ANALYSIS OF DEMAND FOR RICE IN ILE IFE, OSUN STATE, NIGERIA

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ABSTRACT

This study analyses the determinants of demand for rice in Ife Central Local Government Area of Osun State, Nigeria. The objectives of the study were to: analyze the determinants of demand for rice, identify the various rice brands that are mostly consumed, determine the nature of the relationship of other foods items to rice and the nature of rice as a consumer good in the area of study. A random sampling procedure was used to select one hundred respondents from the area. The findings revealed that price of rice, income of household head, price of substitute good like yam and beans, and size of household have significant influence on the demand for rice in the area. Various rice brands are consumed in the area but those that are largely consumed are Tomato, Caprice, Royal Umbrella, Mama Africa, and Rice Land brands of rice. Of all the staple foods declared by the respondents as substitutes to rice, only yam and beans were positively significant, hence, these are substitutes to rice in the area. Rice was also found to be a normal good in the area. Demand for rice being elastic and income being inelastic, price rather than income stands to be the greatest source of increase in demand. A slight reduction in price would bring more than proportional increase in demand that would offset the reduction in price thereby improving the revenue and welfare of the industry.

Keywords: Rice, Demand function, elasticity, Ile-Ife, Nigeri

INTRODUCTION

Rice is a cereal of the family *poaceae* or tufted annual grass. Common varieties include *Oryza sativa* and *O. glaberrima.* Other cereals of paramount importance include wheat, maize, and sorghum. It is the world's single most important food crop and a primary food source for more than a third of world's population. More than 90 percent of the world's rice is grown and consumed in Asia where about 60 percent of the earth's population lives. Rice is planted on about 146 million hectares annually representing 11 percent of the world's cultivated land. Rice is the only major cereal crop

that is consumed almost exclusively by humans (FAO, 1999). It is probably the most diverse crop grown as far North as Manchuria in China (50^0 N) and as far South as Uruguay and New South Wales, Australia (around 35^0 N). It is cultivated under 5 major ecosystems- irrigated, rain–fed, lowland, upland, deepwater and tidal wetlands. World's rice production was about 523 million tons in 1991 and the largest producers of rice are China, Indonesia, Bangladesh, Thailand and Vietnam and only about 12 million tons or 3.5% of the world's rice production is traded annually. Rice is the most rapid growing staple food source in most African countries with consumption levels among the low income strata approaching the levels witnessed in Asia (FAO, 1999), providing the bulk of dietary energy to the growing population (Delisle, Alladoumgue, Begin, Nandjingar, & Lasorsa, 1991). In developing countries, rice accounts for 715 kcal/caput/day, 27 percent of dietary energy supply, 20 percent of dietary protein and 3 percent of dietary fat. Rice contributes nutritionally significant amounts of thiamine, riboflavin, niacin and zinc to the diet, but smaller amounts of other micronutrients to the body, it also serves as raw material for industry e.g. the brewery industries (Akpokodje, Lancon, & Erenstein, 2001).

In Nigeria the agricultural sector supplies food, raw materials and generates income to households through the sale of farm products. Major staple food crops found in Nigeria include rice, maize, millet, wheat, sorghum, cassava, yam, cowpea, groundnut and vegetables. These commodities are of considerable importance for food security, expenditure and income of households. Of all these staple crops, rice is the one of the most pre-eminent. Rice cultivation is widespread within the country extending from the northern to southern states with most rice grown in the eastern to middle belt of the country.

Demand for a commodity can be defined as the quantity of that commodity which consumers are willing and able to buy at different prices during a particular period of time. Some of the most important determinants of demand for a product include its price, consumer's income, prices of other commodities, consumer's tastes, total population, etc. The traditional theory of demand deals with consumer's demand, which is of paramount importance to this study. Households in rural Africa spend at least two thirds of their consumption budgets on food. These shares on food tend to fall with increasing level of income, but the rate of decline is not appreciable, the food share drops by no more than 5 percent points between the lowest and highest income groups in Rural Rwanda and Western Nigeria (Braun, de Haen, & Blanken, 1991; Hopkins, Delgado, & Gruhn, 1994).

