

Assessment of Gender Participation in Rice Production in Abakaliki, Nigeria

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Abstract

The study investigated the participation of male and female in rice production. Abakaliki Local Government Area was purposively selected because of its dominance and popularity in rice production. A total of hundred and sixty (160) male and female respondents were randomly selected from registered rice producers. Primary and secondary sources of instruments were employed and data were analyzed using descriptive statistics as frequency counts, percentages mean and standard deviation. T-Test and Product Moment Correlation was used to test the hypotheses. The result of the study showed that female farmers participated more in rice production chain than males in the study area. Activities like weeding, threshing, winnowing, cleaning, parboiling, dehussing etc. were dominated by the female farmers. Educational qualification ($r=-0.323^{**}$, $p<0.139$) had a negative correlation which implies that the less educated participated more in rice production activities. It is therefore recommended that whenever there is the need to build the capacity of rice farmers, female farmers should be trained in simple/local languages that they can easily comprehend in the study area since they are not as educated as their male counterpart.

Keywords: participation, gender, rice production, Abakaliki.

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1. Introduction

In Africa, rice *Oryzagliaberrima* has been cultivated for 3500 years, between 1500 and 800 BC it was propagated from its originated centre, the Niger River Delta, and extended to Senegal. Its cultivation declined in favour of the Asian species, and spread westward (Maddox, 2006). African rice helped African conquer its famine of 1203 (NRC, 1996).

According to Food and Agricultural Organization, Nigeria produced 4.8 million metric tonnes in 2012. Rice is a major food staple and a mainstay for the rural population and their food security. It is mainly cultivated by small farmers where average holding is about 1.0 – 3.0 hectares. Agriculture is an important source of employment for 87% of economically active women and 80% of economically active men (Blackden and Rwebangira, 2004). Ironically women are known to be more involved in agricultural activities than men in Sub-Sahara African (SSA) countries. Rice production involves a lot of agricultural activities carried out by farmers comprising of both men and women. The gender participation in its cultivation are clearly seen in the different stages of production from land clearing, tilling, weeding, planting, harvesting, transplanting, drying, cleaning, threshing, winnowing, packaging, storage, transportation etc. These operations are commonly dominated by a particular gender group due to some certain factors like laborious nature of the work, tradition or custom and lots more.

Food and Agricultural Organization (FAO) defines gender as “the relation between men and women both perceptual and material. Gender is not determined biologically, as a result of characteristics of either women or men, but is constructed socially. It is a central organizing principle of society and often governs the processes of production and reproduction, consumption and distribution. However as seen from the FAO definition, gender issues focuses on the relationship between men and women, their roles, access to and control over resources, division of labour, interests and needs. It is common knowledge that gender inequality is one of those issues encountered as it cut across different roles, norms, and values, govern the gender division of labour and gender distribution of resources, responsibilities, agency and power (Franklin, 2007). These are critical elements for understanding production levels amongst rural farmers.

Major importers of rice usually include Nigeria, Bangladesh, Iran, Iraq, Saudi Arabia, Indonesia, Malaysia, the Philippines, Brazil and some African and Persian Gulf countries. The local production of rice is estimated to be three million tonnes. The current demand amounts to five million tonnes (NAMIS, 2014). There is a demand-supply gap of two million tonnes per annum for rice in Nigeria. In common with other West African countries, Nigeria is actively promoting domestic production to bridge the gap between production and consumption. According to the Minister of Agriculture and Rural Developments (Adesina, 2013) revealed that Nigeria spends over N356 billion on yearly importation of rice, he as well stated that Nigeria is running a prodigal consumption pattern in the sense that she spends billions of naira everyday importing rice from Thailand and India when rice can be grown here. He made reference to the well branded and packaged rich such as (Abakaliki rice from Ebonyi state, Umza rice from Kano, Miba rice from Benue State and several other long grained parboiled rice which can

favourably compete with any rice from India. Recent rice importation figures attest to the fact that rice is in high demand in Nigeria (Bello, 2007).

In Nigeria, agriculture is the most important sector of the economy from the standpoint of rural employment, sufficiency in food and fibre, and export earning prior to the discovery of oil. Agricultural sector is still the leading sector in Nigeria, citing economy. It provides direct employment to about 75% of the population (NBS, 2007). Presently, agriculture contribution to Nigeria Gross Domestic Product (GDP) is about 37.2% (CBN, 2006). Globally, it is evidenced that one of the major problems confronting mankind in recent times is food crisis. Based on this premise, the following objectives were addressed.

1. To examine the socio-economic characteristics of the male and female rice farmers in Abakaliki.
2. Identify the participation of different gender groups in rice production.
3. Identify the problems faced by male and female rice farmers in the study area.

