An Insight into the Brand Management of Shrimp Feeds Marketing

Abstract

India is considered as one of the world leaders in shrimp production and exports in which Kerala plays a significant role. Considering the requirement of precious foreign exchange, the government has identified the marine products as a trust area for developments. As in the case of all natural resources, the fisheries resources are also depleting and hence cannot be expected to keep up with the demands of the multiplying mankind. There are umpteen numbers of reasons for this predicament of the Indian fisheries. In this context, shrimp feeds are the major growth area and hence it is important that more focus is given for the sustainability of this shrimp feeds and its marketing. In this article we tried to analyze the shrimp feed market in Kerala, various brand variables that influence the farmers purchase behavior and validation of brand acceptance strategy among the framers, manufacturers and marketers in Kerala.

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Introduction

Global Shrimp Market and Production

Shrimp, even now regarded as a luxury food by most people, has become more affordable and available as demand for it steadily rises in the major consuming markets of Japan, North America and Europe. It has grown into a significant global seafood industry – producing nearly four million tons worth some $18 billion annually. Approximately half of the global shrimp supply is traded, with trade flowing mainly from the tropical developing world to the OECD (Organization for Economic Cooperation and Development) countries, i.e. North America, Europe and Japan. The other half is consumed where produced in domestic markets. Shrimp imports by these wealthy markets reached $7.8 billion last year. Add in domestic production in the USA and Europe (worth around $0.4bn for each market) and the total OECD market is valued at $8.6bn. Virtually all the world's major stocks of wild shrimp are either fully or over-exploited and wild shrimp capture has hovered around 2 million tons per annum (p.a.) since the early 1980's. This stagnating growth rate, in the face of growing demand, has boosted shrimp aquaculture, as producers search for ways to increase supply. Shrimp farms have developed rapidly during the past 20 years; global production multiplied from 80,000 tons in the early 1990's to 927,000 tons in 2008.

Shrimp Production in India and Kerala

India has an estimated brackish water area of above twelve lakh hector, hardly eight thousand hector is under shrimp farming out of which over eight percentage is under traditional/extensive farming. The shrimp aqua culture activity in the country is slowly gaining momentum with the help of development agencies like MPEDA, BFFDA, and ADAC. Region-wise marine fish production in India and the share of various regions are shown in above Table 1.0.

The marine fish production of the south west region continues to be in the second position of 32.8 percentage level in the total fish production of India. The first is always the north-west region in comparison to the other four areas. The study area i.e. the south west area comes in the second place. That makes the case of Kerala coastal area more interesting. Kerala is a narrow stretch of land with a long surf-beaten coast on the western side and a lush green mountain range on the eastern side. Kerala is tucked away in the south-west corner in India. It has an area of 38864 square kilometers, which represents only 1.03 per cent of the total area of India. The breadth of the State varies from 32 km (in the extreme North) to 120 km(at the middle of the state). The state is separated from the neighboring states by the Western Ghats, which run parallel to the Arabian sea. The State can be divided into three geographical regions, viz. ,(1) High lands (2) Mid lands and (3) Low lands. The low lands or the coastal areas are made up of the river deltas, back-waters and the shore of the Arabian sea. Fisheries and coir industry constitute the major industries of this area. The coastline is 590 km. long, which is almost one tenth of the Indian coastline. Marine fishing, using artisanal tackles like boat-seines, shore-seines and Chinese dip nets, is an age-old tradition of the state.

Table 1.0 : Marine Fish Production in India – Region wise *(2007-2008)*

Region	Production (MT)	% in the all India Total
North-west (Maharashtra & Gujarat)	8,54,934	35.3
South West (Kerala, Karnataka & Goa)	7,92,335	32.8
South East (Andhra Pradesh, Tamilnadu & Pondicherry)	6,23,556	25.8
North east (West Bengal & Orissa)	1,13,885	4.7
Lakshdweep & Andaman's	33,804	1.4

Source: Annual Report 2007-2008Central Marine Fisheries Research Institute: Cochin. p. 22

Mechanization of fishing commenced in the state in 1957 by the Indo-Norwegian Project; initially in the Quilon region. The early sixties too saw an important technological development, as individual entrepreneurs entered the scene, paving the way for a fast development of trawl fishery in the coastal waters. Commercial purse-seining started during late seventies, and the process of large-scale motorization of country crafts began in early eighties.