For most of the staple crops, the elasticity of demand is positive, less than one but decreasing with the level of income; in other words for these food crops the level of food expenditure increases, but the share is falling. According to Reardon, Delgado, & Matlon (1992), from a study carried out in Ouagadougou, rice represents more than one third of the total amount of cereal consumed by individuals in all income groups, but a higher share of cereal expenditure in the poor stratum (nearly half) than in the higher. This discrepancy in value was due to high consumption among the poor of rice prepared by market vendors. Contrary to expectation, it was found that the price elasticity for rice consumption was lower in the low-income groups than those in the middle. This implied that the poor consumed half of their rice in prepared form outside the home and would be less sensitive to rice price than the rich. Thus, it is the convenience factor, which is more important for the poor.

Akanji (1995) in African countries found that rising demand for rice was partly as a result of the increase in population growth. Consumer generally shifted from traditional staple foods such as yam and cassava to rice, especially the imported parboiled rice.

Rice Production in Nigeria

In terms of area of production, rice is one of the less important cereals grown in Nigeria. In 2000, out of about 25 million hectares of land cultivated to various food crops, only about 6.37 percent was cultivated to rice. During this period, the average national yield was 1.47 tons per hectare. Domestic production is constrained by low-input and crop management techniques by small scale rice farmers as well as lack of water control techniques. Nigeria has the capacity to be self-sufficient in rice production as virtually all ecologies in the country are suitable for rice cultivation. In Nigeria, rice is typically planted from April to May and harvested from August to November. Rain-fed upland rice accounts for approximately 25 percent of the harvested area; rain-fed lowland system accounts for 50 percent, irrigated system accounts for 16 percent, and deep water/mangrove swaps account for less than 10 percent of the total rice area.

Rice grows in many parts of Nigeria. In Osun State rice production was localized in llesa zone in Oriade Local Government Area (LGA) (Erin ljesa, Erin Oke, and Erinmo) and Obokun L.G.A. Upland rice is grown in Oriade, Obokun, lla, and Osogbo LGAs. Lowland rice is produced in Ido, Iwoye, Iragberi, Ara, and Origbo all in Egbedore L.G.A. Other locations are Ayedaade, Osogbo, Iwo, Oriade, Ife North, Irewole, and Ola-Oluwa. In a survey conducted by OSSADEP (Osun State Agricultural Development Project) in 2004, Crop Area and Yield Survey (CAYS) revealed that a total of 7,156 households cultivated 8,000 hectares of land with rice which is just about 7.76 percent of the 103,000 hectares put up for the cultivation of 8 major arable crops such as cassava, maize, cocoyam, pepper, yam, sweet potato and tomatoes. The average yield of rice per hectare in Osun

State was 1.50 tones. An estimated total production of 12,000 tons of paddy rice was produced in year 2004. Despite this, the area cultivated to rice still appears small.

Rice Consumption in Nigeria

Because rice has become a strategic commodity in the Nigerian economy, the Nigeria government has actively interfered in the Nigerian rice economy over the last thirty years. However, policy has not been consistent. It has included oscillating import tariffs and import restrictions. The erratic policy reflects the dilemma of securing cheap rice for consumers and a fair price for producers. Even during the rice import ban period, Nigeria was still importing several hundreds thousands tons of rice per year through illegal trade. With the removal of the rice import ban, consumption resumed its rapid growth taking advantage of the downward trends of rice price on the world market. Notwithstanding the policy measures, domestic production has not been able to meet the increasing population's demand (Ladebo, 1999) leading to considerable import of parboiled rice to bridge the gap between domestic demand and supply in the urban areas with generally high incomes. Only a small portion of the locally grown rice crop is made available in the key urban markets because small scale farmers produce subsistence levels of rice with remaining surplus portions being sold at the village market. Locally milled rice is of poor quality and quantity falls short of urban demand. Rice imports account for approximately one-third of Nigeria's rice supply. The supply of rice in Nigeria is affected by challenges facing local farmers which include unpredictable weather, low returns, lack of infrastructure and of modern mills and shortage of storage facilities. Despite the increase in the production of rice in recent years, importation of rice is still required to meet national demand. This implies that there is an increasing demand for rice due to population increase and shift in consumption from other traditional food crops to rice. The knowledge of the nature of rice demand pattern and its determinants would of paramount importance to repositioning its place in the Nigerian food crops economy and find ways of improving on consumers and producers welfare.

