Seventh Economic Census
2019

Guide for Supervisor Level 2
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Chapter 1 – Introduction to Economic Census (EC)

1. Economic Census is a complete count of all establishments located within the geographical boundary of the country. In Economic Census, all establishments would be covered, whether located in unorganized or organized sector, rural or urban and data would be collected on the basic characteristics of the establishments, like nature of economic activity, number of persons engaged, type of ownership etc.

2. It also provides valuable insights into geographical spread/clusters of economic activities, ownership pattern, persons engaged, etc. of all economic establishments in the country. All this information is very important for policymakers in the government at all levels for evolving policy interventions. It also provides an updated sampling frame for follow-up enterprise surveys undertaken for detailed and comprehensive analysis of all establishments in the country.

3. Economic Census is not a new initiative, Ministry of Statistics & PI has already conducted six economic censuses so far. The first was conducted in 1977. The last census, i.e., sixth census was conducted in 2013 in collaboration with state Governments.

4. The Ministry of Statistics and Programme Implementation (MoSPI) is going to conduct the 7th Economic Census across the country in 2019. MoS&PI has engaged CSC e-Governance Services India Ltd, a Special Purpose Vehicle (SPV) under M/o Electronics & Information Technology, as an Implementing Agency for 7th Economic Census.
Chapter 2 – Data Collection and Supervision – Process Flow

1. The data would be collected by enumerators engaged by CSC (SPV) by visiting door to door and collect the required information as per the approved schedule 7.0 on handheld devices using mobile application.

2. A parallel supervision would be done by the Supervisor level 1 (SL-1) of CSC (SPV), called first level supervision to check the data quality and complete coverage.

3. CSC(SPV) has to ensure the quality of data and complete coverage. After ensuring the completeness and quality of the data, CSC (SPV) will push the data to the system for 2nd level supervision.

4. This 2nd level supervision will be done by the officers/officials from State/UTs Governments and NSO(FOD), MoS&PI called 2nd level supervisors (SL-2).

5. The 2nd level supervision has been put in place over and above the supervision done by the CSC (SPV) to ensure complete coverage, quality and consistency of data.

6. SL-2 is the final mechanism to accept or reject the 7th EC data for tabulation, finalization and dissemination. SL-2 will also be the determinant of penalty to be levied on CSC in case of any deviance from expected quality/Service Level Agreement (SLA) signed by the MoSPI and CSC (SPV).

7. The 2nd level Supervision basically encompasses verification of the processes followed by the enumerators as well as the quality of data.
Chapter 3 – 2nd Level Supervision

3.1. Overview of 2nd level Supervision

In backend of system, a predefined and unique mapping of the first level supervisors (i.e., SL-1) to second level supervisor (i.e., SL-2) has been put in place. SL-1 have been assigned to SL-2 as per their geographical area of operation.

All enumerators under a SL-1 automatically gets tagged to a SL-2. SL-2 may have more than one SL-1 under him, but one SL-1 will only be tagged to a single SL-2.

On the basis of the above mapping, data collected by all the enumerators (under a SL-1) becomes available to SL-2 for his sample verification on the field.

The SL-2 will perform two kinds of checks, one is Process Check and another is Quality Check.

3.2. Concepts and Working Procedures of Process Check and Quality Check

I. Process Check

a. The objective of process check is to assess the learning and behavioral aspects of the enumerator with respect to the enumeration exercise.

b. It starts from 5th day of the start of field work in the concerned State/District and any number of enumerators can be process checked/supervised by the concerned SL-2, to ensure that enumeration processes followed by an enumerator are as per guidelines/norms for the 7th EC.

c. SL-2 will also educate/train the enumerator during the Process Check.

d. It is to be noted that Process check is independent of first level supervision by the CSC (SPV).

