ANALYSIS OF DISCOUNT PRICING AND MARKETING OF PROCESSED CATFISH IN KWARA STATE, NIGERIA

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Abstract: Studies on the effect of discount pricing on market margin of processed catfish are rare in the literature. Thus, the study identifies the common types of price discounts and discount pricing strategies adopted by catfish marketers, describes the structure of catfish market, estimates the marketing margin, determines factors influencing price discounting strategies and identifies the constraints hindering price discounting among marketers in the study area. Proportional sampling technique was employed to select 212 respondents. Data were collected with the aid of structured interview schedule. Descriptive statistics, Likert-scale, Herfindal Index, marketing efficiency model, marketing margin and multiple regression analysis were the analytical tools employed to achieve the research objectives. The result revealed a Herfindahl index value of 0.006. This showed a highly competitive and non-concentrated catfish market. Marketing efficiency value of (140.09%), indicated that catfish marketing was efficient. The estimated marketing margin value of 28.62%, suggested that every ₦1 sale result to a price spread of about 0.29k in catfish marketing. Hence, catfish marketing is profitable and is therefore worthwhile. The multiple regression analysis revealed that marketing margin, cost of spoilt fish, cost of marketing services, pond size and farm distance to state capital are the important variables explaining price discounting among marketers in Kwara state. Furthermore, the study revealed that the most significant constraint hindering discount pricing strategies in catfish marketing is the cost of production. We therefore recommend training of marketers on the efficient fish processing and storage techniques to reduce loses. Marketers are encouraged to pool their resources together to achieve economies of scale in order to reduce the cost of production. Policies towards increasing pond sizes should be enhanced by the government at all levels.

Key words: Catfish, Herfindal Index, marketers, policies, price discounting and strategies.

Introduction

Price discount is a depletion on the efficient selling price of any goods and service. This motivation is done to attract consumers and increase sales. Most managers use discount pricing to sell low-priced products in large quantities. With this strategy, it becomes critical to reduce costs and stay competitive. Most retailers demand for price discounts from suppliers when they buy in bulk. Price discount is an effective marketing strategy aimed at attracting consumers by giving incentive, thereby encourages the consumers to buy the promoted products right away (Yin and Huang 2014).

Marketing on the other hand, involves identifying consumer's needs and productive channels to reach them in order to enhance consumer's satisfaction and profit maximization. It entails the transportation of the products to the end-users in an acceptable form. Myriad of agencies or intermediaries participate in marketing activities. These agencies are: facilitators, brokers, transporters, wholesalers and retailers who perform different functions as goods and services move from one point to another. These agencies reduce the number of transactions by creating assortment and providing varieties of goods and services in one location for customers to buy at the right time. According to Coughlan *et al.* 2001, wholesalers and retailers have improve marketing efficiency largely by curtailing distribution cost.

The catfish marketing must be done with care in order to sustain its quality and nutritional value due to its short shelf-life. Therefore, for enhanced growth and development of the fishery subsector, marketing efficiency is important. Marketing efficiency involves the movement of goods and services from the producers to the consumers at the lowest cost, at the right time and in the right place. Fish marketing becomes profitable only when the products are delivered in a wholesome condition and at a price tolerable to the consumers (Nwabunike, 2014). According to FDF, 2012, fish marketing is almost entirely a function of the private sector and operates through a system of village markets, township markets, assembly centres, retail markets and urban wholesales.

Surprisingly, catfish marketing is badly evolved in Nigeria. It is specified largely by the problem of storability, perishability, processing amongst others. Poor application of appropriate discount pricing strategies that can help them increase their sales, skills and knowledge in marketing had further complicated the situation, leaving many fish farmers and marketers struggling to grow market share. Worst still, many studies have been carried out on catfish marketing and its determinants in Nigeria. However, there is paucity of data on factors influencing price discounting and how price discounting can be used to enhance catfish marketing margin. Thus, this study identifies the common types of price discounts and discount pricing strategies adopted by catfish marketers, describes the structure of catfish market, estimates the profitability of catfish marketing, determines factors influencing price discounting strategies and identifies the constraints hindering price discounting among marketers in the study area.

