Pakistan's National Statistical System: A Primer

Statistics play a vital role in improving economic development by supporting evidence-based policymaking, and reducing information asymmetry for businesses, markets and individuals. It is therefore paramount for a country's National Statistical System (NSS) to be well-structured and well-functioning, where the NSS is understood as an ensemble of National Statistical Organisation (NSO), sub-national statistical agencies, and other producers of official statistics. In Pakistan, the subject of NSS is under researched, even as underlying factors that typically drive reforms in statistics and the NSS, such as need for evidence-based policy reforms and lack of market information, are increasingly becoming prominent. Drawing on internationally accepted principles, standards and best practices, this Special Chapter serves as a primer on the country's NSS. The chapter focusses on the independence of NSO; the state of coordination within the NSS and data users and producers outside the NSS; availability of administrative data; the demand for statistics; and prominent gaps in Pakistan's official statistics. The chapter concludes that the country's NSS needs a comprehensive review and substantial reforms to bring it at par with international best practices.

7.1 Introduction

The link between official statistics and economic governance has been well understood and put into practice since more than a millennia.[1] Tracking the fast paced changes in economics, politics and society, the role of official statistics and statistical systems gained further prominence since mid of 20th century given its indispensable contribution towards economic growth and development.[2]

There are three distinct but complementing ways by which official statistics contribute towards economic growth and development of a country. First, official statistics are a key building block of evidence-based policymaking.[3] While economic reforms are dependent on reliable statistics, policymakers also demand high-frequency granular data for mid-course corrections, policy calibrations, and impact assessment.[4]

Second, proper collection and dissemination of market information reduces asymmetries, and thus contributes towards better functioning of markets.[5] For businesses, data provides basic input and impetus for new initiatives, product development and improvement, innovations, efficiency gains and optimum utilization of resources. At the same time, access of individuals to quality data improves their decision-making related to savings, consumption, mortgages, investments, salary negotiations and so forth.[6]

Third, in the wake of a growing global trend towards devolution and fiscal decentralization,[7] increased focus on sub-national economic and developmental statistics is particularly helpful in comparing regional socio-economic disparities, competitiveness, and business opportunities. It also contributes to healthy competition between sub-national governments against quantifiable targets, such as economic growth and unemployment. Furthermore, it documents the performance of reform and policies experimented in different sub-national regions.[8]

The increasing significance of official statistics has resulted in the transformation of national statistical systems over the last eight decades. While the demand for improvements has come about as a result of criticism by policymakers and the general public over the methodologies, frequency, coverage, availability and dissemination of official statistics,[9] the changes have also been triggered by a host of other factors.

The strategic importance of official statistics became prominent during the second World War, when economists could not adequately estimate the resources needed for war due to insufficient statistical basis.[10] In the ensuing

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[1] Historical accounts suggest that enumeration of and compilation of statistics about people, livestock, and food items dates back to at least 2000-1000 BCE in ancient Egypt, Greece, and China. Source: A. Whitby (2020)

[2] I. Krizman, B. Tissot (2021); K. Shangodoyin (2011); D. Sanga (2013); Y. Carrière-Swallo and V. Haksar (2019); World Bank (2021a).

[3] EU Parliament (2021); Australian Bureau of Statistics (2010); Evidencecolloborative.org (2016)

[4] I. Krizman, B. Tissot (2021); K. Florence, et al (2009)

[5] For instance, the availability of reliable macroeconomic or corporate data and its comparability with international standards has been found to lower borrowing costs in primary and secondary debt markets. For details, see I. Krizman, B. Tissot (2021)

[6] Y. Carrière-Swallow, V. Haksar (2019); P. C. Nutt (2006); B. Lorenc, et al (2011)

[7] A. Rodríguez-Pose, N Gill (2005)

[8] C. Xu (2011); PARIS21 (2016)

[9] T. Orlik (2014); P. C. Mahalanobis (1965)

[10] D. Coyle (2016)

years, increasing regional and international economic and trade integration led to further improvements in statistics and national statistical systems.[11]

The trends in global trade were followed by growth and development of commodity, capital and foreign exchange markets; cross border investments (particularly as part of global value chains); and the onset of new industries, production processes and new economic activities. These created a need for both new statistics and improvements in existing statistics and statistical systems to better capture changing economic structures. Similarly, privatization, deregulation and market liberalization that particularly affected reallocation of factors of production, required improvements in the ways statistics were collected, compiled and disseminated.[12]

More importantly, the global agenda of Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) pushed for improvements in statistics and statistical systems for reliable, timely and granular information to monitor progress on wide-ranging indicators.[13,14] Moreover, shocks to economy have also driven improvements in statistics and statistical systems. For instance, the global financial crisis of 2008 and the Covid-19 pandemic renewed emphasis on cash transfers and social protection programs around the world that necessitated the creation of different types of social registries. These registries, in turn have begun to closely collaborate with national statistical systems.[15]

The pandemic also influenced governments to strengthen efforts for the collection of new high-frequency data from various public and private data sources, such as Google Mobility, electronic payments; sentiment indicators, and night light data. This also accelerated adoption of Information Communication and Technology (ICT) by national statistical organisations.[16] At the same time, increasing digitalization of the economy creates demand for its measurement as well as the need for more frequent surveys and censuses to keep track of fast changing dynamics.[17]

Factors necessitating improvements in official statistics in Pakistan

In Pakistan, the importance of improving national statistical systems and statistics is increasing as the aforementioned underlying factors are gaining prominence. For instance, statistics needed for evidence-based policymaking to support some of the key reform areas are found to be either inadequate or unavailable. Studies have found that unreliable statistics have constrained accurate assessment of infrastructure deficiencies in Pakistan.[18] Similarly, unavailability of reliable statistics is an impediment to the development of various productive sectors. Taking an example of the livestock sector, there are questions about Pakistan's potential for the export of meat and dairy products given inadequate or unreliable data on the production and consumption of meat, milk, and other related products.[19] Similarly, statistics relating to the shortage of housing in Pakistan have been found to be in

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[11] PARIS21 (2019); OECD (2008)

[12] For instance, demand for statistics for ownership structures of businesses (vis-à-vis vertical integration corporate groups); new sectors of production (such as outsourcing, sub-contracting); corporate and sectoral employment trend. Source: OECD (2008); C. Rangarajan (2001)

[13] While the MDGs were concluded at the end of 2015, the data availability was only 68 percent for all MDG goals. On the other hand, the SDG, to be concluded by 2030, is a more ambitious agenda with the crosscutting focus on 17 goals, 169 targets and 230 indicators, compared to 8 Goals, 19 targets and 61 indicators in MDSs. Source: UNCTAD.

[14] PARIS21 (2023)

[15] D. C. Muñoz, et al (2018); N. Kabeer and H. Waddington (2015)

[16] United Nations (2022a); Bank for International Settlements: D. M. Anderson, A. Whitford (2014)

[17] OECD (2020a); ADB (2021); T. Highfill, C. Surfield (2022); Australian Bureau of Statistics (n.d); United Nations (2019)

[18] World Bank (2021b).

[19] S. K. Jafri, et al (2022); World Bank (2023)

want of adequate basis, which has led to misplaced policy diagnosis.[20]

The absence of reliable market information and high frequency economic indicators is another constraint. For instance, limited data on firms and lack of market information is also considered as one of the key challenges faced by industries in Punjab, particularly by new entrants.[21] Soft information suggests that prospective Chinese investors eyeing investment opportunities in various sectors under the China Pakistan Economic Corridor (CPEC) also face similar challenges.

There is also insufficient statistical basis to adequately estimate revenue potential of the country. Limited data on production units, such as enterprise surveys or economic censuses, makes it difficult to measure the size or prevalence of the informal sector.[22] This impairs the quality of official statistics, both in terms of market sizing in particular and representation of economy in general, while also affecting tax collection. For instance, in 2019, a lack of consensus between the tax authorities and the textile association over the domestic market size of textile products – a basic market statistics – led to resistance in the reversal of zero rating of general sales tax (GST) on the industry.[23]

Meanwhile, economic structure is gradually changing on account of several reasons. These include growing number of Free Trade Agreements and gradual trade openness, alongside the government's plans for market liberalization,[24] and attracting foreign

investment particularly with the aim of becoming a part of the global value chain.[25] Change in economic structure because of these factors amid increased digitalization of the domestic economy also necessitates improvement in statistical system.[26]

Similarly, despite some progress in SDGs data reporting, there are still noticeable data gaps. Pakistan has selected 193 out of a total of 247 indicators for national reporting, of which it reports data on 133 indicators. Moreover, the growing intensity and frequency of natural disasters, such as floods, necessitates developing frameworks and information inventories to support a monitoring and response mechanism through evidence-based policymaking and analysis.[27]

In this background, this special chapter attempts to answer the question whether Pakistan's statistical system is ready to deliver on the growing need for accurate data to facilitate timely and informed decision-making.[28] Accordingly, the rest of the chapter is divided as follows. Section 7.2 lays the conceptual foundation of what constitutes a statistical system. The section also identifies some methodological constraints, to comparisons between the statistical systems of various countries as a caveat to drawing comparisons with international best practices in the ensuing sections.[29]

Section 7.3 flags some of the prominent gaps in Pakistan's official statistics from the perspective

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[20] Pakistan Institute of Development Economics (2022)
[21] Punjab Industrial Policy 2018
[22] Y. Cho, Z. Majoka (2020); World Bank (2020)
[23] G. Ejaz (2022)
[24] For instance, in power sector. Source: National Power Policy 2013; National Electricity Policy 2021
[25] Board of Investment
[26] Ministry of IT & Telecom (2018)
[27] National Disaster Risk Management Framework Pakistan, 2007; Pakistan SDGs Status Report, 2021
[28] Pakistan's statistical system is an under-researched subject, hence this special chapter is entitled as a primer. It undertakes broad assessment of the country's statistical system, and is not intended to be exhaustive in nature.
[29] Box standard cross-country comparisons of statistics and statistical systems are a difficult proposition, and as such extremely limited. Therefore, following global literature on NSS, this special chapter draws on international best practises to review Pakistan's statistical system. In addition, it has benefited from conversations with various public and private sector stakeholders, including current and former office holders of federal and provincial statistical agencies.

of coverage, frequency and other related facets, albeit without detailed methodological assessments given the scope and nature of this chapter. In light of Sections 7.2 and 7.3, Section 7.4 will review Pakistan's statistical system —its structure, independence, coordination among various stakeholders, and the demand side of the statistical system. Discussion on each of these aspects starts with a conceptual review of the theme, followed by a review of existing institutional arrangements and a comparison of current domestic practices with global best practices. Section 7.5 summarizes key insights from the chapter, alongside proposals for policy deliberation.

