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SAMPLING FOR LABOUR FORCE STATISTICS BY MEANS OF SURVEYS OF THE GENERAL POPULATION

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SAMPLING FOR LABOUR FORCE STATISTICS
BY MEANS OF SURVEYS OF THE GENERAL POPULATION

To date, only a few African countries have conducted special labour force surveys on the general population. Such an investigation is conducted by surveys based on household samples; employment data (profession, qualification, etc.) are gathered from persons aged over 14 years.

In Africa, manpower statistics have most often been established on the basis of a survey of industrial and commercial establishments (provisional agenda item 9), or as a by-product of a population census or a demographic survey.

The few African countries that have carried out special labour force surveys are Algeria, Nigeria and the UAR.

1. The Economic Commission for Africa provided assistance in the formulation of a sample design project for a labour force survey in Ghana.

It was envisaged to use the districts adopted for a recent population census as a first-stage sampling unit.

Among Census enumeration areas, studies were made on the variation of the ratio of the number of males employed out of the total number of the entire male population.

Within each district, it was noticed that there was a very appreciable degree of homogeneity and that the districts varied considerably from one to another. This analysis had to be taken into account in the planning of the sample design.

There was need to take a higher sampling fraction of first-stage enumeration areas.

At the second stage, the sampling rate could be low. Further as the enumerator could only conduct a single interview, seasonal variations which are of importance in Africa, will not be considered.

2. In Algeria, the areas were divided into four strata: main towns (Algiers, Constantine, Oran and Auraba), urban, semi-urban and rural towns.

The areas were grouped together as much as possible. There were, however, some scattered areas.

First-stage areas divided in four strata were selected: 1,000 agglomerated areas and 567 scattered ones will be covered by the survey.

For the second-stage; households were selected.

Half of these households will be re-surveyed, every six months. The results for each two-month period will be analysed. Each of the analysis will give an estimation of the characteristics of the people for a two month period.

The six tables could then be compared. For the seasonal variation characteristics, there will be six mean estimates obtained from six samples of about 9,250 households. For the non-seasonal variation characteristics, these six estimates could be combined and their average will give a more accurate estimate based principally on a sample of $9,250 \times 3.5 = 32,379$ households. The households were divided according to areas in the multiples of 7.

Because of a new count every two months on half of the households, with 7 additional households it will be possible to survey two households per period, during the six periods envisaged in a year. The fact that a multiple of 7 was chosen for each area for the number of households assigned to each area, gave rise to error in the theoretical number of households to be surveyed, lower than 1.5 per thousand.

3. In Nigeria,^{1/} the Labour Force Sample Survey was conducted on a nation-wide basis from May 1966 to April 1967. The sample was spread uniformly over the whole year in order to eliminate seasonal variation.

^{1/} Data supplied by the Federal Office of Statistics, Nigeria.

The survey covered the whole of Nigeria on sample basis. Separate estimates were required for the urban and rural sectors in each Region. Hence the survey had to be split into two parts: the urban survey and the rural survey.

Sample Design

For the survey in rural areas, the Rural Economic Survey Sample was used. This was a two stage sample with villages or groups of villages whose total census population lie between 1,500 and 3,000 as first stage units and households as second stage units. A complete listing of households was carried out in each village unit and 96 households were systematically selected.

The design for the urban survey was a three-stage sample design with towns as first stage units, census enumeration area as second stage units and households as third stage units. Separate estimates were required for two very large towns (Lagos and Ibadan) and seven other moderately large towns. Therefore all towns in each Region were grouped into two strata; the first containing the special towns for which separate estimates were required and the other containing the remaining towns. In the first stratum, all towns were selected, but in the second stratum, a certain number of towns were selected in each Region with probability proportional to the number of census enumeration areas in each town. The number of towns selected in each Region were therefore as given in the table below.

	North	East	West	Mid-West	Lagos	Total
Stratum I	3	2	2	1	1	9
Stratum II	24	12	12	6	-	54
Total	27	14	14	7	1	63

Enumeration areas were then systematically selected as second stage units in the sample towns. The number of such enumeration areas was 5 in each

of the towns selected from stratum II and 20 in each of the special towns excepting Lagos and Ibadan from each of 40 were selected. A complete listing of households was made in each selected enumeration area. In each of the special towns, 24 households were systematically selected in each enumeration area, while in other 21 households were similarly selected in each enumeration area.

The table below shows the number of households covered in each region for the rural survey as well as the urban survey.

Region	Sample Size		
	Urban	Rural	Total
North	3,960	9,216	13,176
East	2,220	4,608	6,828
West	2,700	3,456	6,156
Mid-West	1,110	2,304	3,414
Lagos	960	960	1,920
All Nigeria	10,950	19,584	30,534

Personnel

The Rural Labour Force Survey was handled by the Rural Economic Survey Staff who were compensated for the additional work. The Rural Economic Survey Staff set-up was as follows: a team of two Enumerators was located in each village unit and to take responsibility for field operations in the unit and to keep records. An Area Supervisor was in charge of six teams of Enumerators and a Senior Supervisor covered the work of about 4 Area Supervisors. Each of the two Enumerators in a village unit covered 48 households for the Labour Force Survey at the rate of 4 a month (or 1 per week). Full-time Editors were employed to scrutinise the filled-in schedules and point out defects to the Enumerators and Supervisors concerned for rectification. The work-load for an Editor was about 200 schedules per month. These Editors were located in the field Headquarters in each Region.

