The International Journal of Agriculture, Management and Technology, Vol 4, No. 1, 2020

www.ijamt.com.ng

IJAMT ISBN: 978-978-54468-2-7

### COMPARATIVE ANALYSIS OF CONSUMPTION PATTERN OF BEEF AND FISH AMONG THE HOUSEHOLDS IN EZZA SOUTH LOCAL GOVERNMENT AREA OF EBONYI STATE, NIGERIA

Ucha, Samuel .O<sup>1</sup>, Nwali, Collins .S.<sup>2</sup>, Nwite, Chukwuma. O<sup>1</sup>, Obute, Justina.  $E^2$  and Nwagbo, Emmanuel.  $E^3$ 

Department of Agricultural Extension and Management, Federal College of Agriculture, Ishiagu, Ebonyi state, Nigeria<sup>1</sup>

Department of Agricultural Extension and Management, Federal College of Agriculture Moor plantation, Ibadan, Oyo state, Nigeria<sup>2</sup>

Department of Agricultural Economics, University of Nigeria, Nsukka, Enugu State, Nigeria<sup>3</sup>

### ABSTRACT

Comparative analysis of consumption pattern of beef and fish among the households in Ezza South Local Government Area of Ebonyi State was studied. Specifically, the socio-economic characteristics of beef and fish consuming households were described, the quantity and Cost of beef and fish consumed by household were estimated, factors affecting household consumption of beef and fish were determined and the constraint faced by households in to beef and fish consumption in the study area were identified. Multi-stage random sampling procedure was used to select respondents for this study. One hundred and twenty (120) household heads were sampled for this study. Data for the study were collected from primary sources. The primary data were collected using structured questionnaires. Frequency counts and percentages were used to achieve objectives i, ii and iv of the study while Objective iii was analyzed using logistic regression analysis. The result on the socioeconomics characteristics of the respondents indicates that 50% of the households' heads were males while 50% were females. The result revealed that the household that consume fish (86.67%) is greater than the household that consume beef (65.83%). Also, an average household in the study area consume 6kg of meat at the cost of N9, 000.00 while the same average households consume 9.5kg of fish at the cost of N11, 400.00 per month. The result equally shows that a household spends N20, 400.00 on beef and fish per month. The findings identified level of education, and income of the household head to be positive determinants of beef and fish consumption in the area. The result showed that the households were limited to the consumption of beef and fish by their low sources of income, poor access to beef, high number of dependents, high cost of beef, and high cost of fish, low level of education and religion and cultural ties. Recommendations made were that household heads in the study area should diversify in their sources of income in order to meet up with the nutritional requirements of the family; membership of cooperative is encouraged to enable the households have a better access to beef in the area; the extension agents should help in educating the household heads on the need for family planning, for this could reduce the problem of high dependency on them and responsibilities; the government should as well assist by the provision of abattoir within the rural areas to increase access to beef in the area; and the farmers should as well be enlightened on the need of protein in their diets.

Key words: Households, Consumption Pattern, Beef, Fish, Comparative Analysis

#### 1. INTRODUCTION

The importance of protein as one of the macronutrients needed by the body cannot be overemphasized. Protein is required for the growth, maintenance and repair of all body tissues, protein for human consumption usually comes from plants and animals, plant proteins are deficient in certain amino acids notably methionine, tryptophan and lysine which are necessary for proper healthy growth (Frank & Harold, 2001). According to Britton (2003), the main difference between animal protein and plant protein is that, animal products contain different ratios of amino acids and higher concentrations of protein than most plant products

do. Most plants contain proteins in lower levels. Hence, in a strictly vegetarian diet, it is important to mix and match different plants to get the variety of protein and amino acids necessary for good health. Animal proteins are said to possess superiority over vegetable protein. Animal proteins are generally referred to as complete proteins. They contain all the amino acids needed in the body as opposed to plant proteins in which one or more of these essential amino acids are lacking (Oloyede, 2005).

Nigeria with numerous natural and human resources remains amongst the least consumers of protein in Africa (Ajana, 1999). Abiodun (2001) observed that the protein intake by Nigeria is about 53.8g with only 6.0 to 8.44 g/head/day of fish and animal origin while the United Nation/ Food Agricultural Organization (FAO) estimated minimum protein 70gm/capita/dav requirements at and the recommended protein intake from animal source to be 35gm/capita/day. It is not surprising that Nigeria is highly deficient in animal protein security with the per capita consumption put at 9.3g/day as against the 35g/day recommended by the FAO to be the minimum requirement for the growth and development of the body (Esobhawan, Ojo & Ikheloa, 2008).

