Original Research Article

Does Value Addition Pay? Evidence from Roasted Meat Processors in Mubi North Local Government Area of Adamawa State

Abstract

Aim: To determine the profitability of adding value to roasted meat by the processors in Mubi-north Local Government Area of Adamawa State.

Methodology: Cross sectional data was taken from 70 roasted meat processors through semi-structured questionnaire. The data was analysed using descriptive statistics and value addition model.

Results: Result of the study revealed that majority (88.57%) of the roasted meat processors were male who were within the age range of 26 and 55, with most (84.28%) having formal education. Also, it was found that chicken (₦720) processing had the highest margin of value addition among five different type of meat captured. More also, processors perceived value addition on roasted meat (*suya*) to be profitable. The processors reported poor storage facilities and inadequacy of finance for the purchase of input as the most worrisome.

Conclusion: It was therefore concluded from the result that, amidst the stated constraints, value addition activity was said to be profitable. However, encouraging the teeming youth to engage in the business of value addition to meat products, provision of cold rooms together with constant power supply and policies that ensure easy access to loans and credit facilities were measures recommended for encouraging processors and improving profitability on *suya* processing.

Key Words: Value addition, roasted meat, value addition model

Introduction

World Poverty Clock (2019) named Nigeria as "the poverty capital of the world" and noted that poverty in Nigeria has been on the rise with about six persons per minute. Unemployment birthed poverty (Nwagu, 2014). It has been seen as an early indicator of poverty in Nigeria (Edu, 2018). Iheoma & Urama (2019) asserted that fragility of the economy is one of the causes of poverty in Nigeria and therefore proffered economy diversification and improving value addition as a measure for reducing poverty. The concept of value addition in agriculture in the developing economies is widely becoming an acceptable strategy adopted by individuals, government and non-governmental organisations towards improving the income generation of rural communities (Ja'afar-Furo *et al.,* 2011). There has been shift of agencies to devise and implement policies that will move

the teeming farmers from the subsistence to commercial production and improve value addition process (TAHRCH, 2005; Tijjani, 2009 and Johnstonebk, 2010). How to achieve this has been issues of concern at various levels of government. It is important to note that, livestock contributes about 37.1% of the GDP of Adamawa State (FAO, 2019). Notwithstanding the significant contribution of livestock to GDP, meat and its products also formed the major parts of human diets and source of nutrient (Vasilev et al. 2019).

Value addition is the further processing of agricultural commodities by increasing convenience to consumer through decreasing preparation time, minimizing preparation steps, allowing use of specific parts and increasing the economic value (Kondaiah, 2004). Also, any process which enhances the value of agricultural product was considered to be agricultural value added (Anwana et al., 2019). The crux of the issues on value addition to roasted meat is to provide convenience, increase economic profitability, improving consumers appeal and decreasing preparation time (Kondaiah, 2004). Value addition according to Kehinde and Aboaba (2016), was forecasted to be solution to the problem of unemployment, improved income and investment opportunities. Selling of roasted meat (*Suya)* is an increasing trend motivated by rising consumers' demand for ready-to-eat roasted meat. Adding value to meat is expected to start from slaughtering which must be guided by a professional to improving on the technology and equipment used in roasting meat. This has not been the case and the equipment used in roasting meat in the developing world is archaic. Also, most of the activities of these processors have been carried out in majorly unorganised way without supervision which made this area (*suya* processing) a neglected activity which has received little or no attention in the past years.

Suya processing is a business undertaken by a processor commonly known in Hausa as the 'Mai Suya'. *Suya* processing is a common business that is found on almost all the streets in Nigeria in which all the *mai suya* (Suya Processors) are assumed to be a northerner. It is sold in club houses, at picnic, parties, restaurants and within institutions (Uzeh et al. 2006). It has also got prominence in the circle of the elite where its delicacy is served during party, occasions and ceremonies (Amala and Onwuli, 2017). *Suya* processing venture is a small-scale business which when the potential is fully harnessed, it can generate employment and perhaps revenue to the government. Thereby reducing idleness amongst the youths which could become nuisance when not gainfully employed and benefiting the government through revenue generation. Small scale industry has been known to be an engine of growth. This is a

business which when developed and given a suggestive name, it could attract the youth and contributes to unemployment reduction through the chain of processing involved. That is; slaughter, transportation, slicing, washing, spicing, smoking/oven drying, packaging and storage of the unsold *suya*. Spices such as seasoned pepper called 'yaji', onions, lettuce and as many vegetables that the processor could add based on his/her level of innovativeness are commonly used.