For the Urban Labour Force Survey, full-time Enumerators were employed to cover 480 households at the rate of 40 a month. In towns where only 105 households were selected, an Enumerator covered 4 such towns. In each of these four towns the sample was randomly divided into 3 groups of 35 households each. The Enumerator then moved round these towns in order surveying 35 households in each town every fourth month. For every 3 Enumerators, there was a Supervisor and for every 6 Enumerators (or 2 supervisors) there was an Editor. There was also an Officer-in-charge in each field Headquarters to guide and control the work of the whole team.

This whole survey was conducted under the Supervision of an ILO Adviser on Manpower Statistics.

4. In the United Arab Republic a continuous Manpower survey was conducted. A sample of about 3,000 households were selected from census card-indexes, in each governorate; half in the urban areas and half in the rural environments. In the urban areas, the selection was a one-stage sample but in the rural areas, a two-stage sample with villages as primary units was used.

In 1964-65, the UAR carried out a survey in the rural areas. The aim was to study in detail how the rural inhabitants spent their time, both in agriculture and in other fields of activity.

A total sample of 480 households were studied. In each household, every four days, the enumerators conducted interviews each covering two days, the exercise lasting a whole year. The sample was stratified depending upon the governorate, the size of the village, the size of the household and the nature of the agricultural employment (including two strata of employment in non-agricultural sectors.)

5. In Chile (see Bulletin of Labour Statistics, Third Quarter, 1967). A continuous manpower survey was conducted.

The census on population and housing carried out in November 1960 was used as the sampling frame. The secondary sources of information

used included census of agriculture, demographic statistics and various geographical and economic surveys that are available.

Primary Units

(a) For the urban area

The Survey defined a population centre of at least 10,000 inhabitants as a combination of all the districts (smaller administrative districts) wholly inside this centre, plus sections of partially urban and partially rural districts.

The urban primary units were either the districts or sub-districts.

(b) For the rural area

When the commune did not contain any population centres with 10,000 inhabitants or more, it constituted a primary unit. When it had more than 10,000 inhabitants, the sub-communes served as primary units.

The primary units always had a minimum of 5,000 inhabitants. 533 primary units were formed.

219 had fewer than 10,000 inhabitants, 154 between 10,000 and 15,000.

8 urban primary units had more than 50,000 inhabitants. To preserve a certain degree of internal homogeneity, some districts or communes were, in some cases, grouped together when they were adjacent.

Second-stage units

Each enumerator was assigned a geographical area so as to be able to complete his task within a single day. This area covering at least 75 households was called enumeration area. Depending upon the area, each district had a number of enumeration districts of variable dimensions.

Final stage units

The term "private dwelling unit" was applied to any house, flat, abode, or shanty which contained or could have contained a private

household. Within the household, the survey only covered habitual residents, i.e. persons who usually slept in the private dwelling units.

B. Selection of Sample

1) Selection of the primary units

The primary units were stratified into the maximum number of strata of approximately equal size and then only one primary unit per stratum was chosen.

88. Strata were based on the demographic, social and economic information available at the primary unit level.

For the urban areas, the grouping was always made bearing in mind the possible existence of a predominant branch of activity. Within each of the eighty-eight strata, a simple primary unit was selected at random on the basis of a number of households covered by the last census.

2) Selection of second-stage sample

Punched cards from the census made it possible to obtain information about the second-stage units; this information concerned the classification of the active population aged twelve and over by main occupational groups. The second-stage urban units were classified, depended on the importance of each occupational group of the active population living in the unit.

The second-stage rural units were classified firstly, according to towns of more than 5,000 inhabitants, then those of 200 to 1,000 inhabitants and finally areas containing scattered units.

Adjustments of the second-stage units have taken place, especially in most of the towns.

Each primary unit was divided into thirteen strata and in each stratum thus obtained, a single second-stage unit was selected according to a probability proportionate to the number of households in each second-stage unit on the up-to-date lists.

3) Selection of private dwelling units

After the compilation of a detailed list of all the private dwelling units in each of the second-stage units, private dwelling units were selected at random. The number of interviews carried out in each selected second-stage unit depended on the primary unit.

It averaged ten in the urban and eight in the rural units.

10,764 households out of 1,600,000 or about 1/160 were chosen during the quarter.

828 households were covered weekly. One-sixth of the sample is renewed every quarter.

Employment surveys: by-products of census and family budgets survey etc.

1) In some cases, a sample survey is conducted for studying particular fields for instance, manpower statistics on a sample for a census or sub-sample of a sampling survey.

The sampling rate in this case is often lower than that for the general fields. It is one to five per cent.

If this method can only be used as regards geographical regions or relatively vast population groups, it makes it possible to secure rapidly a somewhat accurate information at the national or the regional level.

However, the defects of this method lie, inter alia, in the absence of coverage of seasonal changes and the difficulty of ensuring an effective stratification.

However, it is cheaper as it forms a part of another survey.

2) In some of the developed countries, Employment Sample Surveys are conducted on the basis of sampling of administrative records.

For instance in the United Kingdom, such a survey is based on a 25 per cent sample of the National Insurance cards. Every three months, one-quarter of the sample is substituted and there is a quarterly analysis of the employment and unemployment situation.

In Poland, application cards of insured people are used. After dividing the cards into twenty bundles equal in size, in each box, one bundle in each of them is chosen at random; then a sample of 5 per cent is obtained.

In France, detailed information on the wages are used for establishing 5 per cent sample of employees by choosing every twentieth employee on the list.

In Africa, it is difficult to obtain comprehensive information on employees. Funds for family allowance or Provident Funds could provide the list of employees but unfortunately, these lists are rather very often incomplete, and furthermore, they cover only a small portion of employees; independent farmers and craftsmen are not included.

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