



Assessing the Feasibility of WhatsApp-Based Digital Extension Services for Paddy Farmers in Sri Lanka: Evidence from Ampara District

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Agricultural extension services crucially enhance agricultural productivity and food security. Traditional extension systems constantly face serious drawbacks: inadequate communication between farmers and extension officers, limited extension staff capacity, and the slow delivery of timely information. These constraints are particularly evident in Ampara, a leading paddy-producing region in Sri Lanka. This study explored the potential of introducing a WhatsApp-based e-extension service system as an innovative, low-cost, and interactive communication tool. Primary data were collected through a pretested structured questionnaire from a sample of 150 paddy farmers in the Akkaraipattu East, Akkaraipattu West, and Sammanthurai agrarian service areas. Descriptive statistics, confirmatory factor analysis, and a Smart PLS structural model were adopted to assess relationships between key variables: perceived ease of use, perceived usefulness, attitude toward use, and behavioral intention. Findings showed that existing e-extension platforms (Govi Nena, Govi Mithuru, and Krushi Advisor) face several challenges: ineffective communication (mean = 4.50, $p = 0.001$), lack of tailored solutions (mean = 3.79, $p = 0.004$), and information gaps (mean = 3.75, $p = 0.003$). Strong relationships were observed among perceived ease of use, perceived usefulness, and behavioral intention (path coefficients $\beta = 0.83$ and 0.91), suggesting that farmers find WhatsApp more accessible than existing e-sources, and ease of use becomes more effective for obtaining timely information in a trusted way (attitude toward using WhatsApp, $\beta = 0.89$). The study concludes that a WhatsApp-based extension system could significantly improve the accessibility of relevant agricultural information in a timely manner, which can strengthen real-time communication, deliver personalized guidance, and make extension services more accessible. This study offers meaningful insights for policymakers and extension agencies to modernize their approaches by embracing simple, farmer-friendly digital tools to boost agricultural productivity.

Keywords: Digital extension, Farmer readiness, Paddy sector, WhatsApp-based communication