Market Share and Price-Setting Behaviour in Bilateral Areas: Evidence from Bambara Groundnut Markets in Nigeria

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ABSTRACT

Marketing activities within the Bambara groundnut subsector may tend to become sub-standard because of production price uncertainty and production risk which may ejaculate into inefficiency in the market. In this respect, the study analyzed market share and Price-setting Behaviour in Bilateral areas: evidence from Bambara Groundnut Markets in Nigeria. The population of the study comprised marketers of Bambara groundnut in South-east, Nigeria. Of the five states in south-east region of Nigeria, two States were chosen purposively so as to ascertain the movement of prices between the two states. This was done in order to establish fair prices comparison between the production zone and consumption zone. The choice of the two states was based on the predominance of Bambara groundnut marketers. A two-stage random sampling technique was adopted in selecting 221 respondents that was interviewed for the study. Information for this study was obtained from primary sources employing a well-structured questionnaire, oral interviews and direct observations of Bambara groundnut marketers and was analyzed using descriptive and inferential statistics. The results of multivariate analysis (ANOVA) showing the variations in price margins, marketing cost and net marketing margins showed that across the eight markets sampled within the study area, there was no vital significant distinction (F= 0.381; P=0.130, F=2.558; P=0.414 and F=1.725; P=0.217) within the price margins, costs and net margins. The velocity of rural retail prices results indicated that on the average, retail prices of Bambara groundnut was enhanced at a monthly rate of N5.586853 in the rural markets of Abia State with a standard deviation of N0.8089196. Although, the modal price alteration was N5.2300 whereas the minimum price increment was N3.6610, however, the utmost increment was N7.845 per month in the rural Bambara groundnut markets in Abia State. Similarly, for urban prices of Bambara groundnut in Abia State markets, the result showed slight variations in monthly prices. Specifically, for urban retail prices in Abia State markets, Bambara groundnut monthly prices was enhanced by N5.87178274 on the average, though, the modal and minimum values of N5.496730 and N3.847711 existed respectively. The result also showed that the rural and urban prices of Bambara groundnut changed monthly by N5.9040 and N6.2051228 respectively, per month. The result additional discovered the rural/urban retail merchant price in Enugu Abia and Enugu to be N5.72931798 with variance of N0.840113346 and N1.32771324 respectively. In relation to price velocity of wholesalers in Abia and Enugu states, wholesale price velocity of N34.471035 and N36.4364033 and standard deviation of N4.99221480 and N7.05381314, minimum of N22.59371 and N19.62524 and maximum of N 48.41510 and N 49.24824 respectively was observed. However, the results of the Analysis of Variance (ANOVA) showed that there existed significant distinction (F=4.771; $P \leq 0.05$) and (F=0.048; $P \leq 4.19$) between rural and urban retail price velocities in Enugu and Abia State markets, respectively. The moderately high variation of prices with time necessitates governments' action in prices stabilization to shield farmers economically. Guarantee minimum price for producers as an incentive for assured output markets can increase supply volume and promotion of Bambara groundnut industries.

Keywords: Analysis, influence, market structure, price bargaining position, market intermediaries, Nigeria, Bambara groundnut markets

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INTRODUCTION

Bambara groundnut (*Vigna subterranea*), is one in all the aboriginal African crops presently receiving interest from researchers, as a result of its high production turn out and resistance to diseases as well as its ability to adapt to poor soils and precipitation (Abdulai, 2020). In Africa, it's the third most consumed legume after groundnut (Arachis hypogea) and cowpea (Vigna unguiculata) (Alderman, 2019). It served as a vital supply of protein within the diets of a large proportion of the population, significantly to the poorer people, who cannot afford expensive animal protein (Badiane& Shively, 2018). Bambara groundnut makes a balanced food, as it contains high amounts of carbohydrates (65%), protein (16.25%) and fats (6.3%), with comparatively high proportions of essential amino acids (Sexton, Kling & Carmar, 2019).

In line with Food and Agricultural Organisation (2017), Africa spent US$1 billion in 2004 to import Bambara groundnut. Of this, US$752 million was for Bambara vegetable oil and US$254 million was for Bambara groundnut meal. There exists ludicrous empirical data on Bambara groundnut marketing which will enhance understanding and improvement of the operation of Bambara groundnut markets in Nigeria. The variations in climate among agro-ecological zones in Nigeria enabled the differentials in grain production capability of every State; not to mention poor road network which ends in high transfer prices for grocery store transactions among regions of the country. Markets are vital determinants of food handiness and food access. Agricultural marketing assumes greater significance within the Nigeria economy as a result of surplus production from the farm which should be disposed so as to earn some financial gain with so that farmers can purchase merchandise and services not created by them (Negassa & Jayne, 2017).

Fluctuations in food prices may not be swift, however they produce pressure on wages, lower real incomes, rising inflation, unemployment and decreasing demand for non-agricultural products. On the other hand, price drop may lead to a deceptive allocation of inputs in agricultural sectors, that may seriously impair production ability and international competitiveness of this industry. Grega (2019) explicitly stated that if agricultural product prices were too low, the situation within the sector may well be deteriorating by the ensuing outflow of qualified labour pool to alternative sectors of the economy and cause movement of rural population to the urban areas and so, cause the population reduction in the rural areas. Production activities in the Bambara groundnut subsector may be inferior because of turn out price uncertainty and production risk cum marketing inefficiency. Pricing efficiency may additionally decline as a result of farmers having less expedient information on prices to guide them in production call (Delgado, 2018).

Formulation of policy has failed to take grasp of the fact that production and marketing/pricing represent a gamut in which the absence of development in one retard progress within the alternative (Okoh & Akintola, 2017). Since the agricultural producer is each a merchant of his produce as well as a client of agricultural production requisites, agricultural prices conceal not solely the costs "received" by farmers ("output prices") but also the prices "paid" by farmers ("input price"). (International centre for Advanced Mediterranean Agronomic studies [ICFAMAS], 2016; Badiane 2021). According to Food and Agriculture Organization (2017), compared to developed nations, Bambara groundnut marketing in Nigeria is not effective as unfavourable marketing results inhibit production through lower prices of produce and consumption through high prices (Badiane and Shively, 2005). An impactive and efficient marketing system accelerates the speed of economic progression by fostering specialization that leads to improvement in output (Oladapo and momoh, 2008). It is primarily within the marketing system that prices are generated, rewards are allotted and financial gain and capital accumulation are determined.

Furthermore, the Bambara groundnut market structure is because it has effect on market results through its effect on the inspiration, prospects and choices of economic actors involved within the Bambara groundnut market. The potency of each industry is outlined by the character of the market sector and market trends. (Anthonio, 2018). Correct planning and decision-making would be required to upgrade the Bambara

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groundnut value chain particularly with relevance to wholesalers and retailers, which depends on economic knowledge base of the market structure, the actions of the various players within the marketing system and also the success of the market. (Delgado, 2018). This study becomes imperative to proffer solutions to the question of what is the market share and price-setting behaviour in bilateral areas evidenced from Bambara Groundnut marketers in Nigeria?

Objectives of the Study

The broad objective of this research is to examine the market share and price-setting behaviour in bilateral areas: evidence from Bambara Groundnut markets in Nigeria. Specifically, the study seeks to:

1. ascertain the marketing margin of Bambara groundnut marketers
2. examine the velocity of retail price of Bambara groundnuts in the study area

METHODOLOGY

Study area

The study will be carried out in South-East geographical zone of Nigeria. South-East Nigeria comprises of five states viz: Enugu State, Abia State, Ebonyi State, Imo State and Anambra State.

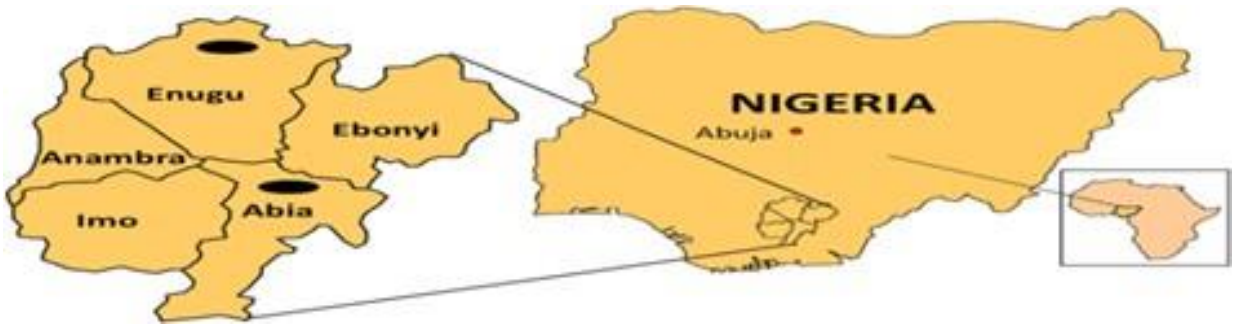

Figure 1: Map showing extraction of the study area from South-eastern, Nigeria. Source: Onu (2020).

The study population encompassed all Bambara groundnut marketers in South-east, Nigeria. Out of the five states in south-east, Nigeria, two States will be purposively selected as the study area in order to establish the movement of prices between the two states so as to establish a fair comparison of prices between the producing zone and consumption zone. The choice of the two states was based on the predominance of Bambara groundnut marketers. A two-stage random sampling technique was adopted in selecting the respondents. First, from the two States, four markets each were purposively selected based on the relative prime availability of Bambara groundnut in the area identified. Post-recognizance survey, the markets surveyed in Abia State included Ariaria International market, Umuahia Ultra-Modern market, Ngwa road and cemetery road/Eziukwu market whereas OrieOrba, Ogbete, Eke Agbani and Awgu were sampled in Enugu State. Successively, from each of the selected Bambara groundnut markets, 30 Bambara groundnut marketers were randomly selected giving a total of 120 marketers of Bambara groundnut from both states of which 112 and 109 Bambara groundnut marketers responses were used for analysis and others discarded due to either error in filling questionnaires, incomplete information or that they were not returned at all. This gave us a grand total of 221 respondents that was interviewed for the study. Data for this study was poised from primary sources by the use of a well-structured questionnaire, oral interviews and direct observations of Bambara groundnut marketers. Data was explored using both descriptive and inferential statistics.

Marketing margin model

The marketing margin model stated mathematically below was employed to estimate the marketing margins of wholesalers and retailers.

