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RESERVE (832)

THE POTENTIAL FOR INCOME AND EMPLOYMENT GENERATION IN
KENYA'S URBAN INFORMAL SECTOR: A PROPOSED SURVEY

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I. Introduction*

The 1972 I.L.O. report on Kenya (7) initiated a great deal of worldwide interest in the potential of the informal sector for promoting the growth of incomes and employment in the rapidly expanding cities of Kenya of the less developed world. The initial response of the Government / (19) was to accept in principle the proposal to encourage the expansion of the sector and a further commitment was made in the 1974 - 78 Development Plan to increase employment opportunities in the sector by 7.5 per cent per year (20).

In practice, however, after a period of four years few positive measures have been taken to actively promote and encourage the growth of the sector. Perhaps the lack of positive action on the part of the government is attributable to the inadequate data base on which to build a programme of help for the informal sector. However appealing the growth of the informal sector sounds as a panacea for urban unemployment and poverty we simply have to admit that we know precious little about the functioning of the sector in Kenya with which to make policy.¹

The informal sector has sprung up as a response to the lack of formal employment opportunities in the towns. A great deal of research has been undertaken into ways of expanding formal sector employment, from studies of the size of the elasticity of substitution between capital and labour to the development of "appropriate" technologies for LDCs. Yet the proportion of the urban labour force outside of formal

* We wish to acknowledge the considerable time and effort rendered by Louis Muench in helping to design the draft questionnaire for this survey, which is based on an I.L.O. survey instrument for the informal sector originally designed by Sethuraman (18).

1. The authors know of only two pieces of economic research which attempted to generate data for an analysis of the sector. One was a survey of households in Kariobangi by Peter Henning (6) which examined amongst other things, expenditure flows between the formal and informal sectors. The data are currently in the process of being analysed. The other piece was a small survey of rural, small-scale enterprises by Frank Child (2,3,4). In addition Kenneth King (9,10) and Hugh Allen (1) have presented valuable case-studies of informal sector operations.

sector employment continues to increase. Rempel (15) has estimated that 15 per cent of Nairobi's labour force was not engaged in formal sector employment in 1964 and that this proportion had increased to 42 per cent by 1972. While some of these people may have been openly unemployed the increasing role of the informal sector as an absorber of labour and a provider of income is indisputable.

While the search for more labour - absorbing policies for the formal sector should continue unabated we believe that this does not preclude the necessity to gather information about the role of the informal sector in the urban economy, to assess its potential for employment and income generation and to identify the constraints on the sector and how it can best be helped as part of the Kenya government's overall goals of growth and equity.

In sector 2 of the paper a brief survey is made of a theory of the informal sector and a number of hypotheses are examined which we hope to test with the data generated from our survey. Section 3 surveys the existing estimates of the size and structure of the informal sector in Nairobi while section 4 outlines the sort of basic economic information we feel is required in Kenya in order to formulate a positive programme of action which might help the more dynamic enterprises in the sector. Section 5 examines some of the potential planning aspects of the sector while Section 6 deals with the methodology of the survey and our proposed time schedule, while in section 7 we append the proposed questionnaire to be used. Comments and constructive criticisms pertaining to the material contained in the latter two sections would be particularly appreciated.

2. A Theory of the Informal Sector

The basic distinction between the formal and the informal sectors has been made by Mazumdar. (13 p.1) who suggests that "employment in the formal sector is in some sense or senses protected so that the wage-level and working conditions in the sector are not available, in general, to the job-seekers in the market unless they manage to cross the barrier of entry somehow. This kind of 'protection' may arise from the action of trade unions, of governments, or of both acting together".

While identifying the informal sector as the 'unprotected' sector - particularly with respect to its labour force which is not protected by minimum wage laws, contractual obligations etc - seems conceptually appealing a great deal of controversy can be aroused over how to identify the sector in practice. One method of identifying the informal sector is to define it as the residual of all private enterprises after excluding the large industrial and commercial establishments whose pay and conditions of work, because of their size, are enumerated and protected.

However, this leaves unresolved the question of how large is "large". Perhaps those enterprises with less than five workers or those with more than five but which operate in semi-permanent or temporary premises would capture the main body of enterprises that operate in an unprotected and informal environment in Kenya. This is the approach we shall adopt for the purposes of our survey.