7.2 What is a National Statistical System?

There is no international consensus on the exact definition of a National Statistical System (NSS); neither at the United Nations, nor among other multilateral organisations. However, the NSS is generally, accepted as an ensemble of public sector organisations, ministries and departments of a country that jointly or separately collect, process, and disseminate official statistics on wide ranging socio-economic aspects: from population trends to business and economic conditions, environmental factors, health, education, and other social indicators.[30]

The NSS comprises a number of actors, and operates in a larger statistical ecosystem (**Figure 7.1**). The primary institution responsible for coordinating the development, production, and dissemination of official statistics within the NSS is known as the National Statistical Office (NSO). In addition to the NSO, government ministries, departments, or agencies, known as other producers of official statistics (OPOS), also contribute to the production and dissemination of official statistics. These include central banks, ministries of health, agriculture departments,

environmental agencies, trade and commerce departments and crime investigating agencies. OPOS may release statistics on their own, or through the NSO, depending on the legal structure and the degree of centralization and devolution of the NSS in a country. Consequently, the role of the NSO and OPOS may also vary.

The structure of an NSS varies across countries, influenced by national circumstances and historical developments. Generally, the structure can be categorized on a spectrum of centralization to decentralization. In a centralized system, for example Canada, a single statistical organisation has primary responsibility for collecting and disseminating official statistics.[31] On the other hand, countries with a decentralized structure, such as the US, have multiple organisations and policy departments – or OPOS - responsible for producing statistics in their respective domain.

The NSS can also be regionally centralized, decentralized or devolved to sub-national regions. For instance, in Germany, each region has separate bodies responsible for conducting statistical surveys as mandated by law. However, even in a decentralized setup, certain official statistics are produced at the national level by federal authorities. In Germany, approximately one-third of official statistics result from central surveys carried out under the Federal Statistical Act.[32] Regardless of the structure, an effective coordination is required between different actors of the NSS to produce reliable statistics on a timely basis.

While the NSS encompasses the producers of official statistics, the statistical ecosystem also includes other data producers – such as non-government organisations, trade organisations, and private sector data gathering firms – who
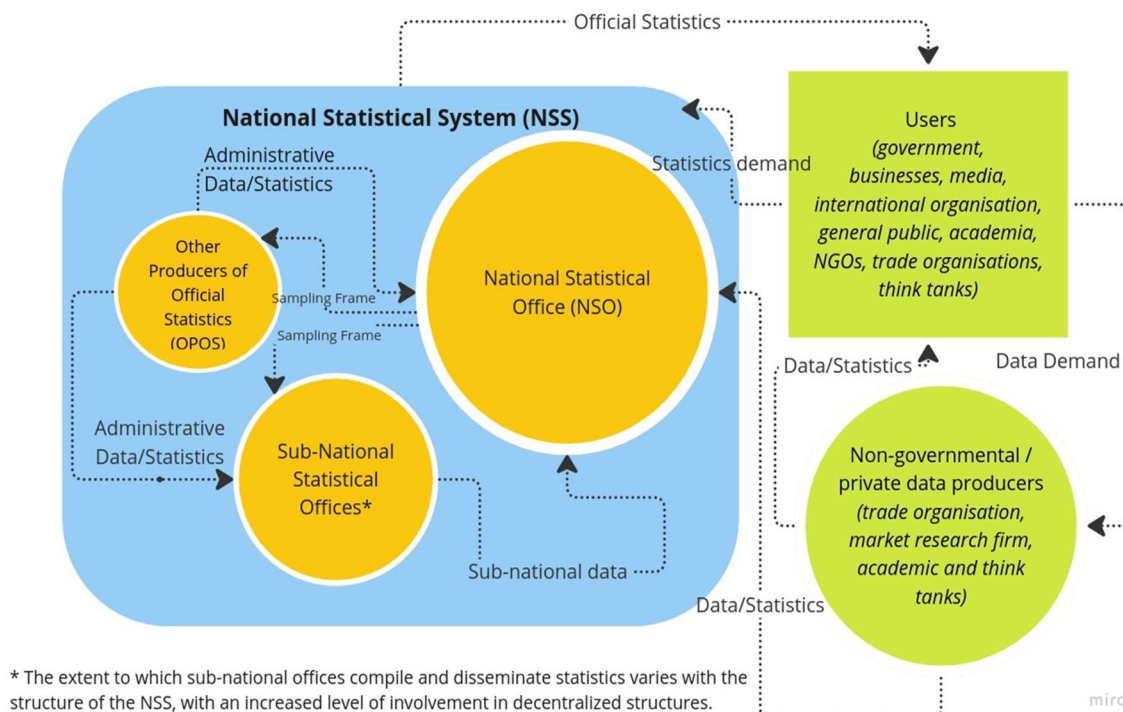
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[30] Statistics Canada (2016)

[31] ibid

[32] United Nations (2018); D. Holt (2008)

Statistical Ecosystem

Figure 7.1

* The extent to which sub-national offices compile and disseminate statistics varies with the structure of the NSS, with an increased level of involvement in decentralized structures.

Source: SBP, based on various studies cited in this special chapter particularly, United Nations (2022). The Handbook on Management and Organization of National Statistical Systems. 4th Edition of the Handbook of Statistical Organization. New York: UNDESA

produce a wide variety of statistics, often based on sampling frames and other statistics provided by the NSS. The statistical ecosystem also includes various types of public and private sector users who create a demand for statistics, and also directly or indirectly supply information to the NSS and other producers of statistics.

The NSOs and its sub-national offices typically obtain data through censuses, surveys and administrative sources, such as customs data for foreign trade or civil registries for demographic changes. In addition, commercial data streams and sources, like satellite imagery and cell phone data, are also used; whereas OPOS

typically rely on their own administrative records.[33]

The challenge of commensurability

The structure of NSSs vary around the developed and developing world. They also come in different forms and sizes that make them difficult to compare or benchmark. This has led to substantial variations in the methodologies and other aspects covered in the evaluation reports of national statistical capacities.[34] Three key reasons behind the challenge of comparability are discussed below.

Firstly, while there are certain standards and classifications,[35] there is no single definition of

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[33] United Nations (2022ᵇ)

[34] C. Willoughby (2008)

[35] For instance, the United Nation's System of National Accounts is a statistical standard to compile and measure economic activity, whereas its International Standard Industrial Classification of All Economic Activities (ISIC) provides countries reference

data quality. Quality is understood as a generic term across various dimensions, such as: relevance, accuracy, timeliness, accessibility, interpretability, and coherence. However, the absence of precise definitions of quality makes the exercise of cross-country comparisons rather challenging, and prone to subjectivity. [36]

Secondly, because national statistics do not always comply with international standards on methodologies and definitions, the lack of uniformity poses a challenge to cross country comparisons and global monitoring. Even when they comply with international standards, the varieties of statistical methodologies allowed within the standards and frameworks, amid an absence of clear documentation of methodologies adopted by countries, particularly developing economies, renders country comparisons rather difficult.[37]

Thirdly, there is a lack of clarity over the scope of the NSOs alongside noticeable differences in the structure of the NSS. There is no clear agreement or unambiguous recipe for success over which actor within the NSS should produce which statistics, or what should be the core function of the NSO.[38] The NSS, as mentioned earlier is not well defined, nor is there a blue print for successful NSS. [39] They can be set up differently in response to varying national needs, structure of economy, political structure, socio-economic challenges, administrative set up and legal environment.

In cognizance of these challenges, this primer relies on three main types of analytical frames to study the NSS in Pakistan. First, the UN

Fundamental Principles of Official Statistics (UNFPOS). While the UNFPOS does not provide details of how an NSS should be structured, it lays out key principles to guide country-level and international practices on various aspects, including on national coordination, use of international standards for classification, production process of statistical systems, and professional ethics.[40] Inspired by UNFPOS, other multilateral organisations have developed different standards and guidelines on various aspects of NSS.[41]

Second revolves around best practices sourced from country-specific case studies produced by independent policy research institutes and assessments of country-specific NSS by regional and global institutions. This includes National Strategies for the Development of Statistics (NSDS) of developing and emerging economies prepared by respective governments. Prepared under the guidelines provided by Partnership in Statistics for Development in the 21st Century (PARIS21),[42] the NSDS are government owned strategies to develop capacity to produce, disseminate and mainstream the use of statistics through the collective and coordinated work of the NSS.[43]

Third relates to global monitoring of statistics that emerged after the launch of UN's MDGs, and particularly SDGs, which led to the realization of data gaps for monitoring. These monitoring efforts include World Bank's Statistical Performance Indicators (SPI) that compare global NSS on the use, services, products, sources and infrastructure related to

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classification of productive activities. Similarly, the IMF's BPM6 provides concepts, definitions, classifications, and conventions for balance of payments and international investment position.

[36] I. Krizman, B. Tissot (2021); G. Brackstone, (1999); P. Allum, M. Agca (2001)

[37] S. Chen, F. Fonteneau, et al (2013)

[38] OPM (2009)

[39] R. Edmunds (2005)

[40] United Nations, Resolution No. 68/261, Fundamental Principles of Official Statistics, adopted by the sixty-eighth session of General Assembly, on 29 January 2014.

