

## Consumer Preference for Local and Imported Rice in Ifako-Ijaiye Local Government Area of Lagos State, Nigeria

**OLADEJO Joana Adefemi**

Department of Agricultural Economics, Ladoké Akintola University of Technology, Ogbomosho,  
Oyo State, Nigeria

E-mail: [jaoladejo@lautech.edu.ng](mailto:jaoladejo@lautech.edu.ng)

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### **ABSTRACT**

*This study analyzed consumer preference for local and imported rice in Ifako-Ijaiye Local Government Area of Lagos State, Nigeria. It specifically described the socio economic characteristics of the respondents, identified the varieties of local and imported rice available in the study area, identified respondents' rice preferences and variables affecting consumer choices in the study area. The study also identified limiting factors to the consumption of imported and local rice in the study area. Population of the study comprises of households in the study area. Three hundred and sixty respondents were selected using the two-stage sampling technique. Primary data were collected using copies of structured questionnaire. The data were analyzed using the descriptive statistics and logit regression analytical tools. Results of the analyses revealed that majority of households in the study area are male-headed with average age of 40.73 years, 65.83% were married with average household size of 5 persons. Ofada rice was the most available local rice while Mama gold brand was the most available imported rice in the area. Exactly 36.67% of sampled household preferred imported rice while 63.33% preferred local rice. Major constraints to imported and local rice consumption were high price and presence of stones/debris respectively. The factors influencing preference status of respondents were marital status, price (affordability), rice availability, taste, and absence of stones/debris. The study concluded that the local rice is more preferred in the study area than the imported rice. Based on the finding that price (affordability) and availability are important variables influencing preference status of respondents, this study recommends that the government should see to it that local rice is within the reach of consumers by investing in the production and processing of local rice and making credit available to rice farmers and processors. In addition, based on the finding that improvement in taste and quality (absence of stone/debris) increase the chances of consumer choosing local rice above imported rice in the study area, this study recommends that the government and non-governmental organizations (NGOs) should assist in providing modern rice processing facilities to rice processors so as to enhance the quality of local rice.*

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**Key words:** Consumer Preference, Local Rice, Imported Rice

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## INTRODUCTION

Rice is the seed of the grass species *Oryza sativa* (Asian rice) or *Oryza glaberrima* (African rice). Rice is the most commonly cultivated cereal throughout the world today (FAOSTAT, 2020). The African rice is believed to have originated from the wild rice (*O. barthii*) about 3500 years ago and was domesticated in the inland delta area of Nigeria from where it spread to other parts of Africa (Onu, 2018). It is a basic and essential food that is widely accepted and consumed by both the rich and poor people in Nigeria. It is a monocotyledon plant that is normally grown annually and can also survive as a perennial crop in some tropical region, which can produce a ratoon crop for up to 30 years (Olaniyi et al., 2012). Rice plant can grow up to 1-1.8m tall, depending on the soil fertility. The caryopsis is about 5-12mm long and 2-3mm thick (Olaniyi et al., 2012). It is an agricultural commodity with the third highest population after sugarcane and maize. *Oryza sativa* can be classified as long, medium and short grain. Rice serves as carbohydrates that supplies energy and fiber to the human body. There are different types of rice which includes Polished rice (local white rice and imported white rice), brown rice and specialty rice such as Basmati rice, fragrant rice, parboiled and glutinous rice (Abdul Latif and Ayob, 2017).

*Oryza sativa* is a good source of protein, phosphorus and iron, it also contains some amount of calcium. The health benefits also include regulating blood sugar level and a good source of vitamin B1 to the body (Olaniyi et al., 2012). Rice is one of the most commonly consumed food in the world because it is a reliable food that supplies the essential nutrient to the body and can also serves as source of food to some livestock such as cattle in form of rice bran, it is also used for malting in brewing industries. Rice can be grown in different ecological conditions, depending on the availability of water. High yields of production are as a result of using new and modern cultivation techniques. Rice is propagated through seed which are sown directly to the field or on the nursery bed before transplanting. For direct sowing or broadcasting, dry the seeds after washing and sown.

