Evaluation of Traffic Forecasting Accuracy in Road Projects in Sri Lanka

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Abstract

Traffic demand forecasting is integral part in the highway planning and feasibility assessment. Forecasted traffic demand is used to determine the highway capacity, to estimate the design ESAL for pavement design and to evaluate road user benefits such as travel time, vehicle operating cost, emission and accident that are used in the economic feasibility assessments.

This research investigates the accuracy of demand forecasts using a sample of projects in Sri Lanka and identifies the factors influencing the demand forecast accuracy. The selected roads include, expressways, national roads in urban and rural areas. The forecast traffic demand values are derived from the demand analysis carried out in feasibility studies of highway projects. The corresponding observed traffic data for this study is drawn retrieved from traffic databases available at University of Moratuwa and the Road Development Authority. The forecasted traffic volumes at the corresponding location is adjusted based on the growth factors given in the demand model used to calculate the traffic volume for the year in which the observed data is available.

The study evaluates the variation of accuracy of demand variations with respect to the following factors, a) demand modelling tool used, b) differences in analysis scenario with respect to other transport infrastructure is the used in the model and condition at the time observed traffic volume was taken, c) variation in error with the forecasting period, and d) variation in error with type of highway. The results of this analysis would useful for highway planning and demand analysis studies to identify the demand variation risk and to incorporate it in improving the demand analysis processes.

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