

**THE SECOND INTERNATIONAL WORKSHOP ON
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ECONOMIC CENSUS IN MALAYSIA

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A. Why Economic Census

1. Introduction

1.1 The Services, Manufacturing, Agriculture, Construction, and Mining & Quarrying Sectors are the most important sectors in the Malaysian economy. In 2005, these sectors accounted 51.2%, 30.7%, 8.0%, 3.3% and 9.5% respectively of Malaysia's GDP (at constant 2000 price¹). The increased contribution was reflected in 2008 especially for the Services sector which accounted for 55.0% while the rest accounted 29.1%, 7.5%, 3.0% and 8.1% respectively. In line with that, the Services Sector is targeted to be the main engine of growth overtaking the manufacturing sector.

1.2 Before year 2000, the census on economic sectors in Malaysia was conducted separately under various names. The first census was conducted in 1931 covering only the Rubber Estates. Then, censuses on other economic sectors were conducted in different years. The history of the census are as follows:

Year	Sectors	Title of Census
1931	Agriculture	Census of Rubber Estates
1960	Manufacturing	Census of Manufacturing Industries
1964	Construction	Census of Construction Industries
1964	Mining	Mining Census
1971 & 1972	Services	Census of Professional & Institutional Establishments (Private Sector
1973	Quarrying	Census of Stone Quarrying

¹ Source : Annual National Accounts, Gross Domestic Product (GDP), 2000 – 2008, Malaysia

1.3 During the 1974 to 1999 period, several censuses were conducted pertaining to the economic sectors mentioned above. In the year 2000, the Department of Statistics, Malaysia (DOSM) decided to integrate all the sectors in one census, namely Economic Census. The Census was conducted in 2001 and will be conducted for every 5 years. The Census is among one of the most important censuses and surveys conducted by DOSM. The most recent Census was conducted in 2006 (reference year 2005). Information pertaining to growth, composition and distribution of the major sectors of the Malaysia economy was canvassed and collected during the Census.

2. Objective

The main objective of the Census is to collect information pertaining to growth, composition and distribution of output, value added, employment and other variables of the sector to assist the government in development planning and for formulating policies.

3. Scope and Coverage

The scope of the Census was confined to services, manufacturing, agriculture, construction and mining & quarrying. The classification of the industry of the establishment is based on the principal activity and is in accordance with the Malaysian Standard Industrial Classification 2000 (MSIC 2000). The MSIC 2000 conforms to the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 3, United Nations, with modification to suit local condition. This Census is canvassed for the whole of Malaysia.

3.1 Frame

The source of frame is Central Registry System, which contains information from the Companies Commission of Malaysia

(CCM), Associations, Local Authorities etc. The Census covered all registered establishments engaged in the following sectors:

- i. Services
 - a. Education – 9 industries
 - b. Health – 17 industries
 - c. Professional – 6 industries
 - d. Selected Services – 8 industries
 - e. Transportation – 24 industries
 - f. Information and Communication Technology – 14 industries
 - g. Accommodation – 9 industries
- ii. Manufacturing – 197 industries
- iii. Agriculture – 30 industries
 - a. Crops, Livestock and Fishery – 30 industries
 - b. Logging – 4 industries
- iv. Construction – 25 industries
- v. Mining and Quarrying
 - a. Mining – 9 industries
 - b. Quarrying – 3 industries

3.2 Reporting Unit

The reporting unit for this census is **Establishment**. An establishment is defined as “an economic unit that engages, under a single ownership or control, that is, under a single legal entity, in one, or predominantly one kind of economic activity at a single physical location”. Each establishment was assigned an industry classification based on its principal activity and not that of its parent company.

In the case of a multi-activity entity, units engaged in separate activities in the same location constituted distinct establishments. Thus, each branch of a multi-branch organization at a different location was conceptually treated as a

different establishment. The establishment was requested to give separate returns for each activity in terms of value. However, if in practice, the accounts were centrally kept such that it was not possible to obtain separate data for each individual unit or branch, that entity or enterprise was treated as a single reporting unit and allowed to submit a consolidated questionnaire covering all units or branches.

