Determinants of the Household Consumption of Eggs in Oyo State A Case Study of Ibarapa Central Local Government

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Abstract

This study was carried to examine the determinants of the household consumption for eggs in Ibarapa Central Local Government Area of Oyo State, Nigeria. The instrument used for the research was questionnaire. A simple random technique was adopted and a sample size of 100 respondents was found valid. Descriptive and inferential statistics were used as tools for analyzing the data. The results shown that about 52.0% were female. The average age of the respondents in the study area was about 34years; about 52.0% of the respondents were married. The average household size among the respondents in the study area was about 3 and 69.0% the respondent were employed, The mean value of the years of schooling was 14years, average income earned by a typical respondent in the study area was about ₦24,180 per month, The mean price of egg per crate is ₦711.00. The coefficient of determination i.e. R^2 was 0.88. Moreover, age, marital status, household size was found to be significant at 1% levels. However, marital status has negative influence on the quantity of egg consumed by the household in the study area.

Keywords: Consumption, Egg, Determinant, Household, Oyo State.

BACKGROUND OF THE STUDY

One of the challenges of Nigerian agriculture is its ability to feed the ever- increasing population with adequate calorie and protein (Williams and Williams, 1991). The Federal Government of Nigeria had tried in the past to offset the huge deficit in animal protein consumption by embarking on massive importation of chilled beef and chickens. Poultry egg as a protein sources, relatively cheap to obtain and rich in essential amino acids. Consumption of an egg a day has been recommended. Nutritionally eating egg is a good way of putting proteins, fats, vitamins and minerals into the diet, (Adichie et al., 1985).

Poultry products (eggs) have assumed the role of providing much needed animal protein to mankind. It has also been judged to be a good source of animal protein and a good replacement for meat as it contains all essential amino acids of the first class protein, especially the sulphur containing amino acid, in adequate protein required by the body for general body growth and repair. Egg is also good source of vitamin A, which protects against night blindness and also helps to protect against skin infection, other vitamins such as B1, B2 and D with minerals such as calcium, iron, are all present in egg hence, it is suitable for complementing carbohydrate in diets, (Aihonsu and Sunmola, 1999).

Eggs contain only a trace of carbohydrate. Poultry eggs contribute to the palatability of many dishes (Alabi and Isah, 2002). Apart from its contribution to the gross domestic product (GDP),   also poultry production contributes to the provision of gainful employment and income to a sizeable proportion of the population (Ajibefun and Daramola, 1999). The high demand for poultry products, the success of exotic breeds and the ease of mastering the technique of poultry production, among other factors make poultry business a very attractive venture (Sani et al, 2002). Poultry egg has also attained industrial importance as a major ingredient in the baking of confectioneries and the use of the egg albumen in the making of shampoo and in book binding (May hew and Penny, 1988). A table egg as is also called is of various economic uses. It serves as a source of income to both small and large-scale producers. It is also major ingredient in the food industry such as garnishing and preparation for some processed food. In the beverage industry, egg is required in the processing of cocoa powder into food drinks this importance of egg justify commercial production in Nigeria (Adetimirin, 2000).

Poultry production has long been recognized as one of the quickest ways for a rapid increase in protein supply in the shortest run. Of recent, there has been a recorded improvement in poultry production sub-sector in Nigeria with its share of the gross domestic product (GDP) increasing in absolute   terms. Poultry products especially eggs' contribution of the livestock share of the G D P increased from 26% in 1995 to 27% in 1999 (C B N, 1999).

Moreover, since the increasing in the level of production alone cannot sustain itself without substantial corresponding increase in the level consumption. The continuous of the flow between production and consumption of any given commodity ensures the sustainability and prosperity of such goods.

Consumption as an activity arises as a result of production of goods and services needed by the consumer. The additional output above the subsistence need of the producer is then channeled into the marketing system as marketable surplus, to satisfy the needs of other consumer .At the simplest level, it might be assumed that consumption is the activities which take place in the market. It is the collective term used to describe the

quantity of good required by a consumer at a particular time to maximize utility.

There are many factors on which the consumption for a commodity depends, among these include; Income of consumer, Change in distribution of income consumer's, Price of the commodity ,Change in the price of related goods, Taste and Preference of the consumers, Price expectations, population, cultural belief, weather, age, health status e.t.c.