According to Aworh (2008), *Suya* is a group name for *Tsire*, *Balangu*, and *Kilishi*. *Suya* originated among the Hausa-Fulani's in the northern Nigeria and Niger where cattle rearing is a major source of livelihood and an important occupation for the people but has spread to other parts of the world (Edema et al. 2008). It is a vended street processed meat product (Ologhobo et al. 2010) which is majorly a fleshy meat of beef, mutton, chevon, pork and chicken. *Suya* processing involves all the techniques/steps involve from slaughter through slicing, staking to roasting and packaging. Processing cycle is incomplete until the products reach the table of the final consumer. Suya is popular as its consumption has extended to many parts of the globe. It is known in Tanzania, Kenya and South Sudan as 'Nyama Choma'. In Uganda, it is called 'Muchomo' and Kebab in Ghana.

Though, various methods have been in use in *suya* processing ranging from the galvanised wire drum in the developing countries to modernised kiln in some countries like US and Australia where sophisticated equipment like gas cooker and ovens are used in roasting meat (Monicah, 2008). In African countries and Nigeria in particular, hot charcoal and galvanised wire are being employed in roasting meat by the processors. The latter is devoid of aesthetics which lowers consumer appeal and subsequently lessen the profit margin of the processors. A typical example of the modern equipment used in roasting meat is the Dutch oven which gives a chalky flavour, it is portable, saves time and labour as there is no need for someone to be slicing and another roasting (FAO, 2010). In Nigeria, the traditional equipment is still commonly in use which consequently lowers consumer appeal and profit margin. It has been identified in Nigeria that most of agricultural products are sold directly by farmers at a cheaper price because they have little access to information or no knowledge at adding value to their produce/products (Kehinde and Aboaba, 2016). This could be attributed to several factors which were unveiled in this paper.

Full knowledge about roasted meat processing, its profitability or otherwise, the sources of meat used, setbacks and prospect of value addition activities among roasted meat processors, which could hopefully benefit the policy makers, researchers that will like to explore the area and the meat processors in making adjustment that will implore their business are essential. In Nigeria and specifically Adamawa State, the evaluation of value addition among roasted meat processors is very important as it hosts one of the largest livestock in West Africa. Examining value addition activities in Mubi-north LGA has not been well defined and very little effort has been committed in this direction. It is for this reason that this study became necessary in order to provide sundry information on how value addition activities on roasted meat can be improved for the benefit of all. Therefore, this study seeks to unfold the profitability of adding value to roasted meat processing and the constraints precluding the processors from adding value to their products in Mubi-North Local Government Area of Adamawa State.

Review of Literatures on Valued Addition

Anwana (2019), uses time series data to examine the relationship between value added agriculture and level of insecurity and poor governance in Nigeria by using auto-regressive distributed lag (ARDL). The study found out that value added agriculture is both positively and significantly impacted by level of technology, governance and security both in the short and long run. Authors concluded that, governance institution which ensure policy formulation and implementation is ineffective at enhancing value added agriculture. Likewise, Asom and Ijirshar (2016), used Johansen co-integration test and vector error correction model to determine the impact of agriculture value added on economic growth of Nigeria. The study found out that agricultural value added had positive and significant influence on economic growth of Nigeria both in the short and long run. It was concluded that agricultural activities had a significant influence on the growth of Nigerian economy.

Ja'afar-Furo et al. (2011), examined value addition activities across different enterprises among small scale rural enterprise in the North-eastern region of Nigeria. Authors used value addition model to determine the profitability of adding value to agricultural products among scale rural enterprises. It was therefore concluded that the prospect of adding value to agricultural activities by small scale enterprises was feasible. Ater et al. (2018), also used value addition model to determine the most profitable value chain of maize and multinomial

logistic regression to evaluate the factors determining the choice of value-added maize enterprise. It was found out that value addition on maize was said to be profitable and encourages the entrepreneurs to venture into it. Authors concluded that constraints which were the major factors to adding value on maize and could be corrected when infrastructures are put in place. Value addition model as used by Ja'afar-Furo et al. (2011), was adopted for this study due to its suitability, accuracy in policy decision and ease of analysis.