Consumer preference can be defined as a choice made by the people who purchase the product over some other alternative product, when they are given the option to show freely (Fife-Schaw et al, 2007). Consumer preference of rice is different from country to country. In Brunei, consumers purchased imported rice compared to local rice because of its availability in the market and followed family inherent traditions/practices because consumers have been using that rice since they were children. In Nigeria, before 2010, about 71% of rice was processed by small scale cottage mills with a capacity of 10-300kg/hour. Most of them (usually located in major paddy rice areas of Laja, Ekiti, Niger, Taraba, Ebonyi, Benue, and Kaduna) relied on obsolete processing equipment and lacked modern milling accessories such as de-stoners, polishers, and color sorters (Lancon *et al.*, 2003; PROP COM, 2007). Due to the availability of fertile land in Nigeria and favourable climatic conditions, rice can be easily produced in large quantities for various household. According to Onu (2018), Nigeria has continued to depend on importation from countries like China and Thailand to meet the increasing demand for rice by households. However this brings about decrease in gross domestic product (GDP) of the country's economy. Akaeze (2010) argued that, the quality of imported rice is far better than the Nigerian produced rice.

Importation of rice has brought about some decrease in the economic growth of Nigeria

in such a way that households believe that the imported rice has more value in terms of quality and quantity than the local rice. However, in the last few years, the government has put in place some programmes and policies to discourage rice importation and encourage domestic production. These includes an increased import tariff on rice from 5% to 50% in 2012 and 2013, a ban on importation of rice across the borders and an establishment of commercial Agricultural Credit Scheme (CACS) to provide cheap funds to Agribusiness (Obih and Baiyegunhi , 2017). Despite all these efforts by the government to reduce the consumption of imported rice, most households in Nigeria prefer to purchase the imported rice due to its refined package.

There are several types of local rice in Nigeria such as the Ofada rice, lake rice among others. The ofada is grown by the subsistent farmers in Ogun state and it been exported to foreign countries. It is widely accepted for its low cholesterol value. The lagos-kebbi rice popularly known as the lake rice is cultivated in Kebbi, milled and bagged in Lagos state. Nigerian consumers usually claimed that the locally produced was of poor quality due to the presence stones, husk and impurity, large quantities of uneven and broken grains. The local marketing system was characterized by many challenges such as low product specialization, high degree of price differentiation, poor packaging, grading and standardization (Ogundele, 2014). All these factors bring about the reasons why consumers prefer imported rice to local rice. In order to minimize the importation of rice in Lagos State, the Lagos state Government introduced the Lagos-Kebbi rice popularly known as Lake Rice which is planted in kebbi but milled and packaged in Lagos state. The lake rice is widely accepted by residents of Lagos State and other neighboring states dues to its freshness and texture, the only difference between the local lake rice and the imported rice is the storage capacity (Okogba, 2016).

Despite the fact that rice is cultivated almost all around the ecological zones in Nigeria, yet its sustainability to mankind still remains small. The majority of rice production and processing in Nigeria is in the hands of resource subsistent farmers who lack the economic and social power to fully adopt technologies (Onu, 2018). Availability of sustainable rice processing technology for Nigerian resource, poor rice farmers is important if the country's effort at achieving self-sufficiency in rice production must be achieved. However, considerable previous research studies have focused on identifying the constraints to increase domestic rice production in Nigeria and explaining the growth of rice consumption (Bamidele et al., 2010). However, Musa et al. (2011) conducted a survey to determine the consumer purchasing behavior for rice in Malaysia. He reported that consumer preferred local white rice in small packs compared to imported rice. Also 70% of the respondents preferred to buy local rice due to its lower price and availability at the retail store. This study aimed at analyzing the situation in Nigeria.

There is little empirical information on consumer preference on Nigerian and imported rice, also, the few empirical studies available did not include the Southwestern parts of Nigeria (Okeke, Iheanacho and Obasi (2015); Iweka & Ederewhevbe (2018); Onu, (2018)). This constitutes the gap in research that this study is designed to fill. Due to this reason, this study was carried out to examine consumer preference for local and imported rice in Ifako-Ijaiye local government area of Lagos State. This study specifically described the socio economic characteristics of the respondents, identified the varieties of local and imported rice available in the study area, identified respondents' preferences and rice attributes affecting consumer choices

in the study area as well as the major constraints to the consumption of imported and local rice in the study area. Hypothesis of the study stated that there is no significant relationship between rice attributes and respondents' preference status for local and imported rice.