[41] UN (2022b); UNECEa; OECD (2022); OECD (2020b); PARIS21

[42] PARIS21 is a global partnership to develop statistics for the 21st Century. It was established in November 1999, by the UN, the European Commission, the OECD, the IMF, and the World Bank.

[43] PARIS21

data. [44] It also includes Open Data Inventory (ODIN) that assesses country-level NSS on the subject of coverage and openness. [45]

Some of the key points of emphasis common to these indicators, principles, guidelines, and best practices include: independence of the NSO; effective coordination between the NSS and the statistical ecosystem; availability of reliable administrative data by OPOS and integration thereof; and an adequate demand for statistics.

7.3 Prominent Gaps in Pakistan's Official Statistics

As discussed in the preceding section, cross-country comparisons of statistical systems is a challenge due to the diversity of datasets and statistics thereof; statistical systems; and demands of data users in each country. However, there is a certain degree of global consensus on certain data dissemination standards and uses, such as the International Monetary Fund's (IMF) dissemination standards, and the measurement of SDGs that has given a fresh impetus to the monitoring of and improvements in NSSs around the world. [46]

In line with these trends, the World Bank has developed SPI to assess the maturity of a country's statistical system on an overarching framework across five pillars. [47] Among the 186 countries ranked on the SPI, Pakistan is ranked 87th, lagging behind its peer economies **(Table 7.1).** The three pillars of SPI in which Pakistan performs well are data usage, data products and data infrastructure. It is important to note that data use is measured solely based on the international usage of official statistics, as the

assessment of usage by local academia, media, and others is limited due to a paucity of indicators. On the other hand, the final score for data products relies on the availability of SDGs indicators. International support and cooperation in collection of these datasets has also helped Pakistan fare better in this category. For instance, Pakistan's Demographic and Health Survey 2017-18 was carried out with financial and technical support from bilateral and multilateral organisations. [48]

In terms of data infrastructure, Pakistan ranks slightly better than comparable countries, but has room for improvement in standards and methods. For instance, Pakistan's National Accounts and Consumer Price Index (CPI) are not annually chain-linked. [49] Moreover, the country does not comply with the Generic Statistical Business Process Model (GSBPM) and Government Finance Statistics Manual (GFSM) that provide guidelines for processing and reporting of various statistics. [50]

Pakistan's performance in the areas of data services and data sources is relatively weak. The low score in the data services category, which assesses the connection between data users and producers, can be attributed to low scores in data releases and online access. Additionally, Pakistan's utilization of geospatial data and administrative data in the data sources category also warrants improvement.

From the perspective of dissemination and openness, Pakistan's weak standing in SPI reflects in other benchmarks as well. For instance, in the IMF's data dissemination

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[44] The World Bank's SPI was introduced in 2021. It builds on and replaced the Bank's earlier Statistical Capacity Index, which was in place since 2004. The SPI is a shift from monitoring 'capacity' to measuring 'performance'.

[45] Open Data Inventory (2022)

[46] While these global benchmarks take roots in the UN's Fundamental Principles of Official Statistics, they do not always fully capture the true picture of statistics.

[47] H. Dang, et al (2021)

[48] NIPS (2017-18)

[49] Out of the 193 countries for which data was available, 40 countries had an annually chain-linked CPI (Source: World Bank SPI 2022); Annual chain linking requires revision of base year annually and linking YoY changes. Source: IMF[a]

[50] IMF[b]; UNECE[b]

Statistical Performance Indicators 2022   **Table 7.1**

Country	Best Performing Country*	Pakistan	Bangladesh	India	Sri Lanka
SPI Overall Score	93.6	71.1	69.7	78.2	79.1
Pillar 1 - Data Use	100.0	100.0	90.0	100.0	100.0
Data use by international org.	1.0	1.0	0.9	1.0	1.0
Pillar 2 - Data Services - Score	99.7	61.9	61.9	87.7	81.8
Data releases	1.0	0.5	0.5	1.0	1.0
Online access	0.9	0.4	0.4	0.6	0.5
Data services	1.0	1.0	1.0	1.0	1.0
Pillar 3 - Data Products	94.2	86.8	85.8	86.3	78.0
Social statistics	1.0	0.9	0.9	0.9	0.7
Economic statistics	1.0	0.9	0.9	0.9	0.8
Environmental statistics	1.0	0.7	0.7	0.8	0.8
Institutional statistics	1.0	0.7	0.9	0.8	0.8
Pillar 4 - Data Sources	88.9	46.9	51.0	62.0	80.4
Censuses	1.0	0.8	0.8	0.7	1.0
Surveys	1.0	0.7	0.6	0.5	0.7
Administrative data	1.0	0.0	0.5	1.0	1.0
Geospatial data	0.8	0.4	0.1	0.3	0.6
Pillar 5 - Data Infrastructure	100.0	60.0	60.0	55.0	55.0
Standards and methods	1.0	0.6	0.6	0.6	0.6

* Scores of the best-performing country in the relevant pillar and sub-indicator.
Note: The highest value for a pillar is 100, and 1 for its various components. SPI covers 5 pillars and was designed to have 22 sub-dimensions across the pillars. However, due to lack of data, it reports a total of 16 dimensions, of which only 14 sub-dimensions (enlisted in this table) are used for the calculation of overall SPI score.
Source: World Bank, Statistical Performance Indicator 2022

standards, Pakistan adheres to the Enhanced General Data Dissemination System (e-GDDS), whereas neighboring countries such as India and Sri Lanka subscribe to the more advanced Special Data Dissemination Standard (SDDS). Among the requirements of SDDS that Pakistan does not meet, are the production of quarterly GDP, wages and employment data.[51] However, as part of the structural benchmarks agreed with the IMF for the 9-month Stand-By Arrangement, the country is scheduled to start compiling and publishing quarterly national accounts from Q1-FY24 onward.[52]

Similarly, Pakistan ranks 121st out of 195 countries covered in ODIN. In comparison, India and Sri Lanka hold the 82nd and 96th positions, respectively **(Table 7.2)**.[53] Except for statistics related to money and banking,

international trade, and balance of payments, official statistics in Pakistan need substantial improvement in coverage and openness across a wide range of data classified under social statistics, economic and finance, and environment statistics. For instance, Pakistan's ranking in the category of crime and justice data is poor due to the unavailability of indicators on homicide rates, prison populations, and limited coverage of crime rate data. Moreover, besides coverage, Pakistan's sub-score in openness significantly lags behind that of top-ranked Singapore, as well as its South Asian neighbors, Sri Lanka and India.

Indicative list of specific data gaps

In the context of the aforementioned gaps in Pakistan's official statistics, it is useful to shed

[51] Pakistan Bureau of Statistics (2020)
[52] International Monetary Fund (2023)
[53] Open Data Watch

Open Data Inventory 2022   Table 7.2

Data categories	Coverage sub score					Openness sub score				
Country*	SGP**	PAK	BGD	IND	LKA	SGP	PAK	BGD	IND	LKA
Population & vital statistics	75	30	0	0	60	100	30	40	60	50
Education facilities	75	30	30	30	40	100	40	30	60	50
Education outcomes	75	40	40	40	40	100	40	40	50	50
Health facilities	75	70	30	40	70	100	40	30	70	70
Health outcomes	38	50	30	30	40	100	30	40	60	50
Reproductive health	75	40	60	50	50	100	40	40	60	50
Food security & nutrition	50	38	0	25	25	100	40	0	50	50
Gender statistics	75	30	40	30	30	100	30	50	40	50
Crime & justice	75	0	0	50	30	100	40	30	70	40
Poverty & income	38	0	40	20	80	100	0	40	30	50
Social statistics sub score	65	33	28	32	47	100	33	34	55	51
National accounts	100	38	38	75	38	100	40	40	60	50
Labour	75	60	40	50	80	100	30	40	60	30
Price indexes	100	38	38	38	75	100	30	40	80	60
Government finance	100	63	75	50	63	100	30	40	70	60
Money & banking	67	100	100	67	100	100	40	40	90	60
International trade	100	100	50	50	100	100	30	30	60	50
Balance of payments	100	100	100	83	100	100	40	30	60	50
Eco. & fin. statistics sub score	91	67	60	58	77	100	34	37	69	51
Agriculture & land use	38	60	70	30	50	100	40	40	50	50
Resource use	83	88	63	38	38	100	40	40	90	40
Energy	100	50	67	100	50	100	40	40	70	40
Pollution	100	13	0	13	0	100	40	0	80	0
Built environment	75	80	60	50	60	100	40	50	40	50
Environment sub score	77	60	52	43	41	100	40	34	66	36
Overall score	77	52	45	43	54	100	36	35	63	46

* SGP = Singapore; PAK = Pakistan, BGD = Bangladesh, IND = India, LKA = Sri Lanka

** Highest ranked.

Note: Scores in any given category are based on 10 elements, 5 each for openness and coverage. Coverage elements: first administrative level (for instance, provincial level data), second administrative level (for instance, district level data) data available last 5 years, data available last 10 years and indicator availability. Openness elements: Machine readability, Non-proprietary format, Metadata Availability, Download Options, Data license/Terms of use.
Source: Open Data Watch

light on some of the key challenges across a variety of economic and social indicators. These include the unavailability of some key indicators, infrequent compilation and dissemination of data, under collection of administrative data, and a lower information base for the production of various indicators.[54]

National Accounts and other key indicators:

In Pakistan, GDP calculations are based on the latest System of National Accounts[55] - SNA 2008

- and the figures are released annually. However, in a 2022 survey of 170 countries, Pakistan was one of the 26 nations that did not produce quarterly estimates of GDP.[56] Moreover, sub-national or provincial GDP figures are also not reported, despite the 18th Constitutional Amendment that devolved several policy areas to provinces. The provinces have made attempts to produce provincial GDP estimates. However, this is not a regular feature and requires comprehensive review and

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[54] The list is not intended to be exhaustive due to scope constraints. Moreover, since users are integral to identification of data gaps, some of the discussion in this subsection is based on anecdotal evidence and soft information.

