THE ROLE OF HOUSEHOLD COMPOSITION IN EGG CONSUMPTION IN THE OBAFEMI AWOLOWO UNIVERSITY COMMUNITY

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ABSTRACT

This paper examined the role of household composition in egg consumption in Obafemi Awolowo University Community. An Ordinary Least Square regression model was used to obtain at-home demand function parameter estimates for egg. Positive and significant relationship was found between quantity of eggs consumed and both household size and the age of children. A 1% increase in each of the variables would cause a 4.68% and 5.71% increase in egg consumption respectively. The need for education of the household on the importance of egg consumption and keeping an optimum family size was suggested based on the findings of the study.

Keywords: Household composition, egg consumption, egg marketing, nutrition, policies.

INTRODUCTION

In Nigeria poultry consumption is one of the major sources of protein. The poultry sub-sector has been growing and enjoying better financial assistance than other sub-sectors of the livestock industry. In 1996 for instance, out of a total of ₦23,198,000 loan disbursed by Agricultural Credit Guarantee Scheme Fund to livestock industry, ₦13,849,500 went to poultry. The growing interest in poultry could have been due to rising prices of other livestock products and wide range of uses of poultry eggs in small scale processing industry such as bakery industry, preparation of vaccines and livestock feed milling.

A striking feature of egg consumption in Nigeria is that it seems to be skewed positively towards a particular set of household whether by orientation or procreation, though previous studies have paid little or no attention to this observation. Previous studies have recognized the importance of other characteristics in addition to the price of other livestock products. Ukeja (1992) showed that a rise in poultry population is directly proportional to the number of eggs consumed. Other factors reported by Oguntuase (1998) include efficient distribution of eggs to various customers. Consumers' knowledge about the product and his traditional consumption pattern. Previous studies seem to be silent on the influence of household composition. A knowledge of the influence of household composition is expedient since it would aid in the formulation of an effective marketing strategy. Hence, this paper utilized household purchase data to analyse prevailing at-home egg consumption.

MATERIALS AND METHODS

Data for this study were obtained from household survey of Obafemi Awolowo University staff quarters. The area was inhabited by about 2000 people of different cultural and socio-economic status. The data collected between January and December 1998 covered 80 households comprising 400 respondents. The data collection was based on simple random sampling technique. For the analysis, only households that continuously responded to egg-consumption questions were considered. Hence the study thus delimited to 60 households comprising 188 female and 175 male respondents. The socio-economic

characteristics of the households were analysed using descriptive statistics.

To define the role of household composition in egg-consumption, Ordinary Least Square (OLS) regression method was used to estimate the egg demand function. The dependent variable was the total quantity of eggs purchased (Y) in the month preceding the time of interview. Information as to the household size (X_1), household income (X_2), number of children below 14 years (X_3) and number of wives (X_4) were the explanatory variables. Both linear and log-linear functional forms were estimated and the lead equation selected on the basis of economic, statistical and econometric criteria.

In explicit form, the functions were:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + u$$

for linear function

$$\log Y = b_0 + b_1\log X_1 + b_2\log X_2 + b_3\log X_3 + b_4\log X_4 + u$$

for log-linear function

RESULTS AND DISCUSSION

A summary of salient socio-economic features of the households is presented in Table 1. The age of the household members varied between less than one year and 65 years old. Their mean age was 32.5 years. About 49.5% of the household members were women while the rest were men. More than half (56.8%) of the household members were under 21 years of age with the proportion of growing children (0

– 14 years old) being 37%. Only a small proportion of the households (10%) consisted of less than four people. The proportion of single-person households made up 5% of the respondents.

Table 2 presents egg consumption level by socio-economic features of the households. The number of eggs consumed by households earning more than ₦5000 per month is exactly three times higher than the quantity consumed by households earning less than ₦5000 on the average. Distribution of egg consumed by age composition of the households however reveals that older people (above 21 years old) consumed more eggs than younger ones. The results showed that egg consumption increased as age increased. Furthermore, most of the respondents claimed that they eat the egg during working hours. The distribution of egg consumed by household size followed a similar trend. While single-person households consumed an average of 20 eggs per month, households comprising greater than 4 people eat about 30 eggs on the average. This implies that single-person household consumed more eggs on the average than others. As household size increased egg consumption increased but at a decreasing rate. Gender analysis of egg consumption showed that women consumed more eggs than men. The mean egg consumption by gender was found to be statistically significant at the 5% level using the student t-test. The implication of this

TABLE 1: SOCIO-ECONOMIC FEATURES OF THE HOUSEHOLDS

Features	Values
Total number of households	60
Proportion of household members below 21 years old (%)	56.75
Average Age	32.50
Proportion of household members that are women (%)	49.50
Average household size	6
Proportion of households with less than 4 members (%)	10
Proportion of single-person household (%)	5
Proportion of household members earning below ₦5000 months (%)	40

Source: Field Survey, 1998.

