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A Study on Consumer Behaviour at Organized Fish Retail Outlet

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Abstract

Indian consumers have been buying fish from the unhygienic fish markets, but of late fish has become available at many of the multi-format retail outlets. Consumers' behaviour at organized fish retail outlets in Mumbai has been studied. The majority of consumers are young (25-35 years) and belong to upper middle class. Fresh fish is the preferred choice and about 60 per cent consumers have emphasized on freshness rather than price of fish. About 97 per cent consumers have recently shifted to organized retail outlets from local markets for purchasing fish. The majority of consumers (84.3%) have been found to be species-specific while buying fish. Quality and convenience have been found to be the major factors responsible for shift from local markets. Sensory evaluation of CIFE's value-added products like fish munch, fish keema, prawn pickle and prawn masala have shown a positive feedback from the consumers as about 62 per cent have rated the parameters like taste, texture, odour, price, etc. highly. However, appearance and packaging have received average feedback, indicating the need to make products more attractive. A majority of consumers (72%) have shown willingness to buy these products and 95 per cent wish to try new products, in both fresh and processed forms, indicating changing consumption pattern in the urban areas. The study has argued that since the technology to prepare such products is already available with Central Institute of Fisheries Education, Mumbai and other institutes like CIFT, Kochi, this can be readily extended to the willing entrepreneurs and women SHGs.

Key words: Organized retailing, Purchasing behaviour, Consumer's awareness, Fish and fisheries products, CIFE technology

JEL Classification: Q13, Q22

Introduction

The total fish production in India during the year 2007-2008 was 7.1 million tonnes with marine sector contributing 2.9 million tonnes and inland sector, 4.2 million tonnes (Indiastat.com). Growing Indian economy and increasing fish productions over the years have been witnessing considerable changes in the marketing structure of domestic fish markets, particularly in wholesaling and retailing. According to '*Handbook of Fisheries Statistics 2000*', the annual consumption per thousand households is about 7400 kg in urban India and about 6250 kg in rural India. In India, about 28 per cent households consume fish, about 600 lakh families consume fish on a regular basis, and the estimated monthly per capita consumption of fish is 0.204 kg.

In India, the fish marketing is highly unorganized. Retail fish markets are miniatures of wholesale markets, the variations being in terms of size, quality of fish, number of traders, facilities, proximity to the consumers, etc. Retail markets also present a dismal picture. Most retailers sell fish by roadside without maintenance of

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quality or hygiene and without access to drinking water, shelter and fish dressing platforms.

Domestic unorganized fish retail has started attracting the attention of policy makers due to lack of quality and hygiene and hence consumer's safety. In recent years, a slow transformation of unorganized fish retail marketing into an organized marketing is becoming visible through the entry of private retailing giants like Spencer's, Reliance Retail, etc. More and more new companies are entering the organized fish retailing; these include private sector players like Foodland, Aditya Birla's More, Tata's Star Bazar, Spinach, etc. In the public sector, the Tamil Nadu Fish Development Corporation Ltd. (TNFDC) operates fish retail outlet in Chennai, under the brand name 'Neidhal'. In Kerala, MATSYAFED has a chain of outlets under the name 'Fresh Fish Point' (Kumar, 2008)

In India, most of the studies on fish markets and marketing have been related to the unorganized retail markets, particularly with reference to gender, age and credit (Tietz, 2004), frozen fish retailing (Agbeja, 2004), marketing facilities, hygiene and sanitation (Bestari 2004). Social aspects of fish retailers and market dynamics as perceived by the fish retailers in Mumbai municipal fish markets were studied by Patil (2005). Not only consumer behaviour and changing preferences but also the nature of changes in the fish retailing and wholesaling have remained almost untouched by the researchers. The present paper has studied the changing patterns of consumer behaviour, various parameters affecting purchase of fish, their preference for new products, etc. Changes in consumer preferences have driven retailers to differentiate their product by creating additional value in the eyes of the consumer. The additional value generated may be designed to meet consumer demands for special tastes, hygienic and natural product and convenience.

