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Comparative Constraints Analysis of small and medium scale rice farmers in Kogi State, Nigeria

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ABSTRACT

The study conducted a comparative constraints analysis of small and medium scale rice farmers in Kogi State Nigeria. Primary Data was used for the analysis of this study through the use of structured questioner on a total sample of 378 rice farmers drawn from three local government that are major producers of rice. Factor analysis was mainly used to analyzed the data collected. Finding shows that land Tenure system, lack of credit, poor marketing outlet, high cost of labour, inadequate capital, inadequate farm inputs supply and high cost of fertilizer are the major constraints of small scale rice farmers in order of their high loading, while lack of credit, inadequate input supply, high cost of fertilizer, land tenure system, poor marketing outlet, inadequate capital and high cost of labour are the major constraints of medium scale rice farmers in order of their high loading. It was recommended that both small and medium scale rice farmers should be given more access to land through proper legislation, adequate farm credit through given of loans at affordable rate and provision of machines to encourage large scale production.

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INTRODUCTION

According to African Development Bank (ADB), 2006. Rice is a region wide strategic commodity' as highlighted in the resolutions of the Abuja Food summit. It has been noted to be the most rapidly growing food source in Africa with estimated 46 percent annual growth rate. In Nigeria however, rice is a leading staple crop, it is cultivated and consumed in all parts of the country. Over the years, Nigeria has been producing same crop below its potentials and this has given rise to increasing demand for rice in the face of the Nation's rapidly growing population which has resulted to wide demand and supply gap. The importation of rice to bridge the gap of demand and supply is worth 365 billion (Ayanwale and Amusan, 2012). This implies loss of foreign exchange for the country. In Nigeria, rice is produced using a variety of rice production system and technological levels co-existing with West African Rice Deployment Association (WARDA).

Daramola (2005) Observed that the middle belt of the country (where kogi state is located) enjoyed a comparative advantage in rice production over the other parts of the country, this is because of the presence of rivers and good soil for rice production. Kogi produced at least 5% of the total rice production in Nigeria. In 2000, Kogi total output and yield mainly from wet season rice farming stood at 1,025,000 tons and 2.28 tons/ha (Project Coordinating Unit, (PCU) 2003). According To Ater et al. (2010) rice is an important component of food consumption pattern in Nigeria. it has emerged as the fastest growing agricultural sub-sector and has also moved from a ceremonial staple food in many Nigerians home within the last three decade to normal staple food as observed by Audu et al, (2008) who opined that rice is the second largest crop production in the world after wheat. This view is countered by Fashola et al (2007) who suggested rice is the fourth largest crop produced after Sorghum, millet and maize. Nevertheless, the unprecedented increase in the price level in March, 2008 affected the prices of the commodities. This effect on the price of other commodities portrayed rice as the most important cereal in the world (Onumadu et al, 2014).

The demand for rice has been increasing at much faster rate (5 million tons/annum) in Nigeria more than any other African country since Mid-1970 (FAD, 2001). Domestic Supply has not kept pace with demand as imports have steadily increase faster than domestic supply by according for 60% of the total supply and leaving the huge gap of 40% which translates into about 2 million metric tons annually, a situation, which has continued to encourage dependence on importation, thus drawing the nations earned foreign exchange (Momoh, 2007). Above all, average yield of rain fed rice which is the main focus in Nigeria is 1. 8 tons/ha while

that of irrigation system is 3.0 tons/ha (PCU, 2003) this is very low when compared to 3.0 tons/ha from upland and lowland system and 7.0 tons/ha from irrigation system in places like Cote'dvoire and Senegal. Therefore, it appears that rice farmers in Nigeria are not getting returns from their resource committed to the enterprise (Mbah, 2006). The importance of rice production in our society and quantity is globally promoted. In order to solve the problem of the low productivity, government should be able to support the farmers by providing the necessary inputs and formulating the right policies. But before this is done, there is need to identify and ensure that the beneficiary of those inputs are either the small scale rice farmers or the medium scale rice farmers, for the attainment of the intended improvement in productivity. This situation therefore calls for the conduct of studies and research to generate the relevant, adequate and effective knowledge as well as information for the process guide. Evidence of few studies like, Onoja and Herbert (2012 assed the profitability of rice production in Kogi State, they came out with a finding that rice is very profitable business in the state. Also, Ataboh et al (2014) determined the technical efficiency among rice farmers in Kogi State and discovered that the technical efficiency of farmers varied. The above studies did not unveil much on comparative constraints details between small scale rice farmers and the medium scale rice farmers in Kogi State, the major producers of rice in North Central Nigeria that can be harnessed for improvement. Not of literature have acknowledged small scale rice production but little of no empirical study has been undertaken on the comparative constraints analysis of small and medium scale rice farmers in Kogi State.

