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Market Structure, Conduct and Performance of Fresh Ginger Marketing in Southeast, Nigeria

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Abstract

The study examined the market structure, conduct and performance of fresh ginger marketing in Southeast, Nigeria. Data were collected from primary source using structured questionnaire. Collected data were analyzed by means of descriptive statistics (mean, frequency) and Gini coefficient. Results identified three channels for fresh ginger distribution in the area, while volume of trade across the channels was highest (58%) at channel iii (producer/supplier → wholesaler → retailer → consumer) which is the most preferred channel in the marketing of fresh ginger. Gini coefficient indices of 0.74 and 0.62 for wholesalers and retailers respectively indicated high level of income inequality and concentration of sales in the hands of few marketers which suggests an existence of imperfect competition in fresh ginger marketing. Findings on market conduct indicated that greater proportions (47.2% and 50.6%) of wholesalers and retailers respectively considered degree of freshness as criteria for purchase. Most of the wholesalers (50.6%) and retailers (57.8%) used pricing technique of cost-oriented pricing as the strategy to arrive at market prices for ginger. It was recommended that government should construct good feeder roads and railway network, address irrelevant produce taxes and levies and modernize existing market infrastructure and facilities to encourage new entrants to the enterprise.

Key words: *Market structure, Conduct, performance, fresh ginger, Southeast*

Introduction

According to Taiwo (2020), employment in Nigeria's agricultural sector accounted for nearly 35% of total employment in 2019 and 2020. Thus, agriculture has proven to be the most valuable contributor to Nigeria's economic growth in recent times despite the nation's dependence on crude oil (Obot et al., 2021). Ginger is one of the crops capable of impacting positively on economic development based on its numerous health and nutritive benefits and variety of uses which has invariably increased its demand globally (National Horticultural Research Institute (NIHORT), 2021; Ositanwosu, 2024). Ginger is available in three forms, fresh root, preserved and dried. About

75% of ginger produced in Nigeria is traded in fresh form, while the remaining 25% is in processed form primarily traditionally dried form and powdered ginger (Marcus, 2019). Ginger is used as a spice, flavor, food, and medicine. Thus, it is an important export commodity globally, with demand growing in Asia, Europe and America (NdaNmadu and Marcus, 2013; Marcus, 2019; Nwaekpe et al., 2022).

The growing awareness of the numerous health and nutritional benefits of ginger has increased its demand in Southeast, Nigeria. The major domestic supplies of ginger come from the Northern States of Kaduna and Plateau, hence efficient marketing system is very essential to ensure its availability throughout the year at reasonable prices to the consumers and sufficient returns to the marketers. Ginger as most agricultural products is perishable and bulky. It therefore exerts various pressures on handling, packaging, transportation and sales with adverse antecedent effect on market prices. More so, ginger marketing is affected by a high degree of seasonality and prices are subject to seasonal variations. Uncertainty in prices makes it difficult for farmers to guarantee sufficient returns from sales because the storage process is technically difficult and expensive hence marketers are forced to sell the product at peak season thereby lowering profit and income.

Danazimi et al. (2020), as well as Egesi and Ebe (2021), reported a gap in supply and demand for fresh ginger, and attributed this to inefficiencies across the supply chain, from production to distribution and marketing. Wilcox (2021) opined that it is not just enough for policy makers to concentrate on increasing productivity without reference to their marketing constraints, because even when actual production maybe adequate, marketable surplus may be insufficient. Put poignantly, poor efficiency in marketing has serious consequences for both marketers and consumers of fresh ginger. This situation may virtually increase the market price of ginger but eventually reduce the marketing margins accruable to the farmers. In addition, there is dearth of information on the marketing of fresh ginger in the Southeast, where fresh ginger marketing is common in virtually all daily markets.

Materials and Methods

The study area was conducted in Southeast, Nigeria. It is one of the six geopolitical zones of Nigeria. The zone comprises of Abia, Anambra, Ebonyi, Enugu and Imo States. The region has an estimated population of 22,012,826 million and is located between latitude $40^{0}51^{I}$N to $70^{0}10^{I}$N and longitudes $60^{0}40^{I}$E to $80^{0}30^{I}$E (National Population Commission NPC, (2006) as cited by National Bureau of Statistics NBS, (2023); Nwankwo et al., 2023). It is bordered by the Niger River in the East and has an administrative and cultural border with the northern region of Nigeria. The total surface area of the region is approximately 76,000 square kilometers (Merem et al., 2019). The predominant occupations are farming, trading, craft etc. However, subsistence farming and agro produce trading is prominent particularly among the rural dwellers with crops like yam, cassava, oil palm, cocoyam, maize, rice, plantain, melon, ginger and okra (Nwaekpe et al., 2022). Fresh ginger marketing is a common enterprise in the urban and rural markets in Southeast, Nigeria. The study population comprised all the ginger marketers and markets in Southeast, Nigeria. Multistage, involving purposive and random sampling methods was used to select three

States, nine agricultural zones, 18 LGAs, 36 daily markets and 360 marketers (180 wholesalers and 180 retailers) for the study. Descriptive statistics and Gini coefficient technique were used to analyze the data.

