

Article title	Multivariate and Non-Parametric Methods for Identification of Factors That Decide the Adoption of Fertilizer Use by Rwandan Farmers.
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Abstract	<p>The quantity of fertilizer used is a good indicator of the degree of prosperity in any country. Prior to 2008, the mean rate of fertilizer use in Rwanda was 4 kg ha⁻¹, lower than the mean for sub-Saharan Africa of 11 kg ha⁻¹, which is the world region with the lowest fertilizer use. In 2008 the Rwandan government, with the assistance of international aid agencies, started programs with the main objective of increasing the use of fertilizers in the diverse crops grown in the country.</p> <p>As part of a project sponsored by USAID, a survey was developed to identify major factors that affect the farmer's decision of starting fertilizer use. The random sampling survey was designed to collect demographic, socioeconomic, and crop management practices data from 2022 small scale farm households located throughout the country.</p> <p>Principal Factor Analysis was employed to identify fertilizer adoption factors. Each of the factors selected is made up by a series of explanatory variables. Then the explanatory variables were tested comparing the Cumulative Empirical Distribution Functions (CEDF) or the Empirical Distribution Functions (EDF) of fertilizer users against no-fertilizer users. The hypothesis tests for the comparison of CEDF's and EDF's from the two groups of farmers were carried out with the non-parametric Kolmogorov-Smirnov test. The ten most influential factors, in order of importance, are shown below.</p> <p>Factor Name Factor</p> <ol style="list-style-type: none"> 1 Percent Maize Sales 2 Percent Vegetable sales 3 Farming Area 4 Interest on Increasing maize and vegetable Production 5 Interest on Getting Credit for maize and vegetable fertilization. 6 Perception of fertilization effect on Maize and Vegetables 7 Interest on Increasing Potato Production

	8 Fund Sources
	9 Understanding fertilizer importance
	10 Perception of Conditions Limiting Access to Fertilizers
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