Materials and Methods

Study Area

This study was carried out in Kwara State. Kwara is located within the North Central geopolitical zone Kwara State is situated between parallels 8Â° and 10Â° north latitudes and 3Â° and 6Â° east longitudes. It is bounded in the north, east, south and west by Niger, Kogi, Osun and Republic of Benin respectively. The mean temperature ranges between 27ºC and 35ºC with a mean annual rainfall of 1,000-1,500mm. It has two main seasons- wet and dry. The wet season comes between early April and late October while the dry season is between November and late March. The State is an inland water state naturally blessed with large volumes of water with an estimated population of about 2,365,353 (NPC, 2006). Due to ecological features, cultural practices and project administrative convenience, the state is divided into four zones. These are: Zone A: Baruteen and Kaima Local Government Areas

(LGAs); Zone B: Edu and Patigi LGAs; Zone C: Asa, Ilorin East, Ilorin South, Ilorin West and Moro LGAs and Zone D: Ekiti, Ifelodun, Irepodun, Offa, Oyun, Isin and Oke-Ero LGAs (KWADPs, 2010) (Figure1).

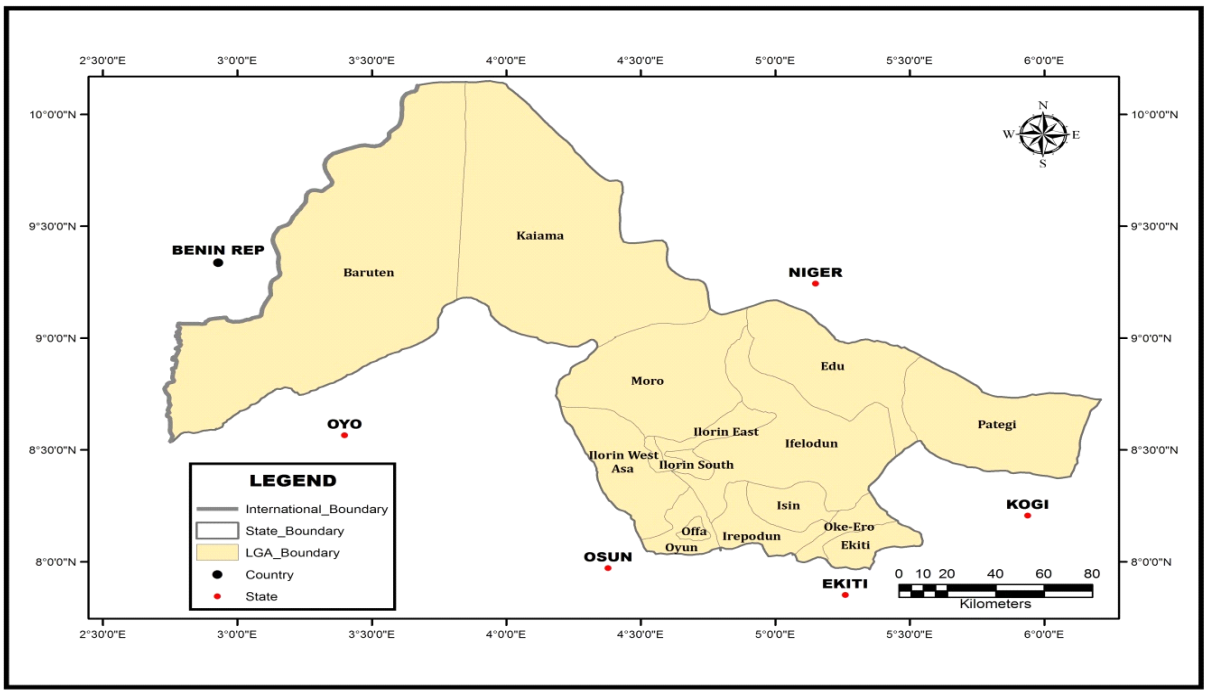

Fig 1. Map of Kwara state showing the Local Government Areas

Data collection and sampling methods

Largely, primary data was used for this study. The data were collected on price discounting strategies and catfish marketing with the use of structured interview schedule. There are 4 ADPs zone in Kwara, out of which Zone D was purposively selected because it has the highest (449) population of registered catfish marketers in the state. The second stage involves proportional selection of 212 catfish marketers from all the 7 LGAs in Zone D using Taro Yamane Formula as shown below:

Taro Yamane Formula

$a = M/1+M(k)^2$

where a= sample size

M = target population

k = 0.05

$a=449/1+449(0.05)^2$

a=212 respondents

Calculation of sample proportion.

Proportion= sample size/population x 100

$\text{Proportion} = \frac{212}{499} \times 100$

Proportion= 47%. That is 47% of the total catfish marketers in each LGA in Zone D were selected

Table 1: Sampled respondents

S/N	LGAs	Number of catfish marketer in each LGA	Sampled proportion
1	Ekiti	27	13
2	Ifelodun	62	29
3	Irepodun	67	31
4	Offa	184	87
5	Oyun	36	17
6	Isin	48	23
7	Oke-ero	25	12
	Total	449	212

Analytical techniques

