

Approach to Freight Trip Attraction Areas Classification, in Developing Countries

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Abstract : In developing countries, informal trade is relevant, but it has been little studied in urban freight transport (UFT) context, although it is a challenge due to the non- contemplated demand it produces and the operational limitations it imposes. Hence, UFT operational improvements (initiatives) and freight attraction models must consider informal trade for developing countries. A four phases approach for characterizing the commercial areas in developing countries (considering both formal and informal establishments) is proposed and applied to ten areas in Mexico City. This characterization is required to calculate real freight trip attraction and then select and/or adapt suitable initiatives. Phase 1 aims the delimitation of the study area. The following information is obtained for each establishment of a potential area: location or geographic coordinates, industrial sector, industrial subsector, and number of employees. Phase 2 characterizes the study area and proposes a set of indicators. This allows a broad view of the operations and constraints of UFT in the study area. Phase 3 classifies the study area according to seven indicators. Each indicator represents a level of conflict in the area due to the presence of formal (registered) and informal establishments on the sidewalks and streets, affecting urban freight transport (and other activities). Phase 4 determines preliminary initiatives which could be implemented in the study area to improve the operation of UFT. The indicators and initiatives relation allows a preliminary initiatives selection. This relation requires to know the following: a) the problems in the area (congested streets, lack of parking space for freight vehicles, etc.); b) the factors which limit initiatives due to informal establishments (reduced streets for freight vehicles; mobility and parking inability during a period, among others), c) the problems in the area due to its physical characteristics; and d) the factors which limit initiatives due to regulations of the area. Several differences in the study areas were observed. As the indicators increase, the areas tend to be less ordered, and the limitations for the initiatives become higher, causing a smaller number of susceptible initiatives. In ordered areas (similar to the commercial areas of developed countries), the current techniques for estimating freight trip attraction (FTA) can be directly applied, however, in the areas where the level of order is lower due to the presence of informal trade, this is not recommended because the real FTA would not be estimated. Therefore, a technique, which considers the characteristics of the areas in developing countries to obtain data and to estimate FTA, is required. This estimation can be the base for proposing feasible initiatives to such zones. The proposed approach provides a wide view of the needs of the commercial areas of developing countries. The knowledge of these needs would allow UFT's operation to be improved and its negative impacts to be minimized.

Keywords : freight initiatives, freight trip attraction, informal trade, urban freight transport

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