
Data Collection

CHAPTER 3

DATA COLLECTION

3.1 OVERVIEW

The Census 2020 enumeration was officially launched on 4 February 2020. A tri-modal data collection strategy, comprising the Internet submission, CATI and face-to-face interviews, was implemented to facilitate data collection from about 150,000 households during the enumeration period from February to end 2020.

The impact of COVID-19 pandemic posed unprecedented challenges for the conduct of Census 2020. Adjustments were made to the data collection strategy and timeline, in response to the COVID-19 situation. The Census field operations were scaled down significantly, including being suspended from April to mid-July 2020.

At the early stage of the Census, face-to-face visits were arranged only upon request from mid-February to early March 2020. To safeguard the well-being of the field staff and the Census respondents, such visits were only carried out after health and travel declarations were obtained from households who had requested for face-to-face interviews. Field staff were also provided with surgical face masks for their face-to-face visits with survey respondents. Households were encouraged to submit their survey returns via the Internet or by phone as much as possible.

In the design of the Census workflow, a staggered rollout approach, where the Census sample was split into a number of smaller batches with survey start dates spreading over several weeks, was adopted. The design helped to spread out the case load on the Internet server, call traffic to the Census 2020 Hotline and minimise risk of data exposure for individual households on the Internet. For the Census 2020, it provided the additional flexibility for the despatch dates and sizes of each batch to be adjusted in response to the evolving COVID-19 situation and measures.

More details on the adjustments made to the Census 2020 data collection strategy amidst COVID-19 are discussed in Appendices O (SSN Issue 2 2020 – Conducting Census of Population 2020 in Singapore amidst COVID-19) and P (SSN Issue 1 2021 – Census of Population 2020 – Modes of Submission and Reminders amidst COVID-19).

3.2 WORKFLOW OF CENSUS BATCHES

For the conduct of the Census 2020 sample survey, the selected addresses were divided into 21 batches and respondents were progressively notified by batch. Staggered start dates of about 3 to 4 days apart were planned for the 21 batches to spread out the load for the data collection modes.

On average, three batches were rolled out in 2 weeks as illustrated in Figure 3.1. This staggered workflow was designed to optimise the use of resources. Apart from moderating the volume of Internet traffic to the Census 2020 Internet submission website and avoiding a sudden surge in usage if all respondents informed of the survey were to register at the same time, staggered batching also allowed for more effective case allocation and follow-up at the Census 2020 Call Centre and by field interviewers.

Figure 3.1: Flow of Records by Batch and Weeks after Census Launch

Batch	Weeks									
	1	2	3	4	5	6	7	...	N	→
1	Inter- net	Inter- net	Inter- net	Inter- net	Inter- net	Field- work	Field- work	Field- work	Field- work	
2		Inter- net	Inter- net	Inter- net	Inter- net	Field- work	Field- work	Field- work	Field- work	
3			Inter- net	Inter- net	Inter- net	Inter- net	Field- work	Field- work	Field- work	
4				Inter- net	Inter- net	Inter- net	Inter- net	Field- work	Field- work	
↓										
21									Inter- net	...

Respondents in each batch were first sent a notification letter informing them that they had been selected to participate in the Census 2020. They were given two weeks to provide their survey returns via the Internet. They also had the option to call the Census 2020 Hotline to provide their information via a telephone interview. The Census 2020 Hotline was manned by the CATI interviewers who were trained to conduct the Census survey over a telephone interview, answer queries about the survey and provide technical assistance for respondents using Internet submission.

After the two-week period provided for Internet submission, the CATI system called out to respondents who had not completed their survey returns. For respondents who had not completed their survey returns by the due date for Internet

submission at the end of the second week, a reminder letter was sent. This reminder letter encouraged respondents to submit their survey returns via Internet or call the Census 2020 Hotline for telephone interview. Respondents would still be able to submit their survey returns either through Internet or CATI in the third to fifth week.

Outside of the CB period, a second reminder was sent at the end of the fourth week to alert respondents that survey officers could be arranged to visit them at their homes to assist them in completing their survey returns if they were not able to submit their survey returns via the Internet or telephone by the given deadline.

