

**TIME SERIES ANALYSIS OF THE RATE OF ROAD TRAFFIC  
ACCIDENT IN NIGERIA**

**(A CASE STUDY OF LAGOS STATE)**

**BY**

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## ABSTRACT

This project work is on time series analysis of the monthly number of road traffic accident in Lagos state for the period of (2005-2010).Lagos state which is Nigeria's major traffic center, fastest growing city, and most heavily motorized urban area in the country. Consequently, the state has one of highest accident and casualty rates in the country. Moreover, the traffic situation in Lagos state is bad because of the absence of effective transport planning, vehicle-misuse, poor management, inadequate street parking, traffic congestion, delays and accidents among other contributory factors.

The objective of the research determines the trend of the data,and fits an appropriate ARIMA Model of the data using the model identification procedures which included the time plot,correlogram and diagnostic check of the model and forecast future values of numbers of road traffic accident. From the time plot of the data it indicated an irregular increasing pattern of the rate of road traffic accident, and the correlogram of both the ACF and PACF indicated an ARIMA model of order (2,1,0). From the diagnostic check of the ARIMA model, ACF plot of the residual indicated a white noise process and a Ljung-Box Chi-squared indicated that the model is adequate and the forecast generated.The trend equation of the data was also determined using the MINITAB statisticalpackage and fitted as  $Y_t = 59.92 - 0.247508*t$ .

From the forecast of the monthly number of road accident on Lagos roads, It is recommend that the Lagos state government and the Federal Road safety corps should focus more on the Roadway characteristics causing road accidents, which include Bad roads, Poor Drainage, Poor Lightening on Lagos roads as this will go in a long way in reducing road traffic accident to its minimal point.