A GEO-DEMOGRAPHIC MODEL FOR ROUTE BASED BUS PATRONAGE ESTIMATION IN A SMALL AND MEDIUM SIZED CITY

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ABSTRACT

One of the methods for estimating bus patronage is to use the model calibrated on a metropolitan basis. Typically, models are not user friendly and are perhaps outdated. In this connection this research proposes an approach, which can be effectively used for predicting bus patronage on individual routes in a small or medium sized city. The patronage model for predicting patronage is not only useful for allocating the resources optimally but also useful marketing tool. The model developed in this research is sensitive to a variety of important factors, including dwelling unit information and land use data. The model used readily available data and can therefore be easily applied to a wide range of operating agencies. The primary level of analysis was based on the Journey to Work (JTW) zones. The process involved the estimation of patronage profiles at the zonal level, which is allocated to both the dwelling unit and land use. This model finally estimated the potential transit boardings for a section. Although comprehensive testing of this model was not carried out, due to the limitation of availability of data, there are a few important conclusions that can be drawn from this research. The approach is simple, quick, and reasonably accurate and it does not involve usage of a comprehensive transport model. These models can be effectively applied in small and medium sized cities where the transit trips involve limited or no transfers.

KEY WORDS: Transit patronage, Journey to work data, Trip attraction and production rates