To encourage submissions through the Internet and telephone while face-to-face interviews were suspended due to the mitigating COVID-19 measures, respondents who did not complete and submit their survey returns by the deadline would receive up to a total of 4 reminder letters, two more compared to the reminders sent in 2010.

Records which were not completed via Internet or telephone interview by the end of the fifth week were assigned to survey officers for follow-up through face-to-face visits. Records were downloaded to the respective team members' tablets to facilitate the conduct of field interviews. Field interviews were planned to take place from the sixth week. The Field team was given another four weeks to complete the survey returns in each batch.

3.3 INFRASTRUCTURE SET-UP FOR DATA COLLECTION

The Census 2020 data collection system was hosted at the Government Private Cloud (GPC). GPC is a one-stop environment for government agencies to host and deploy their applications, e-Services and websites. By riding on the centrally managed infrastructure for the public sector, lower operating costs were achieved with economies of scale. The system availability was also assured through a resilient central infrastructure. In addition, the round-the-clock operational support provided was essential to meet the needs of the Census Internet submission module which was available 24 hours a day, 7 days a week.

The database set-up also provided flexibility for households to switch between different modes of submission during the survey period. To mitigate potential security concerns of hosting too much information in a single database, information was loaded only when each batch became available for enumeration. Upon receiving the complete information for a household, information for the household was transferred from the data collection database to the internal data processing database to minimise the risk of exposure.

3.4 EASING RESPONDENTS' BURDEN

3.4.1 Supporting Internet Submission

Internet submission was part of the Census digital journey which started in 2000 and aligned with Singapore's digital transformation and journey as a smart nation.

Since its introduction in Census 2000, Internet submission had seen a steady increase in take-up. In 2020, 64 per cent of selected households completed the Census online, up from 38 per cent in 2010 and 15 per cent in 2000.

Available round-the-clock, Internet submission provided respondents with the flexibility of completing the survey anytime, anywhere. It allowed respondents to provide their survey returns directly in a paperless and presence-less manner 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).

Automated branching of questions alleviated response burden by directing respondents to only relevant questions. Tips and definitions also aided respondents in understanding the information required for specific questions. Other features such as basic verification rules helped ensure completeness of survey returns while auto-saving of responses for subsequent retrieval allowed respondents flexibility to choose to complete information over different sessions and/or by different household members. The implementation of security features and encryption of data transmissions assured the confidentiality of data provided.

Given the COVID-19 situation in a large part of 2020, responding online was one of the best ways to fulfil the census obligation from home safely. Follow-up activities, if required, were also implemented in contactless manner where viable.

3.4.2 Designing a Device-Friendly Census

The Census 2020 Internet submission website was designed as a mobile-responsive site to meet the increased proportion of mobile users. Census online survey forms were optimised in terms of size and scale, according to the type of device used by the respondent.

Among respondents who completed their Census 2020 survey online, a high 44 per cent accessed the form via their mobile phones while 31 per cent used laptops/desktops and 2 per cent used tablets.

3.4.3 Leveraging on Administrative Data

Other than not requiring respondents to provide the information already available from other government agencies, administrative data sources were also used to validate and certify census results. This allowed DOS to process the data expeditiously and reduced the need to reach out to the respondents, thereby minimising reporting burden further.

3.5 INTERNET SUBMISSION

The Electronic Submission Module (ESM) supported the Internet Submission for Census 2020. Its design built on the lessons learnt from similar systems used in Census 2010 and the more recent Household Expenditure Survey 2017/18. Improvements were made to address feedback raised and new features were introduced to meet the anticipated needs of the public.

3.5.1 Key Features

Registration

To access the ESM for Census 2020, respondents had to register using the unique House ID sent to them in the notification letter. A new alternative approach was to scan the unique Quick Response (QR) code (embedded with Census 2020 Internet Submission website and House ID) on the notification letter. With increased usage of mobile devices, scanning the QR code provided convenience to the respondents where they were brought directly to the submission homepage with their House ID auto-populated in the corresponding field on the “First-Time Registration” screen. The auto-population of House ID also reduced respondents’ effort to locate the House ID and minimised potential data entry errors by the selected household leading to wrong House ID input.

