

How Can the Philippine Statistical System (PSS) Keep Up with the Fourth Industrial Revolution (FIRe) and Other Challenges: The PSS in the Wake of Emerging Data Revolution and Digitalization

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1. Introduction

- Governments need official statistics on a **regular** basis (e.g. CPI, National Accounts, poverty, unemployment) or for **ad hoc** needs.
- The Philippine Statistical System (PSS), the government-wide system of providing statistical information and services, consists of
 - **data producers** in govt, e.g., Philippine Statistics Authority (PSA), BSP, etc.
 - Philippine Statistical **Research and Training** Institute (PSRTI)
 - PSA Board (that provides policy direction)
- The PSS aims to have official statistics in the country
 - **fit for use**
 - follow international **statistical standards** and good practices;
 - **well-disseminated**, e.g. reports, meta-data , microdata, infographics.

1.1. Study Objectives and Policy Questions

In the wake of the many disruptions from various technologies of the Fourth Industrial Revolution (FIRe) and concomitant digitization and data revolution, the study aims to:

- ❑ examine how the PSS fares in the production and communication of statistics required for development planning,
- ❑ look into governance issues and factors (open data, data privacy), influencing the data ecosystem and the enabling environment of the PSS.

Policy Questions:

- ❑ How does PSS fare in meeting data for development needs, esp. for monitoring PDP and int'l dev't commitments (e.g. SDGs, ASEAN Community Blueprints)?
- ❑ What specific interventions, legislation and policies are needed to support and improve the PSS?

1.2. Study Methodology

- Desk review
 - RA 10625 and its IRR
 - PSA financial plans, PSS-wide statistics budget, PSA annual reports, PSA ISSP, PSDP
 - PARIS 21 documentations and discussion papers
 - Other literature
- Secondary data analysis
 - World Bank Statistical Capacity Index, Open Data Initiative and Other international assessments of PSS
 - Production of Key Indicators for Monitoring PDP, SDGs, etc.
 - Other PSS/PSA performance indicators
- Collection and analysis of new primary data (KIIs/FGDs)

2. Statistics Legislation

PSS structure mandated by RA 10625 (Philippine Statistical Act of 2013)

- ❑ **envisions PSS** to be more **responsive** to needs **for nat'l dev't planning**
- ❑ **established PSA** (to **streamline production and coordination of official statistics**) from the then NSCB, NSO, BAS & BLES; and **established PSRTI** from SRTC
- ❑ **defined PSS main actors** (NS, PSA, other data producers, data suppliers, PSA Board, PSRTI), their responsibilities and accountabilities

but the law has fallen short of supplying legal mandate on data sharing needed by PSA to examine data holdings of other government agencies particularly for national accounts compilation. Further, the law has been too-PSA-centric, and not quite provided for a framework for all data producers.

2.1. Statistical Coordination & Policy Formulation

1) RA 10625 mandates PSA to undertake **statistical coordination** to enable **effectiveness** and **efficiency** in the **production of official statistics**, and the PSA Board to promulgate **statistics policy**.

- PSA Board so far has averaged 13 resolutions per year

2) PSA develops and standardizes socio-economic **classifications, concepts and definitions**, and measurements used by entire PSS

