



# Digital Extension Services and Livestock Health Among Zimbabwean Dairy Farmers: A Longitudinal Study

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## Abstract

Digital extension services have been increasingly used to improve agricultural productivity in developing countries, particularly among smallholder farmers. A longitudinal study design was employed with data collected from a representative sample of dairy farmers over three years (-). Digital service use was associated with improved milk yield by an average of 5% compared to non-users, despite some variability in reported outcomes. The study supports the efficacy of digital extension services in enhancing livestock health and farmer productivity but highlights the need for ongoing user engagement and support. Further research should focus on long-term sustainability and explore personalized service delivery models to maximise benefits. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African Geography, Digital Agriculture, Livestock Health, Smallholder Farmers, Extension Services, Epidemiology, Demography*

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