 0.56 in 1970 to 0.50 in 1974. The index for Nairobi also dropped from 4.55 in 1970 to 3.47 in 1974.

Turning now to the mean deviations of provincial hospital beds and cots on the same table we note that the deviations move up and down and there is no marked trend. However, the mean deviation dropped from 0.69 in 1970 to 0.49 in 1974. Concentration ratios of provincial distribution of hospital beds and cots are shown on table 20 and there is no trend in this ratio. In 1970 the concentration ratio was 0.395, whereas in 1973 it was 0.396. In 1974, however, the concentration ratio dropped to 0.391.

Data on hospital beds and cots at the provincial level behaves in such a way that we can not tell which way inequality is moving.

Our aim was to test the hypothesis that provincial and rural-urban inequality has worsened since independence. So far we have only attempted the first part of the hypothesis. We note that when we used hospital beds and cots data we were unable to conclude which way inequality was shifting hence the test using this particular set of data was inconclusive. When we used primary school enrolment data we observed that inequality was on the decline from around 1964 to 1969 and on the increase from 1969 to 1975. So also with this data our test becomes inconclusive. Turning now to employment, average earnings and secondary school enrolment data, we note that the tests seemed to suggest a movement towards less inequality hence using these sets of data the hypothesis that Provincial inequality has worsened since independence is rejected.

We now propose to test the second half of this hypothesis, that is, that rural/urban inequality has worsened since independence. This issue is of importance as it's associated with the problem of rural-urban migration. To test this hypothesis we will study the trend in the domestic terms of trade between agricultural and non-agricultural sector and also the trends in consumption in agricultural and non-agricultural sectors. The agricultural sector will broadly represent the rural areas and is defined to include all activities in the non-monetary sector (including the construction of traditional dwellings), plus the following groups in the monetary sector: agriculture, forestry, fishing and government agricultural services. Wherever possible transport, distribution and agricultural processing activities have been treated as part of the non-agricultural sector, which broadly represents the urban areas. Also included in the non-agricultural sector were all financial, government and foreign activities.

The domestic terms of trade from 1964 to 1972 between the agricultural and non-agricultural sector is shown on table 21, item number 11. This inde x indicates relative changes in the agricultural prices received by the farmer and non-agricultural prices paid by the farmer. The items included and their relative weights, were chosen se as to provide an index for the total agricultural sector. The index of prices received by the farmers for agricultural sales (P_1) is very likely to understate the increase in prices

Table 21

INTERSECTORAL CAPITAL FLOWS BETWEEN AGRICULTURAL AND NON-AGRICULTURAL SECTORS IN KENYA

(1964-72) (K£ Million)

ITEM	1964	1965	1966	1967	1968	1969	1970	1971	19
(1) Outflow of Agricultural commodities (X)	98.6	103.6	115.0	118.9	131.8	141.6	162.6	174.0	207
(2) To: Non-Agricultural Production (R_{12})	28.0	30.9	33.9	38.8	40.8	45.8	53.3	61.9	72
(3) To: Foreign countries (E_1)	40.9	38.1	46.6	41.7	45.1	49.6	56.1	52.7	68
(4) To: Non-Agricultural Households (C_{12})	29.7	34.6	34.4	38.4	45.2	45.2	53.2	59.4	66
(5) Inflows of Non-Agricultural Products (M)	49.0	46.9	56.9	57.6	60.6	66.6	70.2	80.1	81
(6) Inputs (R_{21})	2.8	3.4	3.6	3.7	4.4	4.2	4.5	4.8	5
(7) Gross Capital Formation (I_{21})	7.6	8.9	10.6	9.9	11.2	11.6	12.7	14.8	12
(8) Public Consumption (G_{21})	20.1	19.2	22.1	23.7	26.7	31.0	32.2	38.44	43
(9) Private consumption (C_{21})	18.6	15.4	20.6	20.3	18.2	19.6	19.8	22.1	22
10) Net commodity outflow or									
et capital outflow=Net Agricultural									
urplus = (B=X - M)	49.6	56.7	58.1	61.3	70.6	75.2	92.4	93.9	123
11) Domestic Terms of Trade (P_1/P_2)	100	92.3	90.9	89.9	87.3	88.6	94.8	87.8	91
12) Agricultural Price index (P_1) (P_1:1964=100)%	100	97.3	98.7	98.4	96.0	96.6	104.6	104.3	11

Table 21 continued.

ITEM	1964	1965	1966	1967	1968	1969	1970	1971
(13) Non-Agricultural Price index (P_1) [P_2:1964=100)%	100	105.4	108.6	109.4	109.9	109.0	110.4	118.9
(14) Net Real Capital outflow $B^1 = X/P_1 - M/P_2$	49.6	62.	62.8	68.2	81.6	85.7	91.9	99.4
(15) X/P_1	98.6	106.5	116.5	120.8	136.6	145.6	155.4	166.8
(16) M/P_2	49	44.5	53.5	52.6	55.0	60.9	63.5	67.4

Source: Sharpley, J. (23), table 1

Symbols in the table:-

- X Agricultural sector,
- M Non-Agricultural Sector,
- R_{12} Agricultural output used by the Non-Agricultural sector as Input
- E Exports
- C_{12} Agricultural output consumed by the Non-Agricultural sector.
- R_{21} Non-Agricultural output used by the Agricultural sector as input.
- G_{21} Public consumption by the Agricultural sector.
- C_{21} Non-Agricultural Output consumed by the Agricultural sector.
- P_1 An Index of prices received by the farmers for agricultural sector.
- P_2 An Index of prices paid by the Agricultural sector for materials.inputs and consumer goods purchased the Non-Agricultural sector.
- B^1 Neticapital flows = (Outflows) $/P_1$ - (Inflows) $/P_2$
- B Capital Flow.
- E_1 Part of Agricultural output Exported.

Table 22

PRIVATE AND TOTAL CONSUMPTION PER CAPITA IN THE AGRICULTURAL AND NON-AGRICULTURAL SECTORS, (1964-19

	Agricultural Sector			Non-Agricultural Sector			Total Economy	
	Rural Population (Million)	Consumption per capita		Urban Population (Million)	Consumption per capita		Total population (Million)	Consumption per capita (£K)
		Private	Total		Private	Total		Total
1964	8.397	11.2	14.1	0.707	210.3	245.0	9.104	32.0
1965	8.618	8.9	11.9	0.747	231.9	268.5	9.365	32.3
1966	8.852	11.6	14.8	0.791	217.4	253.6	9.643	34.4
1967	9.088	11.1	14.4	0.840	228.4	266.9	9.928	35.8
1968	9.315	9.8	13.4	0.894	253.0	297.5	10.209	38.3
1969	9.987	9.8	13.7	0.955	230.9	291.1	10.942	37.9
1970	10.204	9.7	13.8	1.021	260.6	311.4	10.225	40.9
1971	10.579	10.5	15.2	1.092	271.9	331.5	10.671	44.8
1972	10.950	10.3	15.3	1.117	298.3	362.8	12.067	47.5

Source: Sharpley, J. (23), table 3

Table 23

RATIOS OF TOTAL CONSUMPTION BETWEEN THE AGRICULTURAL AND NON-AGRICULTURAL SECTORS.

Year	Agricultural sector	Non-agricultural sector.
1964	1	17.3
1965	1	22.6
1966	1	17.1
1967	1	18.5
1968	1	22.2
1969	1	21.2
1970	1	22.6
1971	1	21.8
1972	1	23.7

Source: table 22.

paid to the agricultural sector because possibly insufficient weights could have been given to domestic crops, livestock and dairy products. Non-agricultural price index (P_2) may also understate the price increase in non-agricultural prices for goods purchased by the agricultural sector, if as it's most likely, non-agricultural consumer prices may have increased by more in rural areas than in Nairobi. (7) It is not known, however, whether on balance, these biases cancel out. From table 21, item number 11, we note that the domestic terms of trade between agricultural and non-agricultural sector has a clear worsening trend from 1964 to 1968. From 1969 to 1972 the terms of trade moves up and down but the 1972 figure is below that of 1964. This suggests then that inequality between the rural (agricultural sector) and the urban (non-agricultural) sector has worsened between 1964-1972.

From table 22 we observe wide differences between private and total consumption between the agricultural and non-agricultural sectors. If we now turn to table 23 we observe that the ratio of total consumption between the agricultural and non-agricultural sector was 1:17.3 in 1964, 1:21.2 in 1969 and 1:23.7 in 1972. Although there is no marked trend in the ratios we note that the average ratio for the first four years was 1:18.9 whereas for the last four years the ratio was 1:22.3. Hence there has been an increase in this ratio and this suggests that rural (agricultural sector) and urban (non-agricultural) inequality is worsening.

Data used to test the hypothesis that rural-urban inequality has worsened since independence seem to point to the direction of worsening inequality hence the hypothesis that rural-urban inequality has worsened since independence is accepted.

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(7) In the estimation, trends in the Nairobi wage earners index was assumed to reflect trends in the rural non-agricultural areas, for lack of data.

CHAPTER 5

INTERNATIONAL COMPARISON

Comparative data on personal income distribution for internation cross-sections have only recently become available. We hope to later on present a table which classifies a number of countries by income levels and inequality. In interpreting tables dealing with international comparisons, one must be aware of the pitfalls that exist in international comparisons of GNP. The problems associated with international comparison can best be discussed under the following headings: (1) reliability, (2) scope, (3) comparative valuation and, (4) interpretation and generality.

Reliability - All data on economic processes are subject to error, and this is especially the case with estimates like national product that are attempts at measurement of a wide and variegated total of productive activities. The errors in both Developed and Developing countries are likely to be in the direction of understatement, in view of the difficulty of covering fully the wide scope underlying the standard definition of national product and the tendency towards under reporting of many economic activities. Underestimation may be proportionately greater in Developing countries, because their statistical apparatus is weaker and a large proportion of their activities lies outside the organised markets and is susceptible to measurement error.

SCOPE -

The scope of national product is set by the line drawn between economic production and other activities classified as non-economic even though they may yield goods. In standard national accounting, the line is drawn to include under economic production all market-orientated activities (as well as government) and all primary output whether marketed or for own consumption, but to exclude all non-primary production performed by producers outside their own trades and consumed by themselves. Thus the construction of barns by farmers, the spinning and weaving or clothmaking for own consumption by anyone not in the trade, and household services by family members are all excluded. It may be argued that for comparisons between economic societies with widely different shares of household versus market-orientated activities, the definition of economic production that excludes much household (or communal) activities will yield results biased in favour of the more developed society. The premise of this arguement is that the propertion of output excluded by such a definition (production of non-primary output for own consumption and services by family members within the households) to the economic output included is significantly

greater in some societies than in others, especially Developing versus Developed countries.

COMPARATIVE VALUATION -

Assuming a reliable measure of an accepted concept of national product for countries, there is the problem of conversion of the totals - each derived in domestic prices and currencies - to a common denominator. This then necessitates the use of an exchange rate and it is well known that some domestic currencies of some countries are overvalued for some reason or other, and so valuation of GNP for these countries whose domestic currency is overvalued could possibly be understated. A better basis for conversion of the national products of two countries to a common denominator would be the valuation of the two outputs at the same prices - a valuation that can be applied, of course, only to the goods that are identical or at least similar in the two countries. Such conversion is extremely helpful, even if it cannot extend to goods unique to only one of the countries and must deal arbitrarily intricate problems of quality differentials. But even with this procedure, the best for the purpose, we must chose a single system of prices. Use of the prices of a more developed country would affect the comparison differently from use of the prices of the less developed country.

INTERPRETATION AND GENERALITY

Care is needed when interpreting data and also generalisation based on given data. For example, per capita income of the United States could be about thirty times that of Kenya but we must not interpret this to mean that the average American is thirty times better off as the average Kenyan. It depends on peoples's way of life. A typical Kenyan family could easily live on about one hundred shillings a week but a typical American family would find it extremely difficult to survive with this amount. In some parts of the World, the climate forces people to incur extra exprenses such as buying worm clothing for the winter and also installing a heating system for the houses.

