



# The Impact of Digital Payment Platforms on Food Security Among Zambian Farmers: An Evaluation in an ICT-Powered Agricultural Landscape

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### Abstract

Digital payment platforms have emerged as critical tools for enabling financial transactions in various sectors, including agriculture. In Zambia, where traditional banking services are limited, digital payments offer a viable alternative for farmers to manage income and expenses efficiently. The research employed a mixed-methods approach involving both quantitative data collection through surveys and qualitative insights from in-depth interviews with selected farmers. Data were analysed using descriptive statistics to identify patterns and inferential statistics to test hypotheses regarding the relationship between digital payment platforms and food security. Findings indicate that over 60% of surveyed farmers reported increased income due to seamless transactions facilitated by digital platforms, while nearly half noted reduced transaction costs. However, there was a notable concern about data privacy and security among respondents. The integration of digital payment systems has positively influenced food security among Zambian farmers by enhancing financial management efficiency and reducing transaction barriers. Given the positive impact observed, it is recommended that government bodies and agricultural development organizations promote wider adoption of digital payment platforms to further support smallholder farming communities in Zambia. digital payments, food security, Zambian farmers, ICT, agricultural landscape Model estimation used  $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \theta \} \operatorname{sumiell} ( y_i, f\theta(\xi) ) + \lambda | \operatorname{Vert} \theta |$  with performance evaluated using out-of-sample error.

**Keywords:** Digital Payments, Agricultural Informatics, Food Security, Geographic Information Systems, Rural Development, Poverty Alleviation Models, Precision Agriculture



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