

Socio-economic Determinants of Consumption of Soybean Products in Nigeria: A Case Study of Oyo State, Nigeria

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ABSTRACT This study examined level of consumption of soybean products in Nigeria. The study also found out socio-economic factors influencing the level of consumption of soybean products in the study area. One hundred and ninety two households were sampled for the study using stratified random sampling technique. Data were collected from the respondents using structured interview schedule. The results of the study showed that marital status of the household heads significantly influenced the level of consumption of soybean products by the households since the F – calculated value (3.467) exceeds F – tabulated value (3.10) at 0.05 level. More widowed women consumed soybean products than any other single marital group. The results also showed that there is significant relationship between the household size and level of consumption of soybean products ($r = 0.322$, $p = 0.01$). In addition, there is a negative and significant relationship between respondents' formal educational attainments and their levels of consumption of soybean products ($r = -0.282$, $p = 0.01$). It is recommended that governmental and non-governmental organizations working on food security should provide better assistance to the widowed people.

INTRODUCTION

Adequate food and proper nutrition are basic requirements for economic development, since an underfed nation is an under productive nation. Poverty and malnutrition often afflict the same beleaguered groups of people. Sometimes, rates of malnutrition are used as indicators of poverty. Studies by Haddad and Alderman (2000) reveal that more income leads to better nutrition over time. Inadequate protein in diet appears to be the greatest nutritional problem facing Nigerians today. This is because most sources of animal protein are expensive and only few people can afford enough of them in the diet. Also sharp increase in prices of animal products is now making an average Nigerian conscious of the fact that the grain legumes may provide a cheaper source of protein.

Soybean (*Glycine max*) is one of the important grain legumes in the world in general and particularly in Nigeria. The crop is known for its high nutritive value. An earlier report (Food and Agriculture Organization, 1982) show that the protein content of soybean, which is about 40.0 percent of the seed weight, is higher than the protein content of any other crop. Although soybean is a plant protein source, it has a higher content of lysine, a sulphur containing amino acid.

Soybean also contains about 20.0 percent of

oil. Studies by Lassitar (1981) revealed that the oil is highly digestible, high in polyunsaturated fatty acids about 85.0percent with no cholesterol. The studies also show that mature soybean seed contains vitamins such as thiamine, niacin, riboflavin, cholin, vitamin E and vitamin K. These vitamins are necessary for normal body growth and development. Soybean products serve as essential raw material for vegetable oil industries. An earlier report by Institute of Agricultural Research and Training, IAR&T (1987) reveal that soybean ranks the highest among leguminous crops in terms of protein utilization and efficient ratio compared with other plant sources. The report also reveal that soybean has a high total digestible nutrient percentage of 91.99 percent compared to cowpea with 79.52 percent. Soybean consumption thus helps in solving nutrition protein-intake problem among the poor people. Soybean is currently cultivated in all the major agro-ecological zones of Nigeria. Soybean is used for various cheap recipes.

Earlier reports (Mebrahtu and Hahn, 1986, Burk and Ezekiel, 1976 and IAR&T 1987) revealed the problems militating against the use of soybean such as poor soaking and cooking qualities, lack of palatability and change of colour during cooking. Researchers have also worked on how to improve the quality of soybean products for human consumption. Studies by Knipscher

and Peter (1982) for example, revealed that smaller seeds tend to soften after cooking faster than larger seeds. The authors recommended the selection and breeding of small size seeds to overcome the problem of cooking ability.

To date, a general review of literature revealed very scanty resources on rates of consumption of soybean products and the socio-economic factors affecting the consumption in Nigeria in general and specifically in Oyo State. This study therefore examined the current level of consumption of soybean in Oyo State. The study also investigated socio-economic determinants of consumption of soybean products in the study area.

METHODOLOGY

The cross sectional survey reported here was carried out in Ogbomoso, northern part of Oyo State. Ogbomoso is situated in the derived savannah zone in Nigeria. The climatic conditions of the study area favour cultivation of soybean. Ogbomoso is the second largest city in Oyo State. The study area has a heterogeneous population.

Consumers of soybean products in Ogbomoso, Oyo State constitutes the population for the study. One hundred and ninety two respondents were sampled for the study using stratified random sampling technique. The criterion for the stratification is the level of income of the residents in the study area. The study area was classified into two major strata. The first stratum comprises wards with relatively more high-income earners, while the second stratum consists of wards with more low-income earners. There are ten wards in the study area. Two wards fall into the first stratum, while the other eight wards fall into the second stratum. One ward was sampled from the first stratum, and two wards were sampled from the second stratum by ballot system. Sixty-four households were sampled from each of the three wards, making a total of one hundred and ninety two households. The heads of the sampled households were interviewed.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents: More than half (67.7%) of the respondents are less than 40 years of age with a mean age of 36.53 years (Table 1). More female respondents consumed soybean products than male respondents. Table 1 revealed that majority

(58.3%) of the households interviewed had not more than five members each. Fewer households had between 6 and 7 individuals each. The results show that most households are not too large unlike in the (distant) past when there were large

Table 1: Socio-economic characteristics of respondents (n = 192)