GMM (N)=SP-PP….....1

This is expressed as percentage of retail price as:

GMM%= (SP-PP)/PP X 100 2

Where:

GMM=Gross marketing margin
SP=Selling price (₦)
PP=purchasing price (₦)
RP=Retail price (₦)

Alternatively, the marketing margin for market participants can be calculated thus:

For wholesalers:

(Wholesale sellinng price-wholesale buying price)/(wholesale buying price) x 100… 3

For retailers:

(Retailer selling price-Retailer buying price)/(Retailer buying price) x 100… 4

Net margin analysis

The net margin of a specific agency is the net earnings, which it earns after paying all marketing costs. The procedure for computing net marketing margin is as stated bellow:

$$NMM\% = \frac{GMM - \sum_{i=1}^{n} X \; x \; 100}{RP} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 5$$

Where:

$NMM = Net\ marketing\ margin$

$GMM = Gross\ marketing\ margin$

$$\sum_{i=1}^{n} Xn = marketing\ cost$$

RP=Retail price (₦)

Price velocity model

The models below and their associated first derivatives are evolution of price with time and their associated velocity function:

1) **Exponential model**

Suppose the price evolution follow the exponential form such that:

P (t)=Aert…..... 6

where P(t)=price at time t
t=(1,2… .....N)
A=constant

Logarithm of equ. (6), yields the price velocity

LnP(t)=LnA+rt….....7

The first derivative of this function (equ.7) gives the price velocity. Thus,

(δ (LinP(t)))/δt= (δP(t))/pδt=r;rpδ(t)=δp(t)…….8

Thus,rp= (∂P(t))/∂t…….9

Power growth model

Suppose that prices in the market follow power functional form such

that:

Y=Atb……10

The first derivative:

δy/δt= (A∂

(tb))/∂t+tbδA/δt……11

δy=Abtb-1+0 ……12

δt/δy=Abtb-1……..13

Quadratic function

Suppose that the prices in the market follow quadratic form, the price

evolution function takes the form:

Y=b0+b1t+b2t2……14

With the first derivative as:

δy/δtδt= δ(b0+b1t+b2t2)……..15

=b1t+b2t2……16

Cubic function

Suppose that the price in the market follow cubic functional form,

represented mathematically as:

Y=b0+b1t+b2t2+b3t3……17

The first derivative is:

δy=δb0+b1t+b2t2+b3t3……18

δtδt=b1t+2b2t2+3b3t……..19

RESULT AND DISCUSSION

Description of Marketing Margin of Bambara groundnut Traders

The result of the marketing margin of Bambara groundnut traders in the study area is presented in Table 1. Marketing margin refers to the distinction between the producer price of Bambara groundnut and consumer price. In this context, marketing margin refers to the percentage difference between the selling and purchase price of BG. Wholesalers and retailers marketing margins were expressed as percentage of the wholesale and retail prices, respectively. The study result revealed numerous variations in prices received by the rural assemblers, wholesalers and retailers. For instance, 7.2% of the marketers had negative marketing margins. Technically, very few proportions of the respondents operated at a loss. However, the modal class of marketing margin for Enugu marketers was between 1 and 23 percent while for Abia marketers, marketing margin skewed towards 20 and 50 percent. The mean of the marketing margin for both States did not share much difference being 23.28% and 20.38%, respectively for Enugu and Abia States, with an overall mean of 25.19%. This implied a realization of 25 percent profit from every purchase made. Specifically, from the result, wholesalers in Enugu and Abia States had marketing margins of 24.51% and 28.95%, respectively. This result is in agreement with the result of Barrett (2020) who obtained 22.3% marketing margin for wholesalers that engaged in charcoal marketing in Abia State, Nigeria.

Furthermore, the results showed that among the market participants in the study area, wholesalers in Abia State had the highest marketing margin of 28.95% especially for all market participants, the net margin was fairly moderately high (25.19%). This could be as a result of their return to high capital investment in the BG marketing business. Moreso, for retailers, marketing margins of 26.02% and 26.13% was obtained for Enugu and Abia States, respectively with implication that every ₦1 spent by a consumer for 1kg of Bambara groundnut yield 50 and 52 Kobo to cover the middlemen's marketing costs in Enugu and Abia States, respectively. According to Riley (1972) as a rule of thumb reported that efficient markets in developing countries must have a retail margin of less than 10 percent of the consumers 'price especially for non-perishable goods like Bambara groundnut. Thus, marketing margin of 26.02% and 26.13% found in this study therefore suggested inefficiency in Bambara groundnut market. These margins, though moderately high was adequate to keep Bambara groundnut marketers in the business. Although, there were low connexion of food grain marketers in Bambara groundnut enterprise; those involved still made profit even though it had low turn-over and low benefaction by household consumers unlike other food articles. In another study, marketing margins of 11.9% and 24.4% were gotten for pineapple marketing in rural and urban areas of Lagos State by Oladapo et al. (2008) illustrating market inefficiency. According to Barrett (2020), high marketing margin often ricochet the socio-economic environment of the marketing actors. Negassa (2017) found high marketing margin in cotton marketing in Nigeria which inveterate that the performance of the markets showed pricing inefficiency and imperfections, and high notch of independence. Also, Ejiga (2018) observed a high marketing margin of 46.0% for fuel wood in Abia State, Nigeria. This denied what is expected from undifferentiated primary products in competitive markets (Delgado, 2002). Again, the marketing margins of retailers in Enugu State were (26.02) generally lower than those of Abia State wholesalers (28.95). This was perhaps because retailers typically bought and vended Bambara groundnut in the same market with little or no value addition, thereby incurring less risks and costs. This is in pact with the findings of Aminu (2010) who found analogous result for Benniseed marketers in Nasarawa State, Nigeria.

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Result of marketing costs

Furthermore, analysis of marketing costs showed that limited marketers in Enugu State (2.6%) did not incur any cost in Bambara groundnut marketing (Table 1). This could be elucidated by the fact that they basically bought in insignificant quantities directly from the farmer and immediately sold equivalently to either fellow rural assemblers or wholesalers with a very petite margin without much value addition. However, some marketers, especially wholesalers in Abia State (2.8%) spent between N3,000 to N3,500 per 100kg bag of Bambara groundnut. Similarly, wholesalers in Abia State had the peak mean marketing cost of N2120.01. This corroborated the previous finding that they incurred the highest cost and as well had the highest marketing margin. The group that incurred the least cost in Bambara groundnut marketing was Enugu State rural assemblers who spent N119.33 on average for a 100kg bag of Bambara groundnut. This could be as a result of their close proximity to the source of the produce. This disagreed with the findings of World Food (2019) that short distance marketing had much higher cost on the basis of kilometre per tonne.

Result of net margin

Net margins of Bambara groundnut market participants are presented in Table 1. Net margin of market participants meant the net incomes or profit gained after paying all marketing costs. The result of net margin for 100kg bag further showed that moderately high proportion of respondents (23.1%) operated at a negative net margin. This could be as a result of copious costs involved in the marketing process which included administrative charges, assembling, handling and transfer costs. Conversely, wholesalers in Abia State made the highest net margin per 100kg bag of Bambara groundnut (mean of ₦1402.02) while the least earner group was rural assemblers (mean of N510.02). This could be as a result of their small capital investment and low value addition in the enterprise. The result showed that only very few marketers (1.9%) had net margin within the range of 50 and 100 percent. Average net margin for Enugu State Bambara groundnut marketers was N592.02., while that of their Abia counterpart was N786.263 representing 8.45% and 8.74% of the cost prices of 100kg bag of Bambara groundnut in Enugu and Abia markets, respectively (assuming mean cost price of N7,500 and N9,000 in Enugu and Abia States, respectively). Thakur (2017) ascribed traders' net margin of beneath 5% in grains trade to the presence of competitive pressure. Thus, the value obtained which was more than 5% further showed uncompetitive nature of Bambara groundnut market. Anthonio (2018) found net margin for food grain marketers in Osun and Oyo States as N900/100kg and N433/100kg bag of maize, respectively which is similar to the result of this study.

Table 2: Marketing margin, costs and Net margin of marketing participants in the two States

		Enugu state (N=112)				Abia state (N=109)			N=221
Variables	**Class**	**W/salers**	**Retailers**	**Rural Ass**	**All**	**W/salers**	**Retailers**	**All**	**Overall**
Marketing Margin (%)									
	-20	2 (1.8)	–	5(4.5)	7 (6.3)	5 (4.6)	4 (3.7)	9 (8.3)	16 (7.2)
	0.001-20	17 (15.2)	15 (13.4)	26 (23.2)	58 (51.8)	12 (11.0)	20 (18.3)	32 (29.4)	90 (40.7)
	20.001-50	16 (14.3)	6 (5.4)	16 (14.3)	38 (33.9)	26 (23.9)	25 (22.9)	51 (46.8)	89 (40.2)
	50.001-100	2 (1.8)	4 (3.6)	3 (2.7)	9 (8.0)	3 (2.8)	14 (12.8)	17 (15.6)	26 (11.8)
	Mean	24.51	26.02	21.56	23.28	28.95	26.13	20.38	25.19
Marketing Cost (N/100kg)									
	0	–	1 (0.9)	2 (1.8)	3 (2.6)	2 (1.8)	3 (2.8)	5 (4.6)	8 (3.6)
	1-500	9 (8.0)	12 (10.7)	18 (16.1)	39 (34.8)	12 (11.0)	26 (23.9)	38 (34.9)	77 (34.8)
	501-1000	10 (8.9)	9 (8.0)	9 (8.0)	28 (25.0)	4 (3.7)	5 (4.6)	9 (8.3)	37 (16.7)
	1001-2000	9 (8.0)	6 (5.4)	13 (11.6)	28 (25.0)	14 (12.8)	15 (13.8)	29 (26.6)	57 (25.8)
	2001-3000	3 (2.7)	3 (2.7)	8 (7.1)	14 (12.5)	3 (2.8)	4 (3.7)	7 (96.4)	21 (9.5)
	3001-3500	–	–	–	–	3 (2.8)	12 (11.0)	15 (13.8)	15 (6.8)

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	Mean	1391.39	789.93	119.33	943.62	2120.01	1029.11	1420.98	1098.26
Net margin (N/100kg)									
	-2600	7 (6.3)	5 (4.5)	14 (12.5)	26 (23.2)	8 (7.3)	17 (15.6)	25 (22.9)	51 (23.1)
	1-500	10 (8.9)	7 (6.3)	13 (11.6)	30 (26.8)	7 (96.4)	5 (4.6)	17 (15.6)	42 (19.0)
	501-1000	8 (7.1)	5 (4.5)	8 (7.1)	21 (18.8)	3 (2.8)	14 (12.8)	17 (15.6)	38 (17.2)
	1001-2000	5 (4.5)	2 (1.8)	9 (8.0)	16 (14.3)	13 (11.9)	20 (18.3)	33 (30.3)	49 (22.2)
	2001-4000	3 (2.7)	3 (2.7)	6(5.4)	12 (10.7)	3 (2.8)	9 (8.3)	12 (11.0)	24 (10.9)
	4001-5100	2 (1.8)	3 (2.7)	2 (1.8)	7 (6.3)	–	–	–	7 (3.2)
	Mean	692.3	821.01	510.02	592.03	1402.02	812.02	786.26	584.07

Figures in parentheses are percentages

Source: Computed from field data, 2022

Differences in marketing margins, marketing costs and net margins among the marketing participants

This section sort to discover whether there were significant differences in the marketing margins, marketing costs and net margins of marketers. The results of ANOVA showing the differences in marketing margins, marketing costs and net marketing margins are presented in Table 2. The result showed that athwart the eight markets sampled in the study area, there was no significant difference (F= 0.381; P=0.130, F=2.558; P=0.414 and F=1.725; P=0.217) in the marketing margins, costs and net margins. The cause could be as a result of the nature of Bambara groundnut marketing; being an industrial product, the major key players (processors) coordinate and regulate prices so that irrespective of the markets, the same price prevails. This could account for the similarities in the marketers' margins and costs observed. Also, among all the Bambara groundnut marketers in both Enugu and Abia States, there was no significant difference (F=1.0135; P=0.211) in their marketing margins. This could be as a result of almost equal margins observed in both States. This meant that the marketing margin observed in Table 1 did not contrast significantly from one another. In other words, the variance in the marketing margin observed among the Bambara groundnut marketers was not significantly different from zero. Hence, the null hypothesis which stated that the marketing margins at different markets in the two States were not significantly different was accepted. This result contradicted the result of Alexander and Wyeth (2019) who found significant difference in marketing margins among Benniseed traders in Nasarawa State, Nigeria. Bambara groundnut having high industrial demand could account for the similar margin across States as processing companies synchronise and normalise prices thus ensuring almost uniform profit among marketers.