Analytical tools such as frequency, percentage, mean, mode and range was used to identify the common types of price discounts and discount pricing strategies adopted by catfish marketers in the study area. The structure of catfish market was analysed using the Herfindahl–Hirschman Index (H). The Index is given as

$H = \Sigma A_i^2$ ..... (1)

$A_i = Ci/C$ ..... (2)

Where Ai = Market share for respondent i,
Ci = total kilogrammes (kg) of catfish sold per cycle by respondent i, and
C= total kg of catfish sold per cycle by all respondents

Marketing margin (Mm) analysis was used to estimate the profitability of catfish marketers. It is calculated mathematically as

$$Mm=\frac{SP- PP}{SP} x100 \quad \text{..... (3)}$$

Where:
Mm=Marketing margin
SP= Selling price (₦)
PP= Purchase price (₦)

Marketing efficiency (ME) was used to determine productivity in catfish marketing. The model is depicted as:

ME= Revenue generated from marketing / Cost of marketing services x 100…….. (4)

Where cost of marketing services includes costs of transport, wheel-barrow services and other marketing charges and the 10% commission paid to Commissioned agents by the marketers.

Factors influencing price discounting strategies adopted by marketers were determined using multiple regression analysis. The model is stated as:

$Q= b_0 + b_1k_1 +b_2k_2 +b_3k_3 +b_4k_4 +b_5k_5 + b_6k_6 +b_7k_7+b_8k_8+b_9k_9+ei$ .....(5)

Where
Q=average price discount (□)
k_1=initial capital outlay (□)

k_2=household size (number)
k_3=marketing service ()
k_4=total fish loss due to poor processing or spoilage (kg)
k_5=marketing margin ()
k_6=experience (years)
k_7=education (years)
k_8=farm distance to state capital (km)
k_9=cost of pond ()
ei = Error term
b_0 = intercept (or constant)
b_1, b_2 … b_9 = $_i$th coefficient corresponding to k_1, k_2 … k_9

To describe the factors hindering price discounting strategies in the area, a 5 point-Likert-type scale was employed. Respondents were asked to indicate whether they agree or disagree and to indicate the extent of agreement or disagreement as the case may be. The response options and values assigned were as follows: strongly disagree (SD) =5; disagree (D) =4; agree (A)=3; moderately agree (MA) =2; and strongly agree (SA) =1. These values were added and divided by 5 to obtain the mean (3.0). Constraints with mean scores greater and lower than 3.0 will be regarded as important and unimportant challenges respectively.

