

# Socio-economic Characteristics of Rice Marketing Actors and Value Addition in Rice in Benue State of Nigeria

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**Abstract:** *The main objective was to examine the Socio-economic characteristics of rice marketing actors and value of addition in rice in Benue State of Nigeria. Primary data were collected from 180 randomly selected respondents comprising rice producers, assemblers, processors, wholesalers and retailers, using multiple regression and analysis of variance. The finding indicated that the Socio-economic characteristics of the rice marketing actors have no significant effect on value addition in rice.*

**Keywords:** *Socio-economic Characteristics, Rice marketing actors, Value addition*

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## 1. Introduction

Rice is one of the most important cereals in Benue State among other cereals in terms of marketing (Atom and Bashi, 2010). In line with Atom and Bashi 2010, Benue State is considered as one of the highest State in marketing in Nigeria because its rice is produced and marketed in all the Local Government Areas in the State.

Benue State has experienced rapid growth in per-capita rice consumption during the last three decades from 5kg in the 1990s to 25kg in the late 2010 (National Agricultural Rice Development Agency, 2013). However, rice development programmes like Operation Feed the Nation (OFN), Back to Land (BTL) among others in place after the independence, have made very little impact on food supply (NARDA, 2013).

Notwithstanding the various policy measures, local rice production and marketing has not kept up with the domestic consumption demands of the Nigerian populace and Benue State in particular. Consequently, imported rice now represents more than 20% agricultural imports and half of the total rice consumption (NARDA, 2013). Nigeria has thus become a major rice importer, second only to Indonesia over the last five years (2008-2012) (NARDA, 2013). In 2010, the value of import was 300 million dollars, and as high as ₦ 96 billion in 2012 (FAO 2013). The importation has a negative effect on the balance of payments as well as hinders the poverty reduction efforts of the government.

### 1.1. Objectives of the Study

The main objective of the study was to examine the Socio-economic Characteristics of rice marketing actors and value addition in rice in Benue State of Nigeria. Specifically, the study sought to determine the influence of the socio-economic characteristics of the rice producers, assemblers, wholesalers and retailers on value addition in rice.

## 2. Methodology

### 2.1. Study area and sampling technique

The study was conducted in Benue State of Nigeria. Sampling frame was not used for the study but 180 respondents made of paddy rice producers, assemblers, processors, wholesalers and retailers were randomly selected from six markets in six Local Government Areas (Kwande, Vande-ikya, Gboko, Makurdi, Otukpo and Oju) spread across the three agricultural zones in Benue State based on their intensity in rice production, processing and marketing.

### 2.2. Data collection

Structured questionnaires were used to collect primary data for the study. Primary data were collected on socio-economic characteristics of rice producers, assemblers, processors, wholesalers and retailers. Secondary data were sourced from browsing the internet.

### 2.3. Data Analysis Techniques

Data for this study were analyzed using multiple regression and analysis of variance.

The function for the relationship between rice market actors socio-economic characteristics and value added can be specified as follows:

$$Y = f(X_1 X_2 X_3 X_4 X_5 U)$$

Where;

Y= Value added (₦)

X<sub>1</sub>= Age of actors (years)

X<sub>2</sub>= Sex of actors (1=male and 0= female)

X<sub>3</sub>= Level of education (years)

X<sub>4</sub>= Marketing experience (years)

X<sub>5</sub>= Household size (N0 of persons)

U= Error term

The *a priori* expectations are that X<sub>1</sub> X<sub>2</sub> X<sub>3</sub> and X<sub>4</sub> would have positive relationship with value added, while X<sub>5</sub> would have negative relationship for all the market actors. Different functional forms (Linear, semi-log, exponential and double-log) were tried and the best fitted chosen on the basis of the coefficient of determination (R<sup>2</sup>), *a priori* expectation and number of significant variables. Analysis of variance was used to test the significant variables. Analysis of variance was used to test the significant difference in the value addition to rice among the marketing actors (producers, assemblers, processors, wholesalers and retailers). The format was presented as follows:

