

**THE ROLE OF MICROCREDIT ON TECHNICAL EFFICIENCY OF
PADDY CULTIVATION IN ANURADHAPURA DISTRICT OF SRI LANKA:
A STOCHASTIC FRONTIER ANALYSIS**

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Lack of financial capability is one of the major constraints faced by paddy farmers. Most farmers use microcredit, through formal and informal sources as an option to overcome such constraints. This study examines the effect of microcredit on the technical efficiency of paddy cultivation in *Anuradhapura* district of Sri Lanka using Cobb Douglas stochastic frontier analysis. A sample of 60 farmers, comprising of both microcredit borrowers (35) and non-borrowers (25), were selected through stratified and purposive sampling techniques for the analysis. The study finds that the mean technical efficiency of considered paddy farmers is 89%, implying that the farmers have the potential to increase their paddy productivity by 11%. The farmers show increasing returns to scale (1.01), reflecting that there is a scope to boost both productivity and production by increasing the scale of operation. Among the farm inputs, land and seed paddy ($p < 0.05$) and also the cost of agrochemical ($p < 0.1$) show a significant effect on paddy production. Moreover, factors such as farming experience ($p < 0.05$) with the level of education, extension services, and microcredit usage ($p < 0.1$) are positively influenced the technical efficiency of paddy farmers. The majority of the farmers (85%) obtain small loans not exceeding Rs.100,000 for their production of which, 57% of them use formal credit, while 40% of them are used informal credit sources. However, there is no significant difference ($p > 0.05$) between formal and informal credit access on the efficiency of production. The study confirms that paddy production can be increased further through efficiency gain. Effective and well-functioning extension services and training to improve farmers' managerial ability and the provision of microcredit may influence their efficiency of production. Also, the significant impact of smallholder paddy farmers' access to credit justifies the importance of the provision of agricultural credit facilities to farmers.

Keywords: Cobb-Douglas production function, Paddy production, Stochastic frontier analysis