2. Hypotheses of the Study

- 1) There is no difference between the participation of male and female farmers in rice production.
- 2) There is no significant relationship between the socioeconomic characteristics of male and female rice farmers and their participation.

3. Methodology:

The study was carried out in Ebonyi State, Nigeria. Ebonyi State lies approximately with longitude $8^{\circ} 05' E$ and latitude $6^{\circ} 15' N$. Ebonyi rice (which is popularly known as Abakaliki rice) is a whole grain cereal, very rich in natural minerals and vitamins, grown and milled in Nigeria. It is produced in African soil with minimal risk of Arsenic contamination and all natural. It has low sugar, very rich in dietary fibre, magnesium, fatty acid etc.

Abakaliki Local Government Area was purposely selected because of its dominance and popularity in rice production. One hundred and sixty (160) male and female farmers were randomly selected from registered rice producers. Primary and secondary sources of instruments were employed and data was analyzed using descriptive statistics as frequency counts, percentages mean and standard deviation. T-Test and Product Moment Correlation was used to test the hypotheses.

4. Results and Discussions

4.1. Socio-economic characteristics of respondents

Table 1 shows age distribution of the respondents in the study area. A high proportion of female respondents (59.5%) was within the ages 41-50 years and male respondents (48.3%) were within the ages of 31-40 years with a mean age of 38.9. This is an indication that most of the respondents are in their productive age. Also females tend to stay longer in rice production while the male involvement declines as they advance in age. This agrees with the findings of Ayoola *et al* (2011) which says that the categories of rice farmers in the Northern Guinea are in their productive age and tends to disagree with the findings of Kebbeh *et al* (2003) who reported an average age of 47 years for rice farmers in their research on challenges and opportunities for improving irrigated rice productivity in Kaduna and Niger States of Nigeria.

4.1.1. Household size

Household size is an important source of family labour. A large household is capable of supplying all the labour requirement needed and rely less on hired labour.

Results in Table 1 shows majority of the respondents falls within household size of (6-10) with 54.8% and 50.0% of female and male rice farmers respectively with a mean of 7 persons per household. This is an uneconomic household size for agriculture. This implies that rice farm households could rarely draw some family labour from their household that will be sufficient in rice production. Consequently, there will be an increase in production cost as a result of hired labour.

4.1.2. Educational Qualification

The result shows that a high proportion of the female (35.7%) obtained only primary education and (40.7%) of male had secondary education while 13.8% have no formal education; compared with a previous finding that about 29% of rice farmers in Kaduna and Niger State do not have formal education (Kebbeh *et al.*, 2003). This implies that majority of the rice farmers in the study area have at least one form of formal education. This could aid the rice farmers in understanding the importance of adoption of innovations.

4.1.3. Farm Experience (Years)

The result reveal the highest years of experience to between (11-15) years for both the female and male with 38.1% and 45.8% respectively, followed by (16-20) with 31% and 32.2% for female and male respectively with a mean year of 13 years. This indicates long years of experience which is accompanied by improved practices, proper timing and better marketing strategies for produce. This conforms with Kebbeh *et al.*, (2003), which found an average of 21 years of farmers' experience in rice farming in Kaduna and Niger States of Nigeria.

4.1.4. Size of Farm

From Table 4.1, over half of rice farmers have farm size of 2.0ha and below with 81% and 89% for female and male respectively with a mean of 2.0. The average farm size of the men is greater than that of the women. 38.8% of the farmers have farm sizes between 2.1- 4.0 ha. No farmer has a farm size above 6.0ha. This implies that farm units were generally small sized.

Nigeria makes it easily accessible by the males. This findings agrees with Edeoghon and Koledoye (2017) that the male farmers in Edo State had larger farm sizes than the female farmers. The probable reason for this trend as observed by Ajani (2008) could be patriarchal structures and authorities who give the heritage and control of land to men in Nigeria resulting in women having less access to productive resources particularly land.

