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India's Statistical System: Past, Present, Future

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Summary

The statistical system of a country acts as its mirror. It generates the statistics that allow observers to see how well a country is performing on key socioeconomic parameters such as per capita income, inflation, poverty, life expectancy, and average years of schooling. In most countries, a single agency or a handful of agencies produce the bulk of official statistics. The work of these and other peripheral agencies is typically regulated by a national statistical office that ensures statistical standards are in line with international norms. The statistical system provides citizens an impartial view of the state of their country's progress. It enables policymakers and investors to make informed decisions.

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

It was only after India's independence in 1947 that a serious effort was made to revamp India's statistical infrastructure. The globally renowned statistician P. C. Mahalanobis led this drive and was backed by Jawaharlal Nehru, India's first prime minister. The Mahalanobis model of data collection relied largely on random sampling and inspired similar initiatives elsewhere in the developing world.

With Mahalanobis's death in 1972, India's statistical system lost a powerful champion who had ensured its relevance without compromising its autonomy. Other changes in the post-Mahalanobis era diminished the statistical system. Growing insularity, the lack of investments in computing resources, and the declining influence of the Planning Commission (which had earlier been a pillar of support for statisticians) eroded the statistical system's effectiveness over time.

By the turn of the twentieth century, India's statistical crisis had become too severe to be ignored. In early 2000, the central government appointed a high-level commission led by the former central banker C. Rangarajan to review the statistical system and suggest ways to improve it. Some of the commission's recommendations were implemented but only in a half-hearted manner.

The modest reforms initiated in the wake of the Rangarajan commission's recommendations failed to address the deep-rooted crisis the system faced. The development of the statistical system remained stunted, impacting the credibility of data releases.

Meanwhile, the political pressures on the statistical system grew as data assumed a major role in public discourse. A weakened statistical system failed to assert its autonomy in the face of such pressures. The past decade has seen a number of statistical controversies even as the statistical system struggled to reform itself.

Today, India's statistical system faces a major crisis. Producers and users of official statistics have stated that the lack of a clear road map to address this crisis worries them as much as the crisis itself.

This paper argues that a Statistical Reforms Commission should be set up to address the roots of India's statistical crisis. The proposed commission must outline the legal framework that would underpin a revamped statistical authority. In addition, this commission should frame a new statistical architecture that is able to meet the emerging needs of data users. It should prepare a national statistical strategy document after taking into account the concerns of all key stakeholders.

Without wholehearted reforms, India's statistical system will fail to deliver the kind of high-quality, high-frequency datasets that Indian citizens, policymakers, and investors expect from it today.

Introduction

In some ways, this is the best of times for data users in India. The number of public datasets grows each year, allowing users to discover new facets of the economy and the country. Data on several important economic parameters, from rural road construction to vehicle registration, are now available at a high frequency and granular level.

There are at least three initiatives—one from the government think tank NITI Aayog, one from the Ministry of Electronics and Information Technology (MeitY), and another from the Ministry of Statistics and Programme Implementation (MoSPI)—to standardize public datasets and make them accessible to citizens.

Yet, in many ways, this is also the worst of times for India's data users. 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. Other key datasets are badly out of date. The last official consumer expenditure data pertains to 2011–2012; the next survey, undertaken in 2017–2018, was junked by MoSPI ostensibly due to data quality concerns. 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. 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.

India's apex statistical regulator, the National Statistical Commission (NSC), has struggled to assert its voice on these issues. 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 failed to perform that role. While the total number of datasets is growing, the quality of datasets remains uneven across departments and states. Data users have to struggle hard to make sense of them.

To understand the current predicament of the statistical system, it is important to understand how it has decayed over time. The next section of this paper outlines the methodology used to collect evidence for this research, followed by a chronological account of the rise and wane of a statistical system that was once the envy of the world. The penultimate section points to the road ahead. The final section provides a brief conclusion.

Scope and Methodology

The statistical systems of countries are not always well-defined entities, and they can comprise multiple agencies. Yet every major economy has a statistical office that standardizes statistical practices across the country. These offices ensure that such standards are in line with international norms set by the United Nations Statistics Department (UN Stats). Most statistical offices also tend to produce the key socioeconomic statistics for their countries.

Any investigation of statistical governance in a modern economy must therefore focus on how the apex statistical office functions and how effectively it can standardize, aggregate, and produce statistics. In India, MoSPI plays this role as a producer of core statistics and as the government's nodal authority for coordinating statistics across the country. Hence, this paper's focus is on MoSPI and its previous avatars (the Department of Statistics, the Central Statistical Organization, and the Central Statistical Unit).

Given that the evolution of statistical governance in India is an underdocumented subject, the primary aim of the paper is to fill that gap. It documents how political, economic, and administrative changes have shaped the evolution of India's official statistical system over time. It draws on lessons from the past to outline a path toward reforms.

This paper is based on three sets of qualitative data. The first set comprises transcripts from interviews with thirty-five key stakeholders in India's statistical system. These respondents were classified into two categories. First, respondents who have worked for many years in India's statistical system were classified as data producers. This subset includes officials who have spent their careers in central statistical bodies such as the National Sample Survey Organization (NSSO) and the Central Statistical Organization (CSO), those belonging to state-level directorates of economics and statistics (DESes), and producers of nonofficial

large-scale datasets. Second, respondents who have used India's official statistics intensively for many years have been classified as data consumers. This subset includes people who have been part of key official institutions (such as the Ministry of Finance or the Prime Minister's Economic Advisory Council) and multilateral organizations, economists and fund managers from the private sector, researchers, and techies from India's open data community.

Roughly half (eighteen) of the respondents were data producers; the rest (seventeen) were data consumers. A semistructured questionnaire was used to interview the respondents in the April–December 2022 period. Most initial interviews lasted 40–50 minutes. In some cases, there were follow-up interviews that lasted 15–30 minutes. Eleven of these interviews were conducted in person, and twenty-three interviews were conducted online over Google Meet. One interview was over email.

To allow respondents to express themselves freely, they were promised anonymity and assigned a code, using DP for data producers and DC for data consumers. Throughout the paper, only the code associated with a respondent has been cited (such as DP-1 or DC-7) to make it clear if a particular view is of a data producer or a data consumer, without identifying the individual.

The second set of primary data consists of committee reports and official documents published by the Indian government and multilateral organizations (such as the World Bank, UN Stats, and the Organisation for Economic Co-operation and Development). Some of the documents have been sourced from the websites of the respective organizations and from digital archives. Others have been sourced from libraries across India.

The third set of primary data consists of replies provided by MoSPI on specific aspects of the statistical system in response to right-to-information requests and appeals filed by this author.

Statistics During the Raj: 1858–1947

Statistics in India is 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.

However, it was only after the arrival of the British colonialists that India's modern statistical system began taking shape. In 1858, the Indian subcontinent was brought under the direct rule of the British Crown. Four years later, the governor-general of India appointed

a Statistics Committee to standardize the collection of all official statistics in India. The committee finalized the format of statistical forms in 1866, and the form was approved by the London-based Secretary of State for India in 1867. A year later, the first Statistical Abstract relating to British India (1840–1865) was published by the India Office in London. In 1871, the first Director-General of Statistics was appointed to consolidate the provincial data banks after standardizing all the datasets. Since he had a skeletal staff to assist him, it took him roughly a decade to bring out the first edition of the *Imperial Gazetteer of India* in 1881.[1]

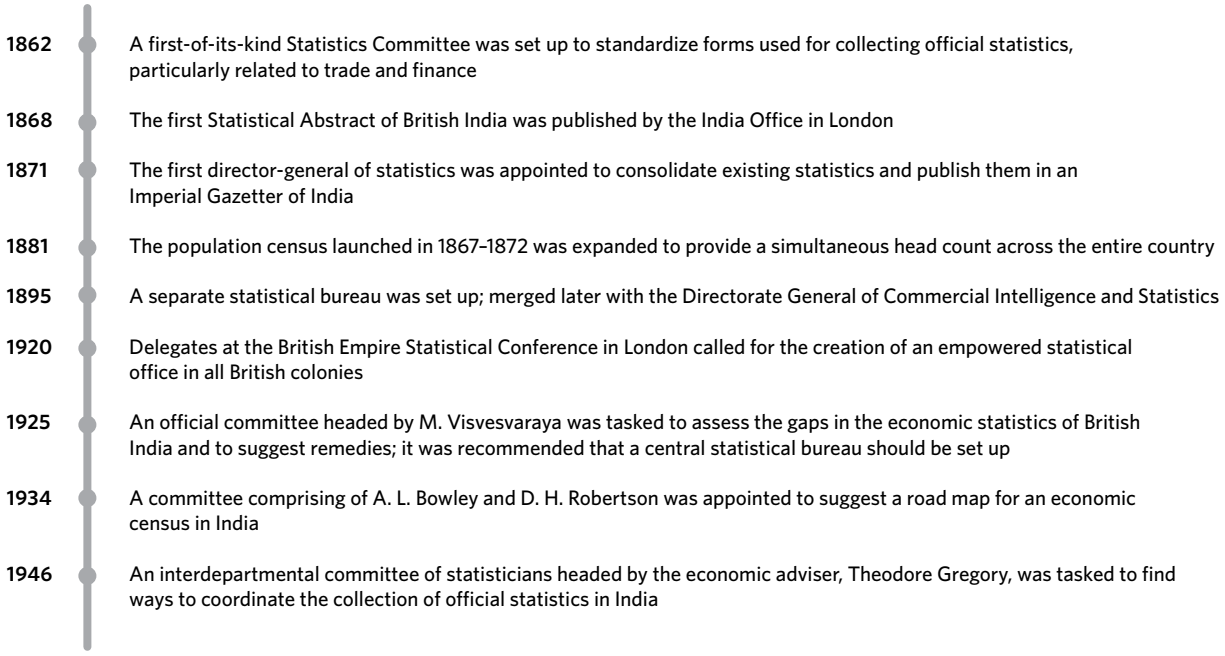
The British Raj's first attempt at a country-wide population census took place in the 1867–1872 period, with head counts in different provinces at different points of time. The exercise failed to provide an all-India head count as it was not held simultaneously across the country. This was remedied in 1881, when an all-India synchronous census was organized. The decennial population census enjoyed an unbroken run until 2011.

