

Effects of Sales Promotional Strategies on Marketing of Apple Fruits in Adamawa State, Nigeria

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Abstract

The research assessed the effects of sales promotional strategies on gross receipts of apple fruits in Adamawa State, Nigeria. Multi-stage, purposive and random sampling methods were used to select four Local Government Areas, four wards and 170 apple fruits marketers or sellers for the research. Descriptive statistics, a 3-point Likert Scale, regression analysis and marketing efficiency tool were employed for data analysis. Findings showed that most (91.18%) of the marketers were male, married (51.76%), within the age of 21-40 year (71.76%) and possessing secondary school education (42.40%) with fair marketing experience of 1-5 years (38.82%). Marketers perceived roadside display (63.53%) as the most viable sales promotion strategy in the marketing of apple in the State. Similarly, roadside display (0.0492) had a significant ($p < 0.05$) influence on the gross receipts of apple fruits in the study area. Further, an ME of 115.34% indicated a highly efficient marketing system for apple fruits, signifying a profitable venture. Major challenges experienced were the high cost of apple fruits (85.88%), inadequacy of finance (78.82%) among marketers and high cost of sales promotion (52.94%). Conclusively, middle-aged married male with secondary education and fairly experienced marketers formed the majority of the respondents in Adamawa State. Roadside display was the most influential sales promotion strategy identified. The main challenge reported by the marketers was the high cost of apple fruit. Institutions that intend to improve apple fruits marketing and consumption in the area should encourage the production of the crop and lessen the tax placed on the importation of the fruits in the country.

Keywords: Adamawa, apple fruit, marketing, sales promotion strategies.

INTRODUCTION

There is a huge growing concern among firms and marketers across the globe on the utilisation of marketing efficiency as a measure for assessment of market output. This is taking

into cognisance the fact that low efficiency is indicative of reduced profit. Of the several factors that can influence marketing efficiency, there are prominent factors which include sales promotional strategies, and some of these strategies are the use of coupons, free product samples, reduction of prices, bogo deals, contests, and enlightenment on health benefits. The appropriate application of these strategies is confirmed to boost the quantum of sales and by implication maximise return on investments (O'Sullivan & Abela, 2007).

The sales promotional strategies which affect marketing efficiency have been advanced by several intellectuals to contain actions that propel consumers to improve the acquisition of more product or service at any point in time. Blattberg & Richard (2014) noted that the promotion of sales encompasses action-focused marketing activities that possess a direct bearing on influencing consumer behaviour in purchasing products or services. In a similar fashion, Panda (2019) stated that sales promotion simply refers to series of activities geared toward improving the demand for service or product within a very shortest time possible, which would include actions like the use of coupons, reduction of price, free product sample, enlightenment on health benefits, and contest, among others. Going by these views, it could be observed that the ultimate essence of these efforts by sellers is to ensure that the sales of products and services are boosted meaningfully, and by extension increase profits.

In line with the above, Blattberg and Richard (2014) reported that firms or sellers allocate over 50.0% of their marketing budget and 13.0% of revenues to sales promotional strategies, as these measures and publicity greatly enhance the demand for goods and services especially consumer packaged goods (CPG). This opinion is further consolidated by Wani (2017) who attested to the fact that this facet alone occupies a significant role in marketing of products generally. However, for these roles to be more useful, the appropriate timing of these activities and locations should be taken into cognisance in order to benefit the target customer. Grimsley (2021) posited that actions like appropriate road-side displays, shopping malls, and mentions in print and electronic media, among many, are to be advanced by various managements of firms, companies and individual marketers for the purpose of enhancing sales of products by consumers.

Additionally, Wani (2017) was of the opinion that efficient marketing is crucial as it involves conveying services and goods from the place of production to areas of consumption while taking into cognisance of consumer appeal. And this usually takes into account both the physical and mental aspects. In the former, the seller must define the consumer's appeal and the buyers should know what is intended for sale. However, the physical aspect deals with conveying goods and services where they are most desired by consumers. But this process involves a huge number of middle persons in the channels of trade between the points of production and areas of consumption. Marketing and sales promotional strategies are therefore, in consonant and can hardly be detached from each other. Furthermore, marketing efficiency as noted by Minhas and Girish (2016) is mainly the extent or facet of the performance of the market, and this is obtained by dividing the marketing costs by its gross receipts and multiplying it by a hundred percent. Positive values signify good performance and vice versa.

In spite of the fact that the efficient marketing of African Star Apple has been discovered to be one of the drivers of successful engagement in the apple fruits sales business (Omotesho *et al.*, 2013), limited studies have been conducted in the area of sales promotional strategies especially taking into account the socioeconomic and related factors that influence the efficiency. This is further buttressed by Minhas and Girish (2016) who reported that for marketers of apple fruit to make any meaningful profit margin, there should be well-

organised and efficient marketing system taking into account the consumer satisfaction at reasonable rate or price. While still ensuring that information on supply and demand factors and factors like weather which led to disruption in apple fruit production in recent years abound, broadening studies in the field of sales promotional strategies become imperative.

It is against this backdrop that this study entitled Effects of Sales Promotional Strategies on Apple Fruits in Adamawa State, Nigeria, became apt, hoping that vital information required for improving marketers' profitability would be unveiled. Also, the inclusion of a description of the socioeconomic characteristics of the marketers, determination of the marketing efficiency and identification of challenges associated with sales promotional strategies would pave the way for more appropriate policies for marketing interventions to boost this global specialty crop.

METHODOLOGY

The Study Area

This research was undertaken in Adamawa State, situated in the Northeastern part of Nigeria. It has 21 Local Government Areas (LGAs), and it is located between latitude $7^{\circ} 15'$ and $10^{\circ} 58'$ N of the equator and between longitude $11^{\circ} 09'$ and $13^{\circ} 47'$ E of the Greenwich Meridian. The State has borders in the south and west with Taraba State, in the northwest with Gombe State and the north with Borno State (Adebayo, 2020). Further, the State is bordered by the Republic of Cameroon in the eastern aspect. The State has landmass of 39, 972.30 km² and a projected population figure of 4, 504,337 based on the 2006 national population figure.

