Bangladesh - Economic Census of Bangladesh 1986

BANGLADESH BUREAU OF STATISTICS

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Overview

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Overview

ABSTRACT
The non-agricultural sectors of the economy account for about 50 percent of GNP and about 40 percent of employment and are growing very rapidly. These sectors (especially the small scale sectors) are precisely the ones with the weakest data available. Improving this situation requires the 'conduct of a comprehensive sample survey designed to collect the appropriate information. However, without a -knowledge of the number and location of establishments classified by industry, no useful and reliable surveys can be conducted. This can only be obtained through a census of non-agricultural economic activities.

There has never been a census of economic activities describing the economic structure and industrial composition of theBangladesh economy. Although some data are being regularly compiled (notably the census of manufacturing industries), most of the previous surveys have been adhocefforts conducted by diverse organizations covering only a very selected universe. As such, the results have been very difficult to compare and have presented very different pictures of the actual situation. The unorganized sector of the economy in particular, suffers from an almost complete lack of reliable data and that which are available conflict in many details. It should be noted that the non-agricultural economic sector must become stronger in the future if it is to absorb the increasingly larger number of landless persons. Accurate information is a necessity for careful short and long term planning efforts in this critidal sector.

The specific objectives of the proposed Economic Census were:

- To determine the structure of the non-agricultural economic sector and measure the relative contribution each makes to the regional and national economies.

- To furnish benchmark figures for revising and up-dating the national income accounts and other economic series covering the non-agricultural economy of Bangladesh.

- To provide a frame for planning and designing future, more frequent in-depth surveys of non-agricultural economic activities.

- To collect basic data on economic activities, persons engaged (working proprietors and partners, full-time and part-time employees, family workers, and by sex), the year business was established, type of machinery used, and type of ownership.

- To determine non-agricultural economic activities done by households in the nonformal sector.

- To provide small area statistics for users both at national and local levels and support the government in its policy of decentralization of planning and functions.

- To derive a base for the formulation and implementation of a comprehensive and integrated plan for the development of the non-agricultural sector.

The industries to be covered included all non-agricultural establishment based economic activities such as mining quarrying, manufacturing (including cottage industry), production of electricity, gas and water, construction, trade, services, transport, storage, communication, finance, insurance and real estate, in short, all non-agricultural activities carried out in the formal

and non-formal sectors. Data to be collected included the name and address, a description of the activity conducted, major products sold or serviced, method of selling, type of ownership, number of persons engaged (working proprietors, partners, full and part-time workers, unpaid family workers) classified by sex, type of machinery used, year of establishment and type of ownership.

KIND OF DATA
Census/enumeration data [cen]

Coverage

UNIVERSE
In the case of Economic Census, the proprietors and managers of business may sometimes be reluctant to disclose correct or accurate detailed information about their economic activities and other related information. Some of them may be. afraid that the Government may either enhance existing taxes or impose new taxes on their economic activities, or take some other action that may adversely affect their economic situation. It is felt that the census -enumerators would naturally face problems regarding their legal authority of collecting such informations. It is therefore, necessary to provide a legal basis to the 1986 Economic Census.

To conduct a nation-wide Economic Census by the staff of the Bangladesh Bureau of Statistics alone was impossible. A large number of persons were required to work as census enumerators and supervisors. These officials were recruited from amongst the members of the public or borrowed from other organizations having field staff. With a view to facilitating availability of requisite number of officials either from amongst the members of the public or other organizations to the Bangladesh Bureau of Statistics during the census field operation it was considered necessary that the members of the public or other organizations were made legally bound to render necessary assistance towards taking of the census; and it any body refused or neglected to perform any census duty imposed upon him or refused to obey any order issued to him under the legal authority vested bylaw in the Bangladesh Bureau of Statistics, such offence should have been made punishable under the law. In view of the circumstances stated in the previous paragraphs, the Government of Bangladesh adopted "The PresidentiaJ Order No. 70'of 1972" (Population Census Act) for the purpose of conducting the 1981 Population Census in Bangladesh.

