

**DATA UTILIZATION AND DISSEMINATION STRATEGIES
POPULATION AND HOUSING CENSUS,
MALAYSIA 2000**

by

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1. INTRODUCTION

- 1.1 The Department of Statistics (DOS), Malaysia is the main Government agency entrusted with the responsibility to collect, compile and disseminate statistics. The Department operates under the authority of the Statistics Act 1965 (Revised 1989) which defines the functions and provides the legal backing to undertake these functions.
- 1.2 The Department of Statistics (DOS) has had a long experience in undertaking national population and housing censuses, apart from its responsibility of collecting, interpreting and disseminating statistics in other fields. The Department had undertaken the Censuses in the years 1911, 1921, 1931, 1947 and 1957. Since the introduction of the Census Act 1960, the Department of Statistics has conducted the Population and Housing Censuses of Malaysia for the years 1970, 1980, 1991 and 2000. The 2000 Population and Housing Census is the fourth nation-wide and latest national census to be undertaken since the formation of Malaysia in 1963.
- 1.3 A population and housing census represents the principal means of data collection aimed at providing a comprehensive set of statistical information on population and housing. In this respect, the Population and Housing Census of Malaysia provides a wealth of information on the number of persons and households together with a wide range of their demographic, social and economic characteristics. In addition, information on the total number of living quarters by type, structural characteristics and the availability of amenities are also available.
- 1.4 As was the case with previous censuses where data collected were used extensively in the preparation and monitoring of the Five-Year Malaysia Plans, the socio-economic data collected in the Census would provide a comprehensive set of statistical information for the planning, formulation and implementation of government policies and programmes. Apart from this, the census data are also widely used by business and industry, research institutions and individuals.

- 1.5 The Census data also provide information on the status and characteristics of the population. These data, when compared and analysed with information collected in the previous censuses, yield invaluable insights into the changing demographic, social and economics of the population at the various geographical level.
- 1.6 The census provides a wide variety of information at both the national and sub-national levels. At the national level, census data serve useful inputs for the planning, formulation and implementation of policies and programmes. This data at the sub-national level (eg. states, districts, mukims, local authority areas, town, localities etc.) are extremely important in arriving at decisions with regards to location of new hospitals, schools and other public facilities as well as to institutions of higher learning and market research firms or organizations.

2. **CENSUS TOPICS**

- 2.1 In order to determine the topics to be included in the 2000 Population and Housing Census, the Technical Committee on Census chaired by the Director General of the Economic Planning Unit with the Department of Statistics acting as its secretariat had deliberations attended by other members such as representatives from Ministry of Finance, Ministry of Housing and Local Government, Ministry of Home Affairs, Ministry of National Unity and Social Development, Manpower Modernisation and Planning Unit (MAMPU), Central Bank, Ministry of Education, Ministry of Health, Ministry of Agriculture and Ministry of Human Resources, Public Services Department, Town and Country Planning Department, Department of National Housing, Department of Social Welfare, Department of Aborigines Affairs, Immigration Department, and National Population and Family Development Board. Resulting from these deliberations a final set of topics to be canvassed in the census was agreed upon taking into consideration the needs of planners as well as other users.
- 2.2 The list of topics canvassed in the 2000 census with comparisons made with those canvassed in the last three previous censuses in 1970, 1980 and 1991 is

shown in **APPENDIX 1.**

2.3 The topics are arranged under three broad headings namely:

- (i) Population
- (ii) Household and
- (iii) Housing

3. DATA PROCESSING

3.1 The data processing activity of 2000 Census was decentralised. 13 processing centres were setup. Total number of personnel was about 2,800 and the number of PC's used was 403 units.

3.2 The Census data collected was processed in two phases as part of the strategy to speedily release the results. They are :

- (i) Phase 1 : Non-coding questions (e.g.: Birthplace)
- (ii) Phase 2 : Coding questions (e.g.: Occupation/ Industry)

3.3 Training of the processing staff was also handled in two phases, that is phase 1 for manual processing activities and phase 2 for quality control and computer processing activities.

3.4 The processing centres were set up to decentralise activities involving manual editing of the census forms, coding of selected fields which were not precoded and data entry using micro computers. All the centres were linked via local area network and wide area network.

3.5 Due to the limited planning and preparation time to conduct the 2000 census, it was decided to maintain the key-in data capture method used in the 1991 census. It was thus a labour intensive method in addition to requiring a great deal of hardware in terms of PCs.

