

Sample Design for Labour force Survey 2006

Sample design

A stratified two-stage sample design was used for this survey. A national sample of 22,000 housing units was decided in order to provide reasonably accurate estimate by district level, national level estimate by sector and also estimate for Tsunami affected area's.

Sample frame

The list of census blocks (enumeration area with the no of housing units) which was prepared at the, Census of Population & Housing - 2001 data file.

Selection of primary sampling units (PSU's)

Primary sampling units are the census blocks which were selected using 'Probability proportion are to size with Systematic' sampling method (size measure is no of housing units in a census block)

Selection of secondary sampling units (SSU's)

Secondary sampling unit is a housing unit. From each selected Primary Sampling Unit, 10 housing units (SSU's) were selected using 'Systematic sampling Method'.

Estimation procedure

Let \hat{X}_{jk} be the estimate of any given characteristic for j^{th} district

This could be given by,

$$\begin{aligned} \hat{X}_{jk} = & \frac{1}{m_{jk(u)}} \sum_{h(u)=1}^{m_{jk(u)}} \frac{1}{P_{h(u)}} \frac{N_{h(u)}}{n_{h(u)}} \sum_{i(u)=1}^{n_{h(u)}} X_{hi(u)} \\ & + \frac{1}{m_{jk(r)}} \sum_{h(r)=1}^{m_{jk(r)}} \frac{1}{P_{h(r)}} \frac{N_{h(r)}}{n_{h(r)}} \sum_{i(r)=1}^{n_{h(r)}} X_{hi(r)} \\ & + \frac{1}{m_{jk(e)}} \sum_{h(e)=1}^{m_{jk(e)}} \frac{1}{P_{h(e)}} \frac{N_{h(e)}}{n_{h(e)}} \sum_{i(e)=1}^{n_{h(e)}} X_{hi(e)} + \frac{1}{m_{jk(ts)}} \sum_{h(ts)=1}^{m_{jk(ts)}} \frac{1}{P_{h(ts)}} \frac{N_{h(ts)}}{n_{h(ts)}} \sum_{i(ts)=1}^{n_{h(ts)}} X_{hi(ts)} \end{aligned}$$

Where

$m_{jk(u)}$ = Number of census blocks selected from the urban sector of the j^{th} district .

$P_{h(u)}$ = Selection probability of the h^{th} census block in the urban sector.

$$P_{h(u)} = \frac{S_{jh(u)}}{\sum_{h=1}^{M_{jh(u)}} S_{jh(u)}}$$

$S_{jh(u)}$ = Measure of size (number of housing units) of the h^{th} census block in the urban sector of the j^{th} district.

$M_{jh(u)}$ = Total number of census blocks in urban sector of the j^{th} district.

$N_{h(u)}$ = Total number of housing units listed in the h^{th} census block in the urban sector

$n_{h(u)}$ = Number of housing units selected from the h^{th} census block in the urban sector

$X_{hi(u)}$ = The observed value for the i^{th} sample household in the h^{th} census block in the urban sector.

$m_{jk(r)}$, $P_{h(r)}$, $S_{jh(r)}$, $M_{jh(r)}$, $N_{h(r)}$, $n_{h(r)}$, and $X_{hi(r)}$ are corresponding terms for the rural sector and $m_{jk(e)}$, $P_{h(e)}$, $S_{jh(e)}$, $M_{jh(e)}$, $N_{h(e)}$, $n_{h(e)}$, and $X_{hi(e)}$ are corresponding terms for the estate sector and $m_{jk(ts)}$, $P_{h(ts)}$, $S_{jh(ts)}$, $M_{jh(ts)}$, $N_{h(ts)}$, $n_{h(ts)}$, and $X_{hi(ts)}$ are corresponding terms for the Tsunami affected areas.

The estimate for the total value of a characteristic for the country.

Sample weights

$$W_i = \frac{1}{m_{jk}} \times \frac{1}{p_{jk}} \times \frac{N_{h()}}{n_{h()}}$$

Adjustment for unit non-response

The occurrence of unit non-response was determined by examining the final result code recorded under control data section of the schedule. Based on the final result codes the households were grouped into the following categories, which were used as a basis for adjusting for the unit non-response.

Category and description	Result code
1. Schedule completed	1
2. Housing unit demolished or vacant	6,7,8
3. Unable to complete schedule, refusal, temporarily away etc.	2,3,4,5,9

a) Each PSU has 'Separate' adjustment factor

$$W_i = \frac{\text{Category (1-9)} - \text{Category (6,7,8)}}{\text{Category (1)}}$$

$$W_{\text{final}} = W_1 \times W_2$$