

Structural business survey in tourism sector

TYPE

Sampling Survey

The survey covers the section H of NACE rev. 1.

Based on the Council Regulation 58/97, the economic activities were grouped as follows

1. 55A: 55.1+55.2
2. 55B: 55.3+55.4+55.5

The sampling scheme that we applied was the *one-stage stratified sampling*, with survey unit the enterprise.

The enterprises were selected from the sampling frame that was based on the updated business register of National Statistical Service of Greece.

The stratification of the enterprises was carried out on the basis of the following criteria:

- a) Economic Activity (2 classes)
55A, 55B
- b) Regions (NUTS II)
- c) Turnover classes

Group	Classes	Turnover Classes
55A	1	0€ - 110.000€
	2	110.000€ – 300.000€
	3	300.000€ - 600.000€
	4	600.000€ - 1.200.000€
	5	1.200.000+
55B	1	0€ - 60.000€
	2	60.000€ - 130.000€
	3	130.000€ - 300.000€
	4	300.000€ - 900.000€
	5	900.000+

The enterprises that belong to the 5th turnover class were surveyed exhaustively.

The allocation of the number of the sample units to the various strata was carried out using the “optimal allocation” method.

In each stratum (economic activity x administrative regions x turnover class), the sampling units were selected with equal probabilities and the application of the systematic sampling scheme.

Survey characteristics estimation

a. Symbols

In each stratum let be:

y_{hi} : the value of the characteristic y of enterprise of order i belonging to the stratum h

N_h : the total number of enterprises belonging to the stratum h

n_h : the number of the respondent enterprises

Y_h : the total of the variable y for all enterprises in stratum h

Y: the total of the variable y for all enterprises in all strata. That is:

$$Y = \sum_h Y_h$$

b. Estimation process

The estimation of Y_h and Y is given by the following formulas:

$$\hat{Y}_h = \frac{N_h}{n_h} \sum_{i=1}^{n_h} y_{hi}$$

$$\hat{Y} = \sum_h \hat{Y}_h$$

c. Variance estimation

The variance estimation of \hat{Y}_h and \hat{Y} is given by:

$$V(\hat{Y}_h) = \frac{N_h(N_h - n_h)}{n_h} S_h^2,$$

Where:

$$S_h^2 = \frac{1}{n_h - 1} \left[\sum_{i=1}^{n_h} y_{hi}^2 - \frac{\left(\sum_{i=1}^{n_h} y_{hi} \right)^2}{n_h} \right],$$

$$V(\hat{Y}) = \sum_h V(\hat{Y}_h)$$

The coefficient of variation (%) of total estimation \hat{Y} is given by:

$$CV(\hat{Y}) = \frac{\sqrt{V(\hat{Y})}}{\hat{Y}} * 100$$