

On the Estimation of Crime Rate in the Southwest of Nigeria: Principal Component Analysis Approach

Authors : Kayode Balogun, Femi Ayoola

Abstract : Crime is at alarming rate in this part of world and there are many factors that are contributing to this antisocietal behaviour both among the youths and old. In this work, principal component analysis (PCA) was used as a tool to reduce the dimensionality and to really know those variables that were crime prone in the study region. Data were collected on twenty-eight crime variables from National Bureau of Statistics (NBS) databank for a period of fifteen years, while retaining as much of the information as possible. We use PCA in this study to know the number of major variables and contributors to the crime in the Southwest Nigeria. The results of our analysis revealed that there were eight principal variables have been retained using the Scree plot and Loading plot which implies an eight-equation solution will be appropriate for the data. The eight components explained 93.81% of the total variation in the data set. We also found that the highest and commonly committed crimes in the Southwestern Nigeria were: Assault, Grievous Harm and Wounding, theft/stealing, burglary, house breaking, false pretence, unlawful arms possession and breach of public peace.

Keywords : crime rates, data, Southwest Nigeria, principal component analysis, variables

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