



## ASSESSING DIETARY PATTERNS OF POULTRY PRODUCTS AMONG URBAN POULTRY-FARMING HOUSEHOLDS IN UMUAHIA NORTH LOCAL GOVERNMENT AREA OF ABIA STATE, NIGERIA

<sup>1</sup>Okocha, O.I., <sup>1</sup>Uwajimgba, A.N., Odo, A.C. and Egbuchulam, O.E.

<sup>1</sup>Federal College of Education, Eha-Amufu, Enugu State.

Corresponding author: [okocha.onuohaifeanyi@fceehamufu.edu.ng](mailto:okocha.onuohaifeanyi@fceehamufu.edu.ng)

Corresponding author's ORCID: <https://orcid.org/0000-0002-8575-0825>

### Abstract

The study assessed the dietary patterns of poultry products (meat and eggs) among urban poultry-farming households in Umuahia North Local Government Area of Abia State, Nigeria. The specific objectives of the study were to delineate the socio-demographic characteristics of the urban poultry-farming households, their dietary consumption patterns in poultry products including frequency of consumption of poultry products, determination of monthly expenditure on poultry products and constraints experienced by urban poultry-farming households in the study area. Snowballed sampling technique was used to randomly select ninety urban poultry-farming households from a population of 324,900 in Ndume Ibeku, Amuzukwu Ibeku, Osah Ibeku, Umuagu Ibeku and Afara Ibeku Autonomous Communities, which make up the urban areas of the local government area. A structured questionnaire with close-ended questions was used to collect data for the study and were analyzed using descriptive statistics. The analyzed results indicated a mean age of 41.3 years, percentage majority of the respondents being females (66%), 77.33% were married, 35.18% had secondary education, 40.56% engaged in poultry farming as a primary occupation, 48.88% had an average of 15years experience in poultry farming, 48.88% earned above N100,000.00 annually from poultry farming and have an average family size of 5 persons. Majority of the respondents occasionally consumed boiled chicken meat and egg followed by fried chicken meat and egg, and scarcely consumed grilled chicken meat (from chicken either still on medication or dead chicken). The mean monthly expenditure on chicken products was N4,999.00 while some of the major constraints limiting consumption of chicken products include high cost of retail price of poultry products, low financial status of respondents, limited access to chicken and egg, lack of storage facilities, long distance to market/farm and dietary restrictions. It was recommended that urban poultry-farming households should be assisted with credit facilities, improved and adaptable species of day-old chicks, well informed on the nutritional benefits of regular consumption of poultry products and the health risks of consuming sick or dead chicken meat; and ensure efficient production of safe chicken products.

**Keywords:** Dietary Patterns, Poultry products, urban poultry farming, Abia State.

## Introduction

In recent times, animal products including poultry meat and egg have been available to a limited extent in developing countries and to a fuller extent in developed countries of the world. Over 1.02 billion people globally have been estimated to suffer malnutrition due to protein deficiency (FAO, 2009). Although responsible protein consumption is being highlighted globally, it is pertinent to note that over 900 million people are protein-deficient and out of which about 800 million are estimated to be from the developing countries of the world as observed by Abdullahi and Aubert (2004). Relying on the estimated 70g of protein per meal per person with about 35g supposedly coming from animal sources and that only about 7g of animal protein is being consumed (representing only 20 per cent of the daily protein requirements) by the FAO (2003), the Federal Government of Nigeria through various initiatives has continued to focus on the development and improvement of poultry industry due to its tremendous contribution to individual protein intake and serving as a ready source of income to smallholder farmers (Afolabi, 2002). The implication of these initiatives is to boost animal protein production, availability and accessibility as the present demand for animal protein in Nigeria and other developing countries of the world is far from being met.