## METHODOLOGY

This study was carried out in Ifako-Ijaiye Local Government Area (LGA), Lagos State, Nigeria. It has a land area of 43 square kilometers and a population of about 427,878 people in 2006 census. The area is a border suburb town as it shares border with Ogun State. There are eleven (11) wards in the study area. These are Ajegunle/Akinde/Animashaun, Alakuko/Kollington, Fagba/Akute Road, Ijaiye/Agbado, Ijaiye/Ojokoro, Ijaiye, Iju-Ishaga, Iju-Obawole, New Ifako/Oyemekun, Old Ifako/Karaole, Pamada/Abule-Egba. The population of this research comprises of various households that reside in the study area. Two-stage random sampling technique was used to select the respondents. In the first stage, fifty percent of the wards (six (6) wards) were randomly selected. These include Ajegunle/Akinde/Animashaun, Alakuko/Kollington, Ijaiye/Agbado, Ijaiye/Ojokoro, New Ifako/Oyemekun and Pamada/Abule-Egba. In the second stage, sixty (60) households were systematically selected from each ward to make a total of three hundred and sixty (360) households. All the household heads of selected households were interviewed accordingly. Primary data were collected through a structured questionnaire due to the literacy level of the respondents in the study area. The questionnaire was designed based on the specific objectives of the study. The analytical tools that were used for this study include both descriptive and inferential statistics. The descriptive tools include percentages, frequency counts, mean, and use of tables. The research hypotheses were tested using logit regression analysis.

### Model Specification

The logit regression model was used to identify determinants of preference status among the respondent households. The model takes the following functional form:

$$y = x\beta + \varepsilon$$

Where  $y = 1$  (preference for local rice) or  $y = 0$  (preference for imported rice). The variable  $y_i$  is the observed contingent valuation bid by individual  $i$ ,  $y_i$  is a latent measure, and  $x_i$  denotes the independent variables.  $\beta$  is a vector of parameters and  $\varepsilon_i$  the error term distributed as independent normal with zero mean and constant variance.

$$Y = f(X_1, X_2, X_3, X_4, \dots, X_{10})$$

$Y$  = Preference for rice (preference for local rice=1, otherwise=0)

$X_1$  = Age of household head (years)

$X_2$  = Marital Status (married=1, otherwise =0)

$X_3$  = Household size (actual)

$X_4$  = Number of years in school (actual)

X<sub>5</sub>= Availability of local rice (available =1, otherwise =0)

X<sub>6</sub>= Taste of rice (Yes =1, otherwise = 0)

X<sub>7</sub>= Price of rice (Yes =1, otherwise = 0)

X<sub>8</sub> = Aroma of rice (Yes =1, otherwise = 0)

X<sub>9</sub> = Stone and debris (Yes=1, otherwise = 0)

X<sub>10</sub> = Monthly income of household head (₦)

## RESULTS AND DISCUSSION

### Socio-economic Characteristics of the Household Heads (Table 1)

The Socio-economic characteristics of household heads include age, sex, marital status, household size, level of education and monthly income. Distribution of respondents based on age revealed that 20 % of the respondents were less than or exactly 30 years old while about 4 % were above 60 years, the mean age was 40.8 years. This revealed that the majority of the respondents were in their productive age. The result corroborates with the findings of Ogundele (2014) where the average age was 46 years. The distribution of respondents based on sex showed that 55.8% of the respondents were male while 44.2 % were female. This indicates that majority of the households in the study area were male-headed. Distribution of respondents based on their level of education revealed that 55.8% had tertiary education, 34.2% had secondary education, 5.8 % had elementary education while 4.2% had no formal education. This implies that most of the respondents in the study area are educated. Analysis revealed that the mean number of years spent in school was 14.0. Distribution of respondents based on household size showed 71.7% had a family size of less than and exactly 5 persons, 26.7% had their household size ranging from 6 to 10 persons while 1.6% claimed above 10 persons. The mean household size was 5 persons. The result correlates with finding of Obih and Baiyegunhi (2017) where the average household size was 5. Distribution of respondents based on marital status revealed that 74.2% of the respondents were married, 10% were single, 5.8% were separated or divorced, and 10% were widowed. This implies that majority of the respondents were married. Distribution of the respondents based on their primary occupation showed that 50.5% were self-employed, 22.5% were government workers, 17.5% were non-government workers working with private companies and 9.2% were artisans. This indicates that majority of the respondents were self-employed, which goes in line with the finding of Sampson (2013) where 46.8% of the respondents were self-employed. Distribution of the respondents based on their monthly income revealed that 67.5% of the respondents claimed to earn less or equal to ₦ 100,000, 19.2% of them earned between ₦ 101,000 to ₦ 150,000, 8.3% claimed to earn between ₦ 151,000 to ₦ 200,000 and 5% of the respondents claimed to earn above ₦ 200,000 monthly.

