



## Comparative Analysis of the Demand and Supply of Major Cassava Products in Nkanu East Local Government Area of Enugu State, Nigeria

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### ABSTRACT

The study aimed to compare the disparity between the rate of demand and supply of selected cassava products in Nkanu-East LGA of Enugu State, Nigeria. The study adopted both primary and secondary data collection approaches through well-structured questionnaires. In this research, one hundred (100) respondents were randomly selected using a multi-stage sampling technique. The collected data were analyzed using descriptive statistics and Z-test. The study showed that there is no significant difference between demand and supply of the products in the study area. The study further revealed that a dual-channel was adopted in marketing the selected cassava products in the area. Further analysis of the study showed that in the last three (3) years, the demand and supply of garri was higher than that of abacha and akpu. Based on this, it is hereby recommended that there is need for off-takers of both abacha and akpu products to help increase the economic status of those rural stakeholders that engage these enterprises

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### 1.0 Introduction

Cassava, *Manihot esculenta*, is one of the world's most important and popular food crops with an annual output of over 34 million tonnes of tuberous roots (Asogwa, Ezihe and Ater, 2013). It is the chief source of dietary food energy for the majority of the people living in the lowland tropics, and much of the sub-humid tropics of West and Central Africa (Tsegia and Komawa, 2002). Therefore, its production and utilization must be given prime attention in food policy (Echebiri and Edaba, 2008). Cassava, whose consumption cuts across all parts of the country (Abang and Agom 2004), is a well known root crop which derives its origin from South and Central America and was introduced into Africa in the 16th century. Cassava is produced

mostly by smallholder farmers on marginal or submarginal lands of the humid and sub-humid tropics (Ani 2010). According to Ntawuruhunga (2010), the challenge is to create a strategy that affects production, processing, and marketing in such a way that they provide an array of high-quality products at reasonable prices for the consumers, while still ensuring a good profit margin for the producers without requiring them to assume the largest part of the development risk. Factories in Nigeria that export cassava products include: Matna Company which supplies starch to Côte d'Ivoire; Aquada Investment and Olu Industries. They supply cassava flour and instant fufu flour to the USA, UK, Ireland, and Italy (IITA, 2009). Formal exports to European and Asian destinations such as the Netherlands, Belgium, and China take place from either Lagos or Kano (IITA, 2009). In Nigeria,

the supply of cassava greatly affects its price (Nweke, 2004). Processing and storage for periods of scarcity would thus increase the profitability of the crop for farmers. However, acquiring the investment for processing is out of reach for most farmers due to inadequate credit facilities and high-interest rates (IITA, 2009). 1.1 Objectives of the Study The broad objective of the study is to compare the disparity between the rate of demand and supply of major selected cassava products (garri, akpu, and abacha) in Nkanu-east local government area of Enugu State, Nigeria. Specifically, the objectives of the study are to: i. compare the difference in demand and supply of the selected cassava products in the area, ii. analyze the consumption pattern of the selected cassava products in the last three years in the study area, iii. describe the channel employed for marketing the selected products in the area. 1.2 Research Hypothesis H0: there is no significant difference between demand and supply of the products in the area. H1: there is a significant difference between demand and supply of the products in the area.

## 2.0 Research Methodology

The study was carried out in Nkanu-East L.G.A, of Enugu State Nigeria. Nkanu-East is one of the seventeen (17) L.G.As that make up Enugu State. It consists of Amagunze, Ugbaw-

ka, Nara, Nkereffi, Mburubu, and Nome. The area is bounded by Akpugo in the West, Nkereffi in the South, Amaechi-Idodo in the North and Ebonyi State to the East. A multi-stage sampling technique was employed in the study for the selection process. The first stage involved a purposive selection of Ugbawka, Nkereffi, Nara, Nome and Amagunze reputed for cassava processing and marketing. The second stage involved a random selection of four (4) villages from each of the five communities. And in the third stage, a census and listing of cassava processors and consumers in each of the communities was conducted through market associations and community leaders. From the formed sampling frame, a purposive selection of seven (7) respondents from each of the four (4) villages from Ugbawka, six (6) from each of the four villages from Nkereffi was done. Furthermore, selection of five (5) respondents from each of the four villages from Amagunze, four (4) from each of the four villages from Nara and three (3) from each of the four villages from Nome was carried out for this research. The respondents comprised of both cassava processors and consumers in each of the four villages in each community and it made a total number of 100 respondents. The table 1 below clearly shows the number of respondents and the sampling frame as described above

Table 1 number of respondents per community

s/n	Study area	Community	Villages	No. of respondents
1		Ugbawka	Amoḍoḍo Amaetiti Ihuona Umuanyi	28
2		Nkereffi	Ihuakpu Umuḡoḡo Onueke Umunama	24
3	Nkanu-east local government area, Enugu state	Amagunze	Isienu Nkwokani Aniyi Oḡuani	20
4		Nara	Oḡuorie Umuiba Ndiagu Imeama	16
5		Nome	Imeama Amaigbo Obinagu Ihuafor	12
	TOTAL	5	20	100