Mazumdar (12, 13) argues that free market forces, independently of any institutional factors, could lead to the evolution of the "protected" sector in the urban labour market because of a group of factors which establishes a direct relationship between the efficiency of a worker and the wage level. Increases in the wage per worker increase the efficiency of the worker more than proportionately to the increase in the wage, so that wage costs per unit of output fall. "Thus even in the presence of an excess supply of labour it will not pay management to set the wage at the lowest level possible..... This wage-level is "protected" because job-seekers at this wage are unable to bid down the wage".(13 p.3)²

It is this protected wage structure, to which rural-urban migrants are assumed to respond, that is then embodied in models of rural-urban migration and which try to explain the rationale for the large numbers of unemployed engaged in searching for formal sector jobs. (25)

2. He argues that the strength of this functional relationship between the wage and the efficiency of a worker will be more important for large firms with a modern technology and those firms dealing with a stable body of workers. The relationship has been explored elsewhere by Harris (5) and Rodgers (21) and for Kenya the source of the increased labour efficiency was attributed to "the reduction of labour turnover, ability to select superior workers, and enhanced morale of workers who see many would-be replacements crowding around the factory gates" (5 p.200). The operation of the formal sector labour market in Kenya has been analysed by Rempel and House (18) who have also stressed a number of research areas of priority for the informal sector (17).

It is to friends and relatives as well as to that part of the informal sector where entry is relatively easy that the migrant turns for subsistence while engaging in the process of job search.

The high cost of urban living induces an additional source of labour supply to the informal sector. The unskilled and semi-skilled heads of households in the "protected" sector seek employment for their dependents, the so-called secondary workers, in the informal sector.

Rempel (16) hypothesizes that the informal sector incorporates two very different groups of people, both in terms of attitudes and motivation. The "community of the poor" consists of those engaged in formal sector job search who view their current situation as temporary as well as those who fail at the formal sector job lottery and continue to eke out a subsistence with a growing sense of despair and hopelessness.

The second group he identifies in the informal sector is made up of small-scale entrepreneurs who have made a conscious decision to invest in their businesses and who have rejected wage labour in the formal sector. Collectively this group has been termed the "intermediate sector" by Child (2,4), and it is this sub-sector that the ILO Report identified as having the greatest development potential.

What determines the relative size of the informal sector? The informal sector is thought to provide the basic day-to-day living requirements for migrants as well as serving the basic demands of a large proportion of low-paid workers of the formal sector. It is these formal sector incomes that define the extent of the market for goods and services produced in the informal sector. In a mathematical model developed by Mazumdar (12,13) the major determinants of the rate of growth of informal sector employment are the marginal propensities of the formal and informal sectors to consume informal sector goods³, the relative levels of income in the two sectors and the rates of growth of employment and productivity in the formal sector.

3. One of the major findings of the study is that the informal sector is a

Clearly then, the informal sector is depicted to be in some form of dependency relationship with the formal sector and is generally not thought of as playing the role of the 'leading sector'⁴.

One major aim of our study of the informal sector must be to assess the overall degree of income inequality in the urban economy and subsequently, to offer proposals based on our findings which would help to raise the incomes of the less well off.

Mazumdar's model of the role of the informal sector in the process of job-search predicts an equilibrium level of informal sector income below that in rural areas. A further prediction of the model is that if the informal sector acts as a point of entry into the urban labour market then we would expect to find an over-representation of the young and perhaps the less educated. And another prediction of the model is that the informal sector acts as a secondary labour market for women, non-heads of households and those not in the prime, working-age groups. Therefore, any attempt to measure income inequalities in the urban labour market must take account of the personal characteristics of those engaged in the informal sector. If, indeed, very low incomes are found in the informal sector, yet they are received by predominantly secondary workers, the consequences for our assessment of the distribution of income and poverty will not be as serious as they would be if we were to find the majority of those in the sector to be prime working - age, heads of households.

It is often asserted that the informal sector is easy to enter yet the authors suspect that a good deal of heterogeneity exists in the sector and that the level of income of an enterprise will be positively related to proxies for the difficulties of entry, such as the capital employed and the education and training, both formal and informal, of the entrepreneur.