Procedures and steps for Process Check
a. List of first level supervisor (SL-1) and enumerators under him will be visible on the dashboard (details provided in Chapter 4) of SL-2 under “Process Check” tab.

b. Average time stamp (i.e., average time taken to complete data collection/verification for an EC house) will be displayed against each enumerator/SL-1 under a SL-2. This will help SL-2 in identifying suitable SL-1/enumerator for conducting the Process Check. Once a SL-1 is identified, all enumerators under said SL-1 would be available for Process Check by SL-2.

c. SL2 will visit the field and observe the enumeration process as being performed by the Enumerator. He will then provide feedback in Yes or NO (In case of NO, appropriate answer/ suitable remarks has to be recorded by SL-2) on the following parameters -

i. Enumerator can identify area boundaries?
ii. Enumerator is carrying ID card and authorization letter while on census work?
iii. Enumerator can identify exclusions?
iv. Enumerator followed protocol for EC House listing?
v. Whether Enumerator has covered all the establishment / household area already covered by him?

e. On the basis of feedback given by SL-2 on above questions, Process Check score will be generated for the selected enumerator and the score would be stored in the system.

f. This Process Score can be used as one of the parameters for the selection of enumerators for the quality check. However, quality check can also be done for those enumerators who have not been selected for process check.

II. Quality Check

The objective of Quality Check is to assess the quality and correctness of data collected by the enumerator (and approved by SL-1). Before going into the details of quality check, lets understand the term ‘Phase’ and ‘Packet’. This will help in understanding the procedures of quality check.

1. Phase: -On completion of 30% of the work assigned to the enumerator and verified by the SL-1, the data will move into the bucket of SL-2. This is called a Phase. The data will come into the
bucket of SL-2 in three phases i.e., on completion of 30%, 30% and 40% of work assigned to the enumerator and verified by the SL-1. In the same fashion data will move to SL-2 bucket for all the enumerators tagged under the said SL-2.

2. Packet: - It is a set of EC houses canvassed by an enumerator and supervised by SL-1 in a particular phase (as explained above). The whole data of each enumerator, which comes to SL-2 under a phase, is called a single packet.

**Procedures and Steps for Quality check**

a. Quality check will be completed in three phases i.e., first 30%, next 30% and then the remaining 40%. Quality check can be done even for those enumerators whose Process check has not been done.

b. In each phase, average values of following 5 parameters will be visible (against each enumerator under SL-1) to SL-2 on his dashboard: Investment in plant and machinery, Annual turnover, total number of workers, time stamp and process check score (if available). This can be used as the criteria for selection of enumerators for Quality Check.

c. Functionality of sorting based on above 5 values will be made available to SL-2 so that he can identify suitable enumerator(s) for initiating Quality check.

d. The data is coming into the bucket of SL-2, in phase wise for each enumerator. Therefore, the selection of enumerators by the SL-2 will start, when data of 10 (minimum) enumerators reached into the bucket of said SL-2. Then SL-2 has to select minimum 10% of enumerators (if less than 10%, system will not allow to proceed) from the bucket and perform the quality check.

e. Further, minimum 10 EC Houses of each selected enumerator needs to be selected/visited by SL-2 and provide feedback in Yes or NO (In case of NO, appropriate answer/ suitable remarks has to be recorded) by the SL-2 on predefined questions (given below in sub-para g and h). The SL2 can select more than 10 EC houses (in multiples of 10 only) if he so wishes.

f. Both (Dashboard as well as Mobile App) can be used for selecting enumerators by SL-2. Selection of enumerators on dashboard and
mobile app are mutually exclusive (i.e., an enumerator selected using App, will not be available/visible on the dashboard and vice versa for selection).

g. Feedback (Yes/No) on selected Residential EC Houses is based on following 4 questions (it will be based upon all households in an EC House):

   i. Enumerator has correctly (largely) identified number of household-based establishments?
   ii. Enumerator has correctly identified activity category (NIC 3 digit)?
   iii. Enumerator has correctly identified number of workers (including contractual workers)?
   iv. Enumerator has captured ownership code correctly for establishment?

h. Feedback (Yes/No) on selected Commercial EC Houses is based on following 4 questions:

   i. Enumerator has correctly identified activity category (NIC 3 DIGIT)?
   ii. Enumerator has correctly identified number of workers (including contractual workers)?
   iii. Enumerator has captured ownership code correctly for establishment?
   iv. Enumerator has filled registration details correctly?