Source: Field survey, 2015

### 2.1 Data Collection

Data were collected with the use of well-structured questionnaires. Descriptive statistics and Z-test were used to analyze data collected. Specifically, the Z-test was employed to analyze the disparity between demand and supply of the selected products in the area. The Zcalc was calculated using the formula according to Ochiaka, (2013) as thus:  $Z_{calc} = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_x^2}{n_x} + \frac{s_y^2}{n_y}}}$

$$Z_{calc} = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_x^2}{n_x} + \frac{s_y^2}{n_y}}}$$

Where: X = demand for the selected products Y = supply of the selected products = mean of X (i.e., mean demand) = mean of Y (i.e., mean of supply) Sx = standard deviation of X Sy = standard deviation of Y nx = Number of X ny = Number of Y

## 3.0 Results and Discussions

### 3.1 Rate of demand and supply of the selected products.

The hypothesis states that there is no significant difference in the demand and supply of the selected products in the area. The hypothesis was tested using the Z-test at 1% and 5%

Table 2: Test of the hypothesis

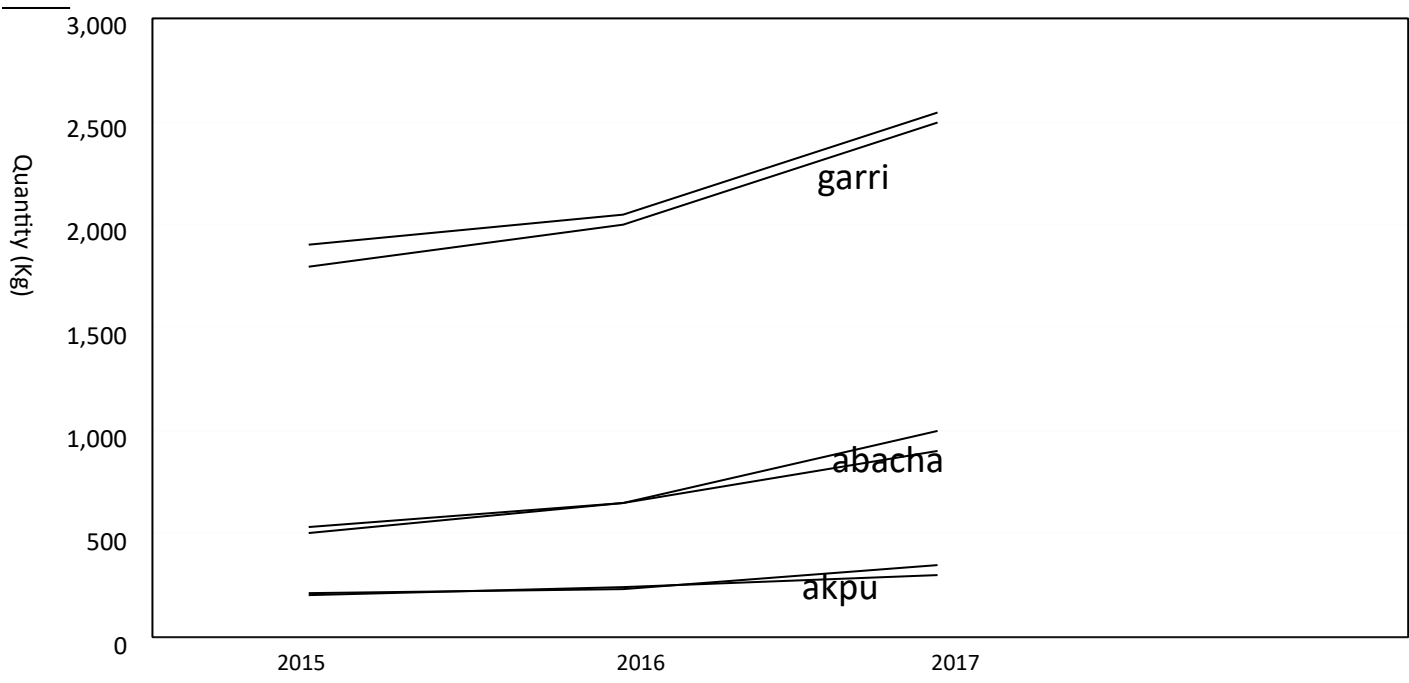
	1%	5%
Ztab	2.576	1.96
Zcalc	-0.8140	-0.8140
Acceptance region	-2.576 to +2.576	-1.96 to +1.96

