

## Profit Efficiency and Technology Adoption of Boro Rice Production in Bangladesh

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**Abstract :** Rice is the staple food in Bangladesh, and therefore, self-sufficiency in rice production remains a major concern. However, Bangladesh is experiencing insufficiency in rice production due to high production cost and low national average productivity of 2.848 ton/ha in comparison to other rice-growing countries in the world. This study aims to find out the profit efficiency and determinants of profit efficiency in Boro rice cultivation in Manikganj and Dhaka districts of Bangladesh. It also focuses on technology adoption and effect of technology adoption on profit efficiency of Boro rice cultivation in Bangladesh. The data were collected from 300 households growing Boro rice through face to face interviews by one set structured questionnaire; Frontier Version 4.1 and STATA 15 software were employed to analyze the data according to the purpose of the study. Maximum likelihood estimates of the specified profit model showed that profit efficiency of the farmer varied between 23% and 97% with a mean of 76% which implied as 24% of the profit is lost due to a combination of technical and allocative inefficiencies in Boro rice cultivation in the study area. The inefficiency model revealed that the education level of the farmer, farm size, variety of seed, and training and extension service influence the profit inefficiency significantly. The study also explained that the level of technology adoption index affects profit efficiency. The technology adoption in Boro rice cultivation is influenced by the education level of the farmer, farm size and farm capital.

**Keywords :** farmer, maximum likelihood estimation, profit efficiency, rice

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