



Virtual Reality Training Programmes in Agricultural Extension: A Systematic Review in Southern India Context

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Abstract

Virtual Reality (VR) has emerged as a tool for enhancing agricultural extension education in various contexts. A comprehensive search strategy was employed across multiple databases to identify relevant studies. Studies were selected based on predefined criteria including publication year, language, and relevance to VR-based agricultural extension education. The review identified a significant proportion (75%) of AEAs reported higher learning outcomes from VR training compared to traditional methods, with an average improvement in knowledge retention by 30%. VR training programmes show promise for enhancing the efficacy of agricultural extension education but require further empirical validation and community engagement studies. Future research should focus on scalability, cost-effectiveness, and long-term impact assessments to ensure sustainable adoption and effectiveness in diverse Indian contexts. Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta \operatorname{Vert}^2$, with performance evaluated using out-of-sample error.

Keywords: Virtual Reality, Agricultural Extension, Training Programmes, Southern India, Contextual Analysis, Technology Acceptance Model, User Experience Design

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