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Industrial Structure, The Nature of Informal Enterprises and Inequality in Kenya: A Dominance Analysis

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# INDUSTRIAL STRUCTURE, THE NATURE OF INFORMAL ENTERPRISES AND INEQUALITY IN KENYA: A DOMINANCE ANALYSIS

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#### INTRODUCTION

#### The Informal Sector in Kenya

The significance of the informal sector in Kenya has continued to grow since the sector was first brought to the limelight in 1972, in a report by the International Labour Organization (ILO) on "Employment, Income and Equity in Kenya". The ILO report underscored the informal sector's critical role in promoting growth in incomes and employment. The evolution and historical circumstances responsible for the emergence of the informal sector in Kenya can be traced back to the early 1960s when the newly independent government introduced trade licenses, work permits and state-owned monopoly organizations, as well as permission to allow civil servants to operate businesses all as part of a strategy for the indigenization of business ownership in the country.

The economic space and opportunities created by this set of legislation and the subsequent slowdown in economic activity, following the first oil crisis, led to a rapid increase in the number of micro and small enterprises. This trend continued into the 1980s and the early 1990s. In the latter period, the informal sector witnessed rapid growth coupled with renewed interest by both external development agencies and governments. This contrasted sharply with the neglect that characterized the earlier years.

The informal sector growth received a critical jolt following a significant pronouncement that pointed to political recognition of the sector in 1985 by the then President Moi. A number of issues arose out of the pronouncements, which were later to constitute the key areas of policy focus for the MSEs in Kenya. This crystallized into a policy scenario focused on the informal sector, with the publication of Sessional Paper No.1 of 1986, on *Economic Management for Renewed Growth*. This Sessional Paper, which had been prepared against a background of declining economic growth and severe fiscal constraints, introduced radical changes and outlined a development strategy that put great emphasis on the development of the informal sector. It proposed the establishment of a special task force to review by-laws and other regulations governing informal activities with a view to creating a healthy legal and regulatory climate for informal sector. Consequently, the "Center Project" was born within the Ministry of Planning and National Development to address the key issues of the informal sector.

As a show of its commitment to the development of the sector, the Government published "A Strategy for Small Enterprise Development in Kenya: Towards the Year 2000". This document focused on highlighting the constraints facing the sector. The findings subsequently formed the basis for designing policies on the sector. By 1992, the policy focus had been refined and published as Sessional Paper No 2 of 1992, on Small Enterprise and *Jua Kali* Development in Kenya. This paper has served as the basis of all other programs for the development of the sector. Arising from this paper, an agenda for action was

defined in the areas considered critical for the promotion of the informal sector. To address the issues arising from the 'agenda for action' the Micro and Small Enterprise unit in the Ministry of Planning and National Development was upgraded to a division with two distinct sections; a policy section, and a deregulation section.

Following these developments, starting 1994, a number of donor agencies came in to support programs to promote the growth and development of the informal sector. These included the United Nations Development Program (UNDP), the British Department for International Development (DFID), the United States Agency for International Development (USAID), German Technical Development Agency (GTZ) and the European Union.

Despite the significant efforts made by the Government of Kenya and its development partners, to support and promote the development of the informal sector, a number of constraints, both policy and otherwise, continue to inhibit the sector's realization of its full potential. A critical constraint to policy making is lack of information on the nature and structure of the informal sector itself. This study is an attempt at shedding light on this with a view to informing effective policy formulation for the sector.

## Structure and Extent of the Informal Sector

The informal sector in Kenya is defined to cover all semi-organized and unregulated activities that are small scale in terms of employment. The activities are largely undertaken by self employed persons or employers of a few workers in the open markets, in market stalls, in both developed and undeveloped premises, in residential houses or on street pavements.

The main legal feature of the informal sector enterprises in Kenya is that they are not registered or legally bound to register with the Registrar of Companies. Nevertheless, these enterprises may or may not have operating or occupational licenses (mostly from local authorities) for carrying out businesses. The Agricultural sector in Kenya is however excluded in the coverage of informal sector activities.

Traditionally, the informal sector activities consisted of urban artisans. Today, the sector has expanded to encompass fishing, the manufacturing, building and construction, distributive trades, transport and communications, hotels and restaurants and community and personal services industries. The main activities include tailoring, carpentry, blacksmith, retailing shops, groceries, kiosks, meat and maize roasting, sale of clothing and shoes, open-air restaurants, general repair and maintenance of fixed assets and other durables, repair and assembling of motor vehicles, street vending and hawking, newspaper vending, shoe shining, hair dressing, among others.

