



## **TECHNICAL NOTES**

### **2021 Annual Survey of Philippine Business and Industry**

#### **I. Introduction**

##### **I.1. Background of the Survey**

The Annual Survey of Philippine Business and Industry (ASPBI), one of the designated statistical activities of the Philippine Statistics Authority (PSA), generates essential statistics for economic planning and analysis. It is specifically designed to collect and generate information on the levels, structure, performance, and trends of economic activities of the formal sector of the country's economy.

The 2021 ASPBI is the 49th in the series of annual surveys of establishments in the country. It was conducted nationwide in April 2022 with 2021 as reference period. In this round of the ASPBI, the 2021 Survey on Information and Communications (SICT) is a rider to this survey.

The conduct of the 2021 ASPBI is authorized under Republic Act No. 10625, known as the Philippine Statistical Act of 2013, which mandates the PSA to collect, compile, analyze, and publish statistical information relating to the country's economic condition.

##### **I.2. Objectives**

The 2021 ASPBI aims to collect and generate information on the levels, structure, performance, and trends of economic activities of the formal sector of the economy for the year 2021. Specifically, the 2021 ASPBI aims to:

1. collect and generate detailed information on employment, revenue, expense, inventories, tangible fixed assets, intangible assets, and total assets of the establishments,
2. generate estimates for other economic indicators such as value added, average compensation, and other indicators which are necessary to evaluate the performance of industries at the national and regional levels,
3. generate statistics for micro, small, and medium establishments (MSME) where identification of MSME is based on total employment, and
4. gather pertinent information for the updating of the sampling frame of establishment-based surveys.

##### **I.3. Historical Information on the Survey**

Annual surveys are usually conducted a year after the reference year. Except for the survey conducted in 2002, the year in the survey title refers to the reference year. The following are the annual surveys conducted:

1. 1956 Annual Survey of Manufactures (ASM) – First annual survey of establishments undertaken since the Bureau of Census and Statistics (BCS) was established in 1940. It was conducted jointly by the National Economic Council (now the National Economic and Development Authority or NEDA) and the BCS with technical assistance provided by the International Cooperation Administration (ICA) of the United States (US). The ICA is the predecessor of the now US Agency for International Development (USAID).
2. 1957 ASM – This was also conducted jointly by NEDA and BCS.
3. 1958 ASM – This survey was integrated as a regular activity of the BCS.
4. 1959, 1960, 1962, 1963, 1964, 1965, and 1966 ASM – Annual Surveys of Manufactures were conducted for these years.
5. 1965 Annual Survey of Wholesale and Retail Trade (ASWRT) was conducted for the City of Manila only. The 1966 ASWRT was expanded to cover both the City of Manila and suburbs, but there were no available publications.
6. 1968 and 1969 – The ASM and the ASWRT were conducted.
7. The 1968 ASWRT was the start of the annual series for wholesale and retail trade at the national level.
8. 1970 and 1971 Annual Survey of Establishments (ASE) – The scope of the annual survey was expanded to include the business, utilities, and services sectors, aside from manufacturing, and wholesale and retail trade.
9. 1973 and 1974 ASE – The coverage of the 1971 ASE was expanded to include Mining and Quarrying; Construction; and Transportation, Communication and Storage; Electricity, Gas, and Water; Financing; Insurance; Real Estate and Business Services were included for the first time in the 1974 ASE.
10. 1976 ASE – The annual survey was conducted for all sectors, which was also the start of the Annual Surveys of Agriculture, Forestry and Hunting, and Fishing.
11. 1977, 1979, 1980, 1981, 1982, 1984, 1985, 1986, 1987, 1989, 1990, 1991, 1992, 1993 and 1995 – Annual surveys for all sectors were conducted for these years.
12. 1996 and 1997 ASE – Only one survey was conducted for all sectors to collect data for two years, 1996 and 1997.
13. 1998 ASE – Annual survey was conducted for all sectors.
14. 2000 – No annual survey was conducted for this reference year.
15. 2001 – The title of the survey for this reference year was renamed as 2002 Annual Survey of Philippine Business and Industry (ASPBI). This was based on NSCB Resolution No.3 Series of 2000 which approved the change in the title of Census of Establishments to 2000 Census of Philippine Business and Industry (CPBI) and changed the title to the year when the census was undertaken. Thus, the title of the ASE was changed accordingly to ASPBI.
16. 2002 – No annual survey was undertaken for this reference year.
17. 2003 ASPBI – Starting with the 2003 ASPBI, the year in the survey title referred again to the reference year. The survey was conducted in 2004.
18. 2004 – No annual survey was undertaken for this reference year.
19. 2005 ASPBI – An annual survey was conducted in 2006 instead of the originally planned 2005 Census of Philippine Business and Industry.
20. 2007 and 2011 – No annual survey was undertaken for these reference years.

