



*PAT* December, 2018; 14 (2): 111-120 ISSN: 0794-5213  
Online copy available at [www.patnsukjournal.net/currentissue](http://www.patnsukjournal.net/currentissue)

Publication of Nasarawa State University, Keffi



## **Influence of marketers' Socio-Economic Characteristics on Rice Production in South East Nigeria**

**Emodi, A.I. and Agwu, E.A\***

*Department of Agricultural Economics and Extension,  
University of Port Harcourt, Rivers State, Nigeria*

*\*Department of Agricultural Extension, University of Nigeria,  
Enugu State, Nigeria  
emodizee@gmail.com*

### **Abstract**

*This study was designed to analyze the influence of socio-economic attributes of rice marketers on rice sale in Southeast Nigeria. Forty (40) rice marketers were purposively selected from four purposively selected states in Southeast Nigeria. Information was collected using structured questionnaire and interview schedule. Data were analyzed using descriptive statistics and exponential functional form of multiple regression models. Findings indicated that majority 60.0% of men were more involved in rice marketing than their female counterparts, while about 80.0% of the marketers were literates. It was also observed that age, marriage, household size, trading were significant in influencing rice marketers' decision to retail rice. The results also showed that 72.5% of the marketers' source of information on rice marketing was from friends/fellow marketers; 76.42F-cal are statistically significant in influencing marketers' decision to sale of rice in the southeast Nigeria. The study recommended that there is need to include male marketers' opinion, rice researchers, farmers' ideas, policy makers suggestions in making policies on rice. The need for relevant authorities to motivate rice marketers through given incentives and credits in rice sales were also recommended.*

**Keywords:** *Marketers, socio-economic characteristics, rice consumption, southeast Nigeria*

### **Introduction**

Rice is predominantly cultivated by small holders in Nigeria with major farming concentration on wet lands of the southern part of Nigeria. Small scale farmers being the backbone of agricultural production in Nigeria, are the supplier of food to every Nigerian (Mgbenka & Mbah, 2016). Increased availability of rice has made it become part of the everyday diet and constitutes a greater serving of the diet of many in Nigeria (Merem, et al 2017). Nigeria has the ability to be self-reliant in rice production as practically all ecological zones are appropriate for rice farming (Emodi, 2010). According to Nigeria Agricultural Sector Report (Crop Production) (2015), about 4,472.52 metric tons of paddies were produced in Nigeria per year from an average annual crop area of about 2,432.63 thousand hectares of land. Among the households in these regions, there are no socio-economic features to distinguish rice farmers from non-rice farmers (Nkwazema, 2016; Nnodim, 2017). The production of rice has introduced new cuisine with rich taste, and provides farmers with new sources of income. This represents 9 percent of caloric intake with changing consumer preferences and rapidly increasing population. With a population of about 174,507,539 persons and at the growth rate of 2.54%, Nigeria happens to be both the highest producer of rice in West Africa, and among the leading importers of rice (Boansi, 2014). Despite the fact that rice contributes significant amount in the food requirements of the population, its production is far below the national requirements. The upswing in domestic demand and consumption of rice far surpasses local production, triggering rise in rice importation bill to about \$695 million US dollars in 2007 (Emodi, 2010). The increase in rice demand is attributed to

a consumer shift from traditional staples such as yam and garri, to imported parboiled rice. In addition, local rice has a very poor marketing image compared to imported rice. This is due to post-harvest handling and processing of local rice which introduce foreign bodies, which consumers find unacceptable. Consumers are also weary of picking stones from the rice and washing local rice several times, while imported parboiled rice is clean and free from foreign matter. Though presently in Nigeria most local rice like the Abakilliki rice are polished and destoned. Never the less, if Nigeria is to become self-sufficient in rice production, productivity must be increased. This implies that resources allocated to rice production must be efficiently utilized.

The environment in agricultural production is generally rural and of poor economic interconnecting markets (Timmer, 2017). It has poor agricultural extension services lacking in inputs supply. The rural poor in this environment, especially farmers who enter into this market are passive and unequal. These farmers are often the marketers who obliged to sell at low price. These marketers seem faced with difficulty to sell, to recover their financial input, and to reinvest into other things. They are faced with difficulty of market access constraints such as low level of literacy, poor means of language communication and immobility which could impair transactions among stakeholders in rice marketing. To Akangbe et al (2013), poor transport system and issue of ease of accessibility from remoteness of the farmlands to the markets are constraints in marketing. Most rice marketers lacked resources to provide vehicles to transport rice to the market.