Table 1: Socio-economic Characteristics of Respondents

	Female		Male		Total		Mean	
	Freq	%	Freq	%	Freq	%		
Age	25 & below	0	.0	1	.8	1	.6	38.9
	26-30	5	11.9	6	5.1	11	6.9	
	31-40	12	28.6	57	48.3	69	43.1	
	41-50	25	59.5	47	39.8	72	45.0	
	>50	0	.0	7	5.9	7	4.4	
	Total	42	100.0	118	100.0	160	100.0	
Household size	5 & below	18	42.9	37	31.4	55	34.4	7
	6-10	23	54.8	59	50.0	82	51.3	
	11-15	1	2.4	13	11.0	14	8.8	
	16-20	0	.0	8	6.8	8	5.0	
	>20	0	.0	1	.8	1	.6	
	Total	42	100.0	118	100.0	160	100.0	
Educational qualification	no formal education	10	23.8	12	10.2	22	13.8	13
	primary education	15	35.7	22	18.6	37	23.1	
	secondary education	13	31.0	48	40.7	61	38.1	
	OND/NCE	4	9.5	31	26.3	35	21.9	
	BSc/HND	0	.0	5	4.2	5	3.1	
	Total	42	100.0	118	100.0	160	100.0	
Farming experience (years)	5 & below	8	19.0	6	5.1	14	8.8	2.0
	6-10	5	11.9	14	11.9	19	11.9	
	11-15	16	38.1	54	45.8	70	43.8	
	16-20	13	31.0	38	32.2	51	31.9	
	>20	0	.0	6	5.1	6	3.8	
	Total	42	100.0	118	100.0	160	100.0	
Farm size	2.0 & below	34	81.0	55	46.6	89	55.6	2.0
	2.1-4.0	8	19.0	54	45.8	62	38.8	
	4.1-6.0	0	.0	9	7.6	9	5.6	
	6.1-8.0	0	.0	0	.0	0	.0	
	8.1-10.0	0	.0	0	.0	0	.0	
	>10	0	.0	0	.0	0	.0	
Total	42	100.0	118	100.0	160	100.0		

Source: Field survey, 2014.

4.2. Participation by Gender Group in Rice Production

Table 2 shows that high proportion of women participate more in land clearing, weeding, harvesting, threshing, winnowing/blowing and cleaning than their male counterpart. These operations are dominated by women. This may be as a result of the ease of operation or the meticulousity of the task. Men are generally known to have little patience and are quick in actions which makes them unsuitable for care-intensive operations.

Male and female rice farmers participated equally in parboiling, dehusking, packaging, storage, transportation and marketing.

The study reveals further that high proportion of men participate in tilling which is a very tedious exercise.

This conforms to the findings of Hills and Vigneri (2009), which says that men engage in more physically challenging work such as tilling and tree felling and women perform the less physically demanding work such as weeding and harvesting.

Women in Tanzania take charge of weeding, harvesting, processing, and storing food crops; they also contribute significantly to these tasks for cash crops, though men tend to help more with agricultural task for cash

crops (Ellis, 2007).

Table 2: Participation by gender group in rice production

	Female		Male		Total	
	Freq	%	Freq	%	Freq	%
Marketing	41	97.6	114	96.6	155	96.9
Transportation	40	95.2	114	96.6	154	96.3
Planting	41	97.6	111	94.1	152	95
Drying	38	90.5	111	94.1	149	93.1
Storage	38	90.5	111	94.1	149	93.1
Packaging	34	81	111	94.1	145	90.6
Parboiling	36	85.7	95	80.5	131	81.9
Tilling	0	0	116	98.3	116	72.5
Dehusking	42	100	74	62.7	116	72.5
Clearing	41	97.6	41	34.7	82	51.3
Threshing	41	97.6	29	24.6	70	43.8
Harvesting	42	100	26	22	68	42.5
Cleaning	41	97.6	25	21.2	66	41.3
Weeding	42	100	15	12.7	57	35.6
Winnowing/blowing	41	97.6	8	6.8	49	30.6

Source: Field survey, 2014

4.3. Constraints in Rice Production

Table 3 shows the different constraints in rice production experienced by male and female farmers. Findings from the Table reveals preference or shift to foreign rice as a very serious constraint in rice production with (3.90) and (3.91) for female and male rice farmers respectively. This is followed by ineffective farm organization and groups (3.24) female and (3.35) male, adverse weather condition (2.68) female and (2.8) male and poor electricity (2.52) female (2.63). The dispersion of preference to foreign rice 3.91 ± 0.87 around the mean affects the significance of the mean positively thus the significance is very strong across the population. This implies that all the rice farmers in the study area agree that preference or shift to foreign (imported) rice is a constraint to rice production in the study area.

This is not in consistent with the findings of Matanmi, Adesiji, Owawusi and Oladipo (2011) which saw lack of rice processing machine (such as thresher and destoner) and financial constraints as the major perceived limiting factors in rice production in Patigi, Kwara State, Nigeria.