i. After quality check on sample EC houses, a combined score would be calculated by the system for the particular packet of the enumerator by considering scores in Process Check (if available) and Quality Check.

j. The packet will be accepted or rejected in entirety as per the combined score.

k. On event of rejection, data will go back to CSC, for re-survey of all the EC houses in that packet.
Chapter 4 – Web Application Walkthrough

Dashboard Home Page

The purpose of the dashboard (Fig. 1) is for the SL2 to be able to see at a glance all the important details pertaining to their role in the 7th EC. Also, the selection of the Enumerators for the 2nd level supervision needs to be done through this dashboard and if the actual supervision is not being carried out on the mobile app then the physical printout of the supervision forms will also be generated through this dashboard. The following is visible on the dashboard:

- Snapshot of the current status of the work under the Supervisor level 2
  - Number of active enumerators, for both rural and urban areas.
  - Work available, completed and pending.
  - Graphical representation of the survey status.
- Selection of the enumerators for verification (Process Check & Quality check) in both rural and urban areas.
- Verification (if not being done on the mobile app) in both rural and urban areas.
The panels will be seen on the dashboard are as following:

1. Central Panel (SL-2 can see the following things in central panel) (Fig. 1.1)
   a. Enumerator count: Total number of enumerators, rural/urban and number of active enumerators tagged under him.
   b. EC house count: This shows the total number of EC houses completed by the enumerators tagged under him.
   c. Classification of type of EC House: The above number of EC houses are shown separately in terms of Residential, Commercial and Others.
   d. Time Period: The data is available in the following 4 formats:
      i. Today – the data that got pushed on the dashboard on that day
      ii. Current Week: the data that has got pushed in the current calendar week
      iii. Current Month: the data that has got pushed in the calendar month
      iv. Overall: the total data that is available on the dashboard
   e. EC House status: Shows the work status in the following three buckets:
      i. Approved: no of EC houses approved by SL2 till date
      ii. Rejected: no of EC Houses rejected by the SL2 till date
      iii. Pending: the no of EC Houses pending to be verified as on date
   f. Task details:
      i. Process Check
         1. No of enumerators selected by SL2 for Process Check
         2. No of Enumerators whose process check has been completed
      ii. Quality Check
         1. No of enumerators selected by SL2 for Quality Check
         2. No of Enumerators whose quality check has been completed
   g. A Graphical representation of the status of work as on date
Fig. 1.1
2. Left Panel (Fig. 1.2)

The purpose of the left panel is as follows:

a. To select Enumerators for Process Based verification
b. To select Enumerators for Quality Based verification
c. To take printouts for the SL2 verification (if required)
d. To see the Enumerator Status at a glance

On clicking the “Process Based” tab of the Left Panel as shown in Fig. 1.2, the following screen will appear:

This is where the SL-2 will select the enumerators for carrying out the process check.
1. Process based

a. Enumerator selection (Fig. 1(a)): The enumerator selection can be made through two modes:

i. **Auto mode**: On choosing Auto Selection, the system will automatically select the requisite number of enumerators, basis an inbuilt algorithm for Level 2 supervision. The SL2 will be able to see the selected data on the dashboard.

ii. **Manual Mode**: The SL-2 will need to manually select the records that they want to verify. The following information is available on the screen to help them choose:

   a. Name & Details of L1 Supervisor (VLE)
   b. Name & Details of Enumerator
   c. Average time Span – the average of the time taken by the enumerator to complete all the surveys
   d. Address of the last EC House done by the Enumerator
   e. Location of the last EC House done
   f. No of EC Houses completed by that particular enumerator.

On selecting the enumerators above, SL-2 needs to “Submit Selection”. This will move the selected enumerators to the verification bucket.

b. **Verification**: On selecting the verification tab under “Process Based”, the SL-2 can view the entire list of the enumerators that have been selected by him for process verification with the same
details as in the above point. Here – on clicking the blue icon in the Lat/Long column, a google map will open up with the location.