The Economic Census of 1986 was conducted to collect statistics regarding economic activities and disabled persons including the head count of population as additional information. For field enumeration of this census, enumerators had to approach households, business/industrial establishments, institutions, etc. As such for conducting this census the aforesaid "Census Act" (Appendix-i) and the "Industrial Statistics Act, 1942" (Appendix-2) were adopted as legal base. Both of these acts authorised the census enumerators to gain access to the households and premices of business/industrial establishments and other institutions and organizations for marking or asking questions for the purpose of conducting the census. Both acts made it obligatory on the part of the respondents to answer questions put to them by the census enumerators. Any person who knowingly made any false return, or intentionally gave a false answer or refused to answer to the best of his knowledge was made punishable by these acts. Similarly these acts imposed certain responsibilities on the census organization and ensured strict secrecy on the information collected during the census operation. The collected information would not be disclosed publicly and none could have a right to inspect any book, register, or record made by a census officer in the discharge of his census duties and no records of census would be admissible in .any civil or, criminal proceedings other than a prosecution under the census act.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
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Sampling

Sampling Procedure

Following the census, the BBS conducted a series of large scale sample surveys covering the nonagricultural economic sector.
They were:
- Integrated Economic Survey in the formal sector.
- Survey of Household and Cottage Industry in the non-formal sector.
The census results were used as the sample frame. Each subject was explored in greater depth than was possible In a full scale census. For example, to get a reasonably accurate response on sensitive items such as value of inputs and outputs from businessmen requires a probing set of questions which was not possible in a census enumeration. The continuing series of economic surveys would be based on the results of the economic' census' both as a sample frame and as a benchmark for accurate estimation procedures.

Deviations from Sample Design

In view of the emphasis of the Economic Census on non-agricultural economic establishments and the disproportionate concentration of such establishments in urban areas, oversampling of urban areas for the PEC was deemed essential. The desire for separate PEC coverage estimates for the large and small cities dictated a further concern for over sampling in urban areas. A third factor bearing on the issue of sample allocation was that census coverage would be lower in urban areas than in rural areas again indicating an additional measure of oversampling in urban areas. At the outset, it was decided that a total sample size of 250 EAs would provide reliable estimates and would be within the resource capabilities of the BBS.
On the basis of pre-census EA lists, the whole country was divided into three domains (a) large cities, (b) small cities, and (c) rural areas including other urban areas. Then on the basis of the activity of the units each domain was divided into two strata : (a) commercial and (b) residential.
a. Selection ofcommerclal EAs
All mauzas with hats/bazars were classified as "Commercial mauzas". In a first stage selection,these "Commercial mauzas" were selected PPS according to the number of EAs in each mauza. The exact EAs were selected in a second stage, during the PEC-A operation. The "Commercial" mauzas were inspected to determine exactly which EAs contained hats/bazars. Those with hats/bazars were classified as "CommercialEAs"; those without hats/bazars were classified as "Residential EAs". In the second stage, "CommerciaEAs"weré selected randomly within the selected "Cormercial mauza".
b. Selection of Residential EAs
All "Residential EAs" were selected in a two-stage sample. The "Residential mauzas" (those mauzas without hats/bazars) and the "Commercial mauzas" were groupedtogether and mauzas were selected PPS according to the number of EAs in each mauzas. Forty-one of these selected mauzas were "Residential mauzas" and nineteen were "Commercial mauzas". EAs within the "Residential mauzas" were selected by a systematic procedure while the EAs within "Commercial mauzas" were selected randomly during the PEC-A operation as stated in Para-a above.

