MODELLING THE URBAN DISTRIBUTION OF GOODS

Author:
Ivan Fernandez Barceló

Tutor:
José Magín Campos Cacheda

The current major cities suffer an excessive solicitation for their urban road capacity, which cause problems of congestion and damage the environment, which must be resolved for the good future of the city and improving the quality of life of its citizens. Such solicitation is partly due to the urban distribution of goods, DUM onwards, so it is presumed necessary its analysis and study, in order to implement improvements in its management, and thus help reduce the solicitation of road urban and / or optimization of the DUM coexistence with other modes of transport.

To analyze the DUM, it is indicated the type of activity, vehicle, goods, and delimitation hourly movements to be taken into account for classification. Then it is necessary to classify the types of DUM, ie it is explained what types depending on different factors. Thus can be made accurate analysis for each route and shop in particular, that will identify their characteristics and their points for and against. The functional classification is based on the following aspects:

i. According kind of general transport processes.
ii. According to the topology of the itinerary.
iii. According sharing conditions.
iv. According kind of actors involved in the process of distribution and sale.
v. Depending on the type of merchandise, type of shop and its associated requirements

It ends the theoretical exposition of the DUM with a summary of its negative impacts and its spatial and temporal constraints, as well as its associated problems. We analyzed both the restrictions imposed by the administration as marginal restrictions inherent in the functioning of transport in the city.

Then, it is appropriate to develop a methodology for estimating the number of trips sued for each type of establishment in a particular area of the city. This methodology is divided into two steps:

i. Estimation of the volume of goods required by the shop: estimation of the volume that should be provided to each shop due to the sale of products and the replacement of non-acceptable for consumption. The most important parameters involved in the model are the sales area of the shop, the number of workers and price of land.

ii. Estimation of the volume of delivery: estimation of the volume of the deliveries in the shops. The most important parameters are the free surface of the shop and the number of operators. We should consider these factors in an individual analysis of the establishment, as in a collective analysis of the shop and its surroundings.

Finally the model is adjusted by means of a case study. The case study corresponds to different districts of Barcelona. It fits the model as different types of shop. The available data are limited by what the model has improvable validity with better data.