

MARKET STRUCTURE, CONDUCT AND VOLUME OF TRADE AMONG THE CHANNELS OF SWEET POTATO MARKETING IN ANAMBRA STATE, NIGERIA

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Abstract: The study examined the market structure, conduct and volume of trade among channels of sweet potato marketing in Anambra State. Data were collected from primary source using well structured questionnaire and were analyzed by means of descriptive statistics such as mean, frequency and gini coefficient. The socioeconomic characteristics revealed dominance of female and married in the marketing of sweet potato in the study area. The result revealed four channel of flow of produce from producer to the end user. The fourth channel involved the flow of produce from producer to wholesalers who sold in bulk to retailers that sold in small quantities to consumers. The implication is that the longer the channel, the lower price accrued to producers due to more exploitation of the middlemen. The findings revealed that majority of wholesalers (84.2%) and retailers (82.5%) used common pricing techniques of fixing price after considering expenses incurred. Market structure, using gini coefficient gave an index of 0.6218 and 0.6927 for wholesalers and retailers respectively. The result showed a high level of income inequalities in the distribution of income, high concentration of sales in the hands of few marketers hence existence of near imperfect market. It was recommended that both government and marketers should improve and upgrade the market infrastructure to accommodate the new entrants into the enterprise for maximum profit and welfare

Keywords: Market structure, conduct, trade, Sweet potato

Introduction

Sweet potato (*Lpomea batatas* L) is an herbaceous, warm-weather creeping plant that belongs to the family of Convolvulaceae and genus *Ipomoea*. It originated from South America where it was introduced to Europe between 153AD (Sanusi and Adesogan, 2014 and Udemezue, 2019). Sweet potato is regarded as world most important food crop due to its high yield. It is the fifth most important food crop after rice, wheat, maize and cassava in developing countries like Nigeria and the seventh most important food crop in the world in terms of production Sanusi, Lawal, Sanusi and Adesogan, (2016) and Udemezue (2019). Nigeria is one of the largest producers of sweet potato in sub Saharan Africa with annual production estimated at 3.46 million tonnes per year and fourth largest producer in Africa while Egypt is Africa number one producer followed by Malawi. It was introduced into Nigeria in the late 1694-1698 through the early activities of the Portuguese and Spanish explores Mbanaso (2010).

Sweet potato plays a great role in developing countries; it provides job opportunity to teeming population by raising their income. The demand for sweet potato is quite higher than the supply Ajakaiye and Akande (1999) as cited by Adewumi and Adebayo (2008). This is as a result of its high nutritional value, cheap and inexpensive of the product compared to other root source of carbohydrates and vitamin. The leaf of potato can be use to feed animal either fresh or in the form of silage. The tubers can be consumed by man either boiled, roasted or fried. It can be dehydrated into chips, canned, cooked and frozen, creamed and used as pie fillings. It could also be dried and ground into flour to make biscuits, bread and other pastries.

Sweet potato can be pounded together with yam to give a delicious meal Udemezue (2019). Baby food has being formulated using sweet potato while some bakeries blend 15-30% of sweet potato flour for making bread and 20-30% for pastries. Sweet potatoes have medicinal value, the leaf decoction is used in folk remedies for asthma, bug bites, burns, catarrh, ciguatera stomach distress, tumor and whit lows. Sweet potato starch can be used in textile, glue, paint and cardboard industries. Industrial potentials of sweet potato have not been exploited due to mainly chronic lack of awareness to the abundance of industrial and commercial benefits.

