Abstract

Vegetable production is vital to smallholder farmers, who often struggle to overcome pests, diseases, and extreme weather. Agroecological cropping systems offer sustainable solutions to these issues but their adoption rates in Tanzania remain low. This study examines the factors influencing smallholder farmers' adoption of selected agroecological cropping systems for vegetable production in Tanzania, which remains underexplored. Using a multistage sampling technique, cross-sectional data were gathered from 525 crucifer and traditional African vegetable farming households within the Arusha and Kilimanjaro regions. Multivariate probit regression analysis, which accounts for the simultaneous adoption of multiple systems, revealed several significant variables influencing adoption. The number of training sessions attended and access to market information positively influenced adoption ($p < 0.01$), while gross income from vegetable production also had a positive influence ($p < 0.05$). Conversely, the age of the household head and the region where the farm was located showed negative effects on adoption ($p < 0.05$). These findings highlight the need for targeted extension services and training sessions focusing on the benefits, methods, and management techniques of agroecological cropping systems. Gender-sensitive policies and interventions should also be developed to address the factors influencing the adoption of agroecological cropping systems.