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ECONOMIC PERFORMANCE AND DETERMINANTS OF DRIED FISH MARKETING IN BENUE STATE NIGERIA

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Abstract

This study examined the economic analysis of dried fish market performance in Benue State, Nigeria. It analyzed marketing performance and determinants of marketing performance in Benue State, Nigeria. A multistage sampling technique was used to select 226 dried fish marketers from Makurdi, Otukpo, Guma, and Agatu LGAs in the State. Data collected were analyzed with the aid of Marketing Margin, Marketing Efficiency, Gross Margin, Economies of Scale and Multivariate Multiple Regression. The study revealed that the cost of purchase took 95.80% and 94.10% of the total variable cost for the rural and urban dried fish marketers respectively. Dried fish marketing is profitable as the result showed the percentage marketing margin per kilogram (kg) of dried fish sold by rural and urban marketers as 25.38% and 12.92% respectively. It also showed that an average rural and urban marketer earns ₦1433.32 and ₦674.10 as gross margin respectively with marketing efficiency of 28.37% and 8.06% respectively for rural and urban marketers. The result revealed that the coefficient of the quantity marketed in the rural and urban areas were -3.33 and -4.19 respectively, both statistically significant at 5% level indicating the existence of scale economy. Finally, income, sex, fish purchase price, average sales, and processing cost were the significant determinants of performance in the study area. The study therefore, recommends the unemployed should be encouraged and empowered to embark on the business since it is profitable. Also, necessary facilities and funds be provided to boost expansion as well as marketing performance of the dried fish marketers in Benue State.

Keywords Dried Fish Marketing, Marketing Performance, Economies of Scale, Gross Margin, Benue State

Introduction

Fish is one of the most diverse groups of animals known to man with over 2,500 species. There are more species of fish than all other vertebrates (Ekine and Binaebi, 2018). The importance of fish to the socio-economic and dietary wellbeing of Nigerians cannot be over emphasized. It provides over 40% of the dietary intake of animal protein of the average Nigerian (Federal Department of Fisheries, FDF, 2011). Fish, provides not only high-value protein but also represents an important source of a wide range of essential micronutrients, minerals and fatty acids which benefit human health (Food and Agriculture Organization, (FAO), 2012). It is readily digestible and immediately utilizable by the human body which makes it suitable for complementing the high carbohydrate diets prevailing in almost all the developing countries of the world (FAO, 2008). The consumption of fish has no social

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

or religious taboo, and provides about two or three kilocalories per person per day (World Health Organisation, (WHO), 2011).

Recent increases in per capita availability have been obtained from aquaculture production, from both traditional rural aquaculture and intensive commercial aquaculture (WHO, 2011). As the fastest growing subsector in agriculture, its contribution to GDP at 2005 current factor cost rose from N162.61 billion to N373,570.19 billion in 2011 (Central Bank of Nigeria, CBN, 2012). Going by the 2014 estimates, local demand for fish amounts to 2.175 million metric tonnes while domestic output stands at 730,000 metric tonnes (Federal Department of Fisheries, FDF, 2018; FAO, 2018) and has not been able to meet up with demand. This has resulted in Nigeria importing about 1.404 metric tonnes to bridge the shortfall in supply at a cost of about US$1.2 billion, going by the 2014 statistics (FAO, 2018). This is a huge drain on the foreign exchange earnings of the country that could have been allocated to foster development in other areas coupled with the enormous potentials of the country to produce the commodity locally (FAO, 2006b; and Oluwasola and Ajayi, 2012;). This has encouraged the government of the nation to intensify efforts in increasing the production of fish locally.

Nigeria's fish industry is the second largest in Africa with an estimation of about 2.5 million tonnes of potential (FAO 2018). It is one of the fastest growing sub-sectors, making it an important source of livelihood, income generation, and job creation. According to Idowu *et al*. (2012), fish abundance is only experienced in the rainy season and their consumption is year round. Through marketing activities, fish may be stored and processed by drying, smoking or boiling. This helps to preserve the fish and make it fit for consumption throughout the year.

Marketing of fish has steadily changed due to urbanization. As the process of urbanization progresses in Nigeria, the share of national fish consumption increases at locations other than where fish is produced. Fish is consumed in all parts of the country and has a good market price, yet the bulk of fish traded in Nigeria are produced by artisanal (small-scale) farmers. In the same vein, despite the nutritional and commercial values of fish, its production and marketing remain low in Nigeria when compared to other nations of the world (FAO, 2012).

