https://dx.doi.org/10.4314/dujopas.v10i4a.21
ISSN (Print): 2476-8316
ISSN (Online): 2635-3490
Dutse Journal of Pure and Applied Sciences (DUJOPAS), *Vol. 10 No. 4a December 2024*

Estimating the Effects of Price Discount and Bogo Deals on Apple Fruits Marketing in Adamawa State, Nigeria

[1]A'ishatu Abdullahi, [2]Muhammad R. Ja'afar-Furo*, [3]John Ldama and [4]Aliyu Abubakar

[1]Department of Business Administration,
Faculty of Administration and Management Sciences,
Adamawa State University,
PMB 25, Mubi, Nigeria
http://orcid.org/0009-0002-0398-9523

[2]Department of Agricultural Economics and Extension,
Faculty of Agriculture, Adamawa State University,
PMB 25, Mubi, Nigeria
https://orcid.org/0000-0001-6550-1402

[3]Department of Business Administration,
Faculty of Administration and Management Sciences,
Adamawa State University,
PMB 25, Mubi, Nigeria
https://orcid.org/0000-0001-5114-0044

[4]Department of Agricultural Economics and Extension,
Faculty of Agriculture, Adamawa State University,
PMB 25, Mubi, Nigeria
https://orcid.org/0009-0005-6577-6963

Email: jaafar436@adsu.edu.ng

Abstract

The prevailing economic condition in the country which cuts across other economies in the world, has subjected firms and marketers to stiff competition on how to sell-off their products. This study therefore, estimates the effects of some selected sales promotion strategies on apple fruit marketing in Nigeria evidencing findings from Adamawa State. With a sample size of 170 apple fruit sellers selected purposely from four agricultural zones, primary data were collected on the demography of respondents, perception of marketers on sales promotion styles, effects of these styles on gross receipts of apple fruits, and major direct and indirect challenges to effective marketing of the fruits. Data analysed by the use of descriptive statistics, a 3-point Likert Scale and regression analysis revealed that middle-aged (43 years) married males formed the majority (91.18%) of the marketers. Also, the sellers perceived the price discount of apple fruits as the most valuable strategy (grand mean of 1.66) that influenced gross receipts. Similarly, price discount was the significant ($p < 0.05$) sales strategy that had a positive effect on the marketing gross receipts. Major challenges experienced by the sellers were the exorbitant cost of apple fruit and its storage. Institutions willing to improve apple fruits marketing in the area should resolve the raised issues.

Keywords: Adamawa, apple fruits, bogo deals, price discount.

Author for Correspondence

INTRODUCTION

The current economic crisis which virtually cuts across most nations in the world coupled with the drastic reduction in the purchasing power of a significant population of these nations has subjected numerous firms and marketers alike to some vigorous competition on how to sell their products. Das *et al.* (2022) stressed that this phenomenal upsurge in this development led some agricultural firms in India to devise appropriate strategies for finding consumers for their products. The most relevant strategies in reaching out to the target buyers were the application of appropriate packages of technologies. In the same light, several other reports from renowned researchers and international organisations have indicated that the emergence of COVID-19 has also played a significant role in reshaping the marketing strategies for a larger chunk of firms across the globe. For instance, Nasir and Bal (2016) reported that consumers were more prone to strategies with propensity of price reduction and offer of buy-one-get-one products than other measures of selling by marketers. While Chen *et al.* (2022) assessed the impact of e-commerce during the COVID-19 period on the behaviours of consumers; Mohammad *et al.* (2022) documented the emergence and relevance of e- commerce in enhancing patronage by customers and ensuring their loyalty.

Taking into cognisance of some specifics, a commissioned research by Alcedo *et al.* (2022) which evaluated e-marketing across 47 nations and taking account **of** 26 firms within the period of COVID-19, discovered a significant rise in e-payments using MasterCard within the scope of the pandemic with disparities across the observed economies. The accelerated rise was mainly linked to the restricted mobility among citizens of these nations. Similarly, AUAS (2022) prepared a comprehensive insight into the net benefit of utilisation of digit**al** marketing in achieving wider coverage of consumers across Europe and beyond. This showed a remarkable paradigm shift to the digitalisation of marketing and the need for a global consensus on e-commerce if market practitioners and consumers have to be at par with the rapid trend of development. Another report from Paredes-Corvalan *et al.* (2023) reviewed how e-commerce particularly social media flourished in the USA and how firms and other marketing outfits can maximise their utilisation in advancing customers' loyalty to their products. Also, Wichmann *et al.* (2022) tried to highlight the marketing mix and marketplace nexus from the global perspective of place and time **and** the functions of firms and their general push in canvassing for mass buyer patronage. These are usually achieved through the effective application of distribution-focused elements, promotion of commodities, refining the product and regulation of price (4Ps).

However, in the context of developing economies, Nasir and Bal (2016) investigated the propensity of consumers to switch products or brands due to sales promotional strategies namely the use of coupons, offer of premium rates, price discounts and buy-and-get-one-promotions. Of these strategies, price discounts and offers of premium rates were the most significant in accelerating customer patronage, with buy-and-get-one and the use of coupons as the least in descending order. Osaremen (2019) and Kadiri (2024) conducted their research in Nigeria, and the typical focus of their studies was on the utilisation of the marketing mix to accelerate marketing loyalty by buyers with no or absolutely less mention of e-commerce. Both Costa and Rodrigues (2023) and Pascucci *et al.* (2023) stressed the digitalisation of marketing or adoption of electronic commerce across all strata of firms or companies for optimisation of consumer loyalty. Meanwhile, the report further documented that digital transformation is complex and requires both expertise and infrastructure to be sustainable. But what strives now is the inclusiveness of big or larger companies or firms, leaving out the micro and medium firms that are in the majority excluded. However, the inclusiveness of all companies, whether micro, medium or large, would accord them equal opportunities for competition.