It was reported by Sanusi et al. (2016) that sweet potato production has recorded good profit margin and is suitable for income generation. It has the potential for food security as well as serving as a cash crop. Sweet potato is becoming a thriving business in the State due to its economic, nutritious and commercial value and it is readily available in every market called sweet potato market. Sanusi et al. (2016) reported that sweet potato marketing has a large potential to enhance agribusiness development, generate income and employment opportunities that will lead to significant impact in the rural sector and non-producing areas. Sweet potato from the farm reaches the consumers through the marketing system. Nkamigbo and Isibor (2019) reported that marketing involves all processes in the movement of products that consumers need from the point of production to the point of purchase. Marketing is concerned with all stages of operation which facilitate the movement of commodities from the farm to the consumers. Marketing has economic value because it gives form, time and place utility Asogwa and Okwoche (2012). Osondu, Nwadike, Ijeoma, Udah and Ugboaja (2014) further explained that efficient marketing plays a crucial role in an economy. This role becomes more evident in areas where there is high rate of urbanization. The marketing system enables producers as well as middlemen to earn income with which they purchase other useful goods and services Ebe (2007) as cited by Nkamigbo, Ugwumba and Okeke (2019).

Ejechi, Anyagbunam, Okoye and Eleodinmuo (2014) noted that there has been growing activities in the marketing of sweet potato due probably to increasing consumer/marketer’s awareness of its economic, nutritional and medicinal values. Sweet potato is either sold as a whole, roasted or fried. The State has several daily markets both in the urban and rural areas where agricultural produce are sold especially sweet potato known as sweet potato market.

Materials and method

The study was carried out in Anambra State. Anambra is a State in South-East of Nigeria. Several raw industrial materials and agro products are produced in various parts of the State. Some of the crops grown in the State include oil palm, maize, rice, yam, groundnut, cassava, sweet-potato, cucumber, watermelon, melon, greenbeans (akidi), pigeon pea, soybean, livestock such as goats, sheep, poultry and cattle are also raised. It is an agrarian State and majority of the people are subsistence farmers. It is situated on a generally low elevation on the Eastern side of the River Niger sharing boundaries with Delta State to the west, Imo, Abia and Rivers State to the South, Enugu State to the East and Kogi State to the North. The State occupies an area of about 4844 Km². Geographically, the State lies within longitude 5o551 and 6o421N. The population of the State is 4,182,232 with 863 Sqkm density (NPC, 2006).

The State has several daily markets both in the rural urban areas where agricultural goods are sold especially sweet-potato known as sweet potato markets. Sweet potato is a thriving business in the State due to its nutritional, medicinal, industrial value, population and economic returns. It is either sold as a whole, fried or roasted.

It consists of twenty one (21) Local Government Areas (LGAs) and four agricultural zones. The state has two distinctly marked seasons: rainy and dry seasons. The rainy seasons occurs from the month of March through October. The dry season occupies the months of November to February. The annual rainfall ranges from 1400 mm in the North to 2500 mm in the South with temperature of 250C-350C. Multistage, purposive and random sampling methods were used to select 12 local Government Areas, 12 daily sweet potato markets and 240 intermediaries (120 wholesalers and 120 retailers) for the study. Descriptive statistics and gini-coefficient were used to analyze the data. Gini coefficient, $GC = 1 - \sum XY$

Table 4.1 Socioeconomic characteristics of the Marketers.

Variable	F	% (Wh)	F	% (Rt)	F	% (Wt & Rt)
Age						
20-29	11	9.17	40	33.3		
30-39	39	32.5	31	25.8		
40-49	48	40.0	21	17.5		

50-59	17	14.17	09	7.5		
60 and above	05	4.17	19	15.8		
Total	120	100	120	100		
Gender						
Male	45	37.5	11	9.2		
Female	75	62.5	109	90.8		
Total	120	100	120	100		
Marital Status						
Single	30	25.0	21	17.5		
Married	70	58.3	89	74.2		
Widow/Divorced	20	16.7	10	8.3		
Total	120	100	120	100		
Household Size						
1-3	28	23.3	13	10.8		
4-6	66	55.0	38	31.7		
7-9	21	17.5	20	16.7		
10 and above	05	4.2	49	40.8		
Total	120	100	120	100		
Educ.Status						
0-6	13	10.8	105	87.5		
7-12	61	50.8	15	12.5		
13-18	46	38.3	-	-		
Total	120	100	120	100		
Marketing Exp						
1-3	30	25	64	53.3		
4-6	69	57.5	37	30.8		
7 and above	21	17.5	19	15.8		
Total	120	100	120	100		

Source of Fin.						
Personal Savings	15	12.5	78	68.0		
Friends & Relatives	59	49.2	35	29.2		
Cooperative/Isusu	37	30.8	07	5.8		
Microfinance Bank	09	7.5	-	-		
Total	120	100	120	100		
Trade Union						
Member	38	31.7	-	-		
Non Member	82	68.3	-	-		
Total	120	100	120	100		

Source: Field survey, 2021.

