



The statistical system of a country acts as its mirror. It generates statistics that allow observers to see how well a country is performing on key socioeconomic parameters such as per capita income, poverty, average years of schooling etc. India is on the cusp of a data revolution, the number of public datasets grows each year, allowing users to discover new facets of the economy and the country. At the same time, the delays in data collection and questions about the discrepancy in official data dwarf its usability. The conclusions drawn from statistics are only as good as official statistics.

IN THIS DOCUMENT

і.	What are Official Statistics?	2	
	I.I. What is the significance of an Official Statistical System?	2	
	1.2. What is the structure of the present Official Statistics System in India?	4	
2.	How did India's Official Statistical System evolve? 2.1. What were the key developments Pre-independence?	5 5	
	2.2. What were the key developments Post-Independence?	5	
3.	What are the challenges present in India's Official Statistical System?		
4.	What steps have been taken to improve the Official Statistics System?	7	
	4.1. What are the major initiatives taken by the Government?	7	
	4.2. How can the National Policy on Official Statistics (NPOS) help?	8	
5.	What can be done to further improve India's Official Statistics System?		
Con	clusion	10	
Тор	ic at a Glance	11	
Boxes and Figures			





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1. What are Official Statistics?

Statistics can be divided based on the body which is publishing it. **Statistics derived by Government** agencies from statistical surveys, registration records etc. are **official statistics**. E.g., the Consumer Price Index (CPI), Index of Industrial Production (IIP) etc.

On the other hand, **statistics published by non-government bodies** like the World Bank's Ease of Doing Business Index (EoDB), NGO Pratham's ASER Report etc. would come under **non-official statistics**.

1.1. What is the significance of an Official Statistical System?

- Socioeconomic estimates: Most statistical offices also tend to produce the key socioeconomic statistics for their countries. E.g., Poverty estimates, price volatility etc.
- Performance monitoring: Country's statistical system provides essential data to assess the country's performance in crucial socio-economic aspects like life expectancy, and educational attainment.
- Impartial view: The statistical system provides citizens with an impartial view of the state of their country's progress.
- Quality assurance: The term "official statistics" serves as a quality label, indicating that official statistics are developed, produced, and disseminated in accordance with internationally agreed statistical standards and recommendations.

Improved Decision Making: Official statistics serve as the essential foundation for evidencebased decisionmaking, policy



formulation, and effective governance. E.g., data-based policing is being explored across the world.

Fulfilment of national goals: It contributes to transparency, accountability, and the advancement of democratic principles by enabling informed public debate and monitoring the progress of a nation towards its goals.

Figure 1.1. SIGNIFICANCE OF STATISTICS



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1.2. What is the structure of the present Official Statistics System in India?

The Official Statistics system in India is laterally decentralized amongst Ministries of the Government of India (GoI) at the central level, and vertically decentralized between the Centre and the States/Union Territories (UTs).

- Central Government: At the national level, the Ministry of Statistics and Programme Implementation (MoSPI) is the nodal agency for official statistics system in the country.
 - National Statistics Office (NSO) within the MoSPI is responsible for planning and facilitating the integrated development of the national statistical system. NSO consists of the Central Statistics Office (CSO) and National Sample Survey Office (NSSO).
 - Besides NSO, most of the line ministries/ departments have statistical establishments for collection and dissemination of data, and coordinating with NSO.

State Government: The Official Statistical System in the States is generally decentralized laterally over the Departments of the State Government.

At the apex level, the Directorates of Economics & Statistics (DES) is responsible for the coordination of statistical activities in the State/UT.

- Data collection, compilation, processing and preparation of results are carried out by the states for most of the sectors and state-wise results are used by the centre for an all-India level statistics.
- ▶ National Statistical Commission (NSC): The government constituted the NSC in 2006 as an apex advisory body on statistical matters on the recommendations of C. Rangarajan Commission.
- Place in Seventh Schedule: The subject 'Statistics' is covered in both the Union and Concurrent list in the Seventh Schedule of the Constitution of India [Entry 94 of the Union List (List – I) and Entry 45 of Concurrent List (List – III)].
- Legislations: Exclusive statistical laws apart from the above ecosystem include the Census Act, 1948; the Registration of Births and Deaths Act, 1969; the Collection of Statistics Act, 2008.