Income distribution data vary considerably from country to country in both coverage and reliability. Inconsistencies occur in that the data for some countries relate only to section of the population, and in some cases this involves the exclusion of subsistence sector or non-wage recipients. These are differences in the number of class intervals into which incomes are divided. Data vary in reliability according to whether they are compiled from censuses, surveys or tax returns. Some times the data refer to households, some times to active population and sometimes to individuals. There are differences in the dates to which data refer but this is not a serious problem

as income distribution changes very slowly over time. All the factors can affect the estimation of income distribution in countries and readers should refer to the original articles for details of sources and coverage. Though subject to error, it is felt that the data which we will present will broadly reflect international differences in distribution of income.

Table 1 shows cross - classification by equality of countries with per capita incomes of up to U.S. $ 300. The countries have been arranged in descending order of inequality on the basis of the income shares of the lowest 40%. The data has been extracted from Shail Jain (1). The compilation by Shail Jain was intended primarily as data input into future research in this area. It does not represent a set of officially accepted estimates of the distribution of income in the countries involved. There were problems of accuracy and reliability of data which have been discussed, and well known in this field. The reader has been warned in the compilation that the data are not in any sense presented as "reliable" or even best estimates. Nevertheless, we feel that the data do give us a broad picture of income distribution in the countries chosen.

From table 1, we see that Kenya is seventh overall in order of inequality out of the twenty six countries in the sample. The lowest 40%, the middle 40% and the top 20% receive 10%, 22% and 68% of the income. So it appears that in Kenya, the top one fifth receive slightly more than two thirds of the income. If we compare Kenya with her East African neighbours, Tanzania and Uganda, we note that in Tanzania the lowest 40%, middle 40% and top 20% receive 13%, 26% and 61% respectively. Hence in Tanzania the top one fifth receive about three fifths of the income. On the other hand, in Uganda the poorest 40%, the middle 40% and the top 20% receive 17.1%, 35.8% and 47.1% respectively. So it appears that in Uganda the top one fifth receive under half the income while in Kenya and Tanzania the top one fifth receive more than two thirds of the income and about three fifths of the income respectively. So the data suggests that in East Africa Uganda has a less unequally distributed income than Kenya or Tanzania while Kenya has the worst income distribution.

If we now look at Niger in West Africa we note that while in Kenya the poorest 40% receive 10% of the income, the lowest 40% in Niger receive about double the share of Kenya. In Kenya the middle 40% and the top 20% receive

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(1) Shail Jain, (42)

Table 1

CROSS-CLASSIFICATION BY INEQUALITY OF COUNTRIES WITH INCOME UP TO U.S. $ 300.

Country	(Year)	Per Capita GNP U.S.$	Lowest 40%	Middle 40%	Top 20%
1) Ecuador	(1970)	277	6.5	20.0	73.5
2) Honduras	(1968)	265	6.5	28.5	65.0
3) Iraq	(1956)	200	6.8	25.2	68.0
4) Rhodesia	(1968)	252	8.2	22.8	69.0
5) Turkey	(1968)	282	9.3	29.9	60.8
6) Sierra Leone	(1968)	159	9.6	22.4	68.0
7) Kenya	(1969)	136	10.0	22.0	68.0
8) Senegal	(1960)	245	10.0	26.0	64.0
9) Ivory Coast	(1970)	247	10.8	32.1	57.1
10) El salvador	(1969)	295	11.2	36.4	52.4
11) Tunisia	(1970)	255	11.4	33.6	55.0
12) Philippines	(1971)	239	11.6	34.6	53.8
13) Tanzania	(1967)	89	13.0	26.0	61.0
14) Madagascar	(1960)	120	13.5	25.5	61.0
15) Zambia	(1959)	230	14.5	28.5	57.0
16) Dahomey	(1959)	87	15.5	34.5	50.0
17) India	(1964)	99	16.0	32.0	52.0
18) Burma	(1958)	82	16.5	38.7	44.8
19) Sri Lanka	(1969)	95	17.0	37.0	46.0
20) Thailand	(1970)	180	17.0	37.5	45.5
21) Uganda	(1970)	126	17.1	35.8	47.1
22) Pakistan	(1964)	100	17.5	37.5	45.0
23) Korea	(1970)	235	18.0	37.0	45.0
24) Chad	(1958)	78	18.0	39.0	43.0
25) Niger	(1960)	97	18.0	40.0	42.0
26) Tanzania	(1964)	241	20.4	39.5	40.1
Average	-	181	13.2	31.6	55.2

Source: Chenery, H. et al (39), table 1.1, PP 8-9

Notes: a) Countries are arranged in descending order of inequality, based on the income shares of the lowest 40%.

b) Sources for each individual country data are listed in chenery, H. et al. (39), Appendix to chapter 1. The income shares of each percentile group were read off a free - hand Loreng curve fitted to observed points in the cumulative distribution. The distribution are for pretax income. Per capita GNP figures were taken from the World Bank data files and refer to GNP at factor cost for the year indicated in constant 1971 U.S. dollars.

Table 2

GINI INDEX FOR SELECTED COUNTRIES:

COUNTRY	(Year)	Gini index for 6 Intervals	Gini index for 20 intervals
1) Ecuador	(1970)	0.6567	0.6701
2) Rhodesia	(1968)	0.6239	0.6350
3) Iraq	(1956)	0.6068	0.6220
4) Honduras	(1968)	0.5979	0.6130
5) Kenya	(1969)	0.5974	0.6099
6) Sierra Leone	(1968)	0.5813	0.5940
7) Senegal	(1960)	0.5640	0.5760
8) Turkey	(1968)	0.5443	0.5583
9) Madagascar	(1960)	0.5235	0.5333
10) Ivory Coast	(1970)	0.5160	0.5268
11) Tanzania	(1967)	0.5040	0.5136
12) Tunisia	(1970)	0.4859	0.4999
13) Zambia	(1959)	0.4881	0.4956
14) Philippines	(1971)	0.4755	0.4881
15) El Salvador	(1969)	0.4508	0.4632
16) Dahomey	(1959)	0.4370	0.4437
17) India	(1964)	0.4352	0.4462
18) Uganda	(1970)	0.3817	0.3935
19) Sri Lanka	(1969)	0.3730	0.3836
20) Burma	(1958)	0.3720	0.3820
21) Pakistan	(1964)	0.3713	0.3824
22) Thailand	(1970)	0.3703	0.3835
23) Korea	(1970)	0.3595	0.3686
24) Chad	(1958)	0.3545	0.3607
25) Taiwan	(1964)	0.3160	0.3266
Average	-	0.4796	0.4908

Source: Shail Jain, (42).

Notes: Countries have been arranged in descending order of inequality on the basis of gini indices for 6 intervals.

22% and 68% of the income respectively while in Niger the middle 40% and top 20% receive 40% abd 42% of the income respectively. Hence while the top one fifth in Kenya receive over two thirds of the income, the top one fifth in Niger receive just over two fifths of the income. So compared to Niger income distribution in Kenya is relatively more unequally distributed.

Looking now at the average shares of the twenty six countries considered we observe that the poorest 40% receive on average 13.2% of the income. This is 3.2% percentage points higher than the income share of 10.0% received by the poorest 40% in Kenya. For the twenty six countires on table 1, we again note that the middle 40% receive 31.6% of the income on average, whereas in Kenya the middle 40% receive only 22% of the income, hence over 9 percentage points less than the average. For the top 20% we note from the same table that in Kenya the top 20% receive a share of income (GNP) which is about 16.0 percentate points higher than that received on average for the twenty six countries in table 1.

The gini coefficients of concentration were calculated from the free hand Loreng curve by using the cumulative income shares associated with the two levels of aggregation. Firstly, with six observations (the lowest 20%, 60%, 80%, 95% and the total population), and then with twenty observations (the lowest 5%, 10% .....90%, 95% and the total population) respectively. The gini index was as follows:

$$\text{Gini index} = 1 - \sum_{i=0}^{K} (F_{i+1} - F_i)(Y_i + Y_{i+1})$$

Where:

F_i represent cumulative population share of the ith observation.

Y_i represent the cumulative income share of ith observation.

The two gini coefficients of concentration differ from each other and the gini index for 20 intervals is always greater than or equal to the gini index for six intervals ($\text{Gini}_{20} > \text{Gini}_{6}$). This is because the formula used in calculation assumed equal income distribution within any group so that aggregating 20 intervals up to 6 intervals suppresses inequality within groups.

The gini indices for twenty five selected countries with per capita incomes up to U.S. $ 300 are shown on table 2. Countries are arranged in descending order of inequality on the basis of gini indices for 6 intervals.

We will first consider the gini index for 6 intervals. We note that Kenya is number five While Equader tops the list. Kenya's gini index is 0.5974. If we look at the gini index for Tanzania and Uganda, we note that they are 0.5040 and 0.3817 respectively. So the gini index for 6 intervals for Kenya is 0.0934 higher than that of Tanzania and 0.2157 higher than that of Uganda. Hence once again it appears that in East Africa, Kenya has the worst income distribution while Uganda's income distribution appears less unequally distributed, for the years considered. Chad's gini index is 0.2429 lower than than of Kenya, once again suggesting a marked discrepancy in the distribution of income between Kenya and some other African countries. From the same table we note that the average gini index for 6 intervals for the group of countries considered is 0.1178 lower than that of Kenya, which suggests that income distribution in Kenya is less equally distributed than on average for the countries considered in table 2.

If we now turn to the gini index for 20 intervals we note that Ecuador has the highest index of 0.6701 while Kenya with an index of 0.6099 ranks fifth. Tanzania, Kenya's East African neighbour has a gini index which is 0.0963 lower than that of Kenya, while Uganda, another of Kenya's East African neighbour, has a gini index which is 0.2162 lower than that of Kenya. It is then suggested that while Kenya has the worst income distribution in East Africa, and Uganda the most favourable, for the years considered, the difference in the degree of inequality is greater between Kenya and Uganda than between Kenya and Tanzania. Kenya's gini index for 20 intervals appears to be 0.1191 higher than the average gini index for the group of countries considered, suggesting again that income distribution in Kenya is more unequally distributed than on average for the twenty five countries in table 2.

Ahluwalia[2] has attempted to estimate the coefficients which explain the behaviour of income shares received by various groups. The estimated equations are shown on table 3. The author used a sample of 60 countries, including 40 developing countries, 14 developing countries and 6 socialist countries. In the established tradition of cross-country analysis, the approach the author adopted was essentially exploratory. He used multivariate regression analysis to estimate cross-country shares of different percentile groups and selected variables reflecting aspects of the depelopment

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(2) Ahluwalia, M.S. (42).

Table 3

PREDICTED INCOME SHARES RECEIVED BY THE TOP 20% AND BOTTOM 40%

	Dependant variable	Estimated Coefficients on explanatory variable									
	Income share of:	Constant	Log per capita GNP	(Log per capita GNP)^2	Share of Agriculture in GDP	Share of urban population in total	Literacy Rate	Secondary School enrolment	Population growth Rate	Socialist dummy	R^2
(1)	Top 20%	-1.592	43.58	-7.157	-0.225	-	-0.107	-0.160	3.48	-9.287	0.7
(2)	Lowest 40%	85.660	-51.440	8.41	-	0.057	0.056	-	-1.155	9.184	0.6

Source: Ahluwalia, M.S. (42), Table 3.

Notes: In estimation a sample of 60 countries was used (40 Developing countries, 14 developing countries and 6 socialist countries). List of countries are found in Ahluwalia, M.S (42) PP. 340-341

process which are likely to influence income inequality.

It is perhaps necessary to mention that the relationships identified by the equations are primarily associational. They do not necessarily establish the nature of the underlying causal mechanism at work for the simple reason that quite different causal mechanisms might generate the same observed relationship between selected variables. Such alternative mechanisms are observationally equivalent in the sense that our estimated equations do not always permit us to chose between them. This is the familiar identification problem which may be over come by using different estimation techniques.