Rice grains undergo series of processes before marketing, which marketers seem to consider in the wants and in rice quality preferred by consumers as they purchase retail rice. These processes include, parboiling, drying, mortar pounding and winnowing before marketing. Parboiled practice is time overwhelming, painstaking and consumes large quantities of firewood and water. The paddy is sun dried in the open, which often do not dry properly and this partly accounts for foul odour of the final product. The final rice product obtained often contains a high percentage of broken grains and foreign bodies. In Nigeria, though few large rice mills exist, but are mostly owned by the state agricultural development projects in Nigeria. Thus, the small rice farmers income difficulties, needs wider rural and economy-wide policy movements, as well as rural infrastructure and education policies to enable long run change of the rural segment (International Fund for Agricultural Development (IFAD, 2016).

The income and employment problem of small rice farmers cannot be effectively addressed just through new forms of cooperation in production and marketing (Rwelamira, 2015). Rice is stalled by inadequate systems of production used by farmers, and dearth of vital inputs of rice production and marketing, caused failure in Nigeria local rice production to catch up with demand for its consumption (Boansi, 2014; FAO, 2016). There were ad hoc policies such as ban on rice importation by the government which place unnecessary value on the banned item; then creates a new market for those who smuggle these products (Emodi, 2010; Ijewere & Oluremi, 2018).

The sustainability of rice production is further threatened by series of diminishing soil potency and growing problems of pests, diseases and weeds (Pretty & Bharucha, 2015). Besides, lack of knowledge by agricultural advisory services on proper post harvesting such as processing and marketing hampers rice marketing (FAO, 2016). There is technology to address these snags, but their implementation is constrained by dearth of information packaged in right set-ups, with poor means of dissemination of information to farmers (Odini, 2014).

Every agricultural produce requires marketing in order to increase income after production, rice marketing is also essential to ensure existence of rice production and its actors (Barungi & Odokonyero, 2016). Rice production and increase in its yield has been the focus in Nigeria, with neglect on the roles of marketers in the improvement of the entire rice market value chains. A deeper understanding of the policy, social institution, market environment in which rice production and trade is taking place is vital. This would aid in developing strategies for competitive rice sectors within a background of continuous growing demand for rice. Similarly, it is important to consider the quality of locally milled rice to conform to imported rice in order to satisfy consumer demand. Inadequate information on rice marketing forms unequal playing grounds between key actors in rice production. This adversely shakes the terms of trade of both the rice farmers, rice marketers and consumers transaction prices which might generate to poor fusion of rice marketers across. The ban on rice importation and government, never generated a better rice yield in Nigeria, rather Nigeria is faced with dwindling economy (Ijewere & Oluremi, 2018). Despite Nigeria being a rice producing country, the price of rice continues to rise due to lack of functional and standardized rice price. One then wonders if the rise in price is due to act of rice hoarding by the marketers or could it be there are less marketers to reach the consumers in the markets or that the quantity of rice produced are not enough to be purchased and distributed by the marketers to the consumers (Nasiri, et al 2015). It is in light of these snags that, the study assessed the influence of rice marketers' socio-economic characteristics on rice production in Southeast Nigeria. The study examined the socio-economic characteristics of rice marketers in Southeast Nigeria and ascertained the personal characteristics of rice marketers that influence rice production.

### **Materials and Methods**

Southeast Nigeria is situated east of River Niger and covering an area of 29,908 square kilometres with a population of about 16,381,729 (National Population Commission (NPC, 2006); lying on latitude  $5^{\circ}$  and  $7^{\circ} 75'$  North and longitude  $6^{\circ} 85'$  and  $8^{\circ} 46'$  East. Southeast Nigeria is one of the six geo-political zones in Nigeria (North- West, North-East, North- Central, South-West, South-East and South-South) and it comprises of five states namely: Abia, Anambra, Ebonyi, Enugu and Imo States

This study adopted the four Nigeria states (Abia, Anambra, Ebonyi and Enugu) in the rice cultivation belt in southeast as the place of interest for the study. This is because Southeast Nigeria has lush, well-drained soil and the population are basically farmers.

