

FACTORS AFFECTING THE ADOPTION INTENTION OF POLYTUNNEL FARMING SYSTEMS AMONG FARMERS IN KURUNEGALA DISTRICT

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This study examined the factors influencing the adoption intention of polytunnel farming among farmers in *Kurunegala* district, Sri Lanka. Polytunnel farming has the potential to boost agricultural productivity and reduce climate-related risks. However, adoption rates remain low among farmers due to a significant knowledge gap. This research aimed to identify key factors affecting adoption intentions using the extended Theory of Planned Behavior (TPB) as the theoretical framework which includes attitudes, subjective norms, perceived behavioral control and actual behavioral control. A structured survey was administered to a randomly selected sample of 150 farmers, with data analyzed through Structural Equation Modeling (SEM) using AMOS 22.0 and SPSS 26.0. In the model evaluation, a Confirmatory Factor Analysis (CFA) resulted in a comparative fit index ($CFI=0.907$) indicating an acceptable model fit. Results indicate that subjective norms and actual behavioral control significantly ($p<0.05$) affect adoption intentions while attitudes toward polytunnel farming and perceived behavioral control do not have significant impacts. To improve subjective norms, it is essential to create a supportive environment where farmers feel encouraged by their peers and community to adopt polytunnel farming and also to enhance actual behavioral control, training programs that focus on hands-on skills for setting up and maintaining polytunnel can empower farmers with the confidence to adopt this technology. Together, these efforts can significantly improve both subjective norms and actual behavioral control leading to wider adoption of polytunnel farming.

Keywords: Adoption barriers, Climate resilience, Farmer perceptions, Polytunnel farming adoption, Theory of Planned Behavior