This study analyzes the determinants of rice demand in Ile-Ife. Specifically the study: identifies the household socio-economic characteristics that affect demand for rice and the various rice brands that are mostly consumed, those preferred and what stops the respondents from buying them; determine whether other staple foods declared by the respondent as substitutes are really substitutes to rice; classify rice as a consumer good and analyse the relationship between rice others major food crops consumed in the study area.

METHODOLOGY

The Area of study

The study was conducted in Ife Central Local Government Area of Osun State, Nigeria. This Local Government Area covers an area of approximately 350 square kilometers and lies between latitudes 25 North 30^0 North of the Equator. It is bounded by Ife North, Ife South, Ayedaade, Atakumosa-West and Ife-West Local Government Areas. Ife Central Local Government Area has a population of about 167,254 people comprising of about 84,653 males and 82,601 females (Federal Republic of Nigeria, Official Gazette, 2007). The population is made up of people of different cultural and socio-economic background.

Sampling

The data used here were obtained from a consumer survey conducted between the months of May and June 2007. One hundred respondents were randomly selected. These respondents were either household heads or those who had idea of the household food purchases and consumption pattern. People that were interviewed included both civil-servants and independents workers as heads of households.

A market survey was first carried out to find out the various rice brands that were available and their prices as well as the prices of various staple foods in the area. Data were obtained with the use of well-structured questionnaires. Some of the information sought from them includes age, sex, marital, status, occupation, income, per month, household size, sex composition of household, food expenditure, quantity of rice consumed monthly, other staple food consumed, prices per kilogram of rice and the stated substitutes to rice, etc.

Analytical techniques

The data were analyzed with the use of descriptive statistics which involves the use of percentage, means, frequency distribution, etc; the regression analysis and the analysis of variance.

Descriptive statistics

The data after being sorted were then analyzed using descriptive statistics first to summarize the data. It involves the use of frequency distribution in the form of frequencies and percentages to show the attributes variables.

For easy data analysis, some of the data collected were used to calculate the average weights of rice and other stated staple as well as deriving the prices per kilogram of these staple food (prices per kilogram);

$$Unit\ price(Naira/kg) = \frac{Amount\ of\ the\ staple\ food\ (Naira)}{weight\ of\ the\ staple\ food\ (kg)}$$

Determinants of Demand for Rice

The analysis shows that the demand for rice is affected by the price of rice, income, household size, age of respondents, frequency of rice purchase, price of beans and the price of yam (since it was opined that these food items would compete with rice in the household diet). To define the role of these variables in the demand for rice, the multiple regression analysis using the Ordinary Least Square (OLS) method was used to estimate rice demand function. For the model estimation, double log form was adopted so as to set the elasticities of demand.

The implicit form of the regression model is as follows:

$Y_1 = (X_1, X_2, X_3, X_4, X_5, X_6, X_7, e_i)$　　　　　　　(1)

Where Y_1 = Quantity of rice bought per month (kg)

X_1 = average monthly price of rice (N/kg)

X_2 = monthly income (Naira)

X_3 = monthly price of beans (Naira/kg)

X_4 = monthly price of yam (Naira/kg)

X_5 = age of respondent (years)

X_6 = household size

X_7 = frequency of rice purchase

e_i = error term

Explicitly, the model is specified in double-log form as follows.