4.1.1 Socioeconomic characteristics of the marketers

The socioeconomic characteristics of sweet potato marketers in Table 4.1 indicate that majority of the marketers 40% of the wholesalers are within the age of 40-49 while 33.3% of the retailers are below 30 years. The implication is that they are young, energetic and within the active labour force. This agreed with Ocholi, Nyiatagher, and Udeh (2017) who noted that the marketers were young and are in their prime age. There is a dominance of female and married in the marketing of sweet potato in the study area. The study is in consonance with Ocholi et al. (2017) who reported a dominance of female in marketing of sweet potato. The result revealed 55% and 31.7% of household size of 4-6 persons. The result revealed that marketers are literate both at wholesale and retail bases. According to the result, marketing experience of the wholesalers is within 4-6 years while retailers are 53.3% of 1-3 years. The wholesalers source their resources through friends and relatives (49.2%) while retailers source their funds through personal savings (68%).

Marketing channels and volume of trade among the channels

Marketing channel referred to the various means to the various pathways through which sweet potato moves from producers till it gets to the end users. The distribution channels of sweet potato in the study area indicated four marketing channels as shown in fig 4.1. The marketing channels identified were:

- i. Producer → consumer (2%)
- ii. Producer → wholesaler → consumer (8%)
- iii. Producer → Retailer → consumer (29%)
- iv. Producer → wholesaler → retailer → consumer (61%)

Sweet potato is cultivated in Anambra State in commercial quantity in serve its numerous customers. The first channel revealed the flow of sweet potato from the producer to the end user (consumer) without getting to the intermediaries. This the shortest form among the channels that recorded only (2%) of traded volume of sweet potato. Consumers preferred it because they pay lower prices than buying it from the intermediaries. The second channel, the producer sold to wholesaler who sells directly to the consumer. The third channel, the producer sold to retailer who sold directly to consumers. The retailer who buys directly from producers pay lower prices than those that buys from wholesalers but maybe subjected to high cost of transportation. This is in agreement with Nkamigbo (2018) who reported that retailers buying directly from producers were subjected to high cost of transportation in conveying the produce to consumers market. The last channel involved the flow of produce from producer to wholesalers who sold in bulk to retailers that sold in small quantities to consumers. The implication is that the longer the channel, the lower price accrued to producers due to more exploitation of the middlemen. This channel

recorded the highest volume of trade (61%) to be the major channel. The finding is at variance with Ocholi et al. (2017) who reported only two channels in the marketing of sweet potato in their study area.

Market structure

Table 4.2 Estimated Gini coefficient of the marketing agents

Monthly Sales	F	Pro of WT's X ₁	Cumulative of WT's	TMS	Cum. Pro of TMS Y ₁	X ₁ Y ₁
101000-501000	08	0.0666	0.0666	1541739	0.0708	0.0047
502000-902000	33	0.2750	0.3416	50581283. 3	0.2325	0.0639
903000-1302000	65	0.5416	0.8832	11695716. 7	0.5376	0.2911
1303000-1703000	14	0.1166	0.9998	3458261	0.1589	0.0185
GC = 1 - $\sum X_1Y_1 = 1 - 0.3782 = 0.6218$						0.3782

Source: Field survey; 2021.