Meat and fish form an integral part of the diet of Nigerian people and are considered essential protein foods, also serving as a focal point for the family meal (Elliot & Ezenwa, 2008). The relative contribution of each these protein sources, however, may vary depending on the livelihood activities of the family, their income and fish availability. In rural and fishing communities in Nigeria, fish is known to play a significant role in the diet, providing up to 75 % of the total animal protein intake (Department for International Development –Food and Agriculture Organization, 2002). In many developing countries, the dependency on fish remains high, as substitutes in the form of other animal foods are inaccessible to the poor.

Beef is a product of livestock farming which has remained an essential component of the agricultural sector of the Nigerian economy. Livestock is a good source of animal protein, which is needed for proper, and balanced diet and beef is the meat obtained from matured cattle. Beef is a major source of animal protein because it contains many nutrients nourishing substance needed by the human body. Its high protein content is available for the growth and repair of the body and as a source of energy. It is an important source of several vitamins, minerals and other nutrients including potassium, phosphorus, sodium, iron, zinc, manic, riboflavin and thiamine. The world demand for beef has risen sharply during the last few decades due to increase in population improvement in technology and increasing incomes (Dafwang et al., 2001).

Fish is also one of the most important animal protein foods available in the tropics (Eyo, 2002). In many Asian countries, over 50% of the animal protein intake comes from fish. Although, Olatunde (1989) reported that fish constitutes 40% of animal protein intake in Nigeria, the African proportion is 17.5% (Willman et al., 1998). Fish consumption has impact on human being throughout various stages of human life, including pregnancy and childhood. According to Alexandratos (2000), the ever-increasing share of fish in animal protein intake and total protein supply implies that fish has become more and more important in people's diet. Over the past 15 years, fish has enjoyed an explosive increase in demand around the world, a demand that has also boosted its price (Amao et al., 2006). FAO (1991) predicted an increase in demand for fish, pointing that the majority of this increase will result from expected economic development, population growth and changes in food habits.

Different types of fish are consumed in Nigeria, among which include Senegal jack (Caranx senegalllus), Marine catfish (Arius mercatoris), Alexandria's pompano (Alectis alexandrines), Mud catfish (Clarias gariepinus), Bonga fish (Ethmalosa fimbriata) and Baraccudas (Sphyraena afria). Mud cat fish consumption is increasingly becoming popular among Nigerians. It can be consumed in different ways. Due to its perishability, many preservative methods are employed to extend its shelf life in Nigeria. Such methods include freezing, drving, smoking, etc. However, smoking is the most common and practicable method of preservation (Eyo,1992). This is because it is affordable and improves the organoleptic properties of the final product. Smoking is practiced by rural and urban dwellers. In preserving fish by smoking, water activity is lowered to the point where the activity of spoilage microorganisms is inhibited (Okonta et al., 2005; Akinola, 2006).

The range of fish species utilized by fishing and rural communities is also largely unknown, although it is commonly accepted that Tilapia species that are sourced from open access bodies of water make a notable contribution to household consumption. The nutritional value of fish and meat, in terms of both protein and micronutrients, in child development is well documented (Bender, 1992; Mori et al. 1999; Addis, 2004). The availability of and access to fish within a household can therefore be an important determinant of its members' well-being. At the household level, the consumption patterns may depend on the availability of hard currency, the primary activity of the household and the social structures and customs. One of the greatest problems facing households in Nigerian is how to improve the quality and quantity of their diet as well as addressing the problem of nutritional imbalances (Abubakar, 1998). However, there is little or no research on the demand of beef and fish in the study area, the need to compare the demand of beef and fish in the study area. Specifically, the study (i) described the socio-economic characteristics of beef and fish consuming households, (ii) estimated the quantity and Cost of beef and fish consumed by household, (iii) determined the factors influencing household consumption of beef and fish: (iv) identified the constraint faced by households in consuming beef and fish in the study area

### 2. MATERIALS AND METHOD

Ezza South Local Government Area is one of the 13 Local Government Areas in Ebonyi State of Nigeria. It is made up of eleven communities. Abakaliki Local Government Area bound the area on the North, it is bounded on the South by Afikpo North and Onicha Local Government Areas; on the East by Ikwo Local Government Area and on the west by Ezza North Local Government Area.