Marketing of food in Nigeria is generally characterized by multitudes of deficiencies and problems and fish marketing is not different. The problems of fish marketing cut across processing, preservation, packaging, distribution and transportation, shortage of supply, price fluctuations due to drying up of sources of water, and spoilage on transit (Ali *et al*., 2008). Much attention was given to physical fish production technology while a little interest was shown on the marketing aspect to complete the production cycle. Increased production, however, without corresponding increase in marketing activities may lead to wastage of resources (Awonyinka 2009). Research development and investment efforts have often been focused primarily on production without a well-developed marketing system which leads to all possible gains from the production effort going into the drains of postharvest losses. Often times, marketers are compelled if not forced to sell their products at a very low price to

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

avoid huge wastage or total loss and this reduces their marketing margins and marketing efficiency (Ocholi and Nyiatagher, 2018).

The level of efficiency and profitability of the market and marketing functions are very important for sustainable marketing of agricultural products like fish (Umoinyang, 2014). Effective and efficient marketing system is the one that will induce the production of those products and quantities which when sold to the consumer will result in maximum returns after the deduction of minimum marketing charges and farm production costs (Muhammed, 2011). This study, therefore, was designed to determine the market performance and its determinants for dried fish in Benue State, Nigeria.

Methodology

The study was conducted in Benue State, which is one of the 36 States of Nigeria located in the North-Central. The State has 23 Local Government Areas (LGAs), and its Headquarters is Makurdi. Benue State lies in the middle belt region of Nigeria between longitudes 6°35E and 10°E of the Greenwich meridian and latitudes 6°30N and 10°N of the Equator. The State has a landmass of 30,955 square kilometers (Benue State Agricultural and Rural Development Authority (BNARDA), 1998) as well as estimated population of 7,992,784 with 413,159 farm families (National Population Census, 2006). Most of the people in the State are farmers while inhabitants of the riverine areas engage in fishing as their primary or important secondary occupation. Benue State experiences two distinct seasons, the wet season and the dry season. The rainy season lasts from April to October with annual rainfall in the range of 150-180mm and the dry season begins in November and ends in March. Benue State is acclaimed the nation's food basket because of its diverse rich agricultural produce which include yams, rice, beans, cassava, soya beans, benniseed, maize, millet, tomatoes and a lot of fruits. Poultry, goat, sheep, pigs and cattle are the major domestic animals kept.

Sampling Techniques and Data Collection

Multi-stage sampling technique was used for sample selection in the study. The first stage was purposive selection of four LGAs which include Makurdi, Otukpo, Guma and Agatu because of their high level of dried fish marketing activities as well as their urban and rural status. Secondly, four markets prominent in fish marketing were purposively selected from the urban areas and four markets from the rural areas as well. The urban markets include Wadata, Wurukum, Otukpo main market and Ella markets and the rural markets include Gbajimba, Abinsi, Obagaji and Oweto giving a total of eight markets for the urban and rural areas. Taro Yamene formula was used to determine the sample size of 226 from a population of 517 dried fish marketers, while Bowley's proportional allocation technique was used to allocate sample respondents to each of the selected LGAs based on their population. A total of 226 respondents were administered questionnaires but 208 questionnaires were retrieved

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

and used in data analysis. Data were collected on socioeconomic characteristics of the fish marketers, fish prices, marketing costs and fish quantities sold, using questionnaire.

Analytical Techniques

Data collected were analyzed using inferential statistics. Marketing margin, marketing efficiency, gross margin analysis and economies of scale were used to determine the performance of the fish market. Multivariate multiple regression analysis was used to determine the factors affecting market performance.

Marketing margin analysis

The Marketing Margin was employed to establish producers' exploitation along the marketing channel for specific objective. The analysis was used to achieve specific objective and expressed as follows:

Marketing margin = $\frac{selling\ price - purchase\ price}{\text{selling price}} X\ 100$ (1)

According to Olukosi *et al*. (2005) a larger variation between the marketing margins of participants indicates a wide price variation along the chain, while a participant with higher marketing margin is said to have a larger share of the marketing benefits**.**

Marketing efficiency

Marketing efficiency is the ratio of marketing cost to marketing margin, and expressed as follows:

ME = MC/MM …….. (2)

%ME = MM X 100 ……... (3)

Where: ME = Marketing efficiency

MC = Marketing cost

MM = Marketing margin

If ME = 1, marketing system is efficient

If ME > 1, marketing system is highly efficient

If ME < 1, marketing system is not efficient

A higher value of this ratio indicates efficiency in the marketing system and lower value denotes inefficiency in the marketing system (Asogwa and Okwoche, 2012).