Source: Field survey, 2015

level of significance. Table 2 above shows the result of the test conducted

The table 2 above shows that the Ztab when  $\alpha = 0.01$  is 2.576 which makes the acceptance region start from -2.576 to +2.576. It shows also that when  $\alpha = 0.05$ , the Ztab is 1.96. The acceptance region in this case then lies between -1.96 and +1.96. At the end of the analysis, the null

hypothesis is retained since the Zcalc fell within the acceptance regions of both levels of significance. 3.2 Consumption pattern of the selected cassava products The distribution of respondents according to trend in demand and supply of garri, akpu and abacha in the study area in the time series of three (3)years (2015 – 2017) is clearly seen in the line graph below



Years

abacha (d)                      garri (s)                      akpu (s)                      abacha (s)

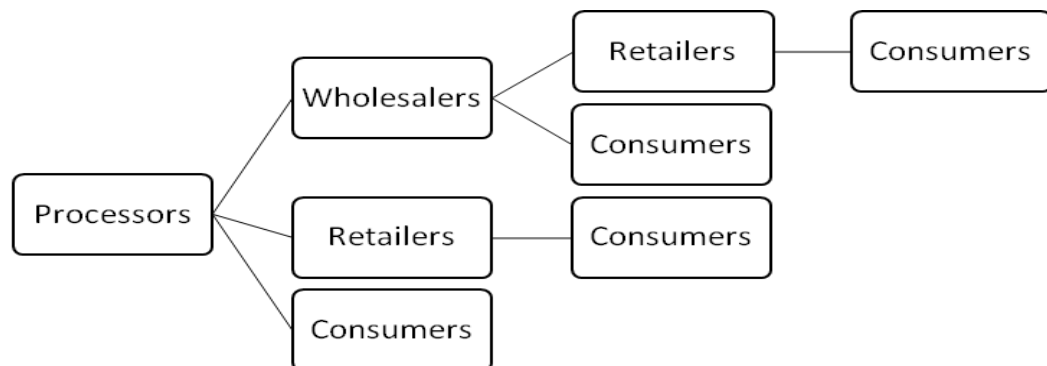
Key: Demand(——) Supply (- - - - -)

**Figure 1** Trend in demand and supply of major cassava products in Nkanu-east

The demand for garri increased with an increasing rate. The sharp rise in demand for garri in 2017 could be because of the migration from the northern part of the country due to insurgency and lack of security in the North. The rise in demand could also be linked to the increase in the population of students who inhabit the area from state University, Nigeria law school and other public and private institutions emerging in recent time. The demand and supply of *abacha*, as seen in figure 1, also increased but not with an increasing rate as that of *garri* while the demand and supply of *akpu* in the area is increasing but with a decreasing rate. The same figure 1 further shows that cassava tubers are mostly processed into garri. This information agrees with IITA (2007) that about 70% of the cassava produced in Nigeria is processed into garri and as such garri is the most commonly traded cassava product even in the study area. Thus, it is evident that there is a significant difference in the consumption pattern of the selected cassava products in the area.

**3.3: Marketing channel employed for the selected products in the area.**

The marketing channel of the cassava products is composed of different institutions that facilitate the transaction and the physical exchange. The institutions that make up the marketing channel for the selected cassava products in the area are the processors, the wholesalers, the retailers and the final consumers. There are basically four (4) types of marketing channels as shown in research which include - direct selling; indirect selling; dual distribution; and reverse channels as reported by (Brunett, 2017). In literature, direct selling is the marketing and selling of products directly to consumers away from a fixed retail location, whereas an intermediary (or go-between) is a third party that offers intermediation services between two trading parties with examples being producer/manufacturer → agent → wholesaler → retailer → consumer. Meanwhile, dual distribution describes a wide variety of marketing arrangements by which the manufacturer or wholesalers use more than one channel simultaneously to reach the end user, and finally, a reverse channel may go from consumer to intermediary to beneficiary. Figure 2 below shows the type of marketing channel employed for the selected various cassava products in the Nkanu East LGA of Enugu State.



**Fig. 2:** Marketing channels for major cassava products in Nkanu-east LGA

From the figure 2 above, the processed cassava products move from the processors to the wholesalers, retailers and consumers (households, hotels, cooks, among others). The same figure 2 shows that consumers buy not only from retailers but also from the wholesalers and even from the main source (the processors). The implication of the above situation is that, the processors are not too far from the consumers in the study area, Therefore, this enhances easy communication between the processors and consumers as raw and un-fabricated feedback gets to the processors in no distant time. Having analyzed the figure 2 above, it is obvious that a dual channel was employed for the marketing of the selected cassava products in the study area.

#### 4.0 Summary, Conclusion and Recommendations

The result of the survey shows an upward trend in supply and demand for the selected cassava products in the study area. From the analysis, garri is the most consumed cassava product of the three major products followed by abacha which is usually taken as an in-between meal or as a main course in the study area. Akpu is the least on the row and this could be attributed to the fact that most people dislike its smell during and after processing especially the youths in the recent time due to poor packaging. The study thereby recommends that there is need for adequate provisions of modern packaging equipments by the three arms of government to enable the rural marketers in the study benefit more from the activities of the cassava products.

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