Kerala is blessed with a rich and unique biodiversity of flora and fauna. It is the homeland and natural habitat of many of the rare species of fishes. Marine, fresh water, brackish water and Western Ghat fish diversities contribute to the fisheries wealth of the State.

The fish diversity of the State is facing a threat of extinction due to various reasons. Over exploitation, disturbances to natural habitats, aquatic pollutions, fish diseases, changes in the courses of rivers, mangrove deforestation, changes in the eco-system, etc., are the main reasons for the decline in fish production.The Government of Kerala is taking various measures for the protection and propagation of the fisheries wealth of the State. The 'monsoon trawl ban' is a step in this direction by which the exploitation of the juveniles of marine fish species is controlled to a great extent.

Shrimp Feed

Feed is one of the important and essential inputs in shrimp farming. In scientific shrimp culture where the cultured organisms are stocked at a high density, the amount of natural food available in the pond is not sufficient to support good growth even with fertilization. As the shrimp grows, the food requirements will increase substantially and if they do not get sufficient food, growth will retard leading to poor survival and production. Hence it is necessarily to increase the production by supplementary nutritionally balanced artificial feed. The role of artificial feed in shrimp farming is greatly dependant on the culture system or cropping density employed. Clearly the nutritional and feeding of shrimp with in each culture system must be considered as being unique and should be evaluated according to the merits of each type.

Three major factors governing the choice of feed ingredients are

a. Suitability for shrimp feed.
b. Consistent availability
c. Cost

The feed ingredients can be broadly classified into three as protein supplements, energy feeds, and roughages. In our country materials like shrimp waste, mantis shrimp, clam meat, wheat flour, tapioca, etc, are also used as feed ingredients.

Types of shrimp feed

1. Natural feed – Natural feed grows in shrimp pond after application of predator control chemicals and fertilizers.

2. Wet feed –This comprises of fresh fish, mussels, etc and is traditionally fed to the shrimps. These feeds are suitable in extensive farming but not in semi-intensive because water quality is affected due to disintegration of feed and thereby creating unhealthy environment.

3. Pellet feed – Having understood the feeding habits of shrimp and role of feed in growth of shrimp and the economics of culture, nutritionally balanced feed in the form of pellets is used in semi-intensive and intensive farming system.

Objectives of the study

1. To analyze the types of shrimp feed and brand accepted in Kerala market.

2. To analyze the brand variables that influence the shrimp farmers to accept a shrimp feed brand.

3. To analyze the important shrimp feed brand acceptance strategies among the shrimp Farmers.

4. To analyze the shrimp feed brand acceptance strategy among the manufacturers and marketers in Kerala.

Methodology

The present study is an empirical one based on the survey conducted among the shrimp feeds using farmers in the state of Kerala, the dealers of shrimp feeds in Kerala and those of the experts in this area. For the study 300 shrimp farmers and 45 shrimp feed dealers are taken as sample by simple random sampling method from three costal districts of Kerala namely Kollam, Aplappuzha and Eranakulam. The study also used secondary data from various journals, magazines, books, periodicals, unpublished documents available at MPEDA and other related institutions. For analysing the data we used 't' test, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Inter Correlation Matrix.

Analysis on type of shrimp feed accepted in Kerala Market

Table 1.1 : Response on type of shrimp feed accepted in Kerala Market

Source: Questionnaire

Based on the above Table1.1, it can be summarized that pellet feed is the most used feed followed by natural feed and wet feed in that order. Pellet feed is found to be accepted more due to its advantages in the Kerala conditions.

Analysis on the shrimp feed brands being purchased in Kerala Market

The shrimp feeds are purchased from various sources and various brands are under active consideration. Only a few people decide to purchase from local market where local brands are being considered. It is clear from the below Table 1.2, that Higashi is leading as the most preferred brand followed by Godrej and Grobest. Ultra brand is also being used. Some of the brands other than those mentioned being bought are Gold Supreme" and "Gold Essence" etc.

Table 1.2 : Response on the shrimp feed brands being purchased in Kerala Market

Type	
Natur	Grob
Wet	
Pelle	
Total	
Higa	
Ultra	
God	
Othe	
Tota	

Source: Questionnaire

Analysis on brand variables that influence the shrimp farmers to accept a shrimp feed brand

The acceptance of the brand consists of so many variables in practice. In the present study, the same is confined to fourteen variables. The farmers were asked to rate these 14 variables at five point scale. The mean score of variables and its respective't' statistics are given below in Table 1.3.