In $Y = b_0 + b_1 inX_1 + b_2 inX_2 + b_3 InX_3 + b_4 InX_4 + b_5 InX_5 + b_6 InX_6 + b_7 InX_7$

Where $b_0, b_1 \ldots., b_7$ are elasticities or coefficients of the model.

Analysis of elasticity

Elasticity of demand which is defined as the degree of responsiveness of demand to changes in the factors affecting demand can be grouped into two, namely, direct elasticity and cross elasticity of demand.　　　For direct elasticity we have price and income elasticities. The price elasticity of a good is the degree of responsiveness of demand to changes in the price of the good. Income elasticity of a good is the degree of responsiveness of demand for the good due to changes in income. The

cross elasticity of demand (CED) is the responsiveness of quantity demanded of one good to change in the price of another good. Where, goods i and j are substitutes, the cross elasticity of demand will be positive (i.e. a fall in the price of good j will result in a fall in the demand for good i as j is substituted for i) and negative where i and j would be complements. Where goods i and j are not related, the cross elasticity will be zero. The elasticities were obtained from this study with the use of the double log functions where the estimated coefficients are the elasticities. The income elasticity shows whether a good is inferior or normal (superior). A good is said to be inferior if as income increases, the demand for the good decreases, i. e. if income elasticity is negative. The good is a normal good if the income elasticity is positive. The same a good would be a normal good if the price elasticity of demand is negative and inferior if price elasticity is positive. A demand would absolutely inelastic $(0 < e_d > 1)$, unitary $(e_d = 1)$ or elastic $(ed > 1)$. If e_d is inelastic, an increased supply reduces market price which increases market demand in less than proportional meaning decrease in total revenue. If e_d is unity, a policy of change in price keeps total revenue unchanged. And if e_d is elastic $(e_d > 1)$, a decrease in market price leads to a more proportional increase in demand, meaning an overall increase in total revenue (Tomek & Robinson, 1972).

A priori expectation

From basic economic knowledge, the following are expected from this demand study: as price of rice increases, the quantity demanded decreases. Hence, a negative coefficient ought to be obtained; as price(s) of substitute good(s) increases, the quantity demanded for rice increases; as income increases, the quantity demanded of rice should increase if rice is a normal good and otherwise if it is an inferior good; as household size increases, the demand for rice should increase; as the age of the respondent increases, the amount of rice bought should decrease because older people are likely to resort to a traditional staple foods like gari, yam, etc; the frequency of rice purchase should influence demand for rice positively.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

Results in table 1, show that most of the respondents are female representing about 65 percent of the total number of respondents while the rest (35 percent) are male. This reflects the facts that women are mostly the household decision makers with regards to household food consumption. However, as evidenced in the table, it could be said that men started to take part in household decision making as a result of fast changing social habits.

The respondents were involved in various types of occupation ranging from teaching, farming, craftsmanship, trading to public service. Table 1 also shows that majority of the respondents were civil servants making about 52 percent while the rest were involved in other occupations. This large percentage of civil servants is as a result of the presence of a Federal University situated in the study area and other government-owned organizations such as a high court, Ife Central Local Government Area office etc. which provide job opportunities for a large number of people in the area. Also the area is fast evolving into an urban city with the advent of financial institutions and other private organizations resulting into growing employment and income opportunities for the area. Most of the respondents are Yoruba living in the Southwestern Nigeria.

Table 1: Socio-economic characteristics of the respondents

Socio-economic characteristics	Categorization	Frequency	percent
Sex	Male	35	35
	Female	65	65
Occupation	Trader	16	16
	Civil servant	52	52
	Artisan	05	05
	Teacher	12	12
	Others	15	15
Ethnic group	Yoruba	91	91
	Igbo	07	07
	Hausa	01	01
	Others	01	01
Income per month (₦)	Less than 50,000	73	73
	50,000- 99,999	24	24
	100,000 and above	03	03
Household size	Less than 5	29	29
	5 – 9	66	66
	10 -14	05	05

Source: Survey data

The income of the household head varied from ₦5, 000 to ₦150, 000 with most of the respondents (about 73 percent) earning below ₦50,000 per month, these are classified as the low income group in this study. Twenty-four (24) percent of the respondents are middle income earners that earn between ₦50, 000 and ₦100, 000 per month and the remaining 3 percent earn above ₦100, 000 per month as reported in the table.