However, analysis of marketing costs and net margins showed that there were significant differences (F=3.1535; P≤ 0.01, F=1.7785; P ≤0.05 respectively) in the marketing costs and net margins of the different participants in the study area. This meant that the costs incurred in Bambara groundnut marketing speckled significantly from one marketer group to another. This finding substantiated the earlier result that wholesalers in Abia State spent the highest amount in Bambara groundnut marketing than other groups due possibly due to long distances leading to high transport costs, costs of booking at markets and payment of tax and produce levies at road blocks. All these variables contributed to high cost incurred by wholesalers in the business. Similarly, the result showed that the net margin from Bambara groundnut marketing varied significantly (F=1.7785; P≤0.014) from one marketer group to another. As detected in Table 1, net margin of wholesalers was found to be the maximum while that of rural assemblers was the least. This could be as a result of discrepancy in their capital base and value addition to the enterprise. While wholesalers incurred more cost, they likewise earned more profit. Their net earnings differed significantly from others whose

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commitments were less. Following the result of the ANOVA, the null hypothesis which stated that there was no significant difference in the marketing costs and net margins of Bambara groundnut marketers was rejected. Hence, the alternative was accepted.

Table 2: Result of ANOVA showing the difference between marketing margin, costs,

and net margin among the marketing participants in Enugu and Abia States, Nigeria

Variables	Groups	Sum of Squares	Degree of Freedom	Mean Square	F Statistic	Sig.
Across the eight markets						
Marketing margin	Between Groups	36218.8	7	542.114	0.381	0.13
	Within Groups	116974.9	214	587.814		
	Total	120769.7	221			
Marketing cost	Between Groups	2.40E+11	7	3634731	2.558	0.414
	Within Groups	6.48E+08	214	3257049		
	Total	6.74E+08	221			
Net margin	Between Groups	4.15E+11	7	5.93E+10	1.725	0.217
	Within Groups	8.14E+12	214	4.09E+10		
	Total	8.56E+12	221			
Among classes of marketers in the two States						
Marketing margin	Between Groups	3513.226	3	1171.076	1.0135	0.211
	Within Groups	117256.4	218	577.618		
Marketing cost	Between Groups	57440000	3	19144256	3.1535***	0
	Within Groups	6.16E+08	218	3035287		
Net margin	Between Groups	4.27E+11	3	1.42E+11	1.7785**	0.014
	Within Groups	8.13E+12	218	4.00E+10		
Among Marketers in Enugu						
Marketing margin	Between Groups	1673.96	3	557.986	0.3925	0.536
	Within Groups	75306.17	109	710.436		
Marketing cost	Between Groups	28660000	3	9550961	2.64***	0.001
	Within Groups	1.92E+08	109	1808942		
Net margin	Between Groups	8.36E+10	3	2.79E+10	0.631	0.213
	Within Groups	2.34E+12	109	2.21E+10		
Among Marketers in Abia						
Marketing margin	Between Groups	4132.288	2	2066.144	2.454***	0.004
	Within Groups	221971	107	420.968		
Marketing cost	Between Groups	29080000	2	14537284	1.6535**	0.035
	Within Groups	4.13E+08	107	42219435		
Net margin	Between Groups	6.13E+11	2	3.07E+11	2.6315***	0.005
	Within Groups	5.48E+12	107	5.82E+10		

*****,** – Significant at 1% and 5%, respectively. Source: Computed from field data, 2022.**

Table 3: Result of Post-hoc of ANOVA showing the mean difference in marketing costs, and net margin among marketers in the two States

Dependent Variable	(A) Class of Marketers	(B) Class of Marketers	Mean Diff (A-B)	Std. Error	Sig.
1. Among all classes of marketers in Enugu and Abia States					
Marketing Cost	Wholesalers	Retailers	729.264***	212.9148	0.002
		Company Agent	636.12	262.2429	0.14
		Rural Assemblers	1394.04	241.3377	0.122
	Retailers	Wholesalers	-729.264***	212.9148	0.012
		Company Agent	-93.1476	225.972	1.114
		Rural Assemblers	663.7308**	201.3354	0.018
	Company Agent	Wholesalers	-636.12	262.2429	0.14
		Retailers	93.1476	225.972	1.076
		Rural Assemblers	757.92**	252.9324	0.052
	Rural Assemblers	Wholesalers	-1394.04	241.3377	0.281
		Retailers	-663.731***	201.3354	0.006
		Company Agent	-757.92**	252.9324	0.052
Net Margin	Wholesalers	Retailers	83236.5**	24456.24	0.022
		Company Agent	20943.18	30122.37	1.206
		Rural Assemblers	98754.13**	27721.08	0.016
	Retailers	Wholesalers	-8.32368**	24456.24	0.022
		Company Agent	-62293.3	25956.18	0.146
		Rural Assemblers	15518.66	23126.22	1.23
	Company Agent	Wholesalers	-20943.2	30122.37	1.206
		Retailers	62293.32	25956.18	0.146
		Rural Assemblers	77811.97*	29052.9	0.092
	Rural Assemblers	Wholesalers	-9.87552**	27721.08	0.016
		Retailers	-15518.7	23126.22	1.23
		Company Agent	-7.78116*	29052.9	0.092
2. Among marketers in Enugu State					
Marketing Cost	Wholesalers	Retailers	51.672	294.7563	1.792
		Company Agents	385.248	288.9459	0.64
		Rural Assemblers	1017.264***	268.8534	0.01
	Retailers	Wholesalers	-51.672	294.7563	1.792
		Company Agents	333.588	240.1254	0.126
		Rural Assemblers	965.592***	215.5284	0.002
	Company Agents	Wholesalers	-385.248	288.9459	0.64
		Retailers	-333.588	240.1254	0.136
		Rural Assemblers	632.016**	207.5103	0.048
	Rural Assemblers	Wholesalers	-1017.26**	268.8534	0.0178
		Retailers	-965.592***	215.5284	0.002
		Company Agents	-632.016**	207.5103	0.048
3. Among marketers in Abia State					
Marketing Margin	Wholesalers	Retailers	9.876**	3.0303	0.032

		Company Agent	21.4344**	5.9139	0.016
	Retailers	Wholesalers	-9.876**	3.0303	0.032
		Company Agent	11.556	5.571	0.246
	Company Agent	Wholesalers	-21.4344**	5.9139	0.016
		Retailers	-11.556	5.571	0.246
Marketing Cost	Wholesalers	Retailers	1028.724**	309.6036	0.028
		Company Agent	257.928	604.2843	1.005
	Retailers	Wholesalers	-1028.72**	309.6036	0.028
		Company Agent	-770.796	569.2788	0.624
	Company Agent	Wholesalers	-257.928	604.2843	1.445
		Retailers	770.796	569.2788	0.624
Net Margin	Wholesalers	Retailers	130515.6***	35639.91	0.014
		Company Agent	-55837	69561.99	1.098
	Retailers	Wholesalers	-130516***	35639.91	0.014
		Company Agent	-186353*	65532.42	0.072
	Company Agent	Wholesalers	55837	69561.99	1.098
		Retailers	186352.8*	65532.42	0.072

***. The mean difference is significant at 0.05 level.**

Further analysis of the difference in marketing costs through post-hoc of the ANOVA (Table 3) showed that specifically, marketing costs sustained by wholesalers was significantly different from that of retailers and rural assemblers. This could be as a result of the high costs incurred by wholesalers arising from the high volume of trade they handle. Similarly, the result of the posthoc of the ANOVA showed that the net margin grasped from Bambara groundnut business by wholesalers was significantly dissimilar from that of retailers and rural assemblers. The low volume of trade handled by retailers and rural assemblers could account for their low return.

Furthermore, among Bambara groundnut marketers in Enugu State, there was no significant difference in the marketing margins ($F=0.3925$; $P=0.536$) and net margins ($F=0.631$; $P=0.213$). This meant that marketing margin and net margin of marketers in Enugu State did not differ significantly from one another. The proximal absence of Bambara groundnut processing firms and poultry feed mills in the State made majority of the marketers to function at almost the same level as commission agents and rural assemblers with almost the same level of margin. However, there was significant difference ($F=5.28$; $P\leq0.01$) in their marketing cost. The different cost constituents and different taxes at different markets makes their marketing costs to differ. Their expenditure in the business was found to be different at diverse markets for instance, in some markets, it was compulsory for traders to join the marketing unions, pay levies and dues, while in some markets, membership of market unions was non-compulsory. Moreover, they pay varying taxes and transportation costs at different markets. Moreover, the result of the posthoc of the ANOVA (Table 3) showed that rural assemblers incurred marketing costs which was significantly lower than that of wholesalers, retailers and company agents. This could be as a result of their little commitment in the business cycle since they usually buy and sell Bambara groundnut in the same market without incurring transportation cost, produce, storage, loading and offloading.

On the other hand, in Abia State, among the Bambara groundnut marketers, there were significant differences ($F=2.454$; 1.6535and 2.6315; $P\leq0.05$, respectively) in the marketing margins, marketing costsand net margins. This could be due to their different procurement capacities. While majority of them

were company agents as a result of the many Bambara groundnut processing firms in the State, others were petty traders who sell Bambara groundnut just to have complete foodstuff. Owing to low patronage arising from low household utilization, the turnover from the business was usually very low except for wholesalers. This could account for the difference in their margin and costs. Specifically, the result of the post-hoc of the ANOVA (Table 3) showed that among marketers in Abia State, the wholesalers made the highest marketing margin. Their marketing margin was significantly higher than that of retailers and company agents. Since wholesalers hold the bulk of Bambara groundnut in the face of high request arising from many processing firms and feed mills in the State, they are bound to make the peak margin. However, their marketing costs were significantly higher than that of retailers and less different from that of the company agents. This probably could arise from the fact that wholesalers bear almost all the costs involved in the marketing of Bambara groundnut. Similarly, their net margin was significantly higher than that of the retailers but not different from the company agents.

