

TECHNICAL EFFICIENCY OF PADDY FARMERS AND ITS DETERMINANTS: APPLICATION OF TRANSLOG FRONTIER ANALYSIS

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Abstract

The objectives of this study are to estimate the technical efficiency and its determinants of paddy farmers in Kurunegala district. 120 sampled farmers were selected from three villages during the last Maha season in 2019/2020. Translog frontier production function is applied to identify the impact of each input on paddy production and its results showed that log forms of the inputs such as land size, chemical costs, seed costs, expenditure on machinery, labor squared, interactions between land and chemicals, land and seed, labor and seed, fertilizer and chemical, fertilizer and seed were significantly affected on paddy production in the model. Empirical findings of the technical efficiencies indicated that, its mean value was 84% with a wide range from 27% to 99%. It suggested that farmers in the study area still have the room to improve their farming efficiency by 16% from its present level and this variation has arisen from differences in demographic characteristics and farm management practices rather than random variability. An inefficiency effect model was estimated by the maximum likelihood method which shows that male farmers are more efficient than females in the sample. Further, family size, income from farming, availability of non- farm income and farming experience were negatively related to technical inefficiency which means that, they were found to be significantly contributing to the variation in farm specific technical efficiency. Based on the results, the study recommended that agricultural extension officers should organize to exchange the farm experiences between male and female farmers, and promote them by providing additional income facilities to improve the efficiency in paddy farming and farmers' income in future.

Keywords: Demographic characteristics, farm management practices, smallholder paddy farmers, technical efficiency, translog frontier production function.