**Table 1: Format for Analysis of Variance**

Source of variation	Degree of freedom	Sum of squares	Mean square	F
MARKETING ACTORS	K-1	SS (TR)	MS (TR)	
$\frac{MS(Tr)}{MSE}$				
ERROR	K(N-1)	SSE	MSE	
Total	kn-1	SST		

Source (freund, 1984)

Where,

F= MS (Tr)= Variance ratio

$$MS(Tr) = \frac{SS(Tr)}{MSE} = \text{Treatment Mean Square}$$

$$MSE = \frac{SSE}{MSE} = \text{Error Mean Square}$$

SS(Tr) = Treatment Sum of Squares

SSE = Error Sum of Squares

SST = Total Sum of Squares

K = Number of Treatments

N = Number of Replications

### 3. Result and Discussion

Multiple regressions was used to determine the influence of the socio-economic characteristics of the rice producers, assemblers, wholesalers and retailers on value addition in rice.

**Producer marketers:** The result in the table show that the coefficient of age was significant implying that age was a determining factor for Value addition in rice in terms of production and marketing. The younger (20-40years) people have more strength and can work round the clock on the farm to ensure more value addition to rice. This conforms with the *a priori* expectations. The reasons could be that the business of rice production and marketing requires much energy to be successful in it. The aged (45 above) people cannot withstand the stress involved in the business. Though, production and marketing experience is much more in the aged people that can contribute to value addition in rice but the strength to sustain the experience is sometime lacking which would negatively affect value addition in rice. The young people grow with new and modern technology ideas that are used effectively in value addition to rice.

The coefficient of sex is positively related to value addition in rice marketing, though not significant. Rice production and marketing is a business that requires much energy and time before value can be added. The men are more in the business than the women because they can withstand the stress involved, but women cannot due to cultural barriers. (Women are under the control of men, women should concentrate on domestic work, women do not own property).

The coefficient of educational level is also positively related to value addition in rice and is in consonance with the *a priori* expectation. This means that as the level of education of the marketer increases, the level of value addition in rice also increases. All things being equal, a literate marketer would likely keep written records to avoid past mistakes in current marketing. The statistical significance of this variable indicates that educational attainment of the marketers was a determinant of their value addition in rice.

The coefficient of experience of the marketers was *a priori* expected to be positively related to value addition in rice. As the number of years in the business increase, the likelihood of their

knowledge in terms of skills, ideas, techniques, etc will also increase in adding value to rice. The statistical insignificance of this variable shows that marketing experience was not a determinant of value addition in rice.

The analysis of the data indicated that the coefficient of household size was not significant and it also agrees with the *a priori* expectation. Though, a household with many productive members would probably contribute to the extra-labour requirements of value addition in rice, the maintenance of a large number of household members in terms of health, feeding and other social need is expensive leading to the negative relationship to value addition in rice.

**Assemblers:** The double-log function was selected for analysis. The result shows that the coefficient of age was statistically insignificant, implying that age was not a determinant of value addition in rice. Age however, has negative coefficient, contrary to *a priori* expectation. This means that, the younger the assemblers, the more value added in rice and the older the assembler, the less value added in rice. The age of the rice market assemblers did not affect value addition partly because there is less stress in the business. The business can accommodate everybody irrespective of age.

The result of the analysis shows that the coefficient of educational level was statistically insignificant, meaning that education was not a determining factor to value addition in rice. The business of rice market assemblers cut across everybody, not withstanding their educational status. This result is not in line with the *a priori* expectation partly because the marketers feel that education is less important to their activity. What is most important to them is money. Education is therefore, left in the hands of children and women who have little or no financial contribution in the house.

The coefficient of marketing experience was *priori* expected to be positively related to value addition because the more experience, the more likely the adaptation of new innovation in rice assembling. However, the analysis shows that marketing experience was insignificant and negatively related to value addition. The variable is not a determinant of value addition in rice.

The analysis shows that the coefficient of household size was significant and had a positive relationship with value addition in rice. A household with many productive members would probably contribute to the extra-labour requirement of adding value in rice, but the maintenance of a large number of members is expensive in terms of feeding, health care and other social needs. The sign of the coefficient is not in agreement with the *a priori* expectation.