Compared to Census 2010 where all members shared a single login account and password, Census 2020 allowed multiple members to register separately and login to the same survey form. In addition to the creation of a Census account and password, respondents were able to choose to register and login with their Singapore Personal Access (SingPass) (Figure 3.5.1).

Figure 3.5.1: Registration for Census 2020

The screenshot shows a web browser window with the Singapore Government Agency Website header. The main content area features a 'First-Time Registration' form. The form has a title bar and a subtitle: 'Please register using details of the member(s) staying in the household.' It contains two input fields: 'House ID' with the value '12345A' and 'NRIC/BC/FIN' with the value 'S****000A'. Below the fields, there are two radio button options: 'CREATE CENSUS ACCOUNT' (selected) and 'SingPass'. At the bottom of the form are two buttons: 'CANCEL' and 'NEXT ->'. The background of the page is a cityscape image.

Security

For respondents who did not have a SingPass account or chose not to register with their SingPass, they had the option to create a password of their own. Once the registration details were entered and verified, respondents were prompted to create their preferred password and to provide a mobile number to receive a One Time Password (OTP) as a form of Two-factor Authentication (2FA). Registration was only considered successful after entering the correct OTP. For subsequent login to the online form or resetting of password, respondents had to go through the 2FA process. This reduced the risk of unauthorised access to the online form.

To reduce the potential risk of a cyber-attack, additional security measures and procedures were built in. For example, the number of unsuccessful attempts for registration/login/change password were all tracked and reviewed. The individual account would be locked if there were multiple unsuccessful login attempts. Previously, respondents had to contact the Census Hotline to unlock their account. In 2020, respondents were allowed to unlock their accounts on their own by re-entering the details entered during registration using the password reset function.

User-Friendly Survey Forms

The enumeration screens were designed to incorporate user-friendly features. Besides the consistent placement of key functions and automated branching of

questions, dropdown lists for descriptive text fields were implemented for the first time in Census 2020 to supplement free-text responses for the collection of industry, occupation and workplace location. The respondents had the option to select from the list of pre-determined search results or leave their responses as entered. This not only reduced respondent’s burden but also improved the quality of the data collected.

Workplace location was collected for the first time in Census 2020. Respondents could choose to enter their workplace address in text or click on the “Map” function to search for the location (Figure 3.5.2). The “Map” function was particularly useful for respondents who were reporting on behalf of other members and might not know the exact workplace location.

Figure 3.5.2: Workplace Location

The screenshot shows the 'Workplace Location' section of the Census 2020 user interface. The page header includes the 'CENSUS 2020' logo, links to 'User Guide (PDF: 1.8 MB)' and 'FAQ (PDF: 313 KB)', and the user's name 'XIAOHUA' with a 'LOGOUT' button. The left sidebar shows a navigation menu with 'HOUSE ID 12345A' at the top, followed by 'Household 01' (selected) and 'XIAOHUA'. The main content area is titled 'Workplace Location' and contains the question: 'What is the address of this person's workplace (for the main job and where he/she usually works most of the time)?'. Below the question are several tips and an 'Address' section. The 'Address' section has a text input field with the placeholder 'You may search for this person's workplace address here:' and a red box around the 'OPEN MAP' button. Below the text input is a 'Postal Code:' dropdown menu with a list of postal codes: 17910, 179100, 179101, 179102, 179103, and 179104. The '179104' option is selected and has 'work' written next to it. At the bottom of the dropdown are radio buttons for 'No fix' and 'Work'.

Privacy Lock for Individual and Household

For addresses with more than one household or more than one member, respondents who logged in were able to create a privacy lock for their household and/or themselves respectively. The “lock”, when activated, prevented other household(s)/member(s) from accessing their locked survey forms and enhanced the protection of confidentiality for the survey returns even among those staying in the same address (Figure 3.5.3).