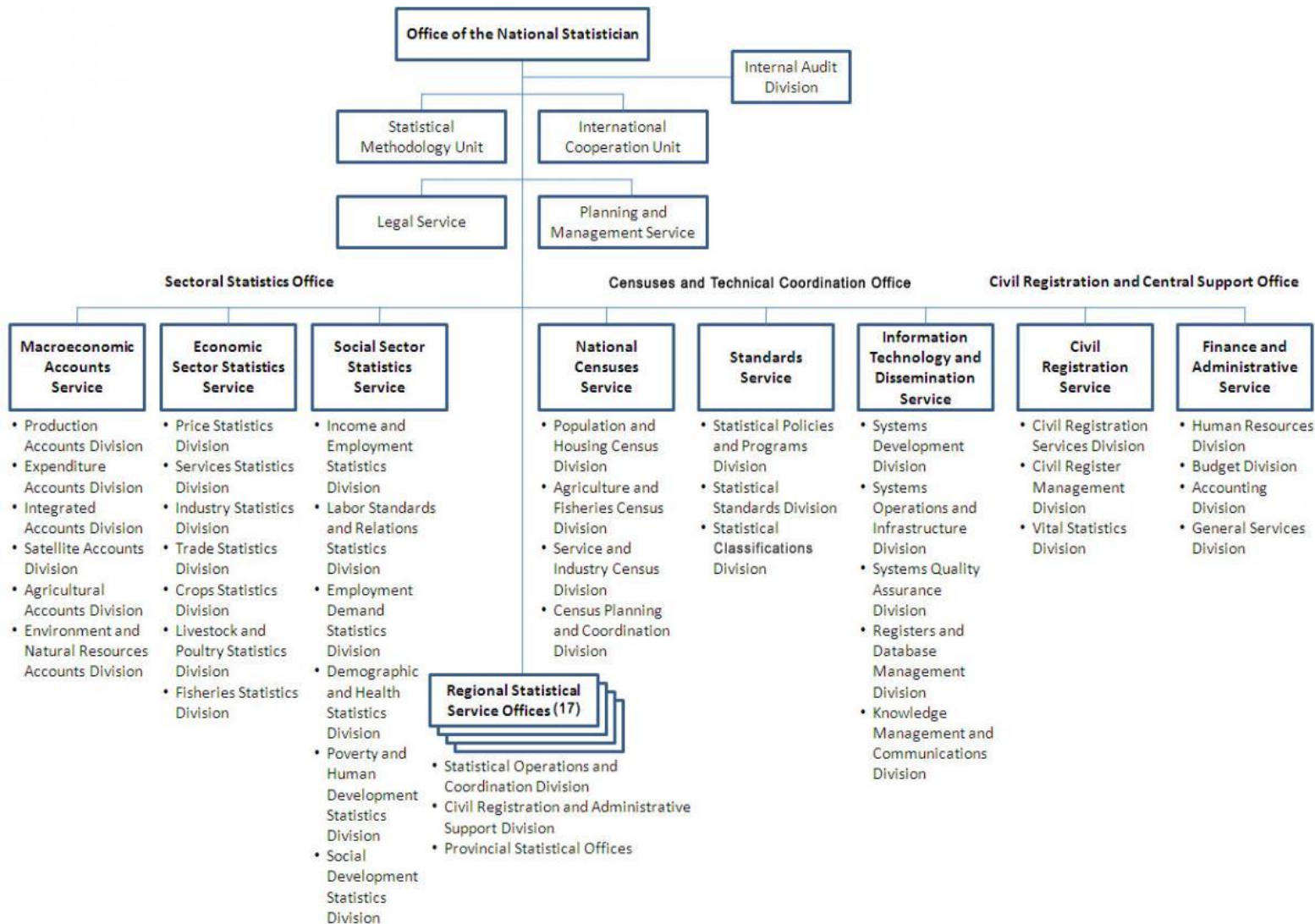
3) PSA Board can create or abolish **Inter-Agency Committees (IACs)** as appropriate

4) While RA 10625 highlights importance of **accurate and useful data**, but some matters were not covered in the law:

- equal access to data (partially covered by EO 2 s. 2016)
- periodicity of sample surveys, and releases (except conduct of CPH as covered in *Batas Pambansa Bilang 72*)
- definitions of statistical activities

2.2. Statistical Operations

PSA Organizational Chart



1) As regards PSA organization

- RA 10625 provides three offices (SSO, CTCO, CRCSO) to PSA; new law on the national ID (RA 11025) adds Office for PhilSys

- RA 10625 attaches PSA to NEDA, but given technical independence to conduct its statistical activities, incl. planning and operations

2.2. Statistical Operations

2) RA 10625 is too PSA/PSRTI-centric

3) PH not alone in having central statistical authority take **special functions** (i.e. CRS, PhilSys ID) **that are not part of statistics** per se

- ❑ While this gives clout to PSA in society as a relevant institution in public admin, but it can distract attention from core function on statistics production and statistics development even with extra responsibilities with **passage of CBMS law**
- ❑ Experts suggest studying whether PhilSys (and even CRS) should continue in PSA given risks that PhilSys could be hacked: if and when this happens, public trust in PSA can erode

