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Research Article

Factors Affecting Fish Consumption in Traditional Fish Markets of Kolkata City, West Bengal

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ABSTRACT

Many factors, specificities and characteristics influences the individual consumer in his decision making process, shopping habits, purchasing behaviour, the brands he buys or the retailers he goes. Consumers' purchase decision is the result of each and every one of these factors. Thus, the study was taken up in Kolkata City to determine the factors affecting fish consumption and also to identify and prioritize the constraints faced by fish consumers in the traditional fish markets. The data was collected from 150 fish consumers randomly selected who were willing to participate with the help of well-structured pre-tested interview schedule. The study showed that price of fish (78%), followed by a taste of fish (76%) and variety of fish (73%) were the major qualitative factors affecting the purchase decision of fish, while among the quantitative factors cost per visit, the number of fish eaters in the family, the frequency of a person visiting the fish market, monthly income of the head of household and the age of the respondent played a significant role. The major constraints faced by the fish consumers in the fish markets were poor hygienic condition (95%) of the fish market, parking facility (79%) and lack of sanitation facilities (68%). This study could be a guide to both the buyers and sellers of fish and fish products to produce products of desired quality, with a good price in a hygienic condition.

Key words: *Traditional fish markets, Factors affecting fish consumption, Constraints, Consumer behaviour.*

INTRODUCTION

The worldwide consumption of fish and fish products has greatly increased in the recent years. This increase in demand has resulted the global fish production to reach 170.9 mmt, out of which about 151.2 mmt is used for human consumption. The global per capita fish consumption was estimated to about 20.3 kg in 2016. In India, about 28 percent of households about 60 million families consume fish on a regular basis and the estimated monthly per capita consumption of fish was 0.204 kg[1]. The annual per capita consumption of the entire population in India was 5 to 6 kg and 8 to 9 kg for fish-eating population[8].

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For a person to be fed adequately, it is necessary to consume 70 gram protein, in which 47 gram must be of animal origin[9]. In this regard fish is considered as an important part of a healthy diet not only for its protein and essential fatty acid contents but also from many other nutritional perspectives[3]. Medical researches has revealed that high consumption of fish oil (omega-3) reduces the risk of diseases in humans[10]. The state of West Bengal, being a fish and meat loving state has a high preference of fish for consumption. Its known fact that cultural and socioeconomic factors such as income level of people, awareness about the health benefits of fish, cost and availability of fish in the markets play important role in fish consumption. Hence, the present study is an attempt to understand the factors influencing the purchasing behaviour of the consumers in traditional fish markets of Kolkata city. Purchasing behaviour of consumers refers to selection, purchase and consumption of goods and services for the satisfaction of their wants[7].

MATERIAL AND METHODS

The study was conducted in the selected traditional markets of Kolkata city. The primary data was collected with the help of well-structured pre-tested interview schedule from the consumers. A total of 150 fish consumer were randomly selected who were willing to participate. The methodology followed in the study is briefly discussed below.

Multiple linear regression: To determine the factors affecting the quantity of fish purchased per visit, multiple linear regression analysis of the form given below was used and the variables are checked at 5% level of significance.

$Y = a + \beta_1X_1 + \beta_2X_2 + \ldots\ldots\ldots + \beta_nX_n$ (General multiple linear regression model)

Where, Y = Quantity of fish purchased per visit (grams)

X_1= Age of the head of household

X_2= Family size

X_3= No. of non-vegetarians in the family

X_4=No. of fish eaters

X_5= Monthly income (₹)

X_6= Household expenditure (₹/month)

X_7= Expenditure on food (₹/month)

X_8= Expenditure on veg (₹/month)

X_9= Expenditure on non- veg (₹/month)

X_{10}= Expenditure on fish and fish products (₹/month)

X_{11}= Frequency of visit

X_{12}= Cost/visit

a = intercept or constant term

β = beta or regression coefficient

X_1, X_2 and X_n are dependent variables

Rank Based Quotient (RBQ): Rank Based Quotient (RBQ) was used to quantify the data collected by a preferential ranking technique for ranking the parameters and then calculating the RBQ.

$$\text{RBQ}= \sum_{i=1}^{n} \frac{(Fi)(n+1-i)}{N*n} * 100$$

RESULTS AND DISCUSSION

1.1. Qualitative factors affecting consumption of fish

Qualitative factors that are affecting the choice of fish for consumption in the fish markets of Kolkata were listed out and respondent were made to rank according to their preference are shown in Table 1.