3.3 Concepts and Definitions

Concepts and definitions are based on the recommendations of the United Nations' Statistical Office. Therefore, the concepts and definitions used in the Economic Census 2005 were also based on the International Recommendations for Industrial Statistics 1983 (IRIS 1983). These concepts adhere to accepted practices, thereby facilitating international comparability of data. The definition of Information and Communications Technology (ICT) is based on the definition of the Organization for Economic Cooperation and Development (OECD).

3.4 Type of business activity

Type of business activity refers to both principal and secondary activities. The principal activity refers to the activity to which the establishment devoted most of its resources or activity which contributes the largest income. Secondary activities are those incidental or ancillary to the principal activity.

4. Approaches and Methods

The census was primarily conducted by mail inquiry. Respondents were given one month to complete and return the questionnaire to the Department. Thereafter field enumeration was undertaken to obtain the completed reports from the non-response establishments.

5. Uses of Economic Census Results

The Economic Census results were used to establish a benchmark for the level of economic development in the country. The data are also used in the compilation of national accounts especially to rebase and obtain new weights for economic indices, input-output tables and specific studies. In addition the results are used by economists, academicians, the private sector and individuals for economic analysis and projections.

B. Planning and Organization of Economic Censuses

1. Legal Provisions

The Census was conducted under the provisions of the Statistics Act, 1965 (Revised-1989). Under the Act, the contents of the individual return received would be kept confidential. In conformity with the requirements of the Act, only aggregated figures are published.

2. Financial and Budget Provisions

The budget to implement the Economic Census in Malaysia just to cover salaries & wages, expenses of travelling & allowance, utilities, etc. The distribution of the budget is as follows:

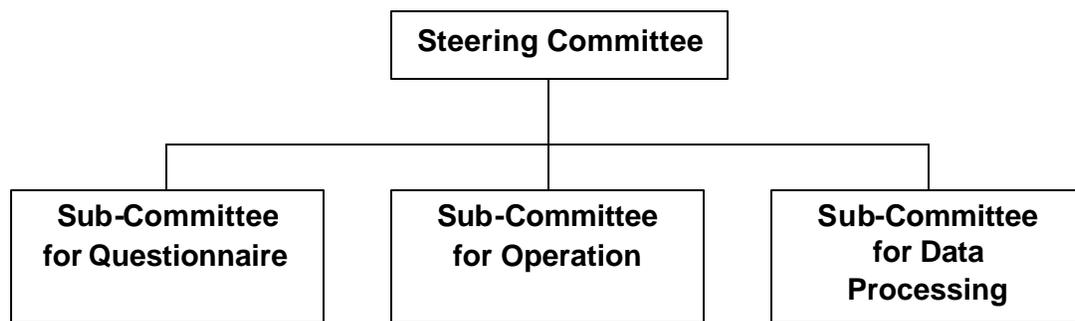
i.	Salaries & wages	-	85%
ii.	Expenses of travelling & allowance	-	11%
iii.	Others	-	4%

Besides the headquarters, the State Offices which are responsible for data collection and processing will also receive the budget

3. Administrative Arrangements

3.1 Committees for the Economic Census

To ensure the smooth implementation of the Census, a steering committee and 3 sub-committees were formed to implement and monitor the various activities of the Census.



3.2 Involvement of Divisions and State Offices

Three Divisions, namely the Industrial Production and Construction Statistics Division, Services Statistics Division and Agriculture and Agro-Based Statistics Division as Subject Matter Divisions (SMD) are responsible in planning work, preparation of concepts and definitions, conduct training to officers in State Offices, preparation of tables, data analysis and preparation of publication as well as data dissemination. The SMD also assist the Information Technology Division in developing data processing and tabulation system. Whereas fourteen State Offices play an important role which responsible in data collection and processing as well as cleaning data before sending to SMD.

4. Work Schedule and Activities

The work schedule of the Economic Census is as follows:

- i. Preparation and Updating of Frame
- ii. Preparation of Economic Census
 - a. Preparation of questionnaire

- b. Preparation of instruction to respondents
- c. Preparation of computer editing and tabulation specification
- d. Printing of questionnaires and other documents
- e. Testing of processing and tabulation system
- f. Recruitment of temporary staff
- iii. Implementation of Economic Census
 - a. Submission of questionnaire and related document to the State Office
 - b. Publicity
 - c. Training (operation and processing)
 - d. Questionnaire received and field operation
 - e. Editing and coding
 - f. Processing/validation
- iv. Merging and Run of Data
- v. Preliminary Report
- vi. Preparation of Detail Tables and Publication

5. Staff Recruitment and Training

Centralised training on field operation, completeness check, manual editing and coding was conducted for offices and supervisory staff from the state offices. These officers in turn conducted training at the state level to all enumerators who have been recruited a month before launching the fieldwork. Regional training on the processing system (data capture and validation) was conducted together with the installation of the processing system for both headquarter and state offices. During the Census, there is a review training especially to strengthen their ability in conducting the census as well as to identify and resolve all issues arise.

