Profit efficiency among cotton farmers: a Cobb-Douglass stochastic frontier production function analysis

ABSTRACT

Based on Stochastic Frontier Profit Function that assumed Cobb-Douglass specification form, a multiple regression model was estimated using a cross-sectional data obtained from a sample of 349 cotton farmers by means of a multi-stage and simple random sampling techniques. Maximum likelihood estimates of the specified profit model explained that profit efficiency of the producers varied between 67.1% and 98.1% with mean 91.3% implying that an estimated 18.7% of the profit is lost due to a combination of technical and allocative inefficiencies in cotton farming production. In addition, results from the technical inefficiency model showed that age, education, farming experience, credit access, extension visit and marital status were significant factors influencing profit inefficiency, revealing that profit inefficiency in cotton production could be shortened significantly with improvement in the level of the aforementioned socio-economics characteristics of the sampled farmers. The overtone of these results is that, it would give more insight to policy makers for further improvements in productivity by given more emphasis to exploiting the technical efficiency 'gap' through adaptive research, farmer education and improved input supply.