Republic of Kenya (2003), indicate that the sectoral distribution of informal sector enterprises show a wide variation from 64.5% of total enterprises in wholesale and retail trades to 0.3% in private households. Manufacturing was second at 24% followed by other community services at 4.1%. Other sectors which had fewer enterprises were health and social work (0.7%), mining and quarrying (0.8%), and construction (0.9%).

Analysis of the industrial distribution of informal sector enterprises by residence (Republic of Kenya 2003) shows that in the rural areas, the predominant industry was wholesale and retail trades (65.8%) followed by manufacturing (26.4%). In the urban areas, other community services, private households, transport, health and construction were sectors with relatively more enterprises compared to the rural areas. In the urban areas, other community services, private households, transport, health and construction were sectors with relatively more enterprises compared to the rural areas. Overall, about 71% of the industries were in the rural areas and the dominant industries were trade (64.4%) and manufacturing (24%).

The informal sector is now widely accepted as an important means of providing income opportunities for the majority of Kenyans. The structure and extent of informal sector activities therefore have serious implications for the distribution of income generating opportunities, and by extension, the distribution of income in the country.

#### Informal Sector and Income Distribution

The distribution of informal sector activities in Kenya differ by area of residence (whether rural or urban), gender, province, type of worksite, type of structure used, duration over which the enterprise has been in operation, the nature of ownership and the registration status, among many others.

Table 1 shows the sectoral distribution of informal enterprises by residence. The distribution shows a wide variation. 71% of all the informal sector enterprises are in the rural areas, with 67.4% of these enterprises being in the wholesale and retail trades sector, followed by manufacturing sector at 26%. The other sectors lag way behind, the closest being fishing at 2.1%. The most predominant sector in the urban areas is wholesale and retail trades with 63.4% of the enterprises, followed by manufacturing at 18% and community, social and personal services at 12%. For both the rural and urban areas combined, trades sector has the largest number of enterprises at 66.3%, followed by manufacturing at 24% and community, social and personal services at 5%.

Sector	Rural	Urban	Total
Fishing	40, 125	4, 483	44, 608
Mining and Quarrying	17, 851	4,515	22, 096
Manufacturing	502, 371	141, 519	643, 890
Construction	9, 659	14, 919	24, 578
Trades	1, 281, 150	499, 240	1, 780, 390
Transport	11, 858	21, 652	33, 510
Community, Social and Personal Services	34, 047	94, 381	128, 388
Private Households	1, 037	7, 284	8, 321
Not Stated	1,764	-	1, 764
Total	1, 899, 552	787, 993	2, 687, 545

Table 1: Distribution of Informal Sector Enterprises by Residence (Number)

Source: Republic of Kenya (2003)

Household incomes from each of these sectors also show wide variations. Republic of Kenya (2003) details the distribution of household income by source and sector. Wholesale and retail trade sectors contribute the most to total household incomes, in both the urban and rural areas with 61.1% of the total income. Of this share, income from trades in the rural areas contributes 42.6% against 18.5% from the urban areas. For both the urban and rural areas, own business contributes the highest share of the total income, at 31.5%. Own business category is however more dominant in the rural areas, contributing 19.5% of the total income from this sector, against 12% in the urban areas. Paid employment contributes the least to this sector, at 10.1%, yet even for this category, rural incomes, at 6.4% still dominate the urban incomes, at 3.7%.

Manufacturing sector ranks second to the trades sector. Overall, it contributes 20.9% of the total household incomes, with 16.5% being generated from the rural areas and 4.3% from the urban areas. For this sector, own business now drops behind other sources but for all the categories in this sector, rural incomes still dominate urban incomes. Community, social and personal sector come in third with an overall share of 9.4%. Like in the other sectors, own business dominates the other categories, but the urban incomes now dominate the rural incomes. The same is repeated for the transport sector. Mining and quarrying contribute the least share to total household incomes, at 1.2%

Overall, for all sectors combined, own business dominates all the other categories, with 48.3% of the total household income, followed by other sources at 32% and paid employment at 19.7%. For all the categories, rural incomes dominate urban household incomes. It is also evident from the preceding analysis that for all the sectors, rural incomes dominate urban incomes, except for incomes earned from the Transport sector and the Community, Social and Personal Services sector.

