

Beyond Adoption: Econometric Analysis of Impacts of Farmer Innovation Systems and Improved Agricultural Technologies on Rice Yield in Ghana

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Abstract : In order to increase and bridge the differences in rice yield, many farmers have resorted to adopting Farmer Innovation Systems (FISs) and Improved Agricultural Technologies (IATs). This study econometrically analysed the impacts of adoption of FISs and IATs on rice yield using multinomial endogenous switching regression (MESR). Nine-hundred and seven (907) rice farmers from Guinea Savannah Zone (GSZ), Forest Savannah Transition Zone (FSTZ) and Coastal Savannah Zone (CSZ) were used for the study. The study used both primary and secondary data. FBO advice, rice farming experience and distance from farming communities to input markets increase farmers' adoption of only FISs. Factors that increase farmers' probability of adopting only IATs are access to extension advice, credit, improved seeds and contract farming. Farmers located in CSZ have higher probability of adopting only IATs than their counterparts living in other agro-ecological zones. Age and access to input subsidy increase the probability of jointly adopting FISs and IATs. FISs and IATs have heterogeneous impact on rice yield with adoption of only IATs having the highest impact followed by joint adoption of FISs and IATs. It is important for stakeholders in rice subsector to champion the provision of improved rice seeds, the intensification of agricultural extension services and contract farming concept. Researchers should endeavour to researched into FISs.

Keywords : farmer innovation systems, improved agricultural technologies, multinomial endogenous switching regression, treatment effect

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