[55] SNA 2008 is a statistical framework that provides a comprehensive, consistent and flexible set of macroeconomic accounts for policymaking, analysis and research purposes. Source: United Nations (2009).

[56] A. Silungwe, et al (2022)

State Bank of Pakistan Annual Report 2022-2023

Global Stocktaking of National Accounts Statistics: Based on 2020 survey of NSOs   **Table 7.3**

% of total responses in a particular category *(Green cell represents Pakistan's presence in the category)**				
1-10	**11-20**	**21-30**	**31-40**	**Over 40**
5	35	18	7	35

No. of activities estimated annually

	No	**Yes**	**Yes, but the estimates are not published**
Quarterly GDP (any approach)	15	84	1
Annual estimates of some or all institutional sector accounts	45	53	2

	Monthly	**Quarterly**	**Annually**	**Biennial**	**Triennial**	**Quin-quennial**	**Deci-annual**	**Irregular**
Population Census	-	-	-	-	-	10	64	26
Agricultural Census	-	-	2	-	-	9	29	60
Business Register	28	2	39	-	-	1	2	28
Structural business survey data	15	10	46	-	-	1	-	29
Household Budget Survey/Survey of Living Conditions	1	9	19	4	1	1	-	65
Other agricultural information	14	24	49	1	-	-	1	11
Value Added/Goods and Services Taxation information	40	36	19	-	-	-	-	4
Corporate Income Tax information	11	14	72	-	-	-	-	3
Personal Income Tax information	18	16	60	-	-	-	-	6
Social Security Information *(such as employment or benefits information)*	25	30	36	-	-	-	-	9
Customs import and export declarations information from customs authorities	77	16	7	-	-	-	-	1
Consumer price indices	100	0	-	-	-	-	-	-
Import and export price indexes	52	37	9	-	-	-	-	2

* Cells not highlighted in green indicate that response to the questionnaire was left blank.
Source: A. Silungwe, A. Baer and V. Guerreiro (2022). 2020 *Global Stocktaking of National Accounts Statistics: Availability for Policy and Surveillance.* Working Paper No. 2022/029. Washington D.C.: IMF.

coordination between the federating units to ensure consistency.[57]

From the perspective of source data, Pakistan's national accounts are based on estimates of 11-20 economic activities. In comparison, advanced economies like the US and Canada, and even developing country peers like Sri Lanka and India track around 40 activities for their national accounts.[58] Various types of source data, such as those related to taxation and social security, are not available **(Table 7.3)**.[59] While Pakistan produces the CPI on monthly basis as per international best practices, it does not report Producer Price Index (PPI). The PPI can serve as an early indicator of inflation, allow assessment of business cost pressures, and improve policy formulation. In contrast, other South Asian economies, such as Sri Lanka and Bangladesh regularly publish the PPI.[60] Similarly, while Pakistan reports monthly trade data from custom authorities, it reports trade price indices

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[57] For instance, KPK Bureau of Statistics published its provincial GDP for FY21, and Punjab has also estimated its GDP used in informing Punjab Growth Strategy 2023. Source: KPK BoS, Planning and Development Board. Punjab; Punjab Bureau of Statistics[a]
[58] Economic activities are categorized based on the industry or sector in which they occur, such as livestock, manufacturing, and education.
[59] A. Silungwe, et al (2022)
[60] Sri Lanka's Department of Census and Statistics[a]; Bangladesh Bureau of Statistics

on quarterly basis. This is unlike majority of the countries.[61]

Gaps also exist at the sectoral level. For instance, harvest prices of crops are not available in Pakistan. In contrast, annual state disaggregated data on 'Farm Harvest Prices' is available for 36 principle crops in India.[62] The last agriculture census in Pakistan was held in 2010, a notable time gap of more than 10 years, whereas frequent floods, climate change and changing market dynamics warrant more frequency of such surveys.

Similarly, estimates of livestock, which contributes to 63 percent of agricultural GDP and around 14 percent of national GDP, is based on inter-census growth between livestock surveys of 1996 and 2006 amid an absence of annual or five-yearly surveys. Only three livestock surveys have been conducted so far, starting in 1986 through 2006, indicating a large time gap in providing reliable information on sectoral dynamics. The country also does not estimate income, outlay, savings, and financial flows and stocks by institutional sectors accounts.[63]

Labour and unemployment:

Official data related to labour, particularly wages and unemployment, plays a crucial role in policymaking - both from the perspective of macroeconomics, such as monetary policy, and from the lens of development policies, such as those relating to structural changes in employment, working conditions, and wage

gaps.[64] In popular discourse too, unemployment remains one of the most talked about socio-economic problem in Pakistan and around the world.

While Pakistan has recently started conducting Labour Force Survey (LFS) at the district level through the use of technology, the frequency of the survey has been low.[65] Since 1963, Pakistan has conducted only 36 annual LFS and 8 quarterly surveys (4 each in FY11 and FY13).[66] Moreover, the results of LFS are published with a considerable time lag, which decreases its effectiveness for analyzing and reflecting on the prevalent trends in employment and wages.[67]

This is unlike international best practices, where unemployment and wages are tracked on a quarterly or even monthly basis. In some countries, key labour statistics are gathered through social registries, whereas other countries rely on frequent labour market surveys. For instance, Sri Lanka and India have been conducting quarterly LFS since 1990 and 2018, respectively.[68] Likewise, Nigeria has recently adopted the best practices for quarterly LFS, and have incorporated digital technologies to ensure geo-referencing of enumerators' locations.[69]

Developed countries, such as Canada, have been conducting their LFS on a monthly basis since 1952. Over the years, the scope of the Canadian LFS has also expanded to include employment, payroll, and hours worked that provide insights on earnings and job data, categorized by

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[61] A. Silungwe, et al (2022)

[62] PBS (2022); PBS[a]

[62] IMF[c]

[63] Institutional sectors are groupings of institutional units, forming structural building blocks for financial statistics. An institutional unit is an economic entity capable of owning assets, incurring liabilities, engaging in economic activities, and conducting transactions with other units or entities. This encompasses households, as well as legal or social entities like corporations, non-profit organisations, and government units, IMF[c]

[64] ILO

[65] Pakistan Bureau of Statistics (2020-21)

[66] PBS[b]

[67] SBP (2021)

[68] Sri Lanka's Department of Census and Statistics[b]; Ministry of Statistics & Programme Implementation, India.

[69] J Lain, U. Pape (2023)

industry and geographical regions.[70] In the US, the Bureau of Labor Statistics reports monthly employment and unemployment figures collected through the Current Population Survey,[71] whereas in the UK a monthly LFS is complemented by administrative data from Jobseeker's Allowance & Universal Credit to gain more granular information about individuals availing unemployment benefits.[72]

Small and Medium Enterprises (SMEs):

Pakistan has a large SME segment that is estimated to contribute 40 percent of GDP, 25 percent of exports and 78 percent of non-agricultural employment.[73] However, despite its widely accepted importance for both macroeconomic and developmental objectives, SMEs footprint in Pakistan's economy and trends thereof is not adequately measured.[74]

Data about economic activities of SMEs and other business enterprises comes from the Census of Economic Establishments of 2005, after which no such census has been conducted.[75] From the perspective of national accounts, the Small and Household Manufacturing Industries survey serves as the primary tool; the last such survey was conducted in 2015-16, after a gap of about ten years, and henceforth the inter-census growth rate is being applied for estimating annual growth.[76]

There are no monthly or quarterly estimates for SME production, unlike the large scale manufacturing index that tracks monthly production of large industries. Nor does Pakistan report annual estimates for the number of SMEs or their contribution to the economy.

Also, most of the current data collection mechanisms in Pakistan captures either small or large firms, and only accounts for the manufacturing sector. This is an inadequate information base for policy and planning for the SME sector.[77]

In contrast, Malaysia reports SMEs' contribution to GDP and exports on an annual basis across the agriculture, manufacturing and service sectors, and their key sub-sectors. This is based on data from censuses of establishments and enterprises conducted every five years, complemented by annual economic surveys and administrative data. In the Philippines, SMEs performance is measured through the Annual Survey of Philippine Business and Industry that tracks a wide range of activities including employment, income, subsidies, information regarding assets, and sales from e-commerce.[78] In the UK, annual estimates on SMEs come from the Inter-Departmental Business Register managed by the UK's national statistics office, whereas in Canada, the information is gleaned from the country's Business Registry updated on a monthly basis, alongside triennial sample surveys, monthly surveys and data from Canada's revenue agency.[79]

High-frequency economic indicators (HFEIs):

Short-term indicators or high-frequency economic indicators do not only provide important insights on fast changing economic conditions but are also used to fill the gaps in official data - which are available with lags. They help policymakers understand the underlying trends in the economy and spot turning points in the business cycles. The HFEIs are not only important for monetary policy

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[70] Statistics Canada[a&b]
[71] Bureau of Labor Statistics
[72] Office of National Statistics
[73] SMEDA (2022) and SBP (2022)
[74] Pakistan Bureau of Statistics (2020)
[75] ibid
[76] Pakistan Bureau of Statistics (2022)
[77] Pakistan Bureau of Statistics (2020)
[78] Ministry of Economy, Department of Statistics Malaysia; OECD (2019)
[79] OECD (2014).

decisions[80] but, as the Covid-19 pandemic showed, they are also important to assess policy responses in real-time.[81] However, HFEIs are more meaningful in terms of causal relationships when they are integrated in a coherent and comprehensive analytical and statistical framework. In particular, the HFEIs need to be aligned with traditional benchmarks, such as quarterly national accounts and gross value added by economic activity.

Globally, countries are increasingly making efforts for availability of these indicators on a monthly, weekly and even daily basis from both the demand and supply side across agriculture, manufacturing and service sectors. Examples of these indicators include: new and existing house sales; indices for new orders and turnover for industry, retail and construction; same-store retail sales; and daily truck toll mileage index; freight (air, sea and land); new employment in services and industry; and tourism related statistics.