21. 2009, 2010, 2013, 2014, 2015, 2016, 2017, 2019 and 2020 ASPBI – The surveys were conducted for these reference years.

An economic census of establishments was undertaken for reference years 1903, 1918, 1939, 1948, 1961, 1967, 1972, 1975, 1978, 1983, 1988, 1994, 1999, 2006, 2012, and 2018. Except for 1999, the title of the census refers to the year the census was conducted. For these years, no annual surveys were undertaken.

#### I.4. Scope and Coverage

The 2021 ASPBI covered establishments engaged in 18 sections classified according to the 2009 Philippine Standard Industrial Classification (PSIC), namely:

1. Agriculture, Forestry, and Fishing (A)
2. Mining and Quarrying (B)
3. Manufacturing (C)
4. Electricity, Gas, Steam, and Air Conditioning Supply (D)
5. Water Supply; Sewerage, Waste Management, and Remediation Activities (E)
6. Construction (F)
7. Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles (G)
8. Transportation and Storage (H)
9. Accommodation and Food Service Activities (I)
10. Information and Communication (J)
11. Financial and Insurance Activities (K)
12. Real Estate Activities (L)
13. Professional, Scientific, and Technical Activities (M)
14. Administrative and Support Service Activities (N)
15. Education (P)
16. Human Health and Social Work Activities (Q)
17. Arts, Entertainment, and Recreation (R)
18. Other Service Activities (S)

The survey was confined to the formal sector of the economy, which consists of the following:

1. Corporations and partnership, regardless of employment size,
2. Cooperatives and foundations, regardless of employment size,
3. Single proprietorships with branches, regardless of employment size, and
4. Single proprietorship with no branches but with total employment (TE) of 10 and over.

Hence, the 2021 ASPBI covered all establishments regardless of employment size, except those establishments with:

1. Legal Organization of single proprietorship (LO=1),
2. Economic Organization of single establishment (EO=1), and
3. TE of less than 10.

## II. Data Collection

### II.1. Data Collection

The survey was conducted nationwide in 2022 with 2021 as the reference period, except for employment where the reference period is as of 15 November 2021.

Distribution and collection of 2021 ASPBI questionnaires were done according to a timetable set. Distribution was done in April 2022 through personal visits by PSA field staff to the sample establishments located in the provinces and cities nationwide. The collection of accomplished questionnaires started one week after distribution.

### II.2. Survey Instruments

The 2021 ASPBI utilized seven forms of questionnaires which captured data of sample establishments engaged in the 18 sections of the economy as defined in the 2009 PSIC. The seven forms of questionnaires are presented in the table below:

ASPBI Form No.	Form Title
1	Agriculture and Fishing
2	Mining Quarrying Manufacturing
3	Electricity, Gas, Steam and Air Conditioning Supply Water Supply; Sewerage, Waste Management and Remediation Activities
4	Construction
5	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles
6	Financial and Insurance Activities
7	Business and Services

Each form of the survey questionnaire is available in three options. These are the following:

1. online questionnaire which can be accessed at <https://aspbi.psa.gov.ph>,
2. electronic copy of the questionnaire, either in portable document format (.pdf) or Excel (.xlsx) file format, and
3. printed copy of the self-administered questionnaire.

The sample establishment can choose from these options in recording the information for the data items in the survey questionnaire.

### II.3. Data Items

The survey collected data on employment, revenue, expense, sales from e-commerce transactions, capital expenditure, book value of fixed tangible and intangible assets, average capacity utilization rate, and inventory.

### II.4. Data Processing

To ensure quality of survey reports, several levels of validation following guidelines set were done during the processing phase of the survey operation.

