

Abstract

Indigenous agricultural practices (IAPs) are environmentally and agriculturally sustainable. Among the widely applied IAPs include crop rotation, agroforestry, intercropping, organic manure application, and minimum tillage. A lot of research has been conducted to reveal the determinants of adoption levels of modern technologies among smallholder farmers. However, little literature exists relating to the effect of socio-economic factors on the adoption levels of IAPs in Kenya. Therefore, the purpose of the study was to determine the effect of farm characteristics, access to credit, and access to advisory services on the adoption levels of IAPs in Chuka sub-county. A descriptive correlational design was utilized to collect and analyze data. The study targeted a population of 22,400 smallholder farmers involving a sample of 100 participants. Cluster sampling technique was applied to select farmers from three clusters; Mugwe, Karingani, and Magumoni Wards. A semi-structured questionnaire was utilized as a data collection tool. A pilot study was conducted in Muthambi Ward to generate data which aided in the checking and improvement of validity of the research instrument. Reliability of the research instrument items was estimated through Cronbach alpha coefficients. The alpha values of the variables were: adoption of IAPs ($\alpha = 0.68$), both farm income and land tenure ($\alpha = 0.84$), access to credit ($\alpha = 0.66$) while that of access to advisory services was 0.89. Statistical package for social sciences (SPSS. V.22) was applied to generate both inferential (simple Pearson correlation and multiple linear regression) and descriptive (frequency, percentage, mean, median, and standard deviation) statistics for analyzing data. The findings indicated that there was a substantial, positive significant effect of land tenure and access to advisory services on the adoption of IAPs ($p = 0.01$). Farm income had a negative, significant effect on the adoption of IAPs ($p = 0.01$) while that of access to credit was positive, though statistically significantly, was weak ($p = 0.01$). Farm income and land tenure jointly accounted for 30% of the variation in the adoption level of IAPs. The adoption level of IAPs was still moderate given the low frequency of application by many smallholder farmers. Therefore, the study recommended that the county government and the ministry of agriculture should give sufficient support to agricultural extension programs, strengthen land tenure systems, sensitize farmers on the importance of IAPs, and make credits more accessible to farmers so as to increase the adoption of IAPs.