Result and Discussion

Marketing channels and volume of trade across the channels

Marketing channel refers to the various means or pathways by which ginger moves from the producers till it gets to the consumers (Nkamigbo and Isibor, 2021). The result of the study identified three marketing channels in the distribution of ginger in the study area as shown in Figure 1. The marketing channels identified were;

Producer/Supplier → Retailer → Consumer (28%)

Producer/Supplier → Wholesaler → Consumer (14%)

Producer/Supplier → Wholesaler → Retailer → Consumer (58%)

The highest quantity of ginger is produced in the Northern States of Nigeria, mainly Kaduna and Plateau. The first channel indicated the flow of ginger from producer/supplier to the retailers who then directly supply to the consumers. The retailers who buy ginger directly from producers/suppliers pay lower prices than those who buy from the wholesalers but maybe subjected to high transportation cost. This agrees with Isibor and Nkamigbo (2023), who stated that retailers buying from producers/suppliers pay high transportation cost to convey the products from the producing market to consumer market. In channel ii, the producer/supplier sells to the wholesaler, who then sells to the consumer. Lastly, the third channel which is the longest and the most common involves the product sales flow from producer/supplier to wholesaler. The wholesaler then sells to retailers in bulk and the retailer to the final consumers in small quantities. However, the longer the marketing channel, the more the farmers are exploited, thus reducing the price they get when compared to the middlemen. This finding agrees with Dilip et al. (2018) who reported three marketing channels for ginger in the Bilaspur district of Chhattisgarh, India.

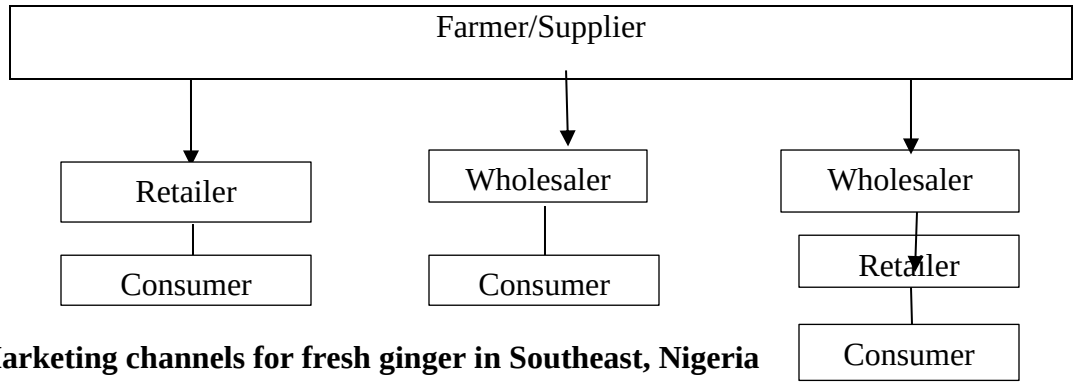

Figure 1: Marketing channels for fresh ginger in Southeast, Nigeria

Channel comparison for ginger was made based on multiple responses of ginger marketers with regards to the volume of the product that passed through each of the channels from the producers to the consumers. Channel iii recorded 58% of the traded volume to be the most important channel. This is the most common channel in the flow of ginger in the study area. This finding agrees with Devendra et al. (2019), who reported that 40% of the respondents identified this channel iii (Farmer- Wholesalers- Retailers- Consumers) to be the most vital channel in ginger distribution in Nepal. More so, this finding also agrees with Ozor et al. (2019) who reported that bulk quantities of dry maize being consumed in the Southeast comes from the Northern part of Nigeria and has to pass through channel iv before they get to the final consumers.