To unveil this death of information this enterprise perpetuates, a comparative, study of constraints of this major producers that is, the small and medium scale rice farmers becomes an obvious task. It is against this backdrop of knowledge gap that this study is embarked upon to undertake a comparative constraints analysis of small and medium scale rice farmers in Kogi State, Nigeria.

The broad objective of the study was to undertake a comparative constraints analysis of small and medium scale rice farmers in Kogi State. Specifically the objectives were to describe the socio-economic characteristic of rice farmers in Kogi State and identify the constraints affecting small and medium scale rice farmers in Kogi State, Nigeria.

METHODOLOGY

The Study was conducted in Kogi State, located in the North Central part of Nigeria on latitude 7^0.49 and 7^0.50N and longitude 6^0.45 and 6^0.70 with a geological feature depicting young sedimentary rocks and alluvium along the river beds, which promotes agricultural activities. Kogi State has a total land area of 28,313.53 square kilometers and a population for the study is the small and medium scale rice farmers.

The population for the study is the small and medium scale rice farmers in Kogi State. The selection of respondents was purposively done on the rice producing zones of the ADP zones in the state. In order to have a good representative sample size for the study, stratified multistage random sampling technique was used. farmers were stratified into small and medium scale producers based on their farm size in hectares (o.1ha – 2.99ha) as small scale farmers and (3.00ha – 6.00ha) as medium scale farmers. First stage involved purposive selection of Two Zones out of the four agricultural zones, (Zone B and D) based on the output of rice and the participation of farmers. In stage two, one Local Government Area was purposively from zone B and two Local Government Areas were selected from Zone D based on the intensity of rice production and the output of rice in these L.G.As, giving a total of three L.G.As and 15 communities. Sampling proportion of 5 percent was used randomly to select a total number of 385 respondents across the selected zones for the study, while structured questionnaires was administered to the small and medium scale rice farmers by the researcher and trained enumerators.

Data analysis was done using descriptive statistics for socio economic characteristics of rice farmers and inferential statistics to identify the constraints faced by the small and medium scale rice farmers.

Descriptive statistics, consisting of frequencies, percentages and mean scores were used for socio economic analysis while Kaiser's (1958) rule of thumb which says, "Variable with coefficients of 0.30 or more have a high loading and may be used", was adopted for interpretation of constraints analysis.

RESULT AND DISCUSSION

Socio Economic characteristics of rice farmers in the study area: Table 1 shows that 52.5% small scale and 79.4% medium scale respondents were male, while about 47.5% small scale and 20% medium scale were female. These results imply that rice production in the study area is dominated by men. This trend maybe because the production of rice is Labour and resource intensive which most women may not be able to do or afford. This agrees with the finding of Emodi (2012).

The age of rice farmers as represented in table 1 also shows that about 39.9% small scale and 25.6% medium scale farmers were between the age range of 21 – 40 while 60.1% small scale and 74.4% medium scale were between the age ranges of 41 – 60 years. However the mean age was 44 years for small scale and 45 years for medium scale farmers respectively, which imply that rice farmers in the study area are within their active years of farming, and likely be able to enhance rice production. These age categories were refers to as economically viable and active groups in production according to Okoruwa and Ogundele (2006) and Atabo *et al (2014).*

The marital status of the farmers in table 1 shows that about 83.3% small scale and 93.9% medium scale farmers were married, while about 16.2% small scale and 6.1% medium scale were widowed and separated respectively. This result indicated that majority of rice farmers are married. This confirmed the finding of Emodi (2012) and Ajah (2014), that majority of rice farmers re married. These imply that most of the farmers have people that will help them in carrying out various farming operation. On the educational status of the respondents, the result shows that majority of small scale rice farmers had low literacy level with the educational mean of 6 years while the medium scale rice farmers have higher literacy level with the educational mean of 12 years. This agrees with the finding of Ajah and Ajah (2014) and Atabo *et al (2014)* that majority of small scale rice farmers have low literacy level.