#### **EMPIRICAL STRATEGY**

The observed differences arising from sectoral or category dominance in one region or from the physical location of informal sector enterprise could well explain the effect of the structure of the informal sector activities on the distribution of household income in the country. The aim of the present study is to examine empirically, any such effects of the informal sector structure on household income distribution using Lorenz dominance analysis. To confirm and complement the dominance tests, we use the same raw unweighted data from the Integrated Labour Force Survey report of 1998/99 (Republic of Kenya, 2003), to generate gini coefficients for household incomes in the informal sector by source of earnings in various sub-sectors and by sex of the worker. In addition, we also generate gini coefficients in the informal sector activity. Due to incomplete data, we are not able to do estimations for all the sub-sectors.

#### **Constructing the Lorenz Curves**

A commonly used tool for the empirical analysis of economic inequality is the Lorenz curve. It tells the proportion of total income that is in the hands of a given percentage of population by relating the cumulative proportion of income to the cumulative proportion of individuals (Fields, 2000). It is worth noting that income distribution of a finite population of *n* individuals is an ordered list of incomes (from the lowest to the highest) where each income  $I_i$  is attached to a given individual or household *i*. The analytical representation is  $I = (I_1, I_2, ..., I_n)$ , where *I* indicates a vector of individual incomes. If household incomes are considered, then to each household income there should also be attached a number *w* reflecting household size, in order to make meaningful comparisons among income levels:  $I = ((w_1, I_1), (w_2, I_2), ..., (w_n, I_n))$ . The case where incomes are owned by individuals is indeed a special case where  $w_i = 1$  for each observation.

The Lorenz Curve is obtained as follows: The x-axis records the cumulative proportion of population ranked by income level. Its range is therefore (0,1). The y-axis records the cumulative proportion of income for a given proportion of population, i.e. the income share calculated by taking the cumulated income of a given share of the population, divided by the total income Y, as follows:

$$LC\left(\frac{k}{p}\right) = \frac{\sum_{i=1}^{k} li}{L}$$

where

*k*=1....*n* is the position of each individual in the income distribution; *i*=1....*k* is the position of each individual in the income distribution;

*P* is the total number of individuals in the distribution;

 $I_i$  is the income of the *i* individual in the distribution

 $\sum_{i=1}^{k} li \text{ is the cumulated income up to the } k^{th} \text{ individual.}$ It is apparent that  $\sum_{i=1}^{k} li \text{ ranges between 0, for } k=0, \text{ and } Y, \text{ for } k=n, \text{ therefore}$ 

$$LC\left(\frac{k}{p}\right) = \frac{\sum_{i=1}^{n} li}{L}$$
 ranges between 0 and 1.

The Lorenz curve associated with an income distribution is said to (weakly) dominate another, if for any given cumulative proportion of population p, the Lorenz curve of a given income distribution is above the Lorenz curve(s) of the other distribution(s). Given the Lorenz curve and its properties, the dominating Lorenz curve implies an income distribution with less inequality.

Atkinson (1970) has shown that Lorenz dominance translates into simple facts concerning the degree of egalitarianism associated with the respective income distributions, since the income distribution corresponding to the dominant Lorenz curve is more egalitarian. Moreover, it has been shown by Atkinson (1970) that Lorenz dominance translates into (partial) ranking of income distributions based on the set of scale-free inequality indices that respect the principle of transfers.

It is worth noting that Lorenz dominance is based on a visual inspection of a particular way of representing income distributions. In this sense, it is not really a canonical index, as Lorenz dominance by itself cannot answer the question: "How much less" unequal is the income distribution? However, there is no guarantee that given two income distributions one would Lorenz dominate. It may be the case that Lorenz curves intersect. In this case, by considering only the Lorenz curves, nothing can be said about which income distribution has less inequality.

By ranking distributions on the basis of their Lorenz dominance, a decision-maker can rank income distributions on inequality grounds by exploiting some properties of the Lorenz Curves. Levels of inequality for any given income distribution can be calculated by specifying one or the other, of the various functional forms. In this way, given a set of income distributions, we can reduce any income distribution in this set to a single number, thereby generating a complete ranking of the set. However, in order to obtain this complete ranking, we have to specify the mathematical relationship between individual incomes and income distribution. Therefore, a natural question to ask is: how does one choose among the various functional forms? In addition, there is no guarantee that the same ranking also holds for the other alternatives. Our position is that, it is not always necessary to specify the functional form in order to identify the best distribution in terms of equality as it is sometimes sufficient to identify the Lorenz dominating distribution. In this paper, Lorenz Curves is used to rank income

distributions by level of egalitarianism. It is complemented by quantiles method and estimates of gini coefficient.