Population of the Study

The selling points of apple fruits in designated areas in Metropolis in the State were located and respondents identified. As Apple fruit selling points are limited in number, enumerators were trained to identify all wholesalers, retailers and relevant sellers who formed the study population for interview and interaction for data collection. A total figure of 170 apple fruit Marketers was used for the study in the entire State.

Sampling Methods and Sample Size

Adamawa State is made-up of four defined agriculture zones namely, Northeast Zone - I, which is composed of Mubi-south, Michika, Maiha, Mubi-north and Madagali LGAs; Northwest Zone - II covering Fufore, Girei, Hong, Gombi and Song LGAs; Central Zone III with Ganye, Jada, Mayobelwa, Yola-North and Yola-South LGAs; and Southwest Zone IV comprising Demsa, Guyuk, Lamurde, Numan and Shelleng LGAs (See figure 1). Of these four agriculture zones, two Metropolises from each zone where apple fruits are most marketed were selected purposely (purposive sampling) for the study. As earlier stated above, all apple fruits selling points including stalls, shops, and farm gates, were identified and selected purposely for interactions.

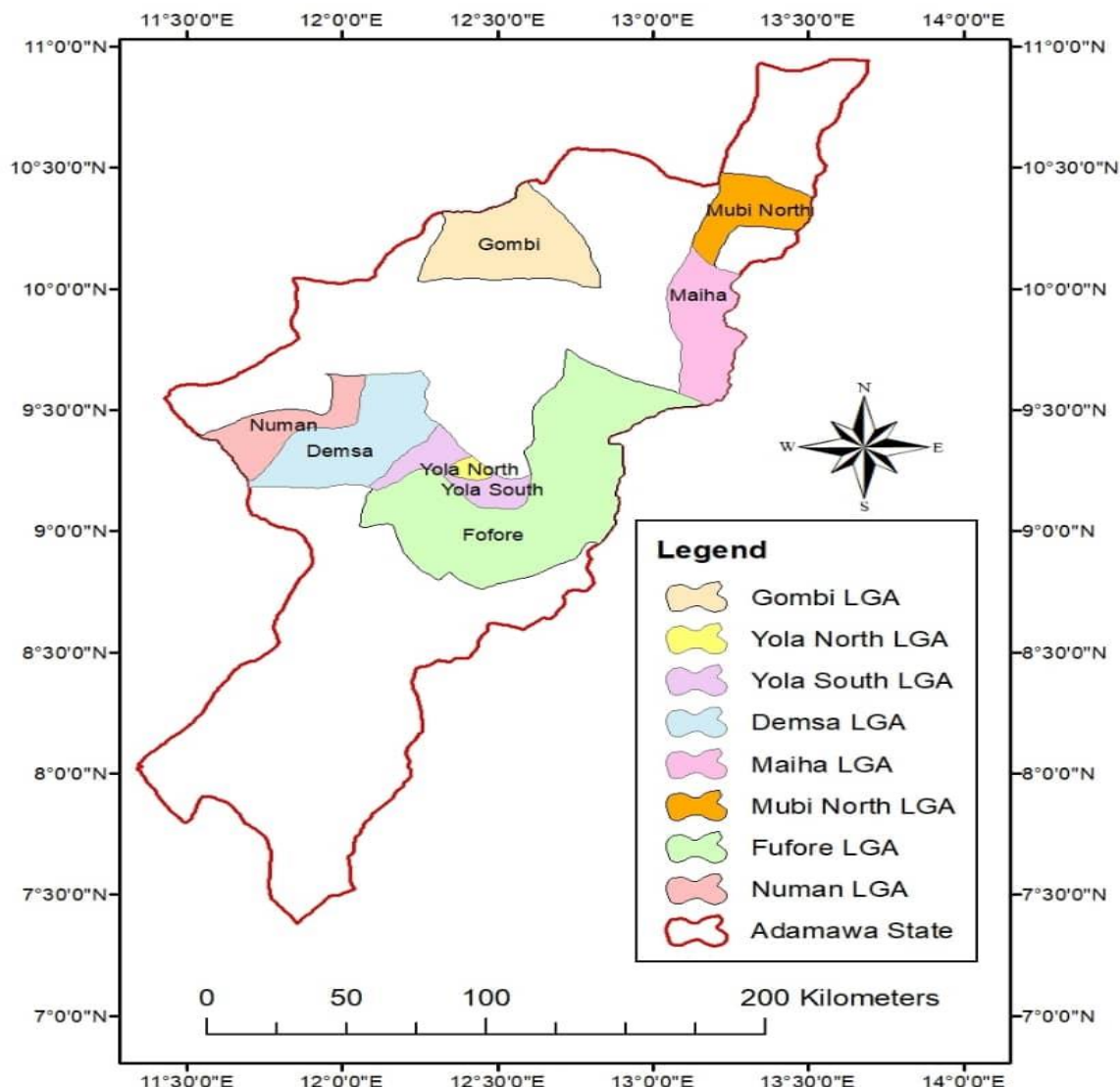


Figure 1: Map of Adamawa State Showing the Study Areas (Eight LGAs)

Data for the research were mainly from primary sources. However, secondary sources were also identified and documented. Structured questionnaire were used in the collection of data. These efforts were supplemented by oral interview where respondents (wholesalers, retailers, etc.) could not read or write. Among others, data on types of sales promotion used, volume of sales made, proceeds realised from such sales, and categories of apple fruits marketed were sought. However, the secondary data were obtained through published materials like Journals, Bulletins, and current Books etc. on apple fruits sellers generally. The data were collected for one month by trained enumerators and supervised by the researchers.