Table 1 also revealed household size distribution of the respondents. Twenty–nine (29) percent of the respondents came from households with less than 5 people, 66 percent have 5 to 9 people and 5 percent account for 10 to 14 people.

Most preferred substitute and most preferred brand of rice

Out of all the foods available in the area, about half (50 percent) of the respondents declared beans and its derivatives as their first preferred substitute to rice, while the rest listed other staple food items as their most preferred substitute to rice. When asked for their second preferred substitute to rice, 39 percent listed yam, 22 percent beans and the remaining 39 percent mentioned other foods as shown in table 2 below.

Table 2 also shows that 30 percent only preferred beans (and its products) as a third substitute to rice. This large proportion could be as a result of the fact that beans can be prepared in a variety of ways such as the cooked beans, bean cake, or bean cheese.

Table 2 reveals that out of the rice brands available in the area, 37 percent of the respondents buy Tomato Rice, 30 percent Caprice, 11 percent buy Royal Umbrella, also 11 percent buy Mama Gold, 5 percent Mama Africa, another 5 percent buy Rice Land, while the remaining 1 percent buys Veetee American Long Grained. The results show that many brands of rice are available to consumers. But all the rice brands are imported rice, mostly from Asia. The main reason imported rice is bought is as a result of the good quality as presumed by the respondents; other reasons were, low price, taste, flavor, availability and cooking characteristics.

Table 2: Distribution of respondents based on preferred substitute to rice, brand bought

Distribution	categorization	Frequency	Percentage
Names of 1st preferred substitute	Beans	50	50
	Yam	18	18
	Gari	17	17
	Yam flour	12	`12
	Maize flour	2	2
	Wheat flour	1	1
		100	100
Names of 2nd preferred substitute	Yam	39	39
	Beans	22	22
	Gari	18	18
	Yam flour	13	13
	Other food items	8	8
		100	100
Preferred type of rice brand	Tomato	37	37
	Caprice	30	30
	Royal umbrella	11	11
	Mama Gold	11	11
	Mama Africa	4	4
	Rice Land	4	4
	Veetee American Long Grained	1	1
	Ofada rice	2	2
		100	100
Any difference between rice brand eaten from that preferred	No	80	80
	Yes	20	20
Quantity of rice bought(kg/month)	Less than 15	20	20
	15 – 30	51	51
	More than 30	29	29
	Total	100	100

Source: Survey data

The table also shows the second type of rice brand bought. It can be seen that seventy-seven percent of the respondents do not have any other type of rice brand they buy aside from that stated as their first preferred rice brand while twenty three (23) percent still buy other brands. From the table, it can also be observed that most of the respondents, about 98 percent, buy foreign rice, while the remaining 2 percent buy the local rice known as Ofada rice only as a second option. This small proportion would be as a result of the poor quality of the local brand of rice. Twenty (20) percent of the respondents buy rice brands that are different from the one they actually prefer. This means that most of the respondents eighty (80) percent actually buy the rice brand that they prefer. Factors that prevented the actual purchase of the preferred rice brand include: high price, unavailability of the preferred rice brand and sometimes, poor quality of the available brand.

Table 2 also shows the percentage of household and amount of rice bought (in kg) per month. It can be observed that 20 percent buy less than 15 kg of rice per month, while 80 percent buy more than

that quantity. This showed that rice is really a preferred staple and is quite affordable as people of all income classes buy it.