With this context, the present study has been designed to understand the consumers profile and their purchasing pattern of fish from the organized retail outlets, to find out the consumer preferences and willingness for fresh fish, frozen fish and processed fish products and to know about their willingness to experiment with new fish-related products.

Methodology

Locale of Study

Considering its growth, popularity and market potential, the Spencer's outlet in Mumbai metro was chosen as the study area. Spencer's Retail Limited is one of India's largest and fastest growing multi-format retailers with 275 stores, including 36 large format stores across 66 cities in India. Established in 1996, Spencer's has become a popular destination for shoppers in India with hypermarkets and convenient stores catering to various shopping needs of its large consumer base.

Sampling Design

The survey was conducted during 1st January to 28th February, 2009 between 6 pm and 8 pm on all week days. Only 140 respondents took part in the study and hence the sample size became 140. In addition, the sensory evaluation of the fish and prawn products prepared by the Central Institute of Fisheries Education, Mumbai, was conducted among 50 willing consumers visiting Spencer's on identified parameters, as given in Table 1.

Data Collection

The study was based on both primary and secondary data. For getting primary data, two different interview schedules were made. Personal interview (face-to-face) method was used for primary data collection from the sample respondents. The interview schedule was consisted of close-ended questions and was pretested. Another interview schedule was prepared specifically for sensory evaluation of CIFE's value-added fish and prawn products. A brochure was designed with details about weight of product,

Table 1. Sample design and major parameters studied

Major parameters studied	Respondents (No.)	Period (days)
Consumers profile, purchase behaviour, volume of purchase, factors influencing purchase, willingness to buy value-added products, etc.	140	30
Perception and sensory evaluation of value-added products	50	30

ingredients, nutritional composition of products and photographs to make the willing consumers better appreciate the products. The ranking was done on a 5-point scale according to the level of importance, i.e. 5 indicated 'very important' (highest rank) and 1 indicated 'no importance' (lowest rank).

The relevant secondary data were collected from the market research journals, periodicals, magazines, reports and websites. The secondary information backed the research study in all possible ways.

Analytical Tools

Frequency and Percentage

Most of the data have been presented in frequency and percentage to understand the consumers profile (age, sex and income), nature of consumer's interest, buying behaviour, perception about the fish in organized fish retail outlet, their expectations, classification of their choice for quality, convenience, products range, and product-form preference.

Factor Analysis Model

The factor analysis technique was used to examine the entire set of interdependent relationships. If the variables are standardized, the factor model may be represented by Equation (1):

$$Xi = Ai1\ F1 + Ai2\ F2 + Ai3\ F3 + \ldots\ldots + Aim\ Fm + ViUi \quad \ldots(1)$$

where,

Xi = The ith standardized variable,

Aij = Standardized multiple regression coefficient of variable i on the common factor j

F = Common factor,

Vi = Standardized regression coefficient of variable I on unique factor,

Ui = The unique factor of the variable I, and

M = Number of common factors.

The unique factors are uncorrelated with each other and with the common factors. The common factors themselves can be expressed as linear combinations of the observed variables, as per Equation (2):

$$Fi = Wi1\ X1 + Wi2\ X2 + Wi3\ X3 + \ldots.. + Wik\ Xk \quad \ldots(2)$$

where,

Fi = Estimate of the i^{th} factor,

Wi = Weight or factor score coefficient, and

K = Number of variables.

The analysis was performed with SPSS ver.17 package.

Result and Discussion

Consumers' Purchasing Behaviour

Information on the general profile of the consumers was collected in terms of age, gender family size and income. It was found that maximum purchasers were in the age group of 25-30 years (65%, 46.4%), followed by the 30-35 years group (39%, 27.9%), more than 35 years group (34%, 24.3%) and less than 25 years group (2%, 1.4%). This revealed that youths constituted the biggest segment of purchasing consumers.