The most considered variables in acceptance of the brand among the farmers are brand name, maintaining high quality and maintaining unique image since their respective mean scores are 3.9446, 3.9337 and 3.8664. Among the Kollam farmers, these are 'coverage of range of produces' having lower cost than the competitors and coverage of various segments since the mean scores are 3.9933, 3.9441 and 3.9896. Regarding the importance given to the variables, the significant difference among the three district farmers have been noticed in the case of innovative products, product design, maintaining high quality, brand name, maintaining unique image, advertising message and differentiating products from competitors since their respective't' statistics are significant at 5% c level.

Table 1.3 : Variables in brand acceptance

Sl. No.	Variables	Mean score among			T-statistics
		Kollam	Alappuzha	Ernakulam	
1.	Innovative products	3.2184	3.9337	3.8146	−2.1452*
2.	Product design	3.8194	3.9446	3.1445	2.6163*
3.	Maintaining high quality	3.9337	3.3194	3.2442	2.5084*
4.	Brand name	3.9446	3.8664	3.1886	2.7331*
5.	Coverage of range of products	3.3194	3.8544	3.9933	−1.8994
6.	Maintaining unique image	3.8664	3.2666	3.1445	1.9968*
7.	Advertising message	3.8544	3.2444	3.0896	2.0864*
8.	Having lower cost than the competitors	3.2666	3.3345	3.9441	−1.7334
9.	Coverage of various segments	3.2444	3.4563	3.9896	−1.8661
10.	Achieving economies of scale	3.3345	3.8446	3.9661	−1.7083
11.	Product positioning	3.4563	3.9446	3.7138	−1.0868
12.	Differentiating products from competitors	3.8446	3.3194	3.1441	2.3664*
13.	Pricing strategy	3.5166	3.8664	3.6084	−0.2448
14.	Promotional techniques	3.2446	3.1114	3.7348	−1.6542

* Significant at five per cent level.

Source: Questionnaire

The analysis of important brand acceptance strategies among the Farmers in shrimp feed

The important acceptance strategies have been identified with the help of Exploratory Factor Analysis (EFA). The score of the variables in the brand acceptance strategy has been included for the analysis. Initially, the test of validity of data for factors analysis has been conducted with the help of Kaiser-Meyer-Ohlin measure of sampling adequacy and Bartletts test of Sphericity. Since the KMO measure is greater than 0.50 and the chi-square is significant at zero per cent. the validity of data for factor analysis has been confirmed. All 14 variables have been standardized for EFA. It results in four important strategies namely market standardization, differentiation, export diversification and cost leadership. The variables in each strategy, its reliability eigen value and the per cent of variation explained by these factors summarized in Table 2.4

Table 2.4 : Important Brand acceptance Strategies

Sl. No.	Important brand acceptance Strategies	Number of Variables	Reliability Co-efficient	Eigen Value	% of Variation Explained	Cumulative Percent of Variation Explained
1.	Market standardization	4	0.7603	2.9496	32.08	32.08
2.	Differentiation	3	0.8144	2.0864	15.45	47.53
3.	Product diversification	3	0.7169	1.9919	14.99	62.52
4.	Cost leadership	4	0.6049	1.8462	10.17	72.69
KMO measure of sampling adequacy: 0.7687			Bartletts test of sphericity: Chi-square value: 89.08*			

*Significant at zero per cent level.

Source : Questionnaire

All the four strategies explain the variables in the strategies to the extent of 72.69 per cent. The most important strategy is 'market standardization' since its mean score and per cent of variation explained are 2.9196 and 32.08 per cent respectively. The next two strategies identified by the factor analysis are differentiation and export diversification since their respective eigen values are 2.0864 and 1.9919. These strategies consist of three variables each with the reliability co-efficient of 0.8144 and 0.7169 respectively. The last strategy identified by the factor analysis is cost leadership which consists of two variables with the reliability co-efficient of 0.7049.

Test for the Reliability and Validity of the Brand acceptance Strategies

The convergent validity, content validity and discriminant validity of the constructs have been computed to prove the reliability and validity of the constructs. The Confirmatory Factor Analysis (CFA) has been executed to analyze the reliability and validity of the constructs. The range of standardized factor loading of the variables in each factor, its 't' statistics and significance, composite reliability and average variance extracted by each factor are presented in Table 1.5 .