Results and Discussion

Socio-economic characteristics of respondents

Table 2, shows that majority (95.8%) of the respondents were males while 4.2% of the respondents were females. This suggests that gender sensitivity is inclined towards men than women in catfish marketing in the study area. This findings agrees with that of Ali *et al*; (2008).

Table 2. Socioeconomic characteristics of the respondents

Variable	Frequency	Percentage	Mean
Age			
1- 30	18	8.5	
31-60	188	88.7	43.8
61-90	6	2.8	
Gender			
Male	203	95.8	
Female	9	4.2	
Level of education			
1 - 6	43	20.3	
7 – 12	46	21.7	12 years
13-18	123	58.0	
Marketing experience			
1 - 10	181	85.4	
11 - 20	20	9.4	12 years
21 - 30	11	5.2	
Household size			
1 - 5	178	84	
6- 10	34	16	5 persons
Main source of income			
Fish marketing	61	28.8	
Others	151	71.2	

Access to Co-operative			
Yes	148	69.8	
No	64	30.2	
Type of ponds used			
Earthen pond	128	60.4	
Concrete pond	84	39.6	
Marketers' income per cycle			
500, 000- 1,000000	17	8.0	1, 412,724
1, 000001- 1,500000	109	51.4	
1,500001- 2000000	86	40.6	

Source: field survey, 2019

The average age of the respondents is 43.8 years. This implies that most of the marketers are still in their active age and could withstand the rigours associated with marketing activities. This gives an indication that the youth were becoming gainfully employed and that they are now realizing their potentials, instead of solely depending on "white collar" jobs as the case in the past. Age is a critical variable which can affect the ability and agility with which the head meets the food needs of the household (Salau *et al;* 2019). Household size refers to the total number of individuals (wives, children, grandchildren and extended family members) that live with and feed from the household. Most (84%) of the catfish marketers in Kwara state have household sizes between 1-5 members while 16% have household sizes between 6-10 members. The average household size is 5 persons. The education of respondents was proxies by the number of years a person spent in formal school. Majority (58%) of the respondents spent between 13-18 years while in school with an average education of 12 years. This indicates that most catfish marketers have tertiary education. Education is essential in managing risks associated with marketing operation and adoption of new technology in the industry. According to Onoja *et al*; (2012), individuals with educational attainments are good adopters of innovations. Majority (85.4%) of the respondents have between 1-10 years of catfish marketing experience, while only 5.2% of them have between 21-30 years of marketing experience, with the mean marketing experience of 12 years. Experience could help to correct past errors and expand or contract the scale of the application of tested skills. Respondents with longer years of experience could be able to forecast market situation in order to sell at higher prices to make more profits. Few (28.8%) of the respondents has catfish marketing as their primary occupation while majority (71.2%) of the respondents embraced other occupation other than catfish marketing.

Common types of price discount and price discounting strategies

Table 3, shows that the common types of price discount adopted by marketers are: quantity, geographical, seasonal, trade and cash discounts. Most (44.3%) marketers adopted quantity discount. Quantity discount is offered to a buyer who purchased in large volumes. It leads to a decreased cost per unit of goods purchased. It is normally done to attract customers to buy in larger volumes. This could be due to perishable nature of catfish. Quantity discount is slightly (25.5%) followed by geographical discount. Geographical discount is the price differentials based on buyers' location. It is offered to reduce high transport costs relative to the selling price. Cash discount (the deduction allowed by some marketers in order to attract customers to pay within a specified time) is least (4.7%) used by the respondents in the study area. The main (37.3%) effective discount pricing strategy is offering discount to new customers. This is slightly followed by customer value discount while offering free shipping to customers is the least frequently used pricing strategy.