Cost benefit analysis was employed by Onwusiribe (2020) to determine the profitability of adding value to ginger in Abia State, Nigeria and multiple linear regression model was employed to identify various factors affecting value addition to ginger. The study found out that value addition to ginger was profitable and socio-economic factors such as age, gender, farm size, income, training, collateral amongst others were the major influence of value addition to ginger. It was concluded that ginger farm enterprise was profitable. More also, Kehinde and Aboaba (20160, used multiple linear regression to determine the factors influencing value addition on cassava processing to Garri. Authors found out that labour cost, quantity of raw cassava processed and cost of maintaining machineries were the major factors affecting value addition to cassava. The study concluded that value addition on cassava was profitable.

Amala et al. (2017), used 2-state Heckman model to evaluate the determinant of value addition to sweet potatoes among small holder farming households in Kwara State, Nigeria. It was found out that farmers who had attended one training or the other either through a seminar or workshops understands the importance of adding value to agricultural products as compared to their counterparts who have not. It was concluded that different factors (extension agent visit, membership of an organisation and access to credit) influences the choice of adding value to sweet potatoes in Kwarat State. Adeyemo and Okoruwa, (2018) used endogenous switching regression (ESR) to assess the impact of value addition on agricultural productivity in Nigeria and data envelopment analysis (DAE) to observe changes in productivity over three years period. The study found out that both the cost and revenue for adding value to cassava increases but farmers whose commodity had higher value addition had better efficiency. It was concluded that since formal registration of the farmer is said to be significant, therefore, making registration available to all the farmers could increase the chance of gaining opportunities to investment.

Material and Methods

The Study Area

Mubi, Adamawa State, North Eastern Nigeria lies on the west of the bank of Yedseram River, a stream that flow into Lake Chad. It is situated on the western flanks of the Mandara Mountains. Mubi is geographically located on latitude 10^0 16' North and Longitude 13^0 16' East. It has an elevation of 1906ft above the sea level. The area falls under Sudan savannah belt of Nigeria's vegetation zone. According to National population Census, NPC (2006), Mubi has a population of about 225,705. It shares boundary on the North with Borno State, west with Hong Local Government, in the South with Maiha LGA and in the east with Republic of Cameroon.

The vegetation is influenced by relief pattern and climate. The soil is formed under the ferruginous tropical soil of Nigeria. It is characterised by underline rock, sloppy in nature and ranges from yellow, red to brown in colour, coarse in nature with almost undefined profile. Mubi is characterised by wet and dry tropical climate. The temperature is normally warm to hot throughout the season. Minimum temperature can be as low as 12^0c and as high as 37^0c (Adebayo, 2004). Rainfall normally commences in the month of May and sometimes in June, its mean annual rainfall ranges from 900mm to 1050mm. The ethnic groups are mainly *Fali*, *Gude*, *Marghi* and *Fulani*. The inhabitants are predominantly farmers and traders. *Suya* processing is one of the predominant non-farm activities of the people in this area. According to Adamu (2018), Mubi international cattle market sold about 5000-7000 heads of cattle per week.

Sampling Procedure and Data Collection

Data for this research was obtained through cross-sectional survey. Primary data was collected through the use of a well-structured questionnaire served to the respondents as a research instrument.

List containing the names and the address of Suya processors in the study area was obtained from the chairman of the Suya processors in the study area according to wards. Purposive and random sampling were used to select respondents for the study. Seven (7) wards where *suya* processors were dominant were purposely selected to include; Kolere, Garden

City (Lokwa), Sabon layi, Yelwa, Vimtim, Muchala and Digil. About 10% of the suya processors were randomly selected from each ward, making a total sample size of 70.