Whatever the type of sales promotional strategy that would be adopted by firms, companies, wholesalers or retailers in any clime, the inclusion of e-commerce or digitalisation of marketing is key in making headway towards successful globalisation in trading. The paradigm shift advocated by Costa and Rodrigues (2023) and Pascucci *et al.* (2023) which was further consolidated during the recent pandemic (COVID-19) by several business pundits is apt and should be supported. However, this development should be within the context of massive infrastructural advancement and commitments from the public and private sectors. Additionally, the aspect of capacity building for both the maintenance of infrastructure and the players (marketers and customers) is imperative. Therefore, developing appropriate policies that would conform with the current marketing trends, calls for investigation in this direction. Since limited information on sales promotional strategies for apple fruits marketing exists in the country, particularly in the study area, this research became apt.

It is in this light that the study attempted to describe the demographic qualities of the apple fruit marketers, assessed the perception of the sellers on some selected sales promotional strategies, determined the effects of these selected strategies on apple fruits gross receipts, and identified the major direct and indirect challenges that worked toward hindrance of seamless apple fruits marketing in Adamawa State, Nigeria.

METHODOLOGY

Area of the Study

The survey was undertaken in Adamawa State in the Northeastern part of Nigeria. The State is situated between Latitude 7^0 15 and 10^0 58" N of the Equator and Longitude 11^0 09' and 13^0 47' E of the Greenwich Meridian. The population of the State is projected at 4, 504,337, with a landmass of 39, 972.30 km^2 (Adebayo, 2020). The majority of the people of the study area are farmers, cultivating mainly maize, sorghum, millets, rice, cowpea and some tubers (yams, cassava, and sweet potatoes). Major livestock raised are cattle, camels, sheep, goats and poultry. However, other animals domesticated alongside the listed include horses, donkeys, dogs, cats and pigs. Amongst the widely traded agricultural crops are cereals, tubers, fruits and livestock.

Sampling Methods, Sample Size and Data Collection

The State is divided into four defined agricultural zones namely Zone I with Maiha, Madagali, Michika, Mubi-North and Mubi-South Local Government Areas (LGAs); Zone II composing of Fufore, Girei, Hong, Gombi and Song LGAs; and Zone III covers Ganye, Jada, Mayobelwa, Toungo, Yola-North and Yola-South LGAs. Lastly, Zone IV is made-up of Demsa, Guyuk, Lamurde, Numan and Shelleng LGAs (Figure 1).