The HFEIs rely both on administrative sources — such as building permits, unemployment insurance claims, and railroad traffic — and trade organisations for statistics relating to the sector/region in their scope. For instance, in the US, the Federal Reserve of New York has constructed a weekly economic index of some daily and weekly indicators of real economic activity including American Staffing Association Staffing Index,[82] the Association of American Railroads, and fuel sales to end users.[83] With the growing digitalization of economies, alternate data is also being used. This includes: the relative frequency of internet searches for word like unemployment, short-term work and vacancies; average nitrogen dioxide concentration in the air, and credit card transaction data.[84]

In Pakistan, certain HFEIs are available and are being used by policymakers, including the SBP. These include monthly agriculture credit disbursement published by the SBP, monthly sales data by automotive and cement manufacturers association, monthly fuel sales data provided by Oil Companies Advisory Council, monthly electricity generation data provided by National Electric Power Regulatory Authority, and monthly public sector development spending shared by the Planning Commission. Some of these are also used for the purpose of now casting.[85] However, a lot of key HFEIs are either not compiled or are not publicly released. These include federal taxes withheld, short term service indicators, such as hotel occupancy, retail sales, comparable-store sales, highways tolls, building permits, domestic air passenger and cargo traffic, and indexes tracking online job market placements.[86]

In addition to other overarching institutional challenges discussed in Section 7.4, these gaps mainly stem from a lack of timely administrative data releases by policy departments, and sectoral data recorded by trade organisations. Moreover, in the absence of high frequency data for traditional measures, such as quarterly national accounts data, it is difficult to gauge the efficacy or predictive power of such high-indicator indices.[87]

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[80] SBP (Forthcoming)

[81] IMF Presentation 2021

[82] The American Staffing Association Staffing Index tracks temporary and contract employment with data coming from a large panel of staffing companies.

[83] Federal Reserve Bank of New York

[84] Bundesbank; Federal Reserve Bank of New York

[85] Now casting refers to the practice of using recently published data to update key economic indicators that are published with a significant lag, such as real GDP. Source: IMF

[86] For example, The Naukri JobSpeak is a monthly index used in India that calculates hiring activity based on the job listings on the Naukri.com website every month. Source: Reserve Bank of India.

[87] SBP (Forthcoming)

Civil Registration & Vital Statistics:

Civil Registration and Vital Statistics (CRVS) is the process of collecting information on vital events such as births, marriages, migrations, deaths, and causes of death. By recording events in real-time, CRVS becomes a real-time source of statistics. While CRVS may not completely replace surveys and censuses designed to extract specific information, it can inform the design of surveys and censuses. In developed countries, the use of CRVS for producing official statistics is already common. For instance, Statistics Sweden utilizes registered person data provided by the Swedish Tax Agency as the basis for population statistics.[88]

However, in the case of Pakistan, the collection and usage of vital statistics is currently limited. It is estimated that approximately 42 percent of children under five years old are officially registered, and only 36 percent possess a birth certificate. Similarly, less than 5 percent of deaths in the country are being registered. The reporting of complete and accurate causes of deaths is also lacking, whereas the adoption of the International Classification of Diseases at hospitals is not widely practiced due to limited awareness and training among hospital staff. Nonetheless, it is worth noting that the government is aware of the importance of CRVS and is taking steps to strengthen the CRVS mechanism.[89]

7.4 The State of Pakistan's NSS

In the context of the foregoing discussion, this section sheds light on Pakistan's NSS including its overall structure, and some of the overarching interrelated challenges. The latter includes those relating to independence of the NSO, coordination within the NSS and the

statistical ecosystem, administrative data, and the overall demand for statistics in the country.

Basic structure

Pakistan's NSS is at an intermediate position of the continuum between a centralized and decentralized statistical system.[90] The Pakistan Bureau of Statistics (PBS) serves as the central agency of the country's NSS, or the NSO. The PBS is mandated both to collect data and statistics, and to coordinate statistical activities at the national level. It is headquartered in Islamabad with four provincial offices and 34 Field Offices across the country.[91]

The PBS collects data via both primary and secondary sources. For instance, as part of its primary data collection, PBS conducts various censuses, such as population and housing census, Mouza census, and livestock census. Another source of primary data is surveys, such as Pakistan Demographic Survey, Pakistan Social and Living Standards Measurement (PSLM), Household Intergraded Economic Survey (HIES) and LFS. The PBS also collects data from secondary sources such as Pakistan customs, federal ministries and provincial governments, for various data sets such as external trade, production index and social statistics.[92]

The country's NSS also includes four Provincial Bureau of Statistics (PBoS), one in each province, and two statistical cells at Gilgit Baltistan and AJ&K that do not have full-fledged bureaus.[93] The PBoS are responsible for the collection, compilation and dissemination of statistics on policy areas devolved to provinces after the 18th Constitutional Amendment, while coordinating among various statistical cells of provincial departments. They are also responsible for coordinating with the PBS on statistics compiled

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[88] Statistics Sweden
[89] Ministry of Planning, Development & Reform and Planning Commission
[90] Pakistan Country Paper, United Nations
[91] PBSᶜ; PBS (2023)
[92] PBSᵈ
[93] Pakistan Bureau of Statistics (2020)

by it, and serve as a liaison between the Federal and Provincial Governments for various statistical matters, in addition to serving as a Secretariat for the Provincial Statistical Council.[94]

Both the PBS and the PBoS operate primarily under the General Statistics (Reorganization) Act 2011 (GSR) (as amended up to February 2022)[95] that provides the legal basis for compilation, analysis, and dissemination of statistics in the country. It outlines the structure and functions of statistical agencies of Pakistan and gives an institutional mechanism for the overall working of NSS in Pakistan. Furthermore, the Industrial Statistics Act, 1942

gives a legal framework for gathering various facets of industrial data.[96]

In addition to PBS and PBoS, OPOS also form a part of NSS (**Figure 7.2**). They comprise different statistical cells or research and analysis units under various federal and provincial ministries and policy departments. For instance, the Agricultural Policy Institute of the Ministry of National Food Security and Research publishes "Agricultural Statistics of Pakistan" which is a data bank on agriculture at a national level, and Ministry of Industries and Production which collects data on Large Scale Manufacturing (LSM).[97]

Figure 7.2
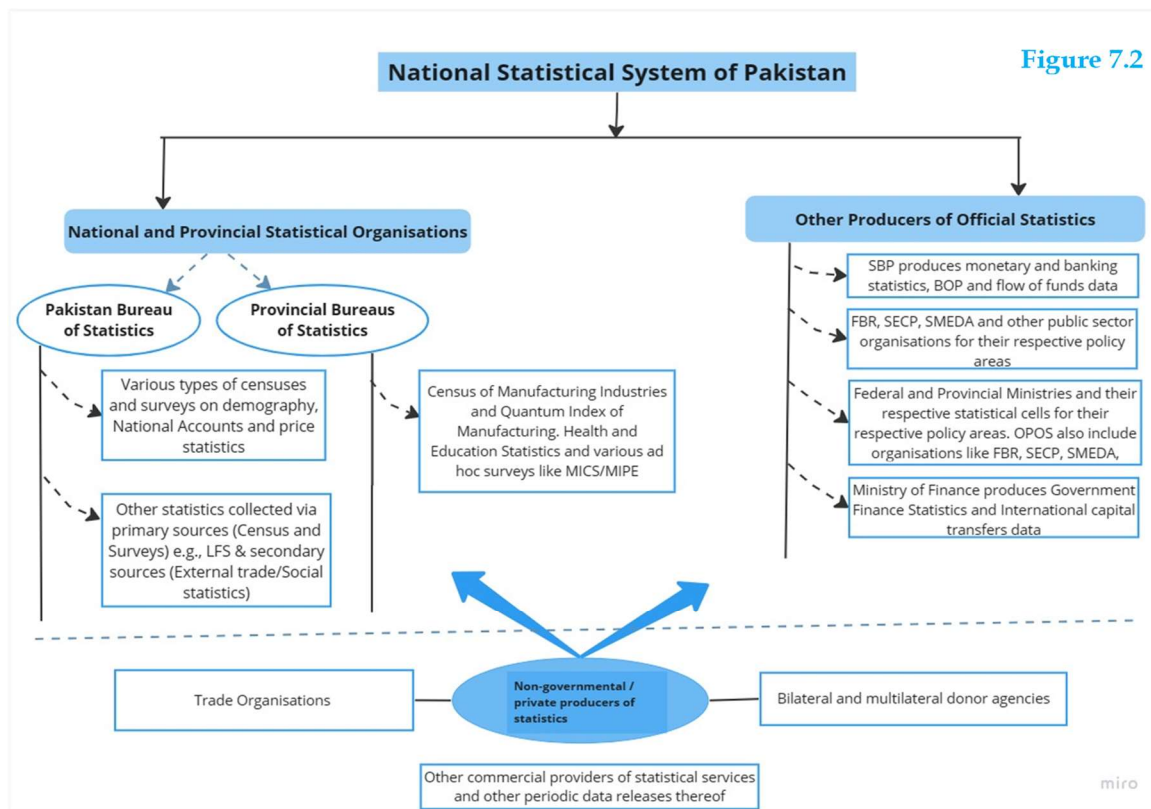
Sources: SBP based on various documents and websites cited in this special section chapter particularly: (a) National Development Strategy 2021-2030 (b) PBS website (www.pbs.gov.pk) (c) Sindh Bureau of Statistics and Punjab Bureau of Statistics website

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[94] Punjab Bureau of Statistics[b]; Sindh Bureau of Statistics
[95] Senate of Pakistan
[96] Industrial Statistics Act 1942
[97] Pakistan Bureau of Statistics (2020)

Moreover, public sector organisations and institutions like the Federal Board of Revenue (FBR), provincial taxation organisations and departments, Security Exchange Commission of Pakistan (SECP), State Bank of Pakistan (SBP), registries like the National Database and Registration Authority (NADRA) and the Benazir Income Support Programme (BISP), which collects data relevant to their field of work, are also by definition a part of the country's OPOS.

