

Estimation of Vehicle Kilometers Travelled in Southern Province, Sri Lanka

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Abstract

Estimation of vehicle kilometers travelled (VKT) is used in traffic and transport planning for various purposes such as allocating resources, estimating vehicle emissions, computing energy consumption, analyzing crashes, assessing traffic impact, and making road safety policy. Therefore, it is crucial to have an accurate timely estimation of VKT. Both traffic and non-traffic measurement methods are popular among the transport planners and researchers. Very few studies have conducted in Sri Lanka for estimating the VKT, but timely data on VMT could not be found. This study proposes to estimate the VKT based on the number of household daily trips, which are collected through the interviews.

All trips made by household members are surveyed for a single “travel day,” with interviews conducted so that every day of the week, including holidays. The interviewer records the mode of travel, total number of kilometer travelled, and number of passengers. The modes considered in this study are car, van, motorbike, bicycle, three-wheeler, and jeep. The socio-demographic information is also collected and this includes age, gender, employment status, and income. The estimation of total VKT is derived from survey respondents’ total number of kilometers each travelled during the previous 12 months in Southern Province, Sri Lanka. Variations in VKT among males and females, different age groups and income groups are identified. When investigating VKT by gender, it is observed yearly VKT of males were higher than females. People in age group of 30-34 years has more yearly VKT than any other age groups. By investigating the residence areas, it is not observed much differences on VKT between rural areas and urban areas. The collected data are also used to estimate the personal kilometer travelled and characteristics of travelers in Southern Province.

The timely estimation of VKT in Sri Lanka is mainly important for road safety analysis, economic analysis, resource allocation, and urban planning. This method can be considered by policy makers to estimate the VMT in each year in all provinces for different vehicle types.

Key words: Vehicle Kilometers, Vehicle Mile Travelled, Automobile

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