The study population constituted all marketers (non-producers of rice) in Southeast agro-ecological zone of Nigeria. Since the actual population of the marketers are not known, the marketers were purposively selected from the biggest markets in each of the states (Abia, Anambra, Ebonyi and Enugu) capitals as follow: from Abia State (Umuahia main market)-15, from -12, Anambra State (Awka main market) -12, Ebonyi State (Abakiliki main market) -15, Enugu States (Enugu main market) -12. A total of 51 marketers were selected and used for the study. Forty (40) copies of questionnaire were properly filled and used for the analysis. Primary data was obtained from the questionnaire and interview schedules for literate and illiterate marketers respectively. Descriptive statistics, consisting of frequencies, percentage and mean scores were used for analysis. Specifically, percentages were used to analyze objective one on the socio-economic characteristics

of the marketers based on the proportion of total respondents (indicating an opinion to a question), while objective 2 was analyzed with multiple regression analysis models.

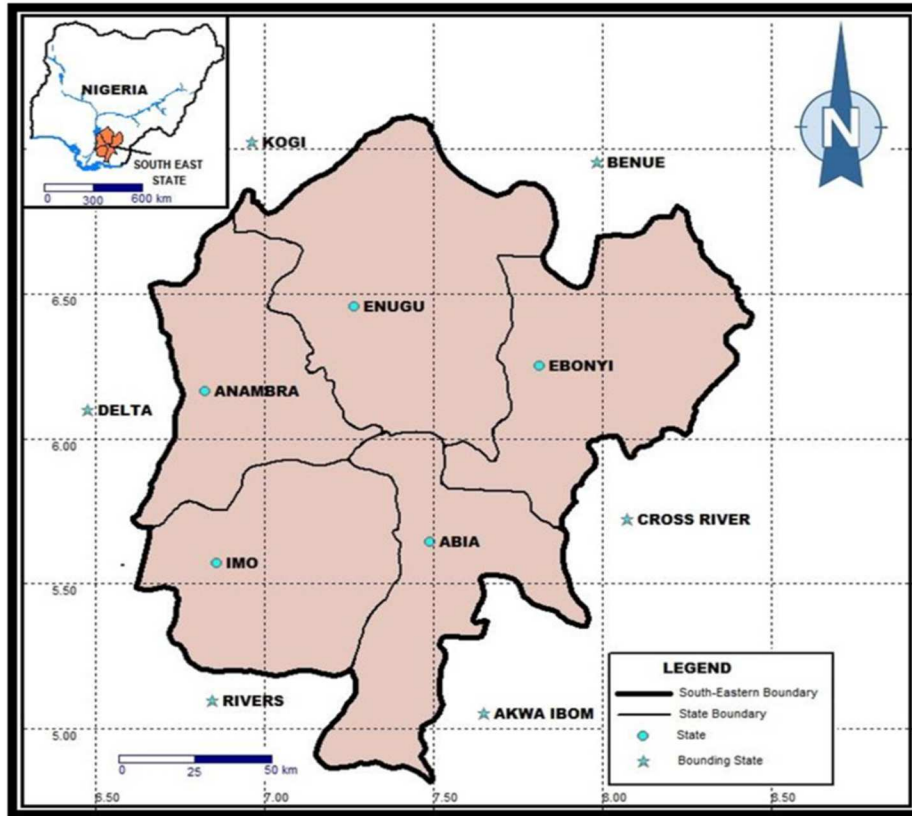


Figure 1: Map of Nigeria showing Southeast States

Source: Adapted from Onaja *et al.*, (2015)

The implicit form of the model is given by

**Model Specification**

$$Y=f(X_1, X_2, X_3, X_4, X_5) + e \dots \dots \dots \text{equ 1}$$

The four explicit forms of the model tried are specified as follows:

**Linear Function.**

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \dots \text{equ 2}$$

**Semi-Log Function**

$$Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + e \dots \text{equ 3}$$

**Double Log Function.**

$$\ln Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + e \dots \text{equ 4}$$

**Exponential Function**

$$\ln Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \dots$$

Where

Y= volume of rice purchased per month (in Kgs/month)

$X_1$  = Sex (Dummy: male = 1, female = 0)

$X_2$  = age (years)

$X_3$  = marital status (married = 1, divorced = 2, single = 3, separated = 4).