Method of Data Analysis

The application of inferential and descriptive statistics was made in data analysis. The descriptive statistics used were finding percentages of values, frequency distribution and means to achieve the aspect of socio-economic characteristics of the apple fruits sellers. However, the marketing efficiency tool was employed to realise the efficiency of the apple fruits marketing. Thus:

$$ME = \frac{TMC}{GMR} \times 100$$

Where:

ME = Marketing Efficiency
TMC = Total Marketing Costs
GMR = Gross Marketing Receipts

The application of Multiple Regression Analysis (MRS) was made in achieving objectives on the effects of roadside display and use of free samples on gross receipts of apple fruits marketing in the State. This is specified as follows:

$$MGR = f(AGE; GEN; MS; EL; HHS; MEX; MOC; IP; RSD; e) \text{ and mathematically expressed as:}$$

$$MGR = \beta_0 + \beta_1 AGE + \beta_2 GEN + \beta_3 MS + \beta_4 EL + \beta_5 HHS + \beta_6 MEX + \beta_7 MOC + \beta_8 IP + \beta_9 RSD + e_i$$

Where:

MGR = Marketing Gross Receipts (Naira)
 β_0 = Constant
AGE = Age of the marketers (yrs.)
GEN = Gender of the marketers (1 = male; otherwise = 0)
MS = Marital status (1 = married; otherwise = 0)
LE = Level of education (yrs.)
HHS = Household size (number)
MOC = Major occupation (trading = 1; otherwise = 0)
IP = Initial price of apple fruits (Naira)
RSD = Roadside display (monetary value of display = Naira)
 $\beta_1 - \beta_4$ = Coefficients of independent variables
 e_i = Error term
f = Function

The position of RSD was substituted with Free Samples (FS), respectively, into the regression model to determine its effect on the gross receipts.

The objective of marketers' perception of sales promotion strategies was realised by the application of the Likert Scale statistical tool which was used to convert qualitative values like perception into quantitative values for ease of interpretation. This was on scale count (3-scale) and the mean value of summation of each opinion was interpreted as:

1 point = perceived opinion in agreement.
 2 point = perceived opinion as neutral.
 3 point = perceived opinion not in agreement

A tool used by Latha *et al.* (2021) and modified by the researchers was applied to achieve the aspect of the Perception Index (PI). This is specified as:

$$PI_i = \frac{\sum U_{ij} \times S_j}{\sum \text{Scale values}}$$

Where:

PI_i = Perception Index of *i*th apple fruits marketer;
 U_{ij} = Unit score of the *j*th apple fruits marketer;
 S_j = Scale value of the *j*th component; and
 \sum = Summation

RESULTS AND DISCUSSION

Socio-Economic Characters of the Apple Fruits Marketers in Adamawa State, Nigeria.

Table 1: Distribution of Socio-Economic Characters of the Apple Fruits Marketers Based on Age, Gender, Marital Status and Level of Education.

S/no.	Variable	Frequency	Percentage (%)
1.	Age (Years)		
	Less than 20	13	7.65
	21 - 30	65	38.23
	31 - 40	57	33.53
	41 - 50	28	16.47
	51 and above	07	4.12
	Total	170	100.00
2.	Gender		
	Male	155	91.18
	Female	15	8.82
	Total	170	100.00
3.	Marital Status		
	Married	88	51.76
	Single	61	33.88
	Windows	15	8.82
	Divorcees	06	3.54
	Total	170	100.00
4.	Education Level		
	Primary school	53	31.20
	Secondary school	72	42.40
	ND/NCE	30	17.64
	Degree	13	7.64
	Masters and above	02	1.21
	Total	170	100.00

Source: Computed from field data (2023).

The role of socio-economic variables of a rural or urban population in making robust policies for the improvement of the livelihoods of individuals in communities cannot be over-emphasised. These include aspects like farming, carpentry, handcraft, engineering, and marketing, among many others. Studies like that of Abdullahi *et al.* (2017), Kumar *et al.* (2018), Belewu *et al.* (2020) and Ogunniyi *et al.* (2021), among several other reports, indicated similar opinions on the relevance of these variables in influencing performances or otherwise of the affected individuals on one hand, and the appropriate policies of the government and non-government agencies in the betterment of the persons involved. Improvement of these variables, among other things, required improved policies by these relevant agencies.

Age of the Apple Fruits Marketers in Adamawa State, Nigeria

The findings in Table 1 show that the larger proportion (38.23%) of the apple fruit marketers was within the age range of 21-30, implying that those that were selling apple fruits in the State were largely young persons. This might be connected with the current economic realities which put inflation at about 27.0%, coupled with the high unemployment trend across the nation. Trailing this group of apple fruits sellers was the set of apple fruits marketers within 31 and 40 years with 33.53% which still signifies younger individuals. Apple fruits sellers of 16.47%, 7.65% and 4.12% accounted for 41-50, less than 20 and 50 years and above, respectively. Pooling from the findings of this study, it could be conveniently deduced that the majority (79.41%) of the apple fruits sellers in Adamawa State, Nigeria, were between

teenage to 40 years of age. These findings aligned with that of Ashraf (2019), Oyewo (2023) and Danladi *et al.* (2023) who conducted similar survey in India, and Oyo and Borno States in Nigeria, respectively.

Gender of the Apple Fruits Sellers in the Study Area.

Gender is a role that is associated with actions that are indicative of an individual being a male or female. This variable heavily influences the kind of activity a person should embark upon especially in the northern parts of Nigeria where customs and traditional beliefs are considered with high esteem. In this study, male apple fruits marketers accounted for the majority (91.18%) of the respondents interacted with, while the female counterpart were in the minority (8.82%) as shown in Table 1. This is in conformity with Danladi *et al.* (2023) who discovered that 100% of the wholesalers of apple fruits in Borno State, Nigeria, were males with 96.00% of the retailers recorded for the same gender. However, the finding varied with Oyewo *et al.* (2023) who reported 75.70% of the apple fruits sellers in Oyo State in the southern part of the country as females and only 24.30% as males. The huge disparity between the northern and southern parts involvement in marketing by gender could be associated with the fact that most women in the former are mostly kept in purdah, while in the latter there are no restrictions placed on the women and hence the dominance.