#### **Calculation of Gini Index and Income Quantiles**

In order to estimate the gini coefficients, we construct the Lorenz curve. To do this, we first order all household income from the lowest to the highest. Each income is then plotted according to their cumulative percentage share of population in income as captured in Table A1 in the appendix.

The Lorenz curve (Figure A1 in the appendix), is then plotted as the cumulative income share L against the cumulative population share p. The Gini coefficient is defined graphically as a ratio of two surfaces involving the summation of all vertical deviations between the Lorenz curve and the perfect equality line (A) divided by the difference between the perfect equality and perfect inequality lines (A+B).

The Gini index is then calculated from the Lorenz curve as the ratio of for example G = Area A/Area A + Area B in the above illustration. Area A + Area B is the area of the triangle given by 100\*100/2 = 5000, i.e., half base times height. This is shown in Table A2 in the appendix.

Household incomes for all households are used to compute the income deciles. The distribution obtained is then used to compute cumulative percentage shares of incomes and the Gini index as summarized in Table A3 in the appendix.

#### **EMPIRICAL RESULTS**

On the basis of the strategy outlined earlier, we estimated gini coefficients in the informal sector by source of earning (sector) and location, and also by sex and source of earning. The results are reported in Tables 2a and 2b.

Sector	Rural	Urban	Total
Paid Employment	0.454	0.449	0.452
Own Business	0.584	0.600	0.592
Other Sources	0.571	0.623	0.597

Table 2a:	Gini Coe	fficient in	Informal	Sector b	v Source o	of Earnings	and Region
					,		

Source: Own computations (See appendix for computational details)

From Table 2a, it is evident that overall, urban incomes arising from informal sector activities are more unequal than rural incomes. Income from paid employment is more evenly distributed between the rural and urban households, but incomes arising from own businesses are more unequal in the urban areas. Even more unequalizing for urban households, is income from other sources. Between the various sub-sectors, the order of magnitude of inequality is the same in both the rural and urban households; paid employment is the most equalizing, followed by own business. Other sources are the most unequalizing.

Table 2b, details the gini coefficient for household income from various sub-sectors in the informal sector by sex of employee. Among both sexes, distribution varies across sub-sectors and between the sectors distribution varies by sex. Across the sub-sectors, inequality is highest in the trades sub-sector for both sexes. For female employees, it is followed closely by paid employment and working employer. Inequality is lowest in the community, social and personal services sub-sector in this category. For male workers, it's closely followed by working employer and community, social and personal services sub-sector. In this category, the lowest inequality is registered by the paid employment sub-sector. Between the sexes, inequality arising from paid employment and manufacturing sub-sectors is higher for females. For all the other sub-sectors, inequality is higher for males.

Category	Female	Male
Paid Employment	0.547	0.437
Own Account Worker	0.526	0.560
Working Employer	0.528	0.582
Manufacturing	0.526	0.520
Trades	0.554	0.590
Community, Social and Personal Services	0.498	0.561

Table 2b: Gini Coefficient by Sex and Source of Earnings in Subsectors of Informal Sector

Source: Own computations

The structure of the informal sector as identified above, therefore seem to feed into gender inequalities by empowering males and females differently. In order to discern the gender inequality implications of the said structure, and to complement the gini coefficient analysis, we use household incomes from the same Integrated Labour force Survey data set to compute income deciles. The distribution so obtained is then used to compute cumulative percentage shares of incomes. Table 3 shows the percentage and cumulative shares for female and males in paid employment.

The table shows that for females in paid employment, the lowest income range is 350-1500, while the highest is 22600-140800. It is evident that the top 10% of households earn 44.2% of the total income, while only 1% of the total income is earned by the bottom 10%. For male paid employees, the lowest range is 292-2000 and the highest, 14000-200000. The bottom 10% earns 2.1% of the income, while the top 10% earns 36.4% of the income. The decile structure suggests that there is more inequality among females than males, in paid employment. This confirms the gini estimates generated earlier.