2.3. Technical Independence

- 1) Acc to RA 10625, **integrity** as key characteristic needed by PSS
 - PSS has had a tradition and reputation of professionalism
- 2) Technical independence is vital (for **credibility of**) official **statistics**
 - Suggestion to look at experience of other countries
 - Thailand's NSO attached to Ministry of ICT
 - Statistics Canada not attached to any specific Ministry; minister rotated regularly
- 3) Valdepeñas committee suggested that a **Statistics Policy Council** be established (in place of NSCB) consisting of eminent **experts**, but RA10625 went for inter-agency board .
 - PSA board to “provide technical assistance and exercise supervision over major government statistical activities”. This task threatens technical independence and assumes technical competence from PSA board members. This should be removed.

2.4. National Statistician

- 1) NS is COO of PSA, and PH rep in intl stat forums : PH's main statistical authority and **symbol for professionalism integrity, and professional independence** on statistical matters
- 2) Law explicitly defines **qualifications of NS**: (though law is silent about removal from office)
- 3) **Screening committee** for NS: NEDA, BSP, UPSS, UP InStat, PSAI
- 4) RA 10625 provides a rank of Usec to NS who “should be assisted by 3 DNSs (Asec rank) for (i) Statistics Production, (ii) Coordination and Standards and (iii) Civil Registration and Administrative Affairs. Fourth DNS for PHilsys also due to law on national ID

2.5. Statistical Research and Training

- 1) RA 10625 **transformed SRTC into PSRTI** → to develop research programs on statistical methods; promote collaborations with academia, data producers and users, conduct staff training; or offer scholarships
- 2) PSRTI headed by Exec Dir. and given policy guidance by Governing Board
 - ▣ PSRTI Governing Board is chaired by PSA Board Chairperson (Sec for SocioEcon Planning) with the ff. as members: the Dean of UPSS, the Executive Director of the PSSC, NEDA rep and the Executive Director of the PSRTI, and possibly two appointive members from the private sector .
- 3) The idea to reengineer former SRTC into PSRTI was meant to staff it with in-house **fellows** similar to PIDS and UN SIAP. DBM should recognize importance of **strengthening PSRTI** as a means of developing entire PSS