At least, three key departments of the British administration—the Home Department, the Finance and Commerce Department, and the Revenue and Agriculture Department[2]—wanted to control the flow of government data. During the second half of the nineteenth century, each of these three departments attempted to set up a central statistical wing within its ambit. In 1895, the statistics branch of the Finance and Commerce Department was merged with the statistics branch of the Revenue and Agriculture Department to create a new statistical bureau. It was expected that the statistical activities of the Home Department would be brought under the purview of this bureau, but the Home Department refused to cede control over the population census until the very end. After a new Department of Commerce and Industry was created in 1905, it was given charge of statistical coordination. The statistical bureau that had been set up in 1895 was merged with the Directorate General of Commercial Intelligence that year. The Directorate General of Commercial Intelligence and Statistics remained the nodal authority for official statistics until India's independence in 1947 (see figure 1).

British efforts at organizing official statistics in India were primarily driven by the imperative to track a key market for English products. As a result, statistics on external and internal trade were more well-developed compared to statistics on domestic production. When the statistical wing of the commercial intelligence department suffered budget cuts in the 1920s, the series on internal trade was discontinued, before being revived in the 1930s.[3]

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.[4] Indian nationalists' reaction to such claims also made use of statistics. Dadabhai Naoroji, a British member of Parliament of Indian origin, used official statistics to derive his estimates of India's per capita income. Based on these estimates, Naoroji argued that Indians were being taxed beyond their means to fund a "despotic" government.[5]

Figure 1. Evolution of Official Statistics During the British Raj



Source: Author's research.

Naoroji's arguments provoked a series of critiques (primarily from British authors) and supporting arguments (primarily from Indian economists).[6] To resolve the unending controversy, India's Central Legislative Assembly recommended that a committee of "non-officials and experts" should ascertain the economic condition of "various classes of the people of India" and their capacity to bear the existing burden of taxation.[7]

The Economic Inquiry Committee, headed by M. Visvesvaraya, was set up in 1925 to examine the available economic information and to suggest ways to ascertain the living conditions of Indians. The committee noted major limitations in data collection, particularly on domestic production and incomes. It argued that the existing statistical material wasn't adequate to form a conclusive view on the economic condition of various classes of people.

The committee recommended that a regular survey program should be launched in India as was done in the other British dominions. As such, it claimed that an economic survey should be seen as an "indispensable preliminary" to the formulation of economic policies.[8]

The committee also recommended the creation of a central statistical bureau to coordinate statistical activities in India, similar to the ones created in Australia, Canada, and South Africa. Accordingly, the bureau should act as a "central thinking office" on statistical

matters.[9] Finally, the committee suggested the enactment of a statistical law that would provide a legal basis for the operations of the central statistical bureau and enable it to demand economic data from firms and individuals.

Although the demand for statistical audits had not been made at that time, the committee suggested periodic reviews of official datasets to assess statistical weaknesses and to identify scope for improvements. To reorganize India's statistical system and fill the gaps in data on domestic production, British officials appointed two English economists, A. L. Bowley and D. H. Robertson, to suggest a road map. The Bowley-Robertson committee was set up in 1933 to come up with a scheme for an economic census in India.[10] It reiterated some of the concerns of Visvesvaraya's committee and argued for a single statistical agency that would conduct both the population and economic censuses. The committee recommended a similar setup in the provinces headed by what would be called provincial statisticians.[11]

During this period, several other committees were set up to examine specific sectors of the economy. These included the Royal Commission on Agricultural in India (1928), the Royal Commission on Labour (1931), and the Indian Central Banking Enquiry Committee (1931). These committees all noted wide gaps in data availability and recommended an overhaul of India's statistical machinery.

The report of the Royal Commission on Agriculture said, "the whole basis of statistics in India urgently requires broadening. . . . It should rest not on the work of a few government officials, however able, but on the support of the informed public, and through them, on the recognition by the legislatures and by the general public that modern statistical methods are in a position to make an indispensable contribution to the successful development alike of scientific agriculture and of social administration."[12]

British administrators accepted the logic advanced by these committees but were unwilling to invest fresh resources to upgrade India's statistical infrastructure. By the late 1930s, the British government's focus was squarely on the looming world war, and the issue of statistical reorganization was put on the back burner.

By the time World War II ended, the realization dawned that there was very little coordination on statistical issues even though the number of government datasets had grown. An interdepartmental committee of statisticians was set up in 1946 to suggest remedies. It reiterated some of the recommendations of the Visvesvaraya committee and the Bowley-Robertson committee and suggested that a permanent cadre of economists and statisticians should be established.[13]

The British Raj was about to end at that point. As India's struggle for freedom came to an close, a struggle for a better statistical future began.

India's Statistical Revolution: 1947–1972

Around the time India's departmental statisticians were debating the issue of statistical coordination in the country, a small group of statisticians were discussing the issue of global statistical coordination at the nuclear session of the United Nations Statistical Commission in New York. This session in 1946 had one participant from India: the preeminent expert in sample surveys, Mahalanobis.

Mahalanobis suggested the commission should set up a panel to formulate global standards on sampling. Since poor countries lacked high-quality administrative datasets that rich economies possessed, newly independent nations would have to depend on large-scale surveys to fill their data gaps, Mahalanobis argued. His suggestion was accepted, and Mahalanobis was asked to chair the Statistical Commission subcommittee on sampling. The first global manual on sampling came from this committee.[14]

Mahalanobis's arguments found receptive ears among India's new national leadership as well. The Indian National Congress, the party that led India's freedom struggle, had resolved to initiate a program of planned economic development once India won independence. As early as 1938, the Congress Party had set up a National Planning Committee with Jawaharlal Nehru as its chairman. The planning initiative was hamstrung by the lack of adequate statistics.

Nehru, who became India's first prime minister, understood the need to revamp India's statistical infrastructure. He invited Mahalanobis to join his cabinet as an honorary statistical adviser in early 1949. Within a few months, a Central Statistical Unit had been set up in the Cabinet Secretariat to coordinate all official statistical activities. For the first two years, this unit was manned entirely by staff from Mahalanobis's research lab, the Indian Statistical Institute (ISI), in Calcutta (now Kolkata).[15] In 1951, this unit expanded to become the CSO.

Mahalanobis was also asked to chair the National Income Committee, set up in 1949, to develop India's national accounts system and to guide the work of the new national income unit. The other members were V. K. R. V. Rao and D. R. Gadgil. The committee's advisers included some of the global pioneers of national accounting: Simon Kuznets (who had set up the U.S. national accounting program), Richard Stone (who had helped set up the United Kingdom's national accounts system), and J. B. D. Derksen (the chief of the Statistical Commission's national accounts unit).

The committee's report drew heavily on earlier research by Rao, who had published the first authoritative estimates of India's national income in 1940. The national income unit, which computed the first official estimates of India's national income, was headed by an ISI researcher, Moni Mukherjee. Mukherjee went on to become a member of the Statistical Commission subcommittee on national accounting, which then was led by Stone.

In 1950, the ISI produced yet another statistical innovation: the National Sample Survey (NSS). The NSS was conceived as a multipurpose survey that would collect data from a nationally representative sample of households. The results of the survey were to be used in computing national accounts and in designing India's five-year economic development plans.

Over time, NSS data came to be used to track employment and poverty levels across the country (see figure 2). Random sampling gained acceptance across government departments, with some agencies using surveys to fill administrative data gaps. For instance, the Office of the Registrar General and Census Commissioner of India struggled to make sense of demographic trends in the early years of India's independence since most births and deaths were not registered in India's official civil registration system. To solve this problem, it launched the Sample Registration System (SRS)—initially as a pilot trial in the 1960s—to estimate births and deaths from a representative sample of households. Even today, the SRS continues to be the primary source of official data on mortality and fertility trends in the country since births and deaths often are not registered in India's poorer regions. The registrar general's office estimates the adequacy of administrative data on births and deaths based on how closely the registration numbers match the sample estimates.

Surveys such as the NSS and SRS inspired similar initiatives across the developing world. Mahalanobis, who went on to chair the Statistical Commission, was instrumental in spreading the gospel of sampling. When Mahalanobis died in 1972, the commission resolution said it had lost its doyen. "Where Mahalanobis and India led, the rest of the world has followed," the Nobel-winning economist Angus Deaton would write several decades later.[16]

The Mahalanobis model of data collection did not go unchallenged in India. P.V. Sukhatme was among the first to question this model. The statistical adviser at the Imperial (later Indian) Council of Agricultural Research (ICAR) was a pioneer of crop surveys, just like Mahalanobis. But his sampling techniques differed in many ways from those of Mahalanobis. Sukhatme held that village-level revenue officials should be deployed to estimate crop yields since they were familiar with local conditions. The ad hoc enumerators of the NSS could not be relied upon to come up with unbiased estimates, he argued.[17]

Sukhatme, who hailed from Poona (now Pune), found support from Gadgil, another distinguished scholar from the same city and a member of the National Income Committee. Gadgil and his team at the Gokhale Institute of Politics and Economics were pioneers in rural household surveys. When Mahalanobis initiated the NSS program, he sought Gadgil's help in organizing the first round. Gadgil agreed to help but soon found himself in conflict with the ISI team on several methodological issues. The early results of the survey disappointed Gadgil, who advocated an end to the NSS experiment even before the first survey round had been completed.

