

Review of: "Socio-Economic Drivers of Food Security Among Rural Households: Evidence From Smallholder Rice Farmers in Ebonyi State, Nigeria"

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Manuscript: Socio-Economic Drivers of Food Security Among Rural Households: Evidence From Smallholder Rice Farmers in Ebonyi State, Nigeria

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Reviewer's Summary: The manuscript contains some excellent data, but its presentation format makes it very hard to understand. The authors need to avoid the use of statistical jargon or terminology that the common reader will not be able to interpret. My understanding is that Qeios is targeting the general reader rather than being a specialist statistical journal. In this case, it requires extensive revision. Please also note that the tables must be understood independently of the text. Therefore, extensive explanations of the terms used in each need to be placed in the table legends.

The recommendation is that the paper be accepted subject to a major redrafting of the text and data tables to allow them to be understood clearly by the reader.

Reviewer's detailed review:

Abstract: The mean per capita household food expenditure is estimated at N 1,026.43; The equivalent in \$US needs to be included.

24.6% point is the food insecurity depth, and 17.2 % point is the severity of food insecurity.

These points need to be re-expressed so that their meaning is understood. What is the difference between food insecurity depth and severity of food insecurity? These data must be re-expressed so that the reader understands their source.

Introduction: has a non-ignorable gap. Do you mean supply gap, I assume?

tons, express in metric tonnes. You use both tons and tonnes.

The definition of food security consists of four dimensions: food accessibility, availability, utilization, and stability. Food

quality must be included here so that micronutrients are supplied in adequate levels in the diet to avoid “hidden hunger.”

which did not have a selection equation. A selection equation for what? This requires further explanation.

The introduction of a new class of food security (severity, gap, and incidence) measures that are understandable theoretically and robust in an application (Obike *et al.*, 2019)

This is not a sentence and requires re-writing.

The introduction needs to provide more information on the key sources of major nutrients within the diets of the under-privileged population. It does not supply sufficient information for the reader to identify the major causes of hunger within the population. Maybe a table would assist here.

Methodology: 2,253,140 persons in 2016, Is there more up-to-date information? This is 8 years ago now.

28°C 28°C

and Onicha local government areas (LGAs)

A proportionate to-size selection of 143 rice farmers was selected in the three LGAs. This needs to be re-expressed to explain more clearly.

Results and discussion:

The table shows that more than half of the farmers were male (54.20%) and 90.08% were married;

I would not say that most are male. You can say that more than half are male.

The mean age of the farmers was 44 years. In contrast, a significant proportion, 66.41%, of the farmers were between 31-60 years old, indicating that they are mostly youth, very agile with more energy for farming activities.

There is no contrast here. This does not indicate that they are mostly youth. There appears to be a normal distribution with close to an equal number under 44 years old and over 44 years old. Rewrite.

The farmers' education level shows that most had education (ranging from primary and secondary to adult literacy)

This is not shown in Table 1 and needs to be.

The total years spent in school by the farmers, the highest percentage, was with the group that had 0-10 years of education, with 21-30 years having the lowest.

It is not clear what this means. Please clarify by re-writing.

The mean household size of the farmers was 51.15%; 51.15% of the farmers had about 16-20 members. What are “years of household members”? This requires definition.

Only 12.40% had access to agricultural activity. Do you mean agricultural education activity?

0-25 acres. Always express areas of land in hectares.

Majorly is not a word.

The origin of land used for rice farming by the farmers was majorly inherited (38.93%) and private land (24.42%).

Is not inherited land privately owned land? This requires re-expression.

In contrast, a more significant percentage of farmers did not have access to extension services.

There is no contrast. This is saying the same thing.

The distance covered by the farmers to the farm distribution ----

What is the farm distribution? This requires re-expression.

About 88.55% of the farmers usually pay between N100-2000 to access the input market, while 3.45% pay beyond or higher amounts] in access input markets -----

Express N100-2000 in \$US in brackets. What is the input market? This needs explanation.

Table 1. The units of measure are needed for many parameters. E.g., years? Hectares?

The P0----

Do you mean Po?

Decomposition of the households by socio-economic and food security indices

Do you mean analysis of households by -----?

This is in line with the expectation of this study, as female-headed households are always prone to food insecurity and most food insecurity.

You need to state why you think this is the case and back it with evidence and relevant references.

Food incidence--- What is this? Food insecurity?

Likewise, the depth and severity too, with 44% and 29%, respectively.

This should be a new sentence.

32%, 17%, and 12%

Use % or percent, but not both, throughout the manuscript.

Table 4. Decomposition of the households by socio-economic and food security indices

Find another word for "decomposition," as I do not know what you mean here.

Food security indices have to be defined as part of the table legend. The table must stand independent of the text.

An Endogenous Switching Regression (ESR) was used to examine the determinants of food security among rice farmers in Ebonyi State, Nigeria. The results of the correlation coefficient (ρ) indicate selection bias and the existence of observed and unobserved factors influencing the food security status of the rice farmers. The non-significance of covariance estimates for both food-secure and non-food-secure households shows that in the absence of association membership, there will be a difference in evidence in the food security status between the food-secure and non-food-secure households. The significant value of the Wald test for independence of the equations suggests interdependence between the selection equation and the outcome equations for food-secure and non-food-secure rice farming households. This offers more proof of endogeneity, and the test results established the validity of our instrument because it has a significant effect on the food security status of rice farmers.

This is extremely difficult to understand. What is endogeneity?

Endogenous Switching Regression (ESR)

This has to be defined for the reader. If it was in the methods section, then refer the reader back to that section.

This indicated that the availability of more female farmers increased the inclination to be food secure, suggesting that female rice farmers are more likely to be food secure than their male counterparts.

You stated that households with female heads were less food secure before.

This agrees with Oyebanjo *et al.* (2013) that female household heads' will increase household food insecurity. This contradicts the previous statement.

The gender of the households was positive in influencing the food security of the non-food-secure rice farming households.

What are these? Further explanation is required.

This contradicts the findings of Obayelu and Orosile (2015) and Awotide *et al.* (2011).

How does this study contradict the results of these publications? More explanation is required.

This might be because unmarried farmers have less family responsibility to care for compared to married households, hence the reason for their food security status.

But are unmarried farmer families smaller, or do they have any family? This needs more explanation.

They opined that education--- Opined- what does it mean? It is not a word.

This contradicts the findings of Mohammed *et al.* (2014), where the higher the years of farming experience by the head of the household, the higher the likelihood of the household being food secured.

Did farmers in this study have access to extension services? More explanation is required here.

who opined that engaging----

Should this be "who stated that engaging ----" or suggested that -----

It may further imply that farmers with small farm sizes are more effective (or productive) than farmers with larger farms in terms of providing more food. The relationship between food security and farming on a given farmland is mainly appropriate for farm households.

Why? More explanation is required.

Table 5 needs more explanation in the table legend so that the reader can understand the content.

Wald chi^2	20.28		
Log-likelihood	-127.345		
LR test of ind. Variable	1.92		
/lns		-0.820*** (0.107)	-1.094*** (0.154)
Rho		-0.477 (0.296)	-0.231 (0.992)

All these terms required explanation in the table legend. The reader will not understand what they mean.

Conclusions and policy recommendations.

The authors should be careful not just to repeat the results. They need to highlight the most important findings in a conversational format. The policy recommendation paragraph is well-written.