Data Analytical Technique

The statistical tools that were employed for the analysis of data include: descriptive statistics, value addition model and Likert Scale. Descriptive statistics were used to analyse socio-economic characteristics, source of meat used by the processors and constraints of roasted meat processors in the study area. In order to determine the profitability of value addition among roasted meat processors, the difference in the value of sold products and the input used in producing the products must be captured (Cowan, 2011). A conceptualised value addition model by Ja'afar-Furo *et al.,* (2011) employing a comparative price analysis was employed to achieve result. Thus;

$$E = (C + D) - (A + B)$$

Where,

E= The added value on the meat

C= The value of by-product(s)

D= the value of meat after processing

A= the value of meat before processing

B= the incurred cost on the processing of meat

Likert Scale

This was named after Rensis Likert who discovered it in 1932 and it is commonly used in measuring perception because it is easy to construct, administer and understand (Jajoo and Malu, 2014). It allows the respondents to express their opinion on the extent of profitability. The statement had "5" points, profitable and unprofitable on the scale. The grading was of the order: Highly Profitable=5; Profitable =4; Don't Know=3; Unprofitable =2 and Highly unprofitable=1. This gave the perception of the respondents on their perception on value addition to roasted meat.

Result and Discussion

Socio-economic Characteristics

Socio-economic characteristics of roasted meat processors play a vital role in their decision and activities. Table 1 below showed that, the average age of processors was 40.5years. This

implied that this aspect of value addition was an adult venture in the study area. The age group of 36-45 years accounted for the larger proportion (35.71%). This age group was considered by studies Ja'afar-Furo,(2006); Daniel, et al. (2009) & Ater (2018) as the major stakeholders in agricultural production and value addition on the agricultural products who are in their active and productive age. Male formed the bulk (88.57%) and this is consistent with Adeyonu et al. (2019) that majority of those who engages in value addition activities were male. More also, studies by Eboiyehi, (2006) & Joda, (2010) confirmed that female were placed at the disadvantaged sides in terms of financial status although they do more of food production, their position in the pursuit for many economic empowerment ventures seem to be lagging. The finding also showed that majority (55.71%) of the processors in the study area were married which is consistent with (Ater, 2017). This indicated that meat processing and value addition on meat is an adult venture. It implies that most of the processors carried out this process in order to earn means of livelihood and cater for their families. The bulk of the respondents had one form of education or the other ranging from primary to secondary education. This agrees with Ogunniyi and Omotesho, (2018) that majority of the respondents were literate. This shows that the sector was dominated by enlightened persons in the communities. This suggests that there is high possibility of the roasted meat processors to be able to comprehend, accept and adopt new ways of adding value or innovation useful in meat processing because they were literate. This according will to a large extent have a greater influence on their levels of production. Also, the bulk (55.71%) of the respondents or the processors were operating on full time basis.

Table 1: Distribution of Respondents base on Socio-economic Characteristics

Characteristics	Frequencies	Percentages
Age		
15-25	8	11.43
26-35	18	25.71
36-45	25	35.71
46 and above	19	27.15
Gender		
Male	62	88.57
Female	08	11.43
Marital Status		
Married	39	55.71
Single	14	20.00
Widow	10	14.29
Divorced	07	10.00
Educational Attainment		
Primary	25	35.71
Secondary	13	18.57
Tertiary	0	-
Islamic	21	30
No formal Education	11	15.72
Primary Occupation		
Suya Processing	46	65.71

Tailoring	03	04.29
Farming	15	21.43
Trading	05	07.14
Artisan	01	01.43

Source: Field Survey (2018)

Sources and type of meat used by the Processors

The result in table 2 below showed that, majority (77.14%) of the meat processors obtained their meat from the wholesalers and 22.86% from the retailers. This is in agreement with Jabo *et al.*, (2010), who on profitability assessment of meat (suya) marketing in Sokoto metropolis reported that majority (65.4%) of *suya* processors obtained their meat directly from the wholesalers and retailers of meat. About 64.29% of the meat used in making *suya* was beef while 12.86%, 11.43%, 5.71% accounted for pork, chicken and mutton respectively, chevon was said to record 5.71%.