Market structure of fresh ginger

Market structure analysis is important in marketing as it is used to classify a particular market in study. The analysis of market structure using Gini coefficient is shown in Table 1 and 2. It can be deduced from the table that the Gini-coefficient was calculated as 0.74 and 0.62 for wholesalers and retailers respectively. These values indicate a high level of income inequality in terms of sales margin distribution among marketers and a concentration of sales in the hands of a few individuals. This suggests the existence of imperfect competition in the fresh ginger market where certain marketers may have the ability to influence product prices. The variation is more among the wholesalers due to advantages of time and place utilities. These findings are consistent with the research conducted by Nkamigbo et al. (2019) who reported similar Gini-coefficients, wholesalers (0.6556) and retailers (0.6278) for watermelon marketers indicating high income inequalities in the distribution of sales income. This is also in agreement with Anjikwi et al. (2020) who reported a Gini coefficient of 0.5797 signifying a very high variation in revenue generated from sale of ginger amongst the marketers in the study area. The action of these marketers could have some influence on marketing as they had high market power which has resulted in uncompetitive market situations. They observed that the high variations in sale income inequality can be attributed to inability of most marketers to raise adequate capital as capital is an important factor in ginger marketing in their study area. Nzima and Dzanja (2015) and Anjikwi et al. (2020) corroborated the study finding as they reported high income inequalities in retail levels of fresh ginger marketing in their study area which they attributed to different levels of investment and possibly barriers to entry.

The findings contrasts with the study conducted by Ugwumba et al. (2016) who reported Gini coefficients of 0.34 for wholesalers and 0.19 for retailers indicating a low level of income inequality among the marketers of giant snail in Anambra State. Also the findings of Obasi and Kalu (2019) contradicts this findings, as they reported a low Gini-coefficient of 0.46 in onion marketing at retail levels in their study area. Generally, the Gini-coefficient analysis highlights the income inequalities and market dynamics within the fresh ginger market indicating varying levels of concentration and competition among wholesalers and retailers.

Table 1: Gini coefficient for fresh ginger wholesalers

Monthly Sales ₦	F	X_1	Cum of Wholesale (₦)	TMS (₦)	Cum Pro of TMS Y_1	X_1Y_1
800,000 - 1,400,000	45	0.2500	0.2500	3,385,000	0.1243	0.0311
1,401,000 - 2,000,000	39	0.2166	0.4666	5,069,000	0.1862	0.0403
2,001,000 - 2,600,000	43	0.2388	0.7054	7,225,000	0.2654	0.0634
2,601,000 - 3,200,000	53	0.2944	0.9998	11,545,000	0.4241	0.1249
	180			27,224,000		0.2597

Key Note: WTs =Wholesalers, Pro = Proportion, Cum = Cumulative, TMS = Total monthly sale. Source: Field survey, 2024.

GC = 1 - $\sum X_1Y_1$ = 1 - 0.2597 = 0.7403 = **0.74**

Table 2: Gini coefficient for fresh ginger retailers

Monthly sales (₦)	(F)	Pro of RTs X_1	Cum of RTs (₦)	TMS (₦)	Cum Pro of TMS Y_1	X_1Y_1
100,000 - 400,000	30	0.1666	0.1666	522,000	0.0817	0.0136
401,000 - 800,000	32	0.1777	0.3443	614,600	0.0962	0.0171
801,000 - 1,200,000	31	0.1722	0.5165	965,000	0.1511	0.0260
1,201,000 - 1,600,000	87	0.4833	0.9998	4,286,300	0.6710	0.3243
	180			6,387,900		0.3810

Key Note: WTs =Wholesalers, Pro = Proportion, Cum = Cumulative, TMS = Total monthly sale. Source: Field survey, 2024.

GC = 1 - $\sum X_1Y_1$ = 1 - 0.3810 = 0.6190 = **0.62**

Market conduct of fresh ginger marketers

This describes the pattern of behavior of ginger marketers in adapting to the market situation. This involves criteria for purchase, strategies for fixing selling price (price determination), membership of market union, entry mode, free entry and exit, sources of market information, and marketing strategies adopted. The result of the analyses carried out on market conduct for ginger are discussed and further presented in Table 3. The table presents the distribution of respondents according to indicators of market conduct for ginger in the study area.

On criteria used for purchase, the result showed that wholesalers (47.2%) and retailers (50.6%) considered degree of freshness as major criteria for purchase. Moreover, wholesalers (31.7%) and retailers (27.8%) considered size of ginger rhizomes as another criterion, while absence of harvest cuts and breakages on the rhizomes were the least considered criteria by both wholesalers and retailers with indications at 21.1% and 21.6% respectively.