The study area is geographically located between Latitude 60<sup>0</sup>8'N and 60<sup>0</sup>13'N and Longitude 80<sup>0</sup>E and 80<sup>0</sup>5'E. The area is generally cold during rainy season and harmattan It has a mean temperature of 21°C during cold period and the mean annual rainfall is approximately 1200mm. the study area has a population of about 133,625 people and an area or land mass of 324KM<sup>2</sup> (NPC, 2006).

The major crops grown in the area are yam, cassava, rice, cocoyam, and sweet potatoes. Other cash crops produced in the study area are Oil palm, coconut, orange, pears, mango and bush mango etc. The farming operation is by traditional method using cutlass, hoes, and other crude implements. The farming system pre-dominantly practiced is mixed farming by combining crop and animal production together. People also practice mixed livestock farming like goat, sheep and cattle breeding combine with semi- intensive poultry management. Forests are equally found there that provides all their forest resources in the study area.

### 2.1 Sampling Procedure

Multi-stage random sampling procedure was used to select respondents for this study. In the first stage, four (4) communities were randomly selected from the thirteen communities that make up the Local Government Area. In the second stage, three (3) villages were randomly selected from each of the four communities selected above. Finally, ten (10) households were randomly selected from each the twelve (12) villages to make up one hundred and twenty (120) households for this study.

### 2.2 Data Collection

Data for the study were obtained mainly from primary source using structured questionnaires to elicit information on the Comparative analysis of consumption pattern of beef and fish among the households in Ezza South Local Government Area of Ebonyi State.

### 2.3 Data Analysis

Both descriptive and inferential analytical statistics were used to analyze data in this work. Objectives i, ii and iv were captured using percentage and frequency count. Objective (iii) was realized using logistic.

Logistic regression was fitted for to assess determinants of the households' consumption of beef and fish in the study area, using the function:

Where Y is a dichotomous response variable (1, for households that consume beef and 0, for those that consume of fish).

 $X_1 = age (years)$ 

 $X_2$  = gender (dummy variable: Male=1, Female = 0)  $X_3$  = household size (number)

 $X_4$  = educational status (formal=1 and informal=0)

X5= income (Naira)

 $X_6 = \text{cost of beef (Naira)}$ 

 $X_7 = \text{cost of fish (naira)}$ 

 $\alpha$  = constant;

e=Error term, it is assumed to be normally distributed with zero and constant variance and  $\beta$  is the parameter to be estimated

### 3. RESULTS AND DISCUSSIONs

# **3.1** Socio-economic Characteristics of the Household Heads.

The result in Table1 indicates that 50% of the households' heads were males while 50% were females. This implies that there is gender equality in the study, which may equate the consumption of both beef and fish in the study area.

The result revealed that majority of the respondent fell between the age brackets of 30-45 years. This implies that the household heads studied were youths who should be able to make good choice between beef and fish in the study area. This corresponds with the findings of Yakaka, and Baba (2012) who reported a mean age of 39 years in their study on the determinants of ruminant meat demand in the Maiduguri, Borno State. Age could be an important determinant in the quality and quantity of protein requirement of an individual and households because food consumption pattern generally follows the body consumption (Amao, *et al.*, 2006).

The result presented in Table 1 also revealed that 38% of the respondent had household size of about 5-10 persons, 40% of them has the household size of between 11-16 persons while 22% of them has the household size of above 17 persons. Household size may positively influence the choice between consumption of beef and fish as indicated by Robert and Juan (2012) in their study on micro level analysis of beef and fish consumption in Imo State. The more the number of people feeding from the same pot, the more the consumption.

The study revealed that majority of the respondents had gained one form of education or the other with only 10% without formal education. However, the finding is contrary to that of Adetunji and Rauf (2011) in their study on evaluation of households' protein consumption pattern in Orire Local Government Area of Oyo State, which reported a low level of education. Education could be an important factor in determining the nutritional status of the households.