With the understanding of the dietary status of an average Nigerian citizen and efforts geared toward boosting egg production in the country and knowing that increasing in the level of production alone cannot sustain itself without substantial corresponding increase in the level consumption. This research work set out to critically answer the following questions; what are the determinants of the household consumption for eggs? What are the socio-economic elements upon which eggs consumption depend on in the study area? Are the income and price of egg elastic or inelastic?

The major objective of this study is to investigate the determinants of the household consumption of egg, while the specific objectives include; analyzing the socio- economic characteristics of eggs consumers' .To identify the determinant of the household consumption for eggs. To have understanding whether the income and price of egg consumption are elastic or inelastic.

AREA OF STUDY

The area of study is Ibarapa Central Local Government of Oyo State; the headquarter is Igboora. It is bounded to the east by Ibarapa East Local Government Area, bounded to the North by Ibarapa North Local Government Area; bounded the South West and the North West by Ogun State. The population of the area according to 2006 provisional census result is 102, 979 where female population is 50,760 and male population is 52,219 (NPC, 2006). The Local Government is heterogeneous and dominated by the Yoruba and others ethnics and tribes. The average rainfall and temperature of the area are about 1455mm and temperature range of 27^0c-32^0c respectively.

INSTRUMENT FOR DATA COLLECTION

The data used for this research work was of primary origin. Well structured questionnaires were administered. Interview schedule and personal observation were combined to ensure adequate, accurate, quality and reliability of all required variables. The simple random sampling technique was adopted for sampling about 120 respondents in the area. However, 100 of the respondents with complete data set were used in the final analysis after data cleaning.

ANALYTICAL TECHNIQUE

Both descriptive and inferential statistical tools were being employed in analyzing data collected. The descriptive analysis such as means, frequency distribution, simple proportion, percentages and the use of tables in calculating some relevant parameters. Inferential statistics such as multiple regression analysis was employed to analyze the type of relationship between the quantity of egg consumed and some selected related variables.

Different functional forms were tried in the cause of analysis and the best functional form was later selected after statistical, econometrical, economic theory and common sense considerations. Some of the functional forms considered to evaluate the relationship between the quantity of egg consumed and some selected related parameters before the selection of the one with the best line of fit include:

1. Linear: $Y = b_0 + bix_i + U_1$
2. Semi-log: $Y = b_0 + b_i \log x_i + U_1$
3. Double log: $\log Y = b_0 + b_i \log x_i + U_1$

Where b_i = coefficients of included variables, x_i = vectors of variables

MODEL SPECIFICATION

$Y = b_0 + bix_i$

Y = Quantity of egg consumed	x_1 = Sex (male or female)
x_2 = Age (years)	x_3 = Household size
x_4 = Amount spent on egg per month (₦)	X_5 = Income (₦)
X_6 = Current price of egg per create (₦)	X_6 = Marital Status
X_8 = Employment	X_9 = Years of education (years)
X_{10} = Price of substitute (₦)	U_1 = errors terms

DISCUSSION OF RESULTS

Table 1 below shows the results of the analysis performed on the data collected, 48.0% of the respondents were male while 52.0% were female. The proximity of the distribution of the values between the male and female implies that egg consumption has no barrier as regarding the gender status of individual in the society.

Moreover, approximately 19. 0% of the respondents were below 20 years of age, 69% falls between 20-40 years, 12.0% were above 40. The average age of the respondents in the study area was about 34years with

standard deviation of about 10 years. The average value of age indicates that majority of the respondents were young people and they are at their productive time. At this active period, more energy is expended among the working class and therefore, there is need to increase dietary intake.

The analysis also reveals that about 52.0% of the respondents were married, 48.0% of the respondents were single. Household population analysis indicates that 35.0% have 2-5 household size while 15.0% have at least 6 household sizes. The average household size among the respondents in the study area was about 3 and the standard deviation was about 2.

Furthermore, the pattern of composition of the households considered shows that about 49.0% of the respondent were single (this include single mothers, widows, divorces, spinster and bachelors), 42.0% were children while 9.0% were married adult. The proportions who were children can contribute positively to egg consumption among the respondents in the study area.