Table 2: Distribution of respondents based on meat source

Item	Frequency	Percentage (%)
Source of Meat		
Wholesalers	54	77.14
Retailers	16	22.86
Type of Meat Used in making Suya		
Beef		
Mutton	45	64.29
Chicken	04	05.71
Chevon	08	11.43
Pork	04	05.71
	09	12.86

Source: Field Survey (2018)

Profitability of Value Addition to Roasted Meat

The result in table 5 below revealed that there were five (5) different types of meat that were captured. They include beef, mutton, chicken, chevon and pork. Chicken had ₦700 as value added per unit product as against beef, mutton, chevon and pork which had ₦490, ₦540, ₦450 and ₦380, respectively. This implied that value addition to all the meats under consideration was profitable with chicken being the highest. However, in spite of the fact that pork which is cheaper supposed to attract more patronage, the discrimination experienced on the meat due to religious reasons lowered it. The processing of chicken from slaughter to roasting was conducted manually. This agreed with Ja'afar-Furo *et al.,* (2011), who stated that the slaughtered chickens were put into a bowl of hot water for easy depluming. The birds were then opened from the ventral aspects with a single incision from the dorsal point of the clavicle to the cloacae. The deplumed chicken was later transferred to a locally made roasting kiln. Spices were applied on the birds and allowed to roast. The by-products which included

the visceral, heads and the legs were sold to buyer who use them for soup. All other products were prepared using traditional roasting kiln.

Table 3: The Distribution of the Respondents based on the Enterprise

Type of Meat	A Value of Product Before Processing ₦	B Cost of Processing ₦	C Value of by-products ₦	D Value of Product after processing ₦	Value Added per Unit ₦ (C+D)-(A+B)
Meat	750/kg	100	40	1300	490
Mutton	800/kg	100	40	1400	540
Chicken	700/kg	150	70	1500	720
Chevon	800/kg	100	40	1400	540
Pork	500/kg	100	30	950	380

Field Survey (2018)

Perceptions of profitability in Value Addition by the Processors

The table 4 below showed how processors perceived the profitability in adding value to their product. Majority i.e. 92.86% of the respondents perceived value addition on roasted meat to be highly profitable and moderately profitable. This confirmed the result of Adeyemo and Okoruwa (2018) & Onwusiribe et al. (2020), that adding value to agricultural product gives almost double of the profit than leaving the products without any packaging on or further processes that make it look appealing. It was only 7.14% that could not say whether value addition is profitable or not. None of the processors conceded that value addition on meat processing was unprofitable or highly unprofitable.

Table 4: Responses of the Processors on the Profitability of Value Addition to Roasted Meat

Perception of the processors on the profitability in value addition to roasted meat	HP	MP	DNK	UP	HU	Total
No of Response	50	15	5	-	-	70
Percentage of Response	71.43	21.43	7.14	-	-	100

Source: Field Survey (2018)
Note: Hp-Highly Profitable, MP-Moderately Profitable, DNK-Do Not Know, UP-Unprofitable, Highly Unprofitable

Constraints to Value Addition among Roasted Meat Processors in the Area

The processors have been operating amidst several problems which were mainly poor storage facilities (100%), where the facilities were available, poor power supply was usually a problem. As a result of these factors, the roasted meat processors were compelled to dry it by spreading it on the floor which is unhygienic and thus reduced the value. Other problems encountered were high cost of meat (28.57%) and lack of modern equipment in roasting (47.14%), as consequence, some had stopped functioning. Finally, there was a general complaint of inadequacy of finance for purchase of input/raw materials for operation (100%)

among the roasted meat processors as shown in table 6. This is consistent with the earlier studies of Ja'afar-furo et al., (2011) and Onwusiribe et al. (2020).

Table 5: Constraints encountered by processors in the study area (n: 70)

Constraints	Frequency	Percentage (%)
Poor storage facilities	70	100
High cost of meat	20	28.57
Lack of modern equipment in roasting	33	47.14
Inadequacy of finance for purchase of inputs	70	100

Source: Field survey (2018)
Note: Multiple responses were observed

Conclusion and Recommendation

The study revealed that value addition activities on roasted meat by the processors were profitable. The levels of profitability differ among the processors based on the type of meat the processor is using for the *suya*. Poor storage facilities together with inadequacy of finance for the purchase of inputs were the major constraints experienced, whereas high cost of meat was least severe problems identified.