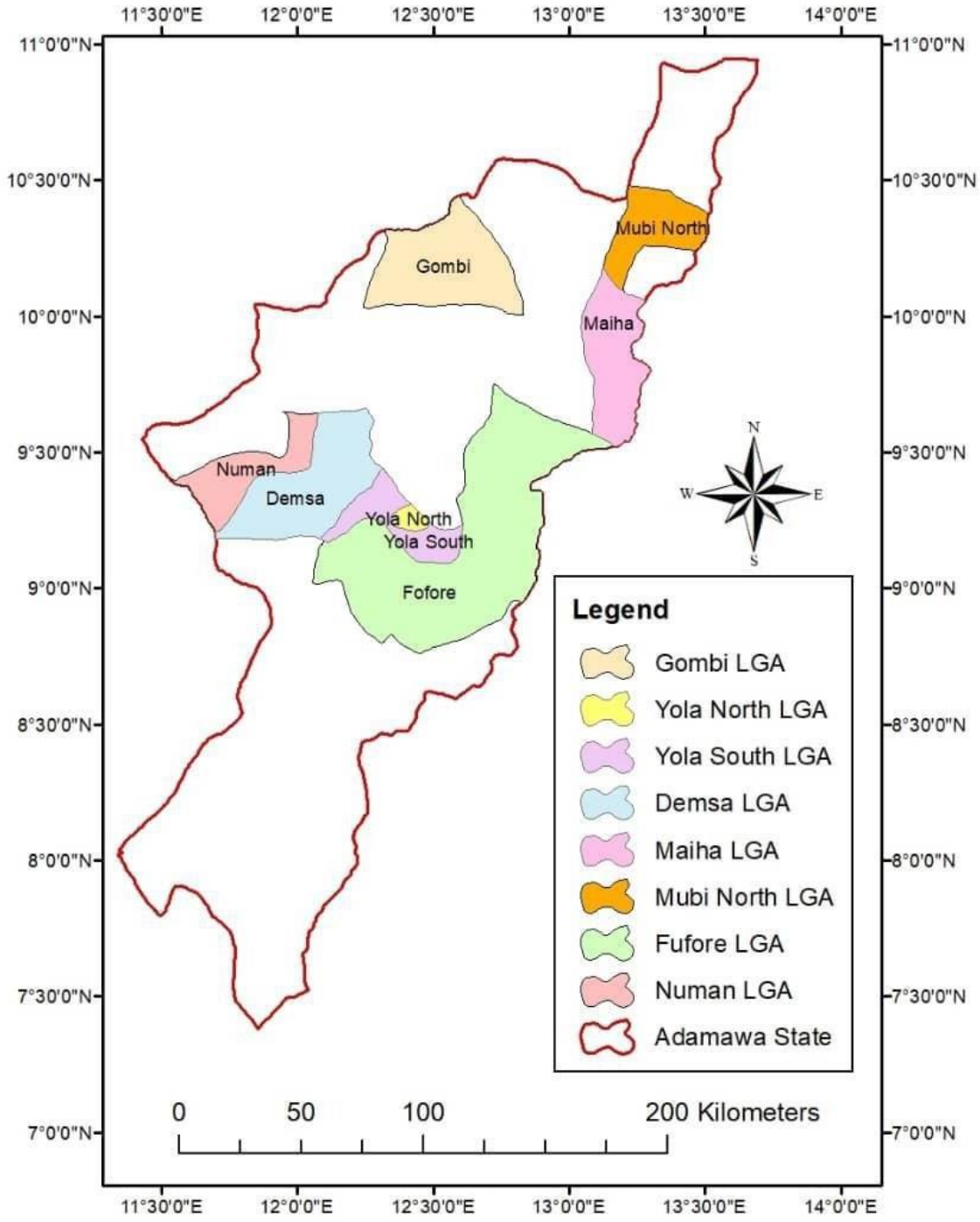

Figure 1: Map of the State Indicating the Eight Selected LGAs.

Using a purposive sampling method, two LGAs where apple fruit marketing has been more pronounced were selected, making a total of eight LGAs in the State. These LGAs include Maiha, Mubi-North, Fufore, Gombi, Yola-North, Yola-South, Numan and Demsa (Figure 1). As apple fruit selling points were limited in number in the State, all designated stalls, shops, malls and other areas where the fruits are sold were identified by trained enumerators to form the respondents. A total of 170 apple fruits marketers were identified and engaged in the study. The distribution of the marketers is shown in Table1.

Table 1: Distribution of Zones, Selected LGAs and Respondents in Adamawa State.

S/no.	Zone	LGAs	Selected LGAs	Respondents
1.	Zone I	Maiha, Madagali, Michika, Mubi-North, Mubi-South	Maiha Mubi-North.	07 23
2.	Zone II	Fufore, Girei, Hong, Gombi, Song.	Fufore Gombi	05 18
3.	Zone III	Ganye, Jada, Mayobelwa, Toungo, Yola-North, Yola-South.	Yola-North, Yola-South	62 35
4.	Zone IV	Demsa, Guyuk, Lamurde, Numan, Shelleng	Demsa Numan	07 13
Total	**04**	**21**	**08**	**170**

Source: Field generated data, 2023.

Primary data were mainly collected by the use of a structured questionnaire. Group discussion, personal interviews and cost-route methods were other complementary efforts applied to source data from the apple fruits marketers. Areas where data were collected centered on the socioeconomic variables of the apple fruits marketers, perception of marketers on sales promotional strategies, effects of sales promotional strategies on gross receipts and the major challenges of the apple fruits marketers in the State. The data were collected for a period of one month, that was December, 2023.

Method of Data Analysis

The aspect of the socioeconomic variables and challenges faced by marketers were analysed using descriptive statistics. The perception of the apple fruits marketers on the sales promotional strategies was realised by applying a 3-point Likert Scale. However, the effects of the sales promotional strategies on the gross receipts were achieved with multiple regression analysis. The specification of the multiple regression model is stated below:

MGR = *f* (AGE; GEN; MS; EL; HHS; MEX: MOC: IP: RSD: e) and mathematically expressed as:

$$\mathbf{MGR} = \beta_0 + \beta_1 AGE + \beta_2 GEN + \beta_3 MS + \beta_4 EL + \beta_5 HHS + \beta_6 MEX + \beta_7 MOC + \beta_8 IP + \beta_9 PD + ei$$

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
MOC = Major occupation (trading = 1: otherwise = 0)
IP = Initial price of apple fruits (Naira)
PD = Price Discount (monetary value of discount = Naira)
B_1- β_9 = Coefficients of independent variables
ei = Error term
f = Function

NB: The position of PD was substituted with BOGO deals, respectively, into the regression model to determine its effect on the gross receipts.

The 3-point Likert Scale was used to capture the opinions of the marketers which were in qualitative forms into quantitative forms for ease of interpretations on the three scale count as:
1 = perceived opinion in agreement;
2 = perceived opinion as neutral;
3 = perceived opinion not in agreement (disagreement)
A tool used by Latha *et al.* (2021) and modified by the researchers was applied to achieve the aspect of 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 ith apple fruits marketer;
U_{ij} = Unit score of the jth apple fruits marketer;
S_j = Scale value of the jth component; and
$\sum$ = Summation.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Apple Fruits Sellers in Adamawa State

The distribution of the apple fruit sellers or marketers in Adamawa State is shown in Table 2. The majority (91.18%) of the respondents were male, while the female accounted for the minority with 8.82%. However, on the contrary, a similar study by Oyewo *et al.* (2023) in the southern part of the country indicated that female formed the majority (75.70%) of apple fruits sellers in Oyo State, Nigeria, with females recording a value of 24.30% as the minority. In part, this could be linked to both the religious and cultural beliefs of the two sets of communities. While in the Northern part, females are mostly kept in purdah and restricted from going out just to concentrate on taking care of the children and doing household chores, the females in the Southern part of the country are free to go out to fend for themselves and may be raise some money for the household keep.

Table 2: Distribution of Apple Fruits Marketers by Gender in Adamawa State, Nigeria.