- 3.6 There were four open ended question that required coding i.e. migration (place of previous residence), field of study, occupation and industry. These were manually coded. Considering that field of study was an additional question for the census, as well as the fact that new classification for both occupation (Malaysia Standard Classification of Occupations (MASCO)) and industry (Malaysia Standard Industrial Classification (MSIC)) were used, the coding process required careful monitoring.
- 3.7 Computer validation and imputation was done on microcomputers. Edit and imputation specifications were written to fill in missing data where possible to ensure that consistency of information was maintained. Reports were also produced on the extent of imputations done for each question and these were inspected by subject matter officers to ensure that imputation levels were not high and data distributions were not affected.
- 3.8 Tabulations for the 2000 Census were produced at the headquarters in Kuala Lumpur using the microcomputers. Some simple tabulation has been produced at an early stage to facilitate some quick analysis of the census data.
- 3.9 The software used in overall processing of the 2000 Census was integrated data processing called IMPS (Integrated Microcomputer Processing) obtained from the International Programs Center (IPC) of the U.S. Bureau of Census. This package was fully supported by IPC and training was given on the imputation (CONCOR) and tabulation (CENTS) modules to both the subject matter and data processing staff.

4. DISSEMINATION OF CENSUS DATA

- 4.1 The 2000 Population and Housing Census of Malaysia provides voluminous information pertaining to persons, households, living quarters, demographic, housing and other social and economic characteristics that are immense value to the public and private sectors for planning purposes.

4.2 A census is not complete until the information collected from the census is made available to various groups of users. It is therefore important at the outset to determine the types of tabulations that are widespread interest to users so that they can be included in the publications. The tabulation strategy employed in the 2000 Census took into account the demand for the speedy release of census data for use by governmental agencies as well as businesses and industry.

4.3 Strategy

4.3.1 Since the census involved the processing of large numbers of forms and information, it was expected that a certain amount of time lapse was needed before the final report could be made available to users. The dissemination strategy of Census 2000 is different from Census 1991. This is because 2000 census report was published based on selected topics. 2000 census report can be divided into two that is preliminary report and final computed data report.

4.3.2 Broadly, the data dissemination program included several strategies, namely published data, non-publication tables, a database providing small area data available on microcomputers and sample data (2%). Thematic maps and a Census Atlas were also planned to be produced using the Geographic Information System (GIS). Details of these strategies are given below.

4.3.3 Published Reports

(i) To provide timely data, two publications based on preliminary fields count from the 2000 Population and Housing Census have been produced to date. The titles of these publications and their dates of release are given below:

- (a) Preliminary Count Report - October 2000
- (b) Preliminary Count Report for Urban and Rural Areas - January 2001

(ii) There are seven publications based on specific topics and containing data in table form. The titles of these publication and their dates of release are given below:

- (a) Population Distribution by Local Authority Areas and Mukims - January 2001
- (b) Population Distribution and Basic Demographic Characteristics - October 2001
- (c) Education and Social Characteristics Of The Population - Jun 2002
- (d) Characteristics of Living Quarters - August 2003
- (e) Economic Characteristics of the Population - September 2002
- (f) Migration and Population Distribution - Mac 2004
- (g) Household Characteristics - September 2004

(iii) In addition to the above reports, the General Report of the Population Census, 2000 is also published. The report presents some of the more important tables as well as highlights the trends and patterns of population and household characteristics.

4.4 Electronic media

4.4.1 CD-ROM

All 2000 Census publication is also available in digital copy. For some users, digital media are the preferred medium of dissemination. This is because data in this form can lend itself for further computer processing, computation, graphing and analysis.

4.4.2 2 per cent sample tape

This 2 per cent sample data was also produced in 1991 Census. In both years (1991 and 2000), the sample data selected was based on two per cent of all occupied living quarters in Malaysia and all households and

persons within these selected living quarters were included. In 1970 and 1980, the census sample data is only for Peninsular Malaysia.

4.4.3 Subfile (for internal use only)

For selected topics such as indigenous (Orang Asli), internal and external migrant etc. Used for further analysis in specific topics.

4.4.4 Databases

2000 Census – InfoCEN (at EB level)

1991 Census – CLIPPER (for sale) & REDATAM (EB level – for internal use)

4.4.5 Census Data on Internet

Census data is also obtainable from the department website www.statistics.gov.my.

4.5 Mapping Products

4.5.1 As in 1991, Census Atlas for Census 2000, which presenting census data in the form of thematic maps is also published. Its main aim is to portray the geographic distribution of some of the more important data at the state and administrative level.

