# TECHNICAL NOTES
## 2023 Survey on Overseas Filipinos

## I. Introduction

### a. Background

The Survey on Overseas Filipinos (SOF) is a nationwide survey designed to gather information on Filipino citizens abroad, including overseas workers, who left the country for employment during the five years preceding the survey, that is, from October 2018 to September 2023. Data such as their remittances, major occupation, place of work, among others, were gathered using the past six months as reference period. The SOF is conducted every year as a rider survey to the October round of the Labor Force Survey (LFS).

The data collection of the characteristics of overseas workers started in 1982 using a one-page rider questionnaire in the Integrated Survey of Households (ISH) and continued until 1986.

In 1987, during the revision of the LFS questionnaire (ISH Form 2), a column indicator for Overseas Contract Workers (OCWs) was added to get the estimate of the number of OCWs. With the increasing demand for information on overseas workers, the Survey on Overseas Workers (SOW) was resumed in 1991. The previous questionnaire was revised to generate more comprehensive data. In 1993, the SOW was renamed to SOF.

### b. Objectives of the Survey

The SOF aims to provide data on overseas Filipinos, particularly the overseas contract workers and their contribution to the economy. Specifically, the survey has the following objectives:

- To obtain national estimates on the number of overseas Filipinos, including overseas Filipino workers and their socio-economic characteristics; and

- To provide estimates on the amount of cash and in-kind transfers received by the families and the modes of remittances.

### c. Scope and Coverage

With regions as domain, survey operations for October 2023 LFS with SOF rider questions ran from 09 to 31 October 2023, which covered 44,913 eligible sample households. Of the eligible samples households, 4,280 had Overseas Filipino Workers (OFWs).

### d. Limitations of the Survey

The SOF has the following limitations:

1. Ideally, information about overseas Filipinos should be obtained directly from them. However, since this is not always possible, the information has to come from their relatives or any member of their household who is knowledgeable about the person who left for abroad. The OFWs included in this report are those whose families still reside in the country as of the time of survey visit.

2. The OFWs covered in this report were those working abroad during the period 01 April to 30 September 2023. The workers, who were at home or on vacation from their jobs abroad who left earlier than April 1 of the reference year, but went back to work abroad during the reference period, is included in this report.

3. The SOF does not ask for the total salary received by the OFWs. Hence, the remittances presented in the results may just be a part of the total salary received by the OFWs.

4. Starting July 2023 round of the Labor Force Survey (LFS), utilized the 2023 Geo-enabled Master Sample (MS) design from which 4 replicates were drawn that includes 44,913 secondary sampling units (SSUs) or sample housing has been adopted. The SOF, being a rider to the LFS, has adopted the 2023 Geo-enabled MS starting October 2023. Careful evaluation must be made in comparing the results of the 2022 SOF with other SOF results prior to the implementation of the 2023 Geo-enabled MS.

5. The 2012 Philippine Standard Occupational Classification (PSOC) was adopted starting October 2016. The 1992 PSOC had been used prior to October 2016.

## II. Concepts and Definitions

### a. Overseas Filipinos

For purposes of this survey, the following are considered as overseas Filipinos as long as their departure occurred within the given five-year period (April 2018 to September 2023):

1. Filipino OCWs who are presently and temporarily out of the country to fulfill an overseas work contract for a specific length of time, or who are presently at home on vacation but still has an existing contract to work abroad. They may either be land-based or sea-based.

   i. **Land-based workers** – these are OCWs who are hired by direct hiring of an employer abroad, or through the assistance of the Philippine Overseas Employment Administration (POEA), or

through a private and licensed recruitment agency. They may have returned to the Philippines for a vacation (annual or emergency leave), or have transferred to other employers, or were rehired by their former employer.

    ii. **Sea-based workers** – these are OCWs who worked or are working in any kind of international fishing/passenger/cargo vessels. These also include OCWs who worked or are working for a shipping company abroad.

2. Other Filipino workers abroad with a valid working visa or work permit. Included also are Crew members of airplanes such as pilots, stewards, stewardesses and others whose employers are foreign nationals are also included.

3. Filipino workers other than those who work on contractual basis. These include Filipinos who went out of the country through backdoor means and worked there during the reference period.