S/no.	Gender	Frequency	Percentage
1.	Male	155	91.18
2.	Female	15	8.82
Total		**170**	**100.00**

Source: Computed from field data, 2023.

Findings in Table 3 reflect on the summary of statistics of the socioeconomic variables of the apple fruits sellers in the study area. Age-wise, 20 years was the minimum for the marketers and 62 years as the maximum. The mean age for the fruit sellers was 43 years; indicative that most of them were middle-aged persons within their prime youthful stage with lots of energy and vigour that could warrant them actively engaging in the selling of apple fruits. Similarly, the educational attainments of the respondents were 6, 20 and 12 years as minimum, maximum and mean, respectively, for the apple fruits sellers. In other words, most of the marketers had a tint with Western education in the State. Perhaps their mass involvement in the sales of apple fruits was due to the high unemployment rate in the country which subjected most of them to find alternative economic coping strategies as sources for survival. Also, Osadebamwen *et al.* (2022) reported a similar age for producers and sellers of apple in Plateau State, Nigeria.

Another important variable of the marketers mentioned in Table 3 is the household size. A mean value of 11 persons for the apple fruit sellers in a household in this present economic dispensation is large enough to increase the expenditure of the family unit thereby increasing their propensity of diversifying their sources of income for better livelihoods. On the other hand, a value of one as the minimum individual in a household for the fruits sellers entailed unmarried persons, whom probably because of their lack of gainful employment might have engaged in the trading of the fruit for livelihood. A family size of 24 individuals in a household meant many people to take care of, in terms of feeding, payment of school fees and medical care, among others. These engagements also over-stretch the family expenditure and hence, widen the possibilities of engaging in many other economic activities to meet-up family needs.

The marketing experience of the apple fruits sellers is equally shown in Table 3. A mean years of 13 for the marketers showed that the individuals were on average slightly experienced in selling the fruit in the State. If the period of 1830-1930 was the commencement of the transaction of apple fruits marketing in the United States of America (USA) as reported by Dimitri (2002), then even the period of 24 years as the maximum for experience in marketing of apple fruits in the State was a mere starting point. This would even go a long way to support the reason why publications on the fruits in the study area, and even the country have been too low. Lastly, information on the status of income for the apple fruit marketers is revealed in Table 3. The maximum amount expended on the purchase of fruits was N1, 320,000= with a mean of N670, 400=. The least amount used by an individual seller on the purchase of apple fruits was N33, 000=. These transactions show that apple fruit marketing requires a large amount of capital to operate efficiently.

Table 3: Summary Statistics of Socio-Economic Characteristics of Apple Fruits Marketers in Adamawa State, Nigeria.

S/no.	Variable	Minimum	Maximum	Mean	Std.
1.	Age (yrs.)	20	62	43	1.0231
2.	Edu. Level (No.)	06	20	12	2.0112
3.	HH/Size (No.)	01	23	11	0.1013
4.	M/Experience (yrs.)	02	24	13	0.0123
5.	Income (Naira)	33,000	1,320,000	670,400	203,102.30

Note: HH = Household; M = Marketing; Edu. = Education; No. = Number.
Source: Computed from field data, 2023.

Perception of Sellers on Price Discount of Apple Fruits in Adamawa State.

The findings in Table 4 show that five perception statements were advanced for price discount as observed by apple fruit sellers in the area surveyed. The perception statement that price discount increases sales was agreed upon by the majority (73.53%) of the apple fruits sellers. A total of 17.65% remained neutral, while only 8.82% disagreed with the statement, thereby giving this category of sellers a perception index of 2.22 which was considered high. In a similar vein, the statement that Products with price discounts attract buyers was agreed by 82.35% of the apple fruits buyers, and 17.06% were neutral in their opinions. However, only a negligible (0.59%) portion of the sellers disagreed with this perception statement, also recording a high index of perception for this set of marketers, with a perception index of 2.44.

The majority (78.82%) of the respondents in Table 4 were neutral on the statement that buyers were indifferent to the price discount of apple fruits, while 19.41% agreed with it. However, a meagre minority (1.76%) of the respondents disagreed with this statement, giving an index of perception of 1.39, which was considered low. On the perception statement that price discount of apple fruits has custom implication; a larger proportion (47.65%) of the respondents had a neutral opinion with 47.06% of them expressing agreement and 5.29%

indicating disagreement. Lastly, the respondents were assessed on the statement that price discount was discretional. Most (77.06%) of the respondents agreed with the statement, while about only 12.94% of them remained neutral. Only 10.00% of the respondents disagreed with this perception statement. Also, this set of respondents had a perception index of 1.23, showing a low opinion on the item. However, the weighted or grand mean of the entire perception statements of 1.66, implied that the majority of the apple fruit marketers in Adamawa State agreed that price discount on apple positively influenced the marketing of the fruits.

Table 4: Marketers Perception on Price Discount of Apple Fruits in Adamawa State, Nigeria.

S/no.	Perception Statement	Agree (1)	Neutral (2)	Disagree (3)	Mean	S/Dev.
1.	Price discount increases sales	125(73.53)	30(17.65)	15(8.82)	2.22	1.85
2.	Products with discount attracts buyers	140(82.35)	29(17.06)	1(0.59)	2.44	0.13
3.	Buyers are indifferent to price discount	33(19.41)	134(78.82)	3(1.76)	1.39	0.79
4.	Price discount has custom implication	80(47.06)	81(47.65)	9(5.29)	1.02	1.50
5.	Price discount is discretional	131(77.06)	22(12.94)	17(10.00)	1.23	1.46
	Weighted/Grand mean				**1.66**	

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

Perception of Apple Fruits Sellers on the Use of BOGO Deals in the Study Area.