Lastly, while non-government and private producers of statistics, such as multilateral agencies and business associations respectively, are not a part of the NSS, they are an important part of the statistical ecosystem. At the one end, the statistics they produce relies on the data supplied by the NSS. For instance, they depend on the PBS for sampling frames. This is because the PBS is the custodian of sampling frames of Pakistan, mandated to support all national and international organisations, departments, agencies for conduct of surveys and censuses as per international standards.[98] At the other end, non-government and private data producers also supply data to the NSS.[99] Furthermore, commercial providers of statistical services also contribute to the overall statistical system by providing data, such as on the start-up and equity landscape of Pakistan.

Independence of NSO

The professional independence of a statistical organisation is critical for public trust in the NSO; the United Nations Fundamental Principles of Official Statistics requires statistical agencies to compile data impartially and make it public accordingly.[100] Therefore, it is not enough that an NSO is independent by way of legal stipulation but it also has to be widely perceived and acknowledged as such by the public.[101] Literature suggests that NSOs are most independent if they are not reporting to the ministries of planning, finance, industries or any other ministry that needs statistics to support their policies both at the time of policymaking and at the time of performance review of those policies.[102]

Different countries have undertaken reforms to strengthen the independence of their NSOs. For example, in 2007, the UK passed a law that provides statutory protection of independence of its NSO by creating an independent board known as the U.K. Statistics Authority (UKSA). The UKSA is a body corporate[103] working as a non-ministerial department that reports directly to the UK Parliament. It has the statutory objective of promoting and safeguarding the production and publication of official statistics, including developing and maintenance of its definitions, methodologies, classifications and standards.[104]

Similarly, the National Statistics Committee (NSC) in Kyrgyz Republic is mandated to present its work directly before congress and public bodies.[105] The head of the NSC is appointed by, and reports to the President, which ensures non-interference by ministries and various policy departments. Moreover, following best practices, such as that in the US, the appointment of the head of the NSC in Kyrgyz Republic is made such that it does not coincide with the term of the administration,

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[98] Pakistan Bureau of Statistics (2020)

[99] For example, trade organisations like Pakistan Automobile Manufacturing Association, Pakistan Sugar Mills Association, and Pakistan Cotton Ginners Association supply data to PBS and PBoS.

[100] United Nations (2015)

[101] D. T. Holt (2008); Principles and Practices for a Federal Statistical Agency (2017)

[102] C.W Howard (2021)

[103] A body corporate is an organisation such as a company or government that is considered to have its own legal rights and responsibilities.

[104] UK Statistical Authority, Section 9, Statistics and Registration Service Act 2007

[105] S. Khwaja, T.K Morrison (2002)

which strengthens the element of professional independence of the statistical body.[106]

In Canada, where the NSO – Statistics Canada (SC) - reports to the Minister of Innovation, Science and Economic Development,[107] legislation has explicitly empowered the Chief Statistician – the head of the NSO - to reinforce the SC's independence. The office of the Chief Statistician in SC is empowered to take decisions on collection, compilation, release, methods, work plans of official statistics, and any rules or instructions thereof. Moreover, the law requires that any ministerial directives on methods procedures and operations to the Chief Statistician are tabled in written form to the Canadian Parliament, whereas the office of the Chief Statistician may require ministerial directives on statistical programs to be made in writing and made public before it acts on it.[108]

In comparison, the PBS has evolved through various organisational forms and reporting lines that include Economic Affairs Division and Ministry of Interior in its initial years. Even when the NSO was reporting to a separate Statistics Division, the division itself was a part of a portfolio of finance or planning ministries for many years. In its current form, the PBS is an attached department of the Ministry of Planning Development and Special Initiatives (MOPDSI) as per the February 2023 amendment to the GSR Act 2011 that had originally conceived it as an attached department of the Ministry for Finance, Revenue, Economic Affairs and Statistics (**Figure 7.3**).[109] Similar to the PBS, the PBoS are also working as attached departments of the respective provincial planning and development departments.

The GSR Act 2011 vests powers and functions of the PBS and overall direction, management,

control and superintendence with the Governing Council (GC). The GC is chaired by the minister in charge, i.e. minister of MOPDSI, with vice chairman being the office bearer of Deputy Chairman of Planning Commission. Other ex-officio members of the GC are: Secretary of the MOPDSI, and Chief Statistician of PBS who acts as the secretary of the GC. In addition, four members from the private sector are appointed by the Federal Government.[110] Decisions of the GC are taken by majority votes, with the chair having a casting vote in case of equal votes.

The Chief Statistician of PBS has the powers to supervise, appraise, and review administrative affairs of PBS's activities under the guidance of the GC. However, it is effectively the GC, as chaired and vice-chaired by the planning ministry, that has the powers to guide and oversee the management and administrative affairs of the PBS, review and approve work plans, recommend budgets to the federal government and constitute committees to carry out day to day business and functions of the PBS against its work plan and goals.[111]

Coordination within the NSS and statistical ecosystem

One of the essential ingredients to achieve consistency and efficiency in the NSS of a country is effective coordination among various statistical agencies, which as discussed earlier include NSOs and OPOS. The importance of such coordination is even more significant in decentralized statistical systems, like in Pakistan, to ensure harmonization amid an increasing contribution of administrative data to the NSS. It also ensures standardization that makes statistics comparable at global and national level. It also serves as the first step

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[106] S. Khwaja, T.K Morrison (2002); Principles and Practices for a Federal Statistical Agency (2017)

[107] Statistics Canada Fees Report Fiscal year 2021–22

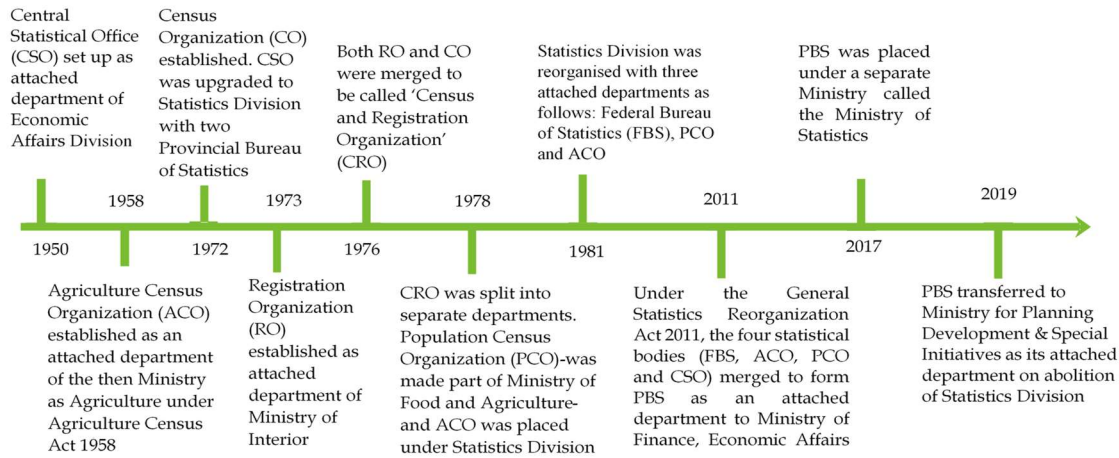[108] Government of Canada; Section 4.2 (1), Statistics Act R.S.C., 1985, c. S-19

[109] Amendment of Section 6, Ordinance No. XIV of 2011 (amended as of February 22, 2022); Section 6 of the General Statistics (Reorganization) Act 2011

[110] Section 5 and 6, General Statistics (Reorganization) Act 2011 (as amended up to February 2022)

[111] Section 8, General Statistics (Reorganization) Act 2011 (as amended up to February 2022)

Brief History of National Statistical Office of Pakistan   **Figure 7.3**

Central Statistical Office (CSO) set up as attached department of Economic Affairs Division — **1950**

Census Organization (CO) established. CSO was upgraded to Statistics Division with two Provincial Bureau of Statistics — **1958**

Both RO and CO were merged to be called 'Census and Registration Organization' (CRO) — **1973**

Statistics Division was reorganised with three attached departments as follows: Federal Bureau of Statistics (FBS), PCO and ACO — **1978**

PBS was placed under a separate Ministry called the Ministry of Statistics — **2019**

1972 — Registration Organization (RO) established as attached department of Ministry of Interior

1976 — CRO was split into separate departments. Population Census Organization (PCO)-was made part of Ministry of Food and Agriculture- and ACO was placed under Statistics Division

1981 — Under the General Statistics Reorganization Act 2011, the four statistical bodies (FBS, ACO, PCO and CSO) merged to form PBS as an attached department to Ministry of Finance, Economic Affairs

Agriculture Census Organization (ACO) established as an attached department of the then Ministry as Agriculture under Agriculture Census Act 1958

2011

2017 — PBS transferred to Ministry for Planning Development & Special Initiatives as its attached department on abolition of Statistics Division

Source: Pakistan Bureau of Statistics website. Information on the Statistics Division of the Government of Pakistan (https://unstats.un.org/unsd/dnss/docViewer.aspx?docID=51#start accessed on May 27, 2023); Introduction Bureau of Statistics , Punjab (bos.gop.pk); UN website. (https://unstats.un.org/unsd/dnss/SearchResults.aspx); S.R.O. 82 (KE), 2018, Notification August 2, 2018, The Gazette of Pakistan, Part II, Ministry of Statistics, Statistics Division, Islamabad: PBS

towards integrated statistics, which minimizes duplication and respondents' burden while enhancing cost efficiency and the quality of statistics through data corroboration from multiple sources.[112]

The importance of coordination may be gauged by the fact that national statistical systems that feature as best practices have either a separate body for coordination, or have other formal institutional mechanisms for it. For instance, in the Philippines, the National Statistics Coordination Board's (NSCB) was established as the coordinating body on statistical issues separate from the country's NSO. The NSCB is primarily is a federal body with representatives of various statistical agencies and OPOS of the country as well as representation of the private sector and local government. At subnational level, the functions of the NSCB are replicated through its regional divisions.[113]

