Experiences of India's SRS with the Use of Record Linkages studies to assess the completeness of reporting of Vital events

Office of the Registrar General, India
(Ministry of Home Affairs, Government of India)
www.censusindia.gov.in

Kameshwar Ojha
Additional Registrar General, India

Agenda

- Introduction of SRS

- Matching records of Part Time Enumerator (PTE) and Supervisor

- Re-verification

- Completeness

- Summary

Introduction

"Based on the principles of the dual-record system, the SRS involves both continuous registration in a nationally representative sample of villages and urban blocks, and a survey every six months for an independent count of events and to update demographic particulars of the sample population. Events recorded in the two operations are matched if possible. Unmatched and partially matched events are referred to the field for verification."

-- P. N. Mari Bhat

Population Studies (2002), 119-134

SRS

- Inception in the year 1969-70.
- Sample units replaced every 10th Year on the basis of Baseline Survey.
- Critical indicator for determining sample size is IMR
- Number of sampling units steadily increasing from 3722 (1969-70) to 8853 (2014).
- Basic objective to provide estimates of IMR,CBR & CDR at natural division level for major states and at state level for smaller states.

Component of SRS

- Baseline Survey
  - Data on characteristics of sample units
  - Characteristics of household
  - Demographic and related characteristics of usual resident population
- Continuous enumeration
  - Carried out by PTE
  - Maintains Birth and Death record of
    – Usual resident inside the unit
    – Usual resident outside the unit
    – In migrants
    – Visitors

Component of SRS   contd...

- ## Half Yearly Survey (HYS)
  - Retrospective in nature (6 months)
  - Carried out by personnel of Office of Registrar General, India
  - Canvassing of each house/household
  - Houselist (Form 1), Household Schedule (Form 2), and Pregnancy Status of Woman (Form 3) is updated
  - Birth and Death of each household is captured

Component of SRS   contd...

- Matching of events
  - Two sets of data on birth and death are matched
  - The exercise is carried out at state offices (DCO)
- Re-verification
  - Carried out by third person of the Statistical cadre of Office of RGI
  - Covers partially matched and unmatched events
  - Re-verification, in no case, will lead to a re-survey of events missed by both.
- Aberrant Unit
  - If the difference between total no. of netted events is found to be more/less than 25% in comparison to corresponding HYS of previous year the whole unit is declared as aberrant and re-survey is carried out.

Matching of Records

- As soon as half yearly survey is over, corresponding events collected by Supervisors and PTEs are compared.

- Parameters compared are

Sl.No	Birth	Death
1	House Number	House Number
2	Household Number	Household Number
3	Head of the Household ID	Head of the Household ID
4	Pregnant women ID	ID of mother (in case of infant death)
5	Date of outcome	Date of death
6	Sex of outcome	Sex of deceased
7	Relationship of pregnant women to head of the household	Relationship of deceased to head of the household

Matching of Records   contd..

- Matching of events results into
  - Matched events (All parameters to match)
  - Partially matched events of Birth:
    - At least three parameters to match
    - Including House no., Household no. and Preg woman ID
  - Partially matched events of Infant Death:
    - At least three parameters to match
    - Including House no., Household no. and ID of mother

Matching of Records   contd..

- Partially matched events of other Death:
  - At least three parameters to match
  - Including House no., Household no. and ID of Head of the household
- Unmatched events
  - Events not covered by above criteria.

Re-verification

- Carried out within one month of HY Survey
- New supervisor is appointed for each unit
- Events verified using the HYS Forms i.e.
  Form 9 & 10
- All partially matched and unmatched events are verified
- Final number of events are determined based on this exercise

Completeness

- Direct attempts to evaluate completeness on vital events
  - Investigation conducted in 1980-81 suggested an omission rate of 3.1% for Birth and 3.3% for Death (All India level)
  - Investigation conducted in 1985 suggested an omission rate of 1.8% for Birth and 2.5% for Death
- Paper published by Prof. P. N. Mari Bhat (2002) studied completeness of Birth and Death reporting in SRS.

Completeness

(Omission %)

		1981-90			1971-80		
		Death		Birth	Death		Birth
		Male	Female		Male	Female	
India		5	12	6	6	8	7
Highest among bigger States	Haryana	19	26				
	Assam			14			
	Rajasthan				11	15	
	Karnataka				10	15	16
Lowest among bigger States	Kerala	0	9				
	T Nadu	2	5				
	H Pradesh			-2			
	M Pradesh				3	0	
	Gujarat				0	4	0

Summary

- SRS is a panel survey
- It is more than 45 years old, running continuously
- During this period, four replacement of units(PSUs) have taken place
- Divided into 10 year slots, each year done in two parts, continuous enumeration and HYS
- IMR is key criterion in determining sample size
- Latest sample size is 8853 (2015) at all-India level
- Each vital record, collected during cont enum and HYS is compared
- Unmatched and partially matched records are re-verified
- Completeness studies suggest that omission levels are around 5-10%

Thank you