Marital Status of the Apple Fruits Marketers in the State.

About 51.76% of the sellers of apple were married individuals (table 1). Single, widows and divorcees accounted for 33.88%, 8.82% and 3.54%, respectively. This is a clear indication that most of the respondents surveyed had established families. An earlier survey in Lagos State in the country by Belewu *et al.* (2020) showed that 65.69% of the apple fruits were married. The married individuals got involved more in the marketing of apple fruits probably for the sake of gaining additional income to adequately carter for the extra family expenditure taking cognisance of the prevailing economic hardship.

Level of Education of the Apple Fruits Marketers in the State.

The propensity of a consumer to demand a product, either refined or raw as applicable in agriculture, is highly connected to the level of thoroughly understanding the product and by extension the mode of promoting the item. In other words, there is a high positive correlation between the sales promotional strategy applied and the level of education of the marketer. Also, captured in Table 1 is the educational level of the apple fruits marketers in the State. A larger proportion (42.40%) of the apple fruits marketers were secondary school graduates, with 31.20% of them having first school leaving certificate. National Diploma/National Certificate of Education graduates accounted for 17.64%, while university graduates and postgraduates had 7.64% and 1.21%, respectively. It could therefore, be deduced from the entire findings on this variable that about 91.24% of the apple fruits marketers in the State had a tint with western education ranging from primary school to postgraduate level. This education scenario influenced the methods of sales promotion strategies in use in the study area which includes the roadside display of apple fruits and use of free samples to entice customers.

Table 2: Distribution of Socio-Economic Characteristics of the Apple Fruits Marketers According to Household Size, Marketing Experience and Major Occupation.

S/no.	Variables	Frequency	Percentage (%)
1.	Household Size		
	1 - 5	72	42.36
	6 - 10	48	28.24
	11 - 15	30	17.64
	16 - 20	15	8.82
	21 & above	05	2.94
	Total	170	100.00
2.	Marketing Experience		
	1 - 5	66	38.82
	6 - 10	64	37.65
	11 - 15	20	11.76
	16 - 20	13	7.65
	21 & above	07	4.12
	Total	170	100.00
3.	Major Occupation		
	Civil servant	13	7.66
	Business	114	67.10
	Farmer	38	22.40
	Others	05	2.94
	Total	170	100.00

Source: Computed from field Data (2023).

Household Size of the Apple Fruits Sellers in the State.

The size of members of a family in a home plays a significant influence in determining the activities of that family in that home. This assertion was interpreted from the perspective of the rate of consumption of a family by Kyaw *et al.* (2018) to rate the magnitude of participation in the marketing of produce in agriculture. However, Zakari and Ibrahim (2021) whose survey in Niger showed the role of group formation and family size in influencing the involvement of individuals in the marketing of agricultural products hinged on this factor as significant in taking the decision to participate in the marketing of commodities. In this survey, the household sizes of the apple fruits sellers are in Table 2. The household size of 1-5 members accounted for 42.36% of the apple fruits marketers in the area studied. This was followed by a group of families with 6-10 persons in a home that recorded 28.24%. Marketers who had 17.64%, 8.82% and 2.94% of the composition of members of households were 11-15, 16-20 and 21 and above in homes, respectively. Belewu *et al.* (2020) who conducted similar study in some selected markets in the area of Lagos State, Nigeria, reported in the same vein. However, the slighter disparity between the two studies was that, while this survey documented larger proportion of the marketers, Belewu *et al.* (2020) findings reported 78.43% of the marketers having households of 1-5 persons.

Major Occupation of the Apple Fruits Marketers Surveyed.

The quality of life of an individual depends on the type of occupation that person undertakes. While most persons in the past, especially from the last three decades, stayed and performed diligently on one job for efficiency and productivity, nowadays individuals tend to diversify their means of earning for livelihoods as job security. This is more so when it's seen from the current economic realities which account for a high inflationary situation of above 27.00%, highly devalued currency (Naira), decades of salary stagnation, coupled with highly corrupt tendencies that are already systemic and a high unemployment rate. In this present situation, individuals cannot but devise several coping strategies. Hence, the study assessed these other

sideline economic involvements of the apple fruits marketers in relation to the marketing of the specialty crop.

In this survey, the majority (67.10%) of the marketers relied mainly on selling apple fruits as a source of their livelihoods. In other words, their major occupation was the selling of apple and other related fruits like oranges, and banana, among others, for survival (Table 2). Farmers who partake in the marketing of apple fruits accounted for 22.40% in the area studied. Another group of apple fruits sellers of interest included civil servants who adopted the business as sideline economic coping strategy to make ends meet, and by that recorded 7.66% of the proportion of the marketers. Also, the last group which formed the minority (2.94%) of the apple fruits sellers were in the category of others, which further investigation revealed were students, housewives, and school leavers who had not secured any employment. It could be inferred from the findings of this survey that most of the apple fruits marketers in Adamawa State, Nigeria, relied mainly on selling the specialty crop as source of their livelihoods which indicates that selling fruits is a lucrative business in the area. Peng (2018) did a study in China and reported that producers of apple fruits were not recording huge profits as the middlemen who retailed the fruits. Similarly, Lavanya *et al.* (2022) who conducted a comprehensive research on the marketing of apple fruits online in India, documented the profitability of selling the fruits by retailers.

Marketing Experience of the Apple Fruits Marketers in the State.