6. Questionnaire Development and Design

Preparation of the Census questionnaires involved several discussions with other government agencies. The questionnaires were finalized based on the numerous discussions with the potential respondents and feedback from the pilot survey. A standard format was used for the questionnaire with modification to suit the various activities of the different sector. For reference year 2005, the questionnaire was designed to suit processing system. The design is more on the setting or margin of the questionnaire which comply with the new technology of processing system, namely Intelligent Character Recognition (ICR).

7. Publicity

An awareness campaign before the Economic Census so to promote the response of businesses was organized. One of the promotional activities is a press conference. Representatives from relevant government departments/agencies and trade organization e.g. Federation of Malaysian Manufacturers, Construction Industry Development Board, Associations etc, were invited to the conference. Pamphlets on the Economic Census were also given to these associations for distribution to their members. Publicity of the Census was also carried out at state level.

8. Completion of Fieldwork

The census was closed after ensuring that the remaining non-response establishments were either dormant, ceased operations, untraceable or had not started operation yet. Only a small proportion refused to cooperate.

C. Data Collection and Data Processing

1. Data Items Collected

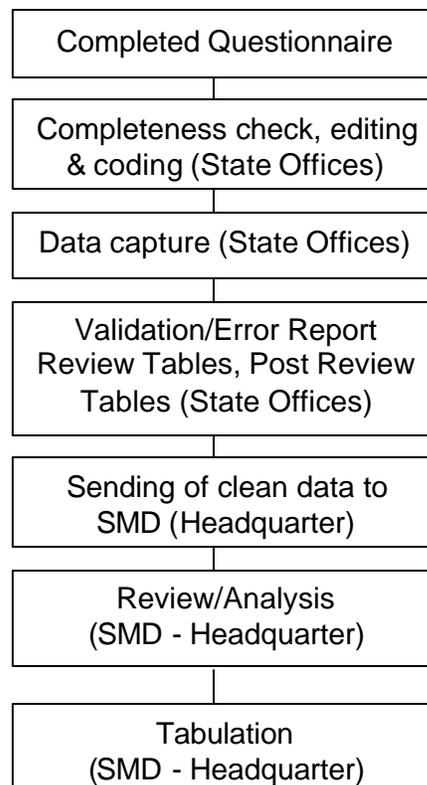
Normally, information collected for each sector involved in the Census was as follows:

Data Items	Services	Manufacturing	Agriculture	Construction	Mining & Quarrying
Identification particulars	v	v	v	v	v
Legal status of the establishment	v	v	v	v	v
Shareholders' Fund and Ownership structure	v	v	v	v	v
Capital expenditure and value of assets	v	v	v	v	v
Employment and Salaries & Wages	v	v	v	v	v
Number of persons engaged by qualification	v	v	v	v	v
Man-hours worked during the reference year	v	v		v	v
Turnover / Income	v	v	v	v	v
Expenditure	v	v	v	v	v
Profit / Loss	v	v	v	v	v
Value of stocks	v	v	v		v
E-Commerce	v	v		v	v
Other relevant questions depends on the services sub-sector	v				
Additional information on headquarters/branches	v				
Water, Lubricants, Fuels and Electricity Consumed		v		v	v
Packing Materials and Containers		v			
Production and Sales		v			v
Raw Materials		v			v
Value of Own Manufactured Products Exported		v			
Sources of Material Consumed		v		v	
Category of Construction Work				v	
Value of Construction Work Done by State / District / Division				v	
Construction Work Done Outside Malaysia				v	
Value of Construction Work Done by Type of Construction				v	
Cost of Building Materials				v	
Material Received and Supplied				v	
Information on Contracts / Tenders				v	
Details of Work Sub-Let To Others				v	

