

An overview of National Sample Survey in Manipur

Khuraijam Shitle Kumar

Assistant Director

Directorate of Economics & Statistics

Manipur

1. Background

Facts and figures are a basic necessity for evidence based planning and formulation of policies or programmes. It is also required for evaluation of the impact of social and economic policies. In pre-independence India, a system of collection of statistics required for administrative purposes was in place, but it was only after independence that the statistical system in India has evolved into what it is today.

In connection with the Azadi Ka Amrit Mahotsav to celebrate and commemorate 75 years of progressive India's socio-cultural, political and economic identity and achievements, the Directorate of Economics & Statistics, Manipur is publishing a series of article on the National Sample Survey conducted under the aegis of the Ministry of Statistics & Programme Implementation (MoSPI), GoI . The present article, first in the series, will highlight an overview of the subject coverage of NSS conducted. The article also presents the topics of the Survey, the general Sampling Designs being used in NSS and the challenges faced at different stages. In the subsequent articles of the series, different aspects of the various subject will be covered separately.

The intended objective of the series of articles to be published on 20th of every month starting from September, 2021 till August, 2023 is to make people and Research Community of the State aware of the various Socio-economic Surveys and other ad-hoc Surveys. The Central Sample data of the NSS have found its way into various peer-reviewed papers published in journals, blogs, newspapers and press releases etc. In addition to the report published by NSO or the State DES, there is a corresponding unit-level (household and individual level) data containing a vast source of information for those conducting research and making policy in the sphere of the subjects covered by the NSS rounds. The readers are expected to avail and incorporate the vast information available in their research or policy making process. Another objective of the series publication of articles is to spread awareness about the methodology, planning and execution of the NSS and their potential use in policy making for Public Wellbeing.

The development of official estimates of national income and related aggregates to meet the requirements for planning and policy purpose began in India after independence. However, it was found that there are large data gaps in statistical data for computation of national income and related aggregates, especially in respect of unorganized/household sector of the economy of India. In order to fill up the large data gaps especially in respect of unorganized/household sector of the economy of India, the National Sample Survey (NSS) was set up in 1950 on the recommendations of the National Income Committee under the Chairmanship of (Late) Prof. Prasanta Chandra Mahalanobis¹.

Initially the statistical work of NSS was carried out by the Indian Statistical Institute, Kolkata under the guidance of professor Prasanta Chandra Mahalanobis, while NSS Directorate was created and assigned the field/survey work.

The NSS was later reorganized as National Sample Survey Organisation (NSSO) in March, 1970 on the recommendation of a Review Committee. It was then all aspects of NSS work was brought under a single Organisation under the Government of India. However, full integration was possible only around June, 1972.

In the new set-up, Governing Council (GC) of the NSSO with a non-official Chairman to guide all the activities of the NSSO came in as the apex body of the new Organisation. In 2006, consequent to formation of National Statistical Commission (NSC), GC of NSSO was dissolved and a steering Committee of National Sample Survey came in its place.

The National Sample Survey Office (NSSO) which was earlier known as National Sample Survey Organization merged with the Central Statistical Office (CSO) to form the National Statistical Office (NSO²) on 23rd May 2019.

The National Statistical Office conducts the NSS every year in the form of rounds and each round, normally of one year duration, is devoted to a socio-economic subject. The scope of enquiries & geographical coverage of the NSS gets evolved over time- from capturing data for the construction of National Accounts and its area of operation in rural in initial rounds to collecting all the important socio-economic aspects in both rural and urban areas. The list of villages/urban blocks (called 'First stage units) and a few

¹ To honour (L) Prof. Prasanta Chandra Mahalanobis for his numerous & significant contributions to the nation in the field of economic planning in India and Statistical development in post Independent era, the Government of India declared 29th June as National Statistics Day (vide notification dated 4th June 2007 as published in the Gazette of India on 5th June, 2007) which coincides with the birth anniversary of Prof. Prasanta Chandra Mahalanobis.

² NSO will refer to National Statistical Office from here onward throughout the article

households/enterprises (called 'second stage units) selected scientifically are surveyed in each round. The NSS data are collected in two independent Samples called as 'Central Sample' & matched³ 'State Sample'. The results processed and compiled by the NSO based on the central sample is disseminated by the NSO of India. In the case of state samples, not all agencies at state level have been able to process their data and bring out results. Another important aspect of the NSS Data is the pooled estimates released by the State DES. The requirement of estimates on different socio-economic parameters at sub-state level is increasing with the decentralization of governance and planning which led to the need for pooled results of the Central and state samples.

