Appendix 6.2

6.2.0 Sample Design for NBS/EFCC Business Survey on Awareness/Attitudes towards EFCC and Corruption in Nigeria 2007

Introduction:
Designing an efficient sample for establishment surveys which incidentally, the collaborative survey on crime, corruption and awareness of EFCC in Nigeria falls into requires a broad understanding of the sectors in the economy and practical experience in sampling techniques.

The final sample selection for this collaborative survey was arrived at through experiences in establishment surveys by both National Bureau of Statistics (NBS) and EFCC with technical guidance of UNODC. It should be noted that the NBS National Integrated Survey of Establishment (NISE) module actually provided the Vehicle in which the collaborative survey utilized.

6.2.1 The Establishment frame for used the selection
In order to have a broad-based list of business and industrial establishments, three (3) sets of establishment frames were used. There are:
(i)   Frame of Establishments from Economic Survey and Census Division of NBS.
(ii)   Frame of Establishments from National Quick Employment Generation Survey (NQEGS) conducted by NBS in 2006.
(iii)   Frame of Establishments from NBS/CBN/NCC collaborative Economic Survey conducted by NBS in 2006.

These frames were merged to give a single cleaned and validated frame.

The cleaning and validation of the frame involve the following;
(i)   Elimination of duplications
(ii)   Removing dead or moribund establishments from the frame
(iii)   Filling in missing information where feasible.

This exercise was made possible through the combined efforts of the Economic Survey and Census Division, the National Accounts Division and the Methodology Division of NBS. Sample of 2,775 were selected from a frame of 15,556 which cut across 14 sectors of the economy namely:

(i)   Agriculture (163)
(ii)   Fishing (10)
(iii)   Mining and Quarrying (75)
(iv)   Manufacturing (474)
(v)   Electricity, Gas and Water (66)
(vi)   Building and Construction (137)
(vii)   Wholesale and Retail Trade (450)

(viii)   Hotels, Restaurants and Tourism (155)
(ix)   Transport (200)
(x)   Communication (92)
(xi)   Financial Intermediation (233)
(xii)   Real Estate, Renting and Business Activities (480)
(xiii) Public Administration (Government) (77)
(xiv)   Education (163)

6.2.2 Selection Parameters:

In order to select the require number of establishments, some parameters were considered which include:

(i)   Employment size, that is strata of 10 and above
(ii)   Contribution of sector to GDP.
(iii) Purposive or prior knowledge of performance of sectors in the economy.

6.2.3 Selection Procedure:

Basically, the sample design used for this survey was a two-level probability proportion to size (PPS) in which the contribution of each sector to the GDP formed the basis of allocation at the first level while the basis of allocation at the second level was number of establishments in each sector. A prior (purposive) allocation was also used to complement and boost the efficiency of the design.

6.2.4 Overall Sample Size:

The overall sample of establishments selected for this collaborative survey was 2,775. in choosing this sample size, many things were taken into consideration such as, limitation of resources, the need to ensure a manageable and controllable sample structure and the three important levels at which data are required for planning purposes, viz National zonal and state levels but basically, the estimates would be at national level.

6.2.5 Estimate Procedure:

If the sample of 'n' establishment is allocated to each sector with probabilities proportional to their sizes (contribution to GDP), say

$$P_i = \frac{M_i}{M_o} \quad and \quad M_o = \sum m_i$$

then the unbiased estimate of population (all establishments) total is given by:

$$\hat{\hat{y}}_{pps} = \frac{1}{n} \sum_{i=1}^{n} \frac{y_i}{p_i}$$

and the estimate of the variance is given by:

$$V(\hat{y}_{pps}) = \frac{1}{n} \sum_{i=1}^{n} p_i \left[\frac{y_i}{p_i} - \hat{y}_{pps} \right]^2$$

The unbiased estimator of the variance of the above estimator is given by:

$$V(\hat{y}_{pps}) = \frac{1}{n(n-1)}\left[\sum_{i=1}^{n}\left(\frac{y_i}{p_i}\right)^2 - ny_{pps}\right]^2$$

Appendix 6.3

NBS/EFCC/UNODC Business Survey 2007
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