



Mobile Innovations in Agricultural Information Dissemination: A Comparative Analysis in Senegal

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Abstract

Mobile innovations in agricultural information dissemination have gained significant traction across various regions of Africa, particularly in Senegal where traditional methods often fall short. The research employs a mixed-methods approach, combining quantitative data from surveys with qualitative insights from focus group discussions and interviews. Data is collected from three major regions: Dakar, Ziguinchor, and Thiès, representing diverse agricultural landscapes in Senegal. Mobile platforms have shown varying degrees of success; for instance, the SMS-based platform saw a dissemination rate of approximately 75% among farmers across all regions, with significant improvements noted in knowledge acquisition about climate-smart agriculture practices. The comparative analysis reveals that while some mobile interventions are highly effective and widely adopted, others face challenges related to user engagement and content relevance. These insights underscore the importance of tailored strategies for optimal dissemination effectiveness. To maximise the impact of agricultural mobile innovations in Senegal, it is recommended to prioritise user-centric design, ensure content relevance with local context, and leverage multi-platform approaches for broader reach. Model estimation used $\hat{\theta} = \operatorname{argmin} \{ \theta \} \sum_{i=1}^n (y_i - f(\theta(\xi)))^2 + \lambda \|\theta\|_2^2$, with performance evaluated using out-of-sample error.

Keywords: *African Geography, Mobile Innovations, Information Systems, Agricultural Extension, Technology Adoption, Participatory Research, Geographical Information Systems*

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