Table 1: Qualitative factors affecting consumption of fish in the traditional fish market

Sl. No.	Attributes	RBQ score	Rank
1.	Quality of fish	61.42	V
2.	Variety of fish	73.08	III
3.	Price of fish	78.00	I
4.	Taste of fish	76.50	II
5.	Hygiene of the fish market	25.42	VIII
6.	Convenience to visit market	42.33	VI
7.	Freshness of fish	64.33	IV
8.	Good relationship with retailers	29.17	VII

The results revealed that price of fish (78%) played a major role in affecting the purchase decision of fish, followed by a taste of fish (76.5%) and variety of fish (73.08%). Low price of fish was a key factor that attracted the consumers towards the traditional fish market. Hence, to make the fish available at a lower price, the state should focus on production of commonly preferred fish in the state itself, so that the fish can be made available to the consumers at a lesser price.

1.2. Quantitative factors affecting consumption of fish

Quantitative factors affecting the consumption of fish and fish products in the sample household are presented in Table 2.

Table 2: Quantitative factors affecting consumption of fish in the traditional fish market

Independent variable	Beta	Standard error	t - value	Sig.
Constant	486.679	144.834	3.360	0.001
Cost/visit (Rs.)	2.897	0.227	12.774	<0.01
No. of fish eaters	103.635	23.586	4.394	<0.01
Frequency of visiting market	-126.910	36.898	-3.439	0.001
Monthly income (Rs.)	-0.003	0.001	-2.307	0.022
Age	-4.607	2.187	-2.107	0.037
R^2 (Coefficient of determination) = 0.702				

For this, the quantity of fish purchased per visit was taken as a proxy for consumption. The initial variables considered but not shown in the stepwise regression model were family size, no. of non-veg eaters, monthly income, total monthly household expenditure, expenditure on food, expenditure on veg, expenditure on non-veg and expenditure on fish and fish products. From the result, it can be said that number of fish eaters has a positive influence on the quantity of fish purchased per visit (kg). With a unit increase in the number of fish eaters, the quantity of fish purchased per visit increases by 104 grams. The other factors like the frequency of visiting market, monthly income and age of the respondent was found to have a negative influence on the quantity of fish purchased per visit. It can be reported that for one rupee increase in cost/visit, the quantity of fish purchased per visit increases by 3 grams. With the increase in the frequency of visiting market by one unit, the quantity of fish purchased per visit per unit decreases by 127 grams, i.e. more the number of times of visiting the market; lesser will be quantity purchased per visit. It can be said that increase in monthly income of the respondent would not make any significant

change in the quantity of fish purchased per visit. Fish being the major food item for the Bengalis, the consumption of fish was very high in Kolkata. Fish was consumed in sufficient quantity by all income groups starting from daily wage earners to government employees or entrepreneurs. Test of significance applied also revealed that there was no significant difference in the quantity of fish purchased per visit among these two different groups of employees, whereas the type of fish chosen for consumption varied significantly between the different income earners but not in quantity purchased. Thus, it was clear from the study that increase or decrease in monthly income of the respondents would not make any drastic change in the quantity of fish purchased per visit. The similar studies regarding seafood consumption have shown that age, taste, health/nutrition and convenience, are important determinants of seafood consumption behaviour[4,5,6].

The Coefficient of determination, i.e. the R^2 value was 0.702. This indicated that the independent variables taken could explain about 70% of the variation on the dependent variable, i.e. the quantity of fish purchased per visit. Therefore, the model was regarded as a good fit model.

1.3. Constraints faced by fish consumers

The constraints faced by the consumers while purchasing fish and fish products were prioritized and were assigned a rank based on the RBQ score calculated by using the formula of RBQ and are presented in table 3.