Characteristics	Frequency	Cumulative frequency	Percentage
<i>Age (years)</i>			
22 – 24	24	24	12.5
25 – 27	30	54	28.1
28 – 30	18	72	37.5
31 – 33	20	92	47.9
34 – 36	20	112	58.3
37 – 39	18	130	67.7
40 – 42	14	144	75.0
43 – 45	12	156	81.3
46 – 48	0	156	81.3
49 – 51	14	170	88.5
52 – 54	6	176	91.7
55 – 57	0	176	91.7
58 – 60	6	182	94.8
61 – 63	4	186	96.9
64 – 66	0	188	97.9
67 – 69	2	188	97.9
70 – 72	4	192	100.0
			Mean age = 36.53 years
<i>Gender</i>			
Male	62	62	32.3
Female	130	130	100.0
<i>Household size</i>			
1	26	14	7.3
2	16	30	15.6
3	20	50	26.0
4	30	80	41.7
5	32	112	58.3
6	44	168	87.3
7	24	192	100.0
			Mean size = 4.32
<i>Years Spent on Formal Education</i>			
0	18	18	9.4
1 – 6	20	38	19.8
7 – 12	30	68	35.4
13 – 18	114	182	94.8
19 and above	10	192	100.0
			Mean year spent = 11.96
<i>Occupations</i>			
Unemployed	22	22	11.5
Crop farming	20	24	21.9
Livestock rearing	24	26	34.4
Food processing	12	67	40.6
Causal labour	10	88	45.8
Trading	38	126	65.8
Artisanship	20	146	76.2
Civil service	46	192	100.0

Source: Field Survey, 2002

households. It may be implied that family planning campaigns have yielded positive results in study area.

Also, more than half of the respondents (59.4%) received more than secondary education or 12 years of formal education. The high level of literacy in the study area was due to the fact that the area is an urban center densely populated by literate people. In addition, the majority of the respondents (64.7%) were engaged in non-formal sector.

Consumption of Soyabean Products by the Respondents: More than three-quarters of the respondents consumed regularly soymilk and soycheese (see Table 2). There was relatively low consumption of soybean in other forms. This may be due to the fact non-formal education was given to the general public on preparation and utilization of soymilk and soycheese. While there was poor education on the preparation of the other soybean products.

Majority (64.6%) of the respondents consumed soybean products at least twice in a week. It may be implied that the importance of soybean products has been recognized by most of the people in the study area.

Respondents' scores on consumption of soybean products reveal that 72.9 percent of the respondents consumed three or more different soybean products. It may be implied that more people consumed various soybean products. This shows that the educational efforts of the governmental and non-governmental organizations on utilization of soybean are yielding positive results.

Factors Affecting Level of Consumption of Soybean Products: Out of the selected demographic characteristics, only marital status contributed significantly to the level of consumption of soybean products. This is because the F – calculated value (3.467) exceeds F – tabulated value (3.10) at 5% level. Widowed women consumed more soybean products than any other single marital group (see Table 3).

In addition, there is a positive and significant relationship between size of household and level of consumption of soybean products by the household. The correlation coefficient between the two variables is 0.322 at 0.01 level (Table 4). In other words, the larger the household sizes the higher the levels of consumption of soybean products by the households. It may be implied that the large households consumed more soybean

Table 2: Distribution of respondents by their consumption of soybean products (n 192)

	Frequency	Cummulative Frequency	Percentage
<i>(a) Variety*</i>			
Soy iru	37		38.5
Soy ogi	35		36.5
Soymilk	83		86.5
Soy cheese	76		79.5
Soy moinmoin	6		6.3
Soy egusi	12		12.5
Soy oil	13		13.5
Soy flour	7		7.3
<i>(b) Rate of consumption</i>			
Almost everyday	46	46	23.9
Three times in a week	40	86	44.80
Twice in a week	38	124	64.60
Once in a week	32	156	81.30
Occasionally	36	192	100.0
<i>Score on consumption</i>			
1	14	14	7.3
2	38	52	27.1
3	76	128	66.7
4	28	156	81.3
5	22	178	92.7
6	14	192	100.0

*Multiple responses

Source: Field Survey, 2002

Table 3: Analysis of variance of influence of demographic characteristics on level of consumption of soybean products

Category	Mean	F calculated	F-tabulated
Gender		0.781	3.95
Male	17.87		
Female	18.14		
Marital Status		3.467	3.10*
Single	18.14		
Married	17.99		
Widowed	18.80		

* Significant F- ratio at 5% level

Source: Field Survey, 2002

products to complement their poor animal protein intake.

Also, Table 4 reveals that there is a negative and significant relationship between respondent's number of years of formal schooling and his/her level of consumption of soybean products. Since there is a positive and significant relationship between respondent's number of years of formal schooling and his/her level of income, it may be deduced that the low-income earners consumed more soybean products than the high-income earners.

Table 4: Correlation matrix

	<i>Age</i>	<i>Household size</i>	<i>Education</i>	<i>Income</i>	<i>Consumption level</i>
Age	1.000	.410**	-.471**	-.047	.164
Household size	.410**	1.000	-.338**	-.058	.322**
Education	-.471**	-.338**	1.000	.239*	-.282**
Income	-.047	-.058	.239*	1.000	.0101
Consumption level	.164	.322**	-.282	.010	.000

Source: Field Survey, 2002

CONCLUSION

The poor widowed women consumed more soybean products than any other single marital group. The sizes of households and household incomes significantly influence the levels of consumption of soybean products by the households. In order to ensure household food security in Nigeria, it is recommended that governmental and non-governmental organizations working on food security should provide better assistance to the people. Programmes on improved income generation should be designed and implemented for the people in their local communities.

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