Travel Time and Delay Study on a Section of Abeokuta-Lagos Highway

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Introduction

Transportation fosters on the movement of people, goods and services. Highway, is a key element of land transportation which ensures interconnection between settlements. The Abeokuta - Lagos highway is a critical infrastructure connecting Lagos, a commercial hub, and Abeokuta, the capital of Ogun State. The road spanning about 101 kilometres consistently witness congestion in prominent stretches. This often increases travel time on the road considerably by several hours. Vehicular movement on this highway in recent time suffers a significant delay resulting in varying consequences for the road users ranging from loss of revenues, wastage of farm produces, loss of jobs, query from employers, vehicle damage, accident, and so on. Mohammad Abojaradeh (2013) in his study on travel time and delay on public transportation in Jordan established that travel time is impacted by the total delay time caused by load shedding, stopping at fixed interruptions, the bus model, and the bus size. Also, Maitray Parikh (2018) from his study on travel time, delay study and speed delay using floating car and test vehicle methods concluded that delay study helps in trip assignment, identifying the effectiveness of intersections, evaluating the causes of congestion, determination of level of service, scope of improvements and helps in applying them.

Materials and methods

Reconnaissance study of the 13-kilometre road section was conducted to determine the causes of traffic delay. License plate method was adopted with observers placed at three control points namely Wasinmi (Total) junction, Itori junction and Papalanto junction. The six observers were placed at each junction with three each on each direction. One observer calls the time a vehicle approaches the junction and the other calls the number plate of the vehicle while the third person makes appropriate entry. The vehicles were grouped according to axle loading. The travel time of each vehicle and average travel time of each category of vehicles were evaluated using the method of mean.

Resultsanddiscussion

Prevailing traffic conditions depend on the period of the day, day of the week, weather conditions, habit of the drivers and so on. The travel time on the investigated stretch should average about 15 minutes however, the study revealed the that Cars/SUVs has the lowest travel time ranging between 20-25 mins; buses/vans followed with travel time ranging between 25-30 mins; mini trucks have travel time ranging between 30-41mins and trailer/trucks having the greatest travel time between 35 -50mins. It was found out that the road surface condition impacted greatly on the travel time causing delay among other conditions such as interruptions at bus stops/intersections, driver behaviour and non-regulated and inadequate parking facilities.

Conclusions

It is thus concluded that road surface improvement, adequate regulation of on-street parking, provision of more off-street parking facilities especially at bus stops, provision of digital and human control measures at levelled intersections and enforcement of traffic rules and regulations will positively impact on travel time, eliminate delays, reduced wastages in perishable agricultural produces transported in that corridor thereby improving food security and engender economic growth.

Keywords: Travel time, Delay study, Highway, Congestion, Control Point.