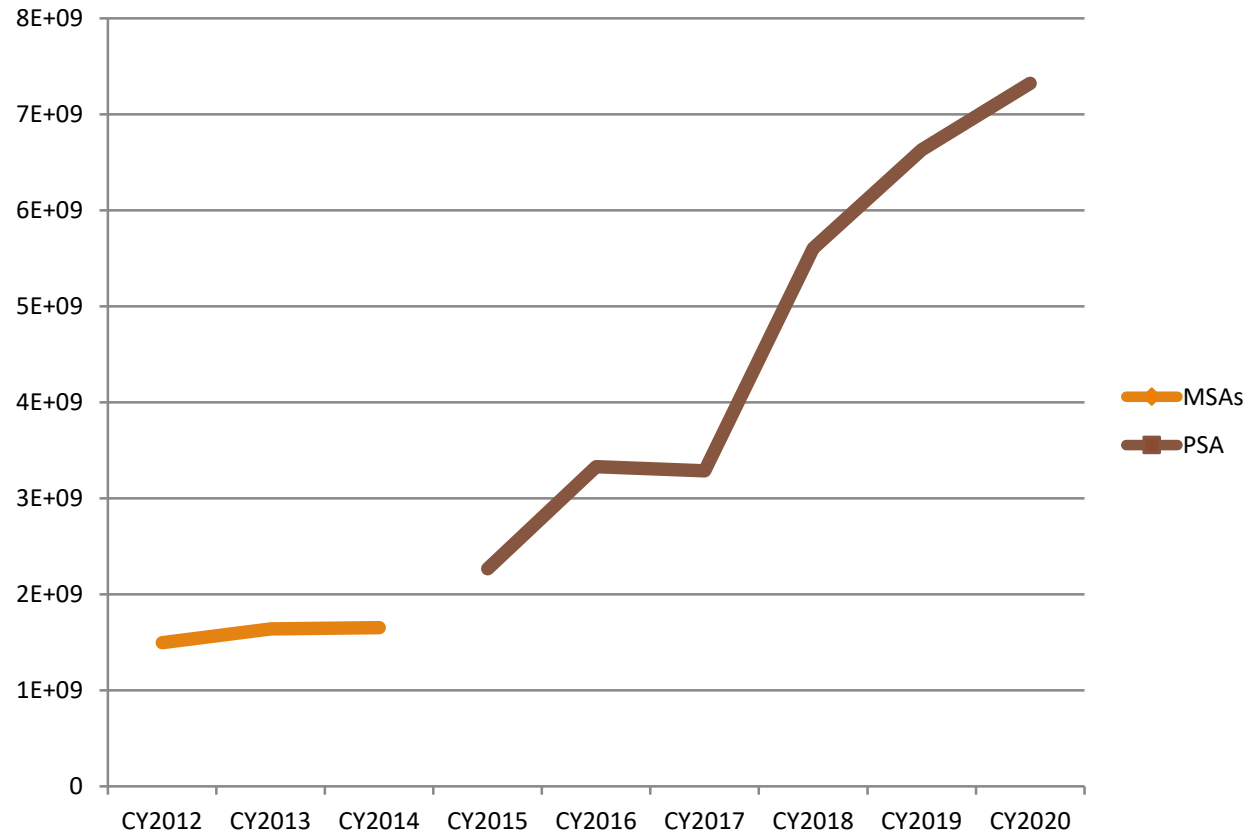
2.5. Statistical Research and Training

- 4) The draft law prepared by Valdepeñas committee in 2007 strengthens the idea on **cross-posting** statistics personnel across various NGAs and LGUs by also assuring basic statistical competence through PSRTI certification (which is not discussed in IRRs of RA 10625).
- 5) PSS can invest in making more use of **admin-based data** (and promoting DQAFs) and **big data**, especially for addressing some data gaps in official statistics, reducing cost of data collection and response burden

3. Budgetary and Human Resources

- **Official statistics are public goods**, freely accessible to all interested actors (as well as inexhaustible) for a net (economic or welfare) gain.
 - Public goods subject to market failure and free riders (i.e., there is likely to be an under-provision)
- **NSSs are supposed to be largely financed by national governments**, with the development community providing occasional support.
- In PH, financing of stat activities in PSS is primarily sourced from GAA
 - RA 10625 does not mention measures for balancing cost and usefulness of statistics. Implicit assumptions are that PSA and other data producers would be given appropriate budgetary resources by government, and developments in statistical methodologies can assure data quality.

3.1. Statistics Budget



Budget of PSA vis a vis Consolidated Budgets of Former Major Statistical Agencies (MSAs) NSCB, NSO, BAS, and BLES: 2012-2020

1) While RA 10625 has not automatically **guaranteed statistics budgets**, the PSA has so far managed to regularly conduct many of its major statistical activities

2) Former NS Bersales reported that 2020 **PSA budget increased** by 342.69% from consolidated budget of PhP 1.65B of the then MSAs in 2014

3) **Medium Term Expenditure Framework (MTEF)** study for PSA suggests total budget stagnant at 0.0148% of GDP in 2008-2017

- After adjusting for variation in conduct of periodic censuses and surveys over the years, total budget for 2015-2017 net of allocation for special surveys and activities is even lower than in previous years when expressed as a percentage of GDP

3.1. Statistics Budget

- 4) Budget allocation for some surveys (e.g., APIS) exceed budget requirement but difference is used for activities which are underfunded (e.g., LFS). While **PSA's total budget allocation** is not necessarily in excess of requirements, the allocation across activities is **not aligned with needs of specific programs and projects** resulting in lack of transparency and inefficiency (Manasan 2017)
- 5) MTEF study should help PSA develop a strategy for obtaining right resources, particularly for economic managers to accept PSA's MTEP.
- 6) Even for PSRTI, regular budgets remain meager at not over PhP 40M in recent years, although these nominal budgets have more than doubled from a decade ago (Php 13-16 M in 2008-2010).

