

ABSTRACT

The city of Yogyakarta in recent years faced a problem that is often faced by other big cities in Indonesia, namely traffic congestion. The impact of congestion causes waste of time, fuel, and increased air pollution and noise pollution. Magelang Road, located in the northern part of the city of Yogyakarta, also have the traffic congestion problem, this is because the road is one of the connection link from outside and inside of the city to Yogyakarta City and otherwise. The purpose of this study are to determine the value of vehicle operating costs, congestion costs and looking for scenario to reduce the value of congestion costs.

Primary data from this study were obtained from surveys and measurements in the location while secondary data were obtained from agencies related to this study. Analysis of motorcycle operating costs (BOK) using the method of the study results of Chairil Mubin (Mubin, 2011) while the BOK analysis of cars using the 1997 LAPI-ITB method (Tamin, 2000). The cost of congestion using the Tzedakis method (Tzedakis, 1980).

The value of the losses of BOK on Magelang Road is Rp.7,658,819,837 / year and the value of congestion costs is Rp.63,685,186,606 / year. To reduce the high value of congestion costs, several scenarios are used: a) the implementation of odd-even number plates, which reduce congestion costs by 51.37% and 48.63%; b) prohibition of heavy vehicles, which decreases congestion costs by 0.77%; c) transfer of passengers to public transportation, which decreases congestion costs by 20.17%. From these scenarios the scenario of applying odd-even vehicle number plates is chosen because the scenario reduces the most congestion costs.

Keywords: Traffic Congestion, Congestion Costs, Vehicle Operating Costs (BOK), Scenarios reduce congestion costs.