In China, where there is no separate body for the purpose of coordinating statistical affairs, the

country's NSO - National Bureau of Statistics (NBS) – has signed inter-departmental protocols for data collection and dissemination with different ministries, which are updated regularly for smooth functioning of this mechanism. As per the statistical law in China, respective ministries collect data as approved by the NBS, and therefore, all data published by the respective ministry forms a part of official data and is disseminated following appropriate quality control procedures. This ensures standardization and harmonization of datasets.[114]

Similar practices of legal or formal agreement with other ministries and official bodies for collection and dissemination of statistics are found in Romania. Despite the presence of a separate Statistics Council for Coordinating Statistical Authority, Romania's NSO - National Institute of Statistics and Economic Studies - has formal agreements with other statistical agencies and ministries that produce data that helps to smoothen working relationships between these

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[112] UNFPOS Principle 8; S. Khwaja, T.K Morrison (2002); United Nations ESCAP; FAO (2014)
[113] M. B. Sarwar, et al (2018); UN Statistics Division
[114] S. Khwaja, T.K Morrison (2002)

bodies.[115]

In cases where there is no separate agency for coordination among various statistical agencies, global best practices suggest that the NSO or a designated statistical agency has a clear legal mandate, representation from all other statistical agencies, and well-defined TORs through which coordination between statistical agencies is ensured. For instance, in the United States, which has a highly decentralized statistical system, the Office of Management and Budget is legally mandated with coordinating the U.S. federal statistical system. It delegates this function to the Chief Statistician, who chairs the Interagency Council on Statistical Policy where all statistical agencies have representation. Inter-agency committees are formed to raise common concerns and recommendations of these respective committees are issued as formal directives for all agencies to follow.[116]

In Pakistan, the GSR 2011 tasks the PBS to formulate, prescribe and implement principles for conducting official statistics in Pakistan including standardization and harmonization of concepts, definitions and classifications pertaining to official statistics. It is also tasked with reducing duplication within the country's NSS, and overall regulation and coordination of statistical activities, including independent monitoring, evaluation and review of statistics and the NSS.[117] This is also in line with the guidelines of the Interagency and Expert Group on SDG Indicators that assigns the role of coordination across NSS to the NSO.[118] The PBoS are mandated to do the same at provincial

level across the line departments within the province.[119]

However, coordination mechanism among and within the statistical organisations is weak.[120] While there is some level of coordination within the NSS, such as for large census, surveys and key indicators,[121] these interactions are on ad-hoc basis. Unlike best practices discussed earlier, there are no permanent institutional and legally mandated platforms for coordination. The GC, as highlighted in the previous section, does not have any ex-officio membership of the PBoS, nor any of the OPOS. This contributes to problems of comparability, given differences in the calendar of surveys, and definitions and classifications.[122]

The state of the Users Council at national and provincial level is similar. Under the GSR 2011, the Users Councils are required to be constituted to perform various functions, including coordination of statistics related policies and operations, addressing statistical gaps, and reducing duplication and differences.[123] However, while the National Users Council has been notified at the federal level, it had not held any meeting until December 2020,[124] whereas a review of PBS's official newsletters for the period between December 2020 and December 2022 suggest that the council did not meet after that as well.[125] Similarly, Users Councils at the provincial level had not been notified up until December 2020,[126] and soft information suggest that it was still not been notified until June 2023.

It is also important to note that ex-officio membership of the User Council of the PBS is

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[115] S. Khwaja, T.K Morrison (2002)

[116] Principles and Practices for a Federal Statistical Agency (2017)

[117] Section 4 and 8, General Statistics (Reorganization) Act 2011 (as amended up to February 2022)

[118] PBS (2020)

[119] Section 20, General Statistics (Reorganization) Act 2011 (as amended up to February 2022)

[120] PBS (2020)

[121] IMF[d]

[122] For instance, Multiple Indicator Cluster Surveys (MICS) are done by provinces in different years. Source: UNICEF MISC

[123] Section 13, General Statistics (Reorganization) Act 2011 (as amended up to February 2022)

[124] PBS (2020)

[125] PBS[e]-News Bulletin available on PBS website for the period December 2020 to December 2022

[126] PBS (2020)

not specified, neither at the federal level nor at the sub-national level.[127] This also implies that there is no permanent forum for cooperation between PBS and PBoS, on the lines of the abolished National Statistical Council, where PBoS could share their views and plans. While coordinating platforms between the PBS and PBoS are necessary to be created with due representation of other statistical agencies, there is also a need for data users' and producers' councils across the country.[128] This will improve coordination as producer councils work to integrate data by developing a comprehensive framework ensuring standardization and resolution of common challenges. While the country's NSS is responsive to the needs of international donor agencies, the aforementioned gaps point toward the fact that the NSS also needs to significantly improve its responsiveness and relevance to expanding needs of policymakers and other domestic stakeholders**.**[129]

Administrative data

With growing digitalization of government records and ICT usage across administrative and policy functions of government departments and specialized public sector organisations, NSOs around the world have started using administrative data for compiling official statistics. While administrative data is not always a replacement for traditional statistical sources, such as census and surveys, they provide valuable insights on monthly trends across various facets of the economy, including taxation, population, health, education, pension, labour, motor vehicles, construction, and state of markets. In addition to providing timely information in an increasingly fast-paced economic environment, administrative data

improves sampling frames and statistical coverage for traditional sources.[130]

In particular, three key features of administrative data make it an essential ingredient in modern NSS. First, they offer rich information, often near-actual information rather than only estimates, on businesses, markets and individuals at the micro level. Second, they are high frequency, ranging from quarterly and monthly to even weekly numbers. Third, they provide comprehensive coverage of the formal sector, while also helping authorities to address informality via triangulation and corroboration of data.[131]

Administrative data can enhance a wide range of statistics. For instance, administrative records on health, education, and welfare can be used in assessment of expenditure with regard to national accounts, in addition to its usefulness in impact assessment of relevant policies. Similarly, as is being practiced in the UK, demographic administrative data – CRVS - and migration statistics can inform census statistics.[132]

The integration and merging of various administrative records with one another and with tax data can also offer policy insights through corroboration and triangulation of data. For instance, Statistics New Zealand's Integrated Data Infrastructure (IDI) provides anonymized data based on individual life events such as income, benefits, migration, health, and education. It also has a Longitudinal Business Database (LBD) with information on topics like agriculture, business financials, and employment.[133] Both LBD and IDI are linked through tax data and complement each other. Other examples include Statistics Canada's Longitudinal Administrative Databank, a

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[127] Section 12, General Statistics (Reorganization) Act 2011 (as amended up to February 2022)

[128] PBSᶠ

[129] Pakistan Bureau of Statistics (2020)

[130] D. P. Cheung (2008)

[131] P. Bachas, A. Jensen (2022)

[132] L. Rivas, J. Crowley (2018); I. Krizman, B. Tissot (2021)

[133] Statistics New Zealand

research tool comprising of information on household, family, income, immigration, pensions, spending and taxes. Similarly, Statistics Denmark's Integrated Database for Labor Market Research provides data on workplaces on an individual level, which can be used for analysis on mobility, job creation by companies, and link between individuals and companies.[134]

The use of taxation record is particularly useful given its usage in national accounts data, for instance through tracking of new industries and business models via value added sales taxes, and improved estimates of intermediate consumption needed for gross value added. For instance, flow of timely tax data is used in compilation of GDP in current and constant prices. In Gambia, the coordination between NSOs and tax authorities is enabling the development of a business register and the compilation of quarterly GDP estimates.[135]

In Pakistan too, opportunities exist for the NSO and the NSS to benefit from the usage of administrative data through an integrated system. Pakistan has multiple sources of administrative data. These include NADRA (civil registry), BISP (social registry), SECP (company's registry), education records at the Higher Education Commission and various education Boards, FBR (tax data), records of tax bodies that levy provincial GST on services, vehicle registration records, automated land records in Sindh and Punjab as well as the e-stamp for real estate transfer of ownership.[136]

For instance, one such integration of administrative records with traditional sources could emerge from the coordination between the PBS and tax authorities, particularly after the 7th Housing and Population census. The census has been conducted digitally for the first time in the

country's history, through which the PBS has integrated the data for development of frame for economic census.[137] The tax authorities, the FBR and provincial tax bodies for GST on services, along with the SECP and district offices that hold records of Association of Persons and partnership firms can jointly maintain a business register. To this end, the PBS can provide guidance on data quality, industry classification, harmonization and standardization, while tax authorities, the SECP and district offices can provide their respective data. This can help the PBS to regularly update its sampling frames, monitor business cycles, and acquire useful information for preparation of quarterly national accounts. At the same time, this will help tax authorities to broaden their tax base by analyzing the geo-tagged clusters of economic establishments that PBS will have, once census results are finalized.[138]

However, these opportunities are constrained by a host of factors. First, except for some public sector organisations and policy departments, administrative departments and ministries in the country give low priority to their statistical functions, resulting in outdated, non-automated administrative processes and record keeping thereof. Second, as discussed in the previous section, Pakistan's NSS is marked by weak coordination between the PBS and PBoS as well as between other producers of statistics, and statistics users. Without coordination, even if datasets are automated, they may lack standardization and harmonization.

Third, the legal framework regulating the NSS in Pakistan needs improvement. Unlike many other countries,[139] maintenance of digitalized administrative data is not mandated by law, nor does the law specifically stipulate sharing administrative data between various statistical agencies. The statistical legislation also does not

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[134] Statistics Canada[c]; Statistics Denmark

[135] L. Rivas, J. Crowley (2018)

[136] PBS (2020); Sources: Sindh Board of Revenue; Punjab Board of Revenue

[137] PBS[g]

[138] PBS[h]

[139] L.Rivas, J. Crowley (2018)

cover the impact of digitization, Big Data, or rules for statistical audit that are needed to ensure data quality at the time of using administrative and commercial data for official statistics. Instead of covering the whole statistical infrastructure of a country, the law mostly focuses on the country's central statistical agency.

