MULTIPLE LINEAR REGRESSION ANALYSIS OF NEW AIDS CASES IN ZIMBABWE (2009-2014)

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ABSTRACT

According to the Zimbabwe Demographic Health Survey (ZDHS, 2010-2011), 129,934 people in 2010 became newly infected with HIV and yet advances and approaches in preventing HIV have been implemented to help us have an HIV free generation. It is therefore imperative that research into the underlying causes of this pandemic be analysed to enable policy makers to predict the number of new AIDS cases in Zimbabwe. The understanding of Human immune virus and Acquired immune deficiency syndrome (HIV/AIDS) is an important concern in developing countries including Zimbabwe, inspired in part by the United Nations Millennium Developmental Goals (MDG 6), which call for a fight against HIV, Malaria and other diseases in the period 1990 to 2015. In view of this, the research assesses the impact of poverty, rape counts, migration and condom distribution on the number of new AIDS cases in Zimbabwe.

In this research data was analysed using descriptive statistics to summarize the characteristics of the predictor variables. A bivariate analysis was carried out to find the correlations among the variables. A stepwise multiple linear regression model was developed to examine the relationship between the number of new AIDS cases and the predictor variables. The regression assumptions were tested and met. A multiple linear regression model formulated showed that the significant factors in explaining the number of new AIDS cases were condom distribution and poverty. The predicted model has an $R^2$ value of 67.2; which meant that condom distribution and poverty explained 67.2% of the variation in the dependent variable. The final model was significant with an F-value being 64.628. The research also showed the significant factors which contribute to the understanding of the number of new AIDS cases. These factors were condom distribution and poverty. Condom distribution showed a strong positive linear relationship with a correlation coefficient of 0.734 and poverty shows a good positive linear relationship with a correlation coefficient of 0.664.

Since the model contributed 67.2 in explaining the number of new AIDS cases, the researcher recommends other researchers to further investigate significant factors not considered in the research in order to increase the $R^2$ value. Some of these factors include literacy, male circumcision, employment rate, and expenditure on health per capita.