Student t test result

Among the wholesalers in the two States, there was no significant differences (t=2.09, 2.291, 5.13; p=0.301; 31.61 and P=0.126, respectively) in the marketing margins, marketing costs and net margins (Table 4). This meant that the variations observed in the marketing margins, marketing costs and net margins were not significantly different from zero. Although the earlier result showed that wholesalers in Abia State incurred more costs in marketing than other groups, the difference among the wholesalers in the two States was not significant at 5% level. This could be due to the fair similarities in their marketing roles and buying capacities which gave rise to same margins and costs.

Similarly, between retailers in the two states (Table 4), there was no significant difference in their marketing margins (t=1.82; p=0.120), marketing costs (t=34.93; p=0.231) and net margins (t=59.01; p=0.157). This meant that the difference in marketing margin, marketing costs and net margins of retailers in the two states were not significantly difference from zero. Their close resemblance in market function and sales volume could account for the similarity in their margins and costs.

Table 4: Result of the t-test showing the difference in marketing margin, costs and net

margins among wholesalers and retailers in the two States.

Marketers	Variables	State	Mean	Std. Deviation	Mean difference	t-value	Sig.
Wholesalers	Mktg margin	Abia	10.812	6.752084	5.32	2.09	0.291
		Enugu	8.722	4.201384			
	Mktg costs	Abia	4361.854	531.874	470.96	5.13	0.301
		Enugu	592.399	516.0471			
	Net margin	Abia	48019.18	109315	89881.73	31.61	0.126
		Enugu	12692.97	12415.82			
Retailers	Mktg margin	Enugu	9.399	9.573967	4.64	1.82	0.120
		Abia	7.577	5.093539			
	Mktg costs	Enugu	575.460	442.5476	343.25	34.93	0.231
		Abia	440.575	619.3445			
	Net margin	Enugu	19028.85	83291.94	35002.19	59.01	0.157
			5271.970	17473.51			

Source: Computed from field data, 2022.

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Result of Price Velocity in Enugu and Abia States (Aug, 2021-Feb, 2022)

The velocities of rural and urban retail prices of Bambara groundnut were derived from the first derivative of the price on time model. It observed the rate of change in price of Bambara groundnut over time. In reckoning the price model, the parametric modelling approach of Hays and McyCoy (2017) was adopted. The scatter plots (Figure 2 and 3) were used as a guide in selecting the lead equation in line with other selection criteria. The result showing the velocity of Bambara groundnut prices in Enugu and Abia States is presented in Table 5 and Figs. 5 and 6. Different functional forms of regression model were analysed with the view to selecting the model that best fit the data. Based on the value of the adjusted R2, the overall model fit as indicated by the significance of F-value and significance of the parameters, complemented with the initial analysis of scatter plot, the exponential growth function was chosen for Abia State retail prices (rural and urban). Specifically, for rural retail price in Abia State, the value of adjusted was 0.84 signifying that about 84 percent of the variations in price was accounted for by time. The velocity of rural retail price was calculated by multiplying the monthly prices by 0.1. Similarly, for Abia State urban retail price, exponential functional form was chosen as it best fitted the model. It had the highest value of 0.88 and significant F-value and explainable parameters. Following the above formula, Abia State urban retail price velocity was calculated by multiplying 0.07 by the monthly prices. Although, the cubic functional form gave the highest R2 of 0.927, other criteria for selection were not met. Some of the parameters which were not significant which did not depict the true condition of cubic functional form. The choice of exponential growth model as the equation of best fit for Bambara groundnut rural prices in Abia State markets contrasted the work of Ani, Chidebelu, and Enete (2017), who found a cubic functional form as the lead equation for cowpea prices in almost all the markets in Enugu State, Nigeria.

Conversely, for Enugu State Bambara groundnut prices (urban and rural retail), the best fitted functional forms for the regression model was exponential. It possessed the highest adjusted , significant F-value and explanatory parameters. For Enugu State rural retail price, the adjusted was 0.64 implying that about 64 percent of the distinctions in price was accounted for by time. And the velocity was calculated by multiplying the estimated Beta coefficient (0.004) by the prices.

Similarly, exponential functional form was the lead equation chosen for the estimation of the Enugu State urban retail price velocity based on its best explanation of the model. The model explained about 76 percent of the variations in price was attributed to time. The velocity of urban retail price was calculated by multiplying the estimated Beta coefficient (0.01) by the prices. The lead equation for Enugu State wholesale price velocity model was exponential functional form of the regression model. This was based on its uppermost adjusted significant F-value and significant coefficients (Bs). The analysis showed adjusted of 0.67, indicating that 67 percent of the variations in wholesale prices was attributed to time. The velocity was obtained by multiplying 0.10 by the wholesale prices.

Table 5: Price velocities of rural and urban retail and wholesale prices in Enugu and Abia States

States	Variables	Linear	Exponential	Power growth	Quadratic	Cubic
Abia Rural Retail						
	Constant	2.12 (0.91)	1.20 (145.20***)	1.80 (16.56***)	21.64 (21.03***)	13.42 (5.64***)
	B1	0.20 (18.2***)	0.10 (26.20**)	0.64 (44.5***)	-0.063 (-1.26)	0.24 (0.11)
	B2	–	–	–	0.14 (14.3***)	0.000 (-0.212)
	B3	–	–	–	–	0.012 (1.18**)
	Adj. R2	0.7712	0.8421	0.679	0.721	0.812

	F- value	147.23***	152.44***	255.05***	321.34***	112.24***
Abia Urban retail						
	Constant	3.50 (6.40**)	5.30 (134.10***)	2.24 (32.40***)	18.72 (12.91***)	26.21 (3.48***)
	B1	0.45 (12.12***)	0.07 (21.22***)	0.58 (20.5***)	-0.5348 (-0.40)	0.321 (5.77**)
	B2	–	–	–	0.065 (14.5***)	-0.001 (-0.39)
	–	–	–	–	–	0.342 (2.172***)
	Adj. R2	0.6239	0.876	0.86	0.82	0.927
	F- value	15.30**	521.03***	439.27***	1329***	113.16***
Enugu Rural Retail						
	Constant	15.31 (2.12***)	16.405. (25.30***)	7.24 (13.4***)	34. (3.56***)	10.340 (3.36***)
	B1	0.68 (34.08***)	0.004 (20.45***)	0.58 (5.40***)	0.255 (2.46***)	0.390 (0.37)
	B2	–	–	–	0.001 (0.18)	0.007 (1.31)
	B3	–	–	–	–	-0.0239 (-1.31)
	Adj. R2	0.5053	0.6422	0.594	0.599	0.541
	F- value	191.201***	124.673***	338.891***	129.204***	92.211***
Enugu Urban Retail						
	Constant	19.02 (1.09***)	15.43 (21.24***)	2.40 (20.87***)	29.022 (4.73***)	29.995 (3.87***)
	B1	0.291 (11.01***)	0.010 (76.43***)	0.48 (17.65***)	0.523 (2.953***)	0.460 (1.02)
	B2	–	–	–	0.002 (1.885**)	0.003 (0.32)
	B3	–	–	–	–	-0.0032 (-0.43)
	Adj. R2	0.3946	0.7612	0.530	0.649	0.623
	F- value	129.192***	254.234***	308.89***	194.987***	128.543***
Enugu Wholesale						
	Constant	2192.15 (3.10***)	7.98 (172.03***)	7.34 (59.43***)	3194.4 (5.32***)	3731.53 (4.12***)
	B1	56.6 (10.45***)	0.102 (14.45***)	0.29 (10.37***)	6.990 (0.26)	-28.15 (-0.33)
	B2	–	–	–	0.183 (2.22**)	0.667 (1.35)
	B3	–	–	–	–	-0.002 (-0.63)
	Adj. R2	0.5624	0.67	0.4532	0.412	0.632
	F- value	112.301***	234.97***	102.753***	58.123***	39.31***

***** (**) significant at 1% and 5%**

Source: Computed from field data, 2022.

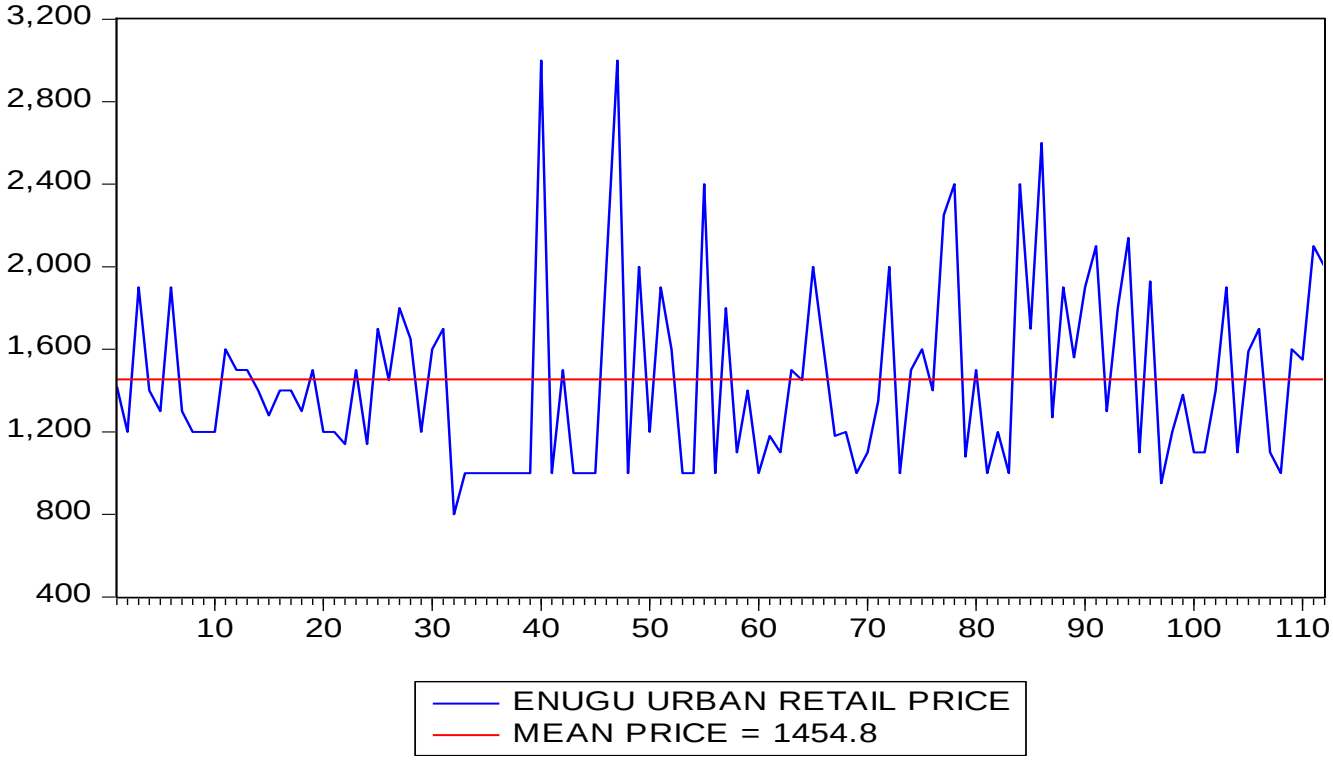

Figure. 2: Scatter plots of urban prices of Bambara groundnut in Enugu State (Aug. 2021-Feb, 2022); Source: Computed from field data, 2022.