4. Leys (11) has argued that the informal sector's existence is essential for the profitable operation of the formal sector, by providing cheap goods and services for the lowly paid in the formal sector. However this view has been questioned by Hans Singer (23 p. 176) who suggests that "if the services of the informal sector were more expensive, wages in the modern sector would be no higher than they are now; but, instead the present large remittances from the urban modern-sector wage bill to the rural areas would be reduced or disappear. This remittancemechanism represents a redistributive element which Colin Leys disregards throughout his book."

A number of other supposed characteristics of informal sector enterprises need to be formulated as hypotheses and tested.

It is thought that small enterprises operate in a world of market imperfections which adversely affect their operation, so that an attempt should be made to identify these imperfections. The hypothesis that relative factor prices of the small enterprise are such as to favour the adoption of labour - intensive techniques leading to low labour productivity again necessitates the need to generate wage data as well as to discover the sources of funds available to the sector. And the small firms are often thought to be operating in a hostile environment because they do not abide by zoning and licensing laws, which often leads to harassment by the authorities.

Before any viable programme of assistance to the informal sector can be developed we need to produce a profile of the enterprise and its operator and establish the major constraints that retard the growth of sectoral incomes. While we want to discover to what extent low personal incomes are due to the characteristics, problems and constraints of the enterprise itself the education, training and attitudes of the entrepreneur, both towards himself and the authorities, need to be explored.

3. Size and Structure of Nairobi's Informal Sector

What do we know about the informal sector in urban Kenya at present? The Central Bureau of Statistics (CBS) currently collects information from very small enterprises - employing less than five - if they have a fixed location and postal address, as part of the annual enumeration of employees. The information mainly concerns numbers employed and average wages and these enterprises are classified as belonging to the formal sector by the CBS. Therefore, we know nothing of their problems or what sort of policies could be implemented to help them, even though they belong to the informal sector by our earlier definition.

In addition the CBS attempts to enumerate persons associated with enterprises having no fixed location or postal address by counting persons seemingly attached to establishments which are clearly visible. And the CBS has begun to ask questions of informal sector participants, mainly concerning the nature of the occupation and the remuneration of the respondent.

The CBS includes in the formal sector persons engaged in enterprises which have a post office box number and a fixed location, even though they employ less than five persons. Clearly, these persons would have to be added to those enumerated in their street-by-street count to assess the numbers in the informal sector the way we have defined it. Given that the CBS must also miss very many workers who are not clearly visible any estimate of the size of the informal sector in Nairobi will be on the low side.

The CBS estimates 1975 formal sector wage employment in the 1976 Economic Survey at 212,000 for Nairobi. But some of these people belong to the informal sector, especially those in the sectors of manufacturing, construction, trade, transport and services. For 1973, from the CBS's Employment and Earnings report we can estimate the proportion of these sectors' total employment in the very smallest establishments (i.e. less than 5 workers), at the national level.⁵ If we assume that these proportions also apply for Nairobi then in 1973 4,500 extra persons were engaged in the informal sector - which we shall assume increased to 5,000 by 1975.

The street-by-street count of the CBS enumerated 21,500 but this must have been on the low side given the closing of the food kiosks for part of the year, because of the cholera scare. Perhaps 25,000 is a more reasonable estimate given that the CBS estimate for 1976 is 30,000, which indicates an unreasonable 50 per cent increase on their figure for 1975.

In addition we have the self-employed and unpaid family workers, perhaps 9,000 in Nairobi in 1975 if we project from earlier years, and let us assume 5,000 of these are in the informal sector by our definition. We are then left with the following very rough estimates of total employment in Nairobi and the proportion informal in 1975:

5. These proportions are: manufacturing 2%; construction 1%; trade 8%; transport 1%; services 2%.

Formal Sector 000's

Employees 207

Self-employed 4

Total 211

Informal Sector

Employees in small enter-
prises enumerated by CBS 5

Self-employed and Unpaid
family workers 5

Street count by CBS
(amended) 25

Total 35

We would estimate, therefore, total employment in Nairobi at 246,000 in 1975 of which 35,000 were informal sector workers or 14 per cent of total employment. This is below the ILO estimate of 20 per cent for the informal sector in 1969 (8 p.54) but given the imprecision in both methods of estimation, and the very nature of the informal sector itself, we can guess that a minimum of 15-20 per cent of persons employed in Nairobi derive their income in the informal sector.

