TIME SERIES ANALYSIS FOR THE RATE OF PROPERTIES LOST BY FIRE ACCIDENT IN LAGOS STATE

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ABSTRACT

The frequent occurrence of major fire accidents in commercial buildings, shopping malls, and markets in Nigeria has become a serious threat to the nation's fragile economy. Many major markets and commercial buildings have been gutted by these "market fires" which is destroying lives and properties worth several billions of naira (NEMA, 2006). Socio-economic impacts of these accidents are aggravated by the fact that victims of such fire disasters are without adequate insurance cover. These fires have continued to render many jobless, damage the environment, disrupt economic activities and worsening the problem of poverty.

This project examines the rate of properties lost by fire accident in Lagos State for the period of (2005-2010). It deals with the types of fire accident, causes and solution to the problems.

Model was developed for the proneness of fire accident which could be used for planning control strategies for regulatory bodies, insurance companies and other stake holders to help in reducing the frequency of fire disaster occurrence in the commercial sector of the State. The statistical tools used for this analysis was time series. After the analysis, the model identified was ARIMA (2, 1, 0) because it has the minimum number of AIC (452.31819) and model coefficient of - 0.50609 -0.22891 The model equation is given as;

$$- 0.50609x_{t-1} - 0.2289x_{t-2} + a_t .$$

For the prediction of future occurrence, the least square method was used, and was observed that the lowest occurrence is in 2012 which have the value of 9.0179 and highest occurrence was observed in 2016 which have the value of 9.3672. From this analysis, it was deduced that in 2016, that the State will lose more properties to fire accident probably due to more economic activities in the state. This project work provides the clue to this incident to reduce the state unplanned budget.