On strategies for fixing selling price, the findings revealed that majority of the wholesalers (50.6%) and retailers (57.8%) used cost-oriented pricing technique, which is fixing price after considering expenses incurred. This is in consonance with the findings of Nkamigbo et al. (2019) who reported consideration of expenses incurred as a tool for fixing price among watermelon marketers. Ginger market price in the study area was also determined through common pricing technique of haggling as indicated by 30.6% of wholesalers and 16.7% of retailers. This agrees with Gege and Ocholi (2023), who reported bargaining as a tool for price determination among ginger marketers in Benue State. Demand and supply push as a determinant of price was indicated by 18.8% and 25.6% for wholesalers and retailers respectively.

The result on table 3 indicated that majority (65.8%) and 86.1%) of wholesalers and retailers respectively were not members of market union, where group buying and selling usually take place. This implies that there was no collusion and monopoly control among the market actors. Thus marketers fixed prices mainly based on consideration of purchased price of their products.

The market conduct analysis for wholesalers and retailers indicated that 34.4% and 10.6% entered the market union by registration for both wholesalers and retailers respectively, while 65.6% and 89.4% for wholesalers and retailers joined by chance. More so, 100% of both wholesalers and retailers had free entry and exit.

On sources of market information, the result indicated that majority (54.4% and 86.1%) of the wholesalers and retailers respectively, obtained their market information from fellow marketers. The result also revealed that 17.8% and 13.9% of wholesalers and retailers respectively sourced information from market unions.

On marketing strategy adopted, the results showed that majority (72.2% and 52.8%) of the wholesalers and retailers respectively applied the strategy of creating customer friendly attitudes in selling their products. Cleaning the ginger rhizomes was another strategy for the wholesalers (27.8%) and retailers (12.8%). For the retailers specifically, 27.2% indicated that selling at strategic points was a good marketing strategy while 7.2% indicated that selling slightly below the

prevailing market prices was another good strategy. However, lowering of prices may act as a barrier for new entrants into the market as they would be forced to price their products even lower, hence risking a cost disadvantage. Thus, only few marketers use this strategy.

Table 3: Distribution of respondents according to behavioral patterns in fresh ginger marketing

Variables	Wholesalers Frequency	%	Retailers Frequency	%
Criteria for purchase				
Degree of freshness	85	47.2	91	50.6
Size of ginger rhizomes	57	31.7	50	27.8
Absence of harvest cuts and breakages	38	21.1	39	21.6
Total	180	100	180	100
Strategies for fixing selling prices				
Fix price after consideration of purchase price and other expenses (cost-oriented pricing)	91	50.6	104	57.8
Fix price through haggling (bargaining)	55	30.6	30	16.7
Demand and supply push	34	18.8	46	25.6
Fix prices by ginger marketers union	-	-	-	-
Total	180	100	180	100
Membership of market union				
Yes	62	34.4	25	13.9
No	118	65.6	155	86.1
Total	180	100	180	100
Entry mode				
By registration	62	34.4	19	10.6
By chance	118	65.6	161	89.4
Total	180	100	180	100
Free entry and exit				
Yes	180	100	180	100
No	-	-	-	-
Total	180	100	180	100
Sources of market information				
Fellow marketers	98	54.4	155	86.1
Middlemen	50	27.8	-	-
Market union	32	17.8	25	13.9
Total	180	100	180	100
Marketing strategy adopted				
Customer friendly attitude	130	72.2	95	52.8
Selling at strategic point	-	-	49	27.2
Selling clean and neat ginger	50	27.8	23	12.8

Selling below prevailing market prices	-	-	13	7.2
Total	180	100	180	100

Source: Field Survey, 2024.

Conclusion and Recommendations

The study specifically examined the marketing channels and volume of trade across the channels and described the market structure and conduct of fresh ginger marketers. Findings on marketing channels identified three channels for the product. Channel comparison for fresh ginger was made based on multiple responses of ginger marketers with regards to the volume of the product that passed through each of the channels from the producers to the consumers. Channel iii (Producer/Supplier →Wholesaler →Retailer →Consumer) recorded majority (58%) of the traded volume to be the most preferred channel.

Market structure using Gini coefficient gave an index of 0.74 and 0.62 for wholesalers and retailers respectively. These values indicate a high level of income inequality among the wholesalers and retailers; and a concentration of sales in the hands of few of them. This suggests the existence of imperfect competition in the fresh ginger market with few marketers having the ability to influence product prices.

The study recommended that ginger market participants should be enlightened and encouraged to form cooperative societies to enable them access finance from government institutions, promote bulk purchase, and increase volume of trade and market share, and that government should construct good feeder roads and railway network, address irrelevant produce taxes and levies and modernize existing market infrastructure and facilities to encourage new entrants to the enterprise.

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