

## Factors affecting technology adoption in smallholder rubber sector: A case study in Kurunegala district

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### Abstract

Adoption of recommendations is a critically important factor for the rubber cultivation as there is a high gap between the actual yield and potential yield of the recommend clones. Therefore, this study attempted to identify the factors affecting technology adoption in rubber smallholder sector in the Kurunegala district. A pre-tested semi-structured questionnaire survey was conducted for data collection. Sampling was done using a two-stage sampling technique with a sample of 112 farmers. In the first stage Rubber Development Officers (RDO) divisions were selected while rubber smallholders were selected in the second stage from selected RDO divisions. Heterogeneity, margin of error, confidence interval and non-respondent rates were respectively 50-50, 0.1, 95% and 10%. Data on demographic details, crop details, social relationships, income and adoption details were collected through the survey. A Fractional probit regression estimated the correct data generation process. Estimation was carried out in a Bayesian framework. Random Walk Metropolis Hasting algorithm was used to draw 300,000 samples. Out of which 250,000 was used as the analysis sample as 50,000 were discarded as a burn-in to reduce the impact of starting values. Markov Chain Monte Carlo convergence was checked using a visual diagnosis of trace plots, histograms and autocorrelation plots. Membership of a rubber related society, attending training programmes, and land extent show a positive relationship with adoption. Results also show that farmers with high incomes are technology adopters compared to low income farmers. According to the results, establishing and functioning rubber related societies as well as organizing training programmes are important to improve the technology adoption in the smallholder rubber sector.

**Keywords:** Adoption of technology, Bayesian analysis, Rubber, Smallholder

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