



**ESTIMATES OF STOCHASTIC FRONTIER PRODUCTION FUNCTION OF
SMALL, MEDIUM AND LARGE-SCALE COWPEA FARMERS IN BAUCHI AND
GOMBE STATES OF NIGERIA**

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ABSTRACT

The research was conducted to determine maximum likelihood estimate of stochastic frontier production of small, medium and large-scale cowpea farmers in Bauchi and Gombe States of Nigeria. The major focus was on socio-economic attributes of the small, medium and large-scale cowpea farmers as well as the effects on their efficiency. A total of 323 small, medium and large scale cowpea farmers (i.e., 165 for small, 76 for medium and 82 for large) were selected using ballot box in 10 local government areas of the two States of the study area. Structured questionnaires and interview schedule were used as instruments for data collection. Data were analyzed using descriptive and Stochastic Frontier Analysis (SFA). The mean scores for small, medium and large-scale cowpea farmers in respect to ages, household size and farming experiences were 46, 44 and 47 years, 16, 17 and 19 persons and 12, 14 and 16 years, respectively. The Maximum Likelihood Estimates (MLE) result of the stochastic frontier production function (SFPF) for cowpea farmers indicated the presence of inefficiency. Farm size and herbicide were significant at $P>0.001$, seed ($P>0.05$) and family labour at $P>0.01$. In the efficiency effects, farming experience and household size were both significant at $P>0.001$; and extension contact and literacy level were significant at $P>0.05$, respectively.

Keywords: Estimate, Maximum, Production, Research, Stochastic.