Based on the findings of this study, it could be concluded that value addition among roasted meat processors in the area evaluated was profitable. This was more valid among the roasted chicken processors. Factors which influence these were; level of education and sources of meat used by the processors. The respondents operated amidst constraints and prominent of them were inadequacy of finance for procurement of input and lack of storage facilities.

For more profitable value addition among processors in the study area, the following recommendations were proffered:

- efforts should be geared by government towards ensuring that loans and credit facilities are advanced to processors at minimum interest rate. Proper monitoring to check diversion of loans by processors should be intensified. Processors on their part should form cooperative groups in order to enhance easy access to soft loans and also procure modern equipment;

- Government together and Nongovernmental organisations (NGOs) should partner with the processors to provide cold rooms and constant power supply for the storage of left-over meat and

- Programmes targeted at involving youth participation in the business of value addition to meat products should be encouraged and embraced by government at various levels.

- processors through the cooperatives should share ideas and teach one another on how to add value to their products so as to increase their profit margin.

Limitation of the study

Finance and time which has been the major issue on this part of the world limited the scope of the research to a local government within the state. Thus, further research on value additions on roasted meat and other agricultural products in general across the six geopolitical zones of Nigeria using a high frequency data is hereby recommended.

Reference

Adamu Y. (2018). Socio-economic Impact of the International Cattle Market in Mubi South Local Government, Adamawa State, Nigeria. International Journal of Research-Granthaalayah, 6(1), 179-184. DOI: 10.5281/zenodo.1325815.

Adebayo A. A. (2004). Mubi Region a Geographical Synthesis, Pracklet Publisher, Yola, Adamawa State, Nigeria. Pp. 32-38.

Adeyemo T. A. and Okoruwa V. O. (2018). Value Addition and Productivity Differentials in the Nigerian Cassava System. Sustainability (Switzerland), 10(12). https://doi.org/10.3390/su10124770

Amala S. E. & Onwuli D. O. (2017). Bacterial Burden of Suya and Suya Spice Ingredients Sold in Some Parts of Port Harcourt, Nigeria. International Journal of Current Research Vol. 9, Issue, 08, pp.55665-55668.

Annes, A. and W. Wright, 2016. Value-added agriculture: A context for the empowerment of french women farmers? Review of Agricultural, Food and Environmental Studies, 97(3): 185-201.Available at: https://doi.org/10.1007/s41130-016-0034-1.

Anwana E. O., Udo A. B. & Affia A. E. (2019). Agricultural value added, governance and insecurity in Nigeria: An Emprical Analysis. Asian Business Research Journal, 4(1-9). DOI: 10.20448/journal.518.2019.41.1.9.

Asom, S. T. and Ijirshar, V. U. (2016). Impact of Agriculture Value Added on the Growth of Nigerian Economy. Nigerian Journal of Management Sciences: A Multi-disciplinary Edition. 5(1): 238-245.

Ater, P. I.; Aye, G.C. & Daniel A. (2018). Analysis of Maize Value Addition among Entrepreneurs in Taraba State, Nigeria. International Journal of Environment, Agriculture and Biotechnology (IJEAB), 3(6). http://dx.doi.org/10.22161/ijeab/3.6.8

Aworh O. C. (2008). The role of traditional food processing technologies in National development: The West African experience. *John R. Lupien*, 1.

Cowan T (2002). Value-Added Agricultural Enterprises in Rural Development Strategies. The US Congressional Research Service. Order Code RL31598, p. 42.

Daniel J. D., Ja'far-Furo M. R., Tashikalma A. K., Ezekiel C. S. (2009). Economics of Cotton Production in Southern Parts of Adamawa State, Nigeria. Inter. J. Crop Sci., 1(1): 73-80.

Eboiyehi FA (2006). Work, Women Employment and Feminization of Poverty in Nigeria. Gender Behav., 4(1): 642-658.

Edema M.O. Osho A.T. and Adila C, I. (2008). Evaluation of microbial hazard associated with the processing of suya (a grilled meat product). Scientific Research and Easy, 3(12), 621-626.