Gross margin analysis

Gross margin analysis was used to determine profitability of dried fish per kg and also to compare the performance of fish marketing in rural and urban areas of Benue State and expressed as follows:

GM = TR-TVC (₦/kg) (4)

Where:

GM = Gross Margin, TR = Total Revenue (₦), TVC = Total Variable Cost (₦)

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

The total revenue represents the value of the output from the farm (e.g. physical quantity of the fish multiplied by the unit price). The total variable cost also called specific costs varies directly with the level of marketing and includes expenditure on fish, processing, storage, loading and offloading, security, tax etc.

The choice of Gross Margin analysis to determine profit was as a result of negligible fixed costs (Iheanacho,1997), associated with fish marketing in the study area.

Economies of scale

Economies of scale was determined using least squares regression expressed as;

$AMC = \alpha + \beta Q + \varepsilon$ (5)

Where:

AMC is cost per kilogram of fish handled per middleman, Q is quantity of fish handled per middleman and ε is error term. An inverse relationship existing between the per-unit cost and the quantity of fish produced, with the fixed costs of production remaining the same, is an indication of scale economy. Economy of scale is a reduction in the per-unit cost to production of an item due to an increase in the number of units produced.

Multivariate multiple regression analysis

Multivariate multiple regression analysis was used to analyze the factors affecting market performance. The explicit form of the model is specified as follows:

$Y_1, Y_2, Y_3 = b_0 + b_1 X_1, + b_2 X_2 + b_3 X_3 + \ldots\ldots b_{17} X_{17}, e)$ (6)

Where;

Y_1 = Marketing Margin (₦)

Y_2 = Marketing Efficiency (Ratio of marketing cost and Marketing Margin)

Y_3 = Gross Margin (₦)

X_1 = Gender (male = 0; Female =1)

X_2 = Age (years)

X_3 = Educational level (years)

X_4 = Household size (Number of persons)

X_5 = Experience (years)

X_6 = Marital status (single = 0; married =1)

X_7 = Storage cost (₦)

X_8 = Fish purchase price (₦)

X_9 = Processing cost (₦)

X_{10} = Access to credit (yes =1; No = 0)

X_{11} = Transportation cost (₦)

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

X_{12} = other costs (tax, rent, feeding, handling etc.) (₦)
X_{13} = Average sales per day (₦)
X_{14} = Duration of sales per day (hour)
X_{15} = Annual income (₦)
X_{16} = Fish type (catfish =1, others = 0) X_{17} = Average quantity sold per day (kg) e = Error term
The *a* priori expectation was that $b_1, b_2 \ldots b_{17} > 0$.

Results and Discussion Marketing Performance of Dried Fish Marketers

The measures of marketing performance were carried out using marketing margin analysis, marketing efficiency analysis, gross margin analysis and economies of scale.

Marketing margin and efficiency analysis for dried fish market

Table 1 presents the costs and revenues associated with dried fish marketing. The result shows that the percentage marketing margin per kilogram (kg) of dried fish sold by rural and urban marketers was 25.38% and 12.92% respectively. This implies that dried fish marketing in the study area is profitable. Also, an average dried fish marketer in the rural and urban areas earns a market margin of N0.25 and N0.12 respectively for every N1 paid by the final consumer in the marketing process. This is in line with the study of Baba *et al.* (2015) which revealed that the marketing margin of an average fresh fish marketer per kg in the study area was N190 and the percentage marketing margin was 30.65%.

From Table 1, percentage marketing efficiency of the rural and urban areas were computed and revealed as 28.37% and 8.06% respectively. Marketing efficiency of 0.284 and 0.080 obtained for rural and urban dried fish marketers respectively is less than one (1) indicating inefficient marketing system in the study area. This is supported by the study of Chinasaokwu (2012) that marketing efficiency of 0.122 and 0.223 obtained for fresh fish and dried fish marketers respectively is an indication of inefficient marketing system in the area. However, it is in contrast to the study of Taiwo *et al*. (2019) which shows that fish marketing activities among fish marketers were highly efficient since the efficiency value was far higher than 100% (558.0%).