The buy-one-get-one deal in the marketing of apple fruits in Adamawa State has not been popular among marketers. This is more evident from the responses of the sellers shown in Table 5. As observed in the findings of the three (roadside display, price discount and free samples) sales promotion strategies in the State earlier discussed, there are five perception statements on BOGO deals for sellers to answer. On the statement that BOGO deals **do** boost sales, most (55.29%) of the sellers remained neutral, with 25.30% of them disagreeing and 19.41% agreeing with the opinion. This set of sellers had a perception index of 1.01 which showed a weak opinion. For the second statement that buyers consider BOGO deals as inferior items, the majority (58.24%) of the apple fruit sellers answered in the affirmative, while 25.29% were neutral and the remaining 16.47% were in disagreement. The perception index of 1.19 was recorded for this set of sellers, indicating a high perception. Further, the opinions of the apple fruit sellers were fairly distributed on the statement that buyers are indifferent to the use of BOGO deals. Values of 35.88%, 32.35% and 31.77% were obtained for those sellers who agreed, remained neutral and disagreed, respectively, giving them a perceptive index of 1.98. The index was an indication that a larger proportion of the sellers were indifferent to this opinion.

However, on the perception statement that the use of BOGO deals is seasonal, most (88.24%) of the apple fruit sellers were in agreement, whereas 8.82% were neutral and 2.94% remained in disagreement. A perception index of 1.50 was indicative that the sellers were of the opinion the practice of buy-one-give-one apple fruit among marketers was seasonal. Lastly on this subject, the statement that the application of BOGO deals reduces profit was assessed. The views of 45.88% of the sellers were in agreement. While a total of 33.53% of the marketers remained neutral, about 20.59% of them were in disagreement, thereby recording a perception index of 1.67 for the set of these marketers. The overall, a weighted or grand mean of 1.47 was obtained for the entire category of apple fruits sellers in the State. The implication of this finding is that there was a low perception among the sellers of apple fruits in the area studied. In other words, most of the respondents believed that BOGO deals did not have any significant influence on the marketing of the fruit.

Table 5: Apple Fruits Sellers' Perception on Use of BOGO Deals in Adamawa State, Nigeria.

S/no.	Perception Statement	Agree (1)	Neutral (2)	Disagree (3)	Mean	S/Dev.
1.	Use of BOGO deals boosts sales	33(19.41)	94(55.29)	43(25.30)	1.01	1.53
2.	Buyers consider BOGO as inferior items	99(58.24)	43(25.29)	28(16.47)	1.19	1.40
3.	Buyers are indifferent to the use of BOGO	55(32.35)	61(35.88)	54(31.77)	1.98	1.03
4.	The use of BOGO deals is seasonal	150(88.24)	15(8.82)	5(2.94)	1.50	1.14
5.	Application BOGO deals reduces profit	78(45.88)	57(33.53)	35(20.59)	1.67	1.46
	Weighted/Grand mean				**1.47**	

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

Effects of Price Discount on the Gross Receipts of Marketing of Apple Fruits in Adamawa State

As far back as 2012, Waterlander *et al.* (2012) reported that a 25% reduction in the prices of vegetables and fruits gave incremental patronage of web-based supermarkets and other selling outlets by consumers in the Netherlands. A similar survey was conducted in Pakistan among 250 students of Gujranwala University where Bhatti (2018) discovered that price discount did not produce any positive effect on the buyers' intentions. This latter finding was at variance with several reports of other studies in Pakistan (Rizwan *et al.,* 2014), Saudi Arabia (Al-Salamin and Al-Hassan, 2016), India (Shekhawa *et al.,* 2020) and Turkey (Akdogan, 2021), among others.

However, in this study, the results of the effects of price discount on apple fruit gross receipts in Adamawa State are captured in Table 6. Also, the same nine variables that were mentioned for roadside display analysis were equally reflected in this regression. These include, the age, gender, marital status, level of education, household size, marketing experience, major occupation of the apple fruits sellers, and initial price and price discount in the marketing processes. Of these independent variables, the level of education (1.3742), marketing experience (1.9416), initial price of apple fruits at retail purchase (0.0632) and price discount at point of sales (1.0655) were all found to be positive and statistically significant at $p < 0.05$. The implication of these findings is that holding other circumstances constant, a 1% increase in these variables would lead to increases in the gross receipts of apple fruits marketing equivalent to the coefficients corresponding to the values against each independent variable. On the other hand, the R^2 value of 0.6095 indicates that a 60.95% variation in the gross receipts of marketing of apple fruits in the State was explained by the included independent variables of the model.

Table 6: Regression Result Showing Effect of Price Discount on Marketing of Apple Fruits in Adamawa State, Nigeria

S/no.	Variable	Coefficient	Stand. Error	t-Values	Level of Sig.
1.	Constant	-4.3201	3.8717	1.1158	0.2661
2.	Age	1.8947	8.6513	2.1901	0.0299^{NS}
3.	Gender	-3.4503	1.7580	-1.9626	0.0514
4.	Marital status	-2.1491	1.2165	-0.1766	0.8599^{NS}
5.	Edu. level	1.3742	1.6552	0.0830	0.0039**
6.	H/H size	-1.3659	1.7969	-0.0760	0.9395
7.	M/Experience	1.9416	1.3801	0.2131	0.0014**
8.	M/occupation	1.4116	1.1541	1.2231	0.2230
9.	Initial Price	0.0632	0.0793	13.395	0.0052**
10.	P/ Discount	1.0655	0.6338	0.5943	0.0030**
11.	Adjusted R^2	0.6095			

Note: ** = Significant at p <0.05; NS = Not Significant.
Source: Generated from Excel 2013 Computer Print-Out, 2023.