3.2. Statistical Human Resources

- 1) During period 2012-2014, PH govt had a **decline in number of statisticians**, mainly attributed to reorganization of PSS
- 2) In CRESS 2016, responding agencies reported only **12.2% of total** number of **govt HR** in these agencies are **doing statistics work**
- 3) As of 2018, PSA has **filled up only 85% of its 2799 plantilla positions**. Three years prior, it only had 1,943 positions filled (69.4% of positions)

ASEAN member state	Statisticians at Statistics Authority per 100,000 people	Budget per statistician (in US \$)
Philippines (2018)	2.2	25,900
Malaysia (2018)	8.9	14,500
Singapore (2010)	9.8	
Viet Nam (2019)	5.5	
Indonesia (2019)	6.4	35,900

In addition, Viet Nam GSO has more than a dozen of its upper management having Ph.D.'s, in contrast to only three for the PSA (1 Ph.D. in Economics, 2 Ph.D. in Statistics)

3.2. Statistical Human Resources

- 4) PSDP 2018-2023 presses for **greater statistical capacity development** through technical, professional, and career development (PSA 2018)
- PSDP has a goal of increasing number of staff with **graduate degrees**
 - PSA to increase number of positions by another thousand for the development and maintenance of the Philsys.
 - It is likely that **outcomes** required **from** capacity development activities are **unclear**, particularly to what extent these activities could be used to influence decisions and changes for improving overall data quality and trust in data
- 5) PSA currently structured in a traditional hierarchy based on product and services – staff own their processes, and undertake their own design methodology, making people tend to work in ‘silos’

3.2. Statistical Human Resources

- 6) While PSRTI aims to work on improving the statistical capacity across the country, it is unclear to what extent it is currently working to **improve capacities among LGUs**, especially given new CBMS law
- 7) The PSS, particularly the PSA will need to be strategic in developing **lifelong learning systems** for all, including using MOOCs, preferably developed by the PSRTI
- 8) Provision in Statistics Law for PSA to cross-post staff to other agencies and LGUs still not implemented
- 9) **Culture and work environment** in PSA and PSRTI need to change in such a manner that newly acquired skills will be welcome and put to use

3.3. ICT Resources

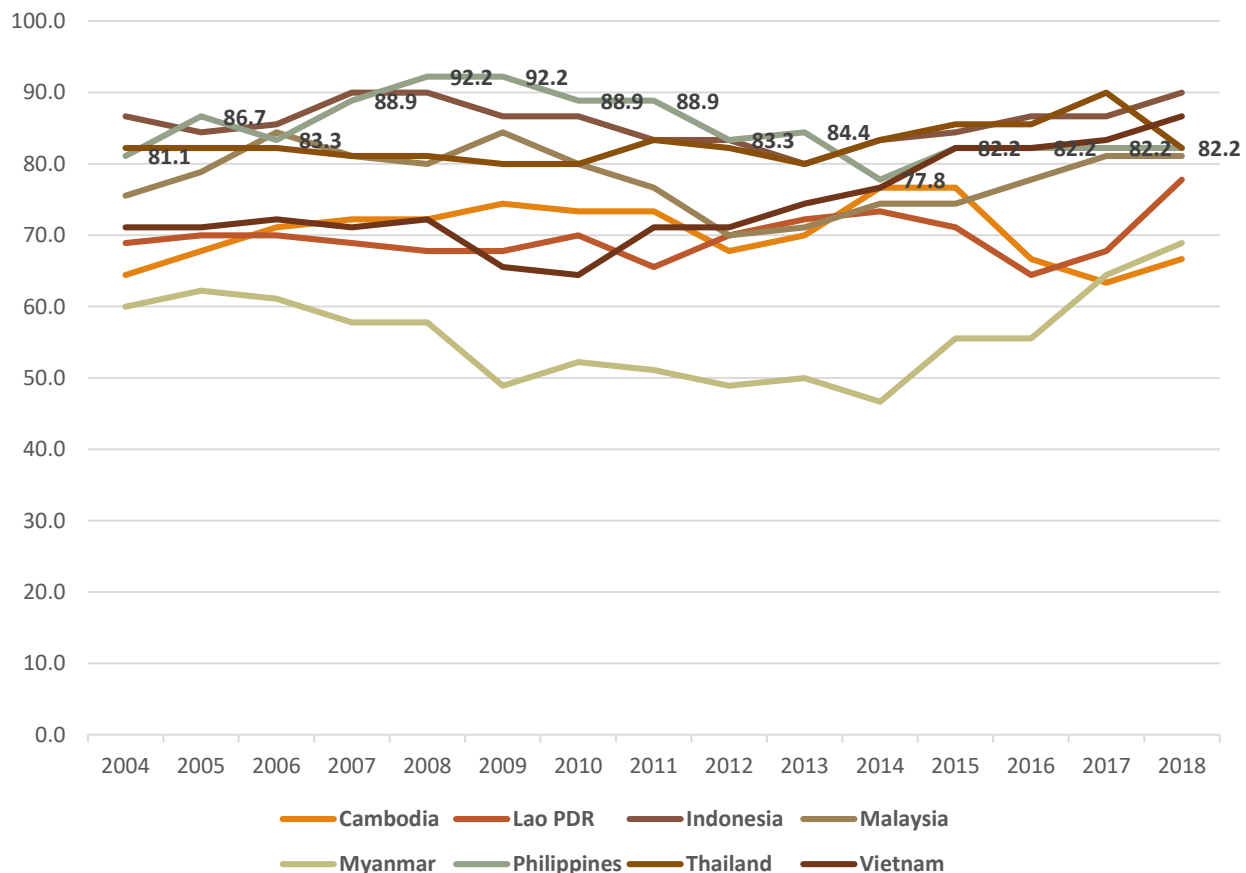
- 1) If PSA and PSRTI will engage in big data analytics, it needs **better ICT infrastructure** and **ample committed bandwidth** to download big data sources, and to catalog, organize, and process data in a timely manner.
- 2) A serious problem faced by PSS is the extremely **limited budget** it has worked with, **for maintenance of statistical infrastructure**, and for **modernization of ICT systems** used in statistical production process
- 3) Although PSA **ISSP 2018-2020** offers a **comprehensive** view of their ICT **but** DICT and DBM expect public orgs to **prioritize** internal and cross-agency ICT **projects**, as well as ICT **investments**
- 4) The DICT suggests that ISSPs account for a **three year aging of ICT equipment**, but PSA inventory of ICT equipment suggests that PSA capital outlay expenditures have not kept up with this suggestion