Chicken meat and egg production constitutes an important component of the agricultural economy in developing countries and also constitutes an instrument of socioeconomic change, improved income and quality of rural life in Nigeria (Olaniyi, *et al.*, 2010). Poultry farming as an aspect of livestock production is important to the biological needs, economic and social development of the people in any nation (Oladeebo and Ambe-Lamidi, 2007). However, consumption of these poultry products determines the protein deficiency of poultry-farming households. Ayoola (2015) notes that protein deficiency is evident in Nigeria's annual egg consumption, standing at 70 eggs per person, in contrast to developed nation like China with 370 eggs per person. Closing this protein consumption disparity appears challenging, given the existing financial and technological constraints experienced by poultry farming households. Poultry farming household's protein consumption need to be efficient. To this effect, the household protein insecurity can be overcome by strengthening the household's poultry (chicken meat and egg) consumption patterns. This forms the basis of this research with the specific objectives to;

- i. identify the socio-demographic characteristics of the poultry-farming households in the study area,
- ii. assess the frequency of consumption of chicken meat and egg among poultry-farming households in the study area,
- iii. determine the monthly expenditure of chicken meat and egg among the poultry-farming households in the study area and
- iv. identify the constraints to the consumption of chicken meat and egg in the study area.

## Methodology

**Study design:** The study adopted a descriptive survey research design. The survey research design was considered appropriate as it elicits information from the respondents concerning their dietary patterns of poultry products (chicken meat and egg).

**Area of the study:** The study area was Umuahia North Local Government Area of Abia State, occupying an area of 245km<sup>2</sup> and a population of 220,660 according to National Population Commission 2006 census (NPC, 2006). It is located within South-East agro-ecological zone of Nigeria, with a typical tropical humid climatic condition. The annual rainfall ranges from 2000-2,500mm, average annual temperature is 27<sup>0</sup>C and the relative humidity ranges between 80-90<sup>0</sup>C in the wet season (National Root Crop Research Institute- NRCRI, 2023). The area lies between 5<sup>o</sup>30' and 5<sup>o</sup>40' North of equator and longitude 7<sup>o</sup>25' and 7<sup>o</sup>32' East of Greenwich meridian.

**Population for the study:** The population of the study is randomly selected poultry farming households within the urban areas of Umuahia North L.G.A. of Abia State.

**Sample selection procedure:** 90 poultry-farming households were selected from the urban areas within the study area. Snowball sampling technique was used to select the respondents. In this method, one identified poultry-farming household referred the researchers to another poultry-farming household.

**Instrument for data collection:** The instrument for data collection was a set of questionnaire. The questionnaire was made up of four sections. Section A contained items on the demographic characteristics of the respondents. Section B elicited information on the frequency of consumption of chicken meat and egg among poultry-farming households. This was measured by using a 7-point Hedonic measurement scale weighted as follows: Daily, 5-6 days/week (6), 3-4 days/week (5), 1-2 days/week (4), once in a week (3), during festivities (2) and not at all (1). Section C obtained data on the monthly expenditure of the respondents on chicken meat and egg in the study area while section D elicited information on the constraints to consumption of chicken meat and egg in the study area. This was done by using a 3-point Likert rating scale of Very High Extent (3), High Extent (2) and Very Low Extent (1).

**Validation of the instrument:** The face validation of the instrument was established by three experts from the Department of Agricultural Education, Federal College of Education, Eha-Amufu, Enugu State, Nigeria.

**Reliability of the instrument:** Reliability of the questionnaire was established using Cronbach alpha method and reliability coefficient of 0.78 was obtained, showing high consistency of the test items.

**Method of data collection:** The respondents were visited in their homes and in their farms to obtain the information. 90 copies of the questionnaire were administered to the farmers verbally with the help of two trained research assistants. Any member of the household who could give reliable information was used for the study. Their responses were then ticked in the questionnaire accordingly. All the 90 (100%) copies of the questionnaire were correctly filled out and returned.

**Informed consent:** A verbal consent was obtained from the respondents before the study commenced. The purpose of the study, the voluntary nature of participation and confidentiality of data were duly explained to them, after which they gave their consent.