4.5.2 Thematic maps present the more important census results, thus allowing the general user to visualise the geographical distributions and patterns inherent in the data. In this respect, it is planned that census maps at various administrative levels will be produced to accompany the census reports, which portray data at different administrative areas.

4.5.3 In addition to the above, it is expected that many users would be interested in very small area data such as that for a housing estate, village, locality etc. The ad hoc area required by these users can then be identified using the Geographic Information System (GIS) and the data at

the lowest level, that is the Enumeration Block (EB), can then be aggregated to meet the user's requirements. Using GIS, census information based on spatial and non-spatial criteria as required by the user can also be produced.

4.6 Analytical Reports

As in the 1991 census program, analytical reports on topics of special interest are also to be produced once the basic census reports are released. These analytical reports will cover such topics as urbanization, migration (particularly foreign migration as witnessed by the presence of a large foreign labour force in the country), the indigenous (Orang Asli) population, the elderly population, and the like. Such reports are especially useful to planners, researchers and specialised users of census data.

4.7 Unpublished Tables

4.7.1 Given that the census contains a wealth of information, not all of the census data can be published. Tabulations required by only a few users, such as certain government offices or specialized research organizations can be supplied in an unpublished form, that is, unpublished hard-copy tables or tabulations in machine-readable format. Given the great number of permutations in the cross-tabulation of different variables, some data may not be tabulated until they are actually required.

4.7.2 However in this aspect, the advancement in computer technology provides the opportunity to produce a greater number and a wider variety of tabulations using PC based software than was the case with previous tabulation approaches. The data stored in the census database allows fast and relatively inexpensive production of additional tables as they are requested.

5. UTILIZATION OF CENSUS DATA

5.1 Development planning and evaluation

5.1.1 Population censuses are traditionally used for public and private sector policy-making, planning, administrative and research purposes. Information on the size, distribution and characteristics of a country's population and housing is essential to describing and assessing its economic, social and demographic situation and to develop sound policies and programmes in relation to education and literacy; employment and human resources; transportation and highway planning and the like.

5.1.2 In the Malaysian context, the data from the 2000 Census would serve as an important input in the evaluation and formulation of important policies, projects and programmes to be incorporated in the Government's Eighth Malaysia Plan (Year 2001-2005). Apart from this, other government agencies would also be using the census data to evaluate and formulate policies and programmes in relation to the duties and responsibilities entrusted to them.

5.2 Population projection

A common use of the results of the census is to provide a basis for the estimates of population in the country. The estimate of population at national and state level is usually for 30 years (2000 – 2030), while for district or mukim level is 20 years (2000 – 2020).

5.3 Updating of census household frame

This activity is a continuous activity and does not stop when the census is completed. An up-to-date frame is important for use not only in household surveys but also as preparation for the next census.

5.4 Research projects and academic use

The advancement in information and computer technology would inevitably ensure that the enormously rich data collected in the 2000 Census would be more fully exploited by users in the public and private sector than has been the case in the past. This is made easier with the variety of media in which the census data can be stored, retrieved and analysed by users.

6. CONCLUSION

Generally, the whole area of data dissemination needs to be given serious emphasis and study at the very early stage of census planning. While it is true that technology advancements may overtake some of the early plans, it is imperative that with the increasing demand for timely data, quick and convenient methods of data release and dissemination needs to be an integral part of early census planning.

