



Socio-cultural Factors Influencing Rural Household Consumption of Protein Sources in Enugu State Nigeria

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ABSTRACT

The study analyzed socio-cultural factors influencing rural households' consumption of protein sources in Enugu State, Nigeria. The specific objectives of the study were to: describe the socio-economic characteristics of the respondents, ascertain the major protein types consumed; assess the consumption frequency of selected protein sources among rural household and determine household's socio-cultural factors influencing protein consumption. Multi-stage sampling procedure was adopted in selecting 150 rural households. Primary data were collected through the use of structured questionnaire. Data were analyzed using frequency, mean, and probit model. Results show that animal protein sources such as crayfish $\bar{x} = 4.8$, fish $\bar{x} = 4.8$ and milk $\bar{x} = 4.8$ as well as okpa $\bar{x} = 4.5$ plant protein sources were most frequently consumed by respondents in the study area. Mean monthly expenditure for animal and plant protein source consumed were ₦2,461.29 and ₦ 1,482.07 respectively. Household size/ composition, wealth status and availability of meat in the house were the major factors affecting protein consumption. There was significant relationship between selected households socio-cultural factors and the consumption frequency of animal and plant protein source at 1% level. Multiple regression result shows that the value of the F-ratio calculated (9.556) was greater than the value tabulated (2.23) at 1% level of significance which implies that personal characteristics of rural households significantly influenced monthly consumption expenditure for animal protein sources. Similarly, F-value computed (8.855) was greater than the tabulated F-value of (2.23) at 1% level of significance which implies that personal characteristics of rural households significantly influenced the monthly consumption expenditure for plant protein sources in the study area. The study concluded that crayfish and okpa were the most preferred protein sources consumed in the study area and the respondents spent more money on animal protein sources than plant protein sources. Therefore, the study recommended that efforts should be made towards sensitizing farm households to raise their livestock and cultivate plant protein sources they consume so as to spend less in buying them.

Keywords: Socio-cultural, Rural household, Consumption, Protein sources

Introduction

Food is essential for human need and a major source of nutrient for man's existence (Amao, 2013). Without food, agricultural production, human capital development, governance, research and scientific discoveries, technology development, human productivity and or any human activity whatsoever becomes practically impossible. Human beings food contain six classes of food: such as carbohydrate, protein, vitamins, minerals, fats and oil and water. Protein is a common phenomenon in the health status of many Nigerians as level of it is responsible for wide spread under nutrition and malnutrition among ages (FAO, 2006 cited in Ume and Okoronkwo, 2013).

Adequate intake of protein is one of the key factors to maintain independence, predominantly by preventing loss of muscle mass and strength (sarcopenia), frailty and associated comorbidities in later life (Bauer et al, 2018). The ever growing demand for foods naturally rich in protein is part of an ecological debate around whether more sustainable sources should be encouraged (Wu et al, 2014). In Nigeria, the per capita absorption of protein is low. The health intricate of protein malnutrition have been well acknowledged (FAO, 1990). Even in Enugu State Nigeria, there are observable incidence of infant mortality, poor child growth, mental retardation common among children of rural household.

An adult requires about 3,500 calories and 50grams of protein per day; a one-year-old child needs about 1000 calories and 15grams of protein. Yet, these quantities of vital nutrients are deficient in the diets of many rural household in Nigeria who consume mostly staples of grains such as maize, without adequate nutritional supplements, Thus, dependence on these staples cause malnutrition especially among resource-poor households (Robert *et al.*, 2000). The state of poverty in Nigeria is increasing due to low level of income, high cost of food products particularly protein foods due to the recent economic recession, as well as inadequate production of protein foods by the predominantly peasant rural farmers. Consequently, rural farm households in Enugu State in an effort to cope with the harsh economic situation in the country cut down on expenditure as well quantity of protein consumed.

Objectives

- i. describe the socio-economic characteristics of the respondents in the study area;
- ii. ascertain the major protein types/sources consumed;

- iii. assess the consumption frequency of selected protein sources among rural farm households and;
- iv. determine household socio-cultural factors influencing protein sources consumption in the study area.