Edu N. (2018). The Antidote to Poverty in Nigeria

FAO, (1991). Guidelines for slaughtering, meat cutting and further processing. ISBN 92-5-102921-0

FAO (2019). Climate-Smart Agriculture in Adamawa state of Nigeria. Pp. 1-21.

Iheonu, C., & Urama, N. E. (2019). Addressing Poverty Challenges in Nigeria. AfriHeritage Policy Brief. africaportal.org.

Ja'afar-Furo MR (2006). Resource-use Efficiency and Constraints to Animal Traction Technology in Adamawa State, Nigeria. Ann. Borno. 23(24): 127-144

Ja'afar-Furo, M. R., Bello, K., & Sulaiman, A. (2011). Assessment of the prospects of value addition among small-scale rural enterprises in Nigeria: Evidence from North-eastern Adamawa State. *Journal of development and agricultural economics*, *3*(3), 144-149.

Jabo M.S.M., Buhari U.A. and Bashir S.S. (2010). Profitability Assessment of Beef Marketing in Sokoto Metropolis. Preceding of 24th Annual National Conference of Farm Management Association of Nigeria, 11-14th October, 2010.

Jajoo D., & Malu, S. K. (2014). Research Methodology. A Study of Buying Decision Process in Malls, 49-64.
http://shodhganga.inflibnet.ac.in/bitstream/10603/97412/5/chapter3.pdf.

Joda A (2010). Women as Agents for Development as Agricultural Entrepreneurs in Adamawa State, Nigeria. A Paper Presented at the 24th Annual National Conference of the Farm Management Association of Nigeria (FAMAN). Held at Adamawa State University, Mubi. 11th-14th, October

Johnstonebk B (2005). Increasing Small-Scale Rural Maize Producers' Revenue by Promoting Maize Value Addition and Collective

Kehinde, A. L., & Aboaba, K. O. (2016). *Analysis of value addition in the processing of cassava tubers to "garri" among cottage level processors in southwestern Nigeria* (No. 310-2016-5384).

Kondaiah, N. (2004). Value added meat products and development of processed meat sector. Africa's Ultimate Capital, Value Addition to Boost Farmers Revenue. Unpublished.

National Population Commission (NPC) (2006). Facts and figures of Adamawa State Population. Ministry of Information, Yola.

Nwagwu, E. J. (2014). Unemployment and Poverty in Nigeria: A Link to National Insecurity. Global Journal of Politics and Law Research, Vol. 2, No. 1, pp. 19–35.

Ogunniyi, L.T and Omoteso, O. A. (2011). Economic Analysis of Swine Production in Nigeria. A case study of Ibadan zone Oyo State. 35(2): 137-142 Ologhobo, A. D., Omojola, A. B., Ofongo, S. T., Moiforay, S., & Jibir, M. (2010). Safety of street vended meat products-chicken and beef suya. *African Journal of biotechnology*, *9*(26), 4091-4095.

Onwusiribe N. C. (2020) Profitability Analysis of Ginger Value Addition in Abia State, Nigeria. Journa of Economic impact, 2(2), 50.54.

Technical Assistant to the House of Representatives Committee on Agriculture, TAHRCA (2005). Promoting Value Adding in Nigerian Agriculture: The Cassava Industry Example. Policy Brief No. 3. 10p.

Tijjani B (2009). Nigeria: Fadama Presentation − International CDD Conference, Beijing, China. October, 17th-19th.

Uzeh, R. E., Ohenhen, R. E., & Adeniji, O. O. (2006). Bacterial contamination of Tsire-Suya, a Nigerian meat product. *Pakistan Journal of Nutrition*, *5*(5), 458-460.

Vasilev, D., Stajkovic, S., Karabasil, N., Dimitrijevic, M., & Teodorovic, V. (2019, September). Perspectives in meat processing. In *IOP Conference Series: Earth and Environmental Science* (Vol. 333, No. 1, p. 012024). IOP Publishing.

World Data Lab. (2019). The Percentage of Nigerians Living in Extreme Poverty could Increase by 2030. Retrieved from World Poverty Clock: www.worldpoverty.io/blog/index.php

Yusuf, S.A., 2014. Role of agriculture in economic growth & development: Nigeria perspective. Munich Personal RePEc Archive (MPRA) Paper No. 55536.