2. Subject Coverage & Conduct of NSS

The topics of current interest on which the NSS should focus are identified by the Ministry of Statistics and Program Implementation, Government of India. The subjects covered by NSS are broadly categorized as

- Consumer Expenditure
- Household Wealth/Finance
- Employment-Unemployment and Migration
- Health & Hygiene
- Education
- Unorganized economic enterprises
- Land holdings, Livestock holdings and other agrarian issues
- Others.

According to the ten-year programme for the conduct of socioeconomic surveys, the subjects generally covered by NSS during a decade are listed as follow:

- i) Employment-Unemployment, and Consumer Expenditure and Social Consumption
- ii) unorganised enterprises in non-agricultural sectors
- iii) population, births, deaths, disability, morbidity, fertility, maternity & child care, and family planning
- iv) land holdings and livestock enterprises
- v) debt, investment and capital formation

Subjects covered by (i) and (ii) are to be taken up quinquennially⁴ and the remaining subjects are covered decennially. The remaining years of the decade are kept open to accommodate subjects of special interest as decided by the Ministry.

³ Refer 'matching pattern' in section 2 for clarity

⁴ However, surveys on topic under (i) are being conducted annually with a relatively small sample size compared to the quinquennial surveys. Employment and Un-employment survey is discontinued under NSS after 68th Round of NSS.

However, for the present paper, the subjects are classified as shown below.

(1) *Household surveys on socio-economic subjects:*

Household Consumer Expenditure, Household Social Consumption on Health, Education etc.

(2) *Surveys on land holding, livestock and agriculture:*

Land and livestock holdings survey (rural only), Situation Assessment Survey of Agricultural Households (rural only) etc.

(3) *Establishment/Enterprise surveys:*

Unincorporated Non-agricultural Enterprises (Excluding Construction), Verification of List Frame Establishments, Survey of Services Sector etc.

(4) *Survey on Basic Amenities:*

Village facilities, particulars of slums (urban area only), Village statistics etc.

(5) *Health/Hygiene Surveys:*

Drinking Water, Sanitation, Hygiene and Housing Condition, Survey of Persons with Disabilities etc.

(6) *Debt, Investment and Capital formation surveys:*

Debt and Investment Survey

(7) *Employment & Unemployment survey:*

After 68th round of NSS, survey on Employment & Un-employment has been discontinued under NSS. It will now be covered by Periodic Labour Force Survey (PLFS) which was launched in 1st April 2017.

(8) *Miscellaneous Surveys/Surveys on subjects of current importance:*

Multiple Indicator Survey: This survey is taken up for the first time in 78th Round of NSS to collect information required for developing some important indicators of Sustainable Development Goals 2030.

The pattern of subject coverage of NSS rounds as per the eight broad categories defined above is shown in Table 1 below.

Table1: Pattern of Subject coverage of NSS rounds

Sl. No.	Broad Subjects/Categories	The Subjects of Surveys	Rounds in which the subjects were covered
1	Household Surveys on SE-Subjects	Household Consumer Expenditure	1, 2, 3, 4, 5, 6, 7, 8, 9, 16, 17, 18, 26, 27, 28, 29, 32, 38, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 66, 68, 72, 75

		Household Social Consumption on Education	42, 71, 75
		Household Social Consumption on Health	71, 75
		Household Expenditure on Services and Durable Goods	72,
		Income & Expenditure	9, 10, 11, 12, 13, 14, 29,
2	Surveys on land holding, livestock and agriculture	Land and livestock holdings survey (rural only)	8, 16, 17, 26, 30, 37, 48, 59, 70, 77
		Situation Assessment Survey of Agricultural Households (rural only)	59, 77
		Land Utilization (and yield survey)	1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26
		Agriculture & animal husbandry	2, 3, 4, 5, 6, 7, 11, 12, 15
		Farming practices	22, 24
3	Establishment/Enterprise surveys/Services	Unincorporated Non-agricultural Enterprises (Excluding Construction)	67, 73
		Verification of List Frame Establishments	74
		Survey of Services Sector	3, 4, 5, 6, 7, 8, 9, 10, 29, 34, 63, 65, 73, 74
		Non- directory manufacturing establishments & Own account manufacturing enterprises (OAEs)	41, 45, 46, 51, 53
		Non-household manufacturing establishments	5, 6, 7, 40, 41
		Manufacture enterprises in the un-organised sector	56, 57, 62
		Household Enterprises	1
		Small Scale manufacture & handicrafts	3, 4, 5, 6, 7, 8, 9, 10, 14, 23, 29, 33
		Household assets and liabilities	1
4	Survey on Basic Amenities	Village facilities	47, 58
		particulars of slums (urban area only)	58, 65, 69
		Village statistics	2, 3, 4, 6, 7, 9, 10, 11, 12, 13, 14, 18, 19, 20, 21, 22, 26, 30
5	Health/Hygiene Surveys	Drinking Water	69, 76
		Health facilities	28, 34, 35, 52, 60

