

The 2016 Vietnam Manufacturing Innovation Capability Survey (the 2016 Vietnam ICS)

The 2016 Vietnam Manufacturing Innovation Capability Survey (**the 2016 Vietnam ICS**) is a collaboration between the Tilburg University and the Enterprise Analysis Unit (DECEA) of the Development Economics Group of the World Bank. This is part of a wider project undertaken by the Tilburg University to study the innovative capability of manufacturing firms in nine countries selected from three regions- Ethiopia, Kenya, Ghana, Uganda and Tanzania from Africa; Bangladesh and India from South Asia; and Indonesia and Vietnam from East Asia and Pacific.

The 2016 Vietnam ICS aims at studying the innovative activities and innovative capabilities of manufacturing firms in Vietnam, by collecting firm-level data using a suitably designed questionnaire and following the DECEA's global methodology of survey design. This survey is a follow-up to and complements the 2015 Vietnam Enterprise Survey (2015 Vietnam ES) undertaken by the World Bank Group. Data from the 2016 Vietnam ICS can be linked to the 2015 Vietnam ES using the "idstd" variable, enabling a richer analysis of the links between innovative capabilities, innovation and the performances of manufacturing firms in the country.

The **main objective** of the project is to collect firm-level data from manufacturing firms in the country to better understand:

- Sources of information and motivation for innovative activities by manufacturing firms;
- Key factors constraining innovative capability of the manufacturing firms;
- The ability of firms to locate, acquire and utilize knowledge for innovation.
- Access to foreign markets and firms' innovative capability.

The **Sampling Strategy** follows the standard ES global methodology of stratified random sampling¹. However, sample is drawn from manufacturing firms covered in the 2015 Vietnam Enterprise Survey

¹ Information on DECEA's global survey methodology can be found at the Unit's website (<http://www.enterprisesurveys.org/methodology>).

(ES))². Therefore, sample is stratified based on firm size and location, unlike the standard ES sampling methodology which includes sector as one of the three stratifying variables.

The universe consists of about 685 manufacturing firms interviewed in the 2015 Vietnam ES, out of which 300 were interviewed for the 2016 Vietnam ICS. Firms are selected from all the four regions covered in the 2015 Vietnam Enterprise Survey and distributed across small (5 to 19 employees), medium (20 to 99 employees) and large (100+ employees) firms. Table-1 provides distribution of the realized sample by region and firm size. Interview conversion rate was about 46%.

Table 1: Realized Sample for the 2016 Vietnam ICS

Region				Total
	Small	Medium	Large	
Red River Delta	35	29	25	89
North Central area and Central coastal	21	25	25	71
South East	28	36	29	93
Mekong River Delta	19	17	11	47
Total	103	107	90	300

P.T Kadence International was hired to implement the fieldwork and data collection. The fieldwork for the 2016 Vietnam ICS was conducted during the period October 21, 2016 to February 10, 2017.

The **Sampling weights** for this survey are calculated from the 2015 Vietnam ES weights. More specifically, sampling weights in the 2015 Vietnam ES are multiplied by a cell-specific factor, which equals the proportion of total completed interview in the cell during the 2015 Vietnam ES to the completed interviews in the corresponding cell in the 2016 Vietnam ICS. More formally, sampling weights for this survey are computed as follows:

$$ICW_{ic} = ICW_{ic} * \frac{N_{ES}}{N_{IC}}$$

²Please see the World Bank's Enterprise Survey website (<http://www.enterprisesurveys.org/data/survey-datasets>) for detailed information on the 2015 Vietnam ES. In particular, the implementation reports of the survey contains useful information on the design and implementation of the surveys. Note that access to the raw data and implementation report require a log-in account.

Where ICw_{ic} is sampling weight in the Innovation Capability survey for firm i in cell c^3 ; ICw_{ic} is the corresponding weight for the same firm in the 2015 Vietnam Enterprise Survey; N_{ES} is the number of completed interview in the ES for that particular cell; and N_{IC} is the corresponding number in the 2016 Vietnam ICS. Note that three sampling weights (variables w_{strict} , w_{median} , w_{weak} in the data) are computed for this survey corresponding to the three sampling weights in the 2015 Vietnam ES.

³ Cell is a variable created by combining three variables in the ES - sampling sector, location and size.