The farm size of farmers indicated that small scale rice farmers had farm size of <1 ha 22.22%, 1 ha 34.34% and 2 ha 43.43% while the medium scale rice farmers had farm sizes of 3ha 31.67%, 4ha 41.4%, 5ha 12.78% and > 5ha 11.11% respectively, with the mean farmer size of 1.5ha for small scale and 4.2 ha for medium scale rice farmers respectively. Small farm size limits large scale production of rice. This result confirmed the finding of Emodi (2012) and Ataboh *et al. (2014)* that small scale rice farmers are characterized by small farm size. in relation to farming experience of the respondents, the result shows that majority of small scale rice farmers and medium scale farmers are with farming experiences of between 21 – 30 years 52.5% and 61.1% respectively, with the mean of 22 years for small scale and 27 years for medium scale. The high duration of farming experience is an indication that farmers in the study area are advanced age in rice production and vast in management of resources that will enhance productivity. This result agrees with the finding of Onoja and Herbert (2012) and Ajah and Ajah (2014). A proportion of 41.4% of Non-farming income is earned by small scale rice farmers and medium scale rice farmers, with the mean of 18% and 30% respectively. This shows that a part from farming, the farmers also get some revenue or income from other sources, such as fishing, trading, pension, salary etc.

Table 1: Distribution of the Socio-economic characteristics of small and medium Scale Rice Farmers in Kogi State

	SMALL n=198		MEDIUM n=180	
Age (years)	**Frequency**	**Percentage**	**Frequency**	**Percentage**
21 – 40	79	39.9	46	25.6
41 – 60	119	60	134	74.4
Mean	44		45	
Sex				
Male	104	52.5	143	79.4
Female	94	47.5	37	208
Marital Status				
Married	166	83.8	169	93.9
Widowed	32	16.2	11	6.1
Separated				
Education				
Non-formal education	68	34.34		
Primary School	64	32.32	20	11.1
Secondary School	66	33.33	77	42.8
Post Primary School			83	46.1
Mean			12	
Farming experience (years)				
1-10	10	5.1		
11-20	74	37.4	26	14.4
21-30	104	52.5	110	61.1
31-40	10	5.1	44	24.4
Mean	22			
Farm size (Hectares)				
<1	44	22.22		
1	68	34.34		
2	86	43.43		
3			57	31.67
4			80	44.44
5			23	12.78
>5			20	11.11
Mean	1.5		4.2	

Non-farm income				
1-10	66	33.3		
11-20	82	41.4	26	14.4
21-30	30	15.2	88	48.9
31-40	20	10.1	55	30.6
41.50			11	6.1
Mean	18		30	

Source: Field survey, 2022

COMPARATIVE CONSTRAINTS AFFECTING SMALL AND MEDIUM SCALE RICE FARMERS

Table 2 shows the constraints to the production of rice in the study area perceived by small and medium scale rice farmers. The finding shows that farmers identify all the constraints as major constraints in rice production. Those constraints includes the following; high cost of labor (.726) for small scale and (.341) for medium scale, inadequate input supply (.405) for small scale and (.884) for medium scale, poor marketing outlet (.789) for small scale and (.695.) for medium scale, land tenure system (.9090) for small scale and (.821) for medium scale, high cost of fertilizer (.444) for small scale and (.42) for medium scale, transportation (.615) for small scale and (.331) for medium scale, inadequate capital (.648) for small scale and (.543) for medium scale and lack of credit (.814) for small scale and (.908) for medium scale.

High cost of labour creates a problem to both the small and medium scale rice farmers as it increases their cost of production. This result support the finding of Emodi (2012), Osanyinlusi and Adenegan (2016) who acknowledged that high cost of labour is a major factor limiting the production of rice, as labour cost increases the variable cost of the farmers, the small scale farmers spend more on labour compare to the medium scale as the medium scale enjoy lower cost as the result of the high patronage.

Inadequate farm inputs like seeds, herbicides, pesticides, fertilizer and machines impede the production of rice in the study area as most farmers get their farm inputs by themselves; this result supports the findings of Matanmi *et al (2011).* According to Emodi (2012) and Sanusi (2014) many farmers do not have access to farm input from the government and therefore buy them at a very high cost leading to high production cost. The medium scale farmers suffer inadequate inputs more than the small scale farmers as the result of their high level of production.

