



# **Analysing Hydroponic Systems Adoption and Performance in Youth Entrepreneurship Programmes in Uganda: A Methodological Exploration**

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## **Abstract**

Hydroponic systems have gained popularity in various entrepreneurship programmes aimed at youth development, particularly in Uganda where agricultural education and innovation are increasingly emphasised. A mixed-methods approach combining quantitative surveys with qualitative interviews was employed. Data were collected from 150 youth participants across five different entrepreneurship programmes, using a structured questionnaire to assess hydroponic systems' adoption rates, performance metrics, and participant satisfaction levels. The analysis revealed that 72% of the surveyed youth had adopted hydroponic systems within their projects. The average system productivity was found to be  $150 \pm 30$  per week (95% CI), with significant variability among participants. This study provides valuable insights into the adoption dynamics and performance outcomes of hydroponic systems in youth entrepreneurship programmes, highlighting areas for further research and policy development. Further studies should focus on understanding long-term sustainability factors, identifying best practices for system design, and exploring the potential for scaling up successful models to broader populations. Hydroponics, Youth Entrepreneurship, Uganda, Adoption Rates, Performance Outcomes

**Keywords:** *Hydroponics, Entrepreneurship, Youth Development, Agricultural Innovation, Case Study, Quantitative Research, Qualitative Analysis, Participatory Evaluation*

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