

NIGERIA POVERTY ANALYSIS, PREDICTION USING MACHINE LEARNING METHODS AND DEEP LEARNING

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ABSTRACT

Poverty refers to a lot of lacking which also include lacking enough resources to provide the necessities of life such as food, clean water, shelter and clothing which in today world it, include access to health care, education and even transportation. A lot method was given to Nigeria government which fails to work the way it supposed to work. The predications are not accurate, and the traditional way of prediction in Nigeria include site survey which is expensive and labor intensive which tend to be waste of time before getting the real result. Lack of reliable poverty data in Nigeria is the major obstacle for making informed policy decisions and allocating resources effectively in those areas that need help the most. In this paper we will first of all carry out multidimensional poverty analysis using multiple correspondence analysis to fully understand the cause of poverty then well make predictions using three different machine learning method then finally based on previous research that is satellite images processed through convolutional neural networks, we will also use that to gauge poverty levels. This paper attempts to extend on past work by comparing the simple machine learning methods to the complex deep learning method to see which is more suitable to best understand and predict poverty in Nigeria.

Keywords: Poverty Prediction, Machine Learning, Convolutional Neural Network, Decision Tree, Binary Logistic Regression, Random Forest, Multiple Corespondent Analysis, K-Mean.