



# INTERNATIONAL RESEARCH JOURNAL OF HUMANITIES AND INTERDISCIPLINARY STUDIES

( Peer-reviewed, Refereed, Indexed & Open Access Journal )

DOI : 03.2021-11278686

ISSN : 2582-8568

IMPACT FACTOR : 6.865 (SJIF 2023)

## Analysis of Factors Affecting Buyers' Intention to Buy Locally Produced Feed for Ornamental Fishes

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DOI No. **03.2021-11278686** DOI Link :: <https://doi-ds.org/doilink/03.2023-68649276/IRJHIS2303020>

### Abstract:

The main objective of this study is to determine the impact of buyers' attitude, perceived availability, perceived price, product knowledge, and perceived quality of local feed for ornamental fishes on buyers' intention to buy locally produced feed for ornamental fishes. The data for the study was gathered from 69 customers buying fish feed on regular basis. The study was conducted in Nagpur city, Maharashtra State, India. Data were analyzed using multiple linear regression analysis. Availability and purposive sampling techniques were used for selecting the samples. The results show that three factors viz buyers' attitude, perceived price and perceived quality are positively and significantly affecting buyers' intention to buy locally produced feed for ornamental fishes. However, two factors viz perceived availability and product knowledge are found to have a negative and insignificant effect on the intention to buy locally produced feed for ornamental fishes. It is also found that buyers' attitude and perceived quality most influence intention to buy locally produced feed for ornamental fishes followed by 'perceived price'. The customers were also found to have high intention to buy locally produced fish feed.

**Keywords:** Feed for ornamental fishes, attitude, perceived availability, perceived price, intention, product knowledge, perceived quality

### Introduction:

Plant or animal matter meant for consumption by pet fish kept in aquariums or ponds is known as aquarium fish feed. Fish feeds typically include the macronutrients, trace elements, and vitamins needed to maintain the health of captive fish. Approximately 80% of people who keep fish as a hobby feed their fish only prepared foods, which are often provided as flake, pellet, or tablet form (Riehl, 1996). The market for aquafeed in India is divided into fish feed, mollusks feed,

crustaceans feed, and other types. The feed for fish is divided into feed for ray-finned fish, mackerel, ribbonfish, cuttlefish, catfish, and other fish (Intelligence, 2023).

In 2017, the Indian aquafeed market was estimated to be worth USD 1.2 billion. It is expected to register a CAGR of 10.4% during 2023-28. The capacity of feed mills in India is 2.9 million metric tons. Andhra Pradesh consumes the most fish feed in India. About 7,517 km of the nation's coastline is made up of 195.20 km of river and canal systems. There are 14 large rivers, 44 medium-sized rivers, and several tiny rivers in India. The country also has many tanks and ponds (Research&Markets, 2022). This statistic indicates that aquaculture is a big industry in India and it has huge potential for the aquaculture feed industry. It is observed that, in India, fish feed products are mainly marketed by foreign companies. Aller Aqua, Alltech, Biomin, BASF, and Archer Daniels Midland are a few aqua feed prominent brands marketed in India (Intelligence, 2023). With this backdrop, the researchers have decided to determine buyers' intention to buy locally produced feed for ornamental fishes.

The rest of the paper is organized as follows. The literature review is presented in Section 2. The research methodology followed to conduct this study is presented in Section 3. Section 4 contains results and conclusions are presented in Section 5.

### **Literature Review:**

As cited above, aquaculture feed is a big industry and it has huge potential across the globe. Incidentally, it is realized that not many studies had been conducted to understand the customers' behavior and their preferences for buying fish feed. A few relevant studies found on the marketing of fish feed are summarised in this section.

(Santoso, 2015) evaluated the impact of marketing mix elements on fish feed customer satisfaction. (Daema, 2022) focused on finding the right social media marketing strategy implementation for fish feed-selling company SABCANTY to increase its sales. (EMEROLE, OGBONNA, & UKAIWE, 2021) analyzed marketing of fish feeds in Ikeja, Nigeria. (Parappurathu, Baiju, & Vijayagopal, 2021) studied the status and prospects of the ornamental fish and fishfeed industry in Southern India. (Mamedov & N.Ganizade, 2020) evaluated production and marketing of compound fish feed. (Munguti & et.al, 2021) studied various aspects of the aquafeed value chain in the Kenyan Aquaculture Sector. (Mancuso, Baldi, & Gasco, 2016) Conducted an empirical study in Italy to determine consumer acceptance of farmed fish fed on insect meals. (Baldi & al., 2021) Determined consumer attitude and acceptance toward fish fed with insects.