Computer systems were also developed and used to facilitate the smooth conduct and monitoring of the survey operation. These were the Monitoring and Tracking System (MTS) and the Establishment Data Management System (EDMS) which are online systems. The MTS was used to monitor the real-time progress of the survey operation, which included distribution, collection, transmittal, manual processing, and data processing of questionnaires, among others. On the other hand, the EDMS was used in the processing of data and tabulation of survey results.

## III. Methodology

### III.1. Sampling Frame

The sampling frame for the 2021 ASPBI was extracted from the preliminary 2021 List of Establishments (LE) updated as of 24 January 2022. This frame was used to draw the sample establishments for the survey. The preliminary 2021 LE showed that there were 1,079,093 establishments that were in operation in the country of which 349,071 establishments comprised the sampling frame or the establishments that are within the scope and coverage of the 2021 ASPBI.

### III.2. Sample Selection Procedure

The 2021 ASPBI uses a stratified systematic sampling design with 3-digit or 5-digit PSIC as the first stratification variable, depending on the section and total employment, which is classified into Micro, Small, Medium establishments (MSME), as the second stratification variable.

Stratified systematic sampling is a process of dividing the population into homogeneous groups, called strata, and then selecting independent samples in each stratum systematically. This method ensures that all important subgroups of the population are represented in the sample and increases the precision of “overall” survey estimates.

### Domain

The geographic domain of the 2021 ASPBI is the region. The industry domain/stratum is a 3-digit or 5-digit industry classification, and the employment domain/stratum is the MSME classification.

## Unit of Enumeration

The unit of enumeration for the 2021 ASPBI is the establishment.

### III.3. Estimation Procedure

#### III.3.1. Weights Computation

##### Base Weight

The base weight is the inverse of the probability of selection. For the ASPBI, the base weight for each domain is given by:

$$w_{hk} = \frac{N_h}{n_h}$$

where  $w_{hk}$  is the base weight of the  $k$ -th establishment in the  $h$ -th stratum,  $N_h$  is the total number of establishments in the  $h$ -th stratum,  $n_h$  is the total number of sample establishments in the  $h$ -th stratum, and  $h$  refers to the industry-employment stratum.

##### Adjustment Factor

To take into account the non-responding sample establishments, the adjustment factor by region and industry section is as follows:

$$A_h = \frac{\sum_{k=1}^{n_h} (w_{hk} X_{1hk})}{\sum_{k=1}^{n'_h} (w_{hk} X_{2hk})}$$

where  $A_h$  refers to the adjustment factor in the  $h$ -th stratum,  $w_{hk}$  is the base weight of the  $k$ -th establishment in the  $h$ -th stratum,  $X_{1hk}$  is the eligibility status of the  $k$ -th sample establishment in the  $h$ -th stratum (i.e., 1 if eligible, 0 otherwise),  $X_{2hk}$  is the responding status of the  $k$ -th sample establishment in the  $h$ -th stratum,  $n_h$  is the total number of sample establishments in the  $h$ -th stratum, and  $n'_h$  is the total number of eligible sample establishments in the  $h$ -th stratum, that is,

$$n_h = \sum_{k=1}^{n_h} X_{1hk}.$$

### Final Weight

The final weight is the product of the base weight and adjustment factor. That is,

$$w_{fhk} = A_{hk} w_{hk}$$

where  $w_{fhk}$  is the final weight of the  $k$ -th establishment in the  $h$ -th stratum,  $A_{hk}$  is the adjustment factor of the  $k$ -th establishment in the  $h$ -th stratum, and  $w_{hk}$  is the base weight of the  $k$ -th establishment in the  $h$ -th stratum.

### III.3.2. Estimation of Total

#### Total by Industry-Employment Stratum (h)

The estimator for the total of a characteristic in each industry-employment stratum (h) in a region (geographic domain) is given by:

$$\hat{Y} = \sum_{k=1}^{n''_h} (w_{fhk} y_{hk})$$

where  $y_{hk}$  is the value of the  $k$ -th establishment in the  $h$ -th stratum,  $w_{fhk}$  is the final weight of the  $k$ -th establishment in the  $h$ -th stratum, and  $n''_h$  is the total number of establishments in the  $h$ -th stratum, that is,

$$n''_h = \sum_{k=1}^{n' h} X_{2hk}.$$

#### Total by Industry Stratum per Region

The estimator for the total of a characteristic in each industry stratum in a region is given by:

$$\hat{Y}_{ir} = \sum_{h=1}^{n_i} \hat{Y}_h$$

where  $r$  is the subscript for geographic domain,  $h_i$  is the number of employment strata for the  $i$ -th industry stratum, and  $n_i$  is the number of employment stratum for the  $i$ -th industry stratum.