RELATIONSHIP BETWEEN HOUSEHOLD SIZE, INCOME CLASS AND FOOD/RICE EXPENDITURE

It was also observed that food expenditure increases as the household size increases. This implies that as the number of the members of the household increases, more will be spent on food consumption. Table 3 shows that, as the household size increase from less than two people to 14 people per household, average food expenditure of these households also increased from ₦ 8,740 to ₦ 16,200 per month. Obviously, it means more people to be fed.

Income has been found by economists, to be an important factor that influences household food consumption. The food consumption of the household is said to increase as the income of the household increases. Table 3 shows how the income class of the respondents determines their monthly food expenditure. The low income class constituting about 73 percent has an average monthly food expenditure of ₦ 10,875; the middle income class spends on average, ₦ 19,666 while the high income class spends an average of ₦ 29,330 per month.

The amount spent on the monthly rice consumption was also found to be influenced by the income classes of the households. It can be seen from the table below that as the income of the household head increases rice expenditure also increases (table 3).

Table 3: Effect of household size and income class on average monthly food
expenditure and average monthly rice expenditure

Effects	Range	Percent	Monthly average food expenditure (₦)
Household size distribution	Less than 5 5 – 9 10 – 14	29 66 5	8,740 14,900 16,200
Income effect on Monthly Average food expenditure (₦)	Low income Middle income High income	73 24 3	10,8675.30 19.666.70 29,333.3
Income effect on monthly average rice expenditure (₦)	Low income Middle income High income	73 24 3	3,139.04 4,174.17 5,366.7

Source: Data analysis

EMPIRICAL RICE DEMAND ANALYSIS

The functional form for rice demand was selected after taking into consideration the coefficient of multiple determination (R^2 value), the overall significance of the regression equation indicated by the F- value, the signs on coefficients (a priori expectation) and the need to obtain the elasticities directly.

From the demand equation (Table 4), price of rice was found to be significant at 10 percent level of significance. It bore a negative relationship with demand for rice, as expected. This implies that as the price of rice increases, the quantity demanded of rice falls. The results show that a 1 percent increase in price of rice would cause about 1.77 percent fall in the quantity of rice demanded.

The income of the household head was found to be significant at the 5 percent level of significance. It bore positive relationship with demand for rice. A 1 percent increase in the income of the household head would cause about 0.27 percent rise in the quantity demanded of rice.

Table 4: Estimated demand for rice

Independent variables	Coefficients	t-value
Constant	3.90 (5.30)	0.735
Price of rice	-1.773* (0.98)	1.81
Income of the household	0.268*** (0.09)	2.97
Price of yam	0.1941* (0.11)	1.76
Price of beans	0.347* (0.19)	1.82
Age of respondent	0.498 (0.31)	1.60
Household size	0.058** (0.031)	1.87
Frequency of rice purchase	0.1991 (0.16)	1.24

Adj. R^2 = 0.30;   F = 5.60***;
*: P=0.1;   **: P=0.05;   ***: P=0.01 levels of significance
Figures in parenthesis are standard errors.
 Source: Data analysis

The price of yam is positively related to demand for rice. It was significant the 5 percent level of significance. It had positive relationship with rice demand. Implying that as the household size increase by 1 percent, the demand for rice would increase by 0.05 percent. Interestingly, the frequency of rice purchase and the age of respondents both had a positive relationship with rice demand, but were not statistically significant. This implies that the age of the respondent and the number of times rice is bought in a month does not determine rice demand. This may be as a result of the fact that rice can be eaten outside the home in restaurants and as fast food joint. The adjusted coefficient of multiple determination (adj.R^2=0.30) shows that about 30 percent of the variation in household demand for rice was explained by the selected variables.

The overall significance of the regression equation (F= 5.60) was found to be significant at 1 percent; this means that at least one of the explanatory variables coefficients is significantly different from zero.

ANALYSIS OF ELASTICITY OF DEMAND FOR RICE

The price, income and cross elasticity were obtained directly from the regression equation as a result of the double log functional form.