Experience is a task that cannot be acquired theoretically within the four walls of the learning environment, but skills that can be obtained experientially through learning by doing. Therefore, this variable can only be obtained in the field. This study revealed five distinct groups of sellers by their experience in marketing apple fruits in the State. Of the groups, apple fruits sellers with 1-5 years of experience were in the larger proportion with 38.82% (table 2). Those sellers who accounted for 37.65% had 6-10 years of experience in marketing of apple fruits. Categories of 11-15 and 16-20 years had 11.76% and 7.65%, respectively. The most experienced apple fruits sellers were in the minority with only 4.12%. It could be observed from these results that the majority (76.47%) of the marketers were hovering between 1 and 10 years of marketing experience. This is a clear indication that apple fruits which had been a globally recognised crop since time immemorial had just been recently introduced in this particular study area. This explained why there had not been many studies in the surveyed State.

Table 3: Perception of Marketers on Roadside Display of Apple Fruits in Adamawa State, Nigeria.

S/no.	Perception Statement	Agree (1)	Neutral (2)	Disagree (3)	Mean	S/Dev.
1.	The display attracts more buyers	108(63.53)	58(34.12)	4(2.35)	1.67	0.14
2.	Shop display is more appealing	142(83.53)	21(12.35)	7(4.12)	1.01	0.11
3.	Buyers are indifferent to display	5(2.94)	15(8.82)	150(88.24)	1.18	0.56
4.	Display of apples boost sales	94(55.29)	71(41.76)	4(2.35)	2.72	1.50
5.	Display of apple is unhealthy	25(14.71)	117(68.82)	28(16.47)	2.25	1.86
Weighted/Grand mean					1.77	

Source: Source: Generated from IBM SPSS Statistics 25 Print-Outs, 2023.

Perception of Apple Fruits Sellers on Sales Promotional Strategies in Adamawa State, Nigeria.

The concept of perception is a subjective opinion of individuals in forming a judgment concerning a subject of interest. As it is being perceived in the marketing of crops or produce, it is driven by the dire desire to boost or improve the consumer patronage of products with the ultimate aim of yielding more margins of profits by farmers, retailers or wholesalers. Inferring from the reports of Adeola and Adetunbi (2015), Liu and Luo (2018) and Nimoh *et al.* (2023) whose findings were documented in Nigeria, China and Ghana, respectively, and guided by perceived consumers' and marketers' choice of place for purchase or sale of items based on predetermined superior qualities thought to be better-off than others within the similar plane of products, Nimoh *et al.* (2023) exhibited such understanding on shopping of local tomatoes in Ghana, and Liu and Luo (2018)'s findings on behaviours and perceptions of farmers toward quality of farmland in China. In both instances, the underpinning assumptions are that, while the consumer always makes his/her choice of place of purchase where his/her utility is maximised, the marketer or seller sells where his/her margin of profit is maximum. Therefore, perceptions from these two market participants are always viewed from these perspectives.

Marketers' Perception on Roadside Display of Apple Fruits in Adamawa State.

The perception of the sellers on the roadside display of apple fruits for buyers was assessed and captured in Table 3 with five perception statements on 3-point Likert Scale. It was sought to know whether the apple fruits sellers perceived the roadside display of apple attracted more buyers. The majority (63.53%) of the apple fruits marketers answered in the affirmative, with only 2.35% of them disagreeing and 34.12% remaining neutral, however, displaying a perception index of 1.67. On the statement that displaying of apple fruits in shops was more appealing, the marketers agreed with the whooping figure of 83.53%, with a negligible 4.12% disagreeing and 12.35% expressing their neutrality. A perception index of 1.01 was recorded for this set of sellers. In response to whether marketers were indifferent to the display of apple fruits as perception statement, the highest (88.24%) chunk of them disagreed. While a total of 8.82% were neutral, only 2.94% agreed, giving a perception index of 1.18. Further, the perception statement that the display of apple fruits boost sales showed that 55.29% of the marketers were in agreement, whereas 41.76% were neutral and only 2.35% disagreed. An index of 2.72 for the perception showed high agreement for this statement. Similarly, the perception statement that the open-display of apple fruits is unhealthy showed high perception (perception index of 2.25) among the marketers with 68.82%, 16.47% and 14.71% of them remaining neutral, disagreeing and agreeing, respectively. However, overall, based on the weighted or grand mean (1.77), the apple fruits marketers' perceptions of the itemised statements (five) could be said to be high. In other words, most of the apple fruits sellers in Adamawa State, Nigeria, agreed that roadside display of apple boost sales of fruits in the area.

Table 4: Perception of Apple Fruits Sellers on Use of Free Samples in Adamawa State, Nigeria.

S/no.	Perception Statement	Agree (1)	Neutral (2)	Disagree (3)	Mean	S/Dev.
1.	Offer of free samples improves sales	92(54.12)	44(25.88)	34(20.00)	1.23	1.04
2.	The use of free samples attracts buyers	127(74.71)	38(22.35)	5(2.94)	1.45	0.33
3.	Buyers are indifferent to free samples	40(23.53)	120(70.59)	10(5.88)	1.63	1.15
4.	Offer of free samples is seasonal	60(35.29)	101(59.42)	9(5.29)	1.35	1.40
5.	Use of free samples reduces profit	121(71.18)	20(11.76)	29(17.06)	1.52	1.32
	Weighted/Grand mean				1.44	

Source: Source: Generated from IBM SPSS Statistics 25 Print-Outs, 2023.

Perception of Sellers on the Use of Free Samples in Marketing of Apple Fruits in the State.

The current economic crunch prevailing in the country coupled with the level of poverty among its citizenry, subjected marketers of various products to stiff competitive situations arising from low consumer patronage. This similar scenario, noted Shen and Xian (2019), necessitated marketers to devise various sales promotional strategies with the intention of enhancing volume of products disposed-off. Among these several strategies, the offer of free samples to consumers was rated the most desirable in their studies.

