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ABSTRACT



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D31: APPLICATION OF BOOTSTRAPING TO A CATEGORICAL DATA OF HIV/AIDS SPREAD ACROSS DIFFERENT SOCIAL-ECONOMIC CLASS, USING R



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Abstract: This research reports on the relationship and significance of social-economic factors (age, sex, employment status) and modes of HIV/AIDS transmission to the HIV/AIDS spread. Sample of people from different social economic class who took HIV/AIDS test was collected. Logistic regression model, a form of probabilistic function for binary response was used to relate social-economic factors (age, sex, employment status) to HIV/AIDS spread. The statistical predictive model was used to project the likelihood response of HIV/AIDS spread with a larger population using Bootstrap re-sampling method. The collected data were also subjected to cross tabulation, Pearson Chi-square test for association and two-ways classification analysis of variance (ANOVA) were also employed. The Exploratory Data Analysis (EDA) of our categorical data showed that the age group 16-19 was the highest contributor to HIV/AIDS spread majorly through sexual intercourse, followed by mother to child transmission. The age group 70 and above was the least infected age group. The larger numbers of infected persons were the unemployed. The research suggested increase in public awareness, abstinence, and increment in employment level as vital control measures to the spread of HIV/AIDS.

D32: SEMI-MARKOV MODELLING IN DISCRETE TIME AND STATE FOR THE STUDY OF DESERTIFICATION IN NIGERIA

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Abstract: The area of land lost to desert encroachment in a year in Nigeria has been considered as a stochastic process. A semi-Markov and gap size model has been utilized to study the process. The model defines a discrete-time, discrete-state process in which successive state occupancies are governed by the transition probabilities of the Markov process. The model was tested by examining the historical data for desertification in Nigeria. The result indicates a slow and continuous loss of Nigeria cropland of about 1.4 % to desert in 200years. The result could be useful to the government and Non-governmental organizations for the control of desert in Nigeria.