Figure 2. India's Statistical Makeover: Key Milestones

1949	P.C. Mahalanobis was appointed as honorary statistical adviser to the union cabinet and placed in charge of a central statistical unit manned by ISI veterans
1950	The first round of the National Sample Survey (NSS) was launched
1951	The National Income Committee, comprising of Mahalanobis, D. R. Gadgil and V. K. R. V. Rao, submitted its initial report, laying down a road map for estimating national income figures accurately
1951	The Central Statistical Organization (CSO) was formed, replacing the central statistical unit, to provide leadership to the statistical system
1951	A series of biennial conferences of central and state statisticians was initiated
1954	The National Income Committee submitted its final report
1954	The finance ministry's National Income Unit was merged with the CSO in line with the recommendations of the National Income Committee
1954	The CSO was given charge of coordinating all statistics relating to planning
1957	The NSS directorate was moved out of the Finance Ministry and placed in the cabinet secretariat; the CSO was asked to coordinate NSS activities
1959	The industrial statistics wing, which had been moved out of the Commerce Ministry in 1957, was merged with the CSO
1959	The Annual Survey of Industries (ASI) was launched to provide regular data on industrial output and wages
1961	The Department of Statistics (DoS) was created in the cabinet secretariat, with the CSO and NSS directorate as constituents
1964	The Indian Statistical Service (ISS) cadre was established
1964	The Sample Registration System (SRS) was launched (initially as a pilot project in a few states) to provide reliable and regular information on births and deaths

Source: Author's research.

Gadgil argued that a poor country such as India should not invest in a new statistical organization. Instead, the resources earmarked for NSS should be used to strengthen administrative data systems and to upgrade the state statistical bureaus. He supported Sukhatme's contention that statistics should be collected by individual ministries and departments that had domain knowledge, not by an outside agency.[18]

Mahalanobis argued that an independent survey agency was essential to collect unbiased data since departmental administrators have a strong incentive to misreport figures. He argued that NSS data quality would improve over time as enumerators gained experience. He also believed the collection of accurate statistics to be a scientific enterprise.

Administrators should only specify which types of data need to be collected. The question of how best to collect the data must be answered by statisticians using the most scientific methods at their disposal.[19] In his 1950 presidential address at the Indian Science Congress, Mahalanobis traced the idea of having an independent mechanism to check administrative data to the *Arthashastra,* which emphasizes the need to verify data collected by the original village-level enumerators through a network of spies.[20]

Mahalanobis lost the battle on agricultural statistics. Unlike industrial statistics, which were brought under the CSO's control, agricultural statistics remained under the control of the agriculture ministry. But he won the war on sampling, and the NSS program was scaled up. To assuage concerns about state bureaus being undermined, Mahalanobis invited states to take part in the NSS program and organized training for state statisticians. India's second five-year economic development plan, drafted largely by Mahalanobis, financed the establishment of statistical bureaus in states that had lacked them.

In a bid to dispel lingering doubts about the NSS program, Mahalanobis invited some of the world's leading survey experts to review it in 1957. The committee was led by R. A. Fisher, arguably the greatest statistician of the twentieth century. The Fisher committee's report said that the costs of funding NSS were insignificant compared to its benefits of preventing misdirected policies and undue spending.

Yet, it highlighted scope for improvements and recommended faster publication of results. The committee qualified its criticisms by noting that in the matter of sample surveys, "those from outside India must expect to have more to learn than to teach."[21]

NSS continued to be run from the ISI until the early 1970s, when a permanent body, the National Sample Survey Organization (NSSO), was established in the Department of Statistics in line with the recommendations of the Fisher committee.

India's Statistical Decline: 1973–1998

Mahalanobis's death in 1972 marked the end of an era. The next few decades witnessed a decline in the statistical system as new investments and innovations dried up. This decline was related to four key factors.

The first factor was the lack of an apex statistical authority in the post-Mahalanobis era. Mahalanobis's scientific achievements, his global stature, and his unique position in the Nehru cabinet ensured that he could act as a one-man statistical commission.[22] Almost all

aspects of official statistics in India were vetted by the legendary statistician. Even the plan for the first two censuses of independent India had to face Mahalanobis's scrutiny before they were approved by the union government.[23]

In the post-Mahalanobis era, the CSO struggled to assert its authority over other departments and ministries. A CSO document marking the silver jubilee of the organization in 1976 noted the absence of a "central authority" to decide what statistics should be collected "by which agency and in what manner." The CSO set up interministerial committees to harmonize statistical standards and classifications, but such mechanisms weren't always effective.[24]

The lack of computational investments was the second factor behind the decline of the statistical system in the post-Mahalanobis era. Mahalanobis made painstaking efforts to bring the first set of digital computers to India,[25] and the computers were essential to process the vast trove of NSS data. Their presence meant that the Department of Statistics (which included the CSO and NSSO) emerged as the government's central processing unit. This arrangement was formalized when the Computer Centre was established as an additional wing of the department in 1967.

Had the Computer Centre lived up to its promise, it could have taken the lead in computerizing government datasets across ministries. It may have been able to provide analytical tools to government departments, enabling it to play a key role in the development of administrative datasets in the country. It may have been able to support similar initiatives in state capitals. What the Department of Statistics lacked in authority could have been made up through computing prowess.

Unfortunately, the Computer Centre struggled to fulfill its mandate. The data processing requirements of the statistics department itself proved overwhelming. As other countries computerized their administrative datasets in the 1970s and 1980s, India was left behind. The IT revolution had begun in India's private sector by then, but the public sector felt its impact much later.

The third factor was the waning influence of technocrats and the rising influence of generalist civil servants in the post-Nehru era. This led to a decline in the rigor of policymaking, lowering the Indian state's stake in the statistical system.

For example, the Planning Commission was not consulted when India decided to devalue its currency in 1966, the national accounting pioneer Rao wrote in his memoir. Rao resigned from the apex planning body soon after to join electoral politics.[26] When prime minister Indira Gandhi needed a steady hand to impart credibility to the commission, Gadgil was

given charge of the commission in 1967.[27] But once Gandhi was able to consolidate her power, winning a landslide victory in the 1971 elections, Gadgil was asked to leave. He died of a heart attack the next day on the train back to Pune.[28]

A former diplomat and a trusted aide of Gandhi, D. P. Dhar, was given charge of the commission in 1972. The growth projections in Dhar's draft plan seemed overly optimistic to a leading economist on the panel, B. S. Minhas. Minhas's objections were overruled, and he resigned in protest in 1973. Minhas, who headed the planning unit at ISI, was considered close to Gandhi. But Dhar was closer.[29]

The lack of adequate feedback loops in the statistical system was the fourth factor behind its decline. Around the time the Fisher committee was reviewing the NSS, Kuznets was asked to review the national accounting system. Kuznets's 1957 memo to Mahalanobis was less flattering than Fisher's report. Kuznets highlighted the need to fill large gaps in India's national accounting database. He also emphasized the need to set up a macroeconomic research unit. Such a unit could carry out research on the emerging relationships between different macroeconomic variables and provide valuable feedback to the CSO.

That unit never materialized. But a similar suggestion came up again in 1970. The Data Improvement Committee headed by Minhas recommended an economic research unit run jointly by the Finance Ministry and the Planning Commission. The quality of official datasets would begin improving once they were used for rigorous analysis, Minhas argued.[30] His suggestion went unheeded.

After the NSS was moved out of ISI, the organic link between the world of statistical research and official statistics was ruptured. The NSSO governing council headed by a non-official expert could fill in that void only partially. Some of the scientific rigor and flexibility of the NSS program was lost.

When Mahalanobis set up the NSS, he had instituted a system of replicating samples as an internal quality check on NSS work. Two separate and independent teams would be tasked to canvas schedules in the same region so that the results of the two teams could be compared. The NSSO governing council dismantled this system, perhaps to save resources.[31] An innovative quality assurance mechanism came to an end.

The stunted growth of state statistical systems deprived the central Department of Statistics of yet another feedback channel. The lack of data processing capacity in the state statistical bureaus meant that most states remained dependent on the central government for their

statistical requirements. While states participated in each NSS round, collecting data from a matching sample, very few states were able to process or use the data their enumerators had collected. The first objective behind the use of such samples was to pool the data of the central and state samples to produce district-level estimates. The sample size of the NSS central sample was inadequate to produce the granular estimates that states needed. But since most states failed to process the state samples, state-level policymakers were unable to rely on the NSS program for district-level data. The second objective of having state samples was to provide an additional check on the NSS central sample. This objective was never realized.

Rescue Efforts

The decline of the statistical system didn't go unnoticed. There were two major reviews of the statistical system in the 1980s that attempted to salvage the situation. The first was a review of the entire statistical system; the second dealt with the CSO.