The result indicated that the mean income of the respondent was N69, 433 per month. The finding disagrees with that of Robert and Juan (2012) that reported a mean monthly income of N35, 543. Income could be a major determinant of demand and budget share allocation among households. The reason for the difference in the mean income of the two studies could be due to differences in education background and time value of money. In the study with mean income of N35, 543, majority (80%) of

the respondents had gained just primary school while the study with mean income of N69, 433, majority (68%) had gained tertiary education. Tertiary education graduates will get more paying jobs than people will with just primary certificates.

The result in the Table 1 on the frequency of consumption of beef and fish shows that majority of

the households 64.2% and 58.3% consume beef and fish 4-6 times and 7- 10 times respectively in a month. This implies that the consumption of fish is higher than that of the beef in the study area. This may be because of the cost and availability of the products to the households.

 Table1: Distribution of the Respondents according to Socio-Economic Characteristic of Households

 Heads in the Study Area

Socio – Economic Characteristics	Frequency	Percentage (%)	Mean
Gender			
Male	60	50	
Female	60	50	
Total	120	100	
Age(years)			
30-45	93	77	
46-60	25	21	43
70 and above	2	2	
Household size			
5-10	45	38	
11-16	49	40	13
17 above	26	22	
Education level			
Non formal Education	12	10	
Primary	23	19.2	
Secondary	50	42	
Tertiary	35	29.2	
Household Heads monthly			
<b>income(naira)</b> 10 000-20 000	75	29.2	
30,000-50,000	30	12.5	30.000
55,000-100,000	15	83	20,000
Frequency of Monthly Beef	10	0.0	
Consumption			
(number of times)	22	10.2	
1-5	23	19.2	~
4-6	//	64.2	5
7-10	20	16.7	
Frequency of Monthly Fish			
1-3	23	19.2	
4-6	27	22.5	8
7-10	70	58.3	
Total	120	100	

Source: Field Survey, (2019)

#### **Consumption Pattern of Beef and Fish**

The consumption pattern of the beef and fish were ascertained and presented in Figure 1.

Figure 1 shows the multiple responses of the household head on their consumption of beef and fish. The result revealed that the household that consume fish (86.67%) is greater than the household

that consume beef (65.83%). This finding implies that majority of the household in the area prefer fish to beef as source of animal protein in their meal. Yusuf (2012) in his work reported that the consumption of fish was greater than beef in his study area.



**Figure 1:** Household Consumption Pattern of Beef and Fish (computed from the result of the Field Survey, 2019 Multiple Responses)

# **3.3** Quantity of Beef and Fish Consumed by Household per Month

The quantity of beef and fish consumed by the household per month were estimated and presented on Table 2. The result shows that an average household in the study area consumed 6kg of meat at the cost of N9, 000.00 while the same average households consume 9.5kg of fish at the cost of N11,

400.00 per month. The result equally shows that a household spends N20, 400.00 on beef and fish per month. The implication is that the major determinant of the quantity and the choice between beef and fish is the cost of the products. This follows the law of demand that the higher the price of a commodity, the lower the quantity demanded of it and vice versa.

 Table 2: Average Quantity and Cost of Beef and Fish Consumed by the Households per Month in the Study Area.

~		
Total		20,400
Fish	9.5	11,400
Beef	6	9,000
Items	Quantity consumed (kg)	Cost (naira)

Source: Field Survey, 2019.

# **3.4 Determinants of the Consumption of Beef and** Fish in the Study Area.

The determinants of the consumption of beef and fish were determined and presented in Table 3. The Logistic regression was used to determine the respondents' determinants to consume beef and fish in the study area. The model parameters as shown by the Pseudo R<sup>2</sup> (0.8215) and the significance of the model chi<sup>2</sup> (<0.01) affirms the relative strength of the model as a good fit. As shown in the Table 4 possession of education is positively related to the consumption of beef and is significant at 1 %, which indicates that the more educated the farmers, the more they know the need to consume either beef or fish. Income of the respondents is positively related to consumption of beef and significant at 1%, which

indicates that the higher the income, the more willing they will be to consume beef instead of fish in the study area. This finding is in line with Yusuf, (2012) who reported that income of a farmer is directly related to the demand of beef in his study.

Conversely, cost of beef and fish show a negative relationship with willingness to consume beef and fish at 1% level of probability. This implies that the higher the cost of beef, the lower the demand for beef and vice versa in the study area. This is in line to the law of demand. Likewise, the coefficient of the household heads' age is negatively related to the conception of beef and statistically significant at 1% level. This implies that as the household head gets older the consumption of beef reduces in the study area. This is also concurring to the findings of Dalhatu and Ala, (2010) who reported that the cost of beef and age of the respondents were negatively related to the consumption of beef in Sokoto State. This may be because the elders do not consume much of red meat for their health wise.