		Sanitation	54, 69, 76
		Vital Statistics (& population, births & deaths; family planning)	12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 28, 39
		Hygiene and Housing Condition	8, 10, 11, 12, 13, 15, 16, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 44, 49, 58, 65, 69, 76
		Survey of Persons with Disabilities	24, 28, 36, 47, 58, 76
6	Debt, Investment and Capital formation surveys	Debt and Investment Survey	26, 37, 48, 59, 70, 77
		Household Indebtedness	8, 11, 16, 25
		Capital formation	17
7	Employment & Unemployment survey	Employment & Unemployment	9, 10, 11, 13, 14, 15, 16, 17, 27, 29, 32, 38, 43, 50, 52, 53, 54, 55, 60, 61, 62, 64, 66, 68
		Employment & Unemployment of households (non-agricultural labour households)	11, 12
		Employment & Unemployment of households and indebtedness of agricultural labour households	11, 12, 19, 20, 29
		Urban Labour Force	16, 17, 18, 19, 20, 21, 22
8	Miscellaneous Surveys/Surveys on subjects of current importance	Multiple Indicator Survey	78
		Domestic Tourism	65, 72, 78*

N.B.: price statistics were collected till 1981 covering in almost all the rounds from round 1 to round 35.

**Domestic Tourism Survey of 78th round was cancelled from July 2020 on the request of Ministry of Domestic Tourism.*

A survey period is referred to as a round in NSS. So far, 78th rounds of NSS have been conducted. A round of NSS may be of one year duration or of six months sometimes as per the subjects covered in the round. Any round of NSS is further sub-divided into sub rounds of three months each. As such, a NSS round of one year duration consists of four sub-rounds while that of six months survey will consist of two such sub-rounds. NSS uses a moving reference period, meaning that different surveyed households reported information for different time points or periods depending on the date of the survey. In some rounds, sub-rounds restriction is applied whereas it is not applied in some rounds for example, 76th round (July - December, 2018) has no sub-round restriction.

Generally, NSO conducts survey in Central sample and DES in respective States in State

samples except in four North Eastern States i.e., Manipur, Mizoram, Nagaland and Tripura where the DES conducts the field work for the two independent samples. Interpenetrating sub-samples of the full sample are allotted to the two teams collecting data in any State/ UT.

The sample size of FSU of State Sample is decided based on the matching pattern provided below subject to change on request of State.

State/ UT	Extent of matching
Nagaland (U)	triple
Manipur, Telangana	double
Maharashtra (U)	one and half
Remaining States/UTs	equal

The extent of matching pattern of a state indicates the number of FSU of State Sample per unit Central Sample of the State. For example, if the no. of FSUs to be surveyed under Central Sample for Manipur is 10, then the number of FSUs to be sampled as State sample for Manipur is double of 10, i.e. 20 FSUs.

3. SAMPLING DESIGN AND SELECTION PROCESS

Generally stratified multistage sampling design is used in NSS. The stratification process is adopted in order to increase efficiency of the survey design and ensure administrative and operational convenience. The First Stage Units will be the Villages and Urban Blocks (Urban Frame Survey) in rural and urban respectively. The Second Stage Unit (SSU) or Ultimate Stage Unit (USU) is households for household based surveys, enterprises for enterprise based surveys, shops/markets for price enquiry surveys, farm or plot, or a group of firms/plots owned or operated by a household for agricultural enquiries, etc.

The selection process is dependent on the availability of the sampling frame, availability of auxiliary information for each unit and the subject of enquiry. Generally, three basic sampling schemes, namely, Simple Random Sampling (SRS), Systematic Sampling, and Sampling with Probability Proportional to Size (PPS) are used for selecting the FSU. For household based surveys, the USU (or SSU) are generally selected using SRS with or without stratification of the households.

Owing to difficulties involved in journeys from one village to another in the hilly areas of the North Eastern States where most of the villages are very small, the procedure of cluster sampling of villages was adopted in many earlier NSS rounds. The details of Sampling Design, selection process, stratification and other related scientific details are beyond the scope of this article. It shall, however, be covered in the upcoming issues of the series.

