

## Decision Tree Analysis of Social Exclusion Factors

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### **Abstract:**

This article presents a study that employs machine learning techniques to investigate the factors influencing poverty as a primary driver of social exclusion in the United States. Addressing gaps in previous research, we propose a decision tree-based approach to develop a set of predictive models aimed at identifying and quantifying the factors affecting poverty. To this end, we train models using microdata from IPUMS USA, collected from censuses and surveys, containing a wide range of socio-economic variables. By grouping the variables into three categories: predisposing, socio-demographic, and socio-economic, we build three sets of predictive models used to assess the significance of factors associated with these variables. Through variable sensitivity analysis and Variable Effect Characteristic (VEC) analysis to evaluate the values of these variables, we propose a methodology for empirically assessing various factors related to poverty. The proposed methodology would aid in making informed decisions when developing policies and setting priorities in this area.

### **Keywords:**

Classification, decision trees, machine learning models, poverty, supervised learning.