The result also shows that about 69.0% the respondent were employed while 31.0% were not employed. The varieties of occupations that people in the study area engaged in further indicated that about 36.0% were teacher, 3.0% were farmer, and 28.0% were civil servant while 33.0% were into trading. There seems to be relative higher employment in the study area. However, there is need to create more job opportunities for the class of people that are not yet employed.

The result reveals that about 3.0% of the respondents had primary school education, 30.0% have secondary education. 40.0% have NCE /OND, 26.0%HND/B.SC while 1.0% has master degree. The mean value of the years of schooling of the population under this study was 14years with standard deviation of 2years; this mean value ranges between secondary and NCE/OND education. Higher level of educational attainment could facilitate their knowledge of importance of protein consumption to their healthy living.

Table1: RESULT OF SOCIO-ECONOMIC VARIABLES

Parameters	Frequency	Percentages	Mean	SD
Gender				
Male	48	48		
Female	52	52		
Total	100	100		
Age				
< 20	19	19		
20-30	47	47		
31-40	22	22	34	10
41-50	9	9		
>50	3	3		
Total	100	100		
Marital Status				
Married	52	52		
Single	48	48		
Total	100	100		
Household Size				
1	50	50		
2-3	6	6		
4-5	29	29	3	2
6-7	11	11		
>7	4	4		
Total	100	100		
Household Composition				
Single	49	49		
Children	42	42		
Married Adult	9	9		
Total	100	100		
Employment Status				
Employed	69	69		
Not employ	31	31		
Total	100	100		
Types of Occupation				
Teacher	25	36		
Farmer	2	3		
Civil Servant	19	28		
Trading	23	33		
Total	69	100		
Educational Level				
Primary	3	3		
Secondary	30	30		
NCE/OND	40	40		
HND/B.Sc	26	26		
M.Sc	1	1		
Total	69	100		

Table 2 below shows that, 18.0% of the respondents earned income ranging between ₦10,000-20, 000 per month, 39.0% earned below ₦10,000 per month, 8.0% earned between ₦31,000-40,000 per month and ₦41,00-50.000 per month respectively while 15.0% receive more than ₦50, 000 per month. Furthermore, according to the result obtained, average income earned by a typical respondent in the study area was about ₦24,180 per month with standard deviation of about ₦10,000. This implies that the income earned per month by a typical respondent was relatively low.

It was revealed that about 89.0% of the respondents eat or consume egg while 11%did not eat egg. This shows that majority of the household consume egg in the study area. Out of the 89.0% that do consume egg, about 17.0% of the respondent eat fried egg only, 23.0% eat boiled egg only, 55.0% eat both fried and boiled while 5.0% eat other forms of egg such as egg bounce, drinking egg in raw with milk for nutrition e.t.c. From this result, it is evident that majority of the people in the study area take preference for taking both fried and boiled eggs.

Further analysis shows that 74.0% of the respondents eat egg once per week, 15.0% eat egg twice per

week, and 8.0% eat egg 3 times in a week, while 3.0% eat egg more than 3 times in a week. The average number of egg eating per week was about 2 times and the standard deviation 1. Moreover, the quantity of eggs consumed per week varied among the households, about 51% of the people interviewed consumed between 1-2eggs per week, 12% consumed between 3-4 eggs per week, 19% consumed between 5-6 eggs, 8% consumed between 7-8eggs and while about 10% consumed more 8eggs per week. On average, a typical household consumed 4 eggs per week with standard deviation of 2eggs.

It was evident from the analysis that about 5. 0% of the respondents bought egg at rate of ₦550 per crate, 10.0% purchased egg at rate of ₦600 per crate, 6.0% bought egg at rate of ₦650 per create, 16.0% bought egg at rate of ₦700 per crate while 63.0% got egg at rate of ₦750 per crate. The mean price of egg per crate is ₦711.00 and the standard deviation is ₦61. The variation in the prices of egg bought per crate by various households was a reflection of sources of the eggs either farm gate price, wholesale price or retail price.

