

APPLICATION OF FRACTIONAL REGRESSION IN MODELING MAIZE FARMERS' ADOPTION OF CLIMATE SMART AGRICULTURAL PRACTICES IN KATSINA STATE, NIGERIA

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ABSTRACT

Nigeria's Maize production had been endangered and bedeviled by periodic droughts, torrents, storms and other extreme weather events, owing to climatic fluctuations. This occasioned in food insecurity and national economic hardship. This study sought to model the adoption of climate smart agricultural practices by the maize farmer in katsina state, Nigeria. Multi-stage sampling procedure was used for the study. Primary data were used to elicit information from maize farmers through pre-tested structured questionnaires. Socio economic characteristic reveals the mean age of the maize farmers to be 48 years. This indicates that maize farmers in the study area were dominated by young people who are active and fall within the productive age group. The mean household size of the respondents was 7. This signals that majority of the maize farmers in the study area had larger household sizes. Further descriptive analysis shows that 30.0 % of the maize farmers had secondary education, 22.0 % had tertiary education, 16.0 % had Arabic education, and 12.0 % had primary education, while only 20.0 % of them had no formal education. About 68.33 % of maize farmers had farming experience of 1 – 10 years, while only 10.0 % of them had 41 – 50 years of farming experience. Fractional regression model Analysis shows that marital status was negatively significant ($P < 0.01$). This connotes that the single farmers are less likely to adopt CSAPs practice than married farmers. It then means that a unit increase in adoption by an unmarried farmer will lead to reduction in the rate of adoption by 20.30 %. Membership of cooperatives was negatively significant ($P < 0.05$). It means that involvement of the maize farmers in cooperative will less likely influence the adoption of CSAPs. Therefore, a unit increase in cooperative fund will lead to a reduction in the adoption of CSAP s. The study concludes that CSAPs maize farmers' adoption in the study area cannot be predisposed absolutely by identified predictors. Youth enlightenment program that can reorientate the single farmers is needed in the area. Cooperative loan should be utilized in a good way.

KEYWORDS: Fractional-Regression, Maize-Farmer, Adoption, Climate-Smart-Agricultural

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