The first committee was headed by the secretary of the Department of Statistics (initially Kripa Narain and later S. M. L. Bhatnagar). It was set up in August 1979 and submitted its report in June 1980 (see table 1). Noting that statistical coordination needed strengthening, the report recommended that the Department of Statistics and state statistical bureaus should be officially notified as the nodal agencies for collecting statistics and coordinating statistical activities. To help improve statistical standards across ministries, high-level posts of statistical advisers should be created in all the major ministries. These advisers should be part of the ministerial decisionmaking process, the report said.[32]

Another key recommendation was to set up the National Advisory Board on Statistics (NABS), headed by the Planning Commission deputy chairperson. NABS was envisioned as the approving authority for all major statistical activities across ministries and states. Apart from the CSO chief, the NABS would include representatives from central ministries, state governments, universities, and research institutions, as well as nonofficial data users, the report said.

Table 1. Narain-Bhatnagar Committee: Key Recommendations

Recommendation	Impact
High-level posts of statistical advisers should be established in all major ministries	Not Implemented*
The statistical department should be notified as the nodal agency for statistical coordination at the center and in states	Implemented**
A National Advisory Board on Statistics (NABS) should be set up to regulate all statistical operations	Implemented***
The CSO should bring out manuals on different subjects containing concepts, defintions, and methods of collecting and processing data	Not Implemented****
All state statistical bureaus (or directorates of economics and statistics) should come under a separate department of economics and statistics, headed by a professional statistician or economist	Not Implemented
A high-level State Statistical Committee (SSC) should coordinate all statistical operations in states; technical subcommittees may be set up where required	Not Implemented
Computer centers should be established in all states to speed up data processing	Not Implemented
All district level offices should be asked to send a copy of all statistics that they supply to state headquarters to the district statistical officer	Not Implemented
For important surveys, quick releases based on a subsample should be considered before the final results are published	Not Implemented
A national inventory of statistics (and state-level inventories) should be prepared to aid policymakers	Not Implemented
Every statistical release should mention the limitations and errors associated with the statistical series	Not Implemented
To promote innovation, university researchers should be provided facilities in DESes/CSO to acquire practical knowledge of statistical applications; similarly, statistical officers should be allowed to spend time at universities/research institutes	Not Implemented

Source: Author's research
Notes: *The government acted on this issue only after the Rangarajan commission reiterated this recommendation
**This has not made a material difference since each department frames its statistical plans without informing the nodal agencies
***The NABS remained an ineffective body, as it was ignored by most states and ministries
****A renewed attempt to prepare manuals was taken up in the late 2000s

In 1984, a high-level committee headed by the Planning Commission member A. M. Khusro was set up to review the functioning of the CSO. It recommended an overhaul of coordination mechanisms between the central government and the states on statistics. The second Conference of Central and State Statistical Organizations (COCSSO) had recommended the setting up of high-powered, state-level coordination committees. The Khusro committee found that such committees were not set up in all states, and in states where they were set up, meetings were irregular.[33]

The Khusro committee identified gaps in coordination at the central level as well, with ministries failing to keep the CSO informed about major statistical activities. In line with the recommendations of the Narain-Bhatnagar review committee, it emphasized the need to designate the CSO as the nodal authority on statistics.

The committee argued that the CSO should go beyond the production and dissemination of data; economic analysis should become a key function. Further, it added, each CSO division should have an analytical unit to carry out such work. Such units should be free to take the help of nongovernment institutions and researchers, the committee said. Most of the important recommendations of the two committees were not implemented. While the NABS was set up in 1982, it remained "ineffective," partly because of opposition from states.[34]

The Liberalization Shock

For years, the decline of the statistical system did not set alarm bells ringing. The liberalization of the economy changed that in 1991. Earlier, industrial units had to report minute details about their operations to the government as part of regulatory requirements. Then, India's deregulation drive freed businesses from their onerous reporting burden. But it also meant that the Indian state had much less data from the industrial sector. The historical neglect of the services sector meant that there was no credible dataset on a fast-growing sector.

The statistical system struggled to fill these large data holes even as the new International Monetary Fund (IMF)'s Special Data Dissemination Standards required India to produce more statistics. The budget cuts of the 1990s did not help matters. The CSO struggled to offer the new datasets that were being demanded by multilateral agencies and by a growing financial sector. Its ability to coordinate statistical activities declined further in the 1990s. The biennial COCSSO meetings were abandoned, and the CSO's technical advisory committees withered away, which meant that there was no interministerial forum to coordinate statistical standards for many years. The post of CSO director-general remained vacant for years at a stretch. The NSSO faced an equally rough ride. In the face of budget cuts, it struggled to hire enumerators even as data demands increased.[35]

The CSO prepared a quarterly GDP series in 1999 in an attempt to meet market demands. Since it did not invest in setting up new, high-frequency indicators, it had to rely on a limited set of proxy indicators to generate the quarterly series. NSSO struggled to change survey designs in response to the changes demanded by a growing economy. The opening up of the economy transformed India's consumer markets and shifted consumption patterns. The old NSS questionnaires were not equipped to track these changes.

A growing band of economic reformers began pressuring the NSSO to redo the old questionnaires. The ham-handed manner in which those changes were introduced contaminated the results of the 1999–2000 consumption expenditure survey. The official poverty estimates

based on that round were discredited, and it took several years to gain clarity on the status of poverty in India. The NSSO never fully recovered from that debacle. To some observers, the episode highlighted the damaging impact of political pressures on the statistical system.[36]

Partial Recovery: 1999–2011

At the turn of the twentieth century, India's statistical crisis had become too severe to be ignored. In 1999, the Department of Statistics was carved out of the Ministry of Planning, and a new ministry was created merging the Statistics and Programme Implementation Departments. MoSPI was born, and it finalized negotiations with the World Bank for a loan to modernize the statistical system. This project was soon put on hold because of cost concerns.

Meanwhile, the government decided to initiate an independent, high-level review of the statistical system. In early 2000, it set up a National Statistical Commission headed by the former Reserve Bank of India (RBI) governor C. Rangarajan to identify the deficiencies of the statistical system and to suggest remedies.

The Rangarajan commission issued a detailed report in September 2001, highlighting the statistical lacunae in each sector of the economy and how these gaps could be filled. To address the gap in corporate data coverage, it recommended a one-time census of registered companies and better use of regulatory filings by companies. It recommended new surveys to address the lack of adequate data on the services sector. It suggested that a new price index on the services sector should be developed as a complement to the wholesale price index.

The Rangarajan commission reiterated some of the complaints of the review committees of the 1980s. In line with the diagnosis of those committees, it identified the weakening of statistical coordination across ministries and states as a key cause of the decline of the statistical system. This had led to a "near collapse" of the administrative statistical system, contributing to delays, poor coverage, and unsatisfactory quality of administrative statistics in the country, it argued.[37] Some of its recommendations—such as the appointment of senior statistical advisers across ministries and the appointment of a professional statistician to head the state statistical departments—echoed those of the earlier committees.

In other respects, the Rangarajan commission went much beyond the earlier committees (see table 2). It acknowledged the need to insulate the statistical system from the politics of the day and recommended the creation of an apex body—the National Commission on Statistics—which would be backed by a law and be accountable to Parliament rather

than the government of the day. The National Commission on Statistics would collectively perform the role that Mahalanobis played in the early years of India's independence, it said. MoSPI's secretary would be the secretary to this body and should be a statistician of high standing, who would be designated as the National Statistician, it said.[38]

Table 2. Rangarajan Commission: Key Recommendations and Status Updates

Recommendation	Impact
MoSPI's secretary should be a professional statistician to be designated as the national statistician	Implemented
A permanent and statutory apex body (the National Commission on Statistics) should be created, independent of the government and responsible to the Parliament	NSC set up in 2006, but not given statutory backing until now
A mechanism for regular statistical audits should be instituted	Not Implemented*
Regular cadre review of ISS officers to ensure timely promotion should be instituted	Implemented
High-level posts of statistical advisers should be set up in key ministries manned by ISS cadre	Implemented; but the advisors do not always have the last word on statistical matters
The Collection of Statistics Act (1953) should be reformed to arm statistical officers with greater powers	The Collection of Statistics Act (2008) was enacted but it is usually not invoked to demand data from other departments
A methodological study unit should be set up in NSSO to conduct pilot trials and to help improve survey methodologies	Not Implemented
NSSO should start doing quick surveys based on demand from different departments	Not Implemented
The Computer Centre division should start functioning as a comprehensive data warehouse of official statistics in India	Several attempts were made but a centralized data warehouse still remains an aspirational goal
State-level DESes should be converted into a department of statistics, headed by a secretary-level professional statistician	Not Implemented
The Census Act should be modified to allow for the economic census to be conducted during the house-listing phase of the population census	Not Implemented
To promote innovation, university researchers should be provided facilities in DESes/CSO to acquire practical knowledge of statistical applications; similarly, statistical officers should be allowed to spend time at universities/research institutes	Not Implemented

Source: Author's research.
Note: The NSC initiated one audit, of the IIP, in 2011 on an exploratory basis. It was to serve as a template for future audits. But no further audit has been attempted since then.

Four years after the Rangarajan commission submitted its report, the union government decided to act on it. In 2005, a government resolution announced the establishment of the National Statistical Commission (NSC). It promised that the commission would receive statutory backing "within one year."[39] The NSC was set up with lofty goals: to set statistical standards across ministries and departments; to lay down processes for collection, tabulation, and dissemination of "core statistics"; to evolve measures for "improving public trust in statistics"; to exercise the powers of "statistical audit" to ensure quality and integrity of official statistics; and to evolve national strategies related to human resources (HR) and IT needs of the official statistical system.[40]

Eighteen years after that resolution, the union government has yet to enact a law providing statutory backing to the NSC. The NSC has failed to realize most of its objectives. Yet, the setting up of the NSC did provide a semblance of autonomy and professional leadership to the beleaguered statistical system.