**TOPICS COVERED IN THE POPULATION AND HOUSING
CENSUSES OF 1970, 1980, 1991 AND 2000, MALAYSIA**

CENSUS TOPICS	1970	1980	1991	2000
(A) POPULATION				
GEOGRAPHIC CHARACTERISTICS				
<i>Place where person was found on Census Day</i>	✓	✓	✓	✗
<i>Place of usual residence at time of Census</i>	✗	✗	✓	✓
DEMOGRAPHIC AND SOCIAL CHARACTERISTICS				
<i>Sex</i>	✓	✓	✓	✓
<i>Age</i>	✓	✓	✓	✓
<i>Date of Birth</i>	✓	✓	✓	✓
<i>Marital Status</i>	✓	✓	✓	✓
<i>Ethnicity</i>	✓	✓	✓	✓
<i>Religion</i>	✓	✓	✓	✓
<i>Citizenship / residence status</i>	✓	✓	✓	✓
<i>Identity Card (Colour)</i>	✓	✓	✗	✗
<i>Language Spoken</i>	✓	✓	✗	✗
<i>Disability</i>	✓	✓	✗	✓
FERTILITY AND MORTALITY				
<i>Number of children born alive</i>	✓	✓	✗	✓
<i>Number of children living</i>	✓	✓	✗	✓
<i>Age at first marriage</i>	✗	✓	✗	✗
<i>Number of times married</i>	✓	✓	✗	✗
<i>Number of years married</i>	✓	✗	✗	✗
MIGRATION CHARACTERISTICS				
<i>Birthplace</i>	✓	✓	✓	✓
<i>Period of residence in Malaysia</i>	✓	✓	✗	✗
<i>Period of residence in present locality</i>	✓	✓	✗	✗
<i>Place of last previous residence</i>	✗	✓	✗	✗
<i>Reason for migration</i>	✗	✓	✗	✗
<i>Place of residence five years ago</i>	✗	✗	✓	✓
<i>Year of first arrival in Malaysia</i>	✓	✓	✗	✓

**TOPICS COVERED IN THE POPULATION AND HOUSING
CENSUSES OF 1970, 1980, 1991 AND 2000, MALAYSIA**

CENSUS TOPICS	1970	1980	1991	2000
EDUCATION CHARACTERISTICS				
<i>Literacy</i>	✓	✓	✗	✓
<i>School attendance</i>	✓	✓	✓	✓
<i>Highest level of schooling attained</i>	✓	✓	✓	✓
<i>Highest educational certificate obtained</i>	✓	✓	✓	✓
<i>Vocational training</i>	✗	✓	✗	✓
<i>Field of study</i>	✗	✗	✗	✓
<i>Place obtained cert. / diploma / degree</i>	✗	✗	✗	✓
ECONOMIC CHARATERISTICS				
<i>Type of economic activity (during previous week)</i>	✓	✓	✓	✓
<i>Number of hours worked (during previous week)</i>	✗	✗	✓	✗
<i>Type of economic activity (during last twelve months)</i>	✓	✓	✗	✗
<i>Occupation</i>	✓	✓	✓	✓
<i>Industry</i>	✓	✓	✓	✓
<i>Employment status</i>	✓	✓	✓	✓
<i>Sector</i>	✗	✗	✗	✓
(B) HOUSEHOLD				
HOUSEHOLD CHARACTERISTICS				
<i>Relationship to head of household</i>	✓	✓	✓	✓
<i>Number of persons in household</i>	✓	✓	✓	✓
<i>Type of occupancy</i>	✓	✗	✗	✗
<i>Rent (furnished/unfurnished)</i>	✓	✗	✗	✓
<i>Main cooking fuel</i>	✓	✗	✗	✗
<i>Household equipment</i>	✓	✓ ^(a)	✓ ^(a)	✓ ^(a)
<i>Household income</i>	✓	✓	✗	✗
(C) LIVING QUARTERS				
<i>Location of living quarters</i>	✓	✓	✓	✓
<i>Type of living quarters</i>	✓	✓	✓	✓
<i>Type of foundation</i>	✓	✗	✗	✗
<i>Construction material of outer walls</i>	✓	✓	✓	✓
<i>Construction material of roof</i>	✓	✓	✗	✗
<i>Condition</i>	✓	✓	✗	✗

APPENDIX 1

**TOPICS COVERED IN THE POPULATION AND HOUSING
CENSUSES OF 1970, 1980, 1991 AND 2000, MALAYSIA**

CENSUS TOPICS	1970	1980	1991	2000
<i>Occupancy status</i>	✓	✓	✓	✓
<i>Year (period) of construction</i>	✓	✓	✗	✗
<i>Type of ownership (tenure)</i>	✓	✓	✓	✓
<i>Rent (furnished / unfurnished)</i>	✓	✗	✓	✓
<i>Type of water supply</i>	✓	✓	✓	✓
<i>Type of lighting</i>	✓	✓	✓	✓
<i>Type of toilet facility</i>	✓	✓	✓	✓
<i>Bathing facility</i>	✓	✓	✗	✗
<i>Cooking facility</i>	✓	✓	✗	✗
<i>Main cooking fuel</i>	✓	✗	✗	✗
<i>No of bedroom</i>	✓	✗	✓	✓
<i>Garbage collection facility</i>	✗	✗	✓	✓
<i>No. of persons</i>	✓	✓	✓	✓
<i>No of household</i>	✓	✓	✓	✓

(a) This topic was canvassed in the household section of the questionnaire in the Population Census.