Materials and Methods

The study was conducted in Enugu State Nigeria. The state is one of the 36 States that make up the Federal Republic of Nigeria, and was created in 1991. It is located in the south east geopolitical zone of Nigeria. The state is made up of 17 Local Government Areas. The Local Government Areas are Aninri, Awgu, Enugu East, Enugu North, Enugu South, Ezeagu, Igbo-Etiti, Igbo-eze North, Igbo-eze South, Isiuzo, Nkanu East, Nkanu West, Nsukka, Oji-River, Udenu, Udi and Uzo-Uwani. Generally, four Local Government Areas viz: Enugu North, Enugu South, Nsukka and Oji-River Local Government Areas are regarded as urban areas in the state given the infrastructural, demographic and socio-economic considerations while the rest are rural.

The state is also divided into three Agricultural zones namely, Enugu zone, Awgu zone, and Nsukka zone. Enugu zone comprises of Enugu East, Enugu North, Ezeagu, Igbo-Etiti and Udi Local Government Areas; Awgu zone includes Awgu, Aninri, Enugu South, Nkanu East, Nkanu West and Oji River Local Government Areas; while Nsukka zone comprises of Igbo-Eze North, Igbo-Eze South, Isi Uzo, Nsukka, Udenu and Uzo-Uwani Local Government Areas (NPC, 2007). It has a land area of about 8,022.95km², and is bounded on the East by Ebonyi State, on the North by Benue and Kogi States, on the South by Abia State and on the West by Anambra State. The state is located between latitudes 5056' and 70 06'N and longitudes 6053' and 7055'E (Independent National Electoral Commission, 2008). According to National Population Commission (2007), the population is about 3,257,298 persons. The climate is tropical, with an annual rainfall of about 1500mm. The rainfall is concentrated within seven to eight months of the year. The major occupation of the people is agriculture. Major crops grown are cassava, yam, maize, rice, melon, groundnut, palm oil, Bambara nut (Okpa), cowpea and a variety of fruits and vegetables.



Data for this study was collected from both primary and secondary sources. However, primary source was through interview schedule, and structured questionnaire relevant to the stated objectives.

Sample size and sampling Technique

The multi stage sampling procedure was used to select the sample size of the study. First stage involved the purposive selection of three agricultural zones which were Awgu, Enugu and Nsukka Agricultural Zones.

Second stage was the selection of 2 LGAs from each of the selected 3 agricultural zones, giving a total of 6 LGAs. Third stage was the selection of five (5) communities from the selected LGAs each giving a total of thirty (30) communities. Fourth stage involved random selection of five (5) rural households from each of the sampled communities giving a total of 150 respondents

Results and Discussion

Table 4.1 Distribution of respondents according to their socio-economic characteristics

Variables	Frequency (n=150)	Percentage (%)
Age (yrs)		
≤ 30	20	13.3
30-39	35	23.3
40-49	46	30.6
50-59	30	20.0
60 and above	19	12.8
mean		44.1
Sex		
Male	41	27.3
Female	109	72.7
Marital status		
Single	26	17.3
Married	113	75.3
Widowed	9	6.0
Divorced	2	1.4
Educational status		
No school	3	2.0
Primary school	12	8.0
Secondary school	85	56.7
Post-Secondary school	50	33.3



Involvement in farming		
Full time	29	19.3
Part time	121	80.7
Household size (persons)		
1-5	52	34.7
6-10	91	60.7
11 and above	07	4.6
Mean		6.2
Estimated monthly income (₦)		
≤ 20,000	60	40
21,000-30,000	41	27.3
31,000-40,000	23	15.3
41,000-50,000	15	10.0
51,000 and above	11	7.4
Mean		27.206.76
Membership of social organization		
Yes	111	74.0
No	39	26.0
Contact with extension agent		
Yes	104	69.3
No	46	30.7

Source: Field survey, 2020

Table 4.1 shows that 30.6% of the respondents in the study area were within the age bracket of 40-49 years while 12.8% of the respondents in the study area were within the age bracket of 60 and above. The mean age of the respondents was 44 years old. This implies that most of the respondents in Enugu State were still in their active stage in life which will enhance their farming activities as well as agricultural production efficiency for household protein food security. This result conformed to findings of Nze and Azubuike (2016) that most farmers in Abia State were in their productive ages and were thus able to cope with the challenges of agriculture. The majority (72.7%) of the respondents were females while 27.3% were males. This indicates that females are more involved in household protein food activities than the males in the study area. This finding suggests that female farmers need to be empowered in order to boost their involvement for the production of protein. This study agreed with the view of Ukanwolu (2014) who observed that



women constituted about (60%) of the agricultural labour force in Nigeria. However, this result differs from the findings of Ikwuagwu *et al.* (2016) and Ezeibe (2012) who reported that most of the farmers in Abia State were males. A high number(75.3%) of the respondents were married while 17.3% were single, 6.0% were widowed and (1.4%) were divorced. This implies that majority of the respondents in the study area were married. This findings conformed with the views of Ayoade (2016) who reported that majority (63.3%) of the sampled respondents in Oyo State were hard working to ensure their families had protein. This finding also agrees with that of Adegbeye (2016) who reported that 90% of the sampled respondents in Northern Nigeria were married.