In addition, it also shows the status in terms of “Completed / Not Started / In Progress”.

a. Not Started: -Shows that no records of this enumerator have yet been verified by the SL-2
b. In Progress – Shows that at least some records (even 1) of this enumerator have been verified by the SL-2.
c. Completed – Shows that all the records of this enumerator have been verified by the SL-2.

This same data will be available on the mobile app of the SL-2. In case the SL-2 does not want to carry out the verification on his mobile app, he has the option of taking a printout & does the verification manually.

For this, the SL-2 needs to click on the tab “Start process” to conduct the process check. On clicking “Start Process” or “In Process”, on the next screen the print survey option is available through which the SL-2 can take a printout and conduct the process check.

In case the process check has already been done, the process score will be visible along with other data fields.

In case the print option is chosen, the SL-2 needs to do the verification on the hard copy that he has & once he’s back in office, he needs to click on the “Start Verification” (Fig. 1(b)) button at the bottom of the screen & fill in the details from the filled forms.
2. Quality based

This is the 2nd phase of verification where the Quality of the data collected by the enumerator is to be verified – as mentioned before a total of 10% of all enumerators under their sphere of control need to be chosen for this.

a. Enumerator selection (Fig. 2(a)): Here a table will be shown giving the following details:

i. Details of SL-1 Supervisor (VLE)
ii. Details of Enumerator
iii. Average time span – the average of the time taken by the enumerator to complete all the surveys
iv. Process score – an average of the process score for the enumerator (if available)
v. Number of workers – median value of this field for all surveys conducted by the enumerator
vi. Annual Turnover– median value of this field for all surveys conducted by the enumerator
vii. Investment– median value of this field for all surveys conducted by the enumerator
viii. Household – displays the total number of households covered by the enumerator
ix. Establishments– displays the total number of establishments covered by the enumerator
x. Address of the last EC House done by the Enumerator
xi. Location – Lat/Long of the last EC House done by the Enumerator
xii. EC House count – Total number of EC Houses done by the Enumerator.

The above parameters can help the SL-2 in selecting enumerators for conducting the Quality Check. It must be noted here that for Quality Check,
the option of automated selection is not available. Thus, manual selection needs to be made on the basis of information available in the mentioned fields for identifying outliers, if any. As being repeatedly emphasized, a minimum of **10 percent** of the enumerators must be chosen for Quality Check, in a given data phase.

**b. Verification (Fig. 2(b)):** The next step is the verification of the records of enumerators that have already been selected manually for quality check. The same fields as above will be displayed on the screen and in addition there is a status column. The Quality Check status may be:

i. **Not Started**: - Shows that no records of this enumerator have yet been verified by the SL-2.

ii. **In Progress**: - Shows that at least some records (even 1) of this enumerator have been verified by the SL-2

iii. **Completed**: - Shows that all the records of this enumerator have been verified by the SL-2
On clicking on the “Start” or “In Progress” button for an enumerator, the SL-2 will be taken to the following screen which displays all the EC houses for that enumerator that have been already verified by SL-1. The details on this screen are as follows:

1. EC House Type – Residential, Commercial or Others
2. Name of Head/Owner- Head of the Household or Name of Owner as the case maybe
3. No of Households within that EC House
4. No of Establishments within that EC House
5. Mobile number of the Head of the Household / Owner of Establishment
6. Timestamp – Time taken to complete that survey
7. Address of the EC House
8. Location of the EC House
9. Print Status – Not Printed / Printed
10. View / Print Button – in case the SL2 wishes to print the form

The SL-2 needs to choose at least 10 EC houses for verification (EC Houses under category “others” can’t be chosen). Post Selection, the SL-2 has two options:

1. He can take a physical printout of the form by clicking on the “Not Printed” button – that will open up a standard printing dialogue box & the form can be printed. This form contains the information collected by the enumerator in this EC House. SL-2 has to record his inputs on 4 Quality parameters also in this form.