Table 1: Marketing Margin and Efficiency Analysis for Dried Fish Market per Kilogram

	Variable	Rural Markets	Urban Markets
Marketing Margin Analysis			
A	Purchase Price (N/kg)	4839.23	7869.10

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

B	Selling Price (N/kg)	6484.87	9036.52
C	Marketing Margin:	25.38	12.92

$\frac{B - A}{B}$ x 100

Marketing Efficiency Analysis

A	Revenue from sales (N/kg)	6484.87	9036.52
B	Marketing cost (N/kg)	5051.55	8362.42
C	Marketing efficiency:	28.37	8.06

$\frac{(A - B}{B}$ x 100)

Source: Field survey data, 2024

Gross margin analysis for rural and urban dried fish markets

Analysis of the costs in Table 2, shows that the cost of dried fish purchase took up to 95.80% and 94.10% of the total variable cost for the rural and urban dried fish marketers respectively.

Also, the table revealed that a rural marketer earned average revenue of ₦6484.87 per kg but incurred a total variable cost of ₦5051.55 per kg over the same period. In the same vein, an urban marketer earned average revenue of ₦9036.52 per kg but incurred a total variable cost of ₦8362.42 per kg. This indicates that an average rural and urban marketer earns ₦1433.32 and ₦674.10 respectively as gross margin per kg, suggesting that dried fish marketing is a profitable venture in the study area. This is in line with the study of Chinasaokwu (2012) which revealed that the gross margin for dried fish was N10, 335.24. This is also evident in the study of Ismail *et al.* (2014) which indicates that the returns per cartoon of dried fish was N1,531.44 as profit obtained per cartoon of dried fish sold.

Table 2: Gross Margin Analysis for Rural and Urban Dried Fish Markets (₦/kg)

Variable		Rural Markets		Urban Markets	
		Value (N/kg)	Percentage	Value (N/kg)	Percentage
A	**Total revenue (TR)**	6484.87	-	9036.52	-

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

B	**Variable costs**				
	Purchase cost	4839.23	95.80	7869.10	94.10
	Transport cost	31.90	0.63	244.38	2.92
	Processing cost	31.84	0.63	35.65	0.43
	Storage cost	16.90	0.33	16.47	0.20
	Labour cost	20.45	0.40	12.48	0.15
	Cost of packaging	13.44	0.27	16.99	0.20
	Local govt/market/ association levy	7.05	0.14	7.95	0.10
	Tax	5.21	0.10	3.74	0.04
	Rent	12.47	0.25	12.97	0.16
	Feeding	73.06	1.44	142.69	1.71
C.	**Total variable cost (TVC)**	5051.55	100.00	8362.42	100.00
	Gross Margin (₦/kg)				
	(TR- TVC)	1433.32		674.10	

Source: Field survey data, 2024

Economies of scale for dried fish marketing in rural and urban markets

Table 3 shows the results of analysis of scale economies in rural and urban dried fish markets. Analysis of the result revealed that the coefficient of determination (R^2) is 0.0346 for rural markets, meaning that the average marketing cost explains 3.46% of the quantity of dried fish marketed. The coefficient of the quantity marketed is negative (-3.33) and statistically significant at 5% level. The implication is that as the quantity of dried fish marketed increases, the average marketing cost is reduced, thus, confirming the presence of economies of scale. This results from bulk purchases, transportation and processing.

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

For the urban markets, the coefficient of determination (R^2) was 0.0467, meaning that the average marketing cost explains 4.67% of the quantity of dried fish marketed. The coefficient of the quantity marketed is negative (-4.19) and statistically significant at 5% level. This implies that as the marketers increased the quantity, the average marketing costs were lowered and profit increased. This indicates the presence of scale economies. This supports the finding by Iheanacho (2000) that marketing cost among wholesalers decreased to the extent that unit costs are lower than their counterparts because of their size in business. It is also in line with the findings of Mohammed *et al*. (2014) which revealed that there were scale economies.