These confessions of ignorance of the overall size of the informal sector only go to underline our greater lack of knowledge of the components of the sector, the role of the sector in the urban economy and the potential of and constraints on the sector for future income and employment generation.

4. Basic Data Requirements for a Programme to Promote the Informal Sector

One of the major aims of our survey will be to generate information that will allow us to assess the potential of the informal sector for raising incomes and promoting employment. For example, we wish to know the extent to which employment in the sector is part-time and seasonal, and the extent to which it serves as a secondary labour market. We would like to test some of the hypotheses summarised earlier which underlie the existing theory of the informal sector, while if we can generate data on employment and earnings, taking account of the characteristics of the individuals involved, we shall be in a better position to gauge the importance and performance of the sector in the Kenya economy.

Perhaps more important, by discovering the major problems confronting the urban informal sector enterprises - problems of capital scarcity, lack of adequate demand, too much competition from informal sector and formal sector firms, harassment by the authorities which retards the motivation to invest in equipment and buildings and outmoded legal restrictions on the location and operation of the enterprises⁶ - it would be possible to formulate operational programmes that could help to ameliorate these problems.

The World Employment Programme of the ILO is currently engaged in large scale surveys of the informal sector in various parts of the world. The questionnaire originally designed for the Jakarta survey, and being used in these other surveys, has been used as a basis for the design of our survey instrument.⁷ However, we have made major amendments so that the questionnaire is appropriate to the Kenya scene.

The information sought in the questionnaire falls into three categories:

(a) that relating to the enterprise and its linkages to the rest of the economy e.g. permanent or temporary buildings, legal status, nature of the products produced, legal constraints on the enterprise, history of the enterprise (age, volume of output and employment, obstacles in establishing the business), operational characteristics (extent of underemployment, use of family labour, age, sex and education of employees, training facilities and terms on which provided, wages in cash and in kind, value of capital employed etc), difficulties in securing the necessary inputs and in marketing the output and the types of assistance needed and desirable changes in government policy which would bring about an expansion of the enterprise's activities.

6. Mukui's recent small survey (14) shows how the existing Nairobi City Council's licensing laws retard the growth of employment in the food kiosks' industry', a sub-sector which would appear to have great growth potential. Only the operator of a kiosk, or his appointed assistant, are issued with hawkers licences, so that any other employee found in the enterprises is liable to be charged for being unlicensed.

7. The survey instrument was originally designed by Sethuraman for the ILO (8) and is described by him in a recent article (22).

We do not underestimate the difficulties to be encountered in establishing some of this information, particularly that relating to incomes and capital employed. We have attempted to allow the respondent to use the recall period - last working day, week or month - which he finds easiest. We shall then attempt to determine the net earnings of the enterprise over a recent time period indirectly, from the information he gives us on the value of sales, raw materials and other inputs and the wage bill.

We would then estimate an earnings or rate of return on capital function for the enterprise where some of the explanatory variables might be: the age of the business; education and training of the entrepreneur; capital employed per worker; degree of harassment by the authorities; sector of activity; sources of sales and raw materials; type of labour force employed etc. Such an exercise would allow us to identify the major determinants of business success and failure and to formulate appropriate remedial policies which could increase the probability of business success.⁸

(b) that relating to the head of the enterprise, e.g. his or her age, sex, education, preference for self-employment over wage employment and attitudes towards himself, his business operations and towards possible government policies to help his business.

(c) that relating to the household of the head of the enterprise e.g. participation in the business, other sources of income and employment of the household and dependency of the household on this particular enterprise.

The overall goal of the survey will be to identify the major constraints on the expansion of the informal sector. The exercise is essentially policy oriented toward income and employment creation, or as Souza and Tokman (24 p. 363) have suggested to identify measures that can increase economic efficiency and increase output in the informal sector.

8. Another factor we hope to identify will be the source of capital inputs, particularly the extent to which formal sector workers are engaged in investing in the informal sector.

