## Survey documentation for the Survey of Manufacturing Industries 2012 (SMI)

***Bangladesh Bureau of Statistics***

***January 2022***

***D R A F T***

The documentation consists of three parts: 1. Reference metadata 2. Releases 3. Process documentation (details about goals, methodology, roles, processes, and evaluation)

The main audience for the survey documentation is the staff working on the survey on a daily basis. In addition, the documentation can be used a) when introducing new staff, and b) when preparing overall plans, conducting quality audits and functional reviews. Finally, the survey documentation can be used when preparing changes, e.g., new IT solutions.

**1. Reference metadata (for internal and external users)**

**1.1 Contact information**

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| --- | --- |
| Contact organization | Bangladesh Bureau of Statistics (BBS) |
| Contact organization unit | Industry and Labor Wing |
| Contact name | Mr Kabir Uddin Ahmed, Director of Industry and Labor Wing |
| Contact mail address | Parishankhyan Bhaban, E-27/A, Agargaon, Dhaka-1207, Bangladesh |
| Contact email address | NA |
| Contact phone number | NA |

**1.2 Statistical presentation**

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| Data description | The Survey of Manufacturing Industries (SMI) is the principal source of industrial statistics in Bangladesh. It provides statistical information to assess and evaluate objectively and realistically the change in the growth, composition and structure of the manufacturing industries. It also provides estimates of the structure, ownership status, employment, intermediate consumption, fix assets value, gross output and gross value added etc. of production units engaged in manufacturing industries. |
| Classification system | The Bangladesh Standard Industrial Classification (BSIC) 2009 was used to classify the manufacturing industries. All the industries in Business Directory are classified in their appropriate groups. This way a unit was classified in only one industry group even though it could manufacture products belonging to different industries. Although the target of the survey was to produce estimates for different aggregates at 2, 3 or even 4-digit level, due to very insignificant number of establishments (sometimes only 1) in certain industries and the issue of confidentiality, the SMI results are presented only at the 2 and 3-digit levels, and by size class as defined in the National Industry Policy 2016. |
| Sector coverage | Manufacturing industries (manufacturing sector) employing 10 or more workers: 1 Jute Textile 2 Cotton Textile 3 Garments 4 Knitwear 5 Paper 6 Fertilizer 7 Iron and Steel 8 Cement 9 Petroleum products 10 Cigarettes 11 Matches 12 Drugs and pharmaceuticals 13 Tea 14 Salt 15 Edible oil 16 Soap and detergent 17 Processing & Preserving of fruits |
| Statistical concepts and definitions | * Manufacturing Industry: manufacturing is defined as the mechanical or chemical transformation of organic or inorganic substances into new products, whether the work is performed by power driven machines or by hand, whether it is done in a factory or in a premise-based location and whether the products are sold wholesale or retail.
* Manufacturing Establishment: an establishment is defined as a unit engaged in the physical or chemical transformation of materials, substances, or components into new products. The units primarily engaged in maintenance and repair of industrial, commercial, and similar machinery and equipment, which were, in general, classified in the same class of manufacturing as those specializing in manufacturing the goods were also included. Thus, all activities covered by BSIC-2009 divisions 10 to 34 were considered as “Manufacturing” for the purpose of the survey.  Large establishment: large-scale establishment means and includes those establishments, which have at least 250 workers.
* Medium establishment: medium scale establishment means and includes those establishments, which have more than 100 workers and less than 250 workers.
* Small establishment: small establishment means and includes those establishments, which have more than 25 workers and less than 100 workers.
* Micro establishment: micro establishment means and includes those establishments, which have more than 10 workers and less than 25 workers.
* Legal status: it defines the status of ownership of the establishment for example, whether an establishment is recognized and registered as one person ownership, or partnership, or private limited company, or public limited company, or cooperative society, or nationalized corporation.
* Individually owned: It means the manufacturing establishments owned and run by one person or family who bear the profits or losses of the establishment.
* Partnership: partnership is defined as the “relation between persons who have agreed to share the profits of a business carried on by all or any one of them acting for all.”
* Private limited company: a company, which has no right to transfer the shares of its members to others according to the “Articles of Association”. The number of members must be at least two but not more than fifty, and the employees are not regarded as members.
* Public limited company: a company incorporated under the Company’s Act 1913 or recognized thereby as an existing company, which is not a private company.
* Co-operative society: a corporate body operating not for the purpose of earning profit but rather for the purpose of providing services to its members, in a co-operative society the capital needed is supplied by members and by borrowing and its saving are distributed to the members.
* Proprietor: when an individual is the sole owner of an enterprise it is a proprietary enterprise. Own account production of fixed assets for own use, when produced by a member, was classified as a proprietary enterprise.