The Annual Economic Survey (AES) sample design is based on two in independent frames a list frame based on the industrial directory of large establishments, and an area frame to cover the smaller establishments, the household economic activities and the large establishments missing from the list frame. The sample design for the area frame provided for 12 monthly national subsamples of approximately 125 EA's each. For the purposes of the area frame sample design, 107 distinct BSIC groups were defined for permanent establishments. Some of these groups consist of establishments at the individual 4-digit BSIC level, while 4-digit BSIC groups with few establishments were combined. The data for the first 3 monthly area subsamples were used to calculate the approximate variances for total TPE for each of the 107 BSIC groups. In order to determine the precision of the combined area and list frame survey estimates, the list frame variances based on the final sampling strategy were calculated for the same 107 groups. These results are presented in annex 3, which includes the C.V.'s for the combined estimates.
The purpose of this report is to define the sample design for the list frame of large establishments. First the issues related to the integration of the Census of manufacturing Industries (CMI) and AES list frame for the manufacturing sector is described followed by considerations for stratification and optimum, sample allocation. Detailed sampling specifications are included to be used in the selection of the sample establishments by Microcomputer.

Questionnaires

Overview

Data Collection

Data Collection Dates

Start	**End**	**Cycle**
1986-12-21	1986-12-27	N/A

Data Collection Mode

Other [oth]

Data Collection Notes

The whole purpose of the training programme was to train the census workers i.e. 1,91,323 enumerators and 19,637 supervisors about the enumeration procedure and the techniques of, filling up the census questionnaires and the summary sheets. The entire training arrangement was worked out to ensure timely and effective training of all enumerators and supervisors. For achieving this objective an elaborate training programme had been chalked out which was implemented in the following phases:
- Training of Regional and District Census Co-ordinators (RCCs/DCCs)by master trainers.
- Training of zonal officers by District Census CoTordinators.
- Training of supervisors by zonal officers.
- Training of supervisors/enumerators combined by zonal officers.
- Review of training of enumerators by supervisors.

Questionnaires

Data Collectors

Name	Abbreviation	Affiliation
BANGLADESH BUREAU OF STATISTICS	BBS	STATISTICS AND INFORMATICS DIVISION, MINISTRY OF PLANNING

Supervision

Adequate arrangement was made at different administrative levels for effective supervision and control of the census field operation. In particular, the Teleprinter Service facility of the Establishment Division was utilised for quick and efficient t communication between different levels of supervision and control.
National level
Enumerator Census Packet: Each containing one 120 page book, one pencil, one identification badge, one eraser, one sharpener, and one challç stick.
Divisional level
At divisional level, 4 Directors of BBS were appointed as Divisional Census Coordinators and were responsible for supervision and control of census work.
Regional level
At regional level 21 Joint/Deputy Directors of BBS were appointed as Regional Census Coordinators and were made responsible for supervision and control of census work in the regions.

Data Processing

Data Editing

Input preparation planning;
The data processing was the most important part of a census operation. it consisted of three distinct operations. A manual editing and coding phase prepared the questionnaires for the Optical Mark Reading (OMR) phase accomplished by high speed DMA machines. The OMA data tape output was then read into the BBS mainframe computer where the data were further edited for completeness and accuracy, corrected where necessary and then tabulated for review and publication.
Manual editing and coding;
The first phase of data processing involved - (i) sequential arrangement of 1,96,720 filled in census books according to geo-code, (ii) verification of geo-code and (iii) manual editing, coding and coverage control. Immediately after receipt of the filled in census schedules from the field, these were arranged by District, Upazila, Zone, Union/Ward according to the geo-codes assigned to them. Manual,editing and coding were taken up just after the filled-in census books were sequentially arranged. Each EA book was processed in the following manner
Coding of economic activities;
A "Code" is numeric symbol by which information can be classified or organised. The Bangladesh Standard Industrial Classification (BSIC)-1 986 had been developed in conformity with lntemational 0 Standard Industrial Classification to assign unique code to economic activities. A team of. trained càders assigned a 4-digit BSIC code to each questionnaire for each unit with economic activity. Each: coder was supplied with coding manuals in both English and Bengali which, showed the entire coding* structure with detailed descriptions of. each classification. A supplemental alphabetic index was prepared in both languages to assist coders in quickly determining the correct codes. The entire coding operation was subjected'to a rigorous uaiity control operation (QC). Every coders work was 100% verfified until the coder demonstated that he/she was "qualified"; following which each coderswork'was verified at a 10% - level. The ve'rdicatio'n'wab done independently; the verification coding was done on a separate coding sheet by coder A, the actUal coding in the EA book was done by coder B, and comparision coder, coder C, compared the two results and prepared the necessary QC documents. These documents were used to monitor control of the coders production and error rates and to measure the quality of the coding operation. With the coding work completed following the abovö procedure, the error rate was less than 1 percent.