**Processors:** Exponential regression was chosen to determine the socio-economic factors that affect rice market processors and value addition in rice. The analysis shows that the coefficient of age was significant. The analysis also conform with the *a priori* expectation that age would have a positive relationship with value addition in rice. The older marketers have vibrant ideas and innovations based on experience and use them to add value in rice. The younger marketers are still inexperienced.

The coefficient of sex was insignificant, meaning that sex was not a determinant of value addition in rice. Part of the reason could be that, rice market and processors do not move round

to buy paddy as others do. This means that the business is a stationed business and not stressful. It is open to everybody irrespective of the sex. It is, however, not in line with the *a priori* expectation of a positive relationship with value addition in rice.

The result of the analysis showed that the coefficient of education was insignificant and negative. The insignificance means that educational levels of the marketers do not affect value addition in rice. Respondents were of the view that education is expensive and time involving. Therefore, the money and time used for education could be channeled to improve their business, since education was not a requirement for managing their business.

The coefficient of experience had a positive relationship with value addition in rice and is significant. The result implies that rice marketing experience was a determining factor in value addition to rice. The reason is that, the more experience in business of rice, the more ideas and innovations used in adding value to rice.

The analysis show that the coefficient of household size was insignificant, meaning that household size was not a determining factor for value addition in rice. Even though a household with many productive members could be a contribution to extra-labour leading to value addition in rice, the expenses involved in maintaining a large number of household members is higher than their inputs. The result agrees with the *a priori* expectation of a negative relationship with value addition in rice.

**Wholesalers:** Linear function was chosen to determine the socio-economic factors that affect rice market wholesalers and value addition. The result of the analysis shows that the coefficient of age was insignificant, meaning that age was not a determinant in value addition in rice. This result did not agree with the *a priori* expectation. The reasons are that rice market wholesalers do not require energy to do the business. Another reason is that the stress of moving from one village to another in search of rice for marketing is not applicable in the wholesalers business as buyers meet them in their shops/warehouses.

The coefficient of sex had a positive relationship with value addition in rice contrary to expectation, and insignificant. This means that sex is not a determinant factor in value addition to rice. This is because energy and stress are not noticeable in rice wholesalers business. Therefore, both male and female can participate effectively in adding value to rice as wholesalers.

The coefficient of educational level is not significant, implying that educational level is not a determinant of value addition in rice. Part of their view was that education is only for people who want to be government employee not for business. Therefore, rice market wholesalers do not consider educational level as a serious challenge to assist them in effective management of resources to add value in rice. The result is different from the *a priori* expectation that educational level has a positive relationship with value addition in rice.

The coefficient of experience of the wholesalers is expected to have a significant and positive relationship with value addition in rice. The results show that experience is insignificant, meaning that marketing experience is not a factor to determine value addition in rice. The reason

is that rice wholesale business does not require any special skills or innovation in managing the business effectively to add value in rice.

The result of the analysis show that the coefficient of household size is insignificant, indicating that household size is not a determinant of value addition in rice. The argument is that a large number of household size members can negatively affect the value addition in rice through provision of basic needs like food, health care and other social needs. Though, productive household members contribute to extra-labour leading to value addition in rice, their expenses are more than their assistance. This is not in consonance with the *a priori* expectation that, household size has a negative relationship with value addition in rice.

**Retailers:** Double-log function was selected to determine the socio-economic factors that affect rice market retailers value addition. The analysis show that the coefficient of age was insignificant, meaning that age was not a determining factor for value addition in rice. The reason is that rice retail business is a stationed business. It does not require movement from one place to another and also, the stress involved is minimal. Age therefore, is never a barrier. The finding was however, contrary to the *a priori* expectation of a positive relationship with value addition in rice.

The coefficient of educational level was positively related to value addition in rice and was in consonance with *a priori* expectation. This means that as the level of education increases, the level of value addition in rice also increases. All things being equal, a literate marketer would likely keep written records to avoid past mistakes in current marketing. The statistical significance of this variable proved that educational attainment of the marketers was a determinant of their value addition in rice.