Table 1.5: Reliability and Validity of the Brand acceptance Strategies

Sl. No.	Brand acceptance Stategies	Range of Standardised Factor Loading	Range of 't' statistics	Composite Reliability	Average Variance Extracted
1.	Market standardization	0.6818-0.9108	4.1708*-9.9617*	0.7739	62.49
2.	Differentiation	0.7234-0.9337	4.6561*-12.3502*	0.8402	51.08
3.	Product diversification	0.7661-0.9446	5.4517*-13.1886*	0.7447	54.55
4.	Cost leadership	0.7339-0.9146	5.0913*-10.1411*	0.7241	59.33

*Significant at five per cent level.

Source: Questionnaire

The range of standardized factor loading of the variables in market standardization is 0.6818 to 0.9108 whereas in the case of differentiation, it varies from 0.7234 to 0.9337. In the case of diversification it varies from 0.7061 to 0.9446. The range of standardized factor loading of the variables in 'cost leadership varies from 0.7339 to 0.9146. The standardized factor loading of the variables in all four strategies are significant at five per cent level. It shows the convergent validity of the strategies. As the composite reliability of the strategies is greater than the standard minimum of 0.50, the content validity of the constructs has been proved. The Average Variance Extracted (AVE) of each strategy also proves the reliability and validity of the constructs since AVE of the strategies are higher than 50.00 per cent.

Discriminant Validity of the Brand acceptance Strategies

The EFA results in four strategies namely market standardization, differentiation, product diversification and cost leadership. In order to analyze the mutual exclusiveness among these strategies, the inter-correlation between these strategies has been computed. The resultant correlation co-efficient is shown in Table 1.6.

Table 1.6: Inter Correlation between brand acceptance Strategies

Export Strategies	Market Standardization	Differentiation	Product Diversification	Cost Leadership
Market standardisation		-0.2917	0.1733	0.2144
Differentiation			0.2466	0.1337
Product diversification				0.1991
Cost leadership				

Source: Questionnaire.

The higher correlation is identified between market standardization and differentiation since its correlation co-efficient is -0.2917 whereas the lower correlation is noticed in the case of differentiation and cost leadership since the correlation co-efficient is 0.1339. The inter-correlation co-efficient between the strategies is not statistically significant. It confirms the discriminant validity of the export strategies. It reveals that the four strategies are mutually exclusive to each other.

Analysis of Brand Acceptance Strategy among the Manufacturers and Marketers in Kerala

The shrimp manufacturers and marketers may be attached with different brand acceptance strategy which depends upon the nature of products, nature of usage and the different customers segment. It is highly imperative to analyze the importance attached to the strategies by the feed manufacturers. The mean score of each strategy among various respondents has been computed separately. Regarding the importance attached to the marketing, strategies, the significant difference among the three districts has been examined with the help of 't' test. The results are given in Table 1.7.

Table 1.7: Brand acceptance strategy among the manufacturers and marketers in Kerala

Sl. No.	Strategy	Mean score among			T-statistics
		Kollam	Alappuzha	Ernakulam	
1.	Market standardization	3.6393	3.2756	3.4133	0.9198
2.	Differentiation	3.8816	3.3126	3.1776	2.5168*
3.	Product diversification	3.2606	3.2456	3.9325	2.3062*
4.	Cost leadership	3.3006	3.2786	3.9551	–2.1718*

*Significant at five per cent level.

Source : Questionnaire

The highly attached strategies among the Kollam respondents are 'differentiation' and 'market standardization' since the mean scores are 3.8816 and 3.6393 respectively. Among the Ernakulam respondents, these two are 'export diversification' and 'cost leadership' since the mean scores are 3.9325 and 3.9551 respectively. Regarding the importance given to these strategies, the significant difference among the three districts has been noticed in the case of importance given to differentiation, product diversification and cost leadership since their respective 't' statistics are significant at five per cent level.

Conclusions

The shrimp feeds are purchased by the farmers from various sources and various brands are under active consideration. It can be seen from the study that most of the farmers purchase Grobest shrimp feeds followed by Godrej and the rest from nearby dealers. The marketers have to design the appropriate strategy for the relevant market conditions. The acceptance of the brand consists of so many variables in practice. The most considered variables in acceptance of the brand among the farmers are brand name, maintaining high quality and maintaining unique image. The most important strategy is market standardization, product differentiation, export diversification and cost leadership. The shrimp feed manufacturers and marketers may be attached with different brand acceptance strategy which depends upon the nature of products, nature of usage and the different customers segment. It is highly imperative to analyse the importance attached to the strategies by the feed manufacturers.

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