Table 3: Economies of Scale for Dried fish Marketing in Rural and Urban Markets

Variable	Coefficient		Standard Error		t		P > | t |	
Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	
Quantity of 0.042 dried fish handled	-3.3**	-4.19**	1.62	2.03	-2.05	-2.06	0.043	
Constant	7019.93***	9708.48***	313.71	440.45	22.38	22.04	0.000	0.000
R-square	0.0346	0.0467						
Adjusted R-square	0.0264	0.0358						
F-value	4.20**	4.26**						

Source: Field survey data, 2024 **= sig @ 5%, ***= sig @1%

Factors Affecting Marketing Performance in Rural Markets

The result of multivariate regression model is presented in Table 4. It shows the independent and dependent variables, R-square, F-value, and t-value obtained from the analysis of rural markets. It is observed that two of the univariate models are empirically significant at 1% and 5% levels respectively. The standard R-square showed that all the predictor variables jointly explained 69.05%, 16.18% and 26.53% of variances in the outcome variables (Marketing Margin (MM), Gross Margin (GM) and Marketing Efficiency (ME)) respectively. The findings reveal that income, fish purchase price, average sales, storage cost and other costs were statistically significant determinants of MM.

Income is significant at 5% level and positively related to the MM, implying that as the income increases, the MM increases. It agrees with the *a priori* expectation. The higher the income of the dried fish marketer, the more

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

able to invest back into the business, and higher the MM. It is in line with the study of Abiodun *et al.* (2015) that capital showed a positive and significant relationship with the level of profit from fresh fish marketing. Also, other cost is positively related to MM at 1% level, implying that as other cost increases, MM also increases which is against the *a* priori expectation. This may be because economies of scale exist; as the quantity of fish handled increases, marketing cost decreases thus resulting to higher MM. This is opposed to the study of Offor *et al.* (2015) which showed that as the transportation and other cost incurred by marketers increased, their profit level decreased.

The coefficient of storage cost was negative and significant at the 5% level of significance. This implies that increasing storage cost would reduce profit of fish marketers, which is in line with *a* priori expectation. This is because fish marketing requires adequate storage to avoid spoilage. Since storage facilities are grossly inadequate in the study area, most marketers resort to smoking and home storage which is not only costly but damage prone, thereby increasing the marketing cost. This finding is in line with that of Nsikan (2014), who emphasized that the cost of storage limits profitability. Again, the coefficient of fish purchase price was significant at 1% and had a negative relationship with MM. This is in line with the *a* priori expectation and implies that as the purchasing price of fish increases the profit made by marketers reduces. This agrees with the findings of Ocholi and Nyiatagher (2018) who reported a significant and negative relationship for both cost of purchase and age of marketers. Also, average sales/volume of sales is significant and negatively affects MM of the rural marketers at 1% level. This is an indication that an increase in the average sales/volumes of sales (quantity marketed of dried fish) reduces MM. This might be probably because the more the quantity of fish in market, the less the marketing price probably because of the perishable nature of fish. This agrees with the study of Folusho and Taiwo (2018) that quantity of fish sold negatively affected the income of the marketers.

In the case of GM, the regression results shows that the average sales were positively significant at 10%, indicating that an increase in average sales results in an increase in GM. This is in line with the *a priori* expectation. It conforms with the findings of Njoku and Offor (2016) which revealed that quantity of fish handled was significant at 1% and positively related to net income of the marketers. In like manner, processing cost was positively significant at 10%, which indicates that an increase in processing cost results to an increase in GM. This result is against the *a* priori expectation that processing cost which is a unit of marketing cost should have an inverse relationship with net marketing income. This could be as a result of the economies of scale that exists where increase in quantity handled reduces unit cost, thereby increasing the GM of marketers.

Similarly in the case of ME, the regression results show that sex has negative coefficient and significant at 10%, implying that females tend to incur less expense on marketing costs than the male marketers. This could be because women engage mainly in post-harvest activities (processing, selling, marketing of fisheries resources)

resulting in some empowerment and have better bargaining power than men. This is in line with the study of Olopode and Dienye (2022) which revealed that all the respondents were female in the study area. Also, fish purchase price was significant and negative at 1% level, implying that as fish purchase price decreases, ME increases. This is also similar to the result obtained in the case of MM and fish purchase price discussed above. This agrees with the a priori expectation and is supported by the study of Abiodun *et al*. (2016) which shows that the purchase price of fresh fish as expected showed a negative relationship with the profit from fresh fish marketing at one percent significance level.