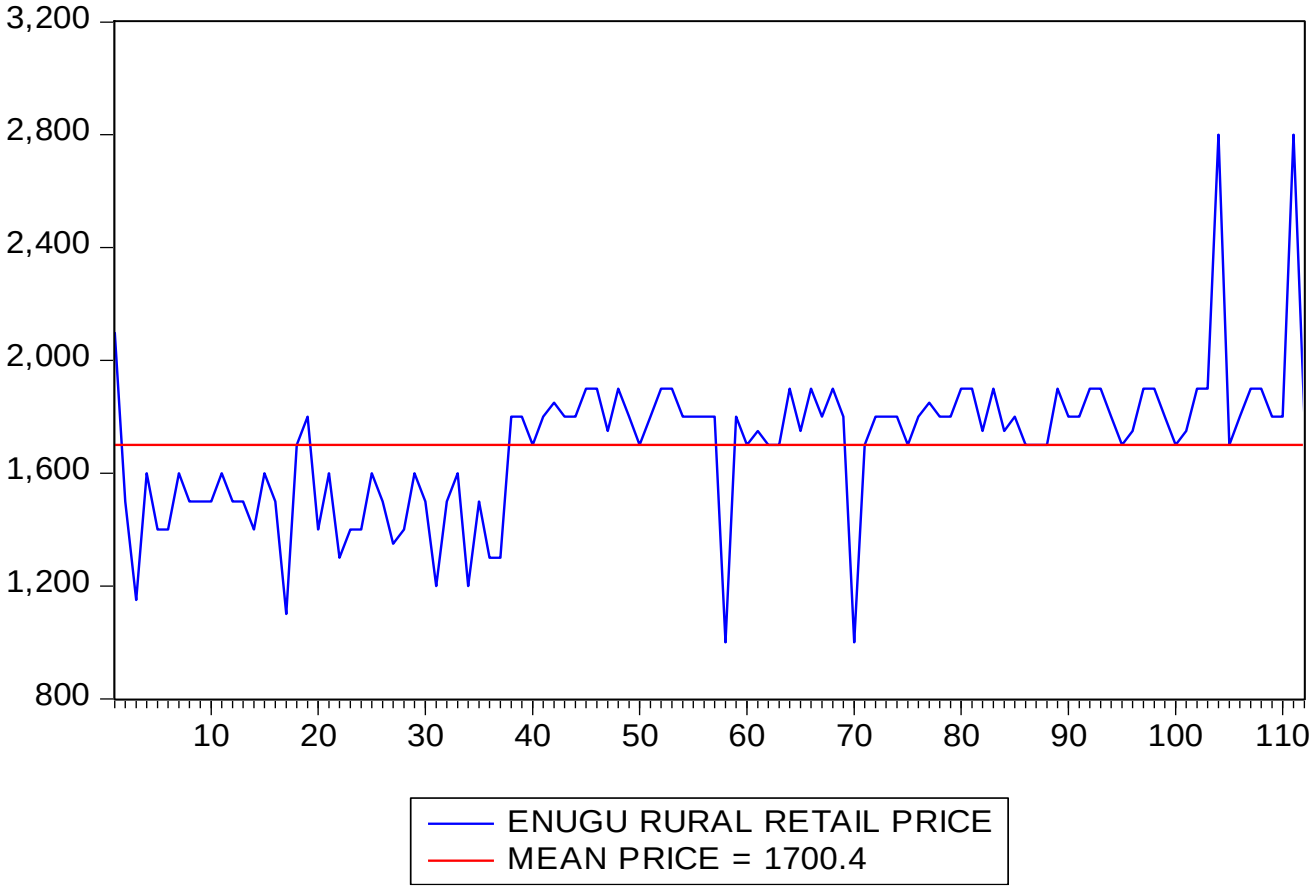

Figure. 3: Scatter plots of retail prices of Bambara groundnut in Enugu State (Aug. 2021-Feb, 2022); Source: Computed from field data, 2022.

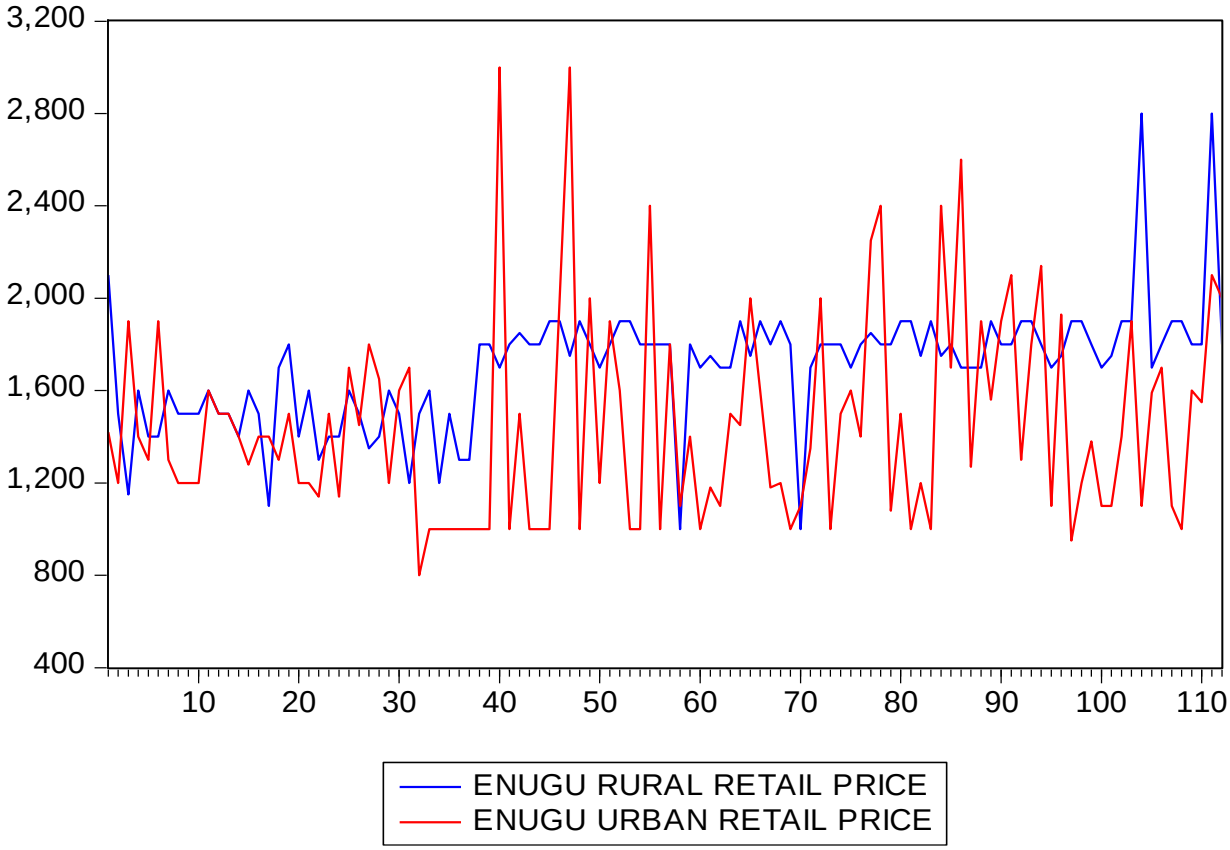

Figure. 4: Scatter plots of rural and urban prices of Bambara groundnut in Enugu State (Aug. 2021-Feb, 2022); Source : Computed from field data, 2022.

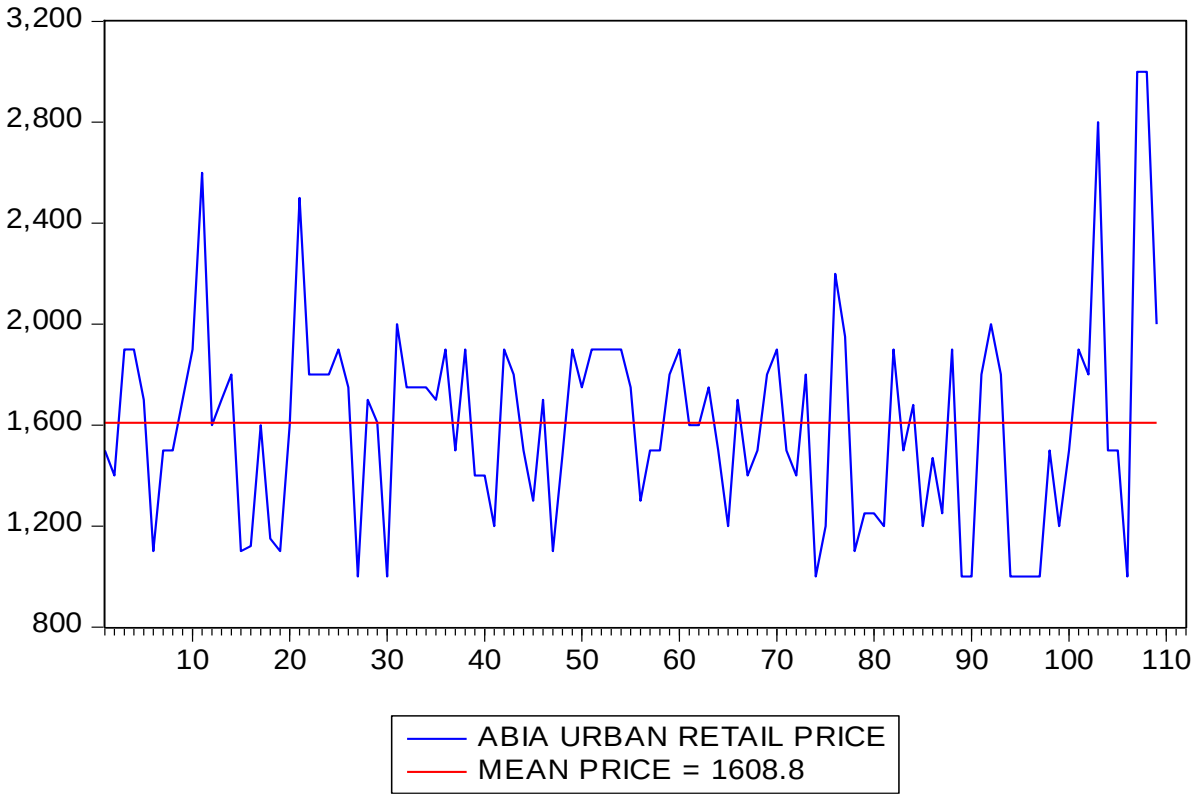

Figure. 5: Scatter plots of urban prices of Bambara groundnut in AbiaState (Aug. 2021-Feb, 2022); Computed from field data, 2022.