Among the total respondents, 85 (60.7%) were males and 55 (39.3%) were females. In India, generally females (house-wives) play an important role in purchasing of fish and fish products for domestic consumption. However, a larger proportion of males can be, to certain extent, attributed to greater unwillingness among female consumers in taking part in the survey. A majority of the consumers had a family size of 5-7 members (80, 57.1%), followed by 3-4 members (50, 35.7%). The number of respondents having family size of more than 7 or up to 2 was very small (5, 3.6% each). The study revealed that 38.6 per cent (54) of the respondents were in the income group of Rs 3-4 lakh / annum, followed by 35.0 per cent (49) in Rs 4-5 lakh / annum group and 24.3 per cent (34) in 2-3 lakh/annum group. Only 2.1 per cent (3) consumers had annual income of more than 7 lakh. Thus, annual income of about 97 per cent consumers was between 2 lakh and 5 lakh, revealing that the majority of customers belonged to the upper middle / middle class income category.

Consumers' Preference for Organized Retail Outlets

On preference for organized retail outlets, a large number (80 %) of the respondents stated that availability

Table 2. Consumers' preference for organized retail outlet (N=140)

Particulars	Frequency	Percentage
Preference for organized retail outlet over the local market		
Quality products	112	80
Convenience	27	19.3
Variety of product	7	0.7
Price	0	0
Preference for Spencer's outlet		
Overall ambience	123	87.9
Quality	2	1.4
Nearness to locality	15	10.7
Price	0	0
Product quality at Spencer's outlet		
Excellent	7	5
Good	133	95
Average	0	0
Bad	0	0
Previous source of purchase		
Street vendors	0	0
Retail shops / organized outlets	4	2.84
Unorganized	136	97.14

of quality products at these outlets was the main reason for shopping preference over the local market (unorganized) (Table 2).

Maximum respondents (88 %) revealed that the overall ambience at the outlet was the deciding factor for choosing a particular outlet to buy their products and a large number (95 %) of the respondents reported that the products in the Spencer's outlet were of 'good' quality. Overall, it was found that quality of the product, merchandising and convenience were the vital factors to hold the existing consumers and attract the new consumers. The study on previous source of purchase revealed that the majority of the consumers (97%) used to buy from the unorganised sector. This showed that consumers were switching over to the organised retail, from unorganised retailing.

Frequency and Volume of Purchase

Regarding frequency of purchase, 45.0 per cent of the respondents visited the store once in a week, while 29.1 per cent of respondents visited fortnightly (Table 3).

It was found that most of the consumers (83. 6%) bought 1-2 kg of fish per visit. The average fish

Table 3. Frequency and volume of purchase (N=140)

Particulars	Frequency	Percentage
No. of visits in a month		
Once a week	63	45
Twice a week	36	25.7
More than twice a week	1	0.7
Fortnightly	40	28.6
Quantity of purchase (kg) / visit		
0.5-1	4	2.9
1-2	117	83.6
2-3	17	12.1
>3	2	1.4

consumption of a family was 6-8 kg per month, as revealed by the frequency of visit and purchase of fish per visit, considering the higher percentage of the response.

Purchasing Behaviour of Consumers

The growth in organized retail is influenced positively by the increasing buying power of consumers. The consumers were found highly species-specific and the preference to purchase of whole fish or in cut pieces depended on the species, viz. catla, mandeli etc. (Table 4). Generally the visitors to the organized retail stores were from the relatively higher income group and they accorded more emphasis to freshness (57.9%) than to

Table 4. Purchasing behaviour of consumers (N=140)

Particulars	Frequency	Percentage
Specificity		
Species specific	118	84.3
Whole	16	11.5
In cut pieces	6	4.3
Form of purchase		
Fresh fish	81	57.9
Processed fish	18	12.9
Marinated fish	9	6.4
Frozen fish	32	22.9
Preferred weight for packed products		
100 g	9	6.4
500 g	127	90.7
1000 g	4	2.9
>1000g	0	0

price of fish. It was interesting to note that most of the respondents (90.7 %) preferred to purchase fish and fish products in packs of 500 grams, while only 6.4 per cent of the respondents opted for 100 gram pack. The purchasers of 1000 gram packs were minimum (2.9%).

Consumers' Awareness and Willingness

In the study on awareness and willingness about fish and prawn products, it was seen that 57.9 per cent consumers were aware about different products. A vast majority (95.7%) of the consumers was willing to buy new fish and products but a considerable proportion (84.3%) reported that these products were not available in the local markets. It clearly shows that there is an opportunity for research, commercial production and marketing of new value-added fish and prawn products which will further encourage development of entrepreneurship in this area.

