

Disaggregate Travel Behavior and Transit Shift Analysis for a Transit Deficient Metropolitan City

Authors : Sultan Ahmad Azizi, Gaurang J. Joshi

Abstract : Urban transportation has come to lime light in recent times due to deteriorating travel quality. The economic growth of India has boosted significant rise in private vehicle ownership in cities, whereas public transport systems have largely been ignored in metropolitan cities. Even though there is latent demand for public transport systems like organized bus services, most of the metropolitan cities have unsustainably low share of public transport. Unfortunately, Indian metropolitan cities have failed to maintain balance in mode share of various travel modes in absence of timely introduction of mass transit system of required capacity and quality. As a result, personalized travel modes like two wheelers have become principal modes of travel, which cause significant environmental, safety and health hazard to the citizens. Of late, the policy makers have realized the need to improve public transport system in metro cities for sustaining the development. However, the challenge to the transit planning authorities is to design a transit system for cities that may attract people to switch over from their existing and rather convenient mode of travel to the transit system under the influence of household socio-economic characteristics and the given travel pattern. In this context, the fast-growing industrial city of Surat is taken up as a case for the study of likely shift to bus transit. Deterioration of public transport system of bus after 1998, has led to tremendous growth in two-wheeler traffic on city roads. The inadequate and poor service quality of present bus transit has failed to attract the riders and correct the mode use balance in the city. The disaggregate travel behavior for trip generations and the travel mode choice has been studied for the West Adajan residential sector of city. Mode specific utility functions are calibrated under multi-nominal logit environment for two-wheeler, cars and auto rickshaws with respect to bus transit using SPSS. Estimation of shift to bus transit is carried indicate an average 30% of auto rickshaw users and nearly 5% of 2W users are likely to shift to bus transit if service quality is improved. However, car users are not expected to shift to bus transit system.

Keywords : bus transit, disaggregate travel behavior, mode choice Behavior, public transport

Conference Title : ICATM 2020 : International Conference on Aviation, Transport and Management

Conference Location : New York, United States

Conference Dates : June 04-05, 2020