Effects of BOGO Deals on the Gross Receipts of Apple Fruits Marketing in Adamawa State, Nigeria

There are several reports across the world (Jayaranman *et al.,* 2013; Effiong *et al.,* 2018; Godon-Hecker *et al.,* 2020; Rai and Bhandari, 2021; Huseynzade, 2023) indicating that the buy-one-get-one for free method of sales promotion of products are widely practiced among marketers and accepted massively by consuming communities to have been perceived to significantly improved buyer patronage.

However, in this research, this perception has been mainly at variance with the widely practiced norm in the sales promotional world. This might be connected with the low-level of acceptability of this practice among marketers for fear of the pre-conceived idea that the process leads to a huge reduction in margin of profits. For the purpose of this study, nine variables were equally regressed against the gross receipts of apple fruits in the State. The findings are shown in Table 6. Also, about four independent variables show various levels of significance in relation to influencing the marketing output of the apple fruits in Adamawa State. The initial price for purchasing apple fruits by the marketers had shown positive a coefficient (1.0646) and was significant at p <0.05. This was followed by the coefficient (2.0994) of the marketing experience of the apple fruits sellers which was also significant at p <0.05. Similarly, the BOGO deals variable was positive (0.2767) and slightly significant at p <0.01. This level of significance was perhaps due to the fact that marketers in the State consider this method of enticing consumers for patronage of their products as yielding meagre profits, while the buyers on the other hand viewed the process as the promotion of inferior products and therefore, desert such items sold under the process. This result is contrary to Bawa and Shoemaker (2014) who reported that a reduction in price and use of BOGO deals brought about incremental sales of products, however, in agreement with Godon-Hecker (2020) that consumers were more in preference for free samples and reduction of prices than offer of BOGO deals in attracting buyers.

Table 7: Regression Result Indicating Effect of BOGO Deals on Marketing of Apple Fruits in Adamawa State, Nigeria

S/no.	Variable	Coefficient	Stand. Error	t-Values	Level of Sig.
1.	Constant	-2.9247	3.6605	-0.7990	0.4254
2.	Age	1.1119	1.0006	1.1112	0.2681*
3.	Gender	-3.2100	1.7401	-1.8446	0.0669NS
4.	Marital status	-3.4415	1.2124	-0.2838	0.7768NS
5.	Edu. level	3.297.1	1.6507	0.1986	0.8427
6.	H/H size	-6.0322	1.8036	-0.3344	0.7384NS
7.	M/Experience	2.0994	18229	1.4259	0.0058**
8.	M/occupation	1.3406	1.1168	1.2004	0.2317
9.	1nitial Price	1.0646	0.0706	15.076	0.0003**
10.	BOGO	0.2767	0.5757	0.4806	0.6314^
11.	Adjusted R^2	0.6138			

Note: * = Value is Significant at p <0.01; ** = Value is Significant at p <0.05; NS = Not Significant.
Source: Generated from Excel 2013 Computer Print-Out, 2023.

Major Direct and Indirect Constraints to Marketing of Apple Fruits in Adamawa State

Generally, risk, uncertainty and challenges are associated with agricultural production and marketing anywhere across the world. This is basically due to the nature of the enterprises involved as these are mainly controlled by biological and natural factors which are more often than not beyond the farmers' efforts in most developing economies.

In this survey, challenges experienced by apple fruits marketers were captured and presented in Table 8. These constraints are grouped into two namely, direct and indirect problems depending on how they affect apple fruits marketing. Foremost among those reported under the direct factors was the exorbitant or high price of apple fruit in the State, which accounted for the majority (91.76%). Perhaps that's why Muder *et al.* (2022) reported that apple fruit is the third most traded fruit in the entire world. Ignorance of the health benefits by the consumers and barriers of storage facilities accounted for 82.35% and 81.76%, respectively. The least challenge in this segment was the high cost of promotional strategies with 58.24%.

On the part of indirect challenges, poor road network was the most (88.82%) widely reported among the apple fruits marketers. Aside from increasing the cost of transportation by the transporters, poor roads lead to injuries on the apple fruits as a result of vigourous shaking which lowers the quality of the fruits. Harsh weather conditions which facilitate fast deterioration of the freshness of the fruits culminate in spoilage. This challenge was reported by 78.24% of the respondents. As a highly perishable agricultural crop, the marketers had to handle the fruits with utmost concern otherwise huge losses would be experienced. Inadequacy of knowledge for growing apple fruits and language or communication barriers accounted for 57.65% and 38.24%, respectively.

***Table 8: Direct and Indirect Constraints to Marketing of Apple Fruits in the State.**

S/no.	Constraint	Frequency	Percentage
1.	**Direct**		
	Exorbitant price of apple fruits.	156	91.76
	Ignorance of health benefits by consumers.	140	82.35
	Apple fruits storage barriers.	139	81.76
	High cost of sales promotions	99	58.24
2.	**Indirect**		
	Poor road networks.	151	88.82
	Harsh weather conditions.	133	78.24
	Inadequate knowledge of growing the crop.	98	57.65
	Communication barriers.	65	38.24

Note: * = Multiple responses were recorded.
Source: Computed from field survey, 2023.