Poor marketing outlet is also another constraint that has high loading. Since majority of the farmers are living in the rural areas they have poor road network which made it difficult for them to carry produce to the town that are needed at a good price. The result supports the finding of Matanmi *et al (2011);* Emodi (2012) and Sanusi (2014) who identified poor marketing outlet as a major constraints in rice production. But the small scale farmers suffer poor marketing than the medium scale due to their low level production which made them to sell their produce locally compare to the medium scale farmers that take their produce outside.

Land tenure system was identified as the most serious constraints in rice production as expansion of farm for both small and medium scale farmers is been hampered by land tenure system arrangement that the system of land ownership in Nigeria prevents farmers to have access to land. But the small scale farmers suffer more than the medium scale farmers and they find it difficult to give out money to the owners of the land for rentage, while the medium scale farmers have the financial capacity to rent land from the owners.

Another constraints identified was high cost of inorganic fertilizer as the result of the activities of the middle men who sell out fertilizer to farmers at exorbitant prices fueling by the removal of fertilizer subsidy by the government. This supports the findings of Matanmi *et al (2011),* Emodi (2012), Sanusi (2014) and Osanyinlusi and Adenegan (2016) that high cost of fertilizer had prevented access by the farmers and those that can by it, bought it at a very high price. But the medium scale farmers suffer more than the small scale farmers because of their high level of production; because the higher your production, the higher your level of fertilizer application.

Furthermore, high cost of transportation is another serious challenge facing rice farmer in the study area. High cost of transportation was as the result of the removal of the petroleum subsidy by the Federal Government this enabled transporters to increase their transport fair. This support the finding of Matanmi et al (2011), Emodi (2012) and Sanusi (2014) that transportation problem affects the production of rice as it increase the variable cost incurred by the farmers, but the small scale farmers suffer more transportation cost more than the medium scale rice farmers. The medium scale farmers enjoy transportation cost advantage due to their high production.

Also, inadequate capital has limited some farmers from expanding their production as they cannot afford the necessary inputs for production due to poor saving by the farmers. This supports the findings of Matanmi *et al (2011),* Emodi (2012) and Sanusi (2014) that most of the farmers lack venture capital in the period of production but the small scale rice farmers suffer less capital compare to the medium scale rice farmers as the result of lack of secondary income.

Another most serious constraint is lack of credit facility to the rice farmers from both the government and non-governmental institution, this have prevented most farmers to have a venture capital for their farming activities. This support the finding of Matamni et al (2011), Emodi (2012), Sanusi (2014) and Osanyinlusi and Adenegan (2016), that majority of the rice farmers lack

access to credit facilities, but the medium scale rice farmers suffer more than the small scale rice farmers as they needed more credit facility to increase their production more than the small scale rice farmers.

Table 2:Factors analysis of the Constraints of small and Medium Scale Rice Farmers:

Variables	Small Scale	Medium Scale
High Cost Labour	.726*4	.3417
Inadequate Input Supply	.405*7	.884
Poor Marketing Outlet	.789*3	.6955
High Cost of Agrochemical	-.546	-.017
Land Tenure System	.909	0.821
High Cost of Fertilizer	.444	.842
Poor Storage	-032	-.835
High Cost Transportation	.615	.331
Problem of Pest and Disease	-884	-331
Inadequate Capital	.646	.543
Lack of Credit	.814	.908
Rotation method: Varimax with Kaiser Normalization		

- High loading constraints

Source: Field Survey, 2022

CONCLUSION

Constraints in rice production for both small and medium scale rice farmers that were identified majorly includes; land tenure system, lack of credit facility, poor marketing outlet, high cost of labour, adequate input supply, high cost of fertilizer, inadequate capital and high cost of transportation.

The study concludes based on the major finding of rice production that both the small and medium scale rice farmers be provided with human, capital and mental power to overcome their constraints by both governmental and non-governmental organization through proper teaching and learning by the extension agents. Also, farmers can form cooperative society that will help them overcome their challenges as government should be ready to provide them with affordable loans and provide rural infrastructures to the farmers especially good roads that will ease their transportation.

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