For example, light will be shed on the age composition of the enterprises and their structure in terms of output and employment, so that we can identify the kind of enterprises that have expanded and are most viable. We should be able to identify the major problems encountered in establishing informal sector enterprises and to determine the sorts of markets in which the enterprises participate, and do not participate - e.g. the capital market - for institutional reasons. If it is found that limited demand for output limits the expansion of the sector it should be possible to formulate policies that could help the enterprises to adapt their product mixes, to meet the changing patterns of demand. We should like to examine in the urban context the sort of internal constraints that Child examined in the rural enterprises, such as managerial constraints and the lack of information on better technology and marketing possibilities, so that perhaps appropriate information could be conveyed through a system of extension services. And we would hope to recommend ways in which the public authorities might remove the obstacles they impose on the informal sector.

In their recent paper on the informal sector in Latin America Souza and Tokman (24 p. 365) suggest that the problem of low incomes in the sector is mainly due to deficiencies in respect of its organisation and cost structure, which in turn relate to the very small scale of production. Their policy prescription is to "organise the informal sector through the establishment of co-operatives or some other system that would enable the economic advantages of large-scale operation to be combined with massive employment creation." They go on to suggest that "one way of improving credit terms for the informal sector might be to set up a properly endowed lending institution exclusively for the purpose."

Meanwhile, they argue that "consideration should also be given to the possible role of scientific and technological institutions in the development, adaptation and diffusion of appropriate technology for the informal sector. This could help to raise productivity, improve product quality and standardise production, all of which would have a beneficial effect on marketing prospects. Finally, the need for manpower training measures in the informal sector should not be forgotten, by which is meant not only/in fact primarily, training in the organisation and running of small businesses."

Before we could even entertain making such grandiose policy recommendations, which if implemented would probably make the informal sector unrecognisable from what we know it in Kenya today, we must search for a better understanding of its role in the Kenya economy and identify the major constraints on the expansion of its more dynamic sub-sectors. It is to these ends that our proposed survey is addressed.

5. Potential Planning for the Informal Sector

The survey is also meant to generate data and information for planners and other descriptives on how best to accommodate the increasing activities within the growing urban areas. The major problem is that most of the urban land use plans are basically static land use exercises. As a result, they have become excessively rigid and antiseptic in concept that they have no room for the informal sector activities and other spontaneous developments; rather the plans tend to look forward to a mellenium when slimy areas and economic activities that fall under the informal sector will be eliminated and replaced by regularly laid out housing and 'modern' industries without specifying the immediate rungs on this particular ladder to 'urban heaven'. To make such a criticism is not necessarily to belittle economists, planners or other agencies who profess to cater for the urban population particularly realising the patronage of politics behind.

As far as locational factors are concerned, we have only observed that a substantial proportion of informal sector activities operate in unplanned and uncontrolled environments in the semi-urban areas, near or within low income residential areas and any other open space pockets within the city centre and other urban areas. Such urban development has not only been seen as posing environmental problems and complex ecology but also as creating bedseats of social and political crimes. Despite the persistent existence and the role played by these activities it would seem that there has been official reluctance to recognise them as an intergral part of urban activity systems and as a result where informal sector activities have not been ignored, they have been harassed as a menace to the image of the urban areas and likely to cause health hazards. Apart from the intensity and geographical distribution of the activities we would like to get more detailed data on specific locational factors influencing both individual and group activities. As a basis for future policy recommendations we shall be testing the following locational factors:-

- (i) nearness of place of work and residence so as to maintain the family socio-economic set up.
- (ii) transport costs between place of work and residence.
- (iii) nearness to the low income residential areas and the formal sector as major consumer flows.
- (iv) prohibitive regulations and high standards requirements in other zones.
- (v) the effects of rents and rates in areas of concentrations.
- (vi) possible evasion of taxation, licences and other levies imposed by the authorities.

Ideally, problems facing the informal sector activities are not limited to fiscal or administrative levels but rather require physical policy prescriptions. The existing intersectorial imbalance in favour of the formal sector can be seen in Nairobi and other towns where precisely demarcated zones are set aside for the large industries while the informal activities rely on mix and flux of land uses. Such biased planning could be attributed to a number of political and economic reasons among which is the great influence of the large industrial ownership on the authorities while the informal sector lack authoritative contacts. On the other hand, these activities have been considered as temporary occupations of urban migrants who are sporadically employed with minimal contribution to urban coffers hence deserving no permanent and well laid zones in the urban set up. Such negative activities have led to a situation of insecurity of investment as a result of lack of urban tenureship which in turn has contributed to lower and haphazard urban environment.

