

**STATISTICAL EVALUATION OF TRAFFIC SURVEY DATA TO
RELATE PEAK HOUR VOLUME TO DAILY TRAFFIC
VOLUME**

By

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DECLARATION BY THE CANDIDATE

I, Mohd Helmizam Bin Kamaruddin, UiTM no. 2002611618 confirm that the work is my own and that appropriate credit has been given where reference has been made to the work of others.

Signed:.....

Date:.....

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ABSTRACT

In general, traffic volume studies are conducted to determine the number, movements, and classifications of roadway vehicles at a given location. There is a lot of useful information that we can obtain from the traffic volume data. One of the important elements in traffic volume measurement is peak volume studies since it is generally used for design and operational analysis. Statistical evaluation of traffic survey data is analyzed in this research to relate peak hour volume to daily traffic volume.

Through this research, the studies are focused on peak hour volume data to determine whether it is related to daily traffic volume data in some way. In other words, data from peak hour volume will be studied and analyzed to ascertain if daily traffic volume can be estimated with acceptable accuracy.

From the research, it can be concluded that peak hour volume is related to daily traffic volume. The regression value $R^2 = 0.9447$ is obtained through the relationship between peak hour volume and daily traffic volume. By using linear equation $y = 0.11x - 7.6343$ the expected traffic volume is calculated. Then, Chi-Squared Distribution is used to check the accuracy of linear equation $y = 0.11x - 7.6343$ in calculating expected daily traffic volume. Based on Chi-Squared Distribution, there is a strong evidence to prove that there is a relationship between peak hour volume and daily traffic volume.

The percentages of error by using linear equation $y = 0.11x - 7.6343$ to calculate expected daily traffic volume varies from 1.2 to 21.7%. However, for future application further research must be conducted to modify the linear equation $y = 0.11x - 7.6343$ in order to reduce the percentages of error in calculating expected daily traffic volume.

CHAPTER 1

INTRODUCTION

Traffic volume studies are conducted to collect data on the number of vehicles and/or pedestrians that pass a point on a highway facility during a specified time period. This time period varies from as little as 15 minutes to as much as a year, depending on the purpose of the survey. The data collected may also be put in such class like directional movement occupancy rates and vehicle classification. The following traffic volume characteristics may be collected from traffic volume studies:

a) **Average Annual Daily traffic. (AADT)** is the average of 24-hour counts collected every day in the year. AADT may be useful in estimation of highway user revenues, computation of accident rate, established of volume trends and for improvement and maintenance programs. (Sharma 1994)

b) **Average Daily Traffic (ADT)** is the average of 24-hour counts collected over a number of days greater than, but less than a year ADT may be used for planning of highway activities, measurement of current demand and evaluation of existing traffic flow. (Sharma 1994)

c) **Peak hour volume (PHV)** is the maximum number of vehicles that pass a point on a highway during a period of 60 consecutive minutes. PHVs are used for functional classification on highways, geometric design, traffic operations and management. (Sharma 1994)

d) **Vehicle miles of Travel (VMT)** are a measure of travel along a section of road. It is the product of the traffic volume and the length of roadway in miles or kilometers to which the volume is applicable. VMTs are used mainly as a base for maintenance and improvement decisions. (Sharma 1994)