Sex	-0.95^{NS}	3.15	-0.30	44886.74	201648.3	0.22	-174.01*	89.71	-1.94		
Age	0.05	0.09	0.56	2417.14	5464.87	0.44	-0.19	2.43	-0.08		
Marital status	6.57	3.99	1.65	85134.97	255594.9	0.33	85.11	113.71	0.75		
Income	0.000016**	7.59 x10^{-6}	2.06	0.17	0.49	0.34	0.00013	0.00022	0.62		
Household size	-0.46	0.28	-1.63	-6130.86	18201.27	-0.34	-12.92	8.10	-1.60		
Experience	0.11	0.16	0.70	10122.79	2.16	4.50	-57.62	-0.01	0.48		
Educational level	-0.05	0.22	13846.02	3.30	6.16	0.25	-12254.33	-0.89	0.54		
Access to credit	0.43	2.72	0.16	174233	45.85	77.51	192048.60	1.10	0.59		
Membership of coop.	-0.33	3.02	-193658.8	-56.24	86.16	-0.11	134005.5	0.69	0.65		
Fish purchase price	-0.0079***	0.00065	-29.60	41.59	-0.082***	0.019	-12.24	0.71	-4.43		

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

Marketing hours	0.04	0.35	-0.10	22573.23	13616.98	4.48	-0.60	10.04 0.45
Average sales	-0.04***	0.014	-3.22	1503.79*	1.72	875.07	-0.93	-0.36 0.39
Transport cost	-0.000051	0.00035	-0.15	-29.55	22.26	-1.33	-0.0050	0.0099 -0.50
Processing cost	0.00043		0.00036	45.07*	1.18	23.14	1.95	-0.0053 0.010 -0.52
Storage cost	-0.0014**	0.00068	-2.01	-1.52	43.49	-0.03	-0.014	0.019 -0.73
Labour cost	0.00035	0.00063	0.56	-0.27	40.69	0.01	-0.0076	0.018 0.42
Other cost	0.00045***	0.00014	3.30	-1.66	8.71	0.19	-0.0013	0.0039 0.33
Constant	6488***	6.11	10.61	193397.9	391795.3	0.49	600.35***	174.30 3.44
R-square	0.6905			0.1618			0.2653	
F-value	13.25***			1.15NS			2.15**	

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

Table 4: Factors Affecting Marketing Performance in Rural Markets

	Marketing Margin			Gross Margin			Marketing Efficiency		
Variable	Coeff	Std Err	t	Coeff	Std Err	t	Coeff	Std Err	t

Source: field survey data analysis, 2024 *** = Significance at 1%; ** = Significance at 5%; * = Significance at 10%; NS = Not significant

Factors Affecting Marketing Performance in Urban Markets

Table 5 shows the results of the multivariate regression analysis in the urban areas with three different indices of marketing performance measures. In MM, the F-statistic value of 2.98 at 1% indicates fitness and statistical significance. The R-square value of 0.4202 indicates that all the explanatory variables in the model jointly explain the 42.02% variation in the MM, which means that there are other variables responsible for the rest of the variation.

The regression analysis provides a significant negative association between MM and the fish purchase price, average sales and storage costs at 1%, 10% and 10% level of significance respectively.

Fish purchase price has a negative and statistically significant effect on marketing margin at 1%. Increase in purchase price means that the marketer will spend more money in procuring her product thereby minimizing her profit margin, as she is bound to sell at the prevailing market price in order to minimize losses that might accrue from spoilage and preservation/processing costs. Therefore, the marketer is compelled to reduce her profit margin by selling at the prevailing price so as to stay in business. This is similar to the result obtained in the case of MM and fish purchase price of rural marketer earlier discussed.

Also, average sales, significant at 10% negatively affected the MM of the marketers. This is an indication that an increase in the average sales of dried fish reduces income. This might be probably because the more the quantity of fish in market, the less the marketing price due to the perishable nature of fish. This agrees with the study of Folusho and Taiwo (2018) that quantity of fish sold negatively affected the income of the marketers.

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

The coefficient of storage cost was negative and significant at the 10% level. This implied that increasing storage cost would reduce MM of fish marketers. This is in line with the *a priori* expectation, because fish marketing requires adequate storage to avoid spoilage. Since storage facilities are grossly inadequate in the study area, most marketers resort to smoking and home storage which is not only costly but damage prone, thereby increasing the marketing cost. It is similar to the result obtained in the case of storage cost and MM of rural marketers earlier discussed.

