Abstract

Using a percentage of a city’s households is a common practice in transport engineering leading to knowing the inhabitants journey pattern. The procedure theoretically consists of calculating the sample based on the statistical parameters of population variable which one wishes to measure. This requires carrying out a pilot survey which cannot be done in countries having few resources because of the costs involved in knowing the value of such population parameters, because resources are sometimes exclusively destined to making an estimated sample according to a pre-established percentage. Percentages between 3% and 6% are usually used in Colombian cities, depending on population size. The city of Manizales (located 300 km to the west of Colombia’s capital) carried out two household surveys in less than four years; when the second survey was carried out the values of the estimator parameters were thus already known. The Manizales mayor’s office made an agreement with the Universidad Nacional de Colombia for drawing up the new origin-destination matrix, where it was possible to calculate the sample based on the pertinent statistical variables. The article makes a comparative analysis of both methodologies, concluding that when statistically estimating the sample it is possible to greatly reduce the number of surveys to be carried out, but obtaining practically equal results.

Keywords

Design, transport planning, passenger origin-destination matrix.