

DETERMINANTS OF THE ADOPTION OF IMPROVED AGRICULTURAL TECHNOLOGY BY IRRIGATED RICE FARMERS IN NORTH-WESTERN NIGERIA

¹Jamilu Sani Garba, ¹Abdulsalam Sikiru Ademola, ¹Saifullahi Sani Ibrahim
and ²Tiri D. Gyang

¹Department of Economics and Development Studies, Federal University Dutsin-Ma, Katsina State,
Nigeria

²Department of Agricultural Economics and Extension, Federal University, Dutsin-Ma, Katsina State,
Nigeria

Corresponding Author's email: djamilm86@gmail.com



Abstract

The study investigated the salient determinants of the adoption of improved agricultural technology of the irrigated rice farmers in north western Nigeria. Cross-sectional data was collected from the 564 irrigated rice farmers selected based on multi-stage sampling technique. The survey data were analysed using the multinomial Instrumented Variable Probit and endogenous switching regression. The results show that age is negatively and significantly related to the adoption of HYVs and combined adoption HYVs and mobile phone. Household size is positively and significantly related to the adoption of HYVs, mobile phone and combined adoption of tractor service and mobile phone. Year of formal education is positively and significantly related to the adoption of HYVs, tractor service and mobile phone. Access to credit is positively and significantly related to the adoption of tractor service only. Farm size is positively and significantly related to the adoption of tractor service and combined adoption of HYVs, tractor service and mobile phone but negatively and significantly related to the adoption of mobile phone, combined adoption of HYVs and mobile phone as well as combined adoption of tractor service and mobile phone. Frequency of extension contact is positively and significantly related to the adoption of mobile phone, combined adoption of HYVs and mobile phone as well as combined adoption of tractor service and mobile phone. Availability of technology is positively and significantly related to the adoption of the combined three technology alternatives. Also, the adoption of mobile phone is likely to increase the technical efficiency of the irrigated rice farmers by 2.426 percentage points and technical efficiency-increasing effect for adopters is 1.340 with 0.364 technical efficiency-decreasing effects for non-adopters. It is concluded that adoption of mobile phone has causal positive effect on the technical efficiency of the adopters and their non-adopters likewise. Therefore, there is the need for encouraging multiple technology adoption and promoting mobile phone adoption among non-adopter irrigated rice farmers.

Keywords: Adoption, Determinants, Irrigated Rice Farmers, Improved Agricultural Technology, North-Western, Nigeria.