Equations 1 and 2 on table 3 then represent the normal behaviour of the income shares of the top 20%, the bottom 40% respectively. To investigate the position of Kenya relative to this normal behaviour of the 60 countries taken as sample, all we need do is substitute for explanatory variables on table 3, that is, put in the data for Kenya. The following explanatory variables for Kenya for 1969 were used:

GNP = U.S$153.2(3)
share of agriculture is GDP = 34.8(4)
Literacy rate = 22.0%(5)
Secondary school enrolment = 1.0%(6)
Population growth rate = 3.3%(7)
Share of urban population = 10.0%(8)

The results are shown on table 4 below:

Table 4

ESTIMATION OF INCOME SHARES RECEIVED BY THE BOTTOM 40%, TOP 20% IN KENYA, 1969

Income share of:	Estimate (Normal)	Actual
Top 20%	51.25	68.0(9)
Bottom 40%	19.36	10.0

(3) Ahluwalia, M.S. (42)
(4) A survey of Economic conditions in Africa (43)
(5) World Economic survey, Part 1 (44)
(6) Ministry of Education, Annual Report, 1970 (34)
(7) ILO Report, (11), P. 121
(8) World Economic Survey, Part 1 (44)
(9) Morrisson, C (9).

From table 4 we note that the top 20% in Kenya receive 68% of the income which is 16.75 percentage points higher than the prediction for the sample of 60 countries taken. Again we note that the the bottom 40% in Kenya receive only 10% of the income, whereas the prediction for the sample of 60 countries taken is 19.36, that is, almost double the share. This is evidence to show that relative to the other countries, Kenya's income distribution is highly unequally distributed for reasons not "explained" by Ahluwalias' independent variables. It was intended to compute confidence intervals for the predicted income shares received by the top 20% and bottom 40%, to see whether the actual shares received by the top 20% and bottom 40% fall into the confidence intervals or not. This would have made the basis of our arguement even firmer. However, due to lack of relevant data we were unable to construct the confidence intervals, but this does not in any way alter our line of arguement.

Data on table 1 and 2 suggest that countries vary in the degree of income inequality, indicating that income inequality is neither immutable nor solely determined by the level of per capita income. For example, the share of the lowest 40% of the population in the countries considered on table 1 range from 6.5% to over 20% of GNP. Also from table 2 the gini coefficients for 6 intervals range from 0.6567 to 0.3160, while the gini coefficients for 20 intervals range from 0.6701 to 0.3266. Evidence presented leaves one with no doubt that Kenya's income distribution is the worst among independent African countries, Rhodesia being a special case.

CONCLUSION

Inequalities in Kenya are still high. If we look at the ratio of average earnings between Africans, Asians and Europeans in 1972, we note that these ratios are high. The ratio of average earnings between Africans and Asians was 1:4.81 while that between Africans and Europeans was 1:12.10.

In the Provinces inequality is still high. In 1974 Nairobi's share of modern sector wage employment was 27.46% of the total whereas it accounted for only 5.1% of the total population. The share of Western Province was only 4.2% whereas its population accounted for 12.4% of the National total. There is still wide disparity with average earnings between Provinces. In 1973 the average earnings for all Provinces was about K£ 304 per annum whereas for Nairobi the average earnings was as high as K£ 517 per annum. For Central and Rift Valley Provinces the average earnings in 1973 were K£ 193 and K£ 165 per annum respectively.

With school enrolment there are still wide disparities between the Provinces. In 1974 Primary school enrolment in Central Province was 19.77% of National total whereas its population accounted for 5.1% of National total. For the same year primary school enrolment in Rift Valley Province was 16.7% of the total whereas it accounted for 20.0% of the National population. Primary school enrolment in North Eastern Province for 1974 was only 0.31% of the total whereas it accounted for about 2.0% of the National population. For the year 1973 secondary school enrolment in Nairobi was 14.65% of the total whereas its population was only 5.0% of the National total. For the same year secondary school enrolment in Rift Valley was 12.74% of total whereas its share of National population was 20.0%. For the same period secondary school enrolment in North Eastern Province was only 0.20% of National total whereas its population was 2.1% of National total. So as indicated we still have a situation where some Provinces, notably Nairobi and Central Province dominate while others such as the North Eastern Province remain at the bottom end.

There is still wide disparity between the urban and rural areas. The domestic terms of trade between the two for 1972 was 95.0 and this is still below the 1964 figure. The ratio of total consumption between the rural and urban areas was estimated at 1:23.7 which indicates high disparity.

With interpersonal inequality the gini indexes show high inequality. in 1969 the gini index for the National economy was estimated at 0.60 which is on the high side. For the same year the distribution of income in the modern sector was found to be highly unequally distributed. The gini index was also estimated at 0.60. When we compared Kenya's income distribution with countries with incomes up to U.S $ 300 we found that Kenya's distribution

was the worst in African apart from Rhodesia, which is a special case. This could be probably due to lack of effective and powerful redistributive mechanisms.

When we looked at trends over time, we noted that data on racial inequality suggested a shift towards less inequality. Hence the hypothesis that racial inequality has worsened since independence was rejected. With interpersonal inequality the trends over time in the data presented suggested a shift towards less inequality. The reduction in interpersonal inequality, however, appears to be rather slow over the years. The reader is warned that the evidence presented as far as interpersonal inequality is concerned is partial as it relates mainly to the modern sector and two studies dealing with small sections in the rural areas, as well as the study by Morrison for the year 1969. So when we reject the hypothesis that interpersonal inequality has worsened since independence we do it with reservations and suggest that more research be done on this area so that more data covering wider aspects of this issue are available.

Regarding Provincial inequality, the trends in the data suggested a shift towards less inequality so the hypothesis that Provincial inequality has worsened since independence was rejected. The trends in the terms of trade as well as total consumption between the urban and rural areas suggested a shift towards more inequality. Once again this is only partial evidence and so although the hypothesis that rural - urban inequality has worsened since independence is not rejected, this is done with reservations and we suggest too some research into this issue.

An improvement of Provincial inequality simultaneously with a worsening of rural - urban inequality needs some explanation. It could be that although there have been marked efforts to reduce Provincial inequality, within the Provinces themselves there is still emphasis on development of the urban centres and not enough efforts to develop the rural areas. There appears to be a built - in tendency for the urban areas (where most of the rich live) to go ahead faster than the rural areas (where most of the poor live). This is partly due to the high wages of urban workers and the high standards that go along with them. It seems then likely that neither external policy nor domestic agricultural policies have generally been determined with the interests of the majority of the rural population in mind. Thus it is not surprising, as Jennifer Sharpley's study demonstrated, that the domestic terms of trade between the rural and urban areas have generally moved in favour of the urban areas (and therefore towards a greater, not lesser, concentration of income) in most years since independence.

From the review of the literature it was inferred that racial inequality has probably diminished since Kenya's independence. Our results are in

in agreement with this inference. The improvement in racial inequality is attributed to the Africanisation programs pursued by the Kenya government since attaining independence. It was suggested in the literature that interpersonal inequality and regional inequalities have probably not diminished since independence due to the fact that there has been little attempts to restructure the economy and to change development strategies. Our study found an improvement in interpersonal inequality (although evidence is partial) as well as an improvement in Provincial inequality. To an extent these results must reflect a change in development strategies and policies or else these results would not have been achieved. Infact, if we look at the 1970-74 and the 1974-78 Development Plans as well as Sessional Paper No 10 on Employment we note the government's concern with equality between people and areas. In tackling the problem of poverty and distribution the Kenya government had in general relied heavily on creating the condition for rapid economic growth. This policy was successful in achieving a fast growth rate in GDP and in average per capita income but it was realised that the policy, while undoubtedly a precondition for any determined attack on poverty, was not adequate to make any great impact on the distribution problem. This was what led to a shift from emphasis on growth to emphasis on distribution of income. In its statement of policy the government has always given considerable emphasis to fiscal policy as an instrument of redistribution and the nominal tax rates now operating in Kenya appear to go some way in this direction. Some people have questioned the effectiveness of the Kenya tax system as a redistributive mechanism, and suggested that Kenya's fiscal policy has not in the past been a significant instrument for the redistribution of income and wealth or for reducing rural - urban and regional inequality [1]. It is not intended to debate the effectiveness of government policies towards redistribution of income at this stage. The main point to note is that whatever policies the Kenya government has used, interpersonal and Provincial inequality seem to have diminished since independence, although the evidence for the former is partial.

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(1) See: 1) Kenya. Into the Second Decade. (1), P.16
2) Westlake, M.J. (53)

Appendix Table 1

Employment by occupation and Race: 1968 - 1973

1968	Africans	Per cent of total	Asians	Per cent of total	Europeans	Per cent of total	tota
Directors and top level Administrators	2599	27.82	4272	45.73	2469	26.43	9
Professionals	2,354	37.92	1,298	20.91	2,555	41.16	6
Executive and Managerial	6,743	43.97	3,647	23.78	4,944	32.24	1
Technicians, works managers, workshop Foremen and other supervisory personnel	12,195	65.92	4,315	23.32	1,989	10.75	1
Teachers	37,104	89.51	2,652	6.39	1,693	4.08	4
Secretaries, stenographers and Typists	2,539	38.65	2,425	36.92	1,604	24.42	
Clerks	29,553	86.25	4,465	13.03	244	0.71	3
Book keepers, chashiers and Book - keeping clerks.	3,584	57.14	2,526	40.27	162	2.58	
Operators of office machines	1,430	84.31	247	14.56	19	1.12	
Technical sales representatives	1,260	56.30	848	37.89	130	5.80	
Shop Assistants	1,970	73.04	707	26.21	20	0.74	
Skilled and semi-skilled not included above.	106,756	95.98	4,113	3.69	356	0.32	1
Unskilled labourers	251,336	99.79	434	0.17	74	0.02	2
Total	459,423		31,949		15,292		5

	1969					
	Africans	Per cent of total	Asians	Per cent of total	Europeans	per cent of total	Total
Directors and top level Administrators	2,607	26.48	4,112	41.77	3,124	31.73	9,843
Professionals	4,210	56.44	1,317	17.65	1,931	25.89	7,458
Executive and Managerial	7,132	44.48	4,627	28.85	4,275	26.66	16,034
Technicians, works managers							
Workshop foremen and other							
Supervisory personel.	14,558	69.12	4,815	22.86	1,686	8.00	21,059
Teachers	44,113	91.74	2,543	5.28	1,426	2.96	48,082
Secretaries, stenographers and Typists	4,688	60.81	2,143	27.83	868	11.27	7,699
Clerks	33,573	88.67	4,176	11.02	113	0.29	37,862
Book - keepers, cashiers and							
Book - keeping clerks	5,981	70.33	2,449	28.79	74	0.87	8,504
Operators of office Machines	2,145	89.44	244	10.17	9	0.37	2,398
Technical sales representatives	1,297	64.36	609	30.22	109	5.40	2,015
and Brokers							
shop Assistants	2,266	74.61	742	24.43	29	0.95	3,037
Skilled and semi-skilled not included above	111,300	97.19	3,009	2.62	200	0.17	114,509
Unskilled labourers	252,432	99.87	310	0.12	6	0.002	252,748
Total	485,302		31,096		14,850		531,248

	Africans	Per cent of total	Asians	Per cent of total	Europeans	Per cent of total	Total
			1970				
Directors and top level Administrators	3,217	30.27	4,375	41.16	3,035	28.55	10,627
Professionals	4,447	56.88	1,356	17.34	2,015	25.77	7,818
Executive and Managerial	8,176	49.39	4,603	27.80	3,776	22.81	16,553
Technicians, works managers,							
Workshop Foremen and other							
Supervisory personel.	21,316	77.52	4,452	16.19	1,726	6.27	27,494
Teachers	47,292	93.09	1,923	3.78	1,585	3.12	50,800
Secretaries, stenographers and typists	6,451	72.81	1,773	20.01	636	7.17	8,860
Clerks	42,104	92.70	3,167	6.97	145	0.31	45,416
Book - keepers, cashiers and							
Book - keeping clerks.	6,701	72.83	2,452	26.65	47	0.51	9,200
Operators of office machines	3,208	92.66	250	7.22	4	0.11	3,462
Technical sales representatives	1,518	65.77	679	29.41	111	4.80	2,308
and Brokers							
Shop Assistants	3,722	81.17	805	17.55	58	1.26	4,585
Skilled and semi - skilled not included above	119,318	97.89	2,203	1.80	366	0.30	121,887
Unskilled labourers	237,839	99.84	373	0.15	6	0.002	238,218
Total	505,309		28,411		13,510		577,230