Figure 3.5.3: Privacy Lock for Individual

The screenshot displays the 'Basic Particulars' section of the Census 2020 survey for individual XIAOHUA. The interface includes a navigation menu on the left with items like 'Contact Information', 'Whereabouts', and 'Household 01'. The main content area shows the following questions for XIAOHUA:

- Name: XIAOHUA
- NRIC/BC/FIN: S [dropdown] *****000A
- Age at Last Birthday: 58 Year(s) Old
- For females, number of children this person has ever given birth to:
Tip: This should include the number of live-born children she has ever given birth to, including those who are currently staying with her, those who have set up their own homes and those who have passed away.
For Females: 1 Child(ren) Not applicable
For Males: Not applicable
- I allow other member(s) of my household to view and complete my survey form on my behalf.

At the bottom, there is a 'REVIEW & SUBMIT SURVEY' button and navigation buttons for 'PREV' and 'NEXT'.

Review before Submission

Taking into account respondents' feedback on preference to be able to print or save a copy of their survey returns, the "review before submission" function was added to allow respondents to view, save and print a copy of their survey form.

The review page displayed all questions asked and the corresponding responses that were entered unless the privacy lock for the household or individual was activated. With a summary of all entered responses, respondents were able to review and return to specific question to make amendments if required (Figure 3.5.4). This increased convenience to check and update their inputs helped improve the accuracy of the data collected.

During the Census operations, the Census 2020 Hotline noticed a number of calls from respondents who were not able to access the survey form after it was accidentally submitted by other household members without including all members. To address this issue, the team implemented an additional checkbox at the review page for the respondent to acknowledge that all members were added in the survey before submission.

Figure 3.5.4: Review before Submission Function

CENSUS 2020 User Guide (PDF: 1.8 MB) FAQ (PDF: 313 KB) XIAOHUA HOUSE ID 12345A LOGOUT

How does this person usually travel to school? Public Bus, Private Chartered Bus/Van (including private van), On-demand Bus Services (e.g. GrabShuttle, On-demand public bus), Personal Mobility Device/Aid (e.g. E-scooter, hoverboards, unicycles, wheelchairs)

What is this person's usual travelling time to school? 1 Minutes

HOUSEHOLD FORM: Household 02

Please identify the spouse/partner of each household member.

Name	Spouse/Partner
XIAOXIAOCHEN	Spouse Not In Household

Does the household reference person or any other member in the household own this house/flat? No. rents room(s) within house/flat

INDIVIDUAL FORM - XIAOXIAOCHEN

Age at Last Birthday 25 Year(s) Old

Where is this person currently residing in?

What is this person's reason for living abroad? Studying

I confirm that ALL member(s) in the house have been included for submission.

PREV SUBMIT

Short Message Service (SMS) / Email Acknowledgement

Based on feedback from previous surveys, a significant number of respondents would like to receive acknowledgment after their completion of the online form. Hence, in addition to the onscreen acknowledgment message previously provided, respondents who provided their mobile number or email address were also sent an acknowledgement SMS and/or email for their reference and record.

3.6 COMPUTER-ASSISTED TELEPHONE INTERVIEWING (CATI)

CATI was a tried-and-tested data collection method, having been successfully deployed in several rounds of the Census of Population and GHS since 1995. Respondents who were not able to complete their survey returns online had the option to provide their survey returns over the phone with the assistance of telephone interviewers via the Census 2020 Hotline. In addition, the Hotline was the general enquiries and feedback line for members to call regarding the Census.

The Census 2020 Call Centre was also responsible for reaching out to respondents who did not complete their survey returns online by the stipulated date. A team of up to 53 interviewers and 16 supervisors was deployed to the Census 2020 Call Centre.

CATI interviewers were trained to multi-task and perform duties ranging from conducting interviews, answering queries, to supporting the field team. With the assistance of the CATI interviewers, the survey could be completed and submitted within 30 minutes for a typical 4-member household. CATI was a useful mode of survey for respondents who were illiterate or were not as Internet savvy.

3.6.1 Key Features

Important features and lessons learnt from previous surveys were integrated into the system design for the Census 2020. Improvements made included:

- (a) Enhanced administrative summary details for interviewers/supervisors to facilitate Internet submission for respondents;
- (b) A more user-friendly form with call script and key messages to convey, as well as translation of the survey questions to the other 3 official languages available onscreen to facilitate enumeration;
- (c) An expanded set of functions to facilitate better coordination with the Field and other Operations teams such as to report vacant houses to be excluded, arrange for fieldwork appointment; and
- (d) Easier access to important announcements and training resources.