CONCLUSION

Conclusively, middle-aged males who were mostly married and had attained secondary school education were the majority of apple fruit sellers in Adamawa State, Nigeria. The marketers perceived price discounts as the most influential sales promotional strategy that increased gross receipts of apple fruits. Similarly, reduction in price was the strategy that had a positive effect on marketing receipts in the State. The major direct challenges for marketers include exorbitant prices of apple fruits, ignorance of the health benefits of apple fruits by consumers, apple fruits storage barriers and high cost of sales promotions. The most indirect constraints were poor road networks, harsh weather conditions, insufficient skills for growing apple fruits and language barriers. Resolving these demanding issues may tremendously improve apple fruit marketing in the study area.

RECOMMENDATION

As apple fruit marketing is faced with various challenges in Adamawa State, adopting the following measures would proffer solutions toward improving the trade:

The apple fruits marketers should come together and form cooperative societies in order to gain government or lending agencies' attention by gaining access to soft loans and other essential services. There should be intensive efforts by both the public and private sectors

toward intensifying extension services for the apple fruits growers to imbibe the improved methods of production so as to increase productivity thereby raising the supply, and by extension lowering the price of the fruit. Also, improved indigenous storage facilities should be made available to the apple fruits marketers in order to minimise the losses experienced through spoilage. This can also be made affordable since the materials to be used would be available at minimal cost. Similarly, Both rural and urban road networks should be constructed as linkages from the production or grower points to selling or consumption areas to lessen the anticipated economic losses that may be accruable to the marketers. Lastly, in spite of the fact that apple fruits are on the high side in terms of the unit price paid by the consumers, placing emphasis on awareness of the health benefits of the fruit would no doubt raise consumption by individuals thereby improving sales.

ACKNOWLEDGEMENT

This research was made possible by an Institutional Based Research (IBR) grant obtained from the Tertiary Education Trust Fund (TETFund), Abuja, Nigeria; vide reference number TETF/DR&D/UNI/MUBI/RG/2023/VOL1. The authors wish to thank the administrators for the intervention.

The authors wish to thank the Management of Adamawa State University, Mubi, Nigeria, for approving the study; Dr. Jalaluddeen Usman of the Department of Agricultural Economics and Extension of the same university for handling the data analysis; and the trained enumerators and apple fruits sellers for their cooperation and patience during the data collection.

REFERENCES

Adebayo, A. A. (2020). Adamawa State in Maps. Second Editon, Paraclete Publishers, Yola, Nigeria. 203pp

Alcedo, J., Cavallo, A., Dwyer, B., Mishra, P. and Spilimbergo, A. (2022). E-Commerce During Covid: Stylized Facts from 47 Economies. International Monetary Fund Working Paper No. WP/22/19. 19pp

Al-Salamin, H. and Al-Hassan, E. (2016). The Impact of Pricing on Consumer Buying Behavior in Saudi Arabia: Al-Hassa Case Study. *European Journal of Business and Management.* 8(12): 62-73 www.iiste.org

Akdogan, C. (2021). A Study on the Effect of Price on Consumer Purchase Decision-Making. XVI. IBANESS Congress Series on Economics, Business and Management – Istanbul / Turkey. September 11th -12th

Bawa, K. and Shoemaker, R. (2014). The Effects of Free Sample Promotion on Incremental Brand Sales. *Marketing Science.* 23(3): 345-363 htttps://doi.org/10.1287/mksc.1030.0052

Bhatti, A. (2018). Sales Promotion and Price Discount Effect on Consumer Purchase Intention with the Moderating Role of Social Media in Pakistan. *International Journal of Business Management.* 3 (4): 50-58 Amsterdam University of Life Science, AUAS (2022). Europe E-Commerce Report 2022. 105pp

Chen, B., Wang, L., Rasool, H. and Wang, J. (2022). Research on the Impact of Marketing Strategy on Consumers' Impulsive Purchase Behaviours in Livestreaming E-Commerce. *Frontiers in Psychology.* 13:905531. https://doi.org/10.3389/fpsyg.2022.905531

Costa, P. and Rodrigues, H. (2023). The Ever-Changing Business of E-Commerce-net Benefits While Designing a New Platform for Small Companies. *Review of Managerial Science.* https://doi.org/10.1007/s11846-023-00681-6

Das, D. S., Dere, S. and Anute, N. (2022). Sales Promotion Strategies Adopted by Agricultural Companies. *Journal of Emerging Technologies and Innovative Research.* 9(8): 647-656 www.jetir.org

Dimitri, C. (2002). Contract Evolution and Institutional Innovation: Marketing Pacific-Grown Apples from 1830 to 1930. *The Journal of Economic History.* 62(1): 189-212 https://www.jstor.org/stable/2697977

Effiong, C., Inameti, E. E., Ernest, N. A. and Arikpo, N. N. (2018). Strategic Management of Sales Promotion Techniques on Products Consumers of Selected Retail Outlets in Calabar Metropolis of Cross River State, Nigeria. *Global Journal of Social Sciences*. 17: 41-53: https://dx.doi.org/10.4314/gjss.v17i1.5

Gordon-Hecker, T., Pittarello, A., Shalvi, S., and Roskes, M. (2020). Buy-One-Get-One-Free Deals Attract More Attention than Percentage Deals. *Journal of Business Research.* 111: 128-134 https://doi.org/10.1016/j.jbusres.2019.02.070