2. He can use the mobile app to verify this information collected by the enumerator for this EC House as well as record his inputs on 4 Quality parameters through the app.

In case the print option is chosen, the SL-2 needs to do the verification on the hard copy that he has & once he’s back in office, he needs to click on the “Start Verification” button at the bottom of the screen & fill in the details from the filled forms (figure shown below).
3. Enumerator Status

This tab displays the status of Enumerators under the SL-2 in the following three tabs:

i. Approved Enumerators – shows the enumerators whose packet has been accepted for each phase

ii. Rejected Enumerators – shows the enumerators whose packet has been rejected by SL-2

iii. Modification Enumerators – shows the enumerators whose packet has been sent back to SL-1 for correction.
Chapter 5 – Mobile App Walkthrough

This Chapter is for those SL-2 who would use Android Based Handset to do the Process & Quality Check. This is the App icon (Screen 1) the second level supervisor can view on the screen post installation.
After logging in with user id & password, SL-2 can see the Screen 2 on the app. This is the opening screen of the App. SL-2 will see two options:

- **Process Based** – to carry out Process Verification.
- **Quality Check** – to carry out Data Quality Verification.
PROCESS CHECK:

1. Selection of enumerators (for process verification) is done through the web dashboard, as discussed above, and not through the App.

2. Whichever enumerator gets selected on the dashboard gets reflected here. There is no minimum number of enumerators that is required to be selected in this case.

3. Screen 3 shows the complete list of all SL-1 who are tagged with the SL-2.

4. On tapping any SL-1, screen 4 opens up with a list of enumerators under that particular SL-1.

   It shows the following details:

   (a) Name of the enumerator

   (b) E-mail

   (c) Contact number: To contact & locate the enumerator so that her Process Check can be initiated.

   (d) Address of the last EC House done by the Enumerator

   (e) Average time

   - This is the average time taken by enumerator to complete the survey of an EC House within her enumeration area. It is calculated by adding total time taken to complete n number of EC Houses.

   - Average time stamp helps the level 2 supervisor (SL-2) in assessing any anomalies or outliers. For example, if an enumerator is taking relatively less time
in completing data collection in EC Houses located in a business hub, which requires him to devote sufficient time per establishment, this enumerator may be chosen for verification by SL-2 as a priority.

(f) Geo-Tagging of locations: These are the coordinates of the last EC House done by the enumerator for ease of location of the enumerator using google maps. On clicking on this, a google map will open up with the location of the last EC House done by the enumerator.

5. On selecting a particular enumerator, the process check parameters will be listed which needs to be assessed in Yes/No:

   **Yes**: In case the SL-2 clicks on “yes”, the tab moves forward to the next parameter.

   **No**: In case of “No”, a comment box opens up which requires the SL-2 to enter comments specifying if any improvement needs to be made or any other remark.

6. By clicking on “Next” button after selecting the answers to all the parameters, then this enumerator’s process score will be submitted. This enumerator thereafter will disappear from the screen and cannot be accessed any longer by the SL-2.

7. It is to be noted that process check is independent of level 1 supervision. Thus, the supervisor level 2 needs to watch/observe the enumerator during the actual process of enumeration and do a “concurrent supervision” of the enumerators’ adherence to the process on the above parameters.

In the similar fashion, SL-2 can do Process Check of another enumerator that has already been selected as per point-1 above. Please note that once an Enumerator’s Process check has happened, the same enumerator will not be visible for process check again.

**QUALITY CHECK:**
1. Once the quality check is clicked on the Home page, one can see the list of all SL-1 under him with their details like name, CSC Id, Mobile, e-mail and also the process score (if available), which is the average process score of all the enumerators under him (screen 6). [Imp: For conducting Quality check using Mobile App, the enumerators need to be selected on web page dashboard.

2. On selecting a particular SL-1, the list of selected enumerators (using by web page dashboard) under him can be seen, with specific details like workers, turnover, investment and the process score (if done), as calculated before. The process scores are calculated as discussed above. Worker, turnover and investment will be the average value of all EC Houses in this packet done by this enumerator. These parameters may be used by SL-2 to select an appropriate enumerator for conducting Quality Check.