Operating Hours

The operating hours for Census 2020 Call Centre were from 9am to 10.30pm daily, including weekends and public holidays, to cater to respondents who worked during the day and available only in the later part of the evenings. This was also in line with the Department's commitment to provide better service and support to our survey respondents.

Automated Outbound Dialler

One key feature of the CATI system was the Automatic Outbound Dialler (AOD). The automated dialling system searched through telephone numbers from the list of available records and made calls based on a set of priority rules built into the system. When a respondent answered the call, it was automatically routed to an available CATI interviewer who interviewed the respondent. If the line was busy or there was no response, the system searched for the next available telephone number to call.

Switching between Inbound and Outbound Calls

The CATI system handled both inbound and outbound calls, including appointment calls to households who had requested to be surveyed at a preferred date and time. To optimise the manpower resources to meet the demand of the day, supervisors had the flexibility to assign specific interviewers to take inbound or outbound calls. The automated dialler would identify available CATI interviewers and assign them with calls based on their assigned roles.

Management of Call Load and Other Needs by Supervisors

Inbound call traffic was monitored real-time and enabled supervisors to adjust the system settings to appropriately handle the call load. For peak periods with high volume of inbound calls, more CATI interviewers were allocated to receive inbound calls to ensure that respondents calling in were attended to expeditiously.

For inbound calls received before or after the CATI operating hours, or during peak periods when there were insufficient CATI interviewers available to answer their calls, the respondents could leave their telephone number for a call back. The CATI system would automatically schedule return calls at the start of the next working day or as soon as a CATI interviewer was available depending on their indicated preference.

In Census 2020, supervisors were also able to assign interviewers with different levels of language proficiency to meet language needs for appointment calls. For example, if the respondent requested for a Chinese-speaking interviewer for an appointment call, the automated dialler would assign the call to an interviewer identified as one with higher Chinese proficiency among the pool of available interviewers.

Authentication Process

There were slight variations between handling an inbound call and an outbound call. For an inbound call (including “overflow calls” made by the system to return missed calls), it was necessary for the CATI interviewer to first verify the selected address. The House Search screen (Figure 3.6.1) was displayed for inbound calls. The greeting message was added to assist interviewers to make proper call introduction. The Mode indicator reflected whether the incoming call was an “Inbound” or “Overflow” call.

Figure 3.6.1: House Search for Inbound Calls

DEPARTMENT OF STATISTICS SINGAPORE

Application Version: Census 2020

You are currently logged in as: Change Password Log out

English

House Search

Mode: **Inbound** Connected No:

Good (Morning/Afternoon/Evening), thank you for calling the Census of Population 2020 hotline. This is (operator's name) speaking. How may I help you?

House ID: Postal Code: Block/House No.: Level/Floor and Unit No.: Street Name:

enter at least 2 out of 3 fields to do a search

Contact No.: NRIC/BC/FIN: Name: Email Address:

Search

0 result(s) found.

House ID	Address	House Status	Individual/Household Privacy	Admin Summary
No record found				

For respondents calling into the Census 2020 Hotline, the CATI interviewer would ask for the House ID which was printed on the notification letter sent to the household. As it was common for respondents to misplace or forget the House ID, the CATI interviewer could also search for the address of the caller using the 6-digit Postal Code or a combination of Street Name, Block/House number and Level/Unit number. After the address was verified, the House Contact Info screen (Figure 3.6.2) was displayed and the CATI interviewer proceeded with the enumeration.

For system-triggered outbound calls (including appointment calls), the House Verification screen (Figure 3.6.3) was shown as the record corresponding to the telephone number was known. Similar to the House Search screen, the greeting message here assisted interviewers to make proper call introduction for outbound calls. The CATI interviewer would confirm the address with the respondent before proceeding to the House Contact screen (Figure 3.6.2) to start the interview.