We would like then like to get data on the relative stability and or mobility of the enterprises so as to ascertain such a sectorial claim on urban land use. We also hope to acquaint ourselves with the degree of commitment of the entrepreneurs to their business not only as a source of employment and income earning but also as an urbanised sector which deserves planning attention as much as any other sector. A major issue of impractical judge will be whether or not there are seasonal and locational variations to the sector activity. Findings related to this issue will indicate the extent to which time and space must be incorporated into informal sector surveys and policy formulation.

Informal sector activities tend to compliment some formal activities while there is an element of competition in others such as furniture making. In order to improve the sectors competitive capacity and potential

for employment generation one requires adequate infrastructure rather than providing for the formal sector which has 'extra' capital. Such informal sector potential may be incited by establishing central agencies for purchasing the supplies by the informal sector enterprises, central marketing organisations or a network of markets and cluster production centres for smaller retailers. A number of studies have suggested that the problem of low income in the sector is due to its deficiencies in terms of organisation and cost structure which in turn relate to small scale production. The present high cost of marketing and credit facilities forms a large portion of the sector's expenditure. Thus there is need to get data on the possibility of establishing Institutions like cooperatives and exclusively lending Institutions to the sector which may reduce the sector's marketing and finance costs. We also need information leading to measure which can be taken to initiate change both in products and production methods and to establish adequate urban infrastructure making it possible to realise advantages of external economies.

It appears that the informal sector's potential for generation of employment and income is curtailed by the present legal impediments. These appear basically in form of license by laws, building regulations as given in the Building-Code and Public Health Act plus the Planning standards and regulations in the Town Planning Act. Development Control within the urban areas is done through detailed rules and regulations but the informal enterprises do not always fit within such legal format which was designed for formal and modern activities. Such laws have also posed as negative attitude towards the sector since anyone wishing to obtain permission for an enterprise usually fails either because the enterprise is not explicitly permitted, hence is refused or the standards required will be too expensive to meet. We do not suggest that there should be such flexibility such that given such a wide choice one would find all types of countryside traditional houses and masses of unlicensed activities in our towns which may pose safety and hygienic hazards. On the other hand, there is need for review of such standards and regulations to march the economic realities of the increasing urban population. We are aware that such calls of review of colonial laws and regulations have been made before (including the I.L.O. report) but there has been no data on the informal sector on which basis for review can be made.

We also hope to look at the overall financial implications of the existence of the sector in urban areas. Financial policy in any urbanised system affects the rate and form of development and development through its influence on the values which owners and occupiers attach to their property (enterprises). Ultimately, the demand for development depends on its worthlessness to owners/occupiers and this is materially affected by the levies which the authorities impose upon them by reason of their ownership or occupancy. While we hypothesise that the informal sector can generate employment and income complementary to the formal sector, we have to know what its financial contribution can be for reinvestment and betterment of the urban environment. Hence we need data not only on incomes but also entrepreneurs attitudes towards their contribution to such an economic environment. Such information should also be useful in influencing policy decisions on licences and other form of taxation since they affect the profits or amenity affording capacity in terms of land acquisition, capital investment etc. which influence the pattern and amount of development.

The potential growth for the sector could also be seen as a function of the available exploitable resources. Most of the informal sector activities largely rely on the indigenous resources as sources of inputs. This exploitation of local resources not only provides employment but also saves on the nation's foreign currency outflow particularly when the products are in form of import-substitution. Unlike the formal sector however, the informal sector's resources have not been studied. It is then important that before we come to any conclusions to have empirical evidence on the resource potential, utilisation and possible conservation related to the sector.

6. Methodology of the Survey

(a) Sample Size and population strata.

The emphasis of the survey will be on the informal sector enterprise and our initial proposal is to interview in Nairobi 1000 heads of enterprises. By its very nature the sector is concentrated in manufacturing, construction, trade, transport and services, but because of the difficulties in undertaking interviews with those engaged in transport, especially the matatu drivers, the remaining four sectors will constitute the population strata.