Table 3: Logistic Regression Analysis Result on the determinants of consumption of beef and fish in the study Area

Variables	Coefficients	z- value
Age of the household head	-0.1436227	-2.30**
Gender of the household head	1.5077789	1.19
Education level of the household head	2.643969	3.31***
Income of the household heads	1.365013	1.97**
Cost of beef	-1.180291	-2.67***
Cost of fish	-11.6917	-3.35***
Household size of the respondents	-1.386578	-0.98

#### Source: Field Survey, 2019.

\* = 10% significance, \*\* = 5% significance and \*\*\* = 1% significance. Prob>chi=0.0052, Pseudo  $R^2 = 0.8215$ 

### **3.5** Constraints to Consumption of Beef and Fish in the Study Area.

Constraints to consumption of beef and fish in the study area were identified and presented in Table 5. The multiple responses of the household heads on the constraints to consumption of beef and fish were identified. The result shows that majority (80.83%) of the households were limited to the consumption of beef and fish by their low sources of income, followed by their poor access to beef (72.5%) in the

area. Others include high number of dependents (71.67%), high cost of beef (65%), high cost of fish (46.67%), low level of education (38.33%) and religion and cultural ties (35%). This implies that consumption of beef and fish in the area were faced with many challenges. This finding is in connection to the findings of Okonta *et al.*, (2005) who attributed the low consumption of beef in the study area to low income, age and the high number of dependents on the household diets.

 Table 4. Result of the Constraints to Beef and Fish Consumption in the Study Area.

Constraints	Frequency	Percentage	
Old age of the household head	67	55.83	
Low source of income	97	80.83	
High cost of beef	78	65.00	
High cost of fish	56	46.67	
Poor access to beef	87	72.50	
High number of dependents	86	71.67	
Low level of education of the household head	46	38.33	
Religion and cultural ties	42	35.00	
S E-11 S 2010			

Source: Field Survey, 2019.

### CONCLUSION AND RECOMMENDATIONS

Household in the study area consume more fish than beef which is due to high cost of the beef than fish in the study area. Also, it concluded that education level, income, cost of beef and age of the household heads were the major determinants of beef and fish consumption pattern in the study area.

Finally, the major constraints to households' beef and fish consumption pattern in the study area include: their low sources of income, poor access to beef in the area, high number of dependents, high cost of beef, high cost of fish, low level of education and religion and cultural ties.

Based on the findings, the following recommendations were made;

i. The household heads in the study area should diversify in their sources of

Multiple Responses.

income in order to meet up with the nutritional requirements of the family.

- ii. Membership of cooperative is encouraged to enable the households have a better access to beef in the area.
- iii. The government should as well assist by the provision of abattoir within the rural areas to increase access to beef in the area.

#### REFERENCES

- Abiodun, W. (2001). *Demand for beef: A case study* of *Ibadan city*. An Unpublished B. Sc. Project, Department of Agricultural Economics, University of Ibadan. 58 Pp.
- Abubakar, M.M. (1998). Utilization of Unconventional Feedstuff for Sustainable Livestock Production. ATBU, Bauchi.

Inaugural Lecture Series No 9. Delivered 30th March.