The first NSC was constituted in 2006 under the chairmanship of the renowned economist, Suresh Tendulkar. In 2007, a former Planning Commission official, Pronab Sen, was appointed as the first chief statistician of India, who would serve as the secretary to the NSC and to MoSPI, in line with the Rangarajan commission's recommendations.

The next few years saw some attempts at healing the statistical system. Between 2007 and 2012, MoSPI published about a dozen manuals on different subjects—from animal husbandry to infrastructure—that laid down definitions and guidelines to be followed while collecting and processing data on these subjects. Several ISS officers were posted as statistical advisers across key ministries. A revamped Collection of Statistics Act was enacted in 2008 that empowered statistical officers to demand statistical information from both private and public organizations. The biennial COCSSO meetings were resumed.

In 2005, MoSPI renewed discussions with the World Bank for a new loan package aimed at implementing the Rangarajan commission's recommendations. The World Bank loan was sanctioned in 2010 and implemented as a centrally sponsored scheme called the India Statistical Strengthening Project. The focus of the project was on improving statistical capacity at the state level. [41]

In 2010, the NSC headed by R. Radhakrishna appointed the former NSSO chief N. S. Sastry to audit IIP data and develop a framework for conducting other such audits. Sastry submitted his report in 2011, highlighting measures to improve the quality of the industrial index and outlining a way forward for future audits.[42]

NSC Proposes, MoSPI Disposes

The NSC appointed a committee led by the legal luminary N. R. Madhava Menon in 2010 to prepare a legislative framework to empower the NSC. In its 2011 report, the Menon committee proposed a draft NSC bill that envisioned a financially independent NSC, with overarching powers to regulate all official statistics. To ensure accountability, it recommended that details of all NSC meetings and activities should be disclosed on a dedicated NSC portal. NSC members should be appointed by a committee comprising both ruling and opposition lawmakers to ensure its autonomy, the Menon committee report said.

Sen's successor, T. C. A. Anant, stalled the Menon committee proposals since they would have constrained the powers of the chief statistician, according to a former Indian Statistical Service (ISS) officer who was posted at the NSC secretariat during those years.[43] The conflict between the chief statistician and the NSC had begun in the Tendulkar-Sen era. Since the NSC was set up as a part-time body without financial autonomy or statutory backing, the chief statistician assumed operational control of the statistical system. The NSC felt its turf was being eroded on several issues while the chief statistician felt that the NSC was overstepping its boundaries.[44]

The NSC chairperson enjoys the rank of a central minister-of-state but is a part-time functionary, dependent on the chief statistician on all operational issues. As the full-time MoSPI secretary, the chief statistician controls finance, HR, and other operational matters.

The government's decision to implement the Rangarajan commission's recommendations had provided MoSPI a window of opportunity to set its house in order. India's divided statistical leadership failed to make the most of it. Despite several reform initiatives in the 2005–2011 period, progress was partial, and momentum for reform has slackened since then.

The project to upgrade statistical capacity in Indian states did not improve DESes' operational efficiency, a 2012 assessment by the World Bank noted. The manuals published in the 2007–2012 period were never updated, and there is little evidence to suggest that government departments have used them. The 2011 IIP audit was intended to serve as a template for other audits, but no such audit has been attempted since then.

The NSC was able to assert its authority only in one area—the conduct of NSS surveys—and even that control was partial. One major administrative decision taken in the late 1990s proved particularly damaging to the NSSO, and the NSC could do very little to undo the damage. Until the late 1990s, the NSSO regional offices had the power to employ field investigators locally. In 1997, the Fifth Central Pay Commission, which sets guidelines for HR policies across central ministries, recommended a new cadre called the Subordinate Statistical Service to improve promotion prospects of field enumerators and junior officers.

The new HR policy disrupted the NSSO's field operations. Field officers recruited through a centrally conducted exam were posted to regions where they could not understand the local language and were in no position to conduct surveys. Many officers dropped out in frustration. The attrition rate spiked up, and fresh recruitment proved to be difficult. To deal with the large number of vacancies, field investigators due for promotions were made to wait several years. This had a demoralizing impact on field staff, a 2012 NSC report by Radhakrishna noted.[45]

Radhakrishna recommended that NSSO should revert to the earlier pattern of local recruitment. His recommendation was not implemented. The issue of vacancies was managed by raising recruitment levels and by hiring local enumerators contractually. Of the sanctioned strength of 3,227 field officers in 2009–2010, 2,181 officers were in-position, actively serving in the statistical system.[46] By 2019–2020, the sanctioned strength of field officers had increased to 4,389, of whom 3,121 were in position.[47]

Data Explosion, Statistical Implosion: 2012–2022

In 1999, the Computer Centre at MoSPI was given a second chance to direct and coordinate the digitization of public datasets in the country. A new data dissemination policy approved by the union cabinet entrusted it with the task of developing a warehouse of official statistics. Following that decision, MoSPI prepared a memo on the subject that said that the ministry's data warehouse would "collect data from various source agencies, integrate the data into logical subject areas, store the data in a manner that is accessible and understandable to non-technical decision-makers and deliver data/information to decision-makers through report-writing and query tools."[48]

The Computer Centre was rechristened as the Data Storage and Dissemination Division and later as the Data Informatics and Innovation Division. But MoSPI struggled to initiate the data warehouse project even as RBI managed to build a centralized data warehouse by the early 2000s, becoming one of the earliest central banks to do so.[49] Had MoSPI's project taken off, it would have provided the ministry with a lever to harmonize data definitions and standards across departments. It would have allowed MoSPI to reposition itself as the government's analytics hub.

In the absence of any centralized initiative to build an official data portal, individual ministries began building their own data portals in the 2000s. By the early 2010s, the need for integrating these datasets and making them more accessible was widely felt. A new data

dissemination policy spearheaded by the Ministry of Science and Technology was approved by the government in 2012. The National Data Sharing and Accessibility Policy laid down the protocols for sharing public data and gave a boost to India's nascent open data movement.

The landmark Right to Information (RTI) Act enacted in 2005 already had a provision for suo motu release of nonsensitive information to the public. Armed with the provisions of the act and the National Data Sharing and Accessibility Policy, a civic community of open data enthusiasts in India lobbied municipal, state, and central government authorities to open up more datasets for public use. Their lobbying helped generate some data flow to the newly set up portal, data.gov.in, which was to serve as a unified portal for accessing government data. While the data.gov.in portal failed to live up to the initial expectations of data users, it provided a nudge to government departments to open up more datasets to the public.

As more data became available from key economic ministries and a growing number of nongovernment data producers, all economic statistics, including those generated by MoSPI, came under increasing scrutiny from a growing tribe of financial analysts. The first dataset to face critical questioning in the early 2010s was the IIP, which seemed to be out of line with other high-frequency indicators. There were several attempts to fix IIP, but its reliability continues to be questioned till this day.[50]

The GDP Controversy

The biggest controversy to rock the statistical system, and one that remains unresolved, pertains to India's GDP calculations. The country's foremost economic barometer underwent a major revision in 2014–2015, only to turn into a subject of controversy. Analysts complained that the GDP figures did not tally with other economic indicators. One independent expert involved in the revisions, R. Nagaraj, questioned the method used to plug in a new database, the MCA-21, which contained company filings. Nagaraj was not consulted, or even informed, when the methodology was finalized.[51]

There were other concerns about the revisions: the use of formal sector proxies to estimate informal sector growth, the method of deflation employed to arrive at the real (inflation-adjusted) growth rates, and the assumptions used to derive the sectoral and state shares of the corporate sector's contribution to the economy. The critics included analysts from the private sector, academic economists, central government officials, IMF officials, and state-level statisticians (see box 1).

MoSPI's refusal to both open up the MCA-21 database for public scrutiny and publish a detailed methodological note kept the controversy alive. Clear communication with data users, an independent review of the entire GDP calculation process, and release of the raw data associated with the GDP numbers might have ended the controversy. But this kind

of openness would also have exposed the large data gaps in the GDP estimation process, mounting pressure on MoSPI to address these gaps urgently. MoSPI's mandarins weren't willing to face such pressures, according to some respondents.

"The national accounts division fears that more disclosures might lead to more questions," said one respondent who worked in MoSPI for many years (DP-4). "People will ask why you are not using current data (in the GDP estimation process) or why you are not conducting surveys."

What was largely a statistical controversy assumed political hues when NITI Aayog got involved and released the official, backcasted GDP series in November 2018. An earlier back series released in August 2018 as part of an NSC report had ended up displeasing the Bharatiya Janata Party (BJP) government since it showed higher growth in the pre-2011 period (when a coalition led by the opposition Congress Party had been in power). The official back series released by then NITI Aayog vice chairman Rajiv Kumar showed that the opposite was true, with growth in the pre-2011 period downgraded. NITI's involvement in a technical exercise undermined MoSPI's authority and raised questions about the integrity of the GDP back series data.