4. NSS in MANIPUR

During 1962-63, the then State Statistical Bureau (SSB), Manipur (which was set up in July, 1958) started to participate in the NSS from 5th sub-round of the 17th round of NSS. With the creation of one post of Director of Economics & Statistics during 1971-72, the then SSB became a Directorate. During 1963-64 there were 10 sub-divisions in Manipur of which 3 sub-divisions such as Mao, Tamenglong and Ukhrul were not covered by NSS. From 1970-71 onwards, the whole of Manipur was covered by the NSS Programme.

5. DISCUSSION

A. SCOPE & LIMITATION OF NSS:

The word multi-subject used in defining NSS itself indicates the wide scope of NSS. It will comprise detailed information on means of livelihood, income, exhaustive information regarding household consumption expenditure, quantity consumed etc. Further the sample survey being highly adaptable, it may include additional items according to the needs of the different Ministries, the NITI Aayog and other agencies. For example, in 78th round information on i. migration and ii) Construction of Houses since 2014-15 had been collected through MIS Schedule as per the request of M/o Housing and Urban Affairs.

The limitation of the Survey is that it has to count all information that have been collected from illiterate household somehow making out a living who cannot recollect the total monthly expenditure at all. It will be a rare phenomenon to come across a household who can supply the details suggested above. It is a common experience that a single visit to the selected household is not sufficient for mining accurate information regarding budget or monthly expenditure. Many a times, the informant out rightly told the investigator to write whatever they feel out of either lack of time or he cannot recollect at all or due to lack of faith in the outcome of the survey as the survey do not directly provide any benefits to the people. It is a major challenge faced in almost all rural areas.

There is also the problem of finding trained investigators for the purpose. As such, the difference in the level of emphasis put by different states, districts, and investigators will result in obtaining information of large varying degrees of reliability.

B. ERRORS OF SURVEY:

The discussion of origin of errors and their in-depth understanding is beyond the

scope of this article. It shall, however, be discussed in the subsequent article of the series. Some of the possible errors in surveys are highlighted below.

The results of surveys or censuses and in particular sample surveys are affected by errors originating from various sources and may be classified into two broad categories: Systematic and Random (Non-systematic) errors. Systematic errors give rise to either under-estimation or over-estimation. Random errors are, however, expected to cancel out when averaged over a large number of observations.

Non-systematic errors originate from (i) errors of observation and (ii) sampling fluctuations if the survey is on a sampling basis. Errors due to sampling fluctuation can be controlled by increasing the sample size until a desired accuracy level is obtained.

The error of observation behaves anomalously and requires careful consideration and can be regarded as composed of two components- the first component is the variation from individual to individual which is stochastic in nature while the second one is the systematic component which introduces bias in the estimate.

Although the stochastic component of the error of observation is generally assumed to converge in probability to zero, this assumption, however, is violated under exceptional cases and makes the situation unfavourable for both census and sample surveys.

Systematic errors may arise due to (i) observational bias, (ii) faulty selection of sample, & (iii) inaccurate method of estimation. However, the sources of error due to (ii) & (iii) can be almost eliminated through proper use of available Statistical Techniques. But the one due to (i) is not amenable to statistical analysis and is, therefore, difficult to handle.

6. CONCLUSION

In the light of the above presentation, it is crystal clear that Statistical Analysis cannot always sufficiently take account of the inaccuracies of the information collected by the Field/Primary Investigators. The irregularity/unfavourable conditions arising due to exceptional case and the systematic error that occurs due to observational bias are not amenable to Statistical Analysis. The only way to minimise such irregularities or bias lie in the selection of well qualified candidates for field investigation. Moreover, proper, sufficient & uniform trainings of field staff on objective definitions of the parameters to be observed must be ensured. Above training, adequate supervision must also be ensured to encourage correct/authenticate recording

of data.

For proper and accurate data collection, an investigator ought to have the following qualities: decent tactful mode of interviewing to mine the accurate data; proper understanding of the objectives, importance, and background of the survey; and awareness of some of the difficulties to be encountered in the field prior to field work so that he/she can be prepared; and interest in the survey work. As such, training should be directed to develop these qualities in the field staff in addition to imparting of proper training, providing instructions/schedules and imbibe interest in the survey work

Some of the above mentioned qualities cannot be achieved by training alone; they have to gain it through experience. Overall, proper training and refresher course is mandatory for overall development of field work. Of all the qualities, interest of the field staff in survey work is of vital importance which can be promoted through need based/localised training, providing honorarium timely, balancing of workload and encouragement/motivation from the superior officers. Therefore, allocation of adequate fund for conduct and long term planning of training programmes for field staffs is of utmost importance.

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