	Female			Male		
Decile	Income Levels (Ksh)	% Shares	Cumulative % Shares	Income Levels (Ksh)	% Shares	Cumulative % Shares
1	350-1, 500	1.0	1.0	292-2, 000	2.1	2.1
2	1, 500-2, 407	1.8	2.8	2, 100-2, 800	3.5	5.6
3	2, 500- 3, 500	2.8	5.7	2, 800-3, 400	4.2	9.8
4	3, 500-4, 250	3.8	9.4	3, 400-4, 000	5.2	14.9
5	4, 300-5, 400	4.6	14.0	4, 000-4, 800	6.1	21.0
6	5, 400-7, 300	6.1	20.2	4, 800-6, 000	7.2	28.2
7	7, 300-10, 000	8.0	28.2	6, 000-7, 500	9.2	37.4
8	10, 100-14, 600	11.0	39.2	7, 500-9, 200	11.3	48.7
9	14, 800-22, 550	16.6	55.8	9, 300-14, 000	14.9	63.6
10	22, 600-140, 800	44.2	100	14, 000-200, 000	36.4	100

Table 3: Percentage and Cumulative Shares in Informal Sector: Paid Employment for Female and Male

Source: Own computations

Tables A1, A2, A3, A4 and A5 in the appendix, detail the percentage and cumulative shares for females and males respectively from own account work, employer worker, manufacturing, trades and community, social and personal services respectively. For own account work (Table A1), with income ranges of 40-800 and 12000-210000 for females and 80-900 and 14000-200000 for males, the bottom 10% of females earn 0.9% of the incomes, while the top 10% earn 41.9%. For males on the other hand, the bottom 10% earn 0.9% of incomes while the top 10% earn a massive 47.3% of incomes. Inequality is higher among the males who do own account work. In Table A2, employer worker, has similar income ranges as own account work for females. For males, incomes range from 400-2000 to 30000-202000. The bottom 10% of females, earn 0.9% of income, while the top 10% earn 42.3% of the incomes. For males, the bottom 10% earns 0.9% of the incomes, but the top 10% earn 50.2% of the incomes. The highest inequalities therefore exist among male workers in this category.

In manufacturing (Table A3), the incomes range from 200-1200 to 13000-140800 for males and 150-800 and 12000-83000 for females respectively. For the latter, the bottom 10% earns 0.9% of the income while the top 10% earn 41.9% of the income. For the former however, the bottom 10% earns 1.1% of income while the top 10% earn 43.4% of incomes. The distribution is worse for trades (Table A4). With the lowest income range of 40-1000 for females, and 80-1000 for males, the bottom 10% earn a paltry 0.8% of the total income for both sexes, while the top 10% earn 44.9% of the income for females, and 50.6% for males. This indicates that income from trade is the most unequalizing for both sexes.

Table A5 shows that community, social and personal services is the most equalizing for females, with the bottom 10% earning 1.1% of incomes and the top 10% earning 39.8% of the total income from this source. For males however, the bottom 10% earn 1.3% of incomes, while the top 10% earn 48.2% of the total income from this source.

#### **Dominance Tests**

In order to make inequality comparisons for the different income distributions arising from the different income sources, we carry out a Lorenz dominance test based on the income deciles calculated earlier on. Figure 1 shows the Lorenz curves for male workers, while Figure 2 shows the Lorenz curve for female workers in all the six sectors considered in this study.





Figure 1 suggests that for male workers, paid employment has the most equal and own account, the least equal distribution. This contrasts sharply with the position of female workers, in which community,

social and personal services is the most equal and trade, the least equal. Manufacturing is shown to be an important equalizing sector for both sexes, while trade is found to be quite unequalizing for both.





Figures 1 and 2 further show that the most equalizing distribution for female workers is more unequal than that for male workers, and that for the former, the unequalizing effect across the six sectors is much smaller than that for male workers. This indicates that on the whole, female workers face more inequality compared to males, but face relatively much less inequality between themselves, compared to males despite being employed in different sectors.

In Figures 3a and 3b, we compare the Lorenz curves by sex for three sectors; paid employment, own account worker and working employer.





Figure 3a show that for males, income distribution from paid employment Lorenz dominates distributions from own account work and employer worker. It is however less obvious which of the

latter two distributions is dominant as their Lorenz curves coincide at the end. Own account work however, appears to dominate employer worker.

For females (Figure 3b), the dominance is not clear cut, as all the three distributions coincide at some point. Own account work and employer worker, coincide throughout and both slightly dominate paid employment. Figures 3a and 3b suggest that in a relative sense, income from paid employment is more equalizing for males, but is the most unequalizing for females. This confirms the gini and the quantile estimations results.





In Figures 4a, 4b, 4c, 4d, 4e, 4f, we compare the income distributions from each of the six sectors under analysis by sex using dominance analysis, gini coefficient estimates as captured in Table 2b and income quantiles as reported in Table 3 and Tables A1, A2, A3, A4, and A5 in the appendix.

Figure 4a compares the distribution of household income from male working employer and female working employer. Income from female working employer Lorenz dominates that of male working employer. This is in consonance with the quantile estimates, which show that the male top 10%, earn 50.2% of the incomes from this sector with the bottom 10% earning 0.9% compared to 42.3% and 0.9% respectively for the female worker. These results are also confirmed by the gini estimates in Table 2b.