4. Filipinos whose place of employment is outside the Philippines but whose employer is the Philippine Government.

5. Filipinos who are sent abroad by the Philippine Government or by private institutions for training, scholarship or any other similar purpose.

6. Filipinos working in other countries who are hired as consultants/ advisors of international organizations such as the United Nations, International Monetary Fund and others.

7. Filipino immigrants and residents in other countries.

8. Filipinos abroad who are holders of other types of non-immigrant visa such as visa for tourist/visitor, student, medical treatment and others.

### b. Overseas Filipino Workers

Of the abovementioned Overseas Filipinos, considered as OFWs are those listed in Items a.1, a.2, and a.3.

## III.   Sampling Design and Estimation Methodology

Starting with the October 2023 round, the SOF, as a rider survey to the LFS, uses the sampling design of the 2023 Geo-enabled Master Sampling Frame (GeoMS) for household-based surveys. The 2023 GeoMS was used starting July 2023.

The 2023 GeoMS design for household-based surveys is a two-stage cluster sampling design witho barangays or enumeration areas (EAs) or groups of nearby barangays or EAs as the primary sampling unit (PSU), and housing

units serving as the secondary sampling unit (SSU) within the PSUs. In the first stage, PSUs are systematically selected from the Master Sample PSU frame of each sampling domain with equal probability. During the second stage of selection, housing units are drawn systematically for each sample PSU.

Generally, all households within the sample housing unit are also considered as sample households. However, for housing unit with more than three households, a maximum of three sample households were randomly selected.

## Sampling Frame

The 2023 Geo-enabled MS sampling frame is constructed based on the results of the 2020 Census of Population and Housing. The EA Reference File (EARF) of the 2020 Census of Population is used as the PSU frame, while the 2020 list of households for each of the PSUs is used as the SSU frame.

## Sampling Domain

The 2023 Geo-enabled MS is designed to generate data at the national down to HUC level to provide subnational or provincial/HUC level statistics with precise estimates the 2023 Geo-enabled MS has 118 sampling domains. Listed as follows: 82 provinces (including Maguindanao del Norte and Maguindanao del Sur); 33 highly urbanized cities (including 16 cities in the National Capital Region); and 3 other urban areas (Pateros, Isabela City, and Cotabato City).

## Primary Sampling Units

In the 2023 Geo-enabled Master Sample Design, each sampling domain (i.e., province/HUC) is divided into exhaustive and non-overlapping area segments known as Primary Sampling Units (PSUs) with about 100 to 300 households. A PSU can be any of the following:

a) a single enumeration area (EA) barangay; or
b) two or more adjacent small EAs within the same barangay; or
c) two or more adjacent small barangays of the same city/municipality; or
d) portion or an EA of a multi-EA barangay.

Out of the 42,046 barangays in the Philippines, 127,028 PSUs were formed. A significant number of these PSUs, or about 15 percent of the total were formed in Region IVA. CAR has the fewest PSUs formed, making up about 2 percent of the total.

## Replicates

From the ordered list of PSUs, all possible systematic samples of 6 PSUs are drawn to form a replicate for 76 out of 82 provinces, while all possible systematic samples of 8 PSUs are drawn to form a replicate for 31 out of 33 HUCs.

Three (3) PSUs are drawn to form a replicate for small provinces/HUC domains such as Batanes, Guimaras, Siquijor, Camiguin, Apayao, and Dinagat Islands, and three (3) to five (5) PSUs per replicate are allocated for small HUCs such as San Juan City and Lucena City and for special areas such as Pateros, City of Isabela, and Cotabato City.

## Sample Allocation Scheme

The total number of sample Secondary Sampling Units (SSUs) are allotted proportionately to the measure of size of the PSU. Thus, a PSU with lesser number of housing units/households would have lesser number of sampled SSUs than those PSUs with larger number of housing units/households. On the average, a total of 12 sample Housing Units are allotted for each sample PSUs in Highly Urbanized City domain while 16 sample housing units/households are allotted for every PSUs in province domain.