Huseynzade, S. (2023). The Power of Sale Promotions: Analyzing the Impact of Sales Promotion Offerings on Consumer Buying Behaviour in the Pandemic. *Management,* 27(2): 100-120 https://doi.org/10.58691/man/176037

Jayaraman, K., Iranmamesh, M., Kaur, M. D. and Haron, H. (2013). Consumer Reflections on "Buy One Get One Free" (BOGO) Promotion Scheme-An Empirical Study in Malaysia. *Research Journal of Applied Sciences, Engineering and Technology.* 5(9): 2740-2747

Kadiri, S. S. (2024). Assessing the Effects of Consumer Sales Promotion and Consumer Buying Behaviour in the Telecommunication Industry of Nigeria. *British Journal of Marketing Studies.* 12(1): 28-45 https://doi.org/10.37745/bjms.2013/vol12n12845

Latha, M. C., Kadian, K. S., Meena, B. S., Manjunath, K. V. and Meena, D. C. (2021). Development of an Index to Measure the Farmers' Perception towards Input Dealers as Para Extension Workers. *Indian Research Journal of Extension Education.* 21(4): 92-98

Mohammad, A. H., Hassan, G. R. and Abd-Elrahman, A. S. (2022). Impacts of E-Commerce on Planning and Designing Commercial Activities Centers: A Developed Approach. *Ain Shams Engineering Journal.* 13 (2022) 101634 https://doi.org/10.1016/j.asej.2021.11.003

Muder, A., Garming, H., Dreisiebner-Lanz, S., Kerngast, K., Rosner, F., Klickova, K., Kurthy, G., Cimer, K., Bertazzoli, A., Altamura, V., De-Ros, G., Zmarlicki, K., Freitas, M. D. B. C., Duarte, A., Bravin, E., Kambor, J., Karamursel, D., Ozturk, F. P. and Kacal, E. (2022). Apple Production and Apple Value Chains in Europe. *European Journal of Horticultural Science.* https://doi.org/10.17660/eJHS.2022/059

Nasir, S. and Bal, E. (2016). Sales Promotional Strategies and Buying Behavior in an Emerging Market at the Post Recession Period. In: Gbadamosi, A. (ed.) Handbook of Research on Consumerism and Buying Behavior in Developing Nations. A volume in the Advances in Marketing, Customer Relationship Management, and E-Services (AMCRMES) Book Series. IGI Global Publishers, United States of America. Pp. 239- 262 https://orcid.org/10.4018/978-1-5225-0282-1.ch011

Osadebamwen, U. G., Adekoya, A. E. and Akintunde, E. A. (2022). Baseline Study of Growers' Constraints in the Production of Apple (*Malus domestica*) in Plateau State Nigeria. *Agriculture and Food Security.* 11(16): 1-19 https://doi.org/10.1186/s40066-022-00354-9

Osaremen, A. J. (2019). Empirical Impact Evaluation of Sales Promotional Mix On Sachet Water Product Distribution on Enterprise Performance. The 1st International Conference on Business, Management and Information Systems. Pp 157-170

Oyewo, I. O., Oyewo, E. O., Adelalu, K. O., Alawode, A. A., Olawode, O. O. and Alawode, Y. O. (2023). Socioeconomic Determinants of Fruit Marketing in Oyo State, Nigeria. *KIU Journal of Social Science.* 9(2): 85-92

Paredes-Corvalan, D., Pezoa-Fuentes, C., Silva-Rojas, G., Rojas, I. V. and Castillo-Vergara, M. (2023). Engagement of the E-Commerce Industry in the US, According to Twitter in the Period of the COVID-19 Pandemic. *Heliyon.* 9 (2023) e1688 https://doi.org/10.1016/j.heliyon.2023.e16881

Pascucci, F., Savelli, E. and Gistri, G. (2023). How Digital Technologies Reshape Marketing: Evidence from a Qualitative Investigation. *Italian Journal of Marketing*. 2023:27–58 8 https://doi.org/10.1007/s43039-023-00063-6

Rai, B. and Bhandari, D. R. (2021). Sales Promotion and Consumer Buying Behavior for FMCGs in Kathmandu. *N. N. Journal*. 6(1): 23-34 https://doi.org/10.3126/nccj.v6i1.57812

Rizwan, M., Javed, M. A., Khan, M. T., Aslam, M. T., Anwar, K., Noor, S. and Kanwal, W. (2014). The Impact of Promotional Tools on Consumer Buying Behavior: A Study from Pakistan. *Asian Journal of Empirical Research.* 3(2): 118-134

Shekhawa, K., Puri, A., Sharma, N., Wagh, H. and Kokatnur, P. (2020). A Study on the Impact of Discounts on Consumer Buying Behaviour. *International Journal of Creative Research Thought.* 8(4): 932-936

Waterlander, W. E., Steenhuis, I. H. M., De-Boer, M. R., Schuit, A. J. and Seidell, J. C. (2012). The effects of a 25% discount on fruits and vegetables: results of a randomized trial in a three-dimensional web-based supermarket. *International Journal of Behavioral Nutrition and Physical Activity.* 9(11): 1-12 http://www.ijbnpa.org/content/9/1/11

Wichmann, J. R. K., Uppal, A., Sharma, A. and Dekimpe, M. G. (2022). A Global Perspective on the Marketing Mix across Time and Space. *International Journal of Research in Marketing.* 39: 502-521 https://doi.org/10.1016/j.ijresmar.2021.09.001