Furthermore, Ozor, Ozioko and Acheampong (2015) noted that marriage is vital in rural areas where wives usually supported their households in agricultural production, processing and marketing. The majority (56.7%) of the respondents had secondary education while (2.0%) of them had non-formal education. This implies that the respondents in the study area had one form of formal education or the other. It also implies that there was relatively high level of literacy among the respondents in the study area which could enhance their consumption of protein source. The more educated the respondents are, the better they can source for their various types of protein for consumption. The household respondents showed that majority (80.7%) of the respondents in the study area were part time farmers while 19.3% engaged in full time farming. This implies that farming was not the major source of income of respondents in the study area.

This finding is contrary to the views of Akin-Olagunju and Omonona (2014) who reported that agriculture represents the main income source in the rural economy. The findings showed that 60.7% of the respondents in Enugu State had a household size of between 6-10 persons while 34.7% of them had a household size of 1-5 and (4.6%) of the respondents had household size of 11 and above. The mean household size of the respondents was 6 persons. This implies that the respondents in the study area had a fairly large household size. Furthermore, they would work harder to provide for these large families through improved agriculture production. According to Ozor *et al.* (2015), large household size could be a useful source of labour for farming activities. This result is also in conformity with the views of Umeh (2016) who reported that household size is a source of cheap labour for farmers, thereby reducing costs incurred in farming operations. On the other hand, household size affects the level of protein consumption among rural farm



household in the study area. Less than (40%) of the respondents in the study earned #20,000 per month while 7.4% of the respondents earned #51,000 and above per month. The mean monthly estimated income of the sampled respondents in the study area was #27,206.76. This implies that the monthly income of the respondents in the study area is low and might affect the level of consumption of protein source among rural farm households in the study area. This finding conformed with those of Ifeanyi-Obi and Matthews-Njoku (2014) who reported that (88.8%) of the rural dwellers in Southeast Nigeria earned below #50,000 with a mean monthly income of #21,000 while only (10.0%) earned above #50,000. The majority (74.0%) of the respondents in Enugu State belonged to one form of social organization or another while (26.0%) did not belong to any social organization. This implies that majority of the respondents in the study area have consumed one form of protein source or another during attendance to meetings. This finding is in conformity with that of Ovwigho (2014) who reported that 55.60% of the respondents in Delta State belonged to social organization while (44.40%) did not belong to any social organization.

According to Akin-Olagunju and Omonona (2014), social organization (co-operative societies, occupational social groups and farmers unions) serve as avenues to reach out to the populace and pool resources together for the benefit of members. The findings revealed that majority (69.3%) of the sampled respondents in the study area do not have contact with extension agents while 30.7% of them had contact with extension agent. This implies that visit by extension agents to farmers in the study area is poor. Agricultural extension plays an important role in educating and raising the production capacity of farmers. This finding is in line with that of Obasi (2009) who reported that 37.7% of the sampled farmers had contact with extension agent occasionally while 7.8% had frequent contact with extension agent in Imo State. The finding is also in conformity with that of Ukoha and Nzeakor (2016) who reported low level of extension contact with farmers in Abia State.



Table 2: Distribution of respondents according to major types of protein sources consumed by the respondents in the study area