▶ It was established in 1950 in the Department of

Statistics in line with the recommendations of the

Primarily data are collected through nation-wide household surveys on various socio-economic

National Sample Survey Organization (NSSO)

Fisher committee.

subjects

Key statistics released by NSSO:

Annual Survey of Industries (ASI)

Debt and Investment Survey

Periodic Labour Force Survey (PLFS)

Table 1.1. Organizational setup for India's Statistical System

Central Statistical Organization (CSO)

▶ In 1949, a **Central Statistical Unit** was set up in the Cabinet Secretariat, which later expanded to become Central Statistical Organization (CSO).

Key statistics released by CSO:

- ▷ National Income Accounting
- ▶ Index of Industrial Production (IIP)
- Consumer Price Indices for Urban Non-Manual Employees
- Annual Report on Twenty Point Programme

Other important bodies

- Annual Survey of Industries (ASI) was launched in 1959 to provide regular data on industrial output and wages.
- Indian Statistical Service (ISS) cadre was established in 1964.
- Sample Registration System (SRS) was launched in 1969-70 to provide reliable and regular information on births and deaths. It continues to be the primary source of official data on mortality and fertility trends in the country.
- National Statistical Commission was setup to set statistical standards across ministries and departments. But it has not yet been granted the statutory status.





2. How did India's Official Statistical System evolve?

2.1. What were the key developments Pre-independence?

Statistics in India are as old as statecraft. The ancient Indian treatise on statecraft, **Arthashastra**, refers to a network of village-level accountants who would collect data on economic output. The medieval-era text, **Ain-i-Akbari**, details an exhaustive apparatus to collect data on farm produce and mentions royal attempts to standardize the system of weights and measurements.

India's official statistical system, as we know it today, began taking shape during the British Raj (1858–1947).

Figure 2.1. Evolution of Official Statistics During the British Raj

1862	A first-of-its-kind Statistics Committee was set up to standardize forms used for collecting official statistics , particularly related to trade and finance	
1868	The first Statistical Abstract of British India was published by the India Office in London	
1871	The first director-general of statistics was appointed to consolidate existing statistics and publish them in an Imperial Gazetter of India	
1881	The population census launched in 1867-1872 was expanded to provide a simultaneous head count across the entire country	
1895	A separate statistical bureau was set up; merged later with the Directorate General of Commercial Intelligence and Statistics	
1920	Delegates at the British Empire Statistical Conference in London called for the creation of an empowered statistical office in all British colonies	
1925	An official committee headed by M. Visvesvaraya was tasked to assess the gaps in the economic statistics of British India and to suggest remedies; it was recommended that a central statistical bureau should be set up	
1934	A committee comprising of A. L. Bowley and D. H. Robertson was appointed to suggest a road map for an economic census in India	
1946	An interdepartmental committee of statisticians headed by the economic adviser, Theodore Gregory , was tasked to find ways to coordinate the collection of official statistics in India	

Box 2.1. Problems with British administrative statistics

- Self-Interest: Colonial efforts to develop the statistical system were driven by an imperative to track a key market for English products; hence, trade statistics were much more well-developed compared to statistics on domestic economic production or socioeconomic development.
- ▶ Non-implementation of reforms: Several official committees suggested reforms to correct the lopsided development of the official statistical system in British India, but most of their recommendations weren't implemented.
- Propaganda: The development of administrative statistics provided an opportunity for propaganda. British officials used these statistics to show Indian subjects and the British Parliament how well they were governing the country.
- Data collection limitations: The Economic Inquiry Committee setup in 1925, headed by M. Visvesvaraya, noted major limitations in data collection, particularly on domestic production and incomes.

2.2. What were the key developments Post-Independence?

- Mahalanobis Model: It was only after India's independence that a serious effort was made to revamp India's statistical infrastructure.
- Prof. P. C. Mahalanobis led this drive and the Mahalanobis model of data collection was applied. It relied largely on random sampling.

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- Random sampling is a type of probability sampling in which the researcher randomly selects a subset of participants from a population.
- India's second five-year economic development plan, drafted primarily by Prof. Mahalanobis, financed the establishment of statistical bureaus in states.
- Post-Mahalanobis era: Mahalanobis's death in 1972 and other changes in the post-Mahalanobis era diminished the statistical system. Factors behind such decline included:
- Growing insularity with the world,
- Lack of investments in computing resources and,
- Declining influence of the Planning Commission (which had earlier been a pillar of support for statisticians)
- Revival Efforts: To review the statistical system, the Narain-Bhatnagar Committee was set up in 1979 followed by the Khusro Committee in 1984.
 - In early 2000, the central government appointed a National Statistical Commission led by C. Rangarajan to identify the deficiencies of the statistical system and to suggest remedies.