Narrative Control

The government's attempts to control data-led narratives extended to private sector datasets (see figure 3). In 2016, senior government officials asked the Centre for Monitoring Indian Economy (CMIE) to modify data on its project tracking database. CMIE is one of India's biggest nongovernment data producers, and its CapEx database is widely used by financial analysts to gauge investment patterns. The CapEx database suggested that investments in the country were still sluggish, contradicting the government's narrative that the investment cycle had picked up after a new government led by the BJP took charge in May 2014.

Officials at the Prime Minister's Office (PMO) were concerned that the data did not reflect the new government's attempts to restart stalled projects, one respondent with direct knowledge of the matter (DC-16) said. The pressures on CMIE eased only after a veteran journalist (the late Sunil Jain) wrote about this issue in one of India's financial dailies, the *Financial Express*,[52] another respondent with direct knowledge of the matter (DP-11) said.

In December 2018, the report of an NSSO employment survey was held back by the chief statistician after the NSC cleared it. The key findings of the Periodic Labour Force Survey (PLFS), which showed a spike in the unemployment rate, were leaked and later published in another Indian financial daily, *Business Standard*. Then NITI Aayog CEO Amitabh Kant claimed that the reported news was based on a draft report, but the acting NSC chairman and former NSSO chief P. C. Mohanan contradicted him, saying the report had his approval. When then chief statistician Pravin Srivastava refused to release the employment report,

Figure 3. The Age of Statistical Controversies: A Time Line

2012

Subject of controversy
Wild fluctuations in the index of industrial production (IIP) created doubts about its reliability

Official response
The parliamentary standing committee on finance (which has oversight over MoSPI) asked for an independent review
Not all recommendations of the reviewer, R. B. Barman, were implemented

2015

Subject of controversy
New GDP series attracted controversy after government officials and independent experts raised doubts

Official response
NSC at that time said there is nothing wrong with the methodology (which it had approved)

2016

Subject of controversy
Senior government officials tried to force CMIE to change its unflattering data on stalled investment projects

Official response
After a newspaper ran a story about the pressures on CMIE, the pressures eased

2018

Subject of controversy
An NSC report released backcasted data for the new GDP series, showing relatively higher growth under the previous government

Official response
The report was pulled down briefly before being uploaded again. A few months later, the NITI Aayog chief released the official back series, which paints a less rosy picture of the past

2018

Subject of controversy
Two NSC members resigned, protesting MoSPI's decision to withhold an NSS report (PLFS) that showed a spike in unemployment

Official response
MoSPI claimed the numbers must be vetted. After the 2019 parliamentary elections concluded, the PLFS report was released

2019

Subject of controversy
An NSS report that exposed holes in the MCA-21 database used in the new GDP series came to light

Official response
The Finance Ministry released a statement defending the GDP methodology

2019

Subject of controversy
Shortly after the NSS report was released, a former finance ministry official published a paper questioning the new GDP series

Official response
Government officials denied the author's claims while defending the GDP figures

2019

Subject of controversy
Soon after the sanitation ministry declared rural India to be free of open defecation, an NSS report pointed out that many rural households lacked toilets

Official response
The MoSPI secretary and the sanitation secretary wrote a joint article discrediting the NSS data on toilets

2019

Subject of controversy
A newspaper published the yet-to-be-released figures of the 2017–2018 consumer expenditure survey, showing a dip in rural consumption

Official response
MoSPI quashed the report, citing data quality issues. It hasn't released the results of any professional review of the survey so far.

2020

Subject of controversy
Fears about an all-India register of citizens bring survey work to a halt in two states

Official response
No official response; shortly afterward the pandemic intervened, and official survey work came to a halt

2022

Subject of controversy
The standing committee on finance questioned MoSPI over a delay in publishing the results of the economic census

Official response
MoSPI passed the buck to state directorates

Source: Author's research.

Mohanan and another nonofficial member of the NSC resigned, saying that the apex body was being sidelined. Mohanan also expressed his disapproval over NITI Aayog's interference in statistical matters, citing its role in the GDP back series episode.

NITI Aayog's interference in statistical matters rankled statisticians and analysts since it had a worrying record in promoting partisan narratives. In October 2017, the PMO asked the government think tank to prepare quick indicators on employment trends. NITI Aayog officials asked the labor ministry for unit-level records of the Employees Provident Fund Organisation (EPFO). Instead of releasing the anonymized version of the dataset publicly, or establishing an institutional mechanism that gave researchers access to the database, it arbitrarily selected two researchers to analyze the data.[53]

These two researchers highlighted major issues with the EPFO raw data in their presentation to the PMO in January 2018. But they omitted those slides while publishing their presentation. In public, they sold a narrative of a thriving job market. One of the researchers involved in the study, Pulak Ghosh, was subsequently appointed to the NSC. The gaps in the EPFO database came to light only after *Business Standard* published a report on this issue in February 2018.[54] The resulting uproar discredited both the EPFO database and NITI Aayog.

Having promoted a narrative of buoyant job creation in early 2018 based on the flawed EPFO data, senior NITI Aayog officials were reluctant to accept the less flattering results of the PLFS. They began discrediting the survey publicly. Srivastava, the chief statistician, appeared to give in to pressure from NITI Aayog when he declared that MoSPI would get the survey vetted by experts once again.

The controversy over the GDP back series and the PLFS report occurred a few months before the 2019 Lok Sabha elections. This created the impression that the government was trying to suppress inconvenient facts ahead of voting. This impression was only strengthened when the PLFS employment report was released just after the Lok Sabha elections ended in May 2019.

Meanwhile, the GDP controversy erupted again when a technical report based on a failed NSS survey sowed fresh doubts about the MCA-21 database. NSS enumerators were unable to trace firms listed in the database, the technical report said. The presence of ghost firms on the database suggested that the new GDP series, based primarily on the MCA-21 database, might be overestimated.[55] Responding to the report, the Finance Ministry argued that the likely extent of overestimation was not significant.

The doubts persisted and were strengthened when a former chief economic adviser to the Finance Ministry, Arvind Subramanian, raised fresh questions about the new series. In a June 2019 working paper,[56] Subramanian argued that India's official GDP growth rate did not concur with other economic indicators. MoSPI may have overestimated growth by 2.5 percent during the 2011–2017 period, the working paper said. Government officials denied his claims, and some launched a tirade against him.

More than a hundred years after the debate sparked by Naoroji, the question of India's true national income has become a deeply contested issue once again.

The CES Fiasco

In November 2019, a new controversy erupted after *Business Standard* published the leaked findings from another survey. The household consumer expenditure survey (CES) in 2017–2018 showed that rural consumption had declined since 2011–2012. In an unprecedented step, MoSPI junked the survey, citing poor data quality. The NSC was informed only after MoSPI took the decision, a move that further undermined the authority of the apex body.

Since India's inflation and poverty numbers are based on CES data, they could not be updated once the survey results were suppressed. MoSPI was unable to clarify what exactly had gone wrong with the survey. This created an impression that its decision was driven by the unappetizing findings of the survey rather than its quality.

"When a survey goes wrong, you tend to know what went wrong - attrition or non-response or other errors," a respondent with many years of experience in conducting surveys said (DP-10). "When you simply say that the data quality was bad without giving specific reasons, it raises suspicions. MoSPI should have released a detailed report on this."

MoSPI had set up an expert panel to review the CES data but did not release the panel's report. Contrary to what some MoSPI officials claimed at that time, the expert panel did not recommend that the CES data should be held back.[57] This author's request (and subsequent appeal) to obtain a copy of that expert panel's report under the RTI Act was turned down by MoSPI, citing the "sensitivity" of the matter.

In 2022, the World Bank published a new set of poverty estimates for India based on CMIE's household survey, perhaps the first such instance where the multilateral institution has relied upon a nonstate actor to estimate poverty figures for a major economy.

A new CES survey is underway based on a modified methodology and a changed questionnaire. The NSC had initially recommended that a subsample should be canvased based on the earlier method of inquiry, so that the results could be compared with the past. This decision was later reversed in what could turn out to be a source of another controversy: When the results of the modified CES are released, data users will struggle to compare them with the past, due to the new methods and questionnaire. They would be right in asking if this move was aimed to prevent any unflattering appraisal of the ruling regime's economic performance.

More than two decades after it first became mired in controversy, India's CES is still under a cloud. It is a story of several missed opportunities. Had NSSO officials reinstated the practice of canvassing independent replicating samples to provide an internal check

on data quality, they would have been in a much stronger position to defend their work. Several scholars—including Mukherjee and Deaton—had suggested that the CES should be converted into an annual survey. Had this suggestion been accepted, the results of each round would not have been as consequential—or as contested. Had the raw data for the last CES round been released along with the expert panel's report, the controversy around the last survey might have ended. Had MoSPI openly discussed the changes in the 2022–2023 CES survey and released the results of its pilot trials using the changed methodology, the concerns around the ongoing survey round could have been abated.

Stillborn Reforms

The growing spate of statistical controversies over the past few years led to demands for reforms in statistical governance. MoSPI initiated a second modernization drive and began negotiations for a fresh loan from the World Bank. It published a glitzy vision document that said the ministry would attempt to integrate public datasets spread across departments and states. It renewed the promise to build an official data warehouse, now rechristened as the National Integrated Information Portal (NIIP).[58]

The vision document prepared under Srivastava's leadership acknowledged that the NSC had not lived up to expectations and emphasized the need for a full-time body backed by law. MoSPI prepared a draft NSC bill in 2019. It was a watered-down version of the Menon committee's version. Some experts saw it as a halfway point between where the NSC should ideally be and where things stand now. Others felt that the 2019 version of the NSC bill would further undermine the credibility of the statistical system.[59]

MoSPI's reform drive lost steam quickly. The NSC bill never reached Parliament. Srivastava's decision to take a World Bank loan to reform the statistical system was reversed by his successor in 2021, after the World Bank board had approved the loan. State-level DESes have been marginalized further in recent years, creating the impression that MoSPI is no longer sensitive to their needs (see box 1).

