

MULTIVARIATE REGRESSION MODEL BETWEEN LAND USES AND ROAD DENSITY

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ABSTRACT: Road development is a costly affair, thus it is imperative to plan it properly. One aspect of planning is by determining the effects of land uses on road development or vice-versa. This study attempts to functionally link road development and land uses using two towns, i.e. Johor Bahru and Sungai Petani, as samples. Road development, the dependent variable, is represented by road density; and land uses are represented by 15 variables encompassing households, employment and property components. The multivariate regression model for these two cities shows that a parsimonious model is possible to adequately describe the relationship between road density and land uses. However, evidence indicates that a separate regression model as a common, single model for the whole nation is not possible.

Keywords: Road development, land use development, transport planning, quantitative model, multivariate regression