Tropentag, September 10-12, 2025, hybrid conference

"Reconcile land system changes
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Farmers' willingness to pay for soil testing in Uganda: Unpacking the effect of principal-agent problem in agricultural extension

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Abstract

This study examined farmers' willingness to pay (WTP) for soil testing services and also explored how the Principal-Agent Problem in the dissemination of soil test results of pilot farmers affected their willingness to pay. Using the Contingent Valuation Method, we assessed willingness to pay for soil testing given different price bids and employed an ordered probit regression model to assess the correlates of WTP. Inverse Probability Weighted Regression Adjustment was used to evaluate the effect of the principal-agent problem on farmers' WTP. Results indicated that while 80 % of the farmers expressed interest in soil testing, only 53 % of those were willing to pay UGX 20,000 for a basic pH test, 24 % were willing to pay UGX 60,000 and only 14 % were willing to pay UGX 180,000 for a comprehensive soil analysis. Based on the ordered Probit model, the farmer WTP for soil testing is significantly influenced by access to agricultural credits, education level, farming experience, and training on soil fertility management. We introduced an information treatment involving soil sample analysis and result dissemination to some farmers, aiming to assess how access to information influences WTP. However, delivery challenges stemming from the Principal-Agent Problem by the extension officers hindered result transmission to the farmers. Our findings reveal that the failure to deliver test results, due to extension officers shirking and deception, significantly worsened farmers' willingness to pay for soil testing. These findings not only underscore the need to address unaffordable soil testing services for the small-scale farmers but also the need to improve information flows between the extension officers and farmers to foster adoption of soil testing.

Keywords: Extension service, principal-agent problem, soil testing, willingness to pay

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