2. Methods of Data Processing

- 2.1 The Economic Census for reference year 2000 using manual data capture i.e. via personal computers (PC) for data processing activity. Whereas, for reference year 2005, DOSM using both ICR system and manual data capture to process the data.
- 2.2 To develop the system, the computer Edit Specifications were prepared. Development and testing of data capture and validation system are also important to take into account.
- 2.3 Processing of data which encompassed completeness check, editing & coding as well as data capture and validation via PC and ICR was carried out by the State Offices.
- 2.4 Queries or clarification with respondents on omissions and inconsistencies were conducted through telephone, field visits or correspondence.
- 2.5 The flow chart of the processing process was as follows:

Flow Chart for Data Processing



3. Technological Innovations

- 3.1 For reducing costs of Economic Censuses, the questionnaire has been downloaded to the DOSM website. The respondents will download or print the questionnaires and return the complete questionnaire by e-mail/post/fax to the State Offices.
- 3.2 Recently, DOSM has improved the quality of the output from censuses/surveys data by improving data capture system. For the first time, Intelligent Character Recognition (ICR) technology is being adopted for processing of Economic Census data. Some advantages using this ICR including less recruitment of staff, turnover of staff can be easily handled, less transcription error etc.

4. Quality Aspects

- 4.1 There is a quality assurance for the Economic Census process which will be undertaken by both at the state and SMD level. At the state level, officers must ensure that the data is clean before sending to SMD. Whereas at the SMD level, officers will analyse the data by comparing with the previous data as well as to take into account the current economic situation. During the process, queries or clarification with respondents on logical and inconsistencies were also conducted through telephone, field visits or correspondence.
- 4.2 To ensure the Economic Census process complete over the period, there is a committee to monitor the progress of field operation and data analysis checking, namely Committee of Big Business Unit (BBU). The State Offices should submit the monthly report for the Committee to take further action. The BBU Committee meet to discuss and decide the next step should be taken according to the progress of the Census .

D. Post-Census Activities

1. Post-Enumeration Checks

1.1 After completion of the fieldwork of the Economic Census, all cases with status such as non-response, wrong industry, post office return (POR) etc., will be studied for further action. Several steps that have been taken to ensure a sufficient data obtained and achieve the response rate target are as follows:

- i. There are establishments with non-response (no cooperation) status but still operation and is the contributor to the national economy. The establishments will be follow-up through telephone or revisited to get all the information need. Whereas for cases which still not given a response instead of active operation, imputation data will be done based on the previous census.
- ii. Wrong industry case – the data will be tried to obtain from the related establishment but if still can't get it, imputation data will be done.
- iii. Post office return – the State Offices will be requested to identify/search a new address of the establishment and get the information. They also should confirm the status of the establishments whether its have been closed or still operation. If still operation but can't get the data, imputation process will be done.

Notes : Method of imputation depends on the respective sectors, some use a manual and others use estimation system programme.

1.2 Several meetings and discussions have been held after the census in order to ensure the Economic Census done properly in term of all frames covered as well as new frame which should

also be covered in the census. Therefore, if the establishment on completion of fieldwork is found to be a big player and active, the establishments will be visited to get the information.

- 1.3 The other source of data will be obtained from the relevant agencies as a checking and comparison process. Usually, the results from the Economic Census were almost the same or slightly higher than the comparable data.

2. Post-Mortem

In order to ensure all the relevant matters take into account for an effective implementation of the next census, some issues raised during the census will be recorded. The issues will be discussed in the post mortem session organized by the headquarters with officers from the State Offices who are directly involved in this census. During the post mortem, results obtained from the current Economic Census and comparison with the previous census or other relevant census will be done.

3. Updating Frame

The frame will be updated especially:

- i. To reduce the printing cost and field operations which will increase if the non operation establishments were not updated in the frame.
- ii. To ensure a complete coverage, new establishments should be updated in the frame.
- iii. Code of wrong industry should be updated with the right code.

4. The Economic Census as a basis for the next census/survey programmes

Besides the census results used for the compilation of National Accounts and Input-Output Table, there are several important activities/programmes would be done either from the census results or in term of frame.

4.1 In term of census results, the data have been used by the government for national development planning and economic policy formulation. The major users are Economic Planning Unit, Central Bank of Malaysia, Treasury etc. The data also are used in rebasing of the Index of Industrial Production. Besides that, the data will also be used to make a comparison with the next censuses/surveys for the related sectors.