**Data and statistical analysis:** Descriptive statistics such as frequency, percentage and means were used to analyze data. As reported by Madukwe *et al.*, (2000) and Ekwe (2019), the recorded frequencies were multiplied by each Hedonic weight and divided by the pooled response. A class mark of 2.33 was established by dividing the maximum response value (7) by the 3 categories to obtain the following categories: 0.00-2.33 (scarcely consumed), 2.34-4.67 (occasionally consumed) and 4.67-7.0 (frequently consumed). Also, a benchmark of 2.0 was used as the cut-off point to determine the constraints to consumption of chicken meat and egg. The scored responses were first multiplied by each Likert weight and divided by the response pooled together. Problems above the cut-off point were considered a major problem and accepted while cut-off scores below 2.0 were considered minor and rejected.

## Results:

### Socio-demographic Characteristics of urban poultry-farming households in Umuahia North L.G.A. of Abia State

Table 1 shows the socio-demographic characteristics of the respondents. The results showed that 42% of the respondents were between 31-40 years of age, and 33.33% were within the age group of 41-50 years. It also showed that 73.33% of the respondents were married, 35.18% of them had post-secondary education, and 40.56% of them were full time farmers. The mean household sizes of the respondents were seven persons/household while the mean annually estimated income of the respondents gave a mean yearly income of N98,200.00.

**Table 1: Descriptive statistics of the demographic characteristics of the respondents**

<b>Variables</b>	<b>Frequency (n=90)</b>	<b>Percentage (%)</b>
<b>Age</b>		
20-30	16	17.78
31-40	30	33.33
41-50	38	42.22
51-60	6	6.67
<b>Marital status</b>		
Single	13	14.44
Married	66	73.33
Divorced	6	6.67
Widowed	5	5.56
<b>Sex</b>		
Male	33	34.0
Female	57	66.0
<b>Level of education</b>		
Informal	10.0	12.01
Primary	22.0	24.13
Secondary	32.0	35.18
Post-secondary	26.0	28.68
<b>Primary occupation</b>		
Farming	37.0	40.56
Civil servants	22.0	24.67
Traders/business/artisans	29.0	32.44
Others	2.0	2.33
<b>Household size</b>		
1-3	27.0	30.01
4-6	44.0	48.88
7 and above	19.0	21.11
<b>Years of experience in poultry farming</b>		
Less than 10 years	27.0	30.01
10-39 years	44.0	48.88
40 and above	19.0	21.11
<b>Estimated annual income from poultry farming (N)</b>		
Less than 50,000.00	19.0	21.01
51,000.00-100,000.00	27.0	30.01
Above 100,000.00	44.0	48.88

**Source: Field Survey, 2024**

**Frequency of consumption of poultry products (chicken meat and egg) among urban poultry-farming households in Umuahia North L.G.A of Abia State.**

Table 2 shows the frequency of consumption of poultry products among the respondents. The results show that chicken meat is consumed mostly in the forms of fried:  $x=5.10$ , boiled:  $x=4.87$ , grilled:  $x=3.68$ .

**Table 2: Distribution of respondents according to the frequency of consumption of chicken meat and egg.**

Frequency of consumption	Fried Chicken meat & egg)	Grilled Chicken meat (Still on medication or dead)	Boiled (Chicken & egg)
Daily (7)	4	0	11
4 days/weeks (6)	10	11	17
Thrice a week (5)	15	5	13
Twice a week (4)	17	4	10
Once in 2 weeks (3)	36	19	11
During festivities/ ceremonies only (2)	10	47	29
Never (1)	0	4	0
Mean Max = 7	2.34	1.62	2.47
Remarks	Occasionally Consumed	Scarcely Consumed	Occasionally Consumed

Key: 1-2.33 (Scarcely consumed), 2.34-4.66 (Occasionally consumed), and 4.67-7 (Frequently consumed)

**Source: Field Survey, 2024**

**Monthly expenditure on poultry products (chicken meat and egg) consumption in the study area**

The distribution of the respondents according to their monthly expenditure on chicken meat and egg consumption in the study area is presented in Table 3. The result shows that most (48%) of the respondents spend between N4000.00-N5,999.00 monthly on the consumption of chicken meat and egg. The mean monthly expenditure on chicken meat and egg by the respondents is N5,250.00

