

Impact of Cooperatives on the Efficiency of Smallholder Farmers in Ghana

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Cocoa cooperatives play an influential role in Ghana's cocoa value chain, but its impact on technical efficiency and productivity is missing in the literature. In Ghana, cocoa cooperatives facilitate training, extension education and inputs to their members, but there is no study on the impact of cooperatives on the smallholder cocoa farmers in Ghana. Using data from 217 and 197 members and non-members of cocoa cooperatives, this study aimed to analyse cooperatives' impact on smallholder farmers' technical efficiency. We used a multi-stage sampling technique to select the respondents of this study. The truncated normal distribution stochastic frontier model was adopted to estimate the farmers' technical efficiency. Finally, we adopted the propensity score matching technique to analyse cooperatives' impact on the farmers' technical efficiency by accounting for observed bias. The study results showed that farm size, labour, and capital have a significant positive impact on the output of cocoa. The results further showed that cooperative membership significantly impacts smallholder cocoa farmers technical efficiency positively from all propensity score matching indicators. We encourage the government of Ghana policy of using cooperatives to disseminate cocoa innovation and cocoa training to smallholder farmers since participation in cooperatives contributes to technical efficiency and productivity of cocoa farmers.

Keywords: Technical efficiency, Output, Cocoa cooperatives, Stochastic frontier, Propensity score matching.