Table 2.1. Kangarajan Commission's Recommendation and their implementation				
Rangarajan Commission's Recommendation	Implementation Status			
MoSPI's secretary should be a professional statisti- cian to be designated as the national statistician.	Implemented			
A permanent and statutory apex body (the National Commission on Statistics) should be created, indepen- dent of the government and responsible to the Parlia- ment.	NSC set up in 2006 but not given statutory status.			
The Collection of Statistics Act (1953) should be re- formed to arm statistical officers with greater powers.	The Collection of Statistics Act (2008) was enacted but has limited powers.			
The Computer Centre division should start func- tioning as a comprehensive data warehouse of official statistics in India.	Several attempts were made but a centralized data ware- house still remains a goal.			
The Census Act should be modified to allow for the eco- nomic census to be conducted during the house-list- ing phase of the population census.	Not Implemented			

The reforms initiated in the wake of the Rangarajan Commission's recommendations though commendable, **failed to address the deep-rooted crisis** the system faced. The development of the statistical system remains a work in progress.

3. What are the challenges present in India's Official Statistical System?

- Interruption in census: The uninterrupted run of India's population census since 1881 has been broken. The last decennial census was in 2011. The 2021 census has been postponed indefinitely.
- Inferior quality of datasets: While the total number of datasets is growing, the quality of datasets remains uneven across departments and states.
 - The last official consumer expenditure data pertains to 2011–2012; the next survey, undertaken in 2017– 2018, was discredited by MoSPI due to **data quality concerns.**
- Outdated key datasets: Various key datasets are badly out of date.
 - For instance, the lack of fresh consumption data has meant that India's Consumer Price Index (CPI) and official poverty estimates continue to be pegged to

outdated data.

- Scrapping Surveys creates a data gap: Several surveys like NSSO employment-unemployment surveys (EUS) have been scrapped citing issues like reliability and desirability. Such frequent changes in data-gathering policies disrupt the analysis and create a vacuum.
- Controversial data: The results of the latest economic census and several new surveys have been kept under wraps. Some of India's core statistics—such as the Index of Industrial Production (IIP) and Gross Domestic Product (GDP)—have been the subject of controversy for several years.
- Limited powers of National Statistical Commission (NSC): India's apex statistical regulator, the NSC, has struggled to assert its voice on issues affecting Indian Statistics.





- The NSC was supposed to audit statistical products on a regular basis, providing a much-needed quality assurance mechanism for data users. But it has **not performed that role effectively.** Also, the NSC has awaited statutory backing for nearly two decades now.
- Lack of a clear roadmap: Producers and users of official statistics have pointed towards the lack of a clear roadmap to address the controversies erupting due to

present statistical methods.

- Shortage of skilled labour and poor working conditions: Several researchers have cited the issue of limited resources and unorganized work schedules.
 - For example, many field agencies which are contracted to organize the ground survey of NFHS have been found in violation of labour laws.

Box 3.1. Issues with National Family Health Survey: Perspective of a Researcher

The researchers have highlighted several issues in the survey, such as:

- **Long questionnaires:** In NFHS 4, the women's questionnaire was 93 pages long with 1,139 questions. It is widely accepted that the longer a questionnaire, the poorer the quality of data.
- Difficult to ask questions: Questions related to sexual violence, HIV/AIDS etc. are difficult to ask as it is difficult to ensure privacy while asking them. This affects the reliability of this data.
- Data quality: When field researchers work in exploitative conditions, work suffers and this can affect the quality of data.
 - This is relevant not only to the survey underway but also to subsequent surveys and analyses that depend on this data.
- Lack of financial transparency: Public health researchers have raised concerns about inflated costs of NHFS pointing out that it has not translated to better quality data.