The NIIP project is not dead yet, but it has very little to show in terms of results. MoSPI's promise to build a data warehouse for real-time monitoring of the economy has not materialized. Meanwhile, MeitY announced its own plans to set up a data warehouse called the India Data Management Office (IDMO). The IDMO would bring uniformity in data standards across departments, MeitY said in its draft data governance policy document published in May 2022.[60]

The vacuum created by MoSPI's inertia can only be partly filled by MeitY. A data warehouse built without the involvement of state and central statisticians, and without a robust mechanism for statistical audits, is unlikely to address India's statistical crisis. Without a data quality assurance mechanism, IDMO would fail to deliver what data users are demanding. NITI Aayog has also stepped into this vacuum and launched a National Data and Analytics

Platform in 2022 to provide easy access to a few core datasets. MoSPI was asked to partner in this initiative, but it refused. The platform has more modest ambitions compared to the NIIP or IDMO proposals, and it is not meant to be a comprehensive data warehouse.

MoSPI has initiated a couple of new annual surveys in recent years, one on the services sector and another on the unorganized sector. It is not clear if and when the reports on these surveys will be released. The results of the last economic census—an inventory of business establishments across the country—have also been kept under wraps. States have expressed grave concerns about the results of the latest economic census, several respondents said (see box 1).

There has been visible progress on two counts in recent years. First, unit-level data for all surveys and censuses conducted by MoSPI are now available free of charge on the national data archive portal. Second, the time lag for releasing PLFS data has reduced because of pressures from official data users. The demand for PLFS data is partly to meet the requirements of real-time monitoring. It is also driven by official anxiety over the use of a nonofficial dataset (CMIE's household survey) to track employment trends.

Box 1. State Statistical Systems

Most official reports describe India's statistical system as being both centralized and decentralized in equal measure. The Rangarajan commission noted that the extent of vertical integration between the CSO and DESes was far deeper than the extent of horizontal integration between the CSO and other departments in Delhi and between DESes and other departments in state capitals.

The horizontal integration in state capitals has been weaker than in New Delhi because state policymakers tend to view DESes as MoSPI's agents that collect data largely for national surveys and national accounting. Historically, the lack of state government support made DESes across the country dependent on MoSPI.

In recent years, the relationship between MoSPI and state DESes has come under strain. The initial concerns were over the GDP revisions in 2014–2015. Several states had reservations about the new methodology since it led to a greater reliance on indirect methods to estimate gross state domestic product (GSDP) figures. Some DES statisticians raised questions about the new methodology in their meetings with MoSPI officials, but they did not get all the answers they sought.

Finally, a statistician, Manish Pandya from Gujarat's DES, launched a blistering public attack on the new methodology. In a research paper coauthored with Ravindra Dholakia (a member of RBI's Monetary Policy Committee at that time), Pandya argued that the new method produced inaccurate estimates for the state of Gujarat.

After the *Journal of Indian School of Political Economy* published Pandya and Dholakia's paper in 2017, MoSPI set up a committee in 2018 to review the methods used to estimate GSDP figures. Dholakia was asked to chair the committee. In its 2020 report, the Dholakia committee recommended shifting to a bottom-up approach in estimating both GSDP and GDP figures. The practice of deriving state shares from national totals should be abandoned, it said. It is not clear when the committee's recommendations will be implemented.

MoSPI-DES ties have also soured over survey-related issues. After the World Bank–funded project failed to improve state statistical capacity, MoSPI began bypassing state DESes in key surveys. State DESes were not involved in the PLFS and have been left out of the ongoing CES. MoSPI's decision to bypass state DESes in the seventh economic census has upset DES officials the most.

Until the sixth economic census, each state's DES had a major role in the selection, training, and supervision of enumerators. For the latest census, launched in 2019, MoSPI employed staff from Common Service Centres established across the country by the IT ministry, marginalizing the role of state-level DES officials. Some state officials protested this decision, arguing that the centers' staff lacked exposure to basic statistics. The disappointing results from the field only justified their fears. So, state officials have been reluctant to approve the results of the economic census so far. It is not clear if and when the results of the economic census will be released.

One heartening development in recent years has been the growing profile of statistics in state capitals. In 2020, the Madhya Pradesh government set up a statistical task force headed by the former NSC member Amitabh Kundu to review its statistical system. The review laid bare the deep crisis in the state's statistical system. It recommended the creation of a state statistical commission. The commission was set up in 2022, with India's former chief statistician, Srivastava, as its head. Kerala has also set up a state statistical commission with the former NSC member Mohanan as its head.

Even if a handful of states manage to revamp their statistical systems, it could have positive ripple effects across the country.

The Road Ahead

India's statistical system stands at the crossroads today. On the one hand, there is a danger that the statistical system could be marginalized further to suppress inconvenient facts. On the other hand, the statistical crisis presents an opportunity for inexpensive reforms that can sharpen India's competitive edge in the global economy.

The political class is aware that the poor state of the statistical system poses a hurdle for investors. The parliamentary Standing Committee on Finance, which has oversight over MoSPI, has critiqued MoSPI officials in recent years for their failure to release key economic data on time. At a time when geopolitical winds favor India as an investment destination, both state and central policymakers are keen to ease the path for potential investors.

"We need a world-class statistical system to build a competitive economy," said a lawmaker and a member of the parliamentary standing committee on finance (DC-17). Almost everyone in the standing committee agrees that India's statistical system lags behind those of other major economies and that the gap needs to be bridged, he said.

Statistical reforms will gain strength only if this desire to rebuild India's statistical infrastructure outweighs policymakers' desire for narrative control. Across state and central ministries, bureaucrats and politicians have become increasingly cautious about statistics, several respondents said. In one state statistical department, detailed, district-wide reports based on pooled NSS data are being produced regularly. But these reports are only being sent to top policymakers without being released publicly, said one respondent involved in preparing such reports (DP-16). Senior officials "fear that the data might be used to attack the government," he added.

The suppression of such reports in turn creates grounds for further marginalization of statistical departments. Since the public remains unaware of their contribution to policymaking, it becomes easy to sideline statisticians. It also demotivates the statistical cadre since their work is not acknowledged.

Institutional Challenges

Eighty-eight percent of data consumers and 67 percent of data producers interviewed by this author said that the statistical system faces a crisis today. The absence of a clear road map to address this crisis worries most respondents as much as the crisis itself. Without wholehearted reforms in statistical governance, the quality and credibility of official datasets could decline sharply in the coming years, they fear.

Among data consumers, the foremost concern is the opacity around datasets. All seventeen data consumers interviewed by this author identified growing opacity as a major challenge. The lack of adequate disclosures limits the extent to which they can rely on most datasets. While the number of public datasets has grown exponentially over the past decade, the quality of such datasets remains uneven across departments and across states. "There is a crying need to integrate real-time data from different sources using common definitions and classifications," said a veteran financial analyst (DC-4).

The NSC's inability to harmonize statistical standards and check statistical quality has created a huge vacuum. "B. S. Minhas would often talk about the need for a star-rating system

for datasets," said a respondent who advises a number of ministries on statistical matters (DP-6). "NSC was supposed to answer that need, but it hasn't been able to do that."

There is no institutional mechanism today to reconcile divergent datasets or to explain credibly the reasons for such divergence. Statisticians' inability to answer valid questions from data users has led to the current credibility crisis, said the aforementioned analyst (DC-4).

Data producers noted the lack of an empowered authority to enforce statistical standards. Most departments want to use statistics for advertising their successes but are not serious about incorporating statistics in decisionmaking, data producers said. MoSPI's inability to develop analytical capabilities is partly because of its own inertia and partly because of the resistance of other departments, said a former government official (DP-17).

State DESes face even greater challenges in getting other departments to share data. "Every department wants to 'own' data, nobody wants any independent scrutiny," said a state-level policymaker (DC-10).

Some data producers also point to a decline in skill sets among official statisticians. There is very little incentive for an ISS officer to collaborate with academic researchers to solve some of the critical issues facing the statistical system today.

There are many bright, young ISS officers who are capable of conducting such research, but the "layers of hierarchy" won't notice them, said one respondent (DP-5). By the time they reach senior levels, their openness of mind will be lost and they will be sucked into routine managerial activities, the respondent added.

Resource Challenges

Apart from institutional reforms, the statistical system also needs more resources to conduct high-quality surveys and to upgrade its analytical capabilities, some respondents said. The resource constraint is particularly severe in states, but even MoSPI officials complained of inadequate resources. The central government spends only 0.2 percent of its budget on MoSPI. Of this, three-fourths goes into the Member of Parliament Local Area Development Scheme, a constituency development fund overseen by members of Parliament. Only one-fourth of the 0.2 percent allocation is used to fund statistical activities.[61]

The funding constraint poses a challenge to the NSS in particular. While the number of NSS surveys has grown over the past three decades, the staff strength hasn't kept pace. The vacancies at the enumerator level are being filled contractually. But it has not been easy to expand the supervisory staff, and the quality of supervision has declined over time, according to some respondents.