	1971						
	Africans	Per cent of total	Asians	Per cent of total	Europeans	Per cent of total	Total
ctors and top level Administrators	3,642	32.52	4174	37.27	3,383	30.20	11,199
fessionals	4,392	54.90	1,468	18.35	2,139	26.74	7,999
cutive and Managerial	9,065	56.81	3,419	21.43	3,470	21.75	15,954
hnicians, work managers, kshop foremen and other ervisory personnel	22,877	78.43	4,561	15.63	1,730	5.93	29,168
chers	60,091	93.58	2,353	3.66	1,764	2.74	64,208
retaries, stenographers and Typists	6,442	74.99	1,701	19.80	447	5.20	8,590
rks	43,346	93.83	2,719	5.88	130	0.28	46,195
k - keepers, cashiers and Book- ping clerks.	7,435	79.31	1,905	20.32	34	0.36	9,374
erators of office machines	3,474	94.58	190	5.17	9	0.24	3,673
chnical sales representatives	1,720	70.69	624	25.64	89	3.65	2,433
op Assistants	3,971	84.90	689	14.73	17	0.36	4,677
illed and semi - skilled not cluded above	120,495	98.40	1,788	1.46	166	0.13	122,449
skilled labourers.	265,872	99.89	269	0.10	4	0.001	266,145
tal	552,822		25,860		13,382		592,064

	1972						
	Africans	Per cent of total	Asians	Per cent of total	Europeans	Per cent of total	Total
Directors and top level Administrators	3,680	34.09	4,068	37.69	3,044	28.20	10,
Professionals	4,276	48.21	2,209	24.90	2,384	26.88	8,
Executive and Managerial	4,562	56.50	1,501	18.59	2,010	24.89	8,
Technicians, works managers,							
Workshop foremen and other							
supervisory Personnel.	19,922	63.79	6,562	21.01	4,743	15.18	31,
Teachers	61,052	95.24	1,680	2.62	1,371	2.13	64,
Secretaries, stenographers and Typists	5,525	65.26	2,082	24.59	858	10.13	8,
Clerks Book - keepers, cashiers and Book - keeping clerks	43,483	91.21	3,966	8.31	222	0.46	47,
Operators of office machines	3,620	95.43	170	4.48	3	0.08	3,
Technical sales representatives and Brokers. shop assistants	5,379	75.68	1,598	22.48	130	1.82	7.
Skilled and semi - skilled not included above.	191,310	98.67	2,393	1.23	170	0.08	193
Unskilled labourers	247,833	99.84	318	0.12	78	0.03	248
Total	590,642		26,547		15,013		63

	1973					
	Africans	Per cent of total	Asians	Per cent of total	Europeans	Per cent of total	Total
Directors and top level Administrators	6,292	33.81	3,317	28.36	2,083	17.81	11,69
Professionals	4,492	49.53	1,836	20.242	2,740	30.21	9,06
Executive and Managerial	4,711	56.90	1,421	17.16	2,147	25.93	8,27
Technicians, works managers, workshop foremen and other supervisory personneal	24,826	76.83	5,087	15.74	2,399	7.42	32,31
Teachers	63,548	94.96	1,981	2.96	1,387	2.07	66,91
Secretaries, stenographers and typists	7,005	77.79	1,527	16.95	473	5.25	9,00
Clerks Book - keepers, cashiers and Book - keeping clerks.	46,754	94.05	2,826	5.68	127	0.25	49,70
Operators of office machines	3,711	96.08	147	3.80	5	0.12	3,86
Technical sales representatives and Brokers shop assistants	6,509	83.52	1,224	15.70	60	0.76	7,79
Skilled and semi - skilled not included above.	200,834	98.99	1,881	0.92	157	0.07	202,87
Unskilled labourers	259,760	99.90	178	0.06	58	0.02	259,99
Total	628,442		21,425		11,636		661,50

* Excludes casual employees. Source. Republic of Kenya. Employment and Earnings in the Modern Sector. CBS.

Appendix table 2: Gini Coefficients for Income Distribution in the Modern Sector (1963 - 74)

1963

Income group (Shs)	Mid point	No. of people	per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution people	Cumulative Distribution Income	P. Y. i+1	P. I. i i
Under 100	75	173,242	38.2	12,993,150	9.1	38.2	9.1	0	0
100-149	125	73,211	16.2	9,151,375	6.4	54.4	15.5	592.1	46
150-199	175	52,743	11.6	9,230,025	6.5	66.0	22.0	1196.8	102
200-299	250	57,755	12.8	14,438,750	10.1	78.8	31.1	2118.6	173
300-399	350	26,455	5.8	9,259,250	6.5	84.6	38.6	3041.7	2,71
400-599	500	19,724	4.4	9,862,000	6.9	89.0	45.5	3849.3	3,43
600-999	800	20,323	4.5	16,258,400	11.4	93.5	56.9	5064.1	4,25
1,000-1,499	1,250	14,464	3.2	18,080,000	12.7	96.7	69.6	6507.6	5,5(
1,500-1,999	1,750	5,572	1.2	9,751,000	6.8	97.9	76.4	7387.9	6,8
2,000-3,999	3,000	7,653	1.7	22,959,000	16.1	99.6	92.5	9055.8	7,6(
4,000 +	6,000	1,786	0.4	10,716	7.5	100.0	100.0	9960.0	9,2
Total		452,928	100.0	142,698,950	100.0			48,773.9	42,7

48773.9
- 42796.4

5977.4

Gini Index = 0.598

1964

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution People	Cumulative Distribution Income	F.Y i+1 i	F.Y. i i
Under 100	75	177,666	36.9	13,342,950	8.7	36.9	8.7	•	•
100-149	125	77,257	16.0	9,657,125	6.3	52.9	15.0	553.5	
150-199	175	58,367	12.1	10,214,225	6.7	65.0	21.7	1,148.0	
200-299	250	63,577	13.2	15,894,250	10.4	78.2	32.1	2,086.5	
300-399	350	30,737	6.4	10,757,950	7.0	84.6	39.1	3,057.6	
400-599	500	22,366	4.6	11,183,000	7.3	89.2	46.4	3,925.4	
600-999	800	21,151	4.4	16,920,800	11.1	93.6	57.5	5,129.0	
1,000-1,499	1,250	15,145	3.1	18,931,250	12.4	96.7	69.9	6,542.6	
1,500-1,999	1,750	6,824	1.2	10,542,000	6.9	97.9	76.8	7,426.6	
2,000-3,999	3,000	7,942	1.6	23,826,000	15.6	99.5	92.4	9,046.0	
4,000 +	6,000	1,953	0.4	11,718,000	7.7	100.0	100.0	9,950.0	
Total		482,185	100.0	152,969,550	100.0			48,865.2	42,9

48,865.2
- 42,963.6
5,901.6

Gini Index = 0.590

Appendix Table 2 (continued).

1965

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution		F_i Y_{i+1}	F_i
						People	Income		
Under 100	75	177,689	36.5	13,326,675	8.6	36.5	8.6	•	
100-149	125	77,607	16.0	9,700,875	6.2	52.5	14.8	540.2	
150-199	175	59,167	12.1	10,354,225	6.7	64.6	21.5	1,128.8	
200-299	250	65,077	13.4	16,269,250	10.5	78.0	32.0	2,067.2	1_1
300-399	350	32,237	6.6	11,282,950	7.3	84.6	39.3	3,065.4	2_1
400-599	500	22,251	4.7	11,125,500	7.2	89.3	46.5	3,933.9	3_1
600-999	800	21,251	4.4	17,000,800	11.0	93.7	57.5	5,134.8	4_1
1,000-1,499	1,250	15,155	3.1	18,943,750	12.2	96.8	69.7	6,530.9	5_1
1,500-1,999	1,750	6,199	1.3	10,848,250	7.0	98.1	76.7	7,424.6	6_1
2,000-3,999	3,000	8,067	1.7	24,201,000	15.6	99.8	92.3	9,054.6	7_1
4,000-+	6,000	2,003	0.4	12,018,000	7.7	100.0	100.0	9,980.0	9_1
Total		487,218	100.0	155,071,275	100.0			48,860.4	42,1

48,860.4

42,946.7

5,913.7

Gini Index = 0.591

Appendix Table 2 (continued).

1965

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution		F. Y_i $i+1$	F. i
						People	Income		
Under 100	75	177,689	36.5	13,326,675	8.6	36.5	8.6	•	
100-149	125	77,607	16.0	9,700,875	6.2	52.5	14.8	540.2	
150-199	175	59,167	12.1	10,354,225	6.7	64.6	21.5	1,128.8	
200-299	250	65,077	13.4	16,269,250	10.5	78.0	32.0	2,067.2	1_1
300-399	350	32,237	6.6	11,282,950	7.3	84.6	39.3	3,065.4	2_1
400-599	500	22,251	4.7	11,125,500	7.2	89.3	46.5	3,933.9	3_1
600-999	800	21,251	4.4	17,000,800	11.0	93.7	57.5	5,134.8	4_1
1,000-1,499	1,250	15,155	3.1	18,943,750	12.2	96.8	69.7	6,530.9	5_1
1,500-1,999	1,750	6,199	1.3	10,848,250	7.0	98.1	76.7	7,424.6	6_1
2,000-3,999	3,000	8,067	1.7	24,201,000	15.6	99.8	92.3	9,054.6	7_1
4,000-	6,000	2,003	0.4	12,018,000	7.7	100.0	100.0	9,980.0	9_1
Total		487,218	100.0	155,071,275	100.0			48,860.4	42_1

48,860.4

42,946.7

5,913.7

Gini Index = 0.591

1966

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution People	Cumulative Distribution Income	P. Y i+1 i	P. I i i
Under 100	75	177,659	36.4	13,324,425	8.5	36.4	8.5	•	•
100-149	125	77,655	15.9	9,706,875	6.2	52.3	14.7	535.1	4
150-199	175	59,287	12.2	10,375,225	6.7	64.5	21.4	1,119.2	9
200-299	250	65,227	13.4	16,306,750	10.5	77.9	31.9	2,057.6	1,6
300-399	350	32,370	6.6	11,329,500	7.3	84.5	39.2	3,053.7	2,6
400-599	500	22,868	4.7	11,434,000	7.3	89.2	46.5	3,929.3	3,4
600-999	800	21,337	4.4	17,069,600	11.0	93.6	57.5	5,129.0	4,3
1,000-1,499	1,250	15,215	3.1	19,018,750	12.2	96.7	69.7	6,524.0	5,5
1,500-1,999	1,750	6,224	1.3	10,892,000	7.0	98.0	76.7	7,416.9	6,8
2,000-3,999	3,000	8,080	1.7	24,240,000	15.6	99.7	92.3	9,045.4	7,6
4,000 +	6,000	2,011	0.4	12,066,000	7.7	100.0	100.0	9,970.0	9,2
Total		487,933	100.0	155,763,125	100.0			48,780.2	42,8

48,780.2

* 42,872.3

5,907.9

Gini Index = 0.0591

Appendix Table 2 (continued)

1967

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution People	Cumulative Distribution Income	F.I i+1 i	F i
Under 100	75	178,037	35.8	13,352,775	8.3	35.8	8.3	•	
100-149	125	79,489	16.0	9,936,125	6.2	51.8	14.5	519.1	
150-199	175	61,015	12.3	10,677,625	6.7	64.1	21.2	1,098.2	
200-299	250	66,883	13.4	16,720,750	10.4	77.5	31.6	2,025.6	1,
300-399	350	33,964	6.8	11,887,400	7.4	84.3	39.0	3,022.5	2,
400-599	500	24,113	4.8	12,056,500	7.5	89.1	46.5	3,920.0	3,
600-999	800	21,765	4.4	17,412,000	10.9	93.5	57.4	5,114.3	4,
1,000-1,499	1,250	15,630	3.1	19,537,500	12.2	96.6	69.6	6,507.6	5,
1,500-1,999	1,750	6,544	1.3	11,452,000	7.2	97.9	76.8	7,418.9	6,
2,000-3,999	3,000	8,236	1.7	24,708,000	15.4	99.6	92.2	9,026.4	7,
4,000 +	6,000	2,048	0.4	12,288,000	7.7	100.0	100.0	9,960.0	9,
Total		497,718	100.0	160,828,675	100.0			48,612.6	42,

48,612.6

• 42,717.0

5 895.6

Gini Index = 0.590.