Table 3: Constraints faced by the fish consumers

Sl. No.	Constraints	RBQ score	Rank
1.	Inadequate sanitation facilities	68.20	III
2.	Lack of hygiene (cleanliness)	94.60	I
3.	Less no. of variety	32.13	X
4.	Higher price fluctuation	60.73	V
5.	Lack of freshness of fish	40.40	VIII
6.	Distantly located market	44.80	VII
7.	Inadequacy of the desired size of fish	55.60	VI
8.	Lack of vehicle parking facility	79.40	II
9.	Irregular supply of fish	36.33	IX
10.	Market congestion	64.47	IV

The results revealed that lack of hygiene (94.60%) in the fish markets was the major constraint faced by the consumers, followed by lack of vehicle parking facility (79.40%). The area of fish markets being very small, no parking facilities were made even for the two-wheelers. The other constraints faced by the consumers were inadequate sanitation facility (68.2%), market congestion (64.47%) and higher price fluctuation (60.73%). Parking facility, hygiene of the fish market and quality of the product were the attributes which the consumers considered while shopping.

CONCLUSION

The study concludes that low price of fish (78%), good taste (76%) and more variety of fish (73%) were the major qualitative factors determining the consumption of fish. Among the quantitative factors, the amount of money spent on purchasing fish per visit, the number of fish eaters in the family, the frequency of a person visiting the fish market, monthly income of the head of household and the age of the respondent were the major driving forces that were affecting the consumption of fish in Kolkata. Constraint analysis revealed that poor hygienic condition (95%) of the fish market, parking facility (79%) and lack of sanitation facilities (68%) in the fish market were the major constraints faced by the consumers in the traditional fish markets of Kolkata. The finding of the study can be used by policy makers to improve the traditional fish markets in the city which will help increase the acceptability and accessibility of fish in the traditional markets.

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REFERENCES

1. DAHD & F., Handbook of Fisheries Statistics Published by Ministry of Agriculture, Krishi Bhawan, New Delhi. Retrieved from http://www.indiaenvironmentportal.org.in/files/file/handbook%20on%20fisheries%20statistics%20 2014. pdf (Accessed on 25 November 2018) (2014).
2. FAO, The State of Worlds Fisheries and Aquaculture Retrieved from http://www.fao.org/publications/sofia/2016/en (Accessed on 24 August 2018) (2018).
3. Feng, W., Jian, Z., Weisong, M., Zetian, F. and Xiaoshuan, Z., Consumers' perception toward quality and safety of fishery products, Beijing, China. *Food Control*, **20(10):** 918-922 (2009).
4. Myrland, O., Trondsen, T., Johnston, R. S. and Lund, E., Determinants of seafood consumption in Norway: lifestyle, revealed preferences, and barriers to consumption. *Food Quality and Preference*, **11:** 169-188 (2000).
5. Olsen, S. O., Seafood in Norwegian households: differences in attitude and consumption behaviour. Norwegian Institute of Fisheries and Aquaculture (in Norwegian). Tromsø, Norway (1989).
6. Olsen, S. O., Understanding the relationship between age and seafood consumption the mediating role of attitude, health involvement and convenience. *Food Quality and Preference*, **14:** 199–209 (2003).
7. Ramya, N. and Mohamed Ali, S. A., Factors affecting consumer buying behavior. *International journal of applied research*, **2(10):** pp.76-80 (2016).
8. Salim, S. S., Fish consumption pattern in India, exports- overview Food & Beverage News August 1-15, 2016 (Accessed on 15 November 2018) (2016).
9. Seçer, S. and Rad, F., Su Ürünleri ve Beslenme Politikaları. *Su Ürünleri Sempozyumu, TMMOB Ziraat Mühendisleri Odası*, 12-15 (1993).
10. Trondsen, T., Braaten T., Lund, E. and Eggen A. E., Eggen Health and seafood consumption patterns among women aged 45–69 years. A Norwegian seafood consumption study. *Food Quality and Preference*, **15:** 117–128 (2004).
11. Verbeke, W., Vanhonacker, F., Sioen, I., Camp, J. V. and De Henauw, S., Perceived Importance of Sustainability and Ethics Related to Fish: A Consumer Behavior Perspective. *Ambio*, **36(7):** 580-585 (2007).