Table 3. Price discount and price discounting strategies

S/N	Price discount	Frequency	Percentage	Price discounting strategy	Frequency	Percentage
1	Quantity discount	94	44.3	Offer discount to new customers	79	37.3
2	Geographical discount	54	25.5	Customer value discount	67	31.6
3	Seasonal discount	42	19.8	Prepayment	26	12.3
4	Trade discount	12	5.7	Free gift with purchase	25	11.8
5	Cash discount	10	4.7	Offer free shipping	15	7.1

Source: field analysis, 2020.

Structure of catfish market

The Herfindahl Index value of 0.006 indicates a highly competitive and non-concentrated catfish market. This implies that there is large number of catfish marketers and buyers, and there is no barrier to entry or exit in catfish market in the state. This explains why catfish marketers uses price discount strategies to attract more sales and become more competitive in the industry.

Marketing efficiency of catfish marketers

Table 4 showed that acquisition cost gulped 81.2% of the total variable cost while the cost of labour accounted for 4.45% of the total variable cost. The cost of storage and transport accounted for 6.25% and 1.09% of the total variable cost respectively. The calculated marketing efficiency value of 135.05%, suggests that catfish trading is productive in the state.

Table 4. Marketing efficiency of catfish marketers per cycle

S/N	Items	Cost (~~₦~~)	% of TVC
1	Average cost of storage	76,760. 9	6.25
2	Average cost of purchase	997,892.1	81.2
3	Average cost of equipment	61,603.05	5.02
4	Average cost of labour	54,735.85	4.45
5	Average cost of transport	13,516.35	1.09
6	Average cost of spoiled fish	13,941.02	1.13
7	Average cost of marketing service	10,436.32	0.85
8	Average total variable cost (TVC)	1,228,885.6	
	Average total revenue	1,659,610.8	
	Market efficiency	135. 05%	

Source: field analysis, 2020.

Profitability of catfish marketing

Table 5 shows a marketing margin value of 25.95%. This indicates that every ₦1 sale result to a price spread of 0.26k in catfish marketing in the study area.

Table 4. The marketing margin of catfish marketing per cycle

S/N	Items	Cost (₦)	% of TVC
1	Average cost of storage	76,760.93	6.25
2	Average cost of purchase	997,892.1	81.2
3	Average cost of equipment	61,603.05	5.02
4	Average cost of labour	54,735.85	4.45
5	Average cost of transport	13,516.35	1.09
6	Average cost of spoiled fish	13,941.02	1.13
7	Average cost of marketing service	10,436.32	0.85
8	Average total variable cost	1,228,885.6	
9	Average total revenue	1,659,610 .8	
	Margin	430,725.2	
	Percentage marketing margin	25.95	

This implies that catfish marketing is a profitable venture and it is therefore worthwhile in the state. This result is consistent with the findings of Abdal and Eglal (2010) and Adeleke and Afolabi (2012), who observed that fish marketing is a profitable venture.

Factors influencing price discounting strategies adopted by marketers

Table 6 reveals the R square value of 0.5435, which implies that 54.35% of the total variation in price discounting strategies employed by the respondents is explained by the estimated explanatory variables. The remaining 45.65% not explained is attributed to other variables not included in the model, but are present in the error term. The farm distance to state capital, cost of spoilt catfish, marketing margin, size of pond and cost of marketing services were all significant. Other factors such as household size, marketing experience and education were not important in determining price discounting among marketers.