Staff constraints also preclude the NSS wing from conducting quick surveys to collect data that policymakers need on an urgent basis. "All the resources of the NSSO are at present tied up with the regular survey work," the Ranagarajan commission's report said in 2001. "No separate resources are available for quickly conducting an enquiry, the need for which might suddenly arise. There is no resource available to take up methodological studies including trying out innovations in survey practice."[62] More than two decades later, not much has changed in this respect.

While MoSPI's budget has stagnated, overall public spending on statistical activities has spiked over the past decade. Both state and central ministries are funding a growing number of surveys and creating more and more datasets with each passing year. But such efforts are uncoordinated and unregulated. The total number of such datasets and the total spending on them remains unknown. Neither MoSPI nor the NSC has been able to keep tabs on the growth of such datasets, much less ascertain their quality. "Very few of these datasets get used by policymakers or researchers," said one respondent (DP-6). "It's a colossal waste of public resources."

The scale of waste is unknown. It is possible that the amount misspent on poor quality surveys and badly structured datasets is more than adequate to finance a revamp of India's core statistical agencies.

Recurrent Patterns

Some of the concerns expressed by these respondents are not entirely new. They echo the concerns of several past committees that were set up to examine India's statistical system over the past century. From the Visvesvaraya committee of 1925 to the Rangarajan commission of 2000–2001, almost all review committees have highlighted the need for an independent and empowered statistical authority that can regulate statistical activities effectively. Both the Bowley-Robertson report (1933) and the Narain-Bhatnagar report (1980) strongly emphasized the need for collaboration with research institutions to drive innovations in the statistical system. Almost all review committees have stressed the need to empower state statistical departments and to professionalize their leadership. In most cases, the recommendations of these review committees have either been ignored or have been implemented in a half-hearted manner. This is true of most of India's preindependence and postindependence history. The only phase when investments in the statistical system became a top governance priority was in the immediate aftermath of India's independence.

The only other period when statistical reforms came close to being a political priority was at the turn of the twentieth century. It was apparent at that time that the long years of decay in India's statistical apparatus had made it unfit to meet the needs of a growing, market-driven economy. The setting up of the Rangarajan commission reflected an urge to set things right. While the reform appetite whittled down after that, it still helped recover the statistical system from the abyss into which it had fallen.

A New Statistical Reforms Commission

The statistical system is at a critical juncture today as it struggles to meet the requirements of the new economy without compromising statistical integrity. A new reforms commission can outline a road map for reforms and reassure all stakeholders about the government's seriousness in fixing a major governance deficit (see table 3). A lot has changed in the world of statistics since the Rangarajan commission submitted its report in 2001. The time has come for a fresh review and a comprehensive plan for rebooting the statistical system.

Table 3. Agenda for Statistical Reforms Commission

Proposed terms of reference	Impact
Conduct a cost-benefit analysis of the existing mechanisms of collecting and organizing public data	The commission should examine how much key ministries spend on ad hoc surveys and whether the government and the public will be better served if fewer high-quality surveys are conducted under the supervision of a statistical authority. It should also provide indicative assessments of the costs involved in keeping data in silos and the benefits that might accrue from integration of economic statistics.
Propose a new statistical architecture	The commission should suggest legal and organizational changes that can ensure effective statistical coordination at all levels of government.
Draft a national statistical strategy document	The document should lay down the road map to build a statistical system that provides timely and credible statistics in a cost-effective manner. The document should guide the actions of the future statistical authority once it is set up and should be reviewed at least once every decade.

Source: Author's research.

The Statistical Reforms Commission would need to lay out a new statistical architecture that can address the emerging needs of data users. The 2011 report by the Menon committee[63] might be a useful starting point to design a legal framework that balances the needs of efficiency, autonomy, transparency, and accountability.

However, the new commission will need to go beyond the Menon committee's recommendations to clearly address three critical issues that were not dealt with adequately in that report: the relationship between the core statistical producer and the statistical regulator or auditor, the relationship between the core statistical producer and other arms of the government, and the issue of center-state coordination on statistics.

The Menon committee had attempted to bring census operations within the NSC's ambit but gave up on this goal in the face of stiff resistance from the Home Ministry. This issue also needs to be revisited. In most large economies, the population census is conducted by the national statistical office. India remains an outlier in this regard because of an unfortunate colonial legacy.

It is possible that two new statistical authorities may be required in the country: one to produce core statistics and another to regulate core and noncore statistics. Both authorities should be autonomous, but the first would necessarily have to depend on the government of the day for effective functioning.

A structure like that of the Comptroller and Auditor General of India (CAG) could work well for the statistical regulator, according to some respondents. Like the CAG, the new statistical regulator should be backed by law and have state and central offices. It should be able to release all statistical audit reports publicly so that data users are aware of the limitations of different datasets and data producers know how to improve them. Such a body should not have to depend on the government to finance its activities.

The new Statistical Reforms Commission must also trace how public funds are being spent on statistical activities across departments and states. It should provide an indicative assessment of the benefits or losses incurred in each major statistical expenditure. Spending on statistical activities without significant public benefits must be redirected to the ones with higher payoffs.

Finally, the commission must prepare a statistical strategy document that would guide the activities of the new statistical authorities. This document should be periodically reviewed to keep it in tune with the changing requirements of data users.

The strategy document should focus on four key areas. First, it should outline a path to improve the accuracy and timeliness of core statistical products that are to be produced by the national statistical office.

Second, it should outline a path to regulate the production of noncore statistics across ministries and states. A framework for conducting regular audits of all surveys and administrative datasets can help bring about the "star rating" system that Minhas had hoped for. This would allow policymakers, researchers, and private-sector analysts to use appropriate filters while integrating datasets of varying quality.

Third, it should set out mechanisms to develop effective feedback loops so that the statistical system becomes responsive to the needs of data users. It should set out guidelines on documentation, metadata, and the improvement of overall transparency of statistical communication.

Fourth, it should outline steps that would foster greater innovation in the statistical system. This would include reforms in HR policies that help ISS officers pursue research projects on critical gaps in the statistical system. Their promotions should be linked to performance in such projects. The innovation policies could also indicate steps that can be taken to bring in more lateral entrants with diverse skill sets into the statistical system.

The Statistical Reforms Commission could be headed by an eminent statistician or by a technocrat (such as a former RBI governor) who is nonpartisan and is perceived as such. It should include representatives from state governments and the central government. Beyond official statisticians, economic policymakers, and jurists, it should also include representatives from India's growing community of nonofficial data users. As one of the leading data analytics hubs of the world, India has a pool of extremely talented data scientists in its private sector. Some of that talent should be tapped in reimagining India's statistical system.

Conclusion

As a growing tribe of analysts await and analyze MoSPI's updates on the economy, the stakes in India's economic statistics have never been higher. India's financial sector expects high-quality and high-frequency datasets from the statistical system today. The growing media attention on statistics has also raised the stakes in the statistical system.

On the flip side, the growing attention on statistics has made politicians increasingly aware of the importance of statistics and data-led narratives. Their desire to control the statistical system and censor the release of datasets is a threat to the autonomy and integrity of the statistical system. India's political class must be able to see beyond their immediate political needs to support efforts to strengthen the statistical system.

At a time when Indian policymakers are keen to attract global investments, fixing the country's statistical plumbing should top their priority list of reforms. If there is political will to address this issue, resources are unlikely to be a major constraint. Indeed, an attempt to rationalize official statistical activities by cutting down on low-quality departmental surveys is likely to save enough resources that can be used to finance the generation of new, high-quality datasets.

About the Author

Pramit Bhattacharya writes the "Truth, Lies and Statistics" column for *Mint* and the "Simply Economics" column for *Hindustan Times*, two of India's leading dailies.

Pramit was earlier the data editor at *Mint*, where he helped set up one of the country's first data journalism units, "Plain Facts," in 2014. He won the Ramnath Goenka Excellence in Journalism Award 2015 in the "commentary and interpretative journalism" category for his explanatory economics column, "Economics Express."

Pramit was trained in the study of economics and contemporary India at Cotton College, Guwahati, Indira Gandhi Institute of Development Research (IGIDR), Mumbai, and at the King's India Institute, King's College London. He can be reached at pramit_b@protonmail.com.

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Notes

1 The details relating to the evolution of the statistical system in the British period have been sourced from the 1946 report of the Inter-Departmental Committee on Official Statistics, headed by Sir Theodore Gregory, the economic adviser to the Government of India. This report was the last major report pertaining to official statistics in the British era and contained a detailed supplement on the "History of Indian Statistical Organization." An abridged version of this history was later published by the secretary to this committee, S. Subramanian, in *Sankhya*, the statistical journal set up by P. C. Mahalanobis at ISI; see S. Subramanian, "A Brief History of the Organisation of Official Statistics in India During the British Period," *Sankhyā: The Indian Journal of Statistics* 22, no. 1/2 (January 1960): 85–118, https://www.jstor.org/stable/25048445.

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"If an administrator wants to put up a building he decides what kind of accommodation is required and what should be the expenditure; if he wants to use a vaccine on a large scale for public health purposes he decides what quantity should be prepared; if he wants chemical fertilisers he decides how much should be produced; and then leaves it to the engineer, the bacteriologist, or the chemist to get the thing done. He would never dream of preparing the detailed specifications or decide intricate questions of production. In India, unfortunately in statistical matters, there is still a tendency among administrators not to remain content with formulating the requirements but also to decide technical questions of procedure. This is due, no doubt, to the fact that statistics in India has remained until recently a virtual monopoly of officials and administrators. But the time has come to now recognise that statistical science has now become as highly specialised a subject as engineering, medicine, or chemistry."

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