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# **Introduction to Population Census 2020**

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## CHAPTER 1

### INTRODUCTION TO POPULATION CENSUS 2020

#### 1.1 WHAT IS A CENSUS?

The United Nations (UN) Principles and Recommendations for Population and Housing Censuses defines a population census as “the total process of planning, collecting, compiling, evaluating, disseminating and analysing demographic, economic and social data at the smallest geographic level pertaining, at a specified time, to all persons in a country or in a well-delimited part of a country.”<sup>1</sup>

#### 1.2 SIGNIFICANCE AND OBJECTIVES OF THE CENSUS

Singapore conducts the population census once in ten years, during years ending with “0”. This is in line with the UN’s recommendation for countries to conduct the national censuses at least once every 10 years, in or close to years ending with “0”, to allow for better international comparability of census data.

The Census is the most comprehensive source of information providing a statistical profile of the population and households in Singapore. It collects information from the population and households and provides benchmark data for demographic and socio-economic statistics. The large sample size and coverage of the Census facilitate analyses on different population groups by fine disaggregation and by geographical area. Hence, the Census is considered an exercise of national importance. Data from the Census provide key information that is used to inform public policy studies, private business decision making and for research and analysis.

#### 1.3 HISTORY OF CENSUS – HOW SINGAPORE’S CENSUSES EVOLVED

The Census of Population 2020 (Census 2020) is the sixth population census carried out since Independence and the fifteenth in Singapore since census taking first began in 1871. It is also the third register-based Census conducted.

The history and key developments in census taking are discussed in the Statistics Singapore Newsletter (SSN<sup>2</sup>) Issue 2 2019 (see Appendix N).

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<sup>1</sup> United Nations Principles and Recommendations for Population and Housing Censuses Revision 3 (2017), p 2.

<sup>2</sup> For this and other acronyms of terms used in the Census, please refer to Appendix K.

## **1.4 REGISTER-BASED CENSUS**

The Census 2020 adopted a register-based approach with a large-scale sample survey. Unlike in a traditional Census where everyone in Singapore had to be surveyed, the register-based Census provided for a full coverage on basic items through administrative records. Basic population count and characteristics such as age, sex, ethnic group, place of birth, type of dwelling, geographical distribution and other basic demographic statistics were obtained from multiple administrative sources.

The sample survey conducted during the same reference period supplemented the administrative data with detailed survey information on selected topics. In 2020, a sample enumeration of about 150,000 households was conducted to obtain additional information useful for in-depth studies but not available from administrative sources. These included marital status and fertility, education and language spoken, literacy, economic characteristics, mode of transport, religion, difficulty in performing basic activities as well as housing and household characteristics.

The approach of using comprehensive up-to-date administrative databases, and the large-scale survey for the Census resulted in reduced response burden for the population and savings arising from lower manpower and resource demands.

## **1.5 CONCEPT AND COVERAGE**

Along with the register-based approach, the Census 2020 adopted the de jure concept for Singapore's population estimates based on a person's place of usual residence. Under the de jure concept of "usual residence", Singapore residents (citizens and permanent residents) with valid local addresses and who were not away from Singapore for a continuous period of 12 months or longer were included in the total population count. Non-residents comprising foreigners who were working, studying or living in Singapore but not granted permanent residence were also included in the total population. The transient population, such as tourists and short-term visitors, was excluded.

The Census reference date was set as 30 June 2020, in line with the mid-year reference point where administrative data were updated.

## **1.6 TRI-MODAL DATA COLLECTION STRATEGY**

To facilitate data collection for the sample enumeration, the Census 2020 retained the tri-modal data collection strategy. The tri-modal approach was first successfully implemented in the Census 2000 and improved in Census 2010. This

approach comprising Internet submission, Computer-Assisted Telephone Interviewing (CATI) and face-to-face interviews was further refined in Census 2020. Face-to-face interviews were carried out via a web-based survey form using mobile devices and the data collection process was fully integrated with secured wireless real-time data transmissions instead of having the need to synchronise the mobile devices with the System as implemented during Census 2010.