$X_4$  = educational level (formal education=1, primary school level=2, secondary school uncompleted=3, secondary school completed=4, vocational teacher school completed=5, tertiary education (OND=6, HND=7, NCE=8, B.A=9, B.Sc=9), (higher degree (M.sc=10, PhD=11)

$X_5$ = Household size (1-3 persons=1, 4-6 persons=2, 7-9 persons=3)

$e$  = Stochastic error term

$b$  = Intercept of the model  $X_8$  = Farm size in hectares.

$b$  to  $b$  = Slope coefficients of the respective variables.

$\ln$  = Exponential log to base  $e$  of the respective variable.

Econometric criteria for selecting any of the four functional forms was based on the equation with highest F-ratio and the highest coefficient of determination ( $R^2$ ) (Okidim & Eze, 2018).

## Results and Discussion

### Socio-economic characteristics of marketers

The results in Table 1 reveal that both male and female are involved in rice marketing. Though majority (60.0%) of the marketers were male, while the remaining 40.0% of these marketers were female. The dominance of males over females in the rice marketing activities implies that rice marketing could be tedious and energy sapping for females. This suggest that the females might have multiple roles as home makers, therefore less time is invested in rice marketing (Gurung, Bhandari & Paris, 2016).

It is also evident from the Table that greater proportion (62.5%) of the marketers were within the age range of 30-39years, and the mean age was 40 years. This implies that bulk of the marketers were at their middle, active and productive age. This is in agreement with the study carried out by Nwalieji (2016) that rice marketers are within middle age and could efficiently engage in rice production.

Data in Table 1 further shows that greater percentage (80.0%) of rice marketers were married. This implies that there could be high income yield from rice marketing to attend to rice marketers household needs. This suggests increase in the number of family members engaged in marketing of rice (Varma, 2017). Table 1 also shows that majority (57.5%) of marketers were of primary school level, while 20.0% had no formal education. Entries reveal that about 80.0% of the marketers were literates; they attended formal education and could read and write. High educational level invariably could have positive influence in the overall rice marketing. The more educated the respondent is, the more likely he is to acquire new ideas in rice marketing.

Entries in Table 1 shows that greater proportion (57.5%) of marketers had 1-3 persons of household size. The household mean was 4 persons. The impact of household size on rice marketing depends on the quality and capabilities of the household members, rather than on the sheer magnitude of the household size in rice marketing (Ajewole, et al 2015). The results further revealed that majority (62.5%) of the marketers' primary occupation was trading. This could be ascribed to the high demand of rice as staple in Nigeria.

Greater proportion (72.5%) of marketers' source information on rice marketing through friends / fellow marketers. This could build confidence and encourage trust among marketers in rice

marketing transactions. However, lack of information limits the marketers' awareness on new idea in rice marketing.

**Table 1: Percentage distribution of marketers by socio-economic characteristics**

Socio economic Characteristics	Frequency (n=40)	marketers (%)	Mean $\bar{X}$
<b>Sex</b>			
Male	24	60.0	
Female	16	40.0	
<b>Age (years)</b>			
20-29 years	0	0	
30-39years	25	62.5	40years
40-49 years	8	20.0	
50 -59years	7	17.5	
<b>Marital status</b>			
Married	32	80.0	
Single	8	20.0	
Divorced	0	0	
Separated	0	0	
<b>Educational level</b>			
No formal education	8	20.0	
Primary School Level	23	57.5	
Secondary school uncompleted	0	0	
Vocational Technical school completed	9	22.5	
Tertiary education (OND, NCE, HND, first degree)	0	0	
Higher Degree (M.Sc, PhD)	0	0	
<b>Household size (persons)</b>			
1-3 persons	23	57.5	4persons
4-6 persons	10	25.0	
7-9 persons	7	17.5	
10-12 persons	0	0	
<b>Primary occupation</b>			
Farming	7	17.5	
Trading	25	62.5	
Teaching	8	20.0	
Palm wine tapping	0	0	
<b>Source of information</b>			
Mass media	8	20.0	
Friends/Fellow marketers	29	72.5	
Government agencies	3	7.5	
<b>Volume of rice purchased</b>			
25,000kg	28	70.0	
100kg	2	5.0	
50 kg	10	25.0	
<b>Type of rice sold</b>			
Local	24	60.0	
Foreign	16	40.0	
<b>Transportation problem in rice marketing</b>			
Lack of vehicle, high cost and poor road	18	45.0	
Availability of vehicle, low transportation cost and good road	22	55.0	