After surveying the literature, it is realized that the previous studies have focused on studying the marketing strategies of fish feed. Not many studies had been conducted to evaluate the buyers' behavior in general and their intention to buy locally-produced fish feed in general. The present study makes an effort to fill up this existing research gap.

### The present Study:

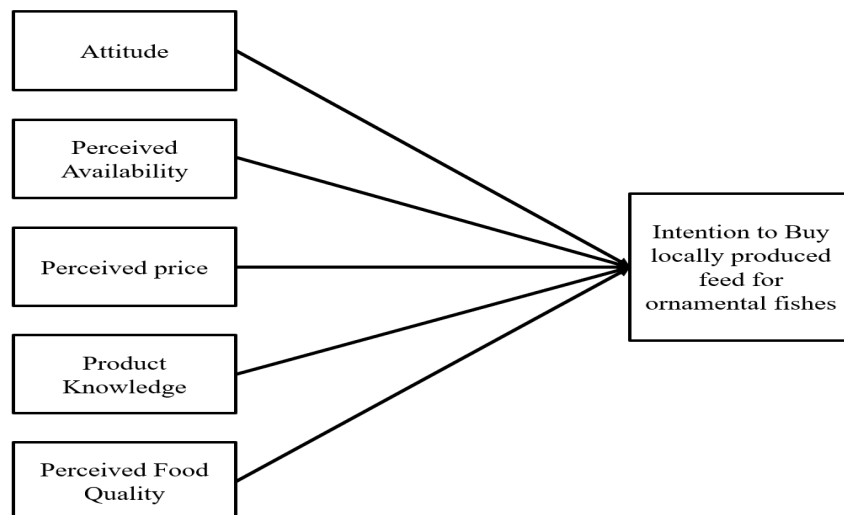
The main objective of this study is to evaluate the impact of buyers' attitudes, perceived availability, perceived price, product knowledge, and perceived quality of local feed for ornamental fishes on buyers' intention to buy locally produced feed for ornamental fishes. Buyers' attitudes, perceived availability, perceived price, product knowledge, and perceived quality of local feed for ornamental fishes are the five independent variables and buyers' intention to buy locally produced feed for ornamental fishes is the only dependent variable for this study.

The present study strives to address the following research questions:

RQ1: Whether the customers have the intention to buy locally produced feed for ornamental fishes?

RQ:2 Whether there is any impact of buyers' attitude, perceived availability, perceived price, product knowledge, and perceived quality of local feed for ornamental fishes on buyers' intention to buy locally produced feed for ornamental fishes.

The research model is presented in Figure 1.



**Figure: 1 Research Model**

The following hypotheses are formulated:

H1: There is no impact of buyers' attitudes on their intention to buy locally-produced feed for ornamental fishes

H2: There is no impact of perceived availability of locally produced feed for ornamental fishes on buyers' intention to buy locally produced feed for ornamental fishes

H3: There is no impact of the perceived price of locally produced feed for ornamental fishes on buyers' intention to buy locally produced feed for ornamental fishes

H4: There is no impact of product knowledge of locally produced feed for ornamental fishes on buyers' intention to buy locally produced feed for ornamental fishes

H5: There is no impact of perceived quality of locally produced feed for ornamental fishes on buyers' intention to buy locally produced feed for ornamental fishes

## **Research Methodology:**

### ***Sampling:***

Customers who are in fish keeping hobby and are regularly buying aquarium products are the sample elements for this study. 69 such customers from Nagpur city, the second capital of Maharashtra State, India, were included in the sample survey conducted by the researchers. The study used availability and purposive sampling techniques.