**Table 3: Distribution of respondents according to their monthly expenditure on chicken meat and egg in the study area.**

Monthly expenditure range (N)	Frequency	Percentage
≤ 2,000.00	14	15
2,000.00-3,999.00	17	19
4,000.00-5,999.00	43	48
6,000.00-7,999.00	8	9
8,000.00-9,999.00	5	6
10,000.00- Above	3	3
<b>Total</b>	<b>90</b>	<b>100</b>
<b>Mean</b>	<b>N5,250.00</b>	

Source: Field Survey, 2024

### Constraints to chicken meat and egg consumption in the study area

Table 4 presents major constraints to the consumption of chicken meat and egg in the study area. The respondents all agreed that the constraints identified were serious with mean scores of cost per kg and per crate.

**Table 4: Constraints to chicken meat and egg consumption in the study area**

Constraints	Very High Extent	High Extent	Very Low	Total Score	Mean	Remark
1. High cost price per Kg and per crate	59	22	10	231	2.53	Accepted
2. Limited access to chicken and egg	44	28	18	211	2.34	Accepted
3. Lack of storage facilities	36	34	23	199	2.14	Accepted
4. Long distances to market/farms	37	44	9	208	2.31	Accepted
6. Health concerns	25	19	46	159	1.77	Rejected
7. Financial status	49	28	13	216	2.40	Accepted
8. Dietary restrictions	46	31	13	213	2.37	Accepted
9. Age	22	20	47	153	1.71	Rejected

Source: Field Survey, 2024

## Discussion

The findings of this study regarding higher proportion of the respondents being female (66%) agrees with the report by Babayemi *et al.*, (2017) who reported that women are more likely to engage in poultry production mostly at small scale level. Also, the respondents being mostly (42%) middle aged (41-50 years) adults who are also mostly married (73.33%) show that the poultry-farming households within the urban areas of Umuahia North L.G.A. of Abia State engage in poultry enterprise as a means of livelihood and to provide family food security as reported by Ekwe (2019) and Ozor *et al.*, (2015). The moderate family size (4-6) indicated a useful source of labour for the poultry farming activities while the study showed that most of the respondents (35.18%) had up to secondary level of education which is an indication of good literacy level that can enhance chicken meat and egg consumption. Juxtaposing the number of respondents whose primary occupation is farming (40%) and their annual estimated income from poultry farming in the present prevailing high-inflationary economic realities in the present day Nigeria, the low income level of the respondents affected their dietary pattern relating to chicken and egg as reported by Ekwe (2019).

There was generally occasional consumption of chicken meat and egg mostly due to the major constraints identified in the study area while the form of chicken meat and egg consumed by the respondents was the boiled form followed by the fried form and scarcely by the grilled form, mostly from chicken either still on medication or dead chicken on medication, as observed from personal enquiry. This could be attributed to ease of convenience during preparation for boiling and frying either in a family kitchen or in the farm and safety concerns on poultry zoonotic diseases. The study also indicated that most of the respondents (48%) spent on a monthly basis an average of N4,999.00 in the consumption of chicken meat and egg. This implies that the respondents did not spend much on consumption of chicken meat and egg. Among the constraints identified in the study area, health concerns and age did not matter while for example, the high cost price per kg and per crate as a major constraints are similar with the findings of Carlos (2017) and Akerele *et al.*, (2015).

## Conclusion and Recommendation

It is concluded that poultry-farming households occasionally consumed chicken meat and egg as they are constrained by some major factors which limit them in having access to animal protein security within the urban areas of Umuahia North L.G.A. of Abia State. It was recommended that urban poultry-farming households should be assisted with credit facilities, improved and adaptable species of day-old chicks, well informed on the nutritional benefits of regular consumption of poultry products and the health risks of consuming sick or dead chicken meat; and ensure efficient production of safe chicken products.

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