4. Statistical Products and Services

- ❑ **PSS** is generally regarded to be at a **similar stage of statistics development** as the **NSSs** of several co-member states of ASEAN, viz., **ID, MY** and **SG**
- ❑ Performance of PSS may be seen using **international assessments**
- ❑ Important to also look at **assessments of local experts on data quality and dissemination** (since intl assessments do not consider institutional/organizational aspects in a NSS such as resource availability and governance that local experts are aware of)

4.1. International Assessments of the PSS

Overall WB Statistical Capacity Index (SCI) Scores of ASEAN Member States: 2004-2018



1) As regards WB SCI, from being top among ASEAN member states in 2008-2012, PH slumped in 2014, bested by ID and TH. PH improved in 2015 but outperformed (barely) by VN at 3rd place.

- ❑ Issues about base years for national accounts and CPI, import and export price indices, and DepEd data
- ❑ Manasan (2017) attributes **weakening performance** of PSS compared to other ASEAN member states in SCI to be **suggestive of persistent data quality issues, and data gaps** that are largely a result of **lack of sufficient monetary & human resources** given to the PSS

4.1. International Assessments of the PSS

2) Acc. to Open Data Inventory of Open Data Watch, PH is second to SG in ASEAN and ranked 41st globally among 178 countries assessed in 2018.

ASEAN member state	Overall Rank	Overall ODIN Score	Coverage Score	Openness Score	Data Categories		
					Social Statistics	Economic & Financial Statistics	Environmental Statistics
Cambodia	157	26	24	28	38	18	20
Indonesia	49	56	49	62	51	62	55
Lao PDR	162	23	27	20	22	21	27
Malaysia	69	50	48	52	41	64	47
Myanmar	78	47	43	51	46	61	35
Philippines	41	58	50	65	54	64	56
Singapore	1	86	67	100	81	93	82
Thailand	125	36	43	29	31	44	33
Vietnam	106	39	36	42	39	45	33

Source: Open Data Inventory, Open Data Watch (<http://www.opendatawatch.com>)

4.2. Stakeholders Observations about the PSS

Proportion of Stakeholders Interviewed (in %) that Provided a Favorable (1 or 2), Neutral (3) and Unfavorable Rating (4 or 5) by Domain of Official Statistics