Table 6. Factors influencing price discounting strategies

Variables.	Coefficient	t-statistics	P- value
Constant	2.11897	2.787	0.00582***
Farm distance to state capital	0.0146533	2.356	0.01945**
Household size	-0.0148494	-0.192	0.84766
Cost of marketing services	5.33187E-05	2.416	0.01657**
Cost of spoilt catfish	-1.09250E-05	-2.452	0.01503**
Marketing margin	-0.0192208	-3.906	0.00013***
Marketing experience	0.0803233	1.288	0.01994
Size of pond	1.27363E-06	3.884	0.00014***
Education	-0.00833764	-0.398	0.69086

* **, *** Significant at 10%, 5% and 1% respectively

The coefficient of the farm distance to state capital is positive and significant at 1% level of probability. This indicates that the farther the farm to the state capital, the higher the

amount of price discount given to customers to entice them. The amount of spoilt catfish is negative and significant at 5 % level. This implies that as the quantity of wasted catfish increases, price discounting decreases. The coefficient of cost of marketing services is also positive and important at 1% level of probability. This suggests that increasing price discounting raises the cost of marketing services. Marketing margin is negative and significant at 5% level, indicating that an increase in price discounting would reduce marketers' marketing margin. Similarly, the size of pond is significant, indicating that the larger the pond size, the higher the amount of price discount adopted.

Constraints hindering the adoption of price discounting strategies among marketers

The most important factor hindering discount pricing strategies in catfish marketing is the high cost of production (4.1368) and was ranked first (Table 6).

Table 6. Constraints hindering discount pricing strategies

Constraint	SD	D	A	MA	SA	Mean	SD	Rank
High cost of production	2(0.9)	9(4.2)	47(22.2)	54(25.5)	100(47.2)	4.1368	0.96634	1st
Discount pricing can lower perceived value	2(0.9)	8(3.8)	46(21.7)	64(30.2)	92(43.4)	4.1132	0.93708	2nd
Risk of losing profit from lower margin	2(0.9)	12(5.7)	65(30.7)	74(34.9)	59(27.8)	3.8302	0.93354	3rd
Marketing objectives	7(3.3)	29(13.7)	73(34.4)	73(34.4)	30(14.2)	3.4245	1.00188	4th
Government policy	11(5.2)	47(22.2)	66(31.1)	65(30.7)	23(10.8)	3.1981	1.06580	5th
Economic condition	4(1.9)	46(21.7)	92(43.4)	51(24.1)	19(9)	3.1651	0.93185	6th
Demand	7(3.3)	19(9)	134(63.2)	39(18.4)	13(6.1)	3.1509	0.79444	7th
Competition	6(2.8)	40(18.9)	108(50.9)	43(20.3)	15(7.1)	3.0991	0.88409	8th

Source: field analysis, 2020.

This could be probably because most commercial fish feeds are imported into the country and the problems associated with importation and distribution could be the main reasons for the hike in feed prices. These imported feeds possess floating and high protein qualities and are therefore preferred by fish farmers to local feeds. This findings concurs with the findings of Ugwumba and Nnabuife (2008), who identified high cost of feed as very serious drawback to profits making in catfish farming. This constraint was followed by lower perceived value and risk of losing profit from lower margin with mean value of 4.1132 and 3.8302 respectively. The least constraint is competition with a mean value of 3.0991.

Conclusion and Recommendations

This study assesses discount pricing and marketing of processed catfish in Kwara state, Nigeria. The result revealed that catfish marketers make use of price discount and price discounting strategies to enhance sales. Majority of the respondents were male and are

moderately aged. Quantity discount is mostly used price discounting type, while cash discount is least used by marketers. Of the different discount pricing strategies adopted by marketers, offering discount to new customer is mostly used by marketers, while offering free shipping to customers is the least frequently used strategy. In addition, the study showed that catfish marketing is competitive and non-concentrated, profitable and efficient. Furthermore, marketing margin, cost of spoilt catfish, and cost of marketing services pond size and farm distance to state capital are the important variables explaining price discounting strategies among marketers in Kwara state. Moreover, the most significant constraint hindering discount pricing strategies in catfish marketing is high cost of production and was ranked first. Marketers should be trained on efficient fish processing and storage techniques to improve the quality and reduce loses. They should also pool their resources together to gain economies of scale in order to reduce the cost of production. Policies towards increasing pond size should be vigorously pursued by the government at all levels.

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