* Manager, Clerical and Sales workers: include all classes of salaried employees engaged in economic activities of the establishment, such as managers, clerks, and sales employees.
* Production workers: production workers are those workers who are directly or indirectly engaged in production activities in exchange of salaries. Working supervisors and persons engaged for repairing and maintenance are also included.
* Temporary workers: mean those engaged in activities on a temporary basis or in exchange for daily wages, but do not get any salary and other benefits like the permanent workers.
* Unpaid Family workers: mean the family members/partners directly engaged in economic activities at least 15 hours in a week of the normal working time of the establishment, but not paid regular wages or salaries.
* Persons engaged: mean the total number of persons who work in or for the establishment, including working proprietors, partners and unpaid family workers. The total persons on short term leave, either because of illness or vacation, are also included.
* Wages and salaries: include all cash payments (monthly salary + house rent + medical allowance + other allowances) made during the year in case as compensation for work done but does not include other cash and non-cash benefits.
* Other Cash benefits: include other monetary benefits such as treatment cost, bonus, etc. given to the employees in addition to wages and salaries.
* Other non-cash benefits: include the material goods and other benefits given to the employees, in addition to their salaries and wages, and cash benefits such as food and food articles, clothing, housing accommodation, transport etc., which is free of cost or at a price lower than the market value. This excludes employer’s contribution to provident fund, person’s gratuity or other social security measures.
* Fixed assets: it means all assets, whether obtained from other enterprise or produced by the establishment out of its resources for its own use, which are expected to have a productive life of more than one year. It consists of land, buildings, other construction, machinery and equipment, transport etc.
* Other fixed assets: other fixed assets include furniture, fixtures, air-conditioners, refrigerators etc.
* Stock: it refers to inventories of inputs such as raw materials, fuel, spare parts, packing materials, lubricants, etc. and finished and semi-finished goods.
* Manufacturing goods/finished products: manufacturing goods are those that were produced during the reference period at the final stage of production and are ready for sales.
* Work-in-progress: it means value of all materials, which have been partially processed and are not usually sold without further processing.
* Industrial waste: it means the products, which are not included in the final products.
* Fuels: these include all purchased fuels except those that are used as raw materials or chemicals. It represents total purchase value of all items of fuels such as coal, liquefied petroleum gas, petrol, electricity, lubricants etc.
* Depreciation: depreciation means an accounting item to set aside an allowance to cover the cost of wear and tear of the fixed assets used in manufacturing process during the year. It is the consumption of fixed capital due to wear and tear and obsolescence during the accounting year and is taken as provided by the factory owner or is estimated on the basis of cost of installation and working life of the fixed assets. Cost of repairs and maintenance work done by others: it means the cost to the establishment of current repairs and maintenance services rendered by others to fixed assets of the establishment.
* Employment cost: it includes all payments, whether in cash or in kind, made by the owner/employer. It includes all cash payments, bonuses etc. It includes direct wage and salaries, payment of overtime, dearness, compensatory, house rent and other allowances, remuneration for the period for not worked, bonus etc.
* Industrial cost: industrial cost includes the cost of materials and supplies that have been physically incorporated in the products and by-products, cost of fuel and electricity used for manufacturing purpose, as well as payment for work done by others.
* Non-industrial cost: it includes payment for water charges, printing and stationery, advertising, business insurance, postage, telegraph and telephone, banking, legal and accounting services rendered to the establishments and also amount paid technical know-how and consultative services. It excludes interest paid to bank.
* Cost of production: cost of production includes industrial cost, non-industrial cost, employment cost and indirect taxes. Valuation of products and by-products: products and by-products are valued at the ex-factory prices. It also includes excise duty, sales tax and other indirect taxes.
* Value of gross output: it includes value of products and by-products, plus receipts for work done and for services to others, plus net change in work-in-progress. Indirect tax: indirect taxes include excise duties, VAT and sales tax only.
* Gross value added: it is the value of gross output less intermediate consumption.
 |
| Statistical unit | A statistical unit or a reporting unit is an establishment where production of goods and services take place. |
| Statistical population | 8,429 manufacturing establishments |
| Reference area | Whole country |
| Time coverage | N.A. |
| Base period | N.A. |

**1.3 Statistical processing**

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| --- | --- |
| Source data | Survey of Manufacturing Industries |
| Frequency of data collection | Every 5-6-years |
| Data collection | Through a questionnaire sent to the sampled establishment |
| Data validation | N.A. |

**1.4 Quality dimensions**

**Relevance**

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| --- | --- |
| User Needs | N.A. |
| User Satisfaction | N.A. |
| Data completeness rate | N.A. |