### ***Measure:***

A well-structured questionnaire was administered to gather the required data. Five-point Likert agree-disagree scale was used for measuring all the specified six constructs exhibited in the research model. The reliability measure, Cronbach's alpha for all the constructs was found to be greater than the threshold of 0.7. The items used to measure all six constructs were adapted from the various prior relevant research studies. The alphas, means, and standard deviations of the constructs and items are presented in Table 1.

### ***Data Collection:***

The researchers used two methods for surveying the respondents viz., self-administration of the questionnaire and online survey. The researchers visited the pet shops in Nagpur city and interacted with the customers visiting the shops. Further, the questionnaires were circulated to the customers who are specifically buying fish feed. The questionnaire was also converted into an electronic Google survey form. This Google form was subsequently delivered to the potential respondents at their respective WhatsApp numbers. The customers' contact numbers were collected from the pet shops.

## **Results and Discussion:**

### ***Descriptive statistics:***

The primary data was gathered from 69 customers. The sample is composed of 75% male and 25% of female customers. 59% of the respondents were of 18-30 years, 23% were between 31-45, 16% were between 46-60, and 1% were of above 60 years of age. There were 39% businessmen, 3% pensioners, 19% salaried, 38% students, and 1% unemployed respondents in the sample. 41% of respondents were married and 59% were unmarried. As far education of the respondents is concerned, 19% of respondents were HSSC, 55% were graduates, 20% were post-graduates, and 6% respondents were having above PG qualification. As far as the experience of buying feed for ornamental fishes is concerned, 36% of respondents are buying feed for less than a year, 23% for 2-3 years, 10% for 2-3 years, 12% for 3-4 years, 4% for 4-5 years and 14% customers are buying fish feed for more than five years.

**Table: 1 Sample characteristics**

Characteristic	Choices	No. of Respondents	%
Gender	Male	52	75
	Female	17	25
Age	18-30	41	59
	31-45	16	23
	46-60	11	16
	Above 60	1	1
Occupation	Business	27	39
	Pensioner	2	3
	Salaried	13	19
	Student	26	38
	Unemployed	1	1
Marital Status	Married	28	41
	Unmarried	41	59
Education	HSSC	13	19
	Graduate	38	55
	PG	14	20
	Above PG	4	6
Monthly Household income	<25,000	25	36
	26 to 50K	27	39
	51 to 75K	11	16
	>75K	6	9
Time since buying feed for ornamental fishes	Less than a year	25	36
	1-2 Years	16	23
	2-3 Years	7	10
	3-4 Years	8	12
	4-5 Years	3	4
	More than 5 years	10	14

N=69

The study was conducted to evaluate the impact of buyers' attitudes, perceived availability, perceived price, product knowledge, and perceived quality of local feed for ornamental fishes on buyers' intention to buy locally produced feed for ornamental fishes. The hypothesis is that intention to buy locally produced feed for ornamental fishes can be predicted by five factors viz; buyers'

attitude, perceived availability, perceived price, product knowledge, and perceived quality. Multiple linear regression analysis was performed to test the hypothesis. The descriptive statistics of all six constructs are presented in Table 2. The mean score of intention to buy locally produced feed is found to be 15.18 indicating the high intentions of customers.

**Table: 2 Items, Alphas, Means, and SD of the constructs**

Construct	Items	Mean	SD
Buyers' Attitude ( $\alpha = .956$ )	I think that local feed is reasonable	3.79	.79
	Local feed is beneficial for the ornamental fishes	3.72	.83
	I am very positive about local feed	3.84	.77
	It is a wise idea to buy local feed	3.86	.76
	It is a good idea to buy local feed	3.84	.77
	I believe that local feed is better than imported feed	3.39	.87
Perceived Availability ( $\alpha = .97$ )	Local feed is easily available to me in the shop where I purchase"	3.62	.76
	Local feed is always available	3.59	.81
	Local feed is sufficiently available	3.47	.77
Perceived Price ( $\alpha = .924$ )	Price of local feed is important to me	4.04	.94
	I think local feed is cheaper than imported feed	3.81	.81
	I always try to find the most reasonable low-price food in the store	3.78	1.22
Product Knowledge ( $\alpha=.977$ )	It is difficult for me to know if product is locally produced	3.36	.99
	I am able to recognize local label	3.11	.96
	I have good level of knowledge about local feed	2.76	.92
Perceived Quality ( $\alpha=.977$ )	The locally produced feed looks good	3.36	.68
	The locally produced feed smells good	3.37	.71
	It has long shelf life	3.43	.79
	Locally produced feed is healthier than imported feed	3.53	.74
	I intend to buy local feed in future	3.78	.74
	The next time I buy food I will choose local feed	3.69	.86