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findings could be that there is unequal access to food nutrients in a typical household in the study area. Moreso, when the adults who consume more eggs do so at work, when the children may not be around to be considered for an equal share of similar nutrient consumption.

On the whole the total number of people under survey was 363 while the total number of eggs consumed was 1890. Average egg consumption per head in the university community was 5.21 per month. In a year, this would be about 63 eggs. The per annum consumption of 63 eggs showed that egg consumption had increased by more than 200% in the past 20 years since it used to be between 20 and 25 in 1979 (Oluyemi and Roberts, 1979). This value is still low when compared with the situation in developed countries where per annum egg consumption per household range between 250 and 300.

The egg demand functions are depicted in equations (1) and (2). The linear function performs better than the log-linear. The explanatory variables explain about 75%

changes in the linear egg-demand function but about 69% for log-linear function. Hence the discussion that follows is based on linear functional form. From the linear function, egg consumption at the household level was determined by the household size and the age of the children. These two variables positively influence the egg consumption level; in other words, as the size of the household increased and the children advanced in age the consumption of egg increased. Interestingly, household income, and the number of wives bore negative relationship with consumption of egg; these relationships however were not significant and therefore need to be taken with some caution.

The coefficient of determination R^2 value showed that about 75% of the variation in household egg demand was explained by the included variables. The results showed that a 1% increase in household size would cause about 4.7% increase in egg consumption; while a 1% increase in age of children would lead to about 5.7% increase in egg consumption. When evaluated at the mean

TABLE 2: SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS BY EGG CONSUMED.

Characteristics	Average monthly egg consumed
Income:	
Less than N500	16
Greater than N5000	45
Age:	
0 – 14 years	10
15 – 21 years	12
Greater than 21 years	18
Household size:	
Single person	20
2 – 4 people	23
Greater than 4 people	30
Gender:	
Women	25*
Men	14*

Source: Field Survey, 1998

*Significant at 5% level.

values of both the dependent and independent variables the income elasticity of egg consumption was estimated to be 0.53. This value was significantly different from zero,

thereby implying that a 1% increase in income could induce 53% increase in egg consumption level.

$$C = 34.94 + 4.68X_1^* + 5.71X_2 - 0.00027X_3 - 7.34X_4 \dots\dots\dots (1)$$

(1.95) (0.61) (0.00031) (10.99)

$R^2 = 75.34\%$; $F = 39.62^*$

$$\text{LogC} = \log 3.67 - 0.15\log X_1 + 0.31\log X_2 + 0.37\log X_3^* - 0.003\log X_4^* \dots\dots\dots (2)$$

(0.13) (0.09) (0.05) (0.03)

$R^2 = 69.9\%$; $F^* = 29.60$

*indicates significance at 5% level

Figures in parenthesis are the standard errors.

Where,

C = average number of eggs consumed by the household in a month (number)

X1 = household size

X2 = Age of children (in years)

X3 = household income (monthly in Naira)

X4 = number of wives

CONCLUSION

This study carried out in a typical cosmopolitan area of Osun State suggest that children constitute a greater proportion of household size, with the number of females being more than males. Furthermore, the household composition as reflected by household size significantly influenced egg consumption. The other factor positively influencing household egg consumption was the age of children. A breakdown of household size by total number of eggs consumed showed that single-person headed households consumed more eggs on the average than other categories.

The significant factors that positively influenced the level of egg consumption were the household size and the age of children. Based on these findings, it is suggested that marketing strategies specifically taking note of age of children and household size need to be employed in the marketing of eggs. Nutrition policies aimed at stimulating increased egg consumption need to be pursued to improve the protein consumption level of the populace.

Another implication of this study is that there is the need for education of the households on the importance of conscious consumption of proteinous food (especially eggs) in order to enhance their nutrition. This education need be directed at women who handle the food preparation at home. The education component could also include various kind of food preparations that could be made from eggs for consumption at home. Given the importance of income as a determinant of egg consumption at the household level efforts should be made to encourage households to increase their earnings to enable them afford good quality food, that would make for high productivity at work. This could be by various vocational training that would enable household members earn extra income at "leisure" hours.

Education about the need to keep an optimum number of household size is also important since household size is also a significant determinant of egg consumption. The size of the household need to be balanced with the income to strike a comfortable number that would both increase egg consumption and general household nutrition.

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