**Accessible and clarity**

|  |  |
| --- | --- |
| Release calendar access | N.A. |
| News release | The year following the survey |
| Publications | Survey of Manufacturing Industries 2012 (<http://203.112.218.65:8008/WebTestApplication/userfiles/Image/LatestReports/SMI-%202012.pdf>) BBS Survey 2019: Number of small industries up, large and medium ones down (<https://www.dhakatribune.com/business/2019/05/30/bbs-survey-2019-number-of-small-industries-up-large-and-medium-ones-down>) |
| On-line database | N.A. |
| Micro-data access | No access. |
| Other | NA |
| Documentation on methodology | N.A. |
| Quality documentation | N.A. |

**Timeliness and punctuality**

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| --- | --- |
| Timeliness and time lag - final results | Satisfactory |
| Punctuality | Satisfactory |

**Coherence and comparability**

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| --- | --- |
| Comparability – geographical | Consistent |
| Comparability over time | Consistent |
| Coherence - cross domain | Consistent |
| Coherence - internal | Consistent |

**Accuracy and reliability**

|  |  |
| --- | --- |
| Overall accuracy | Satisfactory |
| Sampling error | N.A. |
| Non-sampling error | N.A. |

**2. Releases**

| **ReleaseTitle** | **PlannedReleaseDate** | **ActualReleaseDate** |
| --- | --- | --- |
| Survey of manufacturing Industries 2012 (SMI 2012) | 2013-01-01 | 2013-01-01 |

**3. Process documentation (for internal users)**

**3.1 General information**

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| --- | --- |
| Goals/objectives in workplan/strategy | The Survey of manufacturing industries covers all types of manufacturing industries (manufacturing sector) with 10 workers or more. The main objective of the survey is to provide reliable data relating to manufacturing industries of the country. The specific objectives of this survey were the following:* to provide estimate of the number of manufacturing establishment having total persons engaged 10 or more by type of industrial activity;
* to measure the total persons engaged by sex and status in employment;
* to estimate fixed assets, intermediate consumption, raw materials used and
* to calculate gross output and gross value added etc.

The Survey of manufacturing industries 2012 has been conducted to provide reliable data on manufacturing industries (manufacturing sector) at national level. The survey is designed to estimate the number of manufacturing industries, employment, fixed assets, raw materials used, and energy consumed, value of outputs, gross value added etc.(Source 2012 report) |
| Other goals | NA |
| Statistical program type | Sample based survey program |
| Methodology (general) | **1. DESIGN OUTPUTS***Summary information*Preliminary results on the website. NA*Publication*Survey of Manufacturing Industries 2012(<http://203.112.218.65:8008/WebTestApplication/userfiles/Image/LatestReports/SMI-%202012.pdf>)*Dimensional data*NA*Unit data*NA**2. DESIGN VARIBABLE DESCRIPTIONS**NA**3. DESIGN COLLECTION***General*Data collection was done in two phases. First, the questionnaire, manual, request letter, and gazette of notifications were sent to the industries to provide data. Second personal interview and follow up was done to the non-responding industries. Enumerators (Statistical Assistant/Statistical Investigator) from headquarters were engaged for collection of data. Deputy Directors, Regional Statistical officers, Statistical officers and Assistant Statistical officers of BBS were deployed for supervision of field work and qualify control. Besides, the high officials of BBS, were also involved in supervision and monitoring the survey work. Data collection of the Survey of manufacturing industries was done in June 2012 and follow up interviews was done afterwards.*Survey instruments and training of survey personnel*For collection of information on manufacturing industries from the field the following survey instruments have been prepared:* Development of Survey questionnaire
* Prepare Enumerator’s training/instruction manual and
* Development of Listing form

A draft questionnaire for Survey of manufacturing industries was designed on the basis of the objectives of the survey. It was a structured questionnaire and primarily pre-coded covering questions on number of issues such as (i) characteristics of establishments (ii) persons engaged, wages & salaries and fixed assets, (iii) raw materials and energy used, (iv) gross revenue and change in stock etc. A formal field pretest was carried out on the draft questionnaire to finalize the questionnaire, develop instruction and training manual for enumerators and supervisors, survey procedures etc.The main purposes of the pretest were:* to test the suitability of structured questions in terms of language and placement of questions;
* to test and verify the contains and items of questions as per objectives of the survey;
* to find out the appropriate/possible answers for the questions and
* To estimate the time required for filling the questionnaire etc.