Factors Influencing Consumers' Purchasing Behaviour

The study revealed that quality, nutritional value and price of products were the most important factors for guiding the fish purchasing behaviour of consumers. Most of the respondents (82.9 %) revealed that price was the single most important factor in choosing the product, and 96.4 per cent of the respondents considered quality as the most important criterion in choosing the product (Table 5).

As value-added products in the fisheries sector are comparatively new to the market, only a few companies like Godrej have created their brand image among the consumers. It was attested by the study that only 31.4 per cent of the respondents accorded higher emphasis to branded products, while 48.6 per cent of the respondents gave less importance to brand names of fish and fisheries products. A very high percentage of respondents (92.2 %) showed nutritional value to be the most important factor in purchasing of fish and fish products. Thus, the respondents were highly health conscious, and insisted on the quality of products.

The criteria, range and variety of different fish and fishery products was considered as 'most important' by 30 per cent, 'important' by 40 per cent and 'moderately important' by the remaining 30 per cent respondents. Thus, there is still a big gap in the knowledge of consumers about the availability of diversified range and variety of fish and fisheries products. So the companies may consider this as an opportunity for generating awareness among the consumers about their diversified products. This is clearly one of the key strengths of organized retail players as they can make available a broad range of fish and fisheries products under one roof. It was found that a considerable portion of the respondents (60 %) preferred to choose an outlet having most items under one roof which included other food and grocery shopping too. About 91.4 per cent respondents ranked the credit facility as the least important criterion in purchasing behaviour.

As is evident from the Table 6, two factors accounted for 49.38 per cent of the total variance (information contained in the original 7 variables). Hence, we reduced the number of variables from 7 to 2. A look at the Table 6 revealed that variables 'price' and 'nearness' had higher loadings of 0.855 and 0.891

Table 5. Factors influencing the consumers' purchasing behaviour

(N=140)

(in per cent)

Factors	Most important	Important	Moderately important	Least important
Quality of product	96.4	3.6	0	0
Nutritional value of product	92.2	7.8	0	0
Price of product	82.9	17.1	0	0
Convenience	80.0	20.0	0	0
Brand name	31.4	48.6	20.0	0
Range and variety of product	30.0	40.0	30.0	0
Availability under one roof	40	60	0	0
Credit facility	0	0	8.6	91.4

Table 6. Rotated component matrix

Factors	Component 1	Component 2
Price	0.855	–0.022
Quality	–0.148	0.523
Nearness	0.891	0.045
Brand name	–0.655	–0.391
Range and variety	0.140	–0.444
Products under one roof	–0.208	0.757
Credit facility	0.273	0.073

on factor 1. Thus, it could be interpreted that respondents had “value for money” as the first factor in their mind while buying; it contained two variables, viz. price and nearness. This factor emerged as the most important (factor) determinant of customers buying behaviour with a total variance of 32.16 (Table 7). It was observed that most of the respondents analysed price-nearness equation and made further decisions accordingly. Respondents considered ‘Quality with convenience’ with a total variance of 17.22 as the second factor while buying.

Consumer’s Response to Value-added Fish and Prawn Products

The sensory evaluation of fish munch and fish keema, revealed that more than 60 per cent of the respondents ranked the parameters of crispiness, colour and texture of the fish munch as ‘very good’. All the respondents were satisfied with the indicative price of Rs 10 for 30g of fish munch. It shows that there is an opportunity to improve the odour, taste and appearance of the product. As fish munch is the extruded product, the crispiness and the size of piece are the two very important features. Among all the tested products, 80 per cent of respondents ranked the fish keema as ‘very good’ and more than 80 per cent were satisfied with the product features like texture, product name and packaging. As per the sensory evaluation, it was found that still there was scope for improvement in the odour and appearance. Fish keema is a paste product, so it needs excellent texture and on this account, it has scored highest among the requirements, 100 g for Rs 50.