**Table 1: Distribution of Respondents based on Socioeconomic Characteristics, n=360**

<b>Characteristics</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age (years) Mean= 40.78</b>		
≤30	72	20.0
31-40	126	35.0
41-50	93	25.8
51-60	54	15.0
Above 60	15	4.2
<b>Gender</b>		
Male	201	55.8
Female	159	44.2
<b>Level of Education</b>		
No formal Education	15	4.2
Elementary/Primary	21	5.8
Secondary	123	34.2
Tertiary	201	55.8
<b>Household Size Mean=5</b>		
≤5	258	71.7
6-10	96	26.7
Above 10	6	1.6
<b>Marital Status</b>		
Single	36	10.0
Married	267	74.2
Separated/Divorced	21	5.8
Widowed	36	10.0
<b>Primary Occupation</b>		
Civil Servants	81	22.5
Self –employment	183	50.8
Private Establishment	63	17.5
Artisans	33	9.2
<b>Monthly Income</b>		
≤ #100, 000	243	67.5
#101, 000-N200, 000	87	24.2
Above#200,000	30	8.3

Source: Field survey, 2021

**Varieties of Local rice and Imported Rice Available in the Study Area (Table 2)**

Distribution of the respondents based on the varieties of Local rice available in the area revealed that 35% of respondents claimed Abakaliki rice was available, 38.33% endorsed availability of Ofada rice, and 26.67% claimed that Lake rice was available. This indicates that the most available local rice in the study area was the Ofada rice. This may be associated with the fact that the study area (Ifako-Ijaiye LGA) shares border with Ogun State, where Ofada rice is being produced. This result also implies that the Government needs to intensify efforts on the production of the Lake rice in Lagos state. Distribution of the respondents based on the varieties of imported rice available in the area revealed that 45% claimed that Mama Gold was available, 30 % ascertained that Mama Pride was available, 17.50% claimed that Royal Stallion was available, 7.50% claimed Basmati was available. This indicates that the most available imported rice in the study area was Mama Gold brand.

**Table 2: Varieties of Local and Imported Rice Brands Available in the study Area, n=360**

Rice variety	Frequency	Percentage
<b>Local</b>		
Abakaliki rice	126	35.0
Lake rice	96	26.7
Ofada rice	138	38.3
<b>Imported</b>		
Mama Gold	162	45.0
Mama Pride	108	30.0
Royal Stallion	63	17.5
Basmati	27	7.5

Source: Field survey, 2021

**Rice Type Consumption Pattern in the Study Area (Table 3)**

Distribution of the respondents based on the type of rice consumed in the study area revealed that 67.50% consumed only local rice, 20% consumed only imported rice while 12.5% consumed both. This indicates that majority of the respondents consumed local rice which goes in line with the findings of Adeyeye (2012) who opined that though the market for imported and locally produced rice in Nigeria appears segmented, consumption of local rice is as well on the increase as that of imported rice.

**Table 3: Distribution based on Rice Type Consumption Pattern in the Study Area, n=360**

Type of Rice Consumed	Frequency	Percentage
Imported Rice	72	20.0
Local rice	243	67.5
Both Local and Imported	45	12.5

Source: Field survey, 2021



#### Respondents' Preference Status for Local and Imported Rice (Table 4)

Distribution of the respondents based on their preference revealed that 36.67% preferred imported rice while 63.33% preferred local rice. This indicates that majority of the consumers prefer local rice in the study area. This conforms to finding of Musa et al. (2011). Consumers tend to prefer local rice if it is cheaper and available.