Fourth, while the GSR 2011 has explicit provisions to ensure secrecy and confidentiality of statistics,[140] including responses of survey respondents, and other statistical information, the overall legislative framework lacks supporting framework such as Code of Practice, and other supporting legal framework such as data sharing laws. This is important because confidentiality is critical to successful data sharing practices. Successful data sharing relies on supporting legislative frameworks, such as data protection laws, and codes of practice, that spell out acts and abstinences in various areas including data and cyber security, anonymization of data, compatibility of ICT systems, data standardization, protocols of practice and onward sharing. It is important that these elements are grounded in law rather than in MoUs between the NSO and administrative bodies; failing which public confidence, particularly in tax authorities, may erode.[141]

Demand side of NSS

The demand for official statistics is an important enabler of improvements in statistics and the NSS. Lack of adequate demand for official statistics and a robust statistical system (**Box 7.1)**, especially from public and private sector stakeholders within the domestic economy leads to inadequate statistical output, further leading to resource constraints and weak statistical

systems.[142]

It is in recognition of this widely accepted notion that the NSOs of most countries have Users Councils and undertake user satisfaction surveys to gauge and understand user demand, identify gaps and improve data quality.[143] In Pakistan, as discussed in preceding sections, Users Councils are inactive whereas user satisfaction surveys are irregular. At the same time, the demand for official statistics does not appear to be robust.

There are three main drivers of demand for official statistics: the public sector for policymaking; academia, think tanks and other research clusters; and the private sector, particularly trade organisations. In Pakistan's public sector, there is both weak demand and a weak environment of evidence-based policymaking, especially at the sub-national level, coupled with a range of constraints, such as inadequate financial resources, lack of research skills and ability to identify and approach information and evidence producers. This hinders public sector's demand and use of official statistics.[144]

The research clusters on the other hand, including universities and think tanks, are effected by the lack of independent research and are largely inspired by internal deliberations instead of evidence-based discourse. This is suppressing a culture of formal research and monitoring mechanisms. Moreover, the number of think tanks and policy research institutes is not commensurate with the complexity of policy needs. Most such organisations rely almost entirely on international donor funding rather than funding by domestic public and private sector that rarely commissions evidence-based policy research.[145]

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[140] Section 28, General Statistics (Reorganization) Act 2011 (as amended up to February 2022)
[141] L.Rivas & J. Crowley (2018)
[142] World Bank, (2022); G. Eele (n.d)
[143] UNECE (2018)
[144] K. Ahmed, et al (2021); Z. Haq, A. Hafeez, et al (2017); N. Haque, et al (2020)
[145] N. Haque, et al (2020); A. Naveed, A. Suleri (2022)

Box 7.1: NSS in the National Reform Agenda

From the perspective of NSS reforms, a review of literature on Pakistan's economy suggests that despite its widely accepted importance, the NSS is not only under researched but also not a part of policy reform discourse. Save for brief recommendations for autonomy of the NSO and the need for quarterly GDP,[1] the need for NSS reforms does not feature in the long list of economic policy and governance reforms proposed in a flurry of recent publications on Pakistan's economic reform agenda. This includes the Charters of Economy proposed by various policy research and advocacy organisations.[2]

Except for passing reference to evidence-based policymaking and restructuring towards greater autonomy of the then (federal) bureau of statistics in the country's Vision 2030 and Framework for Economic Growth, a reformed NSS that meets the requirements of a modern 21st century economy is not envisioned in the recent visionary frameworks.[3] Moreover, unlike various reform commissions and plans for taxation, agriculture, ease of doing business, government institutions, and economic governance, the NSS in Pakistan has not been comprehensively assessed for laying the foundations for continuous and system-wide improvements in the country's statistical system. To this end, the National Strategy for the Development of Statistics (NSDS) 2021-2030 prepared by the PBS, is a step in the right direction.

The NSDS 2021-2030 lays out a road map for the development of official statistics in the country including areas of coordination, capacity building of statistical practitioners in the NSS, and improvements in data collection. However, the NSDS does not spell out detailed assessments of the challenge of coordination, state of provincial bureaus of statistics, independence of NSO, legal framework, and administrative data.[4]

Undertaking detailed assessments of wide-ranging aspects of the NSS and reform proposals thereof are challenging tasks for an NSO that is mainly engaged in the collection of various types of statistics, census and surveys, and other ancillary core duties. In recognition of this, when India embarked on statistical reforms in 2000, it formed a National Statistical Commission with representation of key stakeholders across the country. Its terms of reference and final reports contained detailed assessments and recommendations on a host of areas relating to the NSS, including legislative framework, IT needs, statistical audit, administrative data systems, human resource development, and a subnational statistics system. It also included assessments and recommendations on specific data deficiencies across nine broad categories of statistics including corporate sector statistics, national accounts, and infrastructure statistics.[5]

Similarly, given the complex nature of administrative data across different layers of government and types of infrastructure, when the US undertook an assessment of its administrative data in 2016, it passed a law to form a Commission on Evidence-Based Policymaking. The commission had fifteen members, three each to be appointed by the president, speaker and minority leader of house of representatives, and majority and minority leader of senate. The commission's TORs included comprehensive study of data inventory, data infrastructure, database security, and statistical protocols, such as data sharing, institutionalization of randomized controlled trials, optimal institutional arrangement, linkages across various administrative data series, and integration thereof.[6]

[1] H. A. Pasha (2021); S. Sherani (2017)
[2] A. Zaidi (2015); The Pakistan Business Council (2020); N. U. Haque, S. Hussein (2022); PRIME Institute (2023); World Bank (2019); I. Husain (2018); V. Ahmed (2019); R. Amjad, S. J. Burki (2015)
[3] Planning Commission (2007); PIDE (2020); Ministry of Planning and Development
[4] PBS (2020).
[5] Ministry of Statistics and Programme Implementation, Government of India, (2001)
[6] US Congress

The state of trade organisations is also similar. Amid an absence of effective platforms for public-private dialogue, trade organisations in the country have weak organisational capacity and a culture of providing research-based policy advocacy and market complimenting services, such as estimating market size of the sector they represent and other sectoral data, or conducting various types of surveys of their members.[146] This also reflects in the fact that the private sector is not found to be sufficiently responsive to various surveys by PBS and PBoS amid an

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[146] State Bank of Pakistan (2022)

absence of effective legal support against non-response,[147] and that only a few trade organisations compile and report the monthly production data of their sector, which as discussed earlier is an integral part of high frequency economic indicators globally.[148]

7.5 Final Remarks

Official statistics serve as the foundation for evidence-based policymaking and informed decision making by policymakers, households and businesses. They also act as indicators of economic and social progress, enabling the assessment of policy interventions and their outcomes. In a developing economy like Pakistan, where the need for evidence-based reforms and policy interventions are imminent across various sectors, the timely availability of reliable statistics becomes even more crucial. However, amid changing economic structures, digitalization, and an increase in frequency of natural calamities, the current state of availability, timeliness and reliability of statistics on essential subjects does not bode well for reform outcomes, policy diagnoses, investment decisions by new entrants and prospective international investors, as well as tax collection efforts.

Despite the importance of statistics for policy reforms, a detailed diagnostic study on the challenges of the NSS and the statistical ecosystem has been absent in Pakistan. This contrasts with comprehensive studies on statistics undertaken in other countries, and also with domestic reform commissions on other areas; for example, several agriculture and tax reform commissions. The NSDS 2021-30 highlight important areas for improvement and presents a broad roadmap for development. However, it does not undertake detailed assessment of challenges in coordination, the role of provincial bureaus, involvement of the

private sector, a strategy to leverage administrative data, and creating a demand for statistics. Similarly, the discourse on NSS seems inconspicuous in Pakistan as gauged by a review of recent prominent books and other publications, the various Charters of Economy, and the Vision documents aimed at planning the country's future course of economic direction.

The output of Pakistan's NSS, which comprises official statistics, falls short in comparison to both best practices and peer economies in the region. Data on crucial subjects, such as quarterly and provincial GDP, unemployment, wages, and small and medium enterprises, is either absent, insufficient in frequency, or lacks comprehensive coverage. This can be attributed in part to the lack of vertical and horizontal coordination within the NSS. This hinders efforts to standardize, harmonize, and integrate the statistical system, leading to duplication and impeding the comparability of statistics. Furthermore, unlike international best practices and UNFPOS principles on independence, the country's NSO has mostly been placed as an attached department of different ministries throughout the country's history.

Globally, the administrative data, which offers relatively cost-effective, accurate, and detailed information at a micro level, is increasingly being adopted, along with its integration with surveys and censuses and other conventional statistical sources. However, in Pakistan, the utilization of administrative data remains limited. To capitalize on its benefits, it is imperative to enhance and integrate local registries and improve the CRVS system in the country.

Furthermore, beyond the NSS, there are deficiencies within the broader statistical ecosystem. The demand for data that can drive and steer the NSS, originating from its users which include the research community, private

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[147]PBS (2020); and National Accounts of Pakistan, 2015-2016 Base Year

[148] Example of trade organisations that self-report sectoral output data on monthly basis include: Pakistan Automotive Manufacturers Association, All Pakistan Textile Mills Association, All Pakistan Cement Manufacturers Association, Pakistan Sugar Mills Association, and Oil Companies Adviser Council.

and public organisations, academia, and the media, is limited. Similarly, despite the growing digitalization that has generated a multitude of data sets, the coordination between official and non-government/private statistical producers as well as the NSS and its users is found to be weak.

In light of these findings, a comprehensive assessment of the statistical ecosystem is necessary, encompassing a review of institutional, legal, policy, technology, and infrastructure gaps, along with unique aspects of key statistics. Such a study may necessitate the involvement of stakeholders from the entire statistical ecosystem and can serve as foundation for subsequent reforms in the ecosystem.

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