Monthly Sales	F	Pro of RT's X ₁	Cumulative of RT's	TMS	Cum. Pro of TMS Y ₁	X ₁ Y ₁
45000-95000	11	0.0916	0.0916	1915594	0.1149	0.0108
96000-146000	27	0.2250	0.3166	3068120.3	0.1840	0.0414
147000-197000	59	0.4916	0.8082	6736032.2	0.4040	0.1986
198000-240000	23	0.1916	0.9998	4950160	0.2969	0.0565
GC = 1 - $\sum X_1Y_1 = 1 - 0.3533 = 0.6927$						0.3073

Key Note: Pro= Proportion, TMS= Tootal monthly sales, Cum, Cumulative: Source, Field survey, 2021.

2.1 Market structure

Gini coefficient which measures the relative degree of income distribution among sellers of the product in the study area. The result of gini coefficient of sweet potato marketers in Table 4.2 revealed a gini coefficient of 0.6218 and 0.6927 for wholesalers and retailers respectively. This implies a high level of income inequalities (sales margin) in the distribution of income among the marketers, high concentration of sales in the hand of few marketers, thus the existence of imperfect competition in the market. The result further revealed an indication that some marketers can influence the price of the produce. The variation is more among the retailers than the wholesalers which implies inequality in the distribution of income. This is in consonance with the report of Anuebunwa (2007) and Ejechi, Anyagbunam, Okoye and Eleodinmuo (2013) who reported an imperfect market for stable food and sweet potato in their study areas. The findings is at variance with Ocholi et al. (2017) who reported gini coefficient of 0.41 and 0.49 for wholesalers and retailers respectively that no single participant can affect the price of the product in the study area.

Table 4.3 Market conduct of sweet potato marketing

Variables	Whs		Rets	
Criteria for purchase	F	%	F	%
Size of potato	35	29.2	39	32.5
Lack of cut and wounds	57	47.5	39	32.5
Colour of potato	-	-	15	12.5
Variety of potato	28	23.3	27	22.5
Total	120	100	120	100

Strategies of fixing selling prices				
Fix price as you like (Arbitrary)	19	15.8	9	7.5
Fix prices after consideration of purchase and other expenses incurred	101	84.2	99	82.5
Fix prices through bargaining with wholesalers, retailers and consumers (demand and supply push)	-	-	12	10
Fix price by sweet potato association	-	-		
Total	120	100	120	100
Purchases strategy from supplier				
Heaps of number of sweet potato tubers	54	45.0	51	42.5
Freshness of sweet potato tubers	66	55.0	69	57.5
Total	120	100	120	100
Selling strategy to buyers				
Full packed bags of sweet potato	99	82.5	17	14.2
Full tubers of sweet potato display	-	-	33	27.5
Customer friendliness (mannerism)	21	17.5	25	20.8
Total washed and cleaned	-	-	45	37.5
Total	120	100	120	100

Note: multiple responses recorded. Source, Field survey, 2021

Market conduct of sweet potato marketers

The distribution of sweet potato marketers shown in Table 4.3. The result showed that wholesalers considered lack of cut and wounds of potato tubers as a criteria for purchase from the producer/supplier (47.5%) and retailers considered size of potato (32.5%) and lack of cut and wounds (32.5%) as criteria for purchase while variety of potato (23.3%) and colour of potato (12.5%) were the least criteria considered by both wholesalers and retailers respectively. The findings revealed that majority of wholesalers (84.2%) and retailers (82.5%) used common pricing techniques of 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 of fixing price among watermelon marketers. The results indicated that wholesalers (55.0%) and retailers (57.5%) used freshness of the produce as criteria for purchase. Also, the result revealed that wholesalers applied the strategy of full packed bags of potato (82.8%) to attract customers while the retailers applied the strategy of well washed and cleaned tubers of potato.

Conclusion and recommendation

Findings in the market channels and volume of trade among the channels showed that the channel ranged from zero to three levels. The volume of product that passed through the channels was highest (61%) in the fourth channel. Market structure, using gini coefficient gave an index of 0.6218 and 0.6927 for wholesalers and retailers respectively. The result showed a high level of income inequalities in the distribution of income, high concentration of sales in the hands of few marketers hence existence of near imperfect market. It was recommended that both government and marketers should improve and upgrade the market infrastructure to accommodate the new entrants into the enterprise for maximum profit and welfare.

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