Intention to Buy locally produced feed (α=.977)	I will continue buying local feed	3.71	.76
	I will recommend others to buy local feed	4.00	.91

The results of multiple linear regression analysis show a significant impact of all the five independent variables on buyers’ intention to buy locally produced feed for ornamental fishes (F=26.054,p<.05) with R<sup>2</sup>= .674, suggesting that 67.4% of the variation in the dependent variable is predicted by the listed factors. The predicted intention to buy locally produced feed for ornamental fishes score is equal to 1.602 + 0.264 (Buyers’ Attitude) - 0.25(Perceived Availability) + 0.342 (Perceived Price) - 0.019 (Product Knowledge) + 0.476 (Perceived Quality). Buyers’ attitude (β= .379, t=3.172, p=.002) and perceived quality (β= .379, t=2.73, p=.008) were found to be the highest predictors of intention to buy locally produced feed for ornamental fishes followed by ‘perceived price’ (β= .286, t=2.362, p=.021). However, the impact of product availability (β=-.189, t=1.731, p=.088), and product knowledge (β= -.014, t=0.145, p=.886) on intention to buy locally produced feed for ornamental fishes is found to be insignificant.

**Table 3: Influence of factors affecting intention to buy locally produced feed for ornamental fishes**

Factors affecting online repeat purchase intention	Regression Coefficient	t-value	Sig.
Intercept	1.602	1.189	.239
Buyers’ Attitude(X1)	.264	3.172	.002
Perceived Availability(X2)	-.250	1.731	.088
Perceived Price(X3)	.342	2.362	.021
Product Knowledge (X4)	-.019	.145	.886
Perceived Quality (X5)	.476	2.730	.008
R <sup>2</sup>	.890		
Adjusted R <sup>2</sup>	.885		
F	190.204	-	.00
N	124	-	-

The results indicate that the three factors viz buyers' attitude, perceived price and perceived quality are positively and significantly affecting buyers' intention to buy locally produced feed for ornamental fishes at .05 significance level. Hence, the null hypothesis that there is no impact of buyers' attitude, perceived price, and perceived quality on buyers' intention to buy locally produced

feed for ornamental fishes is rejected. However, two factors viz perceived availability and product knowledge are found to have a negative and insignificant effect on the intention to buy locally produced feed for ornamental fishes. Therefore, the null hypothesis that there is no impact of perceived availability and product knowledge on intention to buy locally produced feed for ornamental fishes is accepted.

### **Conclusion:**

This research study has used five factors viz; buyers' attitude, perceived availability, perceived price, product knowledge, and perceived quality of local feed for ornamental fishes to determine its impact on buyers' intention to buy locally produced feed for ornamental fishes. The results of regression analysis indicate that three factors viz buyers' attitude, perceived price, and perceived quality are positively and significantly affecting buyers' intention to buy locally produced feed for ornamental fishes. However, two factors viz perceived availability and product knowledge are found to have a negative and insignificant effect on the intention to buy locally produced feed for ornamental fishes. Buyers' attitudes and perceived quality were found to be the highest predictors of intention to buy locally produced feed for ornamental fishes followed by 'perceived price'. The customers were also found to have high intention to buy locally produced fish feed.

This research study has used only five factors to predict the intention to buy locally produced feed for ornamental fishes by customers in Nagpur city. Future studies could involve further determinants of purchase decisions so that further insights on this topic can be explored. Future studies may also involve some other target groups in various geographic areas to predict buyers' intention to buy locally produced feed for ornamental fishes. The results of this study would be very useful for fish feed producers in planning and revising their production and marketing activities.

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