Greater proportion (70.0%) of the marketers purchased about 25,000kg of rice monthly, 25.0% of them purchased 50kg of rice, while 5.0% of them purchased 100kg of rice. This implies that marketers bought rice every month to retail; in different measures and weights using bags, basins (big and small) and milk tins at the market places (Ogundele, 2014). This also suggests that the quantity of rice purchased for sale by marketers, is determined by their financial capabilities. Entries in Table 1 also show that greater percentage (60.0%) of the marketers sold foreign rice while the remaining 40.0% of them sold local rice. It implies that the sale of foreign rice is based on consumers' preference and demand. The cleanliness associated with imported rice is the main reason why imported rice is widely accepted and consumed in Nigeria (Emodi, 2010; Alfred & Adekayode, 2013). Poor post-harvest handling and processing introduce foreign bodies that consumers find unacceptable.

Majority (55.0%) of the marketers experienced problems (lack of vehicle, high cost, poor road) in rice transportation. These problems (lack of vehicle, high cost, and poor road) could have serious implication in flow of information on price of rice sales. Canwat (2014) in support, mentioned that problems in rice marketing affect transaction costs in rice production.

**Effects of personal characteristics of rice marketers on volume of rice purchased:**

-Probability of Default (PD), - Coverage ratio, -Cost of risk

**Table 2: Multiple regression analysis of marketers' socio-economic characteristics influence on rice marketing**

Variable	Exponential Function
Constant	39.536
Sex	-15.982*
Age	-0.500
Primary occupation	2.107*
Education	4.732*
Source of information	6.143*
R <sup>2</sup>	0.918
Adjusted R-squared	0.906
F-cal	76.424*
N	40

*Dependent Variable = monthly sale of rice in kg*

*NB: "\*" = significant at 5% level, values in parenthesis are t ratios*

In Table 2, econometric criteria for selecting exponential function was based on the fact that it had the highest F-ratio of 76.424 and coefficient of determination (R<sup>2</sup>) of 0.918 which is in line with the study of (Okidim and Eze, 2018).

**Regression equation**

$$Y = -15.982 X_1 - 0.500 X_2 + 2.107 X_3 + 4.732 X_4 + 6.143 X_5$$

According to the equation (Regression equation), the coefficient of sex (X<sub>1</sub>) showed a negative relationship. This means that as the sex tends to affect rice marketing negatively, the study show

that majority of the rice marketers were males (60%) increase in the percentage of male rice marketers reduces rice sales,  $X_1(\text{sex})$  has inverse relationship with  $Y$  (rice marketing). It is advised therefore that more female rice marketer be involved in rice marketing.

The coefficient of Age ( $X_2$ ) was found to be negative, also showing the coefficient of  $-0.500 X_2$  meaning that as the age of the rice marketers increases it affects rice marketing negatively; this will reduce rice marketing as farmers age increases.

The coefficient of primary occupation ( $X_3$ ) show positive relationship ( $2.107 X_3$ ). This means that rice farmers whose primary occupation is rice production only will increase with increase in rice marketing. The coefficient of education ( $X_4$ ) and information sources ( $X_5$ ) also show positive relationship ( $4.732 X_4$  and  $6.143 X_5$ ) respectively. This means that as education and sources of information increases, rice marketing also increases. A positive  $X_4$  and  $X_5$  show that rice marketing will increase with increase in education and increase in information sources.

The coefficient of determination ( $R^2$ ) of 0.918, means that 91% of the variation in the dependent variable (rice marketing) was explained by the independent variables-Age, Sex, Occupation, education and information sources. Only 9% was not explained, but this was accounted for by the error term. F-cal of 76.42 show that the model was significant because F-cal was greater than F-tab. The individual variables such as sex ( $X_1$ ), primary, occupation ( $X_2$ ), education ( $X_4$ ), sources of information ( $X_5$ ) were found to be significant.