### **1.6.1 Internet Submission**

The Internet submission was first made available to respondents in Census 2000. Over the years, adoption rate grew and it was the most common mode used by respondents to submit their survey returns for Census 2020.

Available 24 hours a day, 7 days a week, Internet submission provided respondents with the flexibility to access the system and provide their survey returns directly using any Internet-accessible device (e.g. desktop, laptop, tablet or smartphone), on-the-go, without having to go through a third party (i.e. the interviewer). In light of the COVID-19 situation, this self-enumeration mode allowed respondents to stay home while providing their responses to Census 2020 without any need for physical interaction with our field interviewers.

### **1.6.2 Computer-Assisted Telephone Interviewing**

CATI is a tried-and-tested data collection strategy, having been deployed in Censuses 2000 and 2010 as well as General Household Surveys (GHS) 1995 and 2005. For respondents who were unable to complete their survey returns via the Internet, the Census 2020 CATI Hotline was available for them to provide their survey returns over the phone. CATI interviewers also contacted households which did not complete their survey returns by a stipulated date for telephone interviews. The Census 2020 Hotline was in operation 7 days a week, including public holidays from 9 am to 10.30 pm, to provide convenience to respondents who required assistance to complete the survey.

### **1.6.3 Fieldwork**

Fieldwork, or face-to-face interviews, has the longest history among the three data collection modes. For households which did not respond via the Internet and could not be contacted by CATI interviewers after several attempts, visits were made by field interviewers to conduct face-to-face interviews. Respondents who preferred

to be contacted in person could also opt for the face-to-face interviews where the Census 2020 survey officers would visit and collect the information from their homes.

Tablets were used in the Census 2020 field collection. Data were captured and updated to the system directly with authentication processes in place to prevent unauthorised access. The use of tablets enhanced the data security for respondents' survey returns. Automatic branching of questions, consistency checks and electronically coded data were captured directly in the field to reduce back-end processing efforts. With this, the need for households to be re-contacted subsequently after the face-to-face interview was reduced.

## **1.7 LEGAL AUTHORITY**

The Census 2020 was conducted under the *Statistics Act* (relevant parts extracted in Appendix C). All data collected will be kept in confidence in accordance with the *Statistics Act* and used solely for statistical purposes.

## **1.8 CENSUS PLANNING AND BROAD SCHEDULE OF CENSUS ACTIVITIES**

As the Census is the largest national statistical exercise to meet the data needs of the government and population, various Ministries were consulted as part of Census planning.

Planning for the Census 2020 started in the Department of Statistics (DOS) in January 2017, with the review of the approach and budget. User consultation was carried out shortly after to seek inputs on the data items to be included in the Census questionnaire. Areas for improvement identified from the previous Census were also taken into consideration to make refinements to the question phrasing and operational flow.

The drawing up of the Census 2020 IT tender specifications, calling of open tender and evaluation took place from January 2018 to January 2019. The development work of the IT system, user experience design and testing with the vendor spanned from February 2019 to January 2020.

The Census 2020 was officially launched on 4 February 2020. Arising from the COVID-19 outbreak and the Circuit Breaker (CB) measures taken during 7 April – 1 June 2020 to control its spread, the timeline for the conduct of the Census was impacted. The Census team swiftly made adjustments and adapted to the new operating environment for the Census operations. Details on adjustments would be elaborated under the respective sections.

Overall, during the CB, operations at the Census 2020 Call Centre and fieldwork were suspended. Operations were performed via telecommuting. Fieldwork only resumed in mid-July 2020, with data collection completed in December 2020. While data processing started in end March 2020, it was also suspended during CB and only resumed in end June 2020 and continued through January 2021.

The detailed statistical releases from the Census findings were released in June 2021. A schedule of the key activities is shown in Chart 1.1.

**Chart 1.1: Project Timeline**