Figure. 6: Scatter plots of rural prices of Bambara groundnut in Abia State (Aug. 2021-Feb, 2022); Source : Computed from field data, 2022.

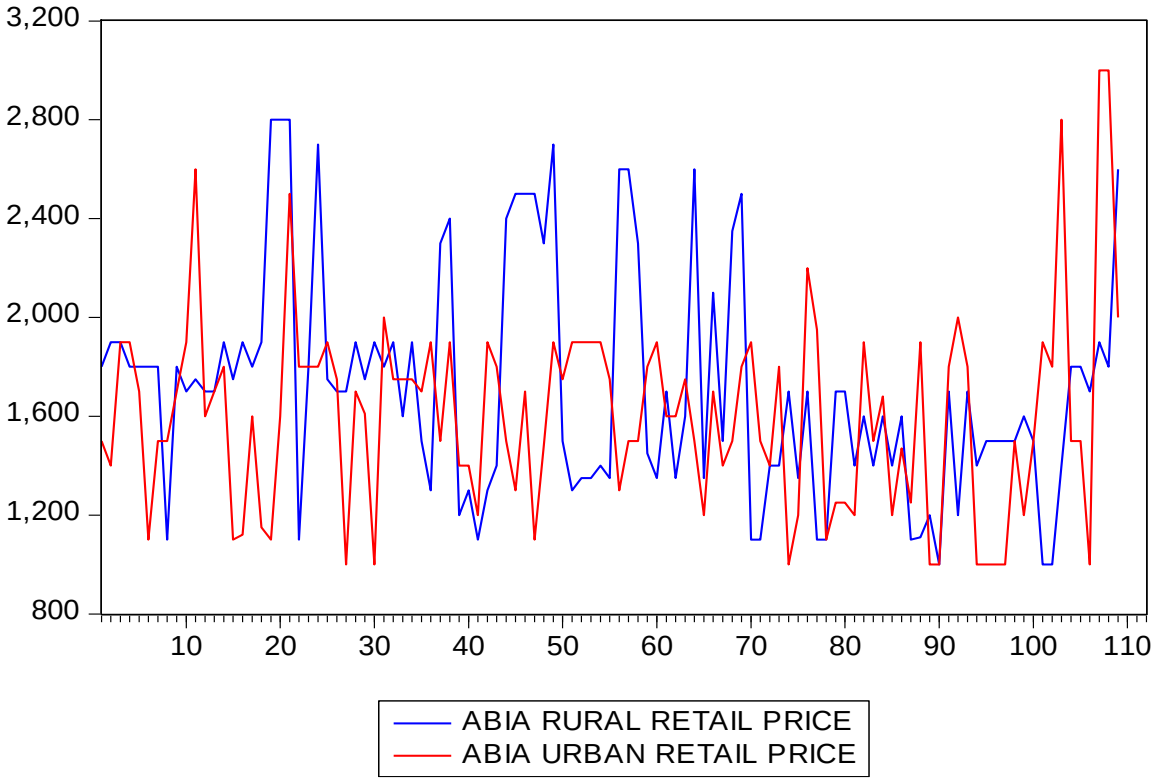

Figure. 7: Scatter plots of rural and urban prices of Bambara groundnut in AbiaState (Aug. 2021-Feb, 2022);

Source: Computed from field data, 2022.

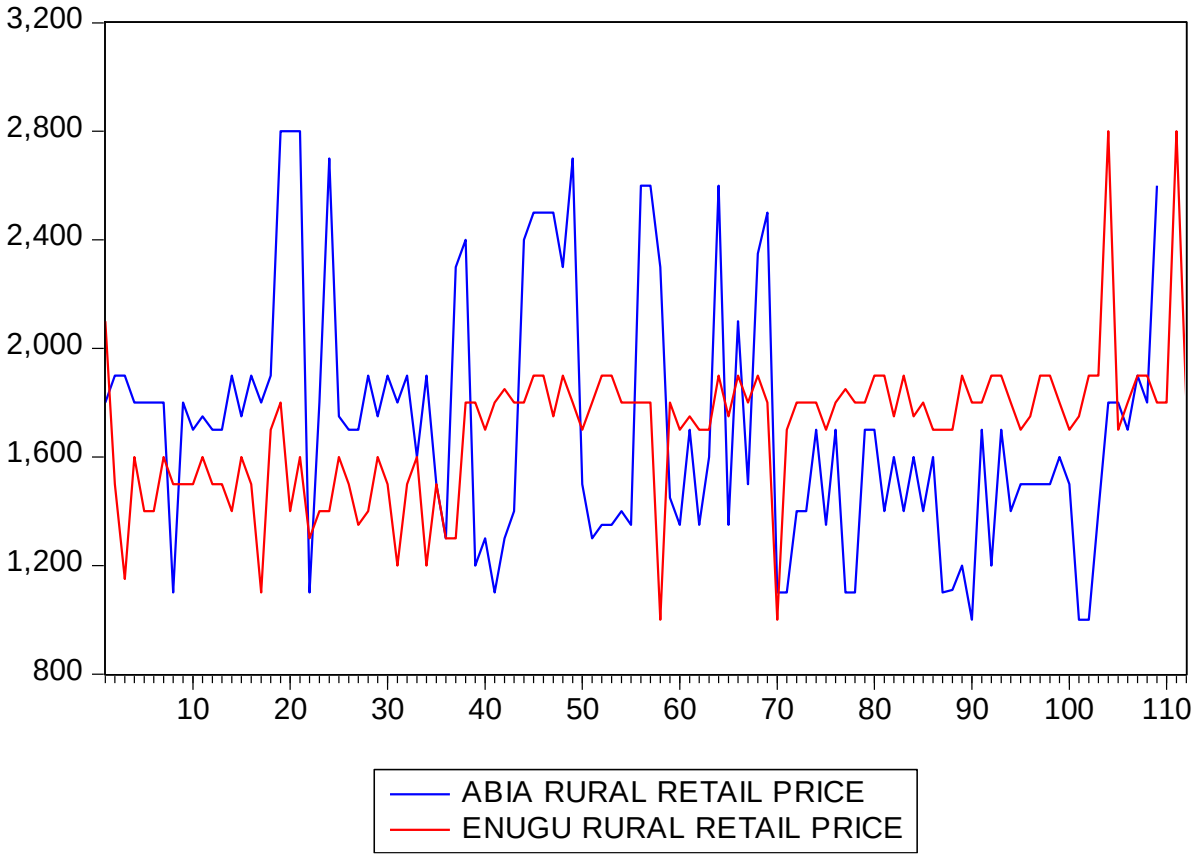

Figure. 8: Scatter plots of rural prices of Bambara groundnut in Abia and Enugu States (Aug. 2021-Feb, 2022); Source: Computed from field data, 2022.

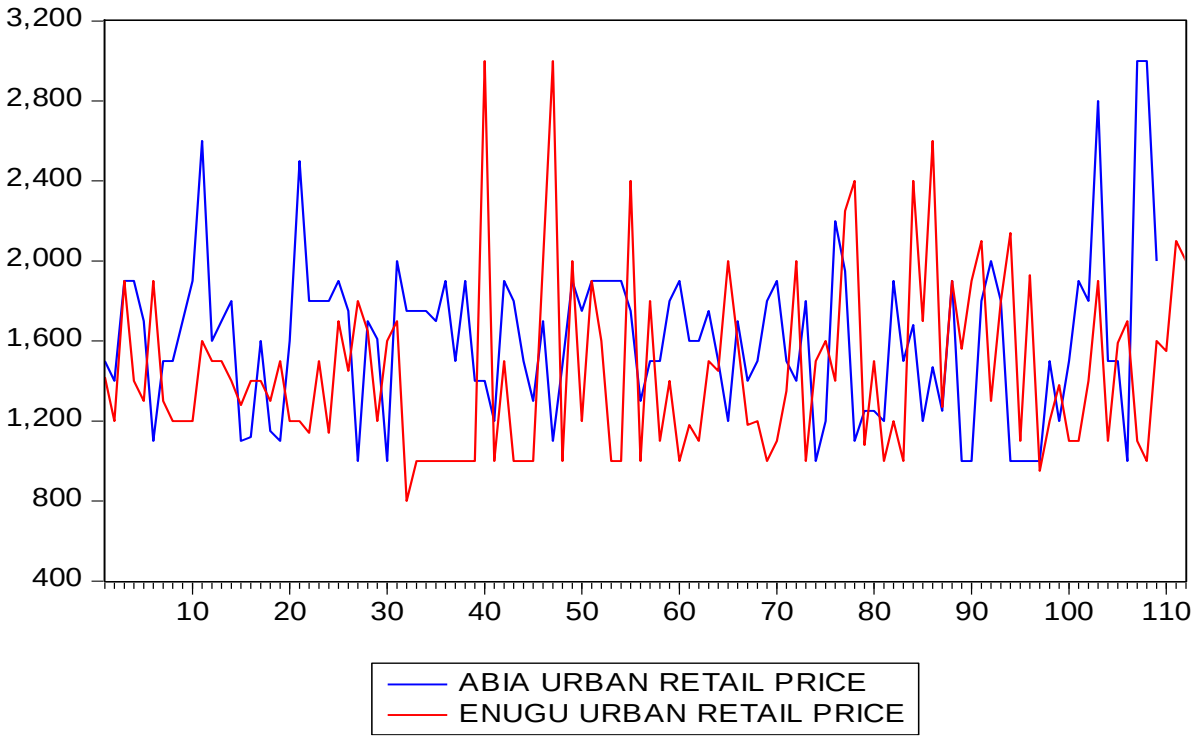

Figure. 9: Scatter plots of ruralprices of Bambara groundnut in Abiaand Enugu States (Aug. 2021-Feb, 2022); Source: Computed from field data, 2022.