## Conclusion

On the bases of this research, it was concluded that education and high level of literacy and good sources of information, increased rice marketing. The major constraints in rice marketing are sale of foreign rice; this is based on poor image of local rice. These limitations tend to turn marketers away from the local rice marketing chain in favour of the imported rice channel. If innovative steps such as credit and improved agricultural extension services are applied in combination with incentives in rice production, the problem of low yield in rice production and marketing will be reduced to a larger proportion among marketers in the study area.

## Recommendations

The study recommends the need to train rice marketers on importance of good sources of information in rice marketing so as to increase sales. The study also recommended the need for male marketers' opinion, rice researchers, farmers' ideas, policy makers suggestions in making rice policies. The need for relevant authorities to motivate rice marketers through given incentives and credits in rice sales were also recommended.

## References

- Ajewole, O., Eytayo, O.A., Ojehomon, V., Noameshie. R.A. & Diagne, A. (2015). Gender analysis of agricultural innovation and decision making among rice farming household in Nigeria. *Journal of Agricultural Informatics*, 6(2):72-82.  
DOI: 10.17700/jai.2015.6.2.179. <http://real.mtak.hu/25119/1/jai8.pdf>
- Akangbe, J.A., Oloruntoba, O.O., Achem, B. & Komolafe, S.E. (2013). An appraisal of transportation facilities effects on agricultural development In Moro Local Government Area, Kwara State, Nigeria. *Ethiopian Journal of Environmental Studies and Management*. 6(2): 191-200.  
<https://www.ajol.info/index.php/ejasm/article/viewFile/86163/76000>



- Alfred, S.D.Y. & Adekayode, A.B. (2013). Consumers' attitude towards local rice production and consumption in Ondo state, Nigeria. *Journal of Agricultural extension and Rural Development*, 6(7): 242-248. DOI: 10.5897/JAERD11.014.  
<http://www.academicjournals.org/journal/JAERD/article-full-text-pdf/77B628645547>
- Barungi, M & Odokonyero, T. (2016). Understanding the Rice Value Chain in Uganda: Opportunities and Challenges to Increased Productivity. Economic Policy Research Center (EPRC). Kampala, Uganda. <https://ageconsearch.umn.edu>
- Boansi, D. (2014). Yield response of rice in Nigeria: a co-integration analysis. . *American Journal of Agriculture and Forestry*, 2 (2): 15-24. DOI: 10.11648/j.ajaf.20140202.11
- Canwat, V. (2014). Proportional Transaction Costs in Rice Marketing: Estimation and Distribution by Institutional Arrangement. *International Journal of Community Development*, 2(1):1-12. DOI: 10.11634/233028791301339.  
<http://www.worldscholars.org>
- Emodi, A.I. (2010). Analysis of rice innovation system in southeast Nigeria. PhD thesis, University of Nigeria, Nsukka, pp: 111-117, 126-130, 131-138, 168-170.
- Food & Agriculture Organisation of the United Nations (FAO, 2016). Climate change and food security: risks and responses. Rome. <http://www.fao.org/3/a-i5188e.pdf>
- Ijewere, E & Oluremi, A. (2018). Is a total ban on rice importation feasible? *Punch Newspaper*, January 8, 2018. <http://punching.com/is-a-total-ban-on-rice-importation-feasible/>
- International Fund for Agricultural Development (IFAD, 2016). Rural development report: Fostering inclusive rural transformation. pp1-78. <https://www.ifad.org/documents>
- Gurung, K., Bhandari, H. & Paris, T. (2016). Transformation from Rice Farming to Commercial Aquaculture in Bangladesh: Implications for Gender, Food Security, and Livelihood. *Gender, Technology and Development*. 20(1):49-80. Asian Institute of Technology. <http://journals.sagepub.com/doi/pdf/10.1177/0971852415618747>
- Merem, E.C., Twumasi, Y., Wesley, J., Isokpehi, P., Shenge, M., Fageir, S., Crisler, M., Romorno, C., Hines, G., Ochai, S., Leggett, S. & Nwagboso, E. (2017). Analyzing rice production issues in the Niger State Area of Nigeria's Middle Belt. *Journal of Food and Public Health*.7(1): 7-22.DOI: 10.5923/j.fph/20170701.02.Scientific and Academic Publishing Co
- Mgbenka, R.N. & Mbah, E.N. (2016). A review of smallholder farming in Nigeria: Need for transformation. *International Journal of Agricultural Extension and Rural Development Studies*, 3(2):43-54. Published by European Centre for Research Training and Development UK ([www.eajournals.org](http://www.eajournals.org))
- National population commission (NPC, 2006). Population figure of Republic of Nigeria, Abuja. <http://www.npc.gov>
- Nigeria Agricultural Sector Report (Crop Production) 2015. <http://businessdayonline.com/wp-content/uploads/2016/10/Agric-Sector-Report-2015.pdf>Nigeria
- Nkwazema, S. (2016). The rice debate: Why Nigeria can't meet local rice production demand. *This Day Newspaper*. November 5  
<https://www.thisdaylive.com/index.php/2016/11/05/the-rice-debate-why-nigeria-cant-meet-local-rice-production-demand/>
- Nnodim, O. (2017). States producing 5.7 million metric tonnes of rice – DFID. *Business and Economy*. *Punch*. Published May 29. [Http://punching.com/states-producing-5-7-million-metric-tonnes-of-rice-dfid](http://punching.com/states-producing-5-7-million-metric-tonnes-of-rice-dfid)