The sensory evaluation of prawn pickle and prawn masala revealed that the respondents ranked these features of products almost equally as ‘very good’ and ‘good’. Packaging of the product was poor and the respondents showed their dissatisfaction over it. This could affect the quality of products and many respondents desired improvement in this feature. Odour and price should be taken into consideration for further improvement of the product. More than 35 per cent of the respondents expressed dissatisfaction over price, it could be due to poor packaging. Product appearance was ranked as ‘good’ by more than 45 per cent respondents. Poor appearance reflected on the price negatively, 100g for Rs 30. A majority of the respondents ranked the CIFE’s spicy prawn masala as either ‘very good’ or ‘good’, indicating the overall satisfaction over most of the important parameters like taste, odour, and appearance. However, improvement in the packaging and texture will make the product more acceptable among consumers. Only about 30 per cent of the respondents ranked the product name as ‘good’, indicating a rethink on a more catchy name.

Willingness to Buy the Value-added Fish and Prawn Products

The percentage of respondents who were ready to buy the value-added fish and prawn products was highest for fish munch (84%), followed by prawn masala (78%), fish keema (72%) and prawn pickle (64%). The fish munch is an extruded product and has minimum price in all the products tested. The response of consumers has shown much scope for research and development on fish and prawn products as consumers have shown preference for crispy, extruded and spicy form of the products.

Table 7. Interpretation of factors

Factor	Per cent variance explained	High loadings	Variables included in the factor
Value for money	32.16	0.855	Price
		0.891	Nearness
Quality with convenience	17.22	0.523	Quality
		0.757	Products under one roof

Conclusions and Policy Implications

Following conclusions and policy implications are drawn from the study:

- About seventy-four per cent of the consumers visiting organized retail outlets are in the age group 25-35 having income of Rs 3-5 lakh/annum.
- The local fish market was the previous source of purchase for the majority of consumers (97%) which shows that consumers are switching over to the organized retail due to multiple factors.
- Quality, nearness to locality and nutritional value of fish are the major factors responsible for shifting purchasing to organized outlets.
- The quality of product, merchandising and convenience are the vital factors to hold the existing consumers and attract new consumers.
- Growth in organized retail is influenced positively by the increasing of consumers' buying power. Generally, visitors to the organized retail stores are from the relatively higher earning group and they give more emphasis on freshness rather than price of fish.
- Most consumers (84.3 %) are species-specific while buying fish.
- The awareness and acceptability of fish and prawn products among consumers are seen high but 84.3 per cent respondents have reported non-availability of those products in the local markets. This clearly shows that there is an opportunity for research, commercial production and marketing of new fish and prawn products which will further encourage entrepreneurship development in this area.
- Factor analysis has revealed that quality, nutritional value and price of the products are the most important factors for deciding the buying of consumers.
- Brand name has been revealed as the most important factor by one-third of the respondents; half of the respondents have given relatively less importance to the brand name of fish and fisheries products.
- A majority of respondents (92.2 %) regard nutritional value as an important factor while purchasing fish and fish products.
- There is a big gap in the knowledge of consumers about the availability of diversified range and variety of fish and fisheries products. So the companies can take this as an opportunity for generating awareness among the consumers about their diversified products.
- The credit facility is regarded as least important by the respondents in purchasing of fish and fisheries products.
- The sensory evaluation of CIFE's fish munch and fish keema have shown crispiness, colour and texture of these products as 'very good'. But, there is a need to improve odour, taste and appearance of these product.
- The percentage of respondents who are ready to buy the value-added fish and prawn products is highest (84%) for fish munch, followed by prawn masala (78%), fish keema (72%) and prawn pickle (64%). The fish munch is an extruded product and has minimum price in all the products tested. The response of consumers has shown scope for research and development on fish and prawn products as consumers have shown preference for crispy, extruded and spicy form of the products.
- The consumers' response indicates opportunities for introduction of multiple value- added fish and prawn products in the urban retail markets as consumers have shown preference towards crispy, extruded and spicy form of products. As the technology to prepare such products is already available with Central Institute of Fisheries Education, Mumbai and other institutes like CIFT, Kochi, this can be readily extended to the willing entrepreneurs and women SHGs.

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