Ineffective human control of signalised intersections in developing countries; Case of Dar es Salaam city

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http://dx.doi.org/10.1016/j.trf.2014.10.003

Abstract

Intersections constitute one of the major bottlenecks on road networks that exacerbate congestion; effective control of which is an important strategy in improving traffic flow. While signals can cost-effectively control traffic at intersections, African countries have adopted an increasing trend across the developing world of overriding traffic signals and instead letting traffic police officers guide vehicles. This study has compared the performance of two major signalised intersections in Dar es Salaam city in Tanzania, when operating under the traffic signal and when the traffic police officer is controlling the intersection. Results show that the traffic police officer is not improving the performance of the intersection but rather makes sure that drivers observe traffic rules. The capacity and delay are improved on some approaches of intersections and worsened on others. The findings dispute the widely held view that traffic police officers do a better job than the signals. It has therefore been concluded that simple improvements on signal timing and improving driver's behaviour through improved enforcement of traffic regulations can better and cost-effectively improve the performance of intersections.

Keywords: Traffic control; Intersection control; Signals; Driving behaviour