ABSTRACT

This thesis is aimed at estimation of Annual Average Daily Traffic ($AADT$) for Indian highways. Three basic topics regarding $AADT$ estimation problem has been focussed in this study. It covers estimation of seasonal factors of traffic from Permanent Traffic Counter (PTC) data, determination of best duration and frequency of Short Period Traffic Count (SPTC) and effectiveness of using fuel sales as a proxy for estimation of $AADT$. Analysis has been done separately for total and truck traffic for each of them giving importance to statistical accuracy of the estimates. This study showed that seasonal variation of traffic is same for all Indian highways. Thus a single seasonal factor can be used for a given month across all sites in India. This study also makes an attempt to find out the best duration and frequency of SPTC for estimation of its $AADT$. It is believed that this study is the first to find out the month separation that is to be kept for SPTC multiple times in a year rather than keeping equal separation between the counts. Besides this, it also tries to find out whether the best duration/ frequency of SPTC is equally good for all sites considered. For this purpose, 'Sum of the Ranks' approach is used. Finally, this thesis also tries to find out the efficacy of using fuel sales as a surrogate for estimation of $AADT$. Though this practise is common in Indian context, no research work has been done to find out how good or valid this practise is. This study showed that it is better to predict seasonal factors of traffic from that of fuel sales, using regression constants determined in this study rather than assuming it to be equal to seasonal factors obtained from fuel sales.

Keywords: Annual Average Daily Traffic (AADT), Short Period Traffic Count (SPTC), Fuel Sales, Seasonal Factor