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Agricultural Technology and Information Response Initiative (ATIRI) in Kenya: Influence of Intrinsic Farmer-Group Characteristics on Household Adoption of Demand-Led Improved Agricultural Technologies

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Abstract

The United Nations in 2000 renewed the commitment to human development through the declaration of Millennium Development Goals (MDGs). The target population for the eight goals is mainly the rural poor, whose principal economic activity, especially in Africa, is agriculture. This makes delivery and adoption of relevant and improved agricultural technologies for increased productivity and profitability, through innovative Research-Extension-Farmer linkages, critical to achieving the MDGs. However, Research-Extension-Farmer linkages in Kenya, as in most of Sub-Saharan Africa, require improvement. This paper examines the intrinsic group characteristics that influence adoption of improved agricultural technologies in a group-based demand-led approach; the Agricultural Technology and Information Response Initiative (ATIRI), used by the Kenya Agricultural Research Institute (KARI) to catalyze agricultural technology dissemination and adoption. To this end, 190 members out of a total of 494 members of 20 farmers' groups from Nakuru District, Kenya, who used the ATIRI approach between 2000 and 2002, were sampled. Data analysis focused on the following intrinsic group characteristics: a) motivation to join and remain within groups; b) characteristics of group leaders; c) inter- and intra-group networking and communication behaviour; and d) groups' organizational capabilities. Principal Component Analysis (PCA) using the Varimax rotation method with Kaiser Normalisation was used to extract principle underlying components from the factors describing each characteristic. The extracted components formed the basis for subsequent binary logistic regression analysis with adoption as the dependent variable. Significant and positive coefficients were realized for: 'regular change in leadership' ($P < 0.001$); 'group support to education and training' ($P < 0.05$); 'groups' capacity to provide agricultural inputs to members' ($P < 0.05$); and, 'information and advice from community leaders' ($P < 0.1$). The component 'leaders with professional skills' was significant ($P < 0.1$) but negative. These results suggest that, groups which change their leaders regularly are better organized to also support adoption decisions among members; education and training of group members and provision of agricultural inputs encourages adoption; and that the involvement of community leaders contributes to adoption of technologies. However, group leaders with professional skills do not necessarily serve farmers' groups well possibly because their commitment to the group is divided between the group and other professional engagements.

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