In this survey, the perception statements (five) of the apple fruits marketers on the use of free samples are documented in Table 4. The first statement which hovers on the perceived opinion that the offer of free samples improves sales, recorded 54.12%, 25.88% and 20.00% for marketers of apple fruits who answered in the affirmative, those who were neutral and individuals who disagreed, respectively. A perception index of 1.23 was realised for them, which aligned with low perception. The second statement which holds that the use of free samples attracts buyers was upheld by the majority of the apple fruits marketers with 74.71%. About 22.35% of the marketers were neutral on this perception, while only 2.94% of them disagreed with the opinion, thereby giving an index of 1.45 which was equally regarded as low. The third perception that buyers were indifferent to the use of free samples was highly rated by marketers (70.59%) who remained neutral, whereas 23.53% of them were in agreement. The minority (5.88%) were those in disagreement. This gave the sellers an index of 1.63 which was termed a high perception. The fourth item states that the offer of free samples in the selling of apple fruits in the State was seasonal. A total of 59.42% of the apple fruits marketers remained neutral on this perception statement, with 35.29% of them in agreement, while 5.29% of the sellers were in disagreement with the opinion. The index of perception for this category of marketers was 1.35, indicating a low perception. The fifth statement that the use of free samples reduces the profit of sellers was shown by the majority (71.18%) of the marketers to agree. And about 17.06% of them disagreed with the statement, whereas 11.76% of the sellers remained neutral. However, the weighted or grand mean for the entire category of these apple fruits sellers was 1.44, implying that overall, the marketers had low perception. In other words, the use of free samples in the marketing of apple fruit had no significant effect on its sales in the State.

Table 5: Regression Result Indicating Effect of Roadside Display on Marketing of Apple Fruits in Adamawa State, Nigeria

S/no.	Variable	Coefficient	Stand. Error	t-Values	Level of Sig.
1.	Constant	-3.5407	4.0575	-0.0872	0.9305
2.	Age	1.0858	1.0123	1.0726	0.2850*
3.	Gender	-4.8559	2.1751	-2.2324	0.0269 ^{NS}
4.	Marital Status	-1.3624	1.3064	-0.1042	0.9170 ^{NS}
5.	Edu. Level	1.5765	1.6983	-0.0928	0.0261**
6.	H/H Size	-9.3355	1.7647	0.5290	0.5975 ^{NS}
7.	M/Experience	0.0306	1.8249	1.5510	0.0228**
8.	M/occupation	9.1506	1.1425	0.8009	0.4243
9.	Initial Price	1.0747	0.0703	1.5266	0.0010***
10.	RSD	0.0492	1.1407	-0.5478	0.0045**
11.	Adjusted R ²	0.6165			

Note: * = Value is Significant at $p < 0.01$; ** = Value is Significant at $p < 0.05$; *** = Value is Significant at $p < 0.001$; ^{NS} = Not Significant.

Source: Generated from Excel 2013 Computer Print-Out, 2023

Effects of Roadside Display on Gross Receipts of Apple Fruits in Adamawa State

The findings on the roadside display of apple fruits in the State are shown in Table 5. A total of nine merged variables namely, gender, age, educational level, marital status, household size, major occupation, marketing experience of the sellers, and initial price of apple fruits and naira value for materials involved in roadside display, were regressed against the gross receipts of the marketing of the fruits. Out of the nine variables stated, the initial price or cost of the apple fruits was the most significant ($p < 0.001$) with a coefficient of 1.074. In other words, a 1% increase in the initial cost of apple fruits would increase the total gross receipts of apple fruits by 1.074. This variable was followed by roadside display (0.049) of apple fruits which was significant at $p < 0.05$. Similarly, a 1% increase in the value of roadside display would increase the gross receipts of apple fruits in the surveyed area by 0.049. The R^2 coefficient of 0.6165 showed that the overall explanatory variables influenced the variations in the dependent variable by 61.65%. In other words, collectively, the included variables (nine) in the regression model caused variation in the gross receipts of apple fruits marketing by about 62.00%. The results obtained from this research on roadside display are in agreement with Vlakveld and Helman (2018) who documented a comprehensive package on the effects of roadside advertisement on the incremental sales of products.

Table 6: Regression Result Indicating Effect of Free Samples on Marketing of Apple Fruits in Adamawa State, Nigeria

S/no.	Variable	Coefficient	Stand. Error	t-Values	Level of Sig.
1.	Constant	-11394	3.1622	-0.3603	0.7190
2.	Age	1.5689	8.6058	1.8230	0.0701
3.	Gender	-3.6873	15002	-2.4578	0.0150 ^{NS}
4.	Marital status	-2.9754	1.0427	-0.2853	0.7757
5.	Edu. level	0.4810	1.4225	0.3852	0.0075 ^{**}
6.	H/H size	-9.4950	1.5538	-0.6110	0.5420
7.	M/Experience	2.3056	1.5656	1.4725	0.0428 ^{**}
8.	M/occupation	7.6178	9.6451	0.7898	0.4308
9.	Initial price	2.4874	0.0984	4.9502	0.0000 ^{***}
10.	Free Samples	0.1550	3.4180	2.4753	0.0122 ^{**}
11.	Adjusted R ²	0.7133			

Note: ** = Significant at $p < 0.05$; *** = Significant at $p < 0.001$; ^{NS} = Not Significant.

Source: Generated from Excel 2013 Computer Print-Out, 2023.

Effects of Use of Free Samples on Gross Receipts of Apple Fruits in Adamawa State.

The act of gift offering of items to consumers by either retailers or wholesalers to increase their loyalty to their products was assessed by Khan *et al.* (2019,) Andrian and Rostiani (2021) and Rai and Bhandari (2021). While the first two authors concurred on the facts that the gift of products to consumers or buyers stimulates the propensity to buy, the last author was of the opinion that the use of free samples and some packs of bonuses were not significantly linked with the gross receipts of marketing of products. Therefore, although the application of free samples in marketing is made to cajole customers to establish consumer loyalty, this attitude would depend on the level of awareness of the buyers and the circumstances within which such consumers found themselves in terms of the modernisation of the markets.