For the GM and ME analyses, the f-statistical values are 1.22 and 0.88 respectively which are insignificant. R-square for GM and ME are 0.2279 and 0.1758 respectively, indicating that all the explanatory variables in the model jointly explain the 22.79% and 17.58% variation in the GM and ME respectively, while other variables are responsible for the rest of the variation.

For GM, transportation cost impacted positively on the profit of marketers at the 10% percent significance level. It shows that increasing transportation cost would increase GM which could be because economies of scale exist. This finding supports the study of Folusho and Taiwo (2018) that the marketing experience (X_2), cost of transportation (X_5) and membership of association (X_6) positively and significantly influenced the income of fresh fish marketers in the study area.

Processing cost also impacted negatively on the profit of marketers at the 10% significance level. It agrees with the a priori expectation that as marketing cost increases, profit reduces. This is opposed to the result obtained in the case of processing cost and GM of rural marketers earlier discussed. This could be because extra cost incurred in procuring fuel/fueling materials led to increase in marketing costs which impacted on the profit negatively.

Transportation cost also impacted positively on the ME of marketers at 5% significance level, implying that increase in transportation cost results to increase in ME. This is similar to the case of transportation cost and GM of urban marketers discussed above.

Table 5: Factors Affecting Marketing Performance in Urban Markets

	Marketing Margin			Gross Margin			Marketing Efficiency		
Variable	**Coeff**	**Std Err**	**t**	**Coeff**	**Std Err**	**t**	**Coeff**	**Std Err**	**t**
Sex	2.58	8.56	0.30	-23655.92	537218	-0.04	-22.78	105.99	-0.21
Age	-0.034	0.14	-0.24	9134.50	9032.17	1.30	1.78	1.01	0.73
Marital status	2.10	0.75	2.79	108037.7	175411.6	0.62	10.38	34.61	0.30

ISSN: 3065-0593

Journal of Marketing and Digital Media

Research Article

Income	-0.000058	-1.13	-1.99	3.22	-0.00023	0.00064	0.000051	
				0.62	-0.36			
Household size	0.037	0.11	-10077.31	21356.96	-2.66	4.21	-0.34	
					-0.47	0.63		
Experience	0.11	0.83	-3939.47	8139.84	-1.01	1.61	-0.13	
				0.48	0.63			
Educational level	-0.016	-0.08	-12711.54	12769.44	-382	2.52	-0.20	
				1.00			-1.52	
Access to credit	-0.52	-0.23	175002	138927.20	34.93	27.4	2.21	
				1.26		1.27		
Membership of coop	1.53	-0.50	133520	193502	23.02	38.18	0.60	3.08
				0.69				
Fish purchase price		-5.80	1.85	22.51	0.0024	0.0044	0.0021***	0.00036
				0.08		0.54		
Marketing hours	0.26	0.77	0.34	45139.65	48207.04	11.15	9.51	
				0.94		1.17		
Average sales	-0.025*	-1.85	-674.44	834.51	-0.81	-0.22	0.16	0.013
						-1.31		
Transport cost	0.000035	0.82	4.93*	2.64	1.87	0.00052	0.000042	
					0.0011**	2.09		
Processing cost	-0.00032	-0.58	-64.42*	34.49	-	0.0068	0.00055	
				1.87	0.000066	0.01		
Storage cost	-0.0030*	-1.98	-85.93	96.00	-0.90	-0.016	0.019	-0.0015
						0.86		
Labour cost	0.0018	0.77	104.50	144.91	0.018	0.029	0.0023	
				0.72		0.62		
Other cost	-0.000022	-0.37	3.73	3.77	0.00062	0.00074	0.00006	
				0.99		0.84		
Constant	29.50***	10.04	-768131.6	630488.1	-1.22	- 124.39	2.94	
				47.58		-0.38		
R-square	0.4202		0.2279		0.1758			
F-value	2.98***		1.22^{NS}		0.88^{NS}			

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Journal of Marketing and Digital Media

Research Article

Source: field survey data analysis, 2024 *** = Significance at 1%; ** = Significance at 5%; * = Significance at 10%; NS = Not significant

Conclusion and Recommendation

Dried fish marketing was a profitable enterprise with high marketing performance majorly and significantly determined by income, fish purchase price, average sales, and processing cost. Government and NGOs should empower and encourage the unemployed to go into the business to curb unemployment and reduce poverty as well as close the large gap of dried fish demand through fish production.

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