Exploring the links between preference and fish consumption: acase of post-graduate students of fisheries science

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Abstract

Objectives: This paper aims to bring out the causal relationship between fish preferences and its consumption pattern among the fisheries science postgraduate students who migrated from a different part of India for higher educations in the Institute of ICAR-CIFE at Mumbai. It also studied the primary factors which are responsible for the fish consumption and also addressed the number of ways that may bring awareness among the consumers to increase the fish consumption in their locality.
Methods/Statistical analysis: The samples for the study were collected randomly with the help of random tables; a total of 30 postgraduate respondents was collected at ICAR-Central Institute of Fisheries Education placed in Mumbai. Descriptive statistics viz., frequency and percentage analysis were used for the analysis. The responses are represented graphically as well as in tables for the better understanding. The rank-basedquotient (RBQ) was used to rank consumer preferences regarding different forms and the primary factors which are responsible for the selection of most preferred fish species.
Findings: The findings of the study depicted that maximum respondents were from Tamil Nadu (16.7%) followed by Kerala (13.3%) and Chhattisgarh (13.3%). It was also found that majority (55.41%) of the respondent's preferred freshwater fishes while 44.59% were in favor of marine fishes. The results of the study also indicated that the factors which are responsible for selecting a different form of fish for consumption were primarily by taste (91.33%) followed by availability (81.33%) and affordable price (57.33%) and the knowledge of fish cooking skills (37.33%). The study added further that there is a less preference among the respondents about the consumption of marine fishes as compared to the freshwater fisheries due to the several criteria viz., taste, availability, affordability and the cooking skills.
Application/ Improvement: The finding of the study will provide an idea about the fish preferences and consumption pattern among the consumers since it covers the respondent from different parts of India at a single sampling site. It supports the marketing companies to spot the target consumers by focusing their demands, which also strengthen the supply/value chain of the fish marketing by reducing the number of intermediaries. Increasing the availability of fish and fishery products through online marketing, direct marketing, availability of various recipes of preparing marine fishes in the form of books or leaflets, creating awareness about the nutritive value of fish, availability of processed fish product (value addition and hygienic condition), year-round availability of fish, advertisement through mass media are the suggestions for fostering better fish marketing and efficient fish consumption.
Keywords: Fish preference, Consumption pattern, Nutrition, Marketing strategy.

1.   Introduction

Healthy food habit heavily encouraged in the last few decades have resulted in proclivity towards healthy food consumption [1] [2]. Fishhas a unique nutritional propertywhich makes it inherently healthy for billions of consumers in both developed and developing countries. It is one of the most efficient converters of feed intohigh-qualityfood, and its carbon footprint is lower compared to other animal production systems [3].

Food demands of a global population of 9 million by 2050 will pose a daunting challenge in satisfying the need [4], and fish can play a significant role in satisfying the hungry world while also meeting the food security needs of the poorest as it represents 16% of all animal protein consumed globally [5].

Globally, fish accounts for a significant part of the animal protein intake as it provided about 16.6% of animal protein supply and 6.5% of all protein for human consumption [6] and considered as a critical element to be addressed in food security policies [3]. Rising consumer demand for fresh quality products, competition among the supermarket chains and between the supermarkets' labels and processor brands have shifted emphasis on freshness of seafood as an essential marketing strategy for fish resultant in seeking more investment on processing industry along with markets for new and harmless technologies with adaptation to local conditions [5]. Based on the above discussion, a survey was carried out to analyze the relationship between preference for fish and fish forms to fish consumption among the students of ICAR-CIFE, Mumbai.

2. Methodology

A close-ended, semi-structured interview schedule was used to collect primary data from post-graduate students of ICAR-CIFE, Mumbai. Selection of locale was purposive as it is a prestigious institution for the dissemination of fisheries education and constitutes students from different parts of India, pursuing their Master's degree in various disciplines of fisheries science. A random number table was followed to select the respondents. Total of 30 respondents was collected. The respondents were givena semi-structured interview schedule and accordingly the responses were noted. Statistical tools like tabular analysis and Rank Based Quotient (RBQ) were used to assess the objectives of the study and elicit meaningful results and conclusions.

1. Tabular analysis
The Tabular analysis was done to study the species preference for consumption of sample respondents which were documented using sums and percentages.

2. Rank Based Quotient (RBQ)
Respondent's preference for a different form of fish, their criteria for preference of the favored fish for consumption and forms of fish consumed were assessed from predicted options using Rank Based Quotient (RBQ). The formula for calculation is,

$$\text{R.B.Q} = \frac{\sum f_i\,(n+1-i)}{N \times n} \times 100$$

Where, f_i = Number of respondents reporting a particular problem under i[th] rank

N= sample size

N= Number of problems identified

3. Results and Discussion

The results obtained by analyzing the data with the help of various tools as discussed earlier are represented below:

1. Respondents' profile
Analysis of profile of the respondents illustrates that maximum respondents belong from Tamil Nadu (16.7%) followed by Kerala (13.3%) and Chattishgarh (13.3%) as shown in Figure 1 and 2.

Among the respondents, 70% belongs to the coastal states of India, while, 30% belongs to the inland states. There are nine coastal states of India that includes Tamil Nadu, Odisha, Kerala, Karnataka, Andhra Pradesh, Gujarat, Maharashtra, West Bengal, and Goa, while the rest among them belongs to inland states like Chattishgarh, Tripura, Telangana, Jharkhand, and Assam.

Figure 1. Respondents' profile state wise