Other Processing

Accuracy check of large permanent establishment data (coverage control);
In an economic census, the enumeration of large permanent establishment was extremely important since their contribution to the totals, especially in the manufacturing sector, was very significant. The purpose of the accuracy check of.large establishments was to ensure that they were accurately included in the 1986 Economic Census tabulations. From various sources (December, 1984 Urban Census, February, 1986 Rural Establishment Survey, and the Census of'Manufacturing Industries) lists of large establishments with 10 or more employees for manufacturing and 20 or more employees for other economic sectors were compiled. These were matched to the EA books to determine if they were enumerated in the 'Economic Census and that their BSIC code and employment size were approximately correct. The existence of establishments which could not be matched were verified in the field. Similarly, establishments which matched, but with different BSIC codes or employment, were also verified in the field. A second function of the accuracy check was to search for and correct "fragmented" establishments. Fragmentation of establishments can occur when enumerators incorrectly report separate structures of the same establihment on separate questionnaires. For example, in one establishment there may be, stores, offices, production facilities; etc. which may have been incorrectly reported on separate questionnaire. To the extent possible,, these were identified and.combined into a single questionnaire. Approximately 50,000 large permanent establishments were checked in this review. Nearly 6,000. were verified in the field, 4847 were found to be in existence and were added to the main census records. The census enumeration, therefore, covered about 90 percent of the larger establishments while the accuracy chock added additional 10 percent.
Manual editing for optical mark reading;
EachEA book was reviewed on a sample basis to ensure that the enumerator had properly marked the ovals on the questionnaires. If the ovals were not properly marked (of I center, not dark enough, smudged, etc.), the information would not be accurately read and reproduced. Whenever ovals were determined to be incorrectly marked, the entire book was reviewed and corrected.
Computer editing and tabulation;
The Computer and Data Processing (COP) wing of the BBS was responsible for computer editing and tabulation .of the, census questionnaires. The computer editing of the questionnaires was instituted to identify suspect relationships among the data items and potential incorrect marking by enumerators. Computer listings of the potentially erroneous questionnaires were prepared. These were reviewed for inconsistencies and corrected,where necessary. The corrections were then, carried

to the computer records. The data were then tabulated using COPOL programs prepared by the CDP Wing.

Printing & publication of census data;

The data published in national report showed the basic economic structure of the industries : the type and number of economic units, industrial classification, number of persons engaged, and form of ownership. Other data collected were used to determine the industrial classification code for each economic unit and were not entered for publication. Census information.for disabled persons collected in conjunction with this census could not be processed 100% due to fálle.oiP OMR technology. However, some basic statistics on them were furnished in the national report from a 5% sample of census enumeration areas.

The printing work for all reports in connection with the Economic Census has been done in the BBS Reproduction Unit by direct reproduction of computer printouts using offset press in order to reduce printing and composition time, and to eliminate typographical. errors. The publication of census dat followed the following publication plan.

Data Appraisal

Estimates of Sampling Error

The universe to be covered by this component of the AES consists of all permanent establishments with 10 or more TPE in the manufacturing sector, and all permanent establishments with 20 or more TPE in the wholesale trade, retail trade, restaurents and hotels, and service sectors. The sampling frame consists of a directory list of permanent establishments. This directory was compiled from the Economic Census, the CMI and other sources. Although a strong effort was made to update the frame as much as possible and eliminate duplication, it is known to contain an unquantified amount of omissions and duplication. Large permanent establishments which are missing from this list frame, such as new establishments, are represented in the area frame, subject to higher sampling errors. It is more difficult to determine the amount of duplication, except in the case of the certainty strata. Following the data collection and evaluation, it may be possible to adjust the estimation to take into account potential duplication inthe frame. Astratified one-stage systematic sample design will be used to select the sample of permanent establishments, which ae the units of analysis.