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Impacts of Agricultural Upgrading Strategies on Smallholder’s Vulnerability to Poverty and Food Insecurity: Panel Evidence from Rural Tanzania

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Abstract

Poverty and food insecurity continue to characterise a considerable number of households in Sub-Saharan Africa. Empirical evidence shows that rural agricultural households constitute majority of the poor and food-insecure. Owing to this, multitudes of agricultural interventions have been implemented to enhance food security and reducing poverty. However, past adoption studies shows huge focus on static welfare analyses with scarce evidence on dynamic impacts of technology adoption along the traditional value chain. This study evaluates impacts of adopting upgrading strategies along the traditional value chain on households’ vulnerability to poverty and food insecurity. We use a balanced panel data (n=457) obtained from households’ survey of 187 adopters and 270 controls collected in 2014, 2016 and 2018 in sub-humid (Morogoro) and semi-arid (Dodoma) regions in Tanzania. We establish households’ dynamic poverty and food insecurity status based on the vulnerability as uninsured exposure to risk (VER) approach. We analyse adoption impacts by modelling probabilities of the households’ ordered poverty status and food insecurity status using the conditional-mixed-process (CMP) framework with instrumental variables ordered probit model to account for possible self-selection bias. Our results show that adoption of upgrading strategies is associated with decreased probability of households to stay poor or vulnerable and positively influence households’ probability to remain non-poor. Further, adoption of upgrading strategies increased the probabilities of extreme food insecure to remain in their category, and increased the probability of the transient food insecure to exit the food vulnerable category. Future research will deal with the question which innovations could improve food security status among the extreme food insecure. These findings imply that adoption of upgrading strategies along the traditional agricultural value chains has substantial benefits on reducing vulnerability among rural households. Policy efforts should therefore focus on continued implementation of agricultural upgrading strategies to improve rural households’ welfare.

Keywords: Adoption, Agricultural upgrading strategies, Tanzania, Vulnerability to poverty and food insecurity

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