The results of the effects of free samples on the gross receipts of marketing of apple fruits in Adamawa State are shown in Table 6. Also, a total of nine variables mentioned earlier were regressed against the marketing output. Out of these independent variables, the value of the initial price of apple fruits was the most significant ($p < 0.001$) with a coefficient of 2.4874. This was followed by the level of education of the apple fruits sellers with a coefficient of 0.4810 which was significant at $p < 0.05$. Other variables that were significant in descending order include marketing experience (2.3056) and free samples (0.1550) at a significant level of p

<0.05, respectively. What these findings mean is that holding other variables constant, a percent increase in these variables would lead to a corresponding increase in the gross receipts of apple fruits marketing as reflected against the values of these variables. Although the coefficient of free samples is positive and significant at $p < 0.05$, the effect exerted on the gross receipts of the apple fruits marketing in the study area was marginal. This might not be unconnected with the minimal use of this method of sales promotion by the apple fruits marketers in the surveyed State. Justifiably overall, the R^2 value of 0.7133 entailed that a 71.33% variation in the gross receipts of the apple fruits marketing was appropriately explained by the nine variables included in the regression model. Therefore, this sales promotion strategy had a very marginal effect on the gross receipt of apple fruits in the State.

Table 7: Determination of Marketing Efficiency of Apple Fruits in Adamawa State

S/no.	Item	Unit	Unit Price (₦)	Quantity	Total Cost (₦)	Percentage (%)
1.	GR					
	Apple fruit	Carton-120	48,000	1500	72,000,000	34.17
	Apple fruit	Carton-135	40,500	2000	81,000,000	38.44
	Apple fruit	Carton- 180	36,000	1603	57,714,000	27.39
2.	TGR	-	-	-	210,714,000	100.00
3.	MC					
	NCB	Carton-120	40,000	1500	60,000,000	32.86
	NCB	Carton-135	35,000	2000	70,000,000	38.33
	NCB	Carton-180	30,161	1690	50,972,000	27.91
	Transport	-	-	-	343,950	0.19
	loading	-	-	-	81,350	0.05
	Off-loading	-	-	-	58,220	0.03
	Tax rate	-	-	-	117,570	0.06
	Storage	-	-	-	162,270	0.09
	Emp.cartons	-	-	-	149,240	0.08
	Packaging	-	-	-	51,300	0.03
	Sales promo	-	-	-	536,450	0.29
	Display	-	-	-	141,500	0.08
4.	TMC	-	-	-	182613850	100.00
5.	ME	<i>TGR/TMC•100</i>			115.34%	

Note: GR = Gross Receipts; TGR = Total Gross Receipts; MC = Marketing Costs; NCB = Number of Cartons Bought; Emp. = Empty; Promo = Promotion.

US\$ = ₦1200

Source: Computed from field data (2023).

Determining of Marketing Efficiency of Apple Fruits in the State.

The concept of efficiency in the marketing of crops is grossly associated with the conduct of these crops or produce from the point of production through the channels of processing up to the wholesome acquisition by the consumers as the end point at the shortest route possible while maintaining some form of margin of profit (Yusi, 2016; Kalita, 2017). The findings of Wani and Songara (2019) whose assessment of apple fruits in the Kullu and Shimla districts of Himachal Pradesh of India affirmed that the most marketing-efficient channel in the area was the shorter one. And since apple fruits and by extension the entire horticulture industry in India occupy a significant place in its economy, the contribution to the country's GDP was reported to be about 15.00% of the total 34.00% making up the entire agriculture sector.

Although in this survey the findings in Table 7 show an absolute efficient marketing of apple fruits in the State with about 115.34% which is an indication of profitability, the sales of apple fruits in Adamawa State, Nigeria, had some revelations associated with the marketing costs. For instance, the number of cartons bought (NCB) as initial cost for medium sized apple fruits accounted for the larger chunk (38.33%) of total marketing expenditure for the marketers in

the area surveyed. This was closely followed by the NCB for the largest size of apple fruits with 32.17%. A total of 27.91% of the marketing costs of apple fruits was accounted for by the smallest size of the three cartons. The next slightly relevant costs were that of sales promotion strategies (0.29%) and transportation of apple fruits (0.19%) in the area. Of the TGR, cartons of 135-pieces, 120-pieces and 180-pieces, with 38.44%, 38.44% and 34.17%, were the marketing receipts in descending order, respectively. Also, Omotesho *et al.* (2013) reported an efficient marketing of apple fruits in Kwara State, Nigeria.

Similar studies in Himachal Pradesh, India by Sharma and Guleria (2020), Guleria *et al.* (2022) also in India and Mossie *et al.* (2023) in Ethiopia, in summation analysed the value chain of fruits and in particular, and more importantly, the marketing of apple fruits, all reported efficient market system. Several other surveys as the likes of Romania (Badiu *et al.*, 2015), China (Sun *et al.*, 2021) and the entire of Europe (Muder *et al.*, 2022) which evaluated the value chains of apple fruits in relation to the global trend culminated in reporting efficient marketing system.

Table 8: Major Challenges Experienced with Sales Promotion of Apple Fruits in the Adamawa State, Nigeria.

S/no.	Challenge	Frequency	Percentage (%)	Rank
1.	Price Fluctuations	146	85.88	1 st
2.	Inadequacy of Finance	134	78.82	2 nd
3.	Cost of sales Promotions	90	52.94	3 rd
4.	Ignorance of H/Benefits	83	48.82	4 th
5.	Storage Barriers	44	25.88	5 th
6.	Scarcity of Apple Fruits	05	2.94	6 th

Note: *Indicates multiple responses were received. H =Health

Source: Computed from field data (2023).

