Tropentag, September 18-20, 2019, Kassel

"Filling gaps and removing traps
for sustainable resource management"

The Role of ICT Based Extension Services on Dairy Production in Kenya: A Case of iCow Service

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Abstract

There is a consensus that agricultural extension service play an important role for growth and transformation of the agricultural sector in Sub Saharan Africa. Benefits such as high productivity, quality of produce, reduction of diseases and pest, and increased income among smallholder farmers are attributed to access to quality extension service. Despite of these contributions of extension services, smallholder farmers have the challenge of accessing timely and credible agricultural information which limits them in realising maximum farm output. Use of ICT as an agricultural extension tool by smallholder farmers has the potential to reverse the scenario and improve farmers' access to credible agricultural information. The current study aimed at determining the impact of iCow service (ICT- based extension tool) on milk production, household income.

The study randomly sampled a total of 457 small-household dairy farmers in three counties of Kenya, of which 209 farmers regularly used the iCow services and 248 farmers were non-users. Further, the study used Propensity Score Matching (PSM) model to estimate the impact of iCow on milk production, household income.

Descriptive analysis shows that there are significant differences in the means between regular users of iCow and non-users with respect to milk production and household income. Regular iCow users realised higher average annual milk production and annual household income than non-users. The results of PSM model indicates that use of iCow services among dairy farmers had a positive and significant effect on milk production and income. Specifically, the figures reveal that use of iCow services led to increased milk production by 1138.95 litres and earned Ksh. 89,043 more annually. These figures can be considered as an opportunity cost of not using iCow service.

The positive impact shows the potential role of ICT-based extension in rural poverty reduction through increased household incomes. The positive correlation of use of phones in getting timely information among farmers suggest partnership between network providers and research institutes should be encouraged as part of bridging the extension gap occasioned by reduced public expenditure on extension services.

Keywords: Agricultural information, dairy farmers, iCow services, ICT, propensity score matching

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