Figure 3.1. Challenges in Official Statistical System						
Data Collection	Data Processing	Institutional Setup				
 Interruption in Census Data Collection Inferior quality of datasets Scrapping of Surveys 	 Datasets get outdated (not timely processed) Controversial data 	 Limited powers of NSC Lack of a clear roadmap Shortage of skilled labour and poor working conditions 				

These issues have limited the credibility and thus usability of the data. Significant and multi-faceted efforts are being taken to rectify these issues.

4. What steps have been taken to improve the Official Statistics System?

4.1. What are the major initiatives taken by the Government?

- Increasing data availability: Data on several important economic parameters, from rural road construction to vehicle registration, are now available at a high frequency and granular level (available at local level).
- Standardizing public datasets: There are several initiatives to standardize public datasets and make them accessible to citizens. For example, Metadata for National Indicator Framework document by MoSPI.
- Digital India: This initiative has transformed the e-government landscape with the introduction of worldclass digital services. The flow of data from these new services enables the government to harness new and timely data sources for decision support.
- Adoption of global standards: India adopted the UNFPOS in 2016 and is aligning its official statistics system in line with the principles enshrined in the UNFPOS.





Table 4.1. UNFPOS Principles and their implementation status in India				
S.No.	UNFPOS	Status in India		
I	Relevance, Impartiality and Equal Access	 Constitution of committees, technical working groups from time to time for recommending appropriate statistical methodologies. Advance release calendars and release of statistical reports in public domain. 		
2	Professional Standards, Scien- tific Principles, and Professional Ethics	Scientific sampling methods, standard statistical techniques, extensive scrutiny, and supervision by National Sample Survey Organization.		
3	Accountability and Transparency	> Availability of all relevant documents in public domain.		
4	Prevention of Misuse	Comprehensive metadata and explanatory notes and press clarifications on data-related issues.		
5	Sources of Official Statistics	National Metadata Structure for Statistical Products which lays down standards for disseminating the data for all official agencies.		
6	Confidentiality	Anonymisation of identification particulars of persons/ entities/respondents.		
7	Legislation	Governance by appropriate legislations like Collection of Statistics Act, 2008; Census Act, 1948; etc.		
8	National Coordination	▶ MoSPI is nodal agency.		
9	Use of International Standards	International concepts, definitions and standards are followed in generating statistical products.		
10	International Cooperation	 India's association and participation in all major global discussion forums on statistical matters. India has been elected, as a member, to the United Nations Statistical Commission (UNSC) for the term 2024-2027. 		

Apart from the above measures, MoSPI has notified the draft National Policy on Official Statistics (NPOS).

4.2. How can a National Policy on Official Statistics (NPOS) help?

NPOS can structurally transform the statistical ecosystem in the following ways-

- Creation of an Integrated Data System (IDS): An IDS led by MoSPI would seamlessly interlink data sets and enable interoperability among different dataproducing systems at National and State/UT level. It will have following features:
 - **Digital survey platform** for computer assisted interviewing and online data interchange.
 - Data warehouse for data ingestion, storage, processing, analytics and archiving along with a metadata repository.
 - A state-of-the-art **output system** for better access & dissemination.

- An innovation hub for piloting emerging technologies such as Artificial Intelligence (AI) and Machine Learning (ML).
- Optimizing use of administrative statistics: Administrative statistics are spinoff of some administrative exercise and are typically collected for three broad purposes:
 - Monitoring of government programmes and other forms of government intervention;
 - Enabling regulatory activities and audit actions; and
 - **Targeting outcomes** of government interventions.





NPOS aims to promote the use of existing administrative statistics for the computation of statistical indicators such as GDP and optimize their uses.

- Core Official Statistics: Certain key statistical products such as GDP, price indices, SDGs etc. to be designed as core statistics. The following should be ensured for these core statistics:
 - Mandatory for the government at all levels to collect and disseminate as per laid down protocols.
 - To be **updated periodically** with pre-determined periodicity
 - To be made available at various disaggregated levels
- Innovation on Surveys: NPOS seeks to reorient the planning and development of various Surveys

in such a way that identifies gaps in data availability, avoids duplication, and disseminates their results while maintaining decided timeliness.

- Augmentation of Quality of Official Statistics: It encourages periodic reviews of statistics, documentation of steps involved, alignment of data products with the Data Governance Quality Index of NITI Aayog, and application of advanced technological tools.
- Enhancing Statistical Coordination: Establishment of an institutional mechanism for central ministries and states/UTs to coordinate with MoSPI through statistical advisers.
- Capacity Development of Statistical Officials: Through funding various schemes which include training, infrastructure augmentation, public awareness exercises, exposure of statistical professionals to international practices etc.