Optimal stratified sampling dictates that n_j , the size of the sample drawn from the j th stratum should depend on N_j , the size of the j th stratum population, and σ_j the standard deviation in stratum j of the variable to be measured.

i.e.
$$n_j = \frac{N_j \sigma_j}{\sum N_j \sigma_j} n$$
 where n = total sample size

Each stratum should exhibit homogeneity with respect to the variable being measured.

As we have already emphasized the population size of each stratum, the total number of enterprises in each sector, is not known. The only information we have on the relative sizes of the sectors is based on the CBS's street count of persons seemingly attached to informal sector activities. To estimate the number of enterprises in each sector's population, assuming the CBS's street count is comprehensive (which it isn't), we must divide the numbers engaged by the number employed per enterprise to obtain N_j .

From our pilot survey we shall obtain estimates of average numbers employed per enterprise for manufacturing, trade and services. The construction sector poses a separate problem since the CBS enumeration failed to find any informal sector construction workers in 1976.

An important set of variables we shall be measuring relate to the value of sales, capital, raw material inputs, net earnings and wages. We expect that these variables will vary between sectors more than they will vary within sectors, hence providing the basis for the strata.

The standard deviation of these variables for each sector will be estimated from our pilot survey.

Hence, the final sample size n_j in our survey will depend on our estimates of N_j and σ_j derived from the pilot survey.

(b) Method of Sampling from the Sectors.

Each of our one-digit I.S.I.C. sectors contains several types of activities which the CBS identifies at the four-digit level. However, very few persons appear to be engaged in some of the four-digit activities, so the "main business" of a one-digit sector can be adequately described by a few of the four-digit activities. Furthermore, from the CBS's street count, we know that each of these "selected" activities is mainly concentrated in a few areas of Nairobi.

This pattern of concentration lends itself to cluster sampling to represent each activity within a sector.

Tables 1, 2, 3 and 4 provide a detailed layout of the clusters for the manufacturing, trade and services sectors based on the 1976 enumeration.

Table 1

<u>Sector</u>	<u>Manufacturing</u>	<u>Trade</u>	<u>Services</u>
Total No. of 4-digit Activities	12	7	11
"Selected" Activities	5	5	6
% of Persons in "selected" Activities	96.7	97.3	91.2
Number of Clusters	14	18	16
% of Persons in Clusters	75.3	67.9	61.0

12 activities are listed under manufacturing and the 5 "selected" activities constitute 96.7% of those counted in manufacturing. Similarly, of the 7 activities in the trade sector the 5 "selected" activities form 97.3% of persons in the trade sector. In addition, of the 11 activities in the services sector the 6 "selected" activities form 91.2% of the sector.

Table 2, 3 and 4 show the clustering in the boxes of the "selected" activities by area of Nairobi.

Table 2

Clustering of I.S.I.C. Activities in Manufacturing by Area of Nairobi

Activity/ Area	3220 Wearing Apparel	3240 Footwear	3319 Wood/ Cork	3320 Furniture	3819 Metal goods
City Centre	1.4	0	-	1.6	0
Mathare	13.9	0	-	16.1	0
Kariobangi	19.0	64.8	-	13.6	8.1
Kawangware/ Dagoretti	4.0	0	-	7.8	3.3
Industrial Area	0	0	-	0	0
Pumwani/ Eastleigh	23.3	12.0	100	16.3	24.0
Kirinyaga Rd.	6.3	12.8	-	15.7	18.4
Kangemi/Uthiru	3.0	6.4	-	2.7	6.6
Eastlands	21.6	3.2	-	12.8	31.2
Other Areas	7.3	0	-	13.4	8.3
Clusters as % of Activity	77.8	64.8	100	74.5	73.6
Activity as % of Sector	43.7	3.3	8.9	26.6	14.2

NOTE: The data in the table refer to the % of persons in that activity found in that area of Nairobi.