Table 3: Distribution of rice farmers showing constraints in rice production

	female		Male		Total	
	Mean	SD	Mean	SD	Mean	SD
Preference or shift to foreign (imported)rice	3.90**	.84	3.91	.89	3.91**	.87
Ineffective farm organization and groups (Co-operatives)	3.24*	.93	3.39	.94	3.35*	.94
Adverse weather condition	2.68*	1.28	2.80	1.25	2.77*	1.26
Poor electricity	2.52*	1.20	2.63	1.20	2.60*	1.20
Poor extension services	2.14	1.29	2.18	1.37	2.17	1.35
Inadequate farmland	2.02	.71	2.16	.89	2.12	.84
Scarcity of inputs	1.97	1.00	2.12	1.10	2.08	1.08
Inadequate labour supply	2.17	.79	1.95	.77	2.01	.78
Poor transportation facilities	2.03	1.08	1.94	.91	1.97	.95
Unavailability of fertilizer	1.87	.42	1.99	.48	1.96	.47
Poor storage facilities	1.81	.74	1.98	.74	1.93	.74
Poor storage facilities	1.90	.78	1.93	.68	1.92	.71
High cost of processing	1.76	.43	1.94	.73	1.90	.67
Lack of storage facilities	1.83	.79	1.92	.72	1.89	.74
Labourious nature of work	1.78	.52	1.84	.63	1.82	.60
Inadequate processing facilities	1.67	.48	1.84	.58	1.80	.56
Pests and diseases	1.68	.50	1.60	.62	1.62	.59
Lack of loan	1.10	.30	1.05	.22	1.06	.24

Source: Field survey, 2014

4.4. Hypotheses

4.4.1. Difference in the Participation of Male and Female Farmers in Rice Production

Result from Table 4, shows that the difference in participation of male and female farmers in rice production is highly significant ($t=18.17$) with male ($\bar{X}=9.42$) and female ($\bar{X}=13.38$) and a mean difference of (3.957). The female farmers participate more in rice production chain than males in the study area. Activities like weeding, threshing, winnowing, cleaning, parboiling, dehusking etc. are dominated by the female farmers. This does not agree with the findings of Afolami *et al* (2012) which says that majority of rice producers in Ekiti (90.3%) and Ogun (85%) States were males suggesting a high dominance of male farmers in rice production.

Table 4: Difference in the participation of male and female farmers in rice production

Sex	N	Participation score		T
		Mean	Difference	
Male	118	9.42	3.957	18.17
Female	42	13.38		

*Significant at the 5% level (critical $t = 1.96$)

4.4.2. Relationship between socio-economic characteristics of male and female farmers and their participation in rice production activities

The results in Table 5, shows that there is a significant relationship between educational qualification, farm size and sex with their participation in rice production.

Educational qualification: ($r=-0.323^{**}$, $p<0.139$) had a negative correlation which implies the less educated participated more in rice production activities. This could mean that women who participated more were not as educated as their male counterparts.

Farmsize: ($r = -0.200^{**}$, $p<0.139$) had a negative correlation which implies that the higher the farmers farm size, the lower the farmers' participation. This could be as a result of the need for more use of hired labour with regards to the large farm size.

Sex: ($r = -0.762^{**}$, $p<0.139$) had a negative correlation. This implies that the gender of the farmer affects the different areas of participation in rice production. More female farmers were observed (Table 2) to be involved in some areas of participation e.g. weeding, threshing etc, while lesser male farmers participated in same areas.

The negative values of household size and years of experience, though not significant meant that smaller household sizes and new entrants of rice farming enterprise participated more in production activities. This could be because the new entrants ventured rice farming with a vision to be market oriented and commercialize. This result agrees with Edeoghon and Oria-Arebutun (2011) where they observed negative correlation of length of residence and household size in economic empowerment of urban agriculture among women farmers in Edo State.

Table 5: Relationship between socio-economic characteristics of male and female farmers and their participation in rice production activities

Independent variables	Participation score (total)
	Coefficient (r)
Age	0.027
Educational qualification	-0.323**
Farm size	-0.200**
Household size	-0.122
Years of experience	-0.05
Sex	-0.762**

*Significant at the 5% level (critical $r = 0.139$)

5. Conclusion and Recommendations

A higher proportion of young females with mean age of 38.9 years having a mean household size of 7 years were involved in rice production; having a form of formal education or the other. Farm units were generally small with a pooled mean of 2 hectares. Female farmers participated more in rice production chain than males in the study area. Activities like weeding, threshing, winnowing, cleaning, parboiling, dehusking etc. were dominated by the female farmers. Most serious constraints of rice farmers were consumer's preference for imported rice, ineffective cooperative groups, adverse weather conditions and poor electricity.

Educational qualification ($r=-0.323^{**}$, $p<0.139$) had a negative correlation which implies that the less educated participated more in rice production activities.

It is therefore recommended that whenever there is the need to build the capacity of rice farmers, female farmers should be trained in simple/local languages that they can easily comprehend in the study area since they are not as educated as their male counterpart.

It is also recommended that government and private sectors get involved in processing and packaging of rice so as to improve the quality of local rice hence, making it acceptable to consumers.

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