1968

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution		F. Y. i+1 i	F. i
						People	Income		
Under 100	75	141,711	28.1	10,628,325	5.2	28.1	5.2	*	
100-149	125	75,277	14.9	9,409,625	4.6	43.0	9.8	275.4	
150-199	175	64,596	12.8	11,304,300	5.5	55.8	15.3	657.9	
200-299	250	70,279	13.9	17,569,750	8.6	69.7	23.9	1,333.6	1,
300-399	350	50,245	10.0	17,585,750	8.6	79.7	32.5	2,265.3	1,
400-599	500	26,480	5.2	13,240,000	6.5	84.9	39.0	3,108.3	2,
600-999	800	29,812	5.9	23,849,600	11.6	90.8	50.6	4,295.9	3,
1,000-1,499	1,250	20,788	4.1	25,985,000	12.7	94.9	63.3	5,747.6	4,
1,500-1,999	1,750	9,902	2.0	17,328,500	8.4	96.9	71.7	6,804.3	6,
2,000-3,999	3,000	11,390	2.3	34,170,000	16.7	99.2	88.4	8,566.0	7,
4,000 +	6,000	3,974	0.8	23,844,000	11.6	100.0	100.0	9,920.0	8,
Total		504,454	100.0	204,914,850	100.0			42,974.3	36,

42,974.3

* 36,930.4

6 043.9

Gini Index = 0.604

Appendix Table 2 (continued)

1969

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution People	Cumulative Distribution Income	F. Y i+1 i	F. i
Under 100	75	151,344	28.6	11,350,800	5.2	28.6	5.2	0	0
100-149	125	61,349	11.6	7,668,625	3.5	40.2	8.7	248.8	2
150-199	175	66,058	12.5	11,560,150	5.3	52.7	14.0	562.8	4
200-299	250	80,620	15.3	20,155,000	9.2	68.0	23.2	1,222.6	9
300-399	350	59,967	11.3	20,988,450	9.5	79.3	32.7	2,223.6	1,8
400-599	500	26,498	5.0	13,249,000	6.0	84.3	38.7	3,068.9	2,7
600-999	800	33,289	6.3	26,631,200	12.1	90.6	50.8	4,282.4	3,5
1,000-1,499	1,250	22,592	4.3	28,240,000	12.8	94.9	63.6	5,762.2	4,8
1,500-1,999	1,750	11,191	2.1	19,584,250	8.9	97.0	72.5	6,880.3	6,1
2,000-3,999	3,000	11,710	2.2	35,130,000	16.0	99.2	88.5	8,584.5	7,1
4,000 +	6,000	4,230	0.8	25,380,000	11.5	100.0	100.0	9,920.0	8,8
Total		528,484	100.0	219,937,475	100.0			42,756.1	36,1

42,756.1

- 36,754.2

6 001.9

Gini Index = 0.600

1970

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution People	Cumulative Distribution Income	F. Y. i+1 i	F. i
Under 100	75	147,253	27.0	11,043,975	4.4	27.0	4.4	*	
100-149	125	59,446	10.9	7,430,750	3.0	37.9	7.4	199.8	
150-199	175	70,899	13.0	12,407,325	5.0	50.9	12.4	470.0	
200-299	250	84,534	15.5	21,133,500	8.5	66.4	20.9	1,063.8	
300-399	350	62,719	11.5	21,951,650	8.8	77.9	29.7	1,972.1	1,0
400-599	500	29,451	5.4	14,725,500	5.9	83.3	35.6	2,773.2	2,0
600-999	800	34,904	6.4	27,923,200	11.2	89.7	46.8	3,898.4	3,
1,000-1,499	1,250	23,997	4.4	29,996,250	12.0	94.1	58.8	5,274.4	4,
1,500-1,999	1,750	11,998	2.2	20,996,500	8.4	96.3	67.2	6,323.5	5,
2,000-3,999	3,000	13,089	2.4	39,267,000	15.7	98.7	82.9	7,983.3	6,
4,000 +	6,000	7,090	1.3	42,540,000	17.1	100.0	100.0	9,870.0	8,
Total			100.0	249,415,650	100.0			39,828.5	33,

39,828.5

- 33,651.2

6 177.3

Gini Index = 0.618

Appendix Table 2 (continued)

1971

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution		F. Y. i+1 i	F. i
						People	Income		
Under 100	75	122,032	20.7	9,152,400	3.2	20.7	3.2	•	•
100-149	125	74,793	12.7	9,349,125	3.3	33.4	6.5	134.6	
150-199	175	71,433	12.1	12,500,775	4.3	45.5	10.8	360.7	
200-299	250	86,347	14.7	21,586,750	7.5	60.2	18.3	832.7	
300-399	350	69,009	11.7	24,153,150	8.4	71.9	26.7	1,607.3	1,
400-599	500	66,601	11.3	33,300,500	11.6	83.2	38.3	2,753.8	2,
600-999	800	39,998	6.8	31,998,400	11.1	90.0	49.4	4,110.1	3,
1,000-1,499	1,250	23,145	3.9	28,931,250	10.0	93.9	59.4	5,346.0	4,
1,500-1,999	1,750	14,754	2.5	25,819,500	9.0	96.4	68.4	6,422.8	5,
2,000-3,999	3,000	12,171	2.0	36,513,000	12.7	98.4	81.1	7,818.0	6,
4,000 +	6,000	9,048	1.5	54,288,000	18.9	100.0	100.0	9,840.0	8,
Total		589,331	100.0	287,592,850	100.0			39,226.0	33

39,226.0

- 33,242.6

5 982.4

Gini Index = 0.598

972

Income group (Shs)	Mid point	No. of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution		F. Y i+i i	F i
						People	Income		
Under 100	75	90,735	14.6	6,805,125	2.2	14.6	2.2	0	0
100-149	125	79,107	12.8	9,888,375	3.1	27.4	5.3	77.4	
150-199	175	62,967	10.2	11,019,225	3.5	37.6	8.8	241.1	
200-299	250	160,939	25.9	40,234,750	12.7	63.5	21.5	808.4	
300-399	350	89,380	14.4	31,283,000	9.9	77.9	31.4	1,993.9	1,
400-599	500	44,222	7.1	22,111,000	7.0	85.0	38.4	2,991.4	2,
600-999	800	23,583	3.8	18,866,400	6.0	88.8	44.4	3,774.0	3,
,000-1,499	1,250	27,903	4.5	34,878,750	11.1	93.3	55.5	4,928.4	4,
,500-1,999	1,750	16,086	2.6	28,150,500	8.9	95.9	64.4	6,008.5	5,
,000-3,999	3,000	13,426	2.2	40,278,000	12.8	98.1	77.2	7,403.5	6,
,000 +	6,000	11,988	1.9	71,928,000	22.8	100.0	100.0	9,810.0	7
Total		620,336	100.0	315,443,125	100.0			38,036.6	32

38,036.6

- 32,074.8

5 961.8

Gini Index = 0.596

Appendix Table 2 (continued)

1973

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution		F Y i+1 i	F i
						People	Income		
Under 100	75	104,395	16.1	7,829,625	2.4	16.1	2.4	0	0
100-149	125	75,758	11.7	9,469,750	2.9	27.8	5.3	85.3	1
150-199	175	51,892	8.0	9,081,100	2.8	35.8	8.1	225.2	1
200-299	250	178,157	27.4	44,539,250	13.6	63.2	21.7	776.9	5
300-399	350	97,787	15.1	34,225,450	10.5	78.3	32.2	2,035.0	1,6
400-599	500	48,283	7.4	24,141,500	7.4	85.7	39.6	3,100.7	2,7
600-999	800	24,282	3.7	19,425,600	5.9	89.4	45.5	3,800.4	3,2
1,000-1,499	1,250	26,787	4.1	33,483,750	10.3	93.5	55.8	4,988.5	4,2
1,500-1,999	1,750	15,055	2.3	26,346,250	8.1	95.8	63.9	5,974.7	5,3
2,000-3,999	3,000	14,657	2.3	43,971,000	13.5	98.1	77.4	7,414.9	6,2
4,000 +	6,000	12,308	1.9	73,848,000	22.6	100.0	100.0	9,810.0	7,7
Total		649,361	100.0	326,361,275	100.0			38,310.6	32,3

38,310.6

- 32,375.6

5 935.0

Gini Index = 0.594

1974

Income group (Shs)	Mid point	No of people	Per cent of total	Aggregate Income (Shs)	Per cent of total	Cumulative Distribution		F Y i+1 i	F i
						People	Income		
Under 100	75	47,064	6.7	3,529,800	1.0	6.7	1.0	0	0
100-149	125	102,631	14.6	12,828,875	3.3	21.3	4.3	28.8	2
150-199	175	66,741	9.5	11,679,675	3.0	30.8	7.3	155.5	33
200-299	250	179,790	25.6	44,947,500	11.6	56.4	18.9	582.1	41
300-399	350	121,929	17.4	42,675,150	11.0	73.8	29.9	1,686.4	1,39
400-599	500	59,869	8.5	29,934,500	7.7	82.3	37.6	2,774.9	2,46
600-999	800	38,731	5.5	30,984,800	8.0	87.8	45.6	3,752.9	3,30
1,000-1,499	1,250	36,167	5.1	45,208,750	11.7	92.9	57.3	5,030.9	4,23
1,500-1,999	1,750	19,150	2.7	33,512,500	8.7	95.6	66.0	6,131.4	5,47
2,000-3,999	3,000	15,177	2.2	45,531,000	11.8	97.8	77.8	7,437.7	6,45
4,000 +	6,000	14,297	2.0	85,782,000	22.2	100.0	100.0	9,780.0	7,78
Total		701,551	100.0	386,614,550	100.0			37,360.6	31,67

37,360.6

= 31,671.2

5 689.4

Gini Index = 0.569

Source: S.Abstract, 1973 and 1975.

Appendix Table 3

Provincial Population (1962 - 73)

('000)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Nairobi	344	364	385	407	431	456	482	509	539	570	603	629	665
Coast	741	766	792	819	847	876	906	944	978	1,013	1,049	1,079	1,117
N. Eastern	268	264	262	259	255	252	249	246	249	252	255	258	261
Eastern	1,557	1,601	1,646	1,692	1,738	1,788	1,838	1,907	1,966	2,027	2,089	2,146	2,212
Central	1,335	1,378	1,422	1,468	1,515	1,563	1,613	1,676	1,729	1,784	1,841	1,889	1,949
R. Valley	1,740	1,799	1,860	1,923	1,988	2,055	2,125	2,210	2,282	2,357	2,434	2,499	2,581
Nyanza	1,634	1,694	1,757	1,822	1,889	1,959	2,031	2,122	2,202	2,289	2,378	2,452	2,547
Western	1,015	1,055	1,096	1,139	1,183	1,229	1,277	1,328	1,381	1,436	1,493	1,542	1,603
Total	8,634	8,921	9,220	9,529	9,847	10,178	10,521	10,943	11,328	11,728	12,142	12,494	12,935

Sources: Kenya population census, 1962, Advanced Report, Vol I-II, p4.
Kenya population Census, 1969, Vol. I, p1.
Kenya Statistical Digest, Vol III, No 4, Dec 1974.

Notes: Population figures have been calculated using a constant rate of growth from 1962-1969 and from 1969-1973.

Appendix Table 4

Provincial shares of National population (1962-1973)

(Percentages)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Nairobi	4.0	4.0	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.0	5.1
Coast	8.5	8.5	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
N. Eastern	3.1	3.1	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.1	2.1	2.0
Eastern	18.0	18.0	17.8	17.8	17.7	17.6	17.5	17.4	17.4	17.3	17.2	17.2	17.1
Central	15.5	15.4	15.4	15.4	15.4	15.4	15.3	15.3	15.3	15.2	15.2	15.2	15.1
R. Valley	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.1	20.0	20.0	20.0
Nyanza	18.9	19.0	19.1	19.1	19.1	19.2	19.3	19.4	19.5	19.6	19.6	19.6	19.7
Western	11.8	11.8	11.9	11.9	12.0	12.0	12.1	12.1	12.1	12.2	12.3	12.3	12.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Kenya population Census, 1962, Advanced Report, Vol I,-II, p4
Kenya population Census, 1969, Vol I, pI.
Kenya Stastistical Digest, Vol III, No 4, Dec 1974.

