



Tropentag, October 7-9, 2008, Hohenheim

“Competition for Resources in a Changing World:
New Drive for Rural Development”

Farmers’ Perceptions of Attributes of Agricultural Technologies and their Impact on Adoption: A Case Study of Nakuru District, Kenya

IMMACULATE NJUTHE MAINA¹, INGRID-UTE LEONHÄUSER¹, SIEGFRIED BAUER²

¹*Justus Liebig University, Nutrition Education and Consumer Behaviour, Germany*

²*Justus Liebig University, Institute of Project and Regional Planning, Germany*

Abstract

Farmers’ perceptions of attributes of technologies as a factor influencing adoption of technologies is often neglected in diffusion studies even as the challenge of low, slow and incomplete adoption of new and improved technologies for rural development continues. Since farmers make rational decisions, technologies must possess certain attributes that appeal to them, fulfil their varied needs and are consistent with available household resources. Perceptions of farmers towards new and improved agricultural technologies were assessed based on the attributes of relative-advantage, compatibility, complexity, trialability and observability. Data were collected in a field survey using structured questionnaires administered to 190 randomly selected members of farmers’ groups in Nakuru District, Kenya. These farmers’ groups were affiliated with the demand-driven Agricultural Technology Information and Response Initiative (ATIRI) of the Kenya Agricultural Research Institute (KARI). Data analysis procedures included descriptive statistics, factor analysis and logistic regression. Descriptive analysis of the aforementioned technology attributes yielded means above 2.6 on the scale of 1=unimportant, 2=important, 3=very important for all attributes. Over 70 % of farmers considered each attribute as ‘very important’ in influencing their adoption decisions. The factor analysis explained 65.2 % of the total variance and extracted five factors. Factor 1 with 15.8 % of total variance explained, gave observability as the most important attribute of technologies. Factor 2 with 14.3 % of total variance explained, was most related to trialability. Factor 3 with 12.7 % of total variance explained, was consistent with compatibility. Factor 4 with 11.2 % of total variance explained, was associated with complexity. Factor 5 with 11.8 % of total variance explained, denoted relative advantage. The computed chi-square for the regression model ($\chi^2=11.803$; $p < 0.05$) suggests that the model parameters jointly are significantly different from zero for the effect of perceptions of technology attributes on adoption. Specifically however, significant results were realised for observability ($p < 0.05$) and trialability ($p < 0.1$). Therefore, agricultural research and development activities must focus on technologies whose results are visible to other farmers, can be tried on the installment plan, are consistent with existing values, past experiences, and needs of potential adopters, can be learnt and used with ease, and are perceived as better than existing ideas.

Keywords: Adoption, ATIRI, attributes of technologies, farmers’ perceptions, Kenya