Domain	Favorable	Neutral	Unfavorable
Agricultural Statistics	7.1	42.9	50.0
Fishery Statistics	8.3	33.3	58.3
Banking, Finance and Monetary Statistics	69.2	7.7	23.1
Statistics on Fiscal Sector	62.5	12.5	25.0
National Income Accounts	60.0	10.0	30.0
Business and Industry Statistics	58.3	25.0	16.7
Consumer Price Index (CPI) and Other Price Statistics	58.3	25.0	16.7
Labor and Employment Statistics	60.0	33.3	6.7
Energy Statistics	12.5	62.5	25.0
Education Statistics	14.3	42.9	42.9
Environmental Statistics	12.5	50.0	37.5
Gender/Time Use Statistics	27.3	45.5	27.3
Health Statistics	27.3	27.3	45.5
Housing Statistics	28.6	0.0	71.4
Income, Consumption and Poverty Statistics	64.3	0.0	35.7
Informal Sector Statistics	11.1	44.4	44.4
Science/ ICT/ Innovation / Digital Economy Statistics	27.3	18.2	54.5
Trade Statistics	18.2	45.5	36.4
Statistics on Justice and Security	12.5	12.5	75.0
Population and Migration Statistics	42.9	35.7	21.4
Tourism Statistics	13.3	53.3	33.3
Transport Statistics	9.1	27.3	63.6

Ratings of study interviewees varied

- Generally favorable ratings for statistics on (a) banking and finance, (b) income, consumption, and poverty statistics, (c) fiscal sector and (d) national income
- Unfavorable for statistics on (a) justice and security, (b) human settlements and housing, (c) transportation, (d) fishery, (e) science, ICT and innovation, and (f) agriculture

4.2.1. Relevance

- ❑ SDGs put forward an ambitious agenda to leave no one behind; yet many of **official statistics** are **not of sufficient granularity**.
- ❑ **Official statistics** often **hide living conditions of special segments** of society, and **do not show reasons for emerging conditions**.
 - ❑ hiddenness in data and statistics is largely because surveys can only give reliable big pictures; hiddenness masks extent of deprivation and disparities they face, and further exacerbates their vulnerabilities
 - ❑ One expert interviewed pointed to emerging trends on vital statistics, particularly that half (53%) of births in PH as of 2017 are outside of wedlock (PSA 2018). Currently no behavioral insights on why this is occurring

4.2.2. Accuracy

- ❑ Several FGD participants lament that the survey **designs**, particularly those pertaining to **establishment surveys, and agricultural surveys have not improved**, if not even deteriorated; master sample of hh surveys good
- ❑ **Agriculture survey system should adopt a master sample approach**, only it will not be one but many, possibly one each for annual crops, perennial crops, livestock, poultry, fisheries, and aquaculture; with these connected via a multifaceted area frame. Considering most of the poor depend on agri sector, and that policy-makers make critical decisions, such as the importance of rice, many express concern on the **poor quality of agri statistics**
- ❑ PSA plans to redesign many of its agricultural surveys in the next few years to reflect an updated agricultural sampling frame based on 2012 CAF

4.2.3. Timeliness

- ❑ RA 10625 mentions **timeliness** as a priority in its statistical system but experts wonder why in a digital age, timeliness in the PSS has not improved
 - Time lags of some PSA surveys are relatively long, such as the ASPBI.
 - According to the WB's SCI, the periodicity of PH stats has declined since 2011
 - RA 10625 mentions nothing about periodicity of censuses, surveys, and releases nor are there specific policies about periodicity other than for designated statistics → currently no accountabilities regarding good and not-so-good practices on timeliness
 - Many suggest that earlier releases of natl accounts, agri production and farmgate prices will not necessarily make policy makers come up with more timely interventions. Experts wonder whether the earlier releases are further sacrificing data quality given the likely low response rates from establishment and agricultural surveys, compared to previous releases.

