

## FACTORS THAT AFFECT THE USE OF FIREWOOD IN AWKA NORTH LOCAL GOVERNMENT AREA OF ANAMBRA STATE

**Benedict Nnabuike Okoye and Nwabueze Ikenna Igu**

Department of Geography and metrology, faculty of environmental science, Nnamdi  
Azikiwe University Awka, Anambra State, Nigeria.

Corresponding Author's Email: [nnabuikeokoye19@gmail.com](mailto:nnabuikeokoye19@gmail.com)

### Abstract

The persistent reliance on firewood as a primary source of household energy remains a pressing issue in many rural communities of Nigeria. Despite the availability of modern cooking alternatives, such as liquefied petroleum gas (LPG) and kerosene, a significant proportion of households continue to depend heavily on firewood due to affordability, accessibility, and cultural preferences. This dependence contributes not only to environmental challenges such as deforestation, biodiversity loss, and land degradation but also to health risks from indoor air pollution, which disproportionately affect women and children. This study adopted a mixed-method design, integrating qualitative and quantitative approaches to enhance validity and reliability. Data collection involved focus group discussions, key informant interviews, and household surveys across six rural communities in Awka North LGA, Anambra State. A sample size of 400 was derived using Taro Yamane's formula. The study area, characterized by tropical savanna climate, fertile plains, diverse relief, and rich vegetation, supports farming and small-scale industries. Instruments were validated by experts and reliability confirmed using Cronbach's Alpha. Data were analyzed with SPSS v20, employing Principal Component Analysis, ANOVA, and Kruskal-Wallis tests to explore firewood usage and its impacts. The study identified ten factors influencing firewood use in Awka North LGA, including socioeconomic status, household size, cultural practices, education, climate, and geographic location. Principal Component Analysis (PCA) reduced these into three major components explaining 91.25% of the variance. Component I (60.17%) highlighted socioeconomic conditions, education, climate, and household size as the strongest determinants. Component II reflected cultural practices, while Component III captured environmental awareness and geographic accessibility. Regression analysis confirmed that socioeconomic status, household size, and cultural practices significantly predicted firewood usage, with  $R^2$  of 0.975. This demonstrates that firewood dependence is shaped by interconnected social, economic, and environmental factors. The study concludes that firewood dependence in the area is shaped by a complex interplay of economic, social, and environmental dimensions.

**Keywords:** Firewood use, socioeconomic factors, cultural practices, Awka North, sustainable energy.

### Introduction

The rising world fuel prices, the growing demand for energy, and concerns about global warming are the key factors driving the use of renewable energy sources. Popp, Kot, Lakner and Oláh (2018) reported that energy consumption is still increasing rapidly, with approximately 570 EJ consumed at the primary energy level in 2014. The world gets about 19.2% of its energy from renewable sources, including about 8.9% from traditional