- Addis, P.B. (2004). Fish oil and your health. http://www.seagrant.umn. edu/fish/oil.html (accessed 23 May 2005).
- Adetunji, M. O. and Rauf, M. O. (2011). Analysis of Household Demand for Meat in Southwest Nigeria, Nigeria Journal of basic and Applied Science. 12(1):1-8
- Adewuyi, S.A., Mafimisebi, T.E., and Awe, P. O. (2007). Food Expenditure Patterns of Urban Households in Ibadan Southwest
- Ajana, A. M. (1999). Overview of Highlight and Problems of Fisheries Extension in Nigeria. Paper Presented in Ibadan at NIOMER during a Workshop on Improvement of Fisheries Extension in Nigeria 12th- 16th March 1999.
- Akinola, O. A., Akinyemi, A. O. and Bolaji, B. O. (2006). Evaluation of traditional and solar drying systems towards enhancing fish storage and preservation in Nigeria. (Abeokuta Local Government as a case study). J. Fish. Int., 2 (1), 99 103.
- Alexandratos, N. (2000). World Agriculture towards 2010: An FAO Study. Rome and Chichester, U.K. Food and Agriculture Organization of the United Nations. John Wiley. Pp 34-41.
- Amao, J. O., Oluwatayo, I. B. and Osuntope, F. K. (2006). Economics of Fish Demands in Lagos State, Nigeria. Journal of Human Ecology. 19(1): 25-30.
- Bender A (1992) Meat and Meat Products in Human Nutrition in Developing Countries. Food and Nutrition Paper 53. Rome: Food and Agriculture Organization.
- Britton, A. (2003): Annual Protein Issues, Speed Way Publishers
- Dafwang, I. I.;Ikam, E. I.;Chikwendu, D. O. and Iwuanyanwu, I. E. (2001).Adoption of Nonconventional feedstuffs by poultry and pig farmers. A proceedings of Nigeria Society of Animal Production, 2(4):250-253
- Elliot, A. K. and Ezenwa, P. C. (2008). Animal protein requirement for healthy living in Nigeria.International Journal of Food Science Nutrition.1(6):1-5
- Esobhawan, A.O., Ojo, S.O. and Ikheloa, E. E. (2008). Profitability, Input Elasticity and Return to Scale of Agricultural Production in Lagos State.Proceedings of 4th Annual Conference Agriculture inNigerian Wetlands. FUT Akure, 21st May, 219-222.
- Eyo, A. A.(1992). Utilization of freshwater fish species in Nigeria. In: Eyo, A.A. and A.M. Balogun (eds.), Proceeding of the 10th

Annual Conference of the Fisheries Society of Nigeria, pp: 32–38

- Eyo, A. A., (2002).Fish processing in the tropics. Published by National Institute for Fresh Water Fisheries Research (NIFER).pp1-4.
- FAO (1990). Aquaculture Production, 1986 1989.FAO Fisheries Circular No. 815, Revision 3 (FIDI / C 815 Rev. 3). Rome: FAO.
- FAO, (1991). Fish for Food and Development. FAO Annual Publication, Rome. 58 pp.
- Frank, C.J. and Harold, W.B. (2001). Nutrition Exercise Physiology for health care Professionals Edwards Brothers Printers/Publishers U S A. Pp9-22.
- Mori TA, Bao DQ, Burke V, Puddey IB, Watts GF & Beilin LJ (1999) Dietary fish as a major component of a weight-loss diet: effect on serum lipids, glucose, and insulin metabolism in overweight hypertensive subjects. Am J Clin Nutr 70, 817–825.
- National Population Commission, (NPC) (2006). The population statistics of Ezza South Local Government Area of Ebonyi State, Nigeria; census 2006.
- Okonta, A. A. and Ekelemu, J. K. (2005). A preliminary study of micro-organisms associated with fish spoilage in Asaba, Southern Nigeria. Proceedings of the 20th Annual Conference of the Fisheries Society of Nigeria
- Olatunde, A. A. (1989). Approaches to the Study of Fisheries Biology in Nigerian Inland Waters.Ayeni and Olatunde (Eds.), Proceedings of National Conference. Two Decades of Research on Lake Kainji. Pp: 1538-1541.
- Oloyede H.O.B. (2005). All for the love of nutrients, the seventy-eight inaugural lecture, Library and publication Committee, University of Ilorin.
- Robert, U. O. and Juan, N. (2012). Micro Level Analysis of Beef and Fish Consumption in Imo State, Nigeria, Journal of Agricultural Research and Review. 1(1): 1-8
- Willman, R., M. Halwart and U. Barg, (1998). Integrating Fisheries and Agriculture to Enhance Fish Production and Food Security. FAO Aquaculture Newsletter No. 20, pp: 3-8.
- Yakaka, B. M. and Baba, B. A. (2012). Determinants of Ruminant Meat Demand in Maiduguri,
- Borno State, Nigeria, Greener Journal of Agriculture Sciences. 2(8): 381-385
- Yusuf, O. I. S. (2012). A System Analysis of the Demand for Animal Protein in Rural and urban
- Nigeria. A case Study of Ibadan Metropolis, JORID 10(2). Retrieved from www.ajol.info/journals/jorind.