Figure 3.6.2: House Contact Information

Figure 3.6.3: House Verification for Outbound Calls

Administrative Summary

An administrative summary screen enabled operators and supervisors to access various details on the house record (e.g. first registrant's information, Internet submission due date, survey mode and whether house account was locked, etc.) to assist respondents doing Internet submission and to resolve the problems they encountered. The administrative summary screen (Figure 3.6.4) was enhanced in Census 2020, with additional information on the notification and reminder letter due dates, as well as access and record status history.

Figure 3.6.4: Administrative Summary

The screenshot shows the 'Admin Summary' page for house ID 12345A. The page includes a header with the Department of Statistics Singapore logo and 'CENSUS 2020' branding. The main content area is divided into several sections:

- Admin Summary:** Displays key information such as House ID (12345A), Batch (01), Sub-Region, Record Status, and Submission Date. It also shows notification and reminder letter end dates (15 Dec 2019, 24 Dec 2019, 02 Jan 2020) and current dates (03 Jan 2020).
- Whereabouts:** A table showing household details. The first row shows household 01, PI No. 01, Preload Y, Name NAME, NRIC S****000A, DOI, DOB, and Whereabouts Present in house.
- Registration:** A table showing registrant details. The first row shows household 01, PI No. 01, Preload Y, First Registrant Y, Name NAME, NRIC S2000020A, DOI, DOB, DOR, Date used for Registration, Mobile No. 9****001, Login Mode Non-Singpass, No. of Times Failed 0, Account Locked? Unlock, No. of Times Account Locked 1, and End ESM Session End Session.

Buttons for 'Go to Enumeration' and 'Return to House Search' are located at the bottom of the registration table. The footer indicates '© 2020 Government of Singapore - Privacy - Terms'.

The Registration section displayed information of online registrants and allowed supervisors to resolve account and system issues encountered by online users.

The House Access History and Record Status History sections showed the list of users who have accessed the record, as well as the updated record statuses. Such information was useful for the team to follow up on specific queries and feedback from respondents.

User-Friendly Survey Form

The survey form used at CATI adopted the same features as the Internet form. With automatic branching of questions, the system displayed relevant questions pertaining to the household and its members based on their profile. The online verification checks for completeness highlighted missing fields or data discrepancies to the CATI interviewers, so that clarifications could be made with the respondents before their surveys were submitted.

Information collected from the online survey, CATI and face-to-face interviews were updated directly in the server to allow a consistent set of the information to be provided through the different modes of submission. This, together with the consistency in interface with the Internet form facilitated the CATI interviewers' support to the Internet respondents. The CATI interviewers were able to provide screen-by-screen guidance that corresponded to what the respondents were seeing during their online session.

The availability of survey questions in Chinese, Malay and Tamil languages onscreen was a new addition in Census 2020 (Figure 3.6.5). CATI interviewers could select the language required from the dropdown choices. This helped interviewers with enumeration in the other 3 official languages.

Figure 3.6.5: Translation of Survey Questions

HOUSE ID X000005 >> HOUSEHOLD 01 - HOUSEHOLD REFERENCE PERSON: MEMBER 1

Tenancy

Does the **household reference person or any other member** in the household own this house/flat?
此房子/租屋是否由家庭关系参照人或其他住户成员所拥有?

- Yes, owns and house/flat is fully paid for
是, 屋主自住并已还清房屋贷款
- Yes, owns with outstanding housing loan
是, 屋主自住但房屋贷款还未还清
- No, rents whole house/flat
不是, 租赁整个房子/租屋
- No, rents room(s) within house/flat
不是, 租赁房间 (不是整个房子/租屋)
- No, house/flat is provided free by employer
不是, 房子/租屋由雇主免费提供
- No, house/flat is provided free by relatives/friends/others
不是, 房子/租屋由亲戚/朋友/他人免费提供

To save your progress, please click [here](#).

REVIEW & SUBMIT SURVEY

← PREV NEXT →

Coordination with Fieldwork and Other Operations Teams

As respondents could call in to the Census 2020 Hotline to furnish information or submit their survey returns at any point of the operations, it was important to ensure that timely updates were provided to the field and data processing teams. Several functions were improved in Census 2020 to facilitate timely information transfer across the teams.