5. What can be done to further improve India's Official Statistics System?

Besides effective implementation of NPOS, the following efforts can be made to capitalize on India's Data revolution-

- Statistical Reforms Commission (SRC): An SRC can be set up on the lines of the Rangarajan Commission to address the roots of India's statistical crisis.
- Dynamic Statistical Architecture: A new dynamic statistical architecture that is able to meet the emerging needs of data users can be conceptualized. It should include a national statistical strategy document after taking into account the concerns of all key stakeholders.
- Strengthening statistical infrastructure: A model for strengthening and integrating the statistical data and

registries including administrative data for real-time monitoring of the Indian economy can be considered (see infographic).

Improving the research ecosystem:

- Holding field agencies accountable, and addressing grievances of researchers.
- Ensuring local presence, administrative and training capacity of field agency that deploys data collectors.







- Use of other technology for integration: Technologies such as big data, cloud computing, artificial intelligence/ machine learning blockchain etc. help in the collection, integration, analysis as well as dissemination of data.
 - E.g., Integration of government registries with official statistics. Data and registries from various governmental sources (PAN, Aadhaar, GSTN etc.) need to be integrated through **aggregator technologies.**

Conclusion

The Indian Statistical system has played an important role in facilitating informed decision-making and contributed to planned social and economic development in the country. Today, it is at a crossroads, systematic and wholehearted reforms need to be undertaken to ensure high-quality, highfrequency datasets that Indian citizens, policymakers, and investors expect.

- ► A state-of-the-art data warehouse and **data** archive with Online Analytical Processing (OLAP) capabilities needs to be created.
- ▶ India Data Management Office (IDMO): IDMO shall be set up under the Digital India Corporation to formulate all data/datasets/metadata rules, standards and guidelines.





TOPIC AT A GLANCE

Indian Statistical System: Decoding Data to Drive Development

Statistics is the science concerned with developing and studying methods for collecting, analyzing, interpreting, and presenting empirical data. Statistics are essential for sustainable economic, environmental and social development.



Official Statistics System

- Official statistics are public goods generated at all levels of government.
- These measure performance on key socio-economic parameters and helps in evidence-based policy formulation.
- Official Statistics system in India is laterally decentralized at the central level, and vertically decentralized between the Centre and the States/Union Territories (UTs).
- Presently, the Ministry of Statistics and Programme Implementation (MoSPI) is the nodal agency for the official statistics system in India.

Challenges with the Present Indian
 Statistical System

- Interruption and postponement in decennial census in 2021.
- **Outdated key datasets** such as consumer expenditure data and poverty estimates.
- **Inferior quality of datasets** and lack of clear understanding of present data.
- Scrapping of key Surveys like NSSO, EUS creates a data gap.
- **Limited powers of India's apex statistical regulator,** National Statistical Commission.
- **Lack of clear roadmap** to address controversies in statistics methodologies.



Measures taken to improve Official Statistics System

- Efforts by MoSPI, NITI Aayog and Ministry of Electronics and Information Technology to **standardize public datasets**.
- ● Adoption of global standards and UN Fundamental Principles of Official Statistics.
- Draft National Policy on Official Statistics (NPOS) by MoSPI.
- **Digital India** initiative enabling flow and availability of new and timely data.



Way ahead

● Formation of Statistical Reforms Commission.

- Framing a new statistical architecture and strategy.
- ⊖ Utilizing regular surveys to fill gaps in administrative datasets.
- Strengthening statistical infrastructure for real-time monitoring of the Indian economy.
- Integrating technology such as artificial intelligence, big data, and cloud computing with statistics.
- **Improving the research ecosystem** through capacity building and better incentives for researchers.
- Setting up of India Data Management Office (IDMO).



Draft National Policy on Official Statistics

- Creation of **integrated data system** with digital survey platform, data warehouse, and innovation hub.
- Optimizing use of administrative statistics for completion of statistical indicators.
- Designing of certain key statistical products such as GDP, Price indices, SDGs etc. as Core Official Statistics.
- **Reorientation of planning and development** of various surveys to avoid duplication.
- **Augmentation of quality** of official statistics through periodic review.





Boxes and Figures

