



Digital Agriculture Tools in Kibera: An Adoption Study on Crop Yield Enhancement

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Abstract

Digital agriculture tools are increasingly being adopted by farmers worldwide to enhance crop yields and productivity. In rural areas of Kenya, such tools have shown promise in improving agricultural practices. However, their adoption in urban slums like Kibera presents unique challenges and opportunities. The research employs both qualitative and quantitative methodologies. Qualitative data is gathered through semi-structured interviews and focus group discussions. Quantitative data is collected via surveys among a sample of farmers who have adopted digital tools. Data analysis includes thematic coding for qualitative data and statistical testing for quantitative data. Among the surveyed farmers, 75% reported an increase in crop yield after adopting digital agriculture tools, with notable improvements in maize and vegetable cultivation. However, challenges such as limited internet access and cost remain significant barriers to wider adoption. Digital agriculture tools show promise for enhancing crop yields among Kibera farmers but require targeted interventions to address identified obstacles. Investment should be directed towards improving infrastructure and affordability of digital tools in urban settings. Public-private partnerships could facilitate access and promote sustainable use.

Keywords: *Kenya, Kibera, Mixed Methods, Quantitative Research, Qualitative Research, Geographic Information Systems, Participatory Action Research*

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