4.2.4. Accessibility

- **Generally positive view** about the shift of the PSA to make **microdata** from household surveys **freely accessible** by the public
 - Many official statistics and microdata are available online free of charge, but access is often cumbersome. **Microdata of surveys** made available by the PSA in its PSADA **does not contain survey design variables** that are vitally needed for estimation of standard errors of parameter estimates from survey data (brgy code data not available from datasets in PSADA and OpenStat)
 - PSA data dissemination platforms are available for the PDP ([StatDev](#)) and the SDGs ([SDG Watch](#)) for monitoring SDGs, but none on ASEAN Community
 - But, several experts expressed concern that the PSA **data platforms are very difficult to access** outside of regular office hours

4.2.5. Interpretability

- Experts expressed strong concerns about the PSA decision to change TC on Poverty Statistics to an IAC, especially as subject matter has technical issues to deal with aside from communication of poverty statistics into interpretable inputs for policy action
 - While several exercises on generating the MPI were presented to IAC on Poverty Statistics, but MPI release of PSA lacked consultation
 - Many issues hound the MPI: choice of indicators, weights
- Need to update nat'l poverty line used by PSA since methodology used was approved a decade ago; this poverty line needs updating since consumptions and lifestyles change across time especially when a country undergoes dev't

Income Poverty Headcount Rates (in %) in Philippines using International and National Poverty Lines: 2006-2015

Year	International Poverty Line		National Poverty Line
	\$1.90 a day	\$3.20 a day	
2015	6.15	26.04	21.6
2012	10.51	33.55	25.2
2009	10.87	34.24	26.3
2006	14.54	38.42	26.6

Source: World Bank Povcalnet; PSAs

4.2.6. Coherence

- ❑ Many top-of-mind official statistics are generally viewed by stakeholders as being coherent.
- ❑ PSA issues press releases to correct and revise statistics, but no existing guidelines and statistical policies for their timing
- ❑ Because of adherence to statistical standards, the official statistics in the country are generally comparable over time, but weaknesses still prevail

5. Summary and Ways Forward

- 1) **Benefits and harms that CRS and PhilSys do in statistics-related activities need re-examination** on whether these should stay with PSA
- 2) PSA **competence** in statistics **has weakened**, as evidenced from int'l assessments, (e.g. SCI) as well as from failure to release results of recent CAF. The conversion of TCs into IACs further weakened outside expert inputs. The PSA should have remedial actions on these matters.
- 3) Current **budgets** of PSA have **not been fully utilized**, with **staff positions not being filled**.
- 4) Attention should also be given to be **improving survey designs**, esp. of establishment and agri surveys, **integrating traditional data sources with other sources** (LGU data, big data and remote sensing).

5. Summary and Ways Forward

4) Many features of RA 10625 have yet to be implemented to improve **quality** of statistics. DQAFs need to be mainstreamed across PSS.

5) Plan for methodological improvement and capacity devt should be more strategic (incl. blending innovative data sources with traditional data sources); **skills upgrading** should focus on **tech & soft-skills** devt.

6) The PSRTI do more to address needed future skills in PSS. DBM should provide items to **PSRTI** on **fellows** as provided for in the law.

7) **Cross posting** to other agencies and to LGUs should commence.

8) Data dissemination and communication need improvement.

9) Better budgetary support, and improved **statistical infrastructure** (incl. systems for cyber-security, and knowledgeable staff on ICT) are essential.

5. Summary and Ways Forward

10) Several **amendments to RA 10625** are suggested:

- ❑ describe processes on products and services across data producers in the PSS,
- ❑ require govt to assure budgets for designated statistics.
- ❑ mention *equal access to data* and ensure independence of statistics
- ❑ Revise composition of the PSA Board
 - Option 1: committee of experts
 - Option 2: reduce number of members in PSA board, and remove PSA Board responsibility to “provide technical assistance and exercise supervision over major government statistical activities”
- ❑ revise PSRTI Governing Board composition
- ❑ require all data producers to publish and adhere to an Advance Release Calendar

5. Summary and Ways Forward

11) The PSS, particularly the PSA and the PSRTI, are in an emerging data landscape in the wake of the data revolution and emerging digitalization. Official statistics are about credibility and integrity.

Building trust is crucial.

- ❑ Issues of trust vs DOH data on COVID-19 infections
- ❑ Unfounded claims of inaccuracy of unemployment rates from the Q1 2020 LFS conducted by PSA


12) **Govt needs to invest in statistics, statisticians, and statistical organizations** to ensure that the official stats continue to be viewed well and will fare even much better than its current standing



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