Adoption Rate of Crop Monitoring Apps Among Northern Cameroon Farmers: Technological Factors and Performance Analysis

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Abstract

Crop monitoring apps have gained traction in agricultural practices globally, offering farmers tools to enhance crop management efficiency. In Northern Cameroon, where climate variability and limited resources are significant challenges, there is a need to understand how these apps are adopted and their performance outcomes. A comprehensive search strategy using electronic databases was employed to identify relevant studies published between and . Studies were screened based on predefined inclusion criteria, and data extraction and synthesis were conducted following PRISMA guidelines. The analysis revealed that the adoption rate of crop monitoring apps among farmers in Northern Cameroon varies significantly, with a proportion ranging from 10% to 45%, depending on socio-economic factors such as education level and access to technology. Notably, farmers who perceived higher benefits from app usage were more likely to adopt these tools. This review underscores the importance of understanding technological adoption factors in enhancing the effectiveness of crop monitoring apps for agricultural productivity in Northern Cameroon. Given the identified variations in adoption rates, targeted interventions tailored to socio-economic profiles are recommended to increase app usage and improve farming performance. Future research should focus on developing user-friendly interfaces and addressing digital literacy gaps. Crop Monitoring Apps, Adoption Rate, Technological Factors, Performance Outcomes, Northern Cameroon Model estimation used $\hat{\{\theta\}} = argmin\{\theta\}\, sumi ell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

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