#### Total by Employment Stratum per Region

The estimator for the total of a characteristic in each employment stratum for the regional domain is given by:

$$\hat{Y}_{jr} = \sum_{h=1}^{h_j} \sum_{k=1}^{n_j} (w_{fhk} y_{hk})$$

where  $h_j$  is the number of industry strata for the employment stratum  $j$ ,  $r$  is the subscript for geographic domain, and  $n_j$  is the number of responding sample establishments in the  $j$ -th employment stratum.

#### Total by Geographic Domain

The estimator for the total of a characteristic in each geographic domain is given by:

$$\hat{Y}_r = \sum_{i=1}^{I_r} \hat{Y}_{ir} \quad \text{or} \quad \hat{Y}_r = \sum_{j=1}^{J_r} \hat{Y}_{jr}$$

where  $I_r$  is the total number of industry strata in geographic domain  $r$ , and  $J_r$  is the total number of employment data in geographic domain  $r$ .

#### Total by Industry Stratum (National)

The estimator for the national total of a characteristic in each industry domain/stratum is given by:

$$\hat{Y}_i = \sum_{r=1}^R \hat{Y}_{ir}$$

where  $R$  is the total number of regions.

#### Total by Employment Stratum (National)

The estimator for the national total of a characteristic in each employment domain/stratum is given by:

$$\hat{Y}_j = \sum_{r=1}^R \hat{Y}_{jr}$$

where  $R$  is the total number of regions.

#### National Total

The estimator for the national total of a characteristic is given by:

$$\hat{Y} = \sum_{i=1}^I \hat{Y}_i \quad \text{or} \quad \hat{Y} = \sum_{j=1}^J \hat{Y}_j$$

where  $I$  is the total number of industry strata, and  $J$  is the total number of employment strata.



#### IV. Concepts and Definition of Terms

An **establishment** is defined as an economic unit under a single ownership or control which engages in one or predominantly one kind of economic activity at a single fixed location. An establishment is categorized by its economic organization, legal organization, industrial classification, employment size, and geographic location.

**Geographic Classification** refers to the grouping of establishments by geographic area using the Philippine Standard Geographic Code (PSGC) classification. The PSGC contains the latest updates on the official number of regions, provinces, cities, municipalities, and barangays in the Philippines. The PSGC as of 31 December 2021 was used for the 2021 ASPBI.

**Size** of an establishment is determined by its total employment as of the time of visit during the latest Updating of the List of Establishments.

**Total Employment (TE)** refers to the total number of persons who work in or for the establishment. This includes paid employees, working owners, unpaid workers, and all employees who work full-time or part-time including seasonal workers. Also included are persons on short-term leave such as those on sick, vacation or annual leaves, and on strike.

**Expense** is the cost incurred by the establishment during the year whether paid or payable. This is treated on a consumed basis. Valuation is at purchaser price including taxes and other charges, net of rebates, returns, and allowances. Goods and services received by the establishment from other establishments of the same enterprise are valued as though purchased.

**Revenue** is the cash received and receivables for goods/products and by-products sold and services rendered. Valuation is at producer prices (ex-establishment) net of discounts and allowances, including duties and taxes but excluding subsidies.

**Salaries and wages** are payments in cash or in kind to all employees, prior to deductions for employee's contributions to SSS/GSIS, withholding tax, etc. Included are total basic pay, overtime pay, and other benefits.

#### V. Dissemination of Results and Revision

The results of the 2021 ASPBI are disseminated through the posting of Special Releases and electronic publications on the PSA website, and final statistical tables in OpenStat. The updating or revisions on data were done upon finalizing the results of the 2021 ASPBI data.

This Special Release presents the results of the 2021 ASPBI for Education Section in the MIMAROPA Region. Data are presented by section or 4-digit classification as classified under the 2009 PSIC.