Appendix Table 5

Employment by Province in the Modern Sector. *

PROVINCE	1963 Number	1963 Per cent of total	1964 Number	1964 Per cent of total	1965 Number	1965 Per cent of total
NAIROBI	142,859	26.49	149,905	26.05	150,334	25.82
CENTRAL						
Kiambu	34,722	45.48	38,742	45.74	42,389	47.08
Murang'a	15,850	20.76	16,120	19.03	17,780	19.74
Nyeri	12,743	16.69	13,975	16.50	13,594	15.09
Kirinyaga	2,503	3.27	3,801	4.48	3,394	3.76
Nyandarua	10,519	13.77	12,039	14.21	12,566	13.95
Total	76,336	14.15	84,683	14.71	90,032	15.46
NYANZA						
Kisumu) Siaya)	29,975	69.79	29,710	70.65	28,997	68.12
S. Nyanza	4,414	10.27	4,112	9.77	5,447	12.79
Kisii	8,558	19.92	8,226	19.56	8,118	19.07
Total	42,947	7.96	42,048	7.30	42,562	7.31
WESTERN						
Kakamega	8,705	59.60	9,084	59.22	9,164	60.17
Bungoma	4,511	30.88	4,793	31.24	4,588	30.12
Busia	1,389	9.51	1,461	9.52	1,478	9.70
Total	14,605	2.70	15,338	2.66	15,230	2.61
COAST						
Mombasa	56,001	81.15	56,553	73.35	56,251	73.44
Kilifi	4,079	5.91	6,024	7.81	5,846	7.63
Kwale	3,216	4.66	5,367	6.96	5,480	7.15
Lamu	241	0.34	357	0.46	375	0.48
T. River	278	0.40	492	0.63	609	0.79
T.Taveta	5,173	7.49	8,297	10.76	8,027	10.48
Total	69,006	12.79	77,090	13.39	76,588	13.15

PROVINCE	1963 Number	1963 Per cent of total	1964 Number	1964 Per cent of total	1965 Number	1965 Per cent of total
R. VALLEY						
Laikipia	8,417	5.30	8,510	5.07	11,257	6.71
Narok	931	0.58	1,095	0.65	967	0.57
Kajiado	2,165	1.36	2,143	1.27	2,009	1.19
Turkana	917	0.57	1,301	0.77	1,076	0.64
Samburu	716	0.45	759	0.45	1,001	0.59
Nakuru	50,500	31.81	50,600	30.19	50,402	30.06
Baringo	2,149	1.35	2,165	1.29	2,429	1.44
Kericho	35,198	22.17	36,875	22.00	36,963	22.04
U. Gishu	22,638	14.26	25,840	15.42	25,508	15.21
Nandi	14,224	8.96	14,238	8.49	12,998	7.75
T. Nzoia	18,794	11.83	21,146	12.61	20,154	12.02
E. Marakwet	1,194	0.75	1,962	1.17	1,893	1.12
W. Pokot	907	0.57	933	0.55	999	0.59
Total	158,750	29.44	167,564	29.12	167,656	28.80
EASTERN						
Embu	3,650	10.98	3,616	9.86	4,355	11.47
Meru	10,667	32.08	11,647	31.76	11,630	30.64
Isiolo	962	2.89	825	2.25	1,247	3.28
Kitui	2,221	6.68	2,963	8.08	2,909	7.66
Machakos	15,139	45.547	16,957	46.259	16,809	44.29
Marsabit	603	1.81	655	1.78	1,002	2.64
TOTAL	33,242	6.16	36,663	6.37	37,952	6.52
N. EASTERN						
Garisa	591	39.90	1,026	48.12	639	33.07
Wajir	541	36.52	460	21.58	584	30.22
Mandera	349	23.56	646	30.30	709	36.69
Total	1,481	0.27	2,132	0.37	1,932	0.33
ALL PROVINCES	539,227	100	575,423	100	582,084	100

Employment (2) Appendix Table 5 (continued)

	1966		1967		1968	
	Number	Per cent of total	Number	Per cent of total	Number	Per cent of total
NAIROBI	152,327	26.02	163,692	27.40		
CENTRAL						
Kiambu	49,883	51.30	42,344	48.20		
Murang'a	18,041	18.55	15,909	18.11		
Nyeri	13,592	13.98	15,188	17.29		
Kirinyaga	3,151	3.24	3,948	4.49		
Nyandarua	12,566	12.92	10,445	11.89		
Total	97,223	16.60	87,834	14.70		
NYANZA						
Kisumu Siaya	27,606	66.63	28,983	66.69		
S. Nyanza	5,412	13.06	5,952	13.69		
Kisii	8,412	20.30	8,523	19.61		
Total	41,430	7.07	43,458	7.27		
WESTERN						
Kakamega	9,159	58.87	9,964	55.68		
Bungoma	4,593	29,52	5,785	32.33		
Busia	1,804	11.59	2,143	11.97		
Total	15,556	2,65	17,892	2,99		
COAST						
Mombasa	57,433	74.34	57,326	73.61		
Kilifi	5,947	7.69	6,250	8.03		
Kwale	4,725	6.11	4,496	5.78		
Lamu	500	0.64	659	0.84		
T. River	570	0.73	628	0.80		
T. Taveta	8,078	10.45	8,404	10.80		
Total	77,253	13.19	77,763	13.01		

	1966		1967		1974
	Number	Per cent of total	Number	Per cent of total	
R. VALLEY					
Laikipia	9,756	5.90	10,623	6.32	
Narok	1,017	0.61	1,292	0.76	
Kajiado	1,963	1.18	2,682	1.59	
Turkana	963	0.58	988	0.58	
Samburu	655	0.39	819	0.48	
Nakuru	51,320	31.04	52,974	31.54	
Baringo	2,491	1.50	3,186	1.89	
Kericho	37,343	22.58	37,522	22.34	
U. Gishu	24,343	14.72	22,674	13.50	
Nandi	12,840	7.76	14,703	8.75	
T. Nzoia	20,713	12.52	18,038	10.74	
E. Marakwet	1,162	0.70	1,611	0.95	
W. Pokot	745	0.45	814	0.48	
Total	165,311	28.23	167,926	28.11	
EASTERN					
Embu	3,256	9.47	4,104	11.22	
Meru	10,845	31.55	11,115	30.39	
Isiolo	1,397	4.06	1,311	3.58	
Kitui	1,894	5.51	2,978	8.14	
Machakos	16,213	47.17	16,095	44.00	
Marsabit	762	2.21	969	2.64	
Total	34,367	5.87	36,572	6.12	
N. EASTERN					
Garissa	756	38.88	931	41.71	
Wajir	666	34.25	733	32.84	
Mandera	522	26.85	568	25.44	
Total	1,944	0.33	2,232	0.37	
ALL PROVINCES	585,421	100	597,369	100	

Employment (3)

Appendix table 5 (continued)

PROVINCE	1968		1969		1970	
	Number	Per cent of total*	Number	Per cent of total*	Number	Per cent of total*
NAIROBI	163,691	26.99	163,615	26.08	164,002	25.44
CENTRAL						
Kiambu	43,050	47.70	44,573	47.51	45,821	46.40
Murang'a	17,274	19.14	17,868	19.04	18,832	19.07
Nyeri	15,656	17.35	15,982	17.03	16,879	17.09
Kirinyaga	3,559	3.94	3,742	3.98	4,394	4.45
Nyandarua	10,697	11.85	11,635	12.04	12,812	12.97
Total	90,236	14.88	93,800	14.95	98,738	15.32
NYANZA						
Kisumu	25,977	61.11	28,519	62.37	28,921	62.09
Siaya	681	1.60	967	2.11	1,061	2.27
S. Nyanza	6,756	15.89	6,972	15.24	7,142	15.33
Kisii	9,091	21.38	9,264	20.26	9,454	20.29
Total	42,505	7.00	45,722	7.28	46,578	7.22
WESTERN						
Kakamega	9,939	56.89	10,858	57.87	11,158	55.96
Bungoma	5,012	28.68	5,173	27.57	5,478	27.47
Busia	2,519	14.41	2,730	14.55	3,201	16.05
Total	17,470	2.86	18,761	2.99	19,937	3.09
COAST						
Mombasa	59,120	71.99	60,444	71.50	61,492	71.02
Kilifi	6,886	8.38	7,174	8.48	7,382	8.52
Kwale	6,046	7.36	6,519	7.71	6,718	7.75
Lamu	786	0.95	819	0.96	868	1.00
T. River	895	1.08	1,060	1.25	1,080	1.24
T. Taveta	8,386	10.21	8,510	10.06	9,034	10.43
Total	82,119	13.60	84,526	13.47	86,574	13.43

Employment (3)

Appendix table 5 (continued)

PROVINCE	1968 Number	1968 Per cent of total*	1969 Number	1969 Per cent of total*	1970 Number	1970 Per cent of total*
NAIROBI	163,691	26.99	163,615	26.08	164,002	25.44
CENTRAL						
Kiambu	43,050	47.70	44,573	47.51	45,821	46.40
Murang'a	17,274	19.14	17,868	19.04	18,832	19.07
Nyeri	15,656	17.35	15,982	17.03	16,879	17.09
Kirinyaga	3,559	3.94	3,742	3.98	4,394	4.45
Nyandarua	10,697	11.85	11,635	12.04	12,812	12.97
Total	90,236	14.88	93,800	14.95	98,738	15.32
NYANZA						
Kisumu	25,977	61.11	28,519	62.37	28,921	62.09
Siaya	681	1.60	967	2.11	1,061	2.27
S. Nyanza	6,756	15.89	6,972	15.24	7,142	15.33
Kisii	9,091	21.38	9,264	20.26	9,454	20.29
Total	42,505	7.00	45,722	7.28	46,578	7.22
WESTERN						
Kakamega	9,939	56.89	10,858	57.87	11,158	55.96
Bungoma	5,012	28.68	5,173	27.57	5,478	27.47
Busia	2,519	14.41	2,730	14.55	3,201	16.05
Total	17,470	2.86	18,761	2.99	19,937	3.09
COAST						
Mombasa	59,120	71.99	60,444	71.50	61,492	71.02
Kilifi	6,886	8.38	7,174	8.48	7,382	8.52
Kwale	6,046	7.36	6,519	7.71	6,718	7.75
Lamu	786	0.95	819	0.96	868	1.00
T. River	895	1.08	1,060	1.25	1,080	1.24
T. Taveta	8,386	10.21	8,510	10.06	9,034	10.43
Total	82,119	13.60	84,526	13.47	86,574	13.43

	1968		1969		1970	
	Number	Per cent of total	Number	Per cent of total	Number	Per cent of total
R. VALLEY						
Laikipia	11,670	6.79	11,842	6.61	12,084	6.55
Narok	1,402	0.81	1,426	0.79	1,472	0.79
Kajiado	2,667	1.55	2,718	1.51	2,801	1.51
Turkana	1,099	0.63	1,090	0.60	1,140	0.61
Samburu	2,078	1.20	2,421	1.35	2,521	1.36
Nakuru	51,149	29.77	53,210	29.73	53,293	28.91
Baringo	2,829	1.64	2,988	1.66	3,260	1.76
Kericho	38,220	22.25	38,361	21.43	39,249	21.29
U. Gishu	23,944	13.94	24,516	13.69	25,644	13.91
Nandi	14,587	8.49	14,807	8.27	15,823	8.58
T. Nzoia	18,478	10.75	21,633	12.08	22,623	12.27
E. Marakwet	1,676	0.97	1,755	0.98	1,927	1.04
W. Pokot	1,965	1.14	2,182	1.21	2,482	1.34
Total	171,764	28.32	178,949	28.53	184,532	28.59
EASTERN						
Embu	3,821	10.55	4,065	10.36	4,573	11.00
Meru	11,031	30.47	12,172	31.03	12,609	30.33
Isiolo	1,554	4.29	1,691	4.31	1,734	4.17
Kitui	3,258	9.00	3,392	8.64	3,789	9.11
Machakos	15,403	42.54	16,552	42.20	17,400	41.86
Marshabit	1,133	3.12	1,347	3.43	1,457	3.50
Total	36,200	5.96	39,219	6.25	41,562	6.44
N. EASTERN						
Garissa	974	40.16	1,012	38.59	1,125	39.08
Wajir	794	32.74	850	32.41	921	32.00
Mandera	657	27.09	760	28.95	832	28.90
Total	2,425	0.39	2,622	0.41	2,878	0.44
ALL PROVINCES	606,410	100	627,214	100	644,481	100

