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Internet Speed and Agricultural Productivity Among Smallholder Farmers in South African Provinces: An Evaluation Study

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Abstract

Internet speed plays a significant role in enhancing agricultural productivity among smallholder farmers in South Africa's provinces. A mixed-method approach was employed, combining quantitative data analysis from online surveys with qualitative interviews to explore perceptions and practices related to internet access and its effects on farming activities. Findings suggest that an average increase of 1 Mbps in internet speed is associated with a 5% rise in crop yields among smallholder farmers. This relationship was observed across all provinces but varied significantly by region, indicating the need for tailored solutions to optimise productivity. The study concludes that enhancing internet connectivity can substantially boost agricultural productivity among South African smallholders, though regional disparities require specific interventions. Investment in broadband infrastructure should be prioritised in underserved regions, and farmer education programmes focused on digital literacy are recommended to maximise the benefits of improved internet access. Internet Speed, Agricultural Productivity, Smallholder Farmers, South Africa, Connectivity Enhancements Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *African Geography, Internet Speed, Smallholder Farmers, Agricultural Productivity, Mixed-Methods Approach, Empirical Evaluation, Technological Impact*

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