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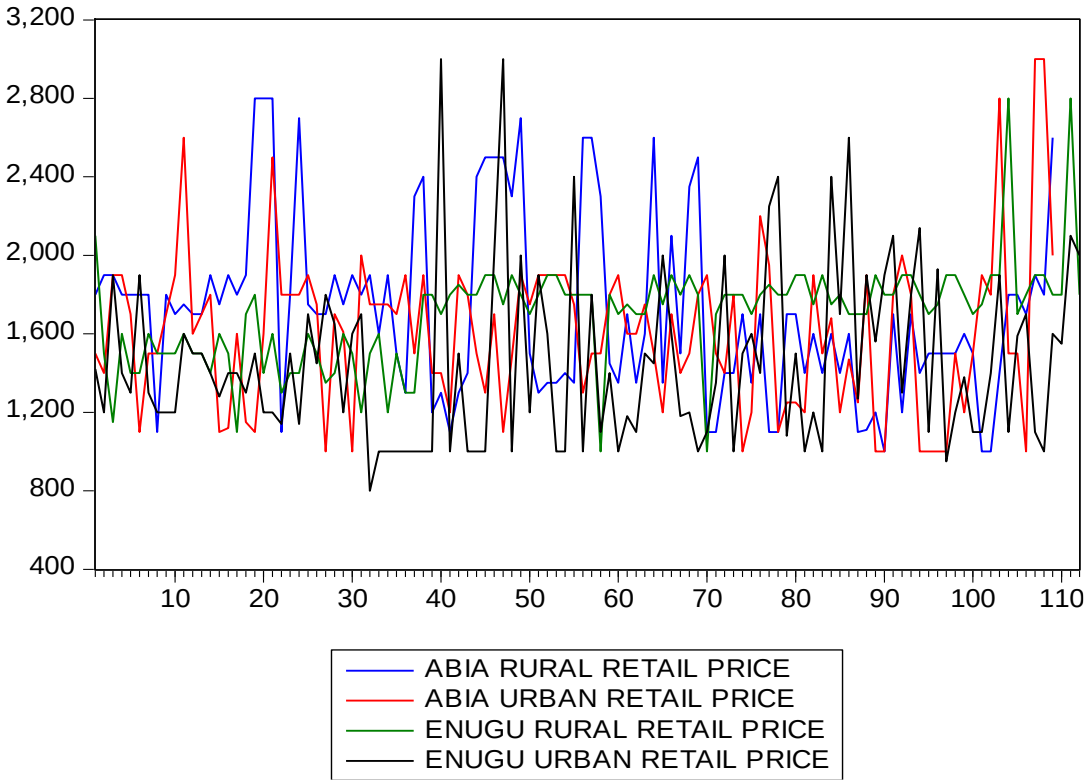
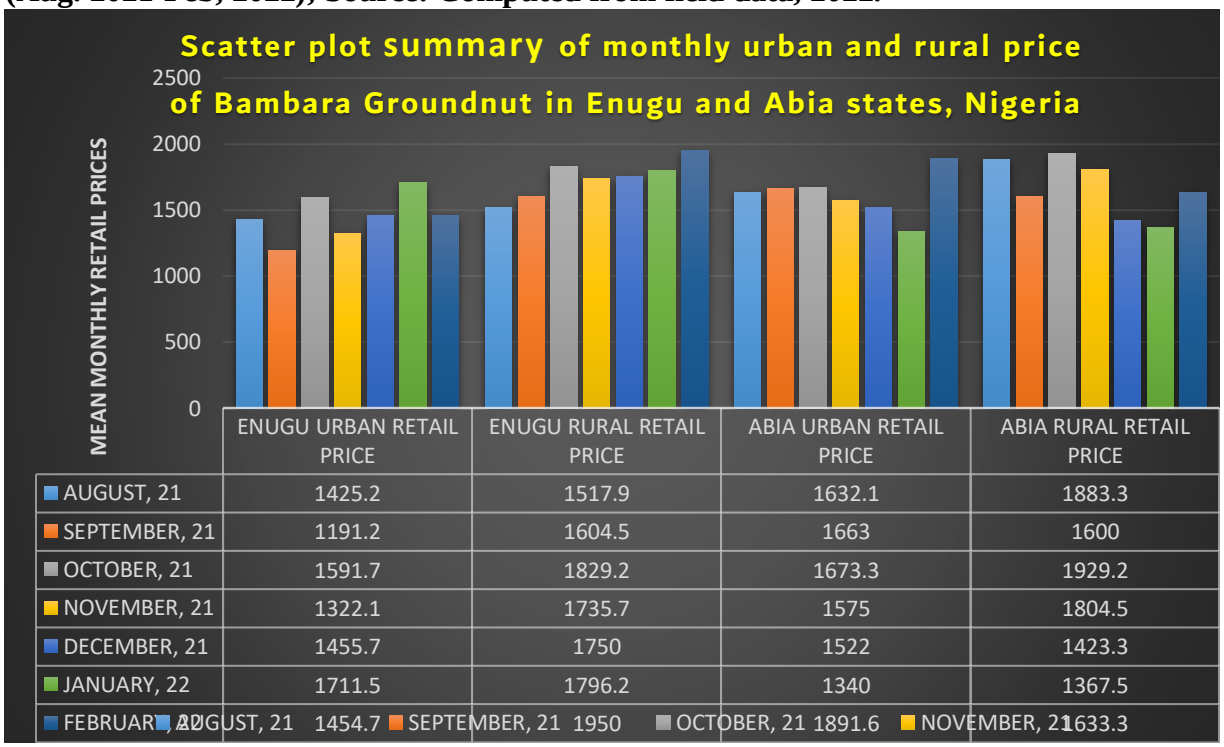


Figure. 10: Scatter plots of rural and urban prices of Bambara groundnut in Abia and Enugu States (Aug. 2021-Feb, 2022); Source: Computed from field data, 2022.



	ENUGU URBAN RETAIL PRICE	ENUGU RURAL RETAIL PRICE	ABIA URBAN RETAIL PRICE	ABIA RURAL RETAIL PRICE
AUGUST, 21	1425.2	1517.9	1632.1	1883.3
SEPTEMBER, 21	1191.2	1604.5	1663	1600
OCTOBER, 21	1591.7	1829.2	1673.3	1929.2
NOVEMBER, 21	1322.1	1735.7	1575	1804.5
DECEMBER, 21	1455.7	1750	1522	1423.3
JANUARY, 22	1711.5	1796.2	1340	1367.5
FEBRUARY, 22				

Figure 11: Scatter plot summary of mean monthly urban and rural price of Bambara Groundnut in Enugu and Abia states, Nigeria (Aug. 2021-Feb, 2022); Source: Computed from field data, 2022

The result of the velocity of Bambara groundnut price in Abia State showed that there was a steady increase in Bambara groundnut price. The result in figs.12 and fig. 13 showed the movement of Bambara groundnut price over a short period of time in Enugu and Abia States. The retail price of Bambara groundnut in Abia State was on the increase over the time surveyed (Aug 2021-Feb, 2022). This could be as a result of

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increasing cognizance on the usages/utilization of Bambara groundnut and hence increased demand for the produce. Generally, the results of the analysis indicated trifling variations of Bambara groundnut rural retail prices in Abia State. Specifically, the results of the study (Table 6 and fig. 5) indicated that on the average, retail prices of Bambara groundnut increased at a monthly rate of N5.586853 per month in the rural markets of Abia State with a standard deviation of N0.8089196. Although, the modal price change was N5.2300 while the minimum price increment could be as low as N3.6610, yet the maximum increment was N7.845 per month in the rural Bambara groundnut markets in Abia State. Low value of Bambara groundnut production and long distance to production States and difference in locations all contributed to the differences obtained. The study found high concentrations of Bambara groundnut processing industries and feed mills in a given location in Abia State such as Isiala Ngwa Abariba and Umuahia townships whereas in some other locations (mostly in rural areas), there were just few. Again, the awareness and household utilization of Bambara groundnut differed from one location to another.

Table 6: Descriptive Statistics of rural and urban retail price velocity of Bambara groundnut for Abia and Enugu States (Aug. 2021-Feb, 2022)

Variables	ABIA	ENUGU	ABIA	ENUGU	ABIA	ENUGU	ABIA	ENUGU
	RURALRETAILERS		URBANRETAILERS		RURAL/ URBAN RETAILERS	RURAL/ URBAN RETAILERS	P. VELOCITY WHOLSALERS	P. VELOCITY WHOLSALERS
Mean	5.586853	5.9040	5.87178274	6.2051228	5.72931798	6.0545703	34.4790356	36.4364033
Std. Error of Mean	0.0774804	0.12178	0.08143195 1	0.1279915 3	0.05689965 6	0.08871157	0.47816746	0.75156470
Median	5.615000	6.2400	5.90136500	6.5582400	5.63800000	6.4300000	34.6527400	38.5099000
Mode	5.2300	6.71	5.496730	7.05221	5.230000	6.71000	32.27673	41.41049
Std. Deviation	0.8089196	1.28881	0.85017453 0	1.3545350 0	0.84011334 6	1.32771324	4.99221480	7.95381314
Variance	0.654	1.661	0.723	1.835	0.706	1.763	24.922	63.263
Minimum	3.6610	3.18	3.847711	3.34218	3.661000	3.18000	22.59371	19.62524
Maximum	7.8450	7.98	8.245095	8.38698	8.245095	8.38698	48.41510	49.24824

Source: Computed from field data, 2022;

P=price.

Similarly, for urban prices of Bambara groundnut in Abia State markets, the result showed minimal variations in monthly prices although urban prices were topmost of rural prices as portrayed in figure 5. This meant that upsurge in monthly prices in urban markets surpassed that of rural prices. Specifically, for urban retail prices in Abia State markets, Bambara groundnut monthly prices augmented by N5.87178274 on the average, although the modal and minimum values of N5.496730 and N3.847711 existed. This implied that price changes in urban centres did not differ significantly from price changes in rural areas in Abia State. This could be due to presence of several industries that require Bambara groundnut and Bambara groundnut products in both urban and rural areas and the near absence of Bambara groundnut production in the State. This result implied that the prices in Abia State changes at a higher degree than in Enugu State hence the steeper slope of its graph.

From the result, it could be seen that urban and rural retail prices of Bambara groundnut in Enugu State showed the same pattern of price velocity, but as expected, the urban prices were higher than the rural prices. The result exhibited that the rural and urban prices of Bambara groundnut changed monthly by

N5.9040 and N6.2051228 respectively, per month with the standard deviation of 1.28881 and 1.35453500 respectively. The result implied that commonly prices of Bambara groundnut slightly swung over a short period of time. The result further revealed the rural/urban retailer price in Enugu Abia and Enugu to be N5.72931798 with standard deviation of N0.840113346 and N1.32771324 respectively. With respect to price velocity of wholesalers in Abia and Enugu states, wholesale price velocity of N34.471035 and N36.4364033 and standard deviation of N4.99221480 and N7.05381314, minimum of N22.59371 and N19.62524 and maximum of N 48.41510 and N 49.24824 respectively. This further suggest that pricing of Bambara groundnut in study area was near to obtained in a seamless and effectual market condition.