S/N	Variable	Awgu n= 50		Enugu n= 50		Nsukka n = 50		Enugu State n = 150	
		Freq	%	Freq	%	Freq	%	Freq	%
Animal Protein									
1	Cow meat	47	94.0	49	98.0	48	96.0	144	96.0
2	Goat/Sheep	30	60.0	45	90.0	41	82.0	116	77.3
3	Pork	11	22.0	37	74.0	30	60.0	78	52.0
4	Fish	48	96.0	49	98.0	50	100.0	147	98.0
5	Crayfish	50	100.0	49	98.0	50	100.0	149	99.3
6	Egg	41	82.0	47	94.0	46	92.0	134	89.3
7	Milk	49	98.0	48	96.0	49	98.0	146	97.3
8	Chicken	46	92.0	48	96.0	49	98.0	143	95.3
9	Snail	34	68.0	40	80.0	31	62.0	105	70.0
10	Bushmeat	41	82.0	37	74.0	33	66.0	111	74.0
Plant Protein									
1	Dry Cowpea (Bean)	47	94.0	47	94.0	50	100.0	144	96.0
2	Green Cowpea (Akidi)	45	90.0	48	96.0	46	92.0	139	92.7
3	Soybean	40	80.0	43	86.0	42	84.0	125	83.3
4	Okpa	48	96.0	49	98.0	48	96.0	145	96.7
5	Pigeon Pea (fiofio)	44	88.0	45	90.0	48	96.0	137	91.3
6	Groundnut	44	88.0	43	86.0	45	90.0	132	88.0
7	Odudu (African Yam bean)	28	56.0	14	28.0	20	40.0	62	41.3
8	Bread Fruit (Ukwa)	50	100.0	46	92.0	42	84.0	138	92.0

Source: Field Survey, 2020

The study considered ten types of animal protein sources consumed by the rural farm households namely cow meat, goat/sheep meat, pork meat, fish, crayfish, egg, milk, chicken, snail and bush meat. All these major types of animal protein sources were consumed by the respondents in the study area, but at different percentages. Most (99.3%) of the respondents consumed crayfish as their major source of animal protein in the study area. This was followed by fish consumption with (98.0%), milk (97.3%), cow meat (96.0%), chicken (95.3%), egg (89.3%), goat/sheep meat (77.3%), bush meat (74.0%) and snail (70.0%). Pork was not considered as major protein source



in the area because only (52.0%) of respondents consumed it. The result implies that crayfish was the most consumed major type of animal protein in the study area while the least was pork meat. This may be as a result of the fact that crayfish is accepted by majority of the respondents while pork meat seems to be alien to the people in the study area probably due to religious or cultural issues.

Similarly, the result further shows the major types of plant protein sources that were equally consumed in the study area. A local delicacy Okpa was considered the foremost source of plant protein consumed by the rural households with (97.7%) followed by dry cowpea (beans) (96.0%), green cowpea (Akidi) (92.7%), bread fruit (Ukwa) (92.0%), pigeon pea (Fiofio) (91.3%), groundnut (88.0%), soya bean (83.3%) and the least consumed was African yam bean (Odudu) with (41.3%). The implication of the result is that there are several plant protein sources readily available for consumption by rural households in Enugu State. This result is in line with the finding of Boye *et al.*, (2010) who reported that okpa flour is very high in protein. However, result contradict the findings of Adetunji, and Adepoju (2011) who reported that protein is fairly available in the study area but not affordable especially the animal protein in Oyo state where people spent as much as ₦7,000 monthly to purchase protein meal and consumed protein meal in partial, once daily because of the cost.

Table 4.3: Distribution of respondents according consumption frequency of protein in the study area

Variables	Agwu Zone	Enugu Zone	Nsukka Zone	Enugu State	Remark
<u>Animal Protein</u>					
Beef	5.04	4.4	3.9	4.5	Occ. Con
Goat/Sheep	3.18	2.7	2.7	2.5	Occ. Con
Pork	2.18	2.7	2.7	2.5	Occ. Con
Fish	5.94	5.0	6.8	5.9	Freq. Con
Crayfish	6.62	6.5	6.4	6.5	Freq. Con
Egg	3.33	3.7	3.5	3.5	Occ. Con
Milk	4.62	5.3	4.9	4.9	Freq. Con
Chicken	2.91	3.5	3.5	3.3	Occ. Con
Snail	3.06	2.7	2.2	2.7	Occ. Con
Bush Meat	2.90	2.4	2.5	2.7	Occ. Con
<u>Plant Protein</u>					
Beans	4.41	4.5	4.5	4.5	Occ. Con
Green Cowpea (Akidi)	3.92	3.8	4.0	3.9	Occ. Con



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Soybean	3.51	3.5	3.5	3.5	Occ. Con
Bambara (Okpa)	5.71	4.8	4.6	5.0	Freq. Con
Pigeon pea	4.16	4.0	3.9	4.0	Occ. Con
Groundnut	4.39	4.1	4.4	4.3	Occ. Con
African yam bean (Odudu)	3.16	2.1	2.5	2.7	Occ. Con
Bread fruit	3.62	3.5	3.4	3.5	Occ. Con