3. Only enumerators selected on the web dashboard will be visible on the mobile app.

4. The EC Houses for Quality check can also be selected in the mobile app as well as the web dashboard. However, the selections done on the web dashboard will not be visible for selection on the mobile app.

5. It must be noted that those EC Houses which have been enumerated under the category of “OTHERS” cannot be selected by SL-2 for verification.
6. Thereafter screen 7 and screen 9 will appear like this

(Screen 8)

(Screen 9)
7. The screen 10 gives data collected at an EC House out of the, say 10, selected from the list of EC Houses. Here, the establishment details are provided along with the process score (if done) of the same enumerator.

8. The quality check parameters need to be assessed for each EC house from the selected EC house available on the app.

9. Screen 11 shows the Quality check parameter for Residential EC Houses

(Screen 11)
10. Similar kind of screen will appear for Quality check for commercial EC houses and following question will appear

- **Enumerator has correctly identified NIC 3 digit**: In case the response by SL-2 is “no”, the level 2 Supervisor needs to fill the correct information, post verification in the fields of nature of economic activity, section, division and group.
- **Has the enumerator correctly identified the number of workers**: In case the response by SL-2 is “no”, the SL-2 needs to fill in the correct number of hired workers, non-hired workers and contractual workers.
- **Has the enumerator correctly identified the ownership code**: In case the response by SL-2 is “no”, for instance if the code has been wrongly identified, say SHG, instead of a proprietary establishment, the SL-2 needs to select the correct code and fill up.
- **Has the enumerator correctly filled the registration details**: In case the response by SL-2 is “no” the remarks need to be filled in with the correct information that he manages to obtain directly from the respondent.

11. The quality check parameters are very crucial. Based on the answers provided by SL-2, Quality score will be generated by the system for selected 10 EC houses and based on this score the entire data packet of that enumerator may get accepted, rejected or returned on the basis of the same.

12. Once the assessment is done, the App will automatically open the summary of the next EC House in the list (selected by SL-2 at point-3 above) and then the quality check will need to be done for all remaining EC Houses.

13. The screen 13, which is top left corner of
Home page have following tabs:

I. **Profile:** This tab gives the profile of the SL-2 with following details: Name, email ID, Mobile number and respective passwords.

II. **Survey Status:** This tab (Screen 14) gives the survey status with respect to the following and just gives a bird’s-eye-view of the:

- **EC House pending:** The count of EC Houses available in the SL-2 bucket that are yet to be supervised by SL-2. This count is inclusive of any packet of the enumerator EC houses, i.e. Packet 1, Packet 2 etc.

- **EC House completed:** The count of EC Houses which has been validated and scored by the SL-2 as per the given set of questions as considered in the score range of 71 to 100%.

- **EC House rejected:** The count of EC Houses which have scored less than 30% of the total score are termed as surveys rejected.

- **EC House corrections:** The count of EC Houses which has fallen in the score range of 31 to 70% and requires correction in them to be considered as correct.

- **Total:** This figure gives the summation of all the EC Houses falling separately under above categories.
III. **Survey result:** This tab (Screen 15) gives all the data at one page, encompassing the accepted, rejected, pending and correction records. For any selected tab, you get details of EC House that are in packets that are Pending/Approved/Rejected/Correction as per data Quality Check.

You see this as per SL-1 → Enumerator → EC House.
IV. **Process score:** This tab (Screen 16) shows a list of all the SL-1 along with their name, CSC ID, enumerators under them, enumerator ID, **average process score** (all the EC houses verified by the respective enumerators, if process check done) and the date of process score generation.

![Screen 16](image)

V. **Quality data:** This tab (Screen 17) shows the quality score of all the enumerators verified, along with their process score (if done), name of the respective SL-1, CSC ID, name of the enumerator, and date of quality score generated.

![Screen 17](image)
VI. Support (Screen 18)
In case of any clarifications,
Contact: 1. 011 4975 4920
hns.ec@csc.gov.in

(Screen 18)