



SDI Review Form 1.6

Journal Name:	American Journal of Experimental Agriculture
Manuscript Number:	Ms_AJEA_22057
Title of the Manuscript:	TECHNICAL EFFICIENCY OF SMALL-HOLDER SWEETPOTATO FARMERS IN SOUTHEAST AGRO-ECOLOGICAL ZONE OF NIGERIA
Type of the Article	

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	1. The stochastic production frontier model with consideration of technical inefficiency effect is in fact proposed by Battese and Coelli (1995), please cite in the manuscript. 2. The model proposed by Battese and Coelli (1995) indeed consists of two functions, the first one is stochastic frontier model, and the second one is used to account for technical inefficiency effects. After specifying, the two models are then estimated jointly. It is very important to note that, the variables cannot be included in two models simultaneously; otherwise, the results will be biased. For more detail please see Battese and Coelli (1995). In the current manuscript, one of important input factor, farm size (ha) is selected as explanation variable in the first model so as to explain the output y, it should not be included in the second model, so as to avoid double count. 3. The second model in Battese and Coelli (1995) in fact accounts for technical inefficiency effects, therefore, in line 141 it should be technical inefficiency, rather than technical efficiency. 4. Since the technical inefficiency effects are taken into account in the second model, therefore, the estimated results should be explained very carefully, the negative coefficients in fact have negative effects on inefficiency, or have positive effects on technical efficiency. In other words, the parameters with negative sign will lead farms to be more efficient.	The theoretical model is a mix of two model specifications- one where no variables affect inefficiency and another where variables affect inefficiency. The model which is estimated in the empirical part of the paper is the latter.



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	Please revise accordingly. 5. In econometrics context, all coefficients should be positive if Cobb-Douglas Production Function is specified, negative coefficients are unacceptable results because one cannot reasonably explain why the farmer will produce less output when utilizing more input variables (land, for example). REFERENCE Battese, G. E. and T. J. Coelli (1995): A Model for Technical Inefficiency Effects in a Stochastic Frontier Production Function for Panel Data, Empirical Economics, 20, 325–32.	It is not compulsory that all the coefficients in Cobb –Douglas function should be positive. A farmer can produce less output while having more land as a result of inefficient and proper resource allocation like fertilizer The Reference has been included in the manuscript
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<u>Minor</u> REVISION comments	1. The No. 11 in the REFERENCES should be as follows: Coelli, T. (1996), A Guide to FRONTIER Version 4.1: A Computer Program for Frontier Production Function Estimation. CEPA Working Paper 96/07, Department of Econometrics, University of New England, Armidale. 2. The number of samples should be 120, rather than 180, please revise (see line 78). 3. In subsection 2.3, page 3, the one side error term representing technical inefficiency should be U_i, rather than U_j, please revise. 4. The order of the variables in Table 1 should be rearranged (from Z_1 to Z_8). 5. In table 3, The symbol of Total variance should differ from those of parameters so as to avoid confusion, please revise. In general, we use sigma to stand for Total variance, and delta for parameters.	All the Corrections here are Noted and effected in the manuscript Coelli, T. (1996), A Guide to FRONTIER Version 4.1: A Computer Program for Frontier Production Function Estimation. CEPA Working Paper 96/07, Department of Econometrics, University of New England, Armidale
<u>Optional/General</u> comments		