Necessary modifications were done on the basis of the field-pre-testing result. The final draft questionnaire and enumerator’s training manual were finalized based on the suggestions/recommendations of the Technical Committee. A comprehensive training and instruction manual for survey personnel (enumerators and supervisors) as well as for data collection was prepared. The objectives of the survey, definitions & concepts of the important terms, interview technique, question wise explanations were clearly stated in the training manual. A3 day-long training program were arranged for the survey personnel (Master trainers/Supervising officers and Enumerators) for collection of reliable data. In first day, the classroom training was devoted to listing of establishments, questionnaire, data collection procedures and selection of sample establishments.The method of data collection and procedures of filling of the questionnaire was thoroughly discussed in the classroom training. In the second day of the training, all trainees were taken to the field for field practice. The field practice experiences of the enumerators and Supervisory officers were reviewed in the afternoon session of the training. Any misunderstanding or confusion about filling up questionnaire and data collection procedures was resolved in the training class.**4. DESIGN FRAME AND SAMPLE***Sample size and stratification*See details in report: Survey of Manufacturing Industries 2012(<http://203.112.218.65:8008/WebTestApplication/userfiles/Image/LatestReports/SMI-%202012.pdf>)**5. DESIGN PROCESSING AND ANALYSIS**Data processing is an important phase of survey operations and editing of data particularly raw data is the major task of data processing. Preliminary checking of various entries in the filled-in questionnaires was done by the supervisory officers and enumerators at the field level. Thorough manual editing of filled-in questionnaires was carried out by trained editors based on specific guidelines and instructions under the supervision of the project officers.Necessary coding such as geo-codes, industry codes and product codes were given in accordance with their respective code lists. Computer editing was done to check the internal consistency, omissions and validation of data.**6. DESIGN PRODUCTION SYSTEM AND WORKFLOW**See roles and processes below. Each process describes who is doing what, input, output, tools and specific methodology aspects. See also desciption of IT solution (general) |
| IT solution (general) | NA |

**3.2 Roles and human resources**

| **Name** | **Description** | **Number of staff allocated in one instance of the survey (man-months)** |
| --- | --- | --- |
| Top management – HQ | Director General | NA |
| Subject matter specialist HQ | Subject matter staff allocated to survey | NA |
| Dissemination staff | Staff allocated to dissemination and data storing | NA |
| Other roles HQ (IT etc) | Staff allocated for data capture tasks | NA |
| District office staff | EnumeratorsSupervisors ensuring quality of enumeration | NA |

**3.2 Collection, Processing, Analysis and Dissemination**

**Data collection**

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| --- | --- |
| Who is doing what | Subject matter specialist prepares data collection: questionnaires, plans etc.District office staff uses paper questionnaire to collect data.District office staff and send questionnaire by post / transport to the headquarters for data transcription? (Or is the data transcription done at the district level).HQ staff do data capture |
| Input | Sample, directory, questionnaires and tools for data capture designed and tested in the design and build phase |
| Output | Directory information, completed paper questionnaires, Input data in CSPro / Stata / SPSS |
| Methodology | See general information |
| Tools | Customized Software (CSpro), SPSS, STATA |

**Data processing**

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| --- | --- |
| Who is doing what | Subject matter specialists do data editing, create weights |
| Input | Input database: Data file in CSPro |
| Output | Clean database: Stata/SPSS files |
| Methodology | See general information |
| Tools | Customized Software (CSpro), SPSS, STATA |

**Data analysis**

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| --- | --- |
| Who is doing what | Subject matter specialists prepare tables, do analysisTechnical committee reviewsTop management approves |
| Input | Output from processing phase, draft tabulation plan from design phase |
| Output | Output database: file, report etc. |
| Methodology | See general information |
| Tools | Stata and word |

**Data dissemination**

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| --- | --- |
| Who is doing what | Subject matter specialist prepares press release with highlights and invite press for presentation of resultsMeeting with pressDissemination staff release report and update release calendarPress publishes press release |
| Input | Output from analysis phase |
| Output | Approved report, pdf file at the website, press release etc. |
| Methodology | See general information |
| Tools | General purpose office tools and web tools |

**3.3 Evaluation**

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| Evaluation: results compared to goals | Lessons learnedFirst, double entry system i.e., same filled-in questionnaires being entered in two separate computers despite higher costs is very much needed to check inconsistencies /misleading numbers and codes.Second, manual data editing, particularly a group of staffs and officers should be developed to perform the internal inconsistencies of the filled-in questionnaires. Third, a strong supervisory team has to be developed comprises of junior and mid-level officials of BBS and may be entrusted with the task of serving as editors and quality control experts and each officials should be concentrate on a few sub-sectors and developed a sound understanding and knowledge on these sub-sectors. Frequent field visits before, during and after the completion of the survey should be ensured with greater participation by mid and senior level officials of BBS.Finally, there was reluctance found on the entrepreneurs’ part to provide data or administer the questionnaire by themselves and it is suggested that greater involvement of the local government authority, chambers, and associations would make the future survey in a more efficient manner. |
| Evaluation: results compared to indicators for processes | NA |
| Issues based on evaluation | NA |
| Recommendations | NA |