In Enugu state, the result (Figure 10) showed minimal fluctuations from August, 2021 through February 2022. The first visible decline in price occurred in September, 2021 (2nd month). Also, in the month of October, there was another strident increase in price which was not sustained as the price sharply depreciated thereafter. There was a very sharp decrease in price around November, 2021 (4th month) which was immediately followed by sharp increase in price in the month of December, 2021. The price rose again in the month of January 2022 and declined slightly thereafter in the month of February, 2022. These sharp appreciations in prices especially November 2021 to January, 2022 could be attributed to the yuletide or festive season, pump price anomalies, high tariffs on Bambara groundnut products. A similar result on price fluctuation was obtained by Ani et al (2017) who though employed a time series data of January 1999 to March 2013 for soybean marketing discovered a sharp appreciation in prices especially around 2011 and attributed it to the number of times of ban on importation of soybean and soybean products in Nigeria. Figures 10 also showed the movement of Bambara groundnut retail prices over petite period of time in Abia State. From the result, there was a sharp initial decrease in price around September 2021which immediately rose to October 2022. Thereafter, there was minimal variations in price until at the 80th month there was another drop in the month of November, 2021 which quickly rose in December 2021 (51th month) and slightly dropped further in January, 2022 (61th month) and thereafter it appreciated in February, 2022 radically. Evidently, the velocity of price in each State followed different patterns (figures 12 and 13). There were variances in times of rising and falling of price over time in different States. This could be explained by the slow adjustment and delay in price transmission established from cointegration results. Price changes did not occur simultaneously due to slow adjustments as a result of imperfect market information flow

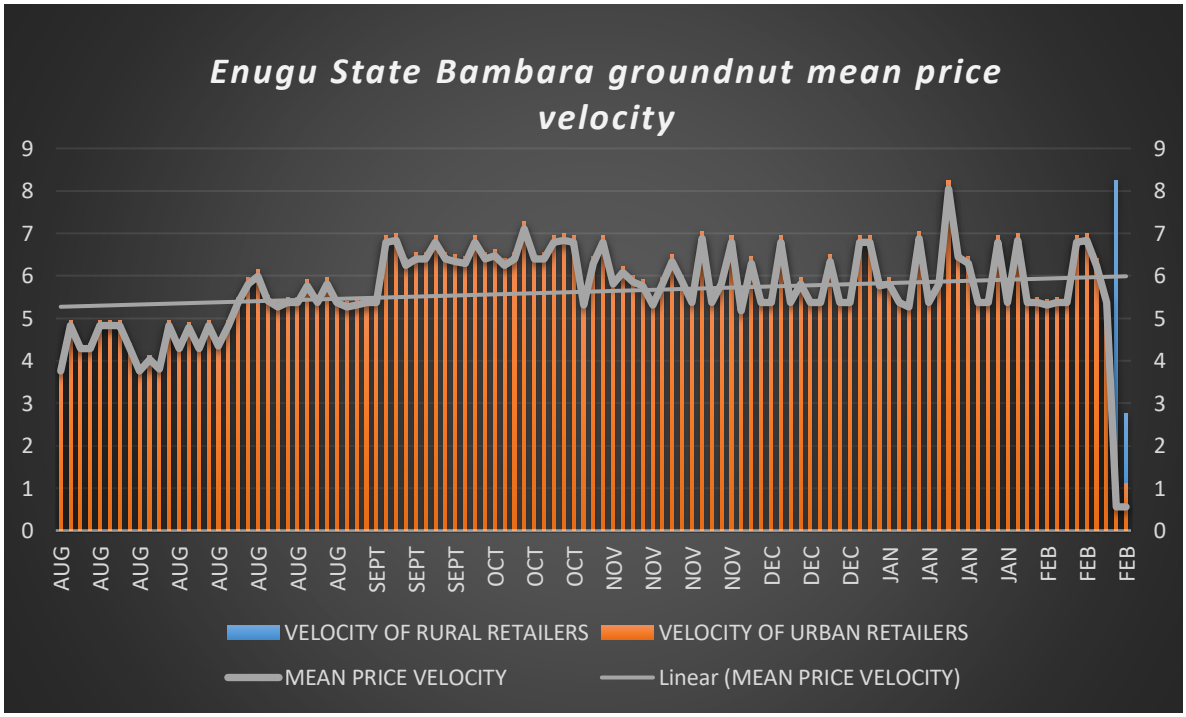

Fig.12: Enugu State Bambara groundnut mean price velocity; Source : Computed from field data, 2022.

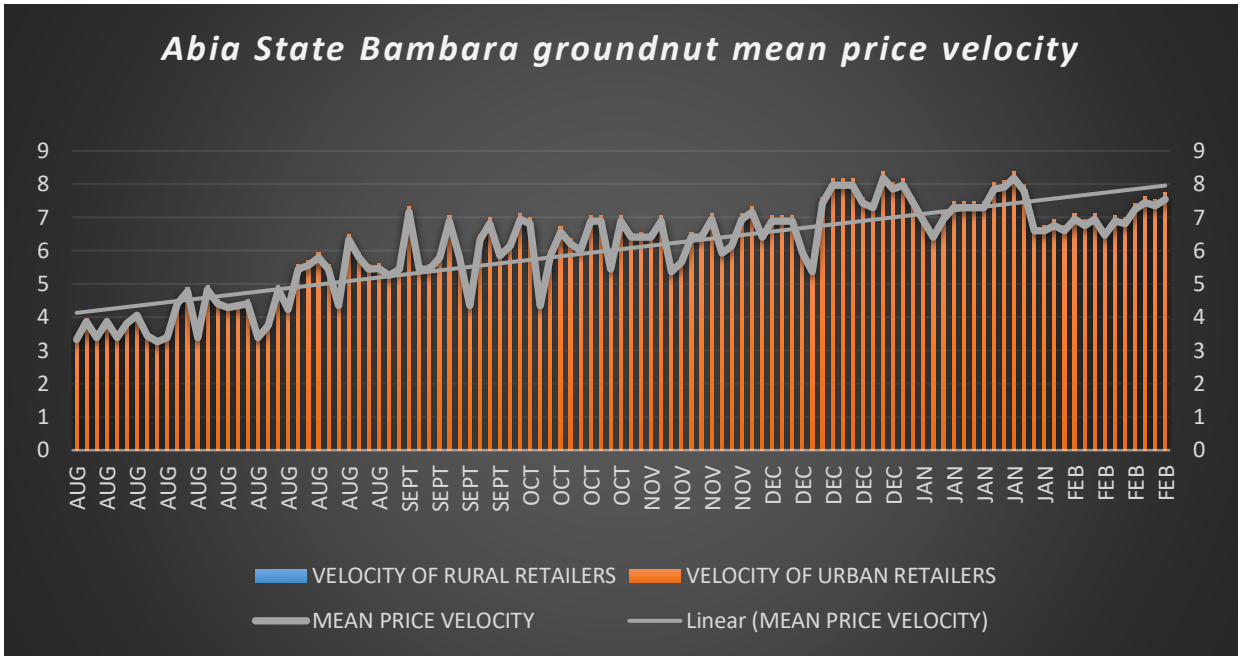

Fig.13: Abia State Bambara groundnut mean price velocity; Source: Computed from field data, 2022.

The positive monthly average change in prices of Bambara groundnut found from the study agreed with the findings of Abdulai (2020) who obtained the same result for Beans and maize in six markets sampled in Enugu State. The result showed that urban and rural retail price velocity of Bambara groundnut in both States reacted in tandem to latent roles of production changes, demand growth, inflation and pyschology of market participants (Pindyck & Rotemberg, 1987).

Table 7: Difference in the velocities of rural and urban retail prices of Bambara Groundnut in Enugu and Abia States

Parameters/states		Sum of Squares	degree of freedom	Mean Square	F Statistic	Sig.(p<0.05)
Velocity of rural retailers	Abia	5.557	1	5.557	4.771	0.030
	Enugu	255.043	219	1.165		
Velocity of urban retailers	Abia	0.057	1	0.057	0.048	0.027
	Enugu	262.435	219	1.198		
Rural/urban retailers	Abia	6.744	1	6.744	1.427	0.234
		1034.773	219	4.725		
Rural urban retailers	Enugu	1.479	1	1.479	2.889	0.008
		182.894	110	1.663		
Price velocity wholesalers	Abia	211.640	1	211.640	4.771	0.030
	Enugu	9713.807	219	44.355		

*****- significant at 1%, Source: Computed from field data, 2022.**

However, the result of the Analysis of Variance (ANOVA) analysis (Table 7) showed that there existed significant difference ($F=4.771$; $P \leq 0.05$) and ($F=0.048$; $P \leq 4.19$) between rural and urban retail price velocities of Enugu and Abia State markets, respectively. The result showed that the rate at which prices changed in rural and urban retail markets in both States were significantly different. Therefore, from the

result, the null hypothesis which states that velocity of rural and urban prices of Bambara groundnut in Abia and Enugu States were not significantly different was rejected. Moreso, results showed that within Enugu markets (rural and urban), the rate of price changes was significantly different ($F=2.889$; $P \leq 0.01$). Thisresult implied that the differences in price velocity of rural and urban markets in Enugu State were not justby accident. This could be visualized by the difference in the steepness of the slope of their graphs. These differences in their velocities could be attributed to the differences in Bambara groundnut production stages at different areas/locations in the State. While Bambara groundnut was largely produced in zones A and B, there was slight or no production in zone C. On the other hand, in Abia State, analysis showed that the velocities of rural and urban prices were not significantly ($F=1.427$;$P=0.234$) different from each other. This implied that the difference in the velocities of rural and urban areas in Abia State could be positive or negative or zero but not significantly different from zero. This could be attributed to the general near absence of Bambara groundnut production in the entire State whether rural or urban areas.

CONCLUSION AND RECOMMENDATIONS

This study gave inference that price fluctuations in urban centres did not vary significantly from price changes in rural areas in Abia State. This could be due to presence of many industries that require Bambara groundnut and Bambara groundnut products in both urban and rural areas and the near absence of Bambara groundnut production in the State. This study concluded that the prices in Abia State changes at a higher rate than in Enugu State hence the slope of its graph was steeper. From the result, it can also be deduced that urban and rural retail prices of Bambara groundnut in Enugu State exhibited the same pattern of price velocity, but as expected, the urban prices were higher than the rural prices. The study showed that the rate at which prices changed in rural and urban retail markets in both States were significantly different. The study recommended that the moderately high variation of prices with time calls for governments' action in soothing prices to protect farmers. Guarantee minimum price for producers as an incentive for more assured output market will intensify volume of supply and promotion of Bambara groundnut industries.

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