Source: Field Survey 2020 **Key: Scarcely consumed 1- 2.33; O = Occasionally consumed 2.34-**

4.66, F = Frequently consumed 4.67 - 7

Table 4.3 shows the result of frequency of protein source consumption by the rural households in Enugu State. The result shows that crayfish ($\bar{x} = 6.5$), fish ($\bar{x} = 5.9$) and milk ($\bar{x} = 4.9$) were the frequently consumed animal protein sources by rural households in the study area. Furthermore, the result also revealed that cow meat ($\bar{x} = 4.5$) egg ($\bar{x} = 3.5$), chicken ($\bar{x} = 3.3$) goat/sheep ($\bar{x} = 3.2$), snail ($\bar{x} = 2.7$), bush meat ($\bar{x} = 2.7$) and pork meat ($\bar{x} = 2.9$) were occasionally consumed by rural households in the study area. The implication of this result is that the respondents in the study area consumed crayfish more than every other animal protein source followed by fish and milk. This may be due to the fact that crayfish is the most readily available and affordable animal protein source among rural farm households in Enugu State.

On the other hand, the result shows that okpa ($\bar{x} = 5.0$) was the only frequently consumed plant protein source among rural households in the study area. Nevertheless, dry cowpea ($\bar{x} = 4.5$), groundnut ($\bar{x} = 4.3$), pigeon pea ($\bar{x} = 4.0$), green cowpea ($\bar{x} = 3.9$), soy bean ($\bar{x} = 3.5$), bread fruit ($\bar{x} = 3.5$) and African yam bean ($\bar{x} = 2.7$) were occasionally consumed by the respondents in the study area. The result shows that okpa is highly consumed while African yam bean (odudu) had low consumption frequency by the rural farm household in the study area. This may be attributed to the fact that okpa is a generally accepted delicacy in the study area and it is highly affordable too. Also the low frequency of consumption of African yam bean (odudu) may be as a result of the fact that the respondents who are farmers are not planting enough for their household consumption or high cost of the commodity in the market as well as time consumed in cooking. This is in line with the findings of Ogunniyi (2011), who reported that majority of the respondents



in Oyo State consumed staple food that are available which prices are highly affordable when prepared irrespective of the nutritional value of the food.

Furthermore, variations in the frequency of protein consumption could be attributed to changes in the physiological state of the body, to various factors associated with different households such as availability and facility of essential goods and services, time use, information, social barriers and the household setting among others (H.A.I.2000)

Table 4.4: Distribution of respondents according to household socio-cultural factors influencing consumption of protein sources

Variables	Frequency (n=150)	Percentage
Household food menu	56	37.3
Household size / composition	93	62
Knowledge of protein relevance	72	48
Household educational status	54	36
Household's religion	28	18.7
Household's cultural affiliation	43	28.7
Household wealth status	119	79.3
Household taste for protein	61	40.7
Availability of protein source	77	51.3

Source: Field Survey 2020

Multiple Responses

The result in table 4.4 shows that household's wealth status (79.3%) was a major household socio-cultural factor influencing consumption of protein sources. The result shows that household size/composition (62%) was a major household socio-cultural factor influencing consumption of protein sources. This result is also in conformity with the views of Umeh (2016) who reported that household size affects the level of protein consumption among rural farm household in the study area. The result shows that availability of protein source in the house (51.3%) was also a major household socio-cultural factors influencing consumption of protein sources. This is in line with



the findings of Ogunniyi (2011), who reported that majority of the respondents in Oyo State consumed meat that are available which prices are highly affordable. Furthermore, the result also shows that household's religion (81.3%), household cultural affiliation (71.3%), household educational status (64%), household food menu (62.7%), household taste for protein (59.3%) and knowledge of protein relevance (52.0%) respectively were not the major factors influencing consumption of protein sources in the study area.

Conclusion and Recommendation

The study concluded that crayfish and bambara (okpa) were the most preferred protein sources consumed in the study area.

The following recommendations were made:

The study recommends that households should consume other sources (beef, goat, pork, beans, soybean, breadfruit) amongst others of protein (because it is also beneficial to their health).

The study recommends that there is need for price control to minimize price fluctuation of protein food to make it affordable.

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