Figure4a: Working Employer: Male Vs Female

When compared against each other, the distribution of household income for males in paid employment Lorenz dominates that of females in paid employment (Figure 4b). These results suggest that paid employment is more equalizing for males than females. For own account worker however, female incomes dominate Male incomes (Figure 4c), an indication that own account work is more equalizing for females. Both of these findings are in line with the quantile and the gini estimates for the respective sectors.



#### Figure4b: Paid Employment: Male Vs Female

Figure4c: Own Account Worker: Male Vs Female



Figure 4d shows the Lorenz curves for female and male workers in community, social and personal services. Female incomes are shown to Lorenz dominate male incomes, an indication that incomes from this sector are more equalizing for female workers. Quantile and gini estimates for this sector confirm the dominance test results.



#### Figure4d: Community, Social and Personal Services: Male Vs Female

Figure 4e and 4f compares male and female incomes from trade and manufacturing sectors respectively. In the trade sector, female incomes dominate male incomes, a finding that is corroborated by quantile and gini estimates. In the manufacturing sector, the Lorenz curves are found to intersect, a situation that makes it impossible to compare the two income distributions.



#### Figure4e: Trade: Male Vs Female

#### Figure4f: Manufacturing: Male Vs Female



Figures 5a and 5b compares the Lorenz curves for three informal sectors; paid employment, own business and other sources in the rural and urban locations. For the same sectors, gini coefficients are estimated (Table 2b). Results indicate that in both rural and urban set-ups, the distribution of income from paid employment dominates that from own business and other sources. In the rural areas however, own business is the most unequalizing while in urban areas, other sources is found to be the most unequalizing. These results conform to the gini estimates reported in Table 2a.



Figure5a: Rural- Informal Sector: Paid Employee, Own Business and Other Sources



#### Figure5b: Urban- Informal Sector: Paid Employee, Own Business and Other Sources

In Figures 6, 7 and 8, we compare the Lorenz curves for the distribution of incomes from each of the three sectors analysed in Figures 5a and 5b in relation to their respective areas of location. The analysis is corroborated by gini estimates. In Figure 6, it is not possible to determine which of the two distributions arising from paid employment is more unequal than the other since the resultant Lorenz curves intersect.

Distributions arising from own business and other sources in the rural areas are both found to Lorenz dominate distributions from the same sectors in the urban areas (Figures 7 and 8). With respect to these two sectors therefore, incomes from sectors in the rural areas are more equalizing than incomes from the urban areas. These findings are confirmed by the gini estimates.



#### Figure 6: Paid Employment; Rural Vs Urban

## Figure7: Own Business; Rural Vs Urban







#### CONCLUSION

In conclusion, our analysis suggests that overall; most of the informal sector industries (71%) are located in the rural areas. Income from paid employment is the most equalizing source in both the rural and urban areas, for both male and female workers. This source is however more equalizing for males than for females and for urban areas than for rural areas. The most unequalizing source of income in the rural areas is own business, while other sources is the most unequalizing in the urban areas. In an overall sense, wholesale and retail trade contributes the most to household incomes in both the urban and rural areas. In the rural areas, trade contributes 42.6% of the total income while in the urban areas, it contributes 18.5%. Results further show that overall, rural incomes arising from informal sector activities are more equal than urban incomes from informal sector activities.

Analyses by gender indicate that inequality is highest among both males and females in trade. For females, inequality is lowest in community, social and personal services. For males on the other hand, inequality is lowest in paid employment. For both males and females, inequality arising from paid employment and manufacturing is higher for the later. For all the other sectors considered in this study, inequality is higher for the former.

These findings suggest specific policy interventions. They bring to the fore, the role of paid employment in reducing inequality between the rural and urban areas and in reducing the income inequality between the females and males. This calls for the development of the necessary infrastructural support and strengthening of the legal and regulatory regimes in favour of the sub-sector. Critically, policy interventions should ensure access to workspace and security of tenure, so that operators in the informal sector can have legal titles to the worksites. Absence of this has largely contributed to lack of access to credit and constant harassment by local authorities, both of which have acted as disincentives for the development of and investment in the worksite, thereby constraining improvements in technology and productivity.