- Nwalieji, H.U. (2016). Comparative profit analysis of rice production enterprise among farmers in Anambra and Ebonyi States, Nigeria. *Asian Journal of Agricultural Extension, Economics and Sociology*. 8(3): 1-11
- Nasrin, S., Lodin, J.B., Jirstrom, M.J., Holmquist, B., Agnes Anderson Djurfeldt, A.A. and Djurfeldt, G. (2015). Drivers of rice production: evidence from five Sub-Saharan African countries. *Agriculture and Food security*. 4:12:1-9. DOI 10.1186/s40066-015-0032-6
- Odini, S. (2014). Access to and use of agricultural information by small scale women farmers in support of efforts to attain food security in Vihiga county, Kenya. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, 5(2):80-86
- Ogundele, O. (2014). Factors influencing consumers' preference for local rice in Nigeria *African journal of marketing management*.6(4):44-55.  
[http://www.academicjournals.org/article/article1409567450\\_Ogundele.pdf](http://www.academicjournals.org/article/article1409567450_Ogundele.pdf)
- Okidim, I.A. & Eze, C.C. (2018). Stabilization policy measures and its effects on demand for farm credit in Nigeria: A case of agricultural credit guaranteed scheme funds (ACCGSF) (1983-2014). 4(1):25-35-2014). *Futo Journal Series (FUTOJNL)*
- Onoja, U. S., Nweze, I. E., Agbo, M. O., Nnamani, P. O., Eke, F. N., Ivoke, N., Eyo, J. E., Attama, C. I., & Ejere, V. C. (2015). Evaluation of bacteriological quality and essential elements in commercially bottled/packaged water produced and marketed in Southeastern Nigeria. *African Journal of Microbiology Research*, 9(28), 1728-1737.  
<https://doi.org/10.5897/AJMR2014.7201>
- Pretty, J. & Bharucha, Z.P. (2015). Integrated pest management for sustainable intensification of agriculture in Asia and Africa. *Insects*, 6(1):152-182. Doi: 10.3390/insects6010152
- Rwelamira, J. (2015). Strengthening farmers organisations and civil society organisations. Paper presented on Feeding Africa: an action plan for African Agricultural Transformation. 21st-23rd October.  
[https://www.afdb.org/fileadmin/uploads/afdb/Documents/Events/DakAgri2015/Strengthening\\_Farmers\\_Organizations\\_and\\_Civil\\_Society\\_Organizations.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Events/DakAgri2015/Strengthening_Farmers_Organizations_and_Civil_Society_Organizations.pdf)
- Timmer, C.P. (2017). Food security, structural transformation, markets and government policy. *Asia and the Pacific Policy Studies*. 4(1):4-19.  
<https://onlinelibrary.wiley.com/doi/full/10.1002/app5.161>
- Varma, P. (2017). Adoption of system of rice intensification and its impact on rice yields and household income: An analysis for India. working paper No. 2017-02-03. Indian Institute of Management Ahmedabad-380 015. India (IIMA).  
<https://web.iima.ac.in/assets/snippets/workingpaperpdf/7923388192017-02-03.pdf>