Table 3

Clustering of I.S.I.C. Activities in Trade by Area of Nairobi

Activity/ Area	6211 Food/Drink	6212 Butchery	6214 Textiles	6218 Retail n.e.c.	6310 Restaurants
City Centre	2.95	0.02	0.01	13.7	3.4
Mathare	17.75	21.2	0.08	20.2	11.0
Kariobangi	18.5	18.8	9.0	15.5	19.9
Kawangware/ Dagoretti	5.0	3.3	4.7	4.9	0.02
Industrial Area	0	0	0	0	10.6
Pumwani/ Eastleigh	15.4	17.1	27.8	10.1	15.0
Kirinyaga Rd.	4.3	3.1	7.1	6.5	8.2
Kangemi/Uthiru	3.0	3.8	2.1	2.0	0.1
Eastlands	19.3	16.8	26.4	14.0	22.9
Other Areas	13.4	13.7	13.3	12.6	6.1
Centres as % of Activity	71	74	54	63	68
Activity as % of Sector	45.2	6.6	10.2	14.3	21.0

Note: The data in the table refer to the % of persons in that activity found in that area of Nairobi.

Table 4

Clustering of I.S.I.C. Activities in Services by Area of Nairobi

Activity/ Area	9511 Footwear Repair	9513 Motor Vehicle Repair	9514 Watch Repair	9519 Other Repair n.e.c.	9591 Barbers	9599 Personal Services n.e.c.
City Centre	0.08	3.6	39.4	0	17.9	60.6
Mathare	10.1	2.1	1.1	12.0	5.5	0.8
Kariobangi	16.6	12.4	11.5	20.9	13.7	5.8
Kawangware/ Dagoretti	4.5	1.2	1.8	7.5	7.1	0.2
Industrial Area	0.4	0	0.3	4.2	2.8	0.1
Pumwani/ Eastleigh	12.9	36.7	11.4	7.3	13.0	5.4
Kirinyaga Rd.	15.0	31.1	23.7	0	14.3	25.0
Kangemi/Uthiru	2.1	3.0	1.1	2.5	5.4	0
Eastlands	22.6	7.7	8.2	32.7	16.1	0.9
Other Areas	8.1	2.2	1.4	12.3	4.2	1.1
Clusters as % of Activity	67.1	80.2	63.1	53.6	62.0	60.6
Activity as % of Sector	20.7	23.0	6.3	8.1	13.9	19.2

NOTE: The data in the table refer to the % of persons in that activity found in that area of Nairobi.

(c) Method of sampling from each cluster

Each cluster is defined by two characteristics:

- (i) an area of Nairobi
- and (ii) an I.S.I.C. four-digit activity.

Our intention is to send a team, comprising a supervisor and perhaps five chosen enumerators, into the area of the cluster to make rough maps of the enterprises engaged in that activity. This procedure is not as formidable as it sounds since we have obtained from the CBS, the concentration of activities by street name for each area of Nairobi.

A random sample of enterprises will later be drawn from these maps, which will constitute our sampling frame, to whom the questionnaire will be administered.

Where a cluster contains a very large number of enterprises, 'sub-clusters' will be identified from the information on concentration by street name, and a selection of these will be treated in the same manner as above.

In addition, it will be possible, if necessary, to augment our sampling frame from the master file of the CBS of enterprises with less than five workers who have a P.O. Box number and a fixed location. Some of these enterprises will doubtless show up in the main sample, since we have asked explicitly if the enterprise has a P.O. Box number. But if we find that we make very little contact with such enterprises it may be that they are different in some way from those in our sample e.g. they are in different locations and missed by our sampling procedure. If this should be the case we would try to locate a sample of them via their P.O. Box number, and administer our questionnaire to them.

(d) Proposed Schedule

It is proposed that during May we shall have selected between 5-8 persons with previous experience in personal interviewing. The main body of the questionnaire will be translated into Kiswahili and the interviewers will become versed in what is required of them. During June we propose to undertake a pilot survey⁹ and hope that the

9. During this time we hope to have developed a means of identifying a sampling frame for the construction sector.

main body of the survey can take place during the months of July, August and September.

Depending on the success of our Nairobi survey, we would hope to visit sometime later some of the other larger towns of Kenya, perhaps Nakuru, Kisumu, Nyeri and Malindi, where the informal sector questionnaire would be administered. We suspect the sector is relatively more important in these towns than in Nairobi and we would be looking for significant differences between the respondents in these towns compared with Nairobi.

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