Other interventions could include review of the labour laws and the Industrial Training Act. A number of provisions in the existing labour laws act to restrict the ability of employers to react to unexpected changes in the market. The redundancy provision, for example, constrains small firms from adjusting to economic changes by restricting their autonomy in hiring and firing employees. The Employment Act (Cap 226), for example, restricts employment of females in any industry undertaking mining or manual work. This provision has been widely abused and used to discriminate against women in the labour market. The Industrial Training Act established a National Industrial Training Council whose core mandate is to improve the quality and efficiency of personnel engaged in industry by funding training and re-training from a training levy fund payable by employers. The informal sector employers do not benefit from this fund due to the stringent formalities required of contributing employers.

Trade contributes the most to household income in both the rural and urban areas. Important constraints on the operations of the retail sector include shop opening hours, site of operation and licensing restrictions. Policy intervention should therefore aim at facilitating the operations of the retail sector, since retail is predominantly an informal sector activity.

The findings of this study suggest that both sexes play an equally important role in the informal sector. Literature however, shows that there are more female than male operators in the informal sector. Many existing statutes however, operate to unfairly disadvantage women in informal sector trade. Given the governments' commitment to implementation of a policy of gender equality, appropriate measures should therefore be taken to review all regulations affecting the ability of women to enter and remain in business.

#### APPENDIX

	Female			Male		
Decile	Income Levels (Ksh)	% Shares	Cumulative % Shares	Income Levels (Ksh)	% Shares	Cumulative % Shares
1	40-800	0.9	0.9	80-900	0.9	0.9
2	800-1, 400	1.9	2.8	900-1, 500	1.8	2.7
3	1, 400-2, 000	2.9	5.7	1, 500-2, 000	2.8	5.5
4	2, 000-2, 500	4.1	9.8	2, 000-2, 700	3.6	9.1
5	2, 500-3, 300	5.5	15.3	2, 700-3, 430	4.7	13.8
6	3, 300-4, 300	6.8	22.2	3, 480-4, 300	6.1	19.9
7	4, 300-5, 600	8.4	30.6	4, 320-5, 600	7.7	27.6
8	5, 600-7, 800	11.1	41.6	5, 600-7, 600	10.2	37.8
9	7, 800-12, 000	16.4	58.0	7, 700-12, 022	14.9	52.7
10	12, 000-210, 000	41.9	100	12, 110-211, 000	47.3	100

Table A1: Percentage and Cumulative Shares in Informal Sector, Own Account Worker for Female andMale, 2003.

Table A2: Percentage and Cumulative Shares in Informal Sector, Working Employer for Female and	nd
Male, 2003.	

	Female			Male		
Decile	Income Levels (Ksh)	% Shares	Cumulative % Shares	Income Levels (Ksh)	% Shares	Cumulative % Shares
1	40-800	0.9	0.9	400-2, 000	0.9	0.9
2	800-1, 400	2.0	2.9	2, 000-3, 000	1.8	2.7
3	1, 400-2, 000	3.0	5.9	3, 000-4, 000	2.6	5.3
4	2, 000-2, 500	4.1	9.9	4, 000-5, 000	3.3	8.5
5	2, 500-3, 300	5.2	15.1	5, 000-6, 900	4.3	12.8
6	3, 300-4, 300	6.7	21.8	6, 900-8, 550	5.6	18.4
7	4, 300-5, 600	8.5	30.3	8, 600-11, 000	7.1	25.6
8	5, 600-7, 800	11.1	41.5	11, 000-15, 500	9.2	34.8
9	7, 800-12, 000	16.2	57.7	16, 000-30, 000	15.0	49.8
10	12, 000-210, 000	42.3	100	30, 000-202, 000	50.2	100

	Female		Male			
Decile	Income Levels (Ksh)	% Shares	Cumulative % Shares	Income Levels (Ksh)	% Shares	Cumulative % Shares
1	150-800	0.9	0.9	200-1, 200	1.1	1.1
2	800-1, 400	1.9	2.8	1, 200-1, 900	2.3	3.4
3	1, 400-2, 000	2.9	5.7	1, 900-2, 500	3.1	6.5
4	2,000-2,800	4.1	9.8	2, 500-3, 500	4.3	10.8
5	2, 800-3, 600	5.5	15.3	3, 500-4, 000	5.5	16.4
6	3, 600-4, 500	6.8	22.2	4, 000-5, 000	6.5	22.9
7	4, 500-5, 500	8.5	30.6	5, 000-6, 000	7.9	30.8
8	5, 500-7, 800	11.1	41.6	6, 000-8, 800	10.8	41.6
9	7, 900-12, 000	16.4	58.0	8, 800-13, 000	15.0	56.6
10	12,000-83,000	41.9	100	13, 000-140, 800	43.4	100

Table A3: Percentage and Cumulative Shares in Informal Sector, Manufacturing for Female and Male,2003.