Major Challenges Associated with Marketing of Apple Fruits in Adamawa State, Nigeria

Challenges are generally associated with human life and endeavours, and solving such occurrences absolutely call for measures that are designed and executed in the form of surveys or studies. In this survey, six major issues that thwart the seamless marketing of apple fruits in the State were experienced by the marketers. Price fluctuations due to the present economic realities in the country which is largely connected with high a rate of transportation triggered by a hike in fuel prices, were the leading problem with about 85.88% of the marketers reporting this (table 8). This challenge made the apple the most expensive fruit at the moment which other consumers refer to it as specialty crop. In fact, Muder *et al.* (2022) reported that apple fruits are regarded as the third most important fruits worldwide after watermelon and banana.

The second most reported constraint among the apple fruits marketers was the inadequacy of finance. While the marketers were discouraged from seeking loans from financial institutions due to the high-interest rate that is reaching a ceiling of more than 27.00% for borrowers, individual lenders have been constrained by the prevailing cashless policy of the government which is gradually coming into effect. And for the retailers who have to import the fruits from countries like South Africa and Ghana are trapped by the current exchange rate of Nigeria’s currency, the naira, which is now exchanged from ₦1900 to \$1. The scenario made things too difficult for about 78.82% of the apple fruits marketers (table 8) interacted with.

Sales promotional strategies are considered significant measures or tools for inducing consumers or customers to tilt toward enhancing the volume of sales of products. In this study and depending on the relevancy, two strategies namely roadside display and use of free samples were identified. However, 52.94% of the apple fruits marketers (table 8) found it difficult to promote their commodities through these media considering the costs involved. Chanda (2018) who undertook a study of promotional strategies of apple fruits in Himachal Pradesh in India, and his findings aligned with this result, stated that the main aim of the exercise has been to affect the attitude, behaviour, preferences and knowledge of buyer to increase volume of sales. Therefore, this challenge should be remedied among the marketers if apple fruit marketing is to prosper in the State.

One of the most important factors that brings about the wide spread of acceptability of apple fruits amongst consumers has been the awareness of the health benefits associated with consumption of the fruits. This factor should therefore, be emphasised in the course of promotion of this fruit in the State.

CONCLUSION

The research concluded that middle-aged male apple fruits marketers were the majority of the sellers in Adamawa State, Nigeria. Most of the respondents were married and had gone through secondary school education studies, with a larger proportion of them as mainly traders. Respondents mainly had between 1-5 members in a household and fairly experienced (1-5 years) in marketing of apple fruits in the State. Of the sales promotional strategies surveyed in the State, roadside display was found to significantly influence the gross receipts of apple fruits. Similarly, the perceptions of marketers on sales promotional strategies revealed that sellers were of the opinion that roadside display was the most relevant measure that attracted more consumers or customers, and by extension increased the marketing gross receipts. The apple fruit marketing was discovered to be highly efficient, and therefore, profitable in the area. The major challenges experienced by the apple fruit marketers in the State were high costs of apple fruits or price fluctuation, insufficiency of finance among marketers and unavailability of storage facilities. Lastly, there was a high cost of sales promotion strategies.

In an effort to proffer remedies to the challenges of the study, the research advanced that; there is a high need for the formation of a cooperative society by the apple fruits marketers in the State to ensure that the sellers have easy access to soft loan from the government and non-government organisations. As the collective presentation of demand is a prerequisite for recognition by lending agencies, the marketers are highly encouraged to come together to advance a common course. The high cost of apple fruits or price fluctuations would be addressed through the intervention of government or well-meaning organisations by supplying the crop in large quantities so as to lower the price, or subsidising the tax placed on the specialty fruit. The cooperatives so formed would immensely benefit from the Federal Government of Nigeria's (FGN) policy on diversification of the economy in which agriculture and natural resources have been major targets of expansion.

The issue of inappropriate storage facilities for apple fruits among the sellers should be resolved through massive commitments of well-trained extension service personnel whom should be saddled with the task of enlightening the fruits marketers on how best to store apple using cheap indigenous methods that are practiced by sellers and farmers in places like South Africa and Cote D'voire, among other nations with similar economies and geographical terrains. This would reduce the magnitude of spoilage experienced by the apple fruits marketers. The issue of scarcity or unavailability of the apple fruits should be addressed by

encouraging farmers to embark on mass production of the crop in areas with favourable climatic conditions in the State, and other parts of the country with similar ideal climate for the fruit to grow. In the event of gluts, the excess of supply should be taken to areas where the fruits are not available. The latter scenario if occurred should be checked by the involvement of the marketers' cooperative society to seek for places of need.

Several agricultural extension outlets should be given priority in both the private and government media outfits to subsidise information on agriculture development generally, and advertisement should be in the fore. This would provide ample opportunities for apple fruits marketers to immensely benefit from such programmes. Both rural and urban agricultural practitioners should be given equal slots to air their experiences with regards to apple growing practices which would be given expert attention. Lastly, ignorance of the health benefits of apple fruits amongst the teeming population in the State has been on the higher side. In this regards, the health workers, marketers and the apple growers should make use of the available opportunities to be provided by the media outfits for agricultural development talks on subsidised airtime for promotion of the health benefits. This would go a long way in generating large number of consumers for the fruit, and by extension improves on the marketing of apple fruits not only in the study area alone but nation in general.

ACKNOWLEDGEMENTS

This study was sponsored by an Institutional Based Research (IBR) grant provided by the Tertiary Education Trust Fund (TETFund), Abuja, Nigeria, vide reference number TEFT/DR&D/UNI/MUBI/RG/2023/VOL.1. The Management of Adamawa State University, Mubi, Nigeria, deserve commendation for their approval to conduct the research, and the trained enumerators and apple fruits marketers in Adamawa State, Nigeria, for their patience and cooperation during the course of the research.

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