4.2 In term of frame, the Economic Census would be as a basis for subsequent sample survey programmes. In Malaysia, the frame was using to provide a sample selection of the annual, quarterly or monthly survey for the sectors covered in this census. Generally, the frame will be used in selection of establishments for cut-off censuses/surveys for some of the services industries. Whereas a sample selection of the Annual Survey of Manufacturing Industries also will be done using the Economic Census frame.

E. Dissemination of Economic Census Results

1. Reports

The Economic Census reports were prepared in two stages i.e. Preliminary Report and Final Report. The Preliminary Report was usually released during 15 months after the reference year. The findings will based on the preliminary data. The primary objective of the

Report was to provide users with an initial overview of the respective industries in the Malaysian Economy. The Final Report was usually released during three to six months after the Preliminary Report. The report will comprise summary of findings, the detailed statistical tables and technical notes as well as relevant appendices.

2. Data Dissemination

The results of the Economic Census was disseminate through printed publication and electronic format (CD-ROM and DVD-ROM). The publication will be circulated to the stakeholders and other government agencies. The researchers, private sectors and individuals will get the publication by purchasing from DOSM at reasonable price. The results were also disseminated through press release and website. For non-published, data can be obtained through request either through letters, e-mail, request forms at website, telephone or visit to the Department.

3. Confidentiality Issues

Although detail data obtained from respondents such as name of the company, address, income, expenditure etc., are available, only aggregated figures are published. This is in line with the provisions of the Statistics Act, 1965 (Revised– 1989).

4. Evaluation, analysis and acceptance of Economic Census Results

The Economic Census results will be evaluated and analyzed, then the write-up will be prepared as well as a complete publication. There is a committee known as Publication Committee which will be chaired by Deputy Chief Statistician with all Directors as members. The publication will be brought to the Publication Committee for clearance in terms of write-up and data reliability. Comments and suggestions raised by the members will be taken into account before publishing the data.

F. Future of Economic Census in the Economic Statistics Programmes

1. Future Plans

1.1 The Department of Statistics, Malaysia is developing a National Enterprise Wide Statistical System (NEWSS) with objectives:

- i. Integrated Statistical System Framework;
- ii. Efficiently monitor and manage Census and Surveys;
- iii. Improve the timeliness and reliability of the Statistical Information; and
- iv. Extend the dissemination of Statistical Information

NEWSS will be used by year 2010. Therefore, the next Economic Census for reference year 2010 will use the NEWSS facilities. Furthermore, in the NEWSS, integrated operation monitoring would be done. Besides that, to produce tables according our need could be done through speedminer system. There is a possibility to conduct the next Economic Census through e-census.

1.2 For the next Economic Census planned in 2011 for reference year 2010, DOSM will migrate from using MSIC 2000 to MSIC 2008, ISIC Rev. 4.

1.3 Recently, data items have been added and definitions revised to reflect the update of the 1993 System of National Accounts. Therefore, the concepts and definitions used in the next Economic Census are also will based on the International Recommendations for Industrial Statistics 2008 (IRIS 2008).

1.4 In terms of method of data collection, to date DOSM practice mail inquiry and fieldwork. For the next Census, maybe new technology or approach could be applied such as using

Computer-Assisted Telephone Interview (CATI), Computer-Assisted Personal Interview (CAPI), Computer-Assisted Self Interview (CASI), etc. but should in line with the budget allocation.

2. Challenges

2.1 Strong Central Registry System – updated addresses

A good frame is essential for the success of the Census. Although the Central Registry System comprise all the frames needed but it's difficult to have an updated addresses. That's why when the census implemented, there are several untraceable or post office return cases arise.

2.2 New Questionnaire – redundant variables

Redundant variables in the questionnaire of Economic Census 2006 will be reviewed for the next Census. A review of the questionnaire content in line with Stakeholders needs and IRIS 2008 are being studied.

2.3 Reduce Respondent Burden

Sometimes, there will be more than one questionnaire received by the respondents. However, the respondents have to answer all the questions which data items collected were varied for each of the questionnaire.

2.4 Besides that, there are several other challenges in conducting the Census:

- i. To obtain good response from respondents
- ii. To enhance the quality and timeliness statistics in order to meet stakeholders' requirements
- iii. To develop and sustain high caliber of human resources