This included a function for interviewers to indicate vacant or non-residential addresses when reported by respondents. This facilitated follow-up by the Field team for verification of such records.

The Fieldwork Visit Appointment function (Figure 3.6.6) was added at CATI to enable CATI interviewers to indicate request by respondents for face-to-face interviews. When an appointment was created, an SMS was sent to the Field team to inform of the field visit request.

Figure 3.6.6: Fieldwork Visit Appointment

Appointment

House ID: 12345A Connected No: Back

Call Appointment requested by Respondent Call Appointment requested by CATI Operator Fieldwork Visit Appointment

Our fieldworkers may still call you nearer to the appointment date and time to confirm the appointment you have requested. Thank you.

Name of Respondent: Fieldwork Supervisor Name and Contact Number: SC3 Supervisor / 9****001

Contact No.: Fieldwork Interviewer Name and Contact Number:

Preferred Date and Additional Remarks: Fieldwork Start Date: 17 Jul 2020

Total: 0 appointment(s).

S/N	Preferred Date and Additional Remarks	Name of Respondent	Contact Number	Date of Request
No record found				

Resources for Interviewers

CATI interviewers were able to access survey reference materials easily from the CATI Home screen (Figure 3.6.7). Daily briefing notes updated under CATI-M Operator Notes and training materials available under CATI-M Documents were useful for interviewers to refer to when needed.

Figure 3.6.7: CATI Resources

The screenshot shows the 'Home' page of the CATI-M system. The page is divided into several sections:

- Useful Information:** A table listing various resources:

Websites	Census 2020 Website	https://www.singstat.gov.sg/census2020
	Internet Submission Website	https://www.census2020.gov.sg/
	Singstat Main Website	https://www.singstat.gov.sg
Hotline	Toll-free Line	1800 236 2020
	For Overseas Caller	+65 6336 2020
	Operating Hours	Daily 9am to 10:30pm (Including Public Holidays)
Email	Census 2020 Feedback/Enquiries	census2020@singstat.gov.sg
	General Feedback/Enquiries	info@singstat.gov.sg
CATI Links	Finesse	https://bdk/vpcor01.dos2.gov.sg:8445/desktop
	Internet	https://www.census2020.gov.sg/census
	Intranet	https://census2020.dos.gov.sg/census
	Intranet (VPN)	https://admin.census2020.singstat.gov.sg/census
CATI Contact	Direct Line* for CATI Admin Matters	6305 4421
	*Do not give out this no. to respondents	
- CATI-M Operator Notes:** A table showing a list of operator notes:

S/N	Date	Operator Notes
1	02 Oct 0020	TESTING123
2	01 Oct 0020	testing
3	25 Jun 2020	Solaris lallal
4	10 Dec 2019	test test test
5	09 Dec 2019	future test
- CATI-M Documents:** A section with a dropdown menu set to '- Select -' and a 'Download' button.
- Outbound:** A section showing 'Total no. of pending number in outbound campaign:' with a value of 0 and an 'Update' button.

CATI during COVID-19

The COVID-19 pandemic posed unprecedented challenges for the conduct of Census 2020 and CATI operations specifically. With work-from-home arrangements in place during CB period between April and June 2020, operations at the Census 2020 Call Centre were scaled down to a large extent. Work processes were changed to allow for a small pool of Census 2020 staff to continue supporting the operation of certain scope of work over the telephone. This included receiving incoming calls for phone interviews and survey enquiries. Calls made to respondents were cut down. More details are in Appendix O.

3.7 FACE-TO-FACE INTERVIEWS / FIELDWORK OPERATIONS

Fieldwork operations were grouped into 3 main regions, namely, Central-South, East-Northeast and West-North. Each region was led by an Assistant Census Director (ACD) and supported by 4 Census Supervisors who oversaw a sub-region each.

Fieldwork operations were carried out from 6 Field Regional Offices (ROs) with a combined staff strength of up to 77 field interviewers. Some of the materials used in fieldwork operations can be found in Appendix J.