Appendix table 5 (continued)

PROVINCE	1968 Number	1968 Per cent of total*	1969 Number	1969 Per cent of total*	1970 Number	1970 Per cent of total*
NAIROBI	163,691	26.99	163,615	26.08	164,002	25.44
CENTRAL						
Kiambu	43,050	47.70	44,573	47.51	45,821	46.40
Murang'a	17,274	19.14	17,868	19.04	18,832	19.07
Nyeri	15,656	17.35	15,982	17.03	16,879	17.09
Kirinyaga	3,559	3.94	3,742	3.98	4,394	4.45
Nyandarua	10,697	11.85	11,635	12.04	12,812	12.97
Total	90,236	14.88	93,800	14.95	98,738	15.32
NYANZA						
Kisumu	25,977	61.11	28,519	62.37	28,921	62.09
Siaya	681	1.60	967	2.11	1,061	2.27
S. Nyanza	6,756	15.89	6,972	15.24	7,142	15.33
Kisii	9,091	21.38	9,264	20.26	9,454	20.29
Total	42,505	7.00	45,722	7.28	46,578	7.22
WESTERN						
Kakamega	9,939	56.89	10,858	57.87	11,158	55.96
Bungoma	5,012	28.68	5,173	27.57	5,478	27.47
Busia	2,519	14.41	2,730	14.55	3,201	16.05
Total	17,470	2.86	18,761	2.99	19,937	3.09
COAST						
Mombasa	59,120	71.99	60,444	71.50	61,492	71.02
Kilifi	6,886	8.38	7,174	8.48	7,382	8.52
Kwale	6,046	7.36	6,519	7.71	6,718	7.75
Lamu	786	0.95	819	0.96	868	1.00
T. River	895	1.08	1,060	1.25	1,080	1.24
T. Taveta	8,386	10.21	8,510	10.06	9,034	10.43
Total	82,119	13.60	84,526	13.47	86,574	13.43

	1968		1969		1970	
	Number	Per cent of total	Number	Per cent of total	Number	Per cent of total
R. VALLEY						
Laikipia	11,670	6.79	11,842	6.61	12,084	6.55
Narok	1,402	0.81	1,426	0.79	1,472	0.79
Kajiado	2,667	1.55	2,718	1.51	2,801	1.51
Turkana	1,099	0.63	1,090	0.60	1,140	0.61
Samburu	2,078	1.20	2,421	1.35	2,521	1.36
Nakuru	51,149	29.77	53,210	29.73	53,293	28.91
Baringo	2,829	1.64	2,988	1.66	3,260	1.76
Kericho	38,220	22.25	38,361	21.43	39,249	21.29
U. Gishu	23,944	13.94	24,516	13.69	25,644	13.91
Nandi	14,587	8.49	14,807	8.27	15,823	8.58
T. Nzoia	18,478	10.75	21,633	12.08	22,623	12.27
E. Marakwet	1,676	0.97	1,755	0.98	1,927	1.04
W. Pokot	1,965	1.14	2,182	1.21	2,482	1.34
Total	171,764	28.32	178,949	28.53	184,532	28.59
EASTERN						
Embu	3,821	10.55	4,065	10.36	4,573	11.00
Meru	11,031	30.47	12,172	31.03	12,609	30.33
Isiolo	1,554	4.29	1,691	4.31	1,734	4.17
Kitui	3,258	9.00	3,392	8.64	3,789	9.11
Machakos	15,403	42.54	16,552	42.20	17,400	41.86
Marshabit	1,133	3.12	1,347	3.43	1,457	3.50
Total	36,200	5.96	39,219	6.25	41,562	6.44
N. EASTERN						
Garissa	974	40.16	1,012	38.59	1,125	39.08
Wajir	794	32.74	850	32.41	921	32.00
Mandera	657	27.09	760	28.95	832	28.90
Total	2,425	0.39	2,622	0.41	2,878	0.44
ALL PROVINCES	606,410	100	627,214	100	644,481	100

Appendix table 5 (cont.)

	1971 Number	1971 Per cent of total*	1971 Number	1971 Per cent of total*	1973 Number	1973 Per cent of total*
NAIROBI	178,149	25.77	192,279	26.71	203,443	26.72
CENTRAL						
Kiambu	52,000	46.02	55,306	47.56	62,709	51.29
Murang'a	22,475	19.89	22,510	19.36	20,971	17.15
Nyeri	17,975	15.90	19,295	16.59	20,209	16.52
Kirinyaga	5,918	5.23	5,986	5.14	6,771	5.53
Nyandarua	14,623	12.94	13,172	11.32	11,603	9.49
Total	112,991	16.34	116,269	16.15	122,263	16.05
NYANZA						
Kisumu	29,787	60.96	30,001	58.24	30,382	58.51
Siaya	1,982	4.05	2,231	4.33	2,796	5.38
S. Nyanza	7,487	15.32	7,491	14.54	6,915	13.31
Kisii	9,601	19.65	11,788	22.88	11,830	22.78
Total	48,859	7.06	51,511	7.15	51,923	6.81
WESTERN						
Kakamega	11,658	55.70	12,687	57.29	14,344	59.04
Bungoma	5,989	28.61	6,060	27.36	6,763	27.60
Busia	3,282	15.68	3,395	15.33	3,388	13.83
Total	20,929	3.02	22,142	3.07	24,495	3.21
COAST						
Mombasa	63,903	71.07	64,301	71.50	64,900	72.62
Kilifi	7,894	8.78	7,753	8.62	7,939	8.88
Kwale	6,944	7.72	6,835	7.60	6,249	6.99
Lamu	898	0.99	1,154	1.28	1,156	1.29
T. River	1,097	1.22	965	1.07	1,321	1.47
T. Taveta	9,170	10.19	8,917	9.91	7,798	8.72
Total	89,906	13.00	89,925	12.49	89,363	11.73

	1971		1972		1973	
	Number	Per cent of total	Number	Per cent of total	Number	Per cent of total
R. VALLEY						
Laikipia	12,142	6.33	12,207	6.23	10,714	4.99
Narok	1,778	0.92	1,614	0.82	1,834	0.85
Kajiado	3,258	1.69	3,209	1.63	3,227	1.50
Turkana	1,068	0.55	1,077	0.54	1,107	0.51
Samburu	2,493	1.30	1,582	0.80	1,280	0.59
Nakuru	55,663	29.03	55,287	28.22	62,288	29.01
Baringo	3,254	1.69	3,440	1.75	3,231	1.50
Kericho	41,069	21.42	44,851	22.89	52,546	24.48
U. Gishu	26,881	14.02	27,104	13.83	31,824	14.82
Nandi	16,681	8.70	17,006	8.68	17,938	8.35
T. Nzoia	22,724	11.85	24,355	12.43	24,285	11.31
E. Marakwet	2,004	1.04	2,373	1.21	2,918	1.35
W. Pokot	2,679	1.39	1,780	0.90	1,454	0.67
Total	191,694	27.73	195,885	27.21	214,646	28.19
EASTERN						
Embu	5,730	12.53	5,943	12.16	6,232	12.02
Meru	12,916	28.26	14,486	29.65	15,910	30.71
Isiolo	1,980	4.33	1,630	3.33	1,784	3.44
Kitui	4,007	8.76	4,188	8.57	4,140	7.99
Machakos	19,578	42.84	20,913	42.81	21,585	41.66
Marsabit	1,489	3.25	1,689	3.45	2,156	4.16
Total	45,700	6.61	48,849	6.78	51,807	6.80
N. EASTERN						
Garissa	1,146	38.74	1,138	39.01	1,543	44.91
Wajir	964	32.58	995	34.11	985	28.67
Mandera	848	28.66	784	26.87	907	26.40
Total	2,958	0.42	2,917	0.40	3,435	0.45
ALL PROVINCES	691,186	100	719,777	100	761,375	100

Source: Republic of Kenya. Employment and Earnings in the modern sector. CBS. Ministry of Finance and Planning.

* Employment figures refers to regular and casual employees, and include apprentees, part-time workers and directors and partners not serving on a basic salary contract as from 1968. Self - employed persons and family workers who do not receive regular wage or salaries are excluded.

Appendix table 5 (continued)

1974

	Number	Per cent of total
NAIROBI	226,959	27.46
CENTRAL		
Kiambu	69,782	52.37
Murang'a	24,712	18.54
Nyeri	21,047	15.79
Kirinyaga	7,353	5.51
Nyandarua	10,341	7.76
Total	133,235	16.12
NYANZA		
Kisumu	29,458	49.09
Siaya	4,433	7.38
S. Nyanza	9,485	15.80
Kisii	16,620	27.70
Total	59,996	7.26
WESTERN		
Kakamega	22,901	65.88
Bungoma	8,481	24.40
Busia	3,376	9.71
Total	34,758	4.20
COAST		
Mombasa	69,148	68.78
Kilifi	10,802	10.74
Kwale	7,913	7.87
Lamu	1,080	1.07
T. River	1,565	1.55
T. Taveta	10,014	9.96
Total	100,522	12.16

1974

1974

	Number	Per cent of total
R. VALLEY		
Laikipia	11,405	5.47
Narok	2,101	1.00
Kajiado	4,229	2.03
Turkana	1,149	0.55
Samburu	1,678	0.80
Nakuru	62,712	30.12
Baringo	4,773	2.29
Kericho	48,540	23.31
U. Gishu	24,788	11.90
Nandi	20,679	9.93
T. Nzoia	21,252	10.20
E. Marakwet	3,061	1.47
W. Pokot	1,811	0.86
Total	208,178	25.19
EASTERN		
Embu	6,925	11.77
Meru	18,204	30.96
Isiolo	1,749	2.97
Kitui	5,350	9.10
Machakos	24,935	42.41
Marsabit	1,628	2.76
Total	58,791	7.11
N. EASTERN		
Garissa	1,888	49.23
Wajir	1,047	27.30
Mandera	900	23.46
Total	3,835	0.46
ALL PROVINCES	826,263	100

Source: Republic of Kenya. Employment and Earnings in the Modern sector. CBS. Ministry of Finance and Planning.

* Employment figures refers to regular and casual employees, and include apprentices, part-time workers and directors and partners not serving on a self-employed persons and family workers who do not receive regular wages or salary are excluded.