From the table 5 it can be seen that the price elasticity of rice is negative and greater than 1 in absolute term. This implies that the demand for rice is elastic; meaning a slight increase in price would lead to greater fall in demand that is a slight decrease in price would mean a more than proportional increase in demand for rice which would translate into greater revenue for the industry. The negative relationship implies that a 1 percent increase in price will lead to more than 1 percent fall in quantity demanded of rice (about 1.773 percent).

The income elasticity of demand for rice is positive, less than 1, but greater than zero. This means that rice is income inelastic as a percentage change in income is less than a percentage change in the quantity demanded. Due to the fact that the income-demand relation is positive, rice is a normal good in the study area and may also be a necessity as this was also confirmed by the negative price elasticity.

Table 5: price, income and cross elasticities of rice in Ile Ife

Type of elasticity	Elasticity
Price elasticity	-1.773
Income elasticity	0.268
Cross-price with yam	0.194
Cross-price with beans	0.347

Source: Data analysis

The cross-price elasticity of rice with yam is positive but less than 1. As a result of the positive relationship between price of yam and demand for rice, yam can be said to be a substitute for rice since as price of yam increases, the quantity of rice demanded increases also. Likewise, the cross-price elasticity of rice with beans is positive though less than 1. This makes beans also a true substitute for rice; as the price of beans rises (by 1 percent), the quantity of rice demanded increases also (by about 0.34 percent).

CONCLUSION

   In this study, an attempt was made to examine analysis of demand for rice in Ile Ife, Osun State, Nigeria. The study revealed that majority of respondents was females making housewives the major decision makers. Majority of the respondents are workers that earn salaries, this is as a result of the

various firms and corporations available in the study area. The household size of the respondents varied between from less than 5 people to 14. Fifty (50) percent of households admitted that beans was their first preferred substitute to rice while the remaining 50 percent listed various other staple foods as their own first preferred substitute for rice. Thirty nine percent of the respondents picked yam as their second-best substitute to Rice. When asked for their third preferred substitute, 30 percent picked beans. The analysis, confirmed that beans and yam were direct substitutes for rice. Various rice brands are being sold in the market. Eighty (80) percent of the respondents indicated that the type of rice brand bought is actually what they prefer and love to buy. While 20 percent said that they buy another type of brand. Reasons given for not buying the type of brand preferred include high price, unavailability, poor quality of the local type of rice, etc. Various quantities of rice (in kg) are being bought per month and about 80 percent buy more than 15kg of rice per month. The household size showed an influence on food expenditure. Household with less than 5 persons spend on average about ₦ 8,740 per month. Those with 5 – 9 people spend an average of ₦ 14, 900 per month. While households with, 10 to 14 persons spend an average of ₦ 16, 200 per month. It was also found that income and household size influence positively food expenditure. The income of household head was also found to influence the monthly rice expenditure. As the income of the household head increases, the monthly rice expenditure also increases. Socio-economic characteristics like the price of rice, prices of substitute foods like yam and beans, income of household head and household size have been found to be statistically significant on the analysis of demand for rice. The price of rice had a negative relationship with the quantity of rice bought; showing that as price of rice increase, the quantity of demanded would fall. The prices of yam and beans, income of household head, household size, age of respondent, and frequency of purchase have a positive relationship with the quantity of rice bought. However, the age of the respondent and the frequency of purchase could be as a result of the fact that most households buy rice once in one or two months but in a large quantity compared to others that buy more than once in a month but in smaller quantity. This study found that rice is negatively price elastic and positively income inelastic indicating therefore rice as a normal good. The cross-price elasticities with yam and beans are positive implying that yam and beans are perfect substitutes for rice in the study area.

As a result of the fact that rice is an important staple food in the study area it could be recommended that government should ensure better quality of local brand of rice. It should also provide incentives to rice farmers since a slight decrease in price through increased supply would mean increased total revenue and as local rice would be relatively cheaper to the foreign rice. This would also ensure a better welfare of the households and as well as an increase in the general level of income that would translate into greater demand of good quality rice that meets consumer's preference for the item.

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