The distribution of the respondents' substitutes for egg in the study area revealed that about 31% of them have no substitute for egg, about 34.0% of the respondents substitute fish for egg, while 22.0% consumed meat in place of egg while 13.0% substitute chicken for egg. In addition, examination of some of reasons why people in the study area eat eggs show that about 12% of the households consume eggs because it is cheap, 62% of the consume eggs because it is proteinous, 12% consume egg because it is available while 14.0% consume egg because of all the reasons. It is very evident that majority of people consume eggs for its nutritious benefit.

Table2: DISTRIBUTION OF THE RESPONDENTS BY THEIR EGG CONSUMPTION VARIABLES

Parameters	Frequency	Percentages	Mean	SD
Income per month (₦)				
<10000	39	39		
10000-20000	18	18		
21000-30000	12	12	24,180	10,000
31000-40000	8	8		
41000-50000	8	8		
>50000	15	15		
Total	100	100		
Consume egg?				
Yes	89	89		
No	11	11		
Total	100	100		
Egg products consumed				
Fried egg only	17	17		
Boiled egg only	23	23		
Both fried and Boiled	55	55		
Others	5	5		
Total	100	100		
Time of consumption per week				
1	74	74		
2	15	15	2	1
3	8	8		
>3	3	3		
Total	100	100		
Quantity consumed per HH per week				
1-2	51	51		
3-4	12	12		
5-6	19	19	4	2
7-8	8	8		
>8	10	10		
Total	100	100		
Unit price of egg (₦)				
20	15	15		
25	26	26	27	3
30	59	59		
Total	100	100		
Egg price per crate (₦)				
550	5	5		

600	10	10	711	61
650	6	6		
700	16	16		
750	63	63		
Total	100	100		
Substitute for Egg				
No substitute	31	31		
Fish	34	34		
Meat	22	22		
Chicken	13	13		
Total	100	100		
Reasons for Egg consumption				
Cheapness	12	12		
Very proteinous	62	62		
Readily available	12	12		
Chicken	13	13		
All of the above	14	14		
Total	100	100		

RESULT OF REGRESSION ANNALYSIS

Table 3 shows the results of regression analysis. Many functional forms were tried on to determine best line of fit, these include; linear, Cobb-Douglas, semi-log. After thorough considerations of the statistical, economics theory of consumption, econometric and common sense criteria, semi-log functional form was found fitted for this analysis.

The model applied indicated a relationship between quantities of egg consumed (Y) and some explanatory variables which include; sex, age, marital states, household size, employment, years of education, income, price of egg and price of substitute.

According to the result, the coefficient of determination i.e R^2 was about 0.88 and it means that all the variables considered in this model accounted for about 88% variations on the quantity of egg consumed in the study area. Moreover, age, marital status and household size were found to be significant at 1% levels. Among the variables that were significant, marital status have negative influence on the quantity of egg consumed by the household in the study area. This implies that the more the population in a typical household the less the quantity or tendency of egg consumption. This inverse relationship could be attributed to the higher cost and quantity eggs required for feeding larger family.

Table 3: **Result of Regression Analysis of the Quantity of Egg Consumed**

Independent variable	Coefficient	t-value
Constant	0.6459	(2.93)
Sex	0.0106	(0.33)
Age	0.0105	(3.73)
Marital Status	-0.2822	(-4.40)
Household size	0.0723	(6.60)
Employment	0.0256	(0.84)
Years of education	-0.0123	(-1.51)
Income	-2.65E-08	(-0.02)
Price of egg	-0.066	(-1.54)
Price of substitute	4.62E-06	(0.10)
R^2	0.8881	
R^{-2} (Adjusted)	0.8770	

CONCLUSION AND RECOMMENDATIONS

The summary of the major findings from this research work indicated the majority of respondents were of younger age, 52.0% of the respondents were female, 40.0% of the respondents had tertiary education, and the mean size of the family was about 3 which show that most of the respondents have small household size. Majority of the respondents' income was relatively low. A typical respondent in the study area purchased eggs at average rate of ₦711 per crate.

Moreover, about 74.0% of the respondents consume egg once in a week. Among the variables that were significant, marital status have negative influence on the quantity of egg consumed by the household in the study area. Therefore, the people in the study should be enlightened on the benefit of keeping moderate family size and consumption of eggs for good health living.

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