**Table 4: Frequency Distribution based on Respondents' Rice Preference Status, n=360**

Preferred Rice	Frequency	Percentage
Imported rice	132	36.7
Local rice	228	63.3

Source: Field survey, 2021

#### Limiting Factors to Consumption of Imported and Local Rice (Tables 5a and 5b), n=360

Respondents were asked to indicate limiting factors to the consumption of imported and local rice. Results showed that price, availability, grain size (long/short), taste, colour (appearance), and aroma are factors influencing imported rice consumption in the study area. Frequency distribution (Table 5a) implied that majority (77.5%) of the respondents chose price as the major constraint in the consumption of imported rice. Results further revealed that presence of stones/debris, taste, availability, price, colour and aroma are limiting factors influencing local rice consumption in the study area. Frequency distribution (Table 5b) implied that majority (84.2%) of the respondents indicated presence of stones/debris as the major constraint in the consumption of local rice.

**Table 5a: Constraints to Imported Rice Consumption in the Study Area**

Variable	Frequency *	Percentage
Price	279	77.5
Availability	234	65.0
Grain size (long/short)	114	31.7
Taste	114	31.7
Colour (appearance)	102	28.3
Aroma	100	27.8

\* Multiple choices

Source: Field survey, 2021

**Table 5b: Constraints to Local Rice Consumption of in the Study Area**

Variable	Frequency *	Percentage
Stones/Debris	303	84.2
Taste	282	78.3
Availability	282	78.3



Price	255	70.8
Colour	231	64.2
Aroma	105	29.2

\* Multiple choices

Source: Field survey, 2021

### Factors influencing Preference Status of the Respondents (Logit Regression Analysis)

Table 6 presents the result of the logit regression analysis employed to investigate variables influencing the rice preference status of the respondents. Ten (10) explanatory variables were estimated in the model. The estimated variables comprised of the socioeconomic characteristics of respondents and the rice attributes. The results obtained established that preference status is determined by combination of the respondents' socioeconomic characteristics and the rice attributes. Five (5) variables were statistically significant at various levels, the log pseudo likelihood = -77.248681, pseudo  $R^2 = 0.1696$  and Wald chi square = 11.75

Marital status was significant at 5% level, and has a positive coefficient. This implies that there is a probability of respondents preferring local rice (with lower price tag) if married; this is probably as a result of more mouths to feed in the family. Rice availability is significant at 10% level and has a positive coefficient. This indicates that the more available the local rice is, the more the likelihood of respondents choosing it instead of imported rice. Taste is significant at 10% level and carries a positive coefficient. This implies that there is increase in chances of respondents' preference for local rice based on better taste offer. Price (proxy for affordability) is significant at 5% level and carries a positive coefficient. This implies that an affordable price of local rice increases the chance of its preference over imported rice. Presence of stones/debris is significant at 5% level and has a negative coefficient. This implies that decrease in the number of stones/debris will increase the chance of respondents preferring local rice over imported rice.

**Table 6: Factors influencing the Preference Status of the Respondents (Logit Regression)**

Variable	Coefficient	Standard Error	z	P>/z/
Age	0.0102962	0.0186439	0.55	0.581
Marital status	4.62489	1.996956	2.32**	0.022
Household size	-0.0112538	0.1073064	-0.10	0.916
No of Years in School	0.0319248	0.0525384	0.61	0.543
Rice availability	3.896259	2.128801	1.83*	0.070
Taste	0.4793628	0.2488891	1.93*	0.057

Aroma	0.3007638	0.2460177	1.22	0.222
Price	0.9184579	0.4168275	2.20**	0.028
Monthly income	-0.0000211	0.0000268	-0.79	0.432
Stones/Debris	-0.4793628	0.204959	-2.34**	0.021
Constant	1.168667	0.444726	2.63	0.010

\*\*= 5% significant level      \*=10% significant level

Source: Data Analysis, 2021.

### Conclusion

Local rice (Ofada) is the most preferred rice in the study area. Marital status, availability, taste, price affordability and presence of stones/debris are the major determinants of respondents' preference status. This indicates rejection of the null hypothesis. Improvement in taste and quality (absence of stone/debris) of local rice increases the chances of consumer choosing local rice above imported rice in the study area.

### Recommendations

This study recommends that:

- Based on the finding that price (affordability) and availability are important variables influencing preference status of respondents, this study recommends that the government should see to it that local rice is within the reach of consumers in terms of affordability and availability. This could be achieved when the government invests in the production and processing of local rice by issuing affordable loans to rice farmers and processors.
- Based on the finding that improvement in taste and quality (absence of stone/debris) increase the chances of consumer choosing local rice above imported rice in the study area, this study recommends that the government and non-governmental organizations (NGOs) should assist in providing modern processing facilities to processors so as to enhance local rice quality.

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