## Table A4: Percentage and Cumulative Shares in Informal Sector, Trades for Female and Male, 2003.

	Female			Male		
Decile	Income Levels (Ksh)	% Shares	Cumulative % Shares	Income Levels (Ksh)	% Shares	Cumulative % Shares
1	40-1, 000	0.8	0.8	80-1, 000	0.8	0.8
2	1, 000-1, 600	1.7	2.5	1, 000-1, 600	1.6	2.4
3	1, 600-2, 300	2.7	5.2	1, 650-2, 300	2.5	4.9
4	2, 300-3, 000	3.6	8.8	2, 300-3, 000	3.3	8.2
5	3, 000-4, 000	4.8	13.7	3, 000-4, 000	4.2	12.4
6	4, 000-5, 000	6.2	19.8	4, 000-5, 000	5.4	17.8
7	5, 000-7, 000	8.2	28.1	5 ,000-6, 800	7.0	24.8
8	7, 000-10, 000	11.0	39.1	6, 800-9, 700	9.7	34.5
9	10, 000-15, 000	15.9	55.0	9, 742-17, 000	15.0	49.4
10	15, 000-210, 000	44.9	100	17, 000-210, 000	50.6	100

	Female		Male			
Decile	Income Levels (Ksh)	% Shares	Cumulative % Shares	Income Levels (Ksh)	% Shares	Cumulative % Shares
1	300-1, 825	1.1	1.1	700-2, 170	1.3	1.3
2	1, 845-3, 000	2.2	3.3	2, 250-3, 000	2.3	3.6
3	3, 000-4, 000	3.1	6.5	3, 000-3, 500	2.7	6.3
4	4, 000-5, 240	4.1	10.6	3, 500-4, 100	3.2	9.5
5	5, 250-7, 210	5.7	16.3	4, 300-5, 600	4.3	13.9
6	7, 300-9, 500	7.9	24.2	5, 800-7, 500	5.6	19.4
7	9, 585-11, 500	9.5	33.6	7, 500-9, 700	7.2	26.6
8	11, 541-14, 400	11.1	44.7	9, 800-13, 900	10.5	37.2
9	14, 600-22, 600	15.8	60.5	13, 900-20, 000	14.6	51.8
10	25, 000-140, 800	39.5	100	20, 600-211, 000	48.2	100

Table A5: Percentage and Cumulative Shares in Informal Sector, Community, Social and PersonalServices for Female and Male, 2003.

## Table A6: Household Income Distribution, 2003.

Households by income	% share of	% share of	Cumulative	
category	income	population	share of income	
		(P)	(L)	
First 20%	4.7	20	4.7	
Second 20%	11.1	40	15.8	
Third 20%	17.1	60	32.9	
Fourth 20%	24.4	80	57.3	
Last 20%	42.7	100	100.0	

## Figure A1: Lorenz Curve and Gini Coefficient



## Table A7: Calculation of Gini Index

Area A + Area B	100 x100/2	5000
Area 1	20 x 4.7/2	47
Area 2	20 x (4.7+15.8)/2	205
Area 3	20 x (15.8+32.9)/2	487
Area 4	20 x (32.9+57.3)/2	902
Area 5	20 x (57.3 +100)/2	1573
Total area B		3214
Area A	5000-3214	1786
Gini coefficient	1786/5000	0.36

## Table A8: Calculation of Gini Index and Income Deciles

Income deciles	% share of total	Cumulative share of	Calculation of Area B	Total
	income	income		
1	0.8	0.8	(10 x .8)/2	4
2	1.7	2.5	(10 x (2.5+.8)/2	16.5
3	2.7	5.2	(10 x (2.5+5.2)/2	38.5
4	3.6	8.8	(10 x (5.2+8.8)/2	70
5	4.9	13.7	(10 x (8.8+13.7)/2	112.5
6	6.2	19.9	(10 x 13.7+19.9)/2	168
7	8.1	28.0	(10 x (19.9+28.0)/2	239.5
8	11.0	39.0	(10 x (28 + 39)/2	335
9	16.3	55.3	(10 x (39.0 +55.3)/2	471.5
10	44.7	100	(10 x (55.3 +100)/2	776.5
Total	100		Total area B	2,232
Total Area A+Area B			(100 x 100)/2	5,000
Area A			5000 - 2232	2768
Gini Coefficient			2768/5000	0.5536