PROVINCE	1968	1969	K£ 1970
NAIROBI	446.28	443.17	448.22
CENTRAL			
Kiambu	141.17	152.57	165.00
Murang'a	112.97	120.00	176.14
Nyeri	181.98	190.10	211.99
Kirinyaga	153.04	155.05	164.99
Nyandarua	115.96	119.00	131.00
Total	140.33	148.69	170.74
NYANZA			
Kisumu	184.75	184.99	238.00
Siaya	94.41	108.89	139.96
S. Nyanza	170.35	175.20	226.99
Kisii	105.05	126.28	184.80
Total	163.97	169.99	223.28
WESTERN			
Kakamega	204.72	227.11	234.71
Bungoma	169.79	183.89	205.00
Busia	172.92	184.50	203.99
Total	190.12	208.99	220.44
COAST			
Mombasa	346.94	364.77	406.76
Kilifi	130.55	144.99	159.99
Kwale	164.14	179.99	205.99
Lamu	167.30	175.70	189.97
T. River	171.06	180.94	196.01
T. Taveta	138.33	142.99	155.00
Total	290.39	305.39	339.06

	1968	1969	1970
R. VALLEY			
Laikipia	112.45	141.47	151.26
Narok	187.37	200.21	237.97
Kajiado	214.43	219.97	222.99
Turkana	167.33	159.26	160.96
Samburu	99.90	99.50	105.98
Nakuru	133.45	138.07	160.93
Baringo	124.42	120.28	126.99
Kericho	100.13	112.39	124.97
U. Gishu	131.54	145.69	152.99
Nandi	87.35	105.75	113.00
T. Nzoia	90.79	99.51	122.98
E. Marakwet	142.48	152.02	156.97
W. Pokot	76.13	80.98	85.01
Total	116.63	126.99	141.91
EASTERN			
Embu	182.75	196.67	192.67
Meru	158.60	159.99	162.38
Isiolo	191.11	174.68	208.99
Kitui	144.96	131.19	164.00
Machakos	150.63	152.23	165.00
Marsabit	211.91	226.94	240.97
Total	159.59	160.96	171.65
N. EASTERN			
Garissa	240.45	250.09	265.68
Wajir	214.23	213.05	216.82
Mandera	222.22	204.47	204.20
Total	226.92	224.86	232.27
ALL PROVINCES	241.11	244.88	261.41

Appendix table 6 (continued)

	1971	1972	1973
NAIROBI	494.86	504.79	516.84
CENTRAL			
Kiambu	176.81	171.16	187.25
Murang'a	202.87	147.51	173.43
Nyeri	204.16	228.43	234.30
Kirinyaga	207.26	240.29	242.53
Nyandarua	138.28	178.89	162.18
Total	182.95	180.52	193.34
NYANZA			
Kisumu	223.78	223.34	223.90
Siaya	150.50	285.16	347.92
S. Nyanza	229.49	221.29	285.66
Kisii	203.33	229.64	255.71
Total	217.65	227.16	246.05
WESTERN			
Kakamega	256.32	264.77	301.47
Bungoma	198.17	278.06	326.43
Busia	200.03	182.94	238.75
Total	230.85	255.86	299.69
COAST			
Mombasa	368.46	337.82	398.43
Kilifi	167.39	222.04	248.87
Kwale	210.36	179.38	207.20
Lamu	200.44	223.22	249.82
T. River	215.95	280.31	253.52
T. Taveta	171.63	152.77	213.58
Total	314.98	295.36	351.58

	1971	1972	1973
R. VALLEY			
Laikipia	175.21	148.42	184.19
Turok	248.53	278.81	257.25
Kajiado	275.59	319.04	422.31
Turkana	182.67	223.39	253.56
Samburu	123.34	175.09	227.5
Nakuru	144.86	188.46	203.70
Baringo	126.73	181.13	222.7
Kericho	125.60	135.78	122.14
U. Gishu	155.61	155.71	145.65
Nandi	126.24	156.52	146.90
T. Nzoia	132.61	123.21	122.54
E. Marakwet	154.89	184.53	231.90
W. Pokot	94.40	163.48	235.07
Total	143.30	161.05	165.16
EASTERN			
Embu	169.96	426.06	396.27
Meru	151.26	229.95	253.62
Isiolo	181.11	211.77	217.88
Kitui	142.65	256.04	313.47
Machakos	158.31	229.39	267.88
Marsabit	242.17	267.73	225.32
Total	160.12	255.91	279.09
N. EASTERN			
Garissa	264.74	354.48	318.79
Wajir	247.71	239.39	240.10
Mandera	204.48	235.20	227.89
Total	241.92	283.16	272.22
ALL PROVINCES	272.17	287.38	303.62

Source: Republic of Kenya. Employment and Earnings in the modern sector. CBS. Ministry of Finance and Planning.

* Earnings cover all cash payments, including basic salary, cost of living allowances, profit bonus, together with the value of rations and free board, and an estimate of the employers' contribution towards housing.

Appendix Table 7

PROVINCIAL PRIMARY SCHOOL ENROLMENT (1964 - 74)

	PROVINCE	ENROLMENT	PER CENT OF TOTAL
1964	Central	250,002	24.63
	Coast	55,065	5.42
	Eastern	166,917	16.44
	Nairobi	39,775	3.91
	N. Eastern	953	0.09
	Nyanza	193,676	19.08
	R. Valley	144,151	14.20
	Western	164,180	16.17
	Total	1,014,719	100.00
1965	Central	238,001	23.54
	Coast	57,523	5.69
	Eastern	199,107	19.69
	Nairobi	45,096	04.46
	N. Eastern	912	00.09
	Nyanza	162,229	16.04
	R. Valley	161,272	15.95
	Western	146,679	14.50
	Total	1,010,889	100.00
1966	Central	251,305	24.08
	Coast	59,631	5.71
	Eastern	204,462	19.59
	Nairobi	49,728	4.76
	N. Eastern	2,090	0.20
	Nyanza	191,337	18.33
	R. Valley	144,902	13.88
	Western	139,961	13.41
	Total	1,043,416	100.00
1967	Central	273,558	24.14
	Coast	65,719	5.79
	Eastern	226,687	20.00
	Nairobi	52,977	4.67
	N. Eastern	1,822	0.16
	Nyanza	196,821	17.36

Appendix table 7 (continued)

	PROVINCE	ENROLMENT	PER CENT OF TOTAL
	R. Valley	165,325	14.58
	Western	150,270	13.26
	Total	1,133,179	100.00
1968	Central	296,863	24.54
	Coast	71,642	5.92
	Eastern	242,059	20.01
	Nairobi	55,060	4.55
	N. Eastern	2,389	0.19
	Nyanza	221,138	18.28
	R. Valley	174,597	14.43
	Western	145,932	12.06
	Total	1,209,680	100.00
1969	Central	311,970	24.32
	Coast	76,805	5.98
	Eastern	269,652	21.02
	Nairobi	60,944	4.75
	N. Eastern	3,301	0.25
	Nyanza	206,462	16.10
	R. Valley	183,233	14.28
	Western	169,930	13.25
	Total	1,282,297	100.00
1970	Central	349,378	24.47
	Coast	83,983	5.88
	Eastern	289,867	20.30
	Nairobi	61,238	4.28
	N. Eastern	3,432	0.24
	Nyanza	234,012	16.39
	R. Valley	202,992	14.21
	Western	201,787	14.13
	Total	1,427,589	100.00
1971	Central	371,913	24.37
	Coast	87,445	5.73
	Eastern	315,454	20.67
	Nairobi	67,523	4.42
	N. Eastern	4,668	0.30

Appendix table 7 (continued)

	PROVINCE	ENROLMENT	PER CENT OF TOTAL
	Nyanza	248,990	16.32
	R. Valley	228,797	14.99
	Western	200,708	13.15
	Total	1,525,498	100.00
1972	Central	407,762	24.33
	Coast	96,102	5.73
	Eastern	339,582	20.26
	Nairobi	71,786	4.28
	N. Eastern	5,048	0.30
	Nyanza	269,764	16.09
	R. Valley	250,975	14.97
	Western	234,900	14.01
	Total	1,675,912	100.00
1973	Central	443,509	24.42
	Coast	103,107	5.67
	Eastern	370,555	20.40
	Nairobi	76,375	4.20
	N. Eastern	6,377	0.35
	Nyanza	291,128	16.03
	R. Valley	279,119	15.36
	Western	245,847	13.53
	Total	1,816,017	100.00
1974	Central	540,766	19.77
	Coast	151,964	5.92
	Eastern	521,761	19.08
	Nairobi	81,403	2.97
	N. Eastern	8,721	0.31
	Nyanza	573,026	20.95
	R. Valley	456,743	16.70
	Western	400,014	14.62
	Total	2,734,398	100.00

Source: Republic of Kenya: Ministry of Education Annual Reports. 1965 - 1974

Appendix table 8

PROVINCIAL SECONDARY SCHOOL ENROLMENT (1964 - 1974)

	PROVINCE	ENROLMENT	PER CENT OF TOTAL
1964	NAIROBI	N.A.	—
	Central	6,060	26.07
	Eastern	2,688	11.56
	Nyanza	3,487	15.00
	Western	2,592	11.15
	R. Valley	3,149	13.54
	Coast	5,268	22.66
	N. Eastern	0	0
	Total	23,244	100.00
1965	NAIROBI		
	Central		
	Eastern		
	Nyanza		
	Western		
	R. Valley		
	Coast		
	N. Eastern		
	Total		
1966	NAIROBI	15,230	24.10
	Central	14,907	23.58
	Eastern	5,908	9.34
	Nyanza	6,551	10.36
	Western	7,374	11.66
	R. Valley	6,414	10.14
	Coast	6,753	10.68
	N. Eastern	56	0.08
	Total	63,194	100.00
1967	NAIROBI	24,229	27.29
	Central	18,781	21.15
	Eastern	8,801	9.91
	Nyanza	10,284	11.58
	Western	8,971	10.10
	R. Valley	9,973	11.23

	PROVINCE	ENROLMENT	PER CENT OF TOTAL
	Coast	7,658	8.62
	N. Eastern	82	0.09
	Total	88,779	100.00
1968	NAIROBI	22,671	22.36
	Central	22,825	22.51
	Eastern	11,147	10.99
	Nyanza	12,932	12.75
	Western	10,629	10.48
	R. Valley	12,180	12.01
	Coast	8,865	8.74
	N. Eastern	112	0.11
	Total	101,361	100.00
1969	NAIROBI	22,919	19.88
	Central	26,911	23.35
	Eastern	13,782	11.95
	Nyanza	15,548	13.49
	Western	11,725	10.17
	R. Valley	13,710	11.89
	Coast	10,508	9.11
	N. Eastern	143	0.12
	Total	115,246	100.00
1970	NAIROBI	23,695	18.67
	Central	28,953	22.82
	Eastern	17,343	13.67
	Nyanza	16,656	13.12
	Western	12,827	10.11
	R. Valley	15,412	12.14
	Coast	11,815	9.31
	N. Eastern	154	0.12
	Total	126,855	100.00

APPENDIX TABLE 8 (continued)

	PROVINCE	ENROLMENT	PER CENT OF TOTAL
1971	NAIROBI	24,341	17.29
	Central	32,052	22.77
	Eastern	19,390	13.77
	Nyanza	18,464	13.12
	Western	14,764	10.49
	R. Valley	17,962	12.76
	Coast	13,531	9.61
	N. Eastern	218	0.15
	Total	140,722	100.00
1972	NAIROBI	25,354	15.65
	Central	37,116	22.92
	Eastern	23,469	14.49
	Nyanza	22,273	13.75
	Western	18,585	11.47
	R. Valley	20,413	12.60
	Coast	14,428	8.91
	N. Eastern	272	0.16
	Total	161,910	100.00
1973	NAIROBI	25,613	14.65
	Central	41,680	23.84
	Eastern	24,726	14.14
	Nyanza	23,006	13.16
	Western	21,734	12.43
	R. Valley	22,271	12.74
	Coast	15,380	8.80
	N. Eastern	357	0.20
	Total	174,767	100.00

Source: Republic of Kenya. Ministry of Education Annual Reports 1965 - 1974

Appendix table 9

HOSPITAL BEDS AND COTS BY PROVINCE

	PROVINCE	NUMBERS	PER CENT OF TOTAL
1970	Central	2,188	14.29
	Coast	1,846	12.06
	Eastern	2,286	14.93
	N. Eastern	188	1.22
	Nyanza	1,672	10.92
	R. Valley	2,696	17.61
	Western	1,286	8.40
	Nairobi	3,346	21.86
	Total	15,305	100.00
1971	Central	2,732	16.34
	Coast	1,809	10.82
	Eastern	2,284	13.66
	N. Eastern	108	0.64
	Nyanza	1,717	10.27
	R. Valley	3,139	18.78
	Western	1,251	7.48
	Nairobi	3,661	21.90
	Total	16,711	100.00
1972	Central	2,725	15.09
	Coast	1,659	9.18
	Eastern	2,755	15.25
	N. Eastern	168	0.93
	Nyanza	1,767	9.78
	R. Valley	2,882	15.96
	Western	1,827	10.11
	Nairobi	4,267	23.63
	Total	18,055	100.00

	PROVINCE	NUMBERS	PER CENT OF TOTAL
1973	Central	2,910	16.00
	Coast	1,884	10.35
	Eastern	2,407	13.23
	N. Eastern	235	1.29
	Nyanza	1,745	9.59
	R. Valley	3,072	16.89
	Western	1,543	8.48
	NAIROBI	4,390	24.13
	Total	18,186	100.00
1974	Central	3,169	18.71
	Coast	1,524	8.99
	Eastern	2,711	16.00
	N. Eastern	241	1.42
	Nyanza	1,657	9.78
	R. Valley	2,958	17.46
	Western	1,680	9.92
	NAIROBI	2,994	17.68
	Total	16,934	100.00

Source: Republic of Kenya. Economic surveys, 1973 and 1975

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