3.7.1 Use of Tablets

Riding on the efficiency and enhanced productivity by leveraging technology in the Census 2010, Census 2020 continued to develop a fieldwork application for face-to-face enumeration with the use of a mobile device (i.e. a tablet in 2020), incorporating the lessons learnt from the previous Census.

With the use of tablets, data collected were encrypted and saved to the central database real time. It eliminated the need to print hardcopy forms, manage physical form handling and transcribe data as well as the need to synchronise data at specific intervals.

The same web form used by Census respondents at ESM was deployed for use by the field team. Additional field management functions were included to support the operations planning and needs. For example, field interviewers were able to schedule appointments with respondents, with reminders sent via SMSes to them on upcoming appointments. The application also broadcasted important messages to the targeted group(s) of users. This function enabled all to keep abreast with information disseminated by the ACDs and Census Supervisors.

3.7.2 Fieldwork Management System

The Fieldwork Management (FWM) system enabled the Census Supervisors to allocate and transfer records. Census Supervisors were able to view records a week prior to the allocation of records. This enabled them to plan for record allocation and conduct field reconnaissance of records before actual allocation. Field reconnaissance was especially important for difficult-to-access properties such as gated communities or apartments (mainly condominiums) with access-controlled security gates managed by gate keepers, property concierges or managers. Efforts were required to obtain separate approval for field team to access the estates.

Census Supervisors met their field interviewers twice a week, once in person at the Field ROs and once remotely for progress updates. Supervisors were able to monitor the status of each record and progress of fieldwork through the FWM. During the updates, ACDs and Census Supervisors provided guidance and conducted briefings to ensure the field interviewers were adequately trained and competent in carrying out their tasks.

3.8 NON-RESPONSE FOLLOW-UP

The follow-up of households that did not respond to the Census was an essential stage in ensuring the Census achieve its overall quality targets. Success at follow-up hinged on the ability to identify the non-responding households, make contact with them and offer the appropriate support to get their responses.

3.8.1 Follow-Up Procedures

For Census 2020, the key follow-up strategies included:

Reminder Letters

Reminder letters were an integral tool, used to prompt respondents to continue with uncompleted survey submissions. With up to a total of four reminders sent in Census 2020, timing such letters based on informed trends with the use of data analytics was found to be effective in nudging respondents to complete the survey (more details in Appendix P).

Even though the reminder letters were sent to non-responding households, addresses with contact information continued to be called up by CATI interviewers, with field visits being the last resort.

Targeted Outbound Calls at CATI

For areas with lower response rates, more targeted calling was arranged at the Census 2020 Call Centre to better manage the load for the field. The information was obtained through data of the responses and integrated with the call priority rules.

Making Contact

To maximise the effectiveness of outreach activities by the field staff, the best times to contact households were generally late afternoons, evenings and weekends. Attempts to reach households were also made on different days of the week and at different times of day. It is noted that for 2020, for the period when work-from-home was the default, for those whose work allowed it, the field team was able to reach a high proportion of respondents at home during weekday work hours.

Through returned undelivered mails, addresses reported to be not occupied (for example, a newly-built block of flats, or houses due for demolition) were updated. Field supervisors arranged to check and confirm the occupancy status of the addresses during their field reconnaissance. These records would then not appear on future follow-up lists but be reflected as vacant and out of scope.

Vacant Properties

With the COVID-19 measures implemented, some households made adjustments to their living arrangements in view of child and elder-care needs. This resulted in more efforts in reaching and assessing if a house was occupied and temporarily vacant or was unoccupied. The field team made additional visits after the measures were relaxed to ascertain the final status of the selected address. Visitation cards were left for residents to contact the Census 2020 Call Centre or field staff to complete the survey. Responses continued to be accepted till end December 2020 to allow for delays caused by the prolonged absence from the addresses.

Given the measures implemented during CB and Phase 1 for the COVID-19 situation, Census 2020 relied on sending more reminder letters, targeted outbound calls at CATI as well as modification of outreach activities to non-responding households. In spite of the challenges faced, Census 2020 ensured that attempts were made to reach all non-responding addresses.