

Improving livelihoods through postharvest loss management: evidence from Nigeria

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Abstract

Postharvest loss is a major challenge in food production and supply chains in developing countries like Nigeria. This leads to significant falls in livelihood outcomes such as reduced household income and food insecurity. Using primary data from perishable agricultural commodity dealers in Nigeria and endogenous switching econometric modelling, we investigate factors determining postharvest technology (PHT) adoption, the impacts of PHT adoption on net returns and its implication on livelihood outcomes. We found that adoption of PHT significantly increases net returns and thus improves livelihoods. The counterfactual impact analysis indicates that value chain actors who adopted PHT would have earned 7% lower net returns had they not used the technology. Conversely, non-adopters would have increased their net returns by 5% had they adopted the technology. However, heterogeneous treatment effects were observed due to heterogeneities among the adopters. Results further indicate that the position of value chain actors along the perishable supply chain, income level, product seasonality, sales frequency, and technology affordability positively influence adoption decision. High cost of technology is found to be the major barrier to technology adoption. We suggest targeted interventions to enhance access to PHT for reducing food losses, reducing food insecurity, and improving livelihoods for agricultural actors along perishable value chains. Policy interventions, such as improving access to affordable financing options, incentives for production of low-cost technology locally, or duty-free importation should be considered to make PHT affordable, increase its wider adoption, and improve food security of households along the agricultural value chains in developing countries like Nigeria.