The statistical significance of the coefficient of marketing experience in rice retail business shows that it is a determinant of value addition. As the number of years in the business increases, there is likelihood that skills, ideas, techniques, etc will also increase in adding value to rice. This is also in line with the *a priori* expectation.

Analysis of the result shows that the coefficient of household size was also significant and positively related to value addition in rice. This implies that the more the household size the more likely value addition would increase. A household with many productive members would probably contribute to the extra-labour requirement of rice retail marketing, leading to value addition in rice. This finding however, did not conform with the *a priori* expectation, which states that household size is negatively related to value addition in rice.

**Table 2: Multiple Regression Analysis of Socio-economic Determinants of Rice Market Actors and Value Addition in Rice.**

Market Actors	Variable	Functional Forms	Coefficient	Standard Error
F-sta	T-value			
Producers	Constant	Linear	853.452	
	Age(X <sub>1</sub> )		70.895	.759 1.217*
	Sex(X <sub>2</sub> )		-334.190	688.933 -485 <sup>NS</sup>

	Educational Level(X <sub>3</sub> )		33.986	81.922		.415*
	Experience In marketing(X <sub>4</sub> )		-66.706	69.721		-.957 <sup>NS</sup>
	Household Size(X <sub>5</sub> )		-126.157	75.217		-1.677 <sup>NS</sup>
Assemblers	Constant	Double-log	10.307			
	Age(X <sub>1</sub> )		-.661	.726	.763	-.911 <sup>NS</sup>
	Sex(X <sub>2</sub> )		-	-		-
	Educational Level(X <sub>3</sub> )		-.024	.078		-.301 <sup>NS</sup>
	Experience In marketing(X <sub>4</sub> )		-.087	.115		-.756 <sup>NS</sup>
	Household Size(X <sub>5</sub> )			.060	.131	
Processors	Constant	Exponential	6.403			
	Age(X <sub>1</sub> )		.014	.009	.673	1.504*
	Sex(X <sub>2</sub> )		-.067	.052		-1.295 <sup>NS</sup>
	Educational Level(X <sub>3</sub> )		-.005	.007		-.717 <sup>NS</sup>
	Experience In marketing(X <sub>4</sub> )		.002	.012		.188*
	Household Size(X <sub>5</sub> )		-.014	.019		-.734 <sup>NS</sup>
Wholesalers	Constant	Linear	4265.492			
	Age(X <sub>1</sub> )		-3.375	20.410	1.941	-.165 <sup>NS</sup>
	Sex(X <sub>2</sub> )		-250.101	156.642		-1.597 <sup>NS</sup>
	Educational Level(X <sub>3</sub> )		-8.051	20.239		-.398 <sup>NS</sup>
	Experience In marketing(X <sub>4</sub> )		-22.680	35.885		-.632 <sup>NS</sup>
	Household Size(X <sub>5</sub> )			-6.616	60.562	
Retailers	Constant	Double-log	11.112			
	Age(X <sub>1</sub> )		-.788	.472	.357	-1.670 <sup>NS</sup>
	Sex(X <sub>2</sub> )		-	-		-
	Educational Level(X <sub>3</sub> )		.134		.066	
	Experience In marketing(X <sub>4</sub> )		.148	.158		.938*
	Household Size(X <sub>5</sub> )		.062	.130		.478*

Source: Field Survey data, 2014. \* = Significant at 5%; Ns = Not significant

#### 4. Conclusion and Recommendation

The study examined the socio-economic characteristics of rice marketing actors and value addition in rice in Benue State of Nigeria. The finding indicated that the socio-economic characteristics of the rice marketing actors have no significant effect on value addition in rice.

Based on the findings, the following recommendations are made;

- i. The marketing actors should form a strong cooperative society to help them access loans from banks to finance and expand their rice production and marketing business. This may reduce unemployment, increase food security in Nigeria and Benue State in particular and also generate more revenue for the State.

- ii. The government should create a conducive business environment such as security, markets, good roads, and reduce taxes on the marketers as a form of encouragement.

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