## Base Weight Computation

The base weight is computed as the inverse of selection probability

$$w_{p\tau\alpha\beta} = \frac{A_p}{a_p} \; x \; \frac{B_{p\tau\alpha}}{b_{p\tau\alpha}}$$

where:
  $A_p$     - total number of PSUs in the domain p
  $a_p$     - total number of sample PSUs in the domain p

$B_{p\tau\alpha}$ - total number of housing units in PSU $\alpha$ , and replicate $\tau$ in domain p

$b_{p\tau\alpha}$ - total number of sample housing units in PSU $\alpha$ , and replicate $\tau$ in domain p

For housing units with at most 3 households, the base weight is computed as

$$w_{p\alpha\beta} = \frac{A_p}{\alpha_p} \; x \; \frac{B_{p\alpha}}{b_{p\alpha}}$$

For housing units with more than 3 households, the base weight is computed as

$$w_{p\alpha\beta y} = \frac{A_p}{\alpha_p} \; x \; \frac{B_{p\alpha}}{b_{p\alpha}} \; x \; \frac{C_{p\alpha\beta}}{c_{p\alpha\beta}}$$

where:
  $C_{p\tau\alpha\beta}$ - total number of households in the sample housing unit

  $c_{p\tau\alpha\beta}$ - 3, the number of sample households in the sample housing unit

## Base Weight Adjustment

The base weight was adjusted for unit non-response and was further calibrated to conform to the known or projected population count. The October 2023 projected population count was used for the October 2023 LFS.

For unit non-response adjustment (within domain p), the adjustment was computed as:

$$A_{p1} = \frac{weighted * total\ number\ of\ eligible\ sample\ housecholds}{weighted * total\ number\ of\ eligible\ responding\ households}$$

Applying this to the base weight, we have:

$$w'_{p\alpha\beta_{adj}} = w_{p\alpha\beta} \times A_{p1}$$

Further calibration was made to conform with known population count, as follows:

| Age Group | Sex | |
|---|---|---|
| (In years) | Male | Female |
| 0 – 14 | C1 | C2 |
| 15 – 24 | C3 | C4 |
| 25 – 34 | C5 | C6 |
| 35 – 44 | C7 | C8 |
| 45 – 54 | C9 | C10 |
| 55 – 64 | C11 | C12 |
| 65 and over | C13 | C14 |

$$A_{p2c} = \frac{X_{pc}}{\hat{X}_{pc,adj}}$$

where:

$X_{pc}$ — is the projected total population for age-sex class c

$\hat{X}_{pc,adj}$ — is the weighted estimate of the population for age-sex class c using the non-response adjusted weight

Hence, the final weight (calibrated weight was):

$$w'_{p\alpha,fin} = \underbrace{w'_{p\alpha,adj}}_{\substack{non-\\response\\adjusted\\weight}} \times \underbrace{A_{p2c}}_{\substack{population\\adjustment\\factor}}$$

## Estimation of Totals

- Generally, the estimate for the weighted total for a sampling domain (province/HUC) considering the number of sample replicates was derived using:

$$\hat{Y}_p = \sum_{\tau=1}^{l} \sum_{\alpha=1}^{a_\tau} \sum_{\beta=1}^{b_{\tau\alpha}} w'_{p\tau\alpha,fin} y_{p\tau\alpha\beta} \qquad \text{l = 1 to L sample replicates}$$

- For each of the sampling domain which considered 16 sample, the estimate for the weighted total was computed as the value of the sample household for variable Y multiplied by its corresponding weight using this formula:

$$\hat{Y}_p = \sum_{\tau=1}^{16} \sum_{\alpha=1}^{a_\tau} \sum_{\beta=1}^{b_{\tau\alpha}} w'_{p\tau\alpha,fin} y_{p\tau\alpha\beta} \qquad \text{l = 1 to 16 replicates}$$

- For the Province/HUC
  The estimate for the weighted total for the province/HUC was derived as the average of the estimates for the 16 replicates

$$\hat{Y}_p = \frac{1}{16} \sum_{\tau=1}^{16} \left( \hat{Y}_{p\tau} \right) = \underbrace{\frac{1}{16} \left( \hat{Y}_{p1} + \hat{Y}_{p2} + \hat{Y}_{p3} \ldots + \hat{Y}_{p16} \right)}_{\text{Average of the estimates for the 16 replicates}}$$

  where:

  $\hat{Y}_{p\tau}$ - estimate of Y for replicate τ in province p

- For the region

  The estimate for the weighted total for the region was derived as the sum of its weighted provinces/HUCs domain totals:

$$\hat{Y}_r = \sum_{p=1}^{m_r} \left( \hat{Y}_p \right) = \underbrace{\hat{Y}_1 + \hat{Y}_2 + \ldots + \hat{Y}_{m_r}}_{\text{Weighted Province/HUC Totals}}$$

  where:

  $\hat{Y}_p$ - estimate of total for province/HUC p
  $m_r$ - total number of provinces/HUCs in the region

- For the entire country

$$\hat{Y} = \sum_{r=1}^{n} \left( \hat{Y}_r \right) = \underbrace{\hat{Y}_1 + \hat{Y}_2 + \ldots + \hat{Y}_n}_{\text{Weighted Region Totals}}$$

  where:

  $\hat{Y}_r$ - estimate of total for region r
  n - total number of regions in the country

## Estimation of Rates and Proportions

Rates will be computed as for example employment rate:

$$\hat{R} = \frac{\hat{Y}}{\hat{X}}$$

where:
$\hat{Y}$ = estimated total employed
$\hat{X}$ = estimated total population in the labor force

To estimate the weighted proportion $\hat{p}_r$ in the rth region

$$\hat{p}_r = \frac{\sum_{p=1}^{mr} \sum_{\tau=1}^{16} \sum_{\alpha=1}^{a_\tau} \sum_{\beta=1}^{b_{\tau\alpha}} w'_{p\tau\alpha,fin}\, x_{p\tau\alpha\beta}}{\sum_{p=1}^{mr} \sum_{\tau=1}^{16} \sum_{\alpha=1}^{a_\tau} \sum_{\beta=1}^{b_{\tau\alpha}} w'_{p\tau\alpha,fin}\, y_{p\tau\alpha\beta}}$$

Where $x_{p\tau\alpha\beta}$ = the total number of cases in the sample with a certain attribute

x

$y_{p\tau\alpha\beta}$ = the total number of cases in the sample.

## Estimation of Sampling Error

Sampling error is usually measured in terms of the standard error for a particular statistic (mean, percentage, etc.), which is the square root of the variance.

If the sample had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the LFS is the result of a multi-stage design, and it was necessary to use more complex formulas.

Sampling errors are computed using statistical programs. These statistical programs use the Taylor linearization method to estimate variances for survey estimates that are means, proportions, or ratios.

The Taylor linearization method treats any percentage or average as a ratio estimate, r=y/x, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance.

Its formula is given as follows:

$$SE(\hat{R}_p) \approx \frac{1}{\hat{X}_p^{\,2}} \left[ \hat{V}(\hat{Y}_p) + \hat{R}_p^{\,2} \hat{V}(\hat{X}_p) - 2\hat{R}_p c(\hat{Y}_p, \hat{X}_p) \right]$$

where:

$$\hat{R} = \frac{\hat{Y}}{\hat{X}}$$

$$c(\hat{Y}, \hat{X}) = \frac{a_p}{a_{p-1}} \sum_{\alpha=1}^{a_P} \left( y_\alpha - \frac{\hat{Y}}{a_p} \right) \left( x_\alpha - \frac{\hat{X}}{a_p} \right)$$

$a_p = number\ of\ sample\ PSUs\ in\ domain\ p$

In the SOF, the 118 province/HUC domains are also treated as natural stratification while the primary sampling units (PSUs) are treated as clusters.

## Data Checking, Coding and Filtering Prior to Estimation of Proportions

Enumeration is a highly complex operation, and it may happen that reported/encoded entries during data collection may have some omissions, and implausible/inconsistent entries. Editing is a process meant to correct these errors.

During the interview, embedded editing was activated and errors/inconsistent entries were detected by the program. Editing was also done using Computer Aided Field Editing (CAFE) program after every interviewed household to ensure completeness and consistency of encoded entries. For monitoring of the status of data collection, LFS raw data from the tablet is uploaded to the PSA Central Office server as soon as the interview of a household/EA was completed.

Review and verification of the PSOC and PSIC codes and invalid values for LFS data items were done in the provincial office using the LFS Information System (LFS IS).
Further processing in the regional office such as ID validation, and completeness check, edit and matching of LFS sample households with the original List from Master Sample (MS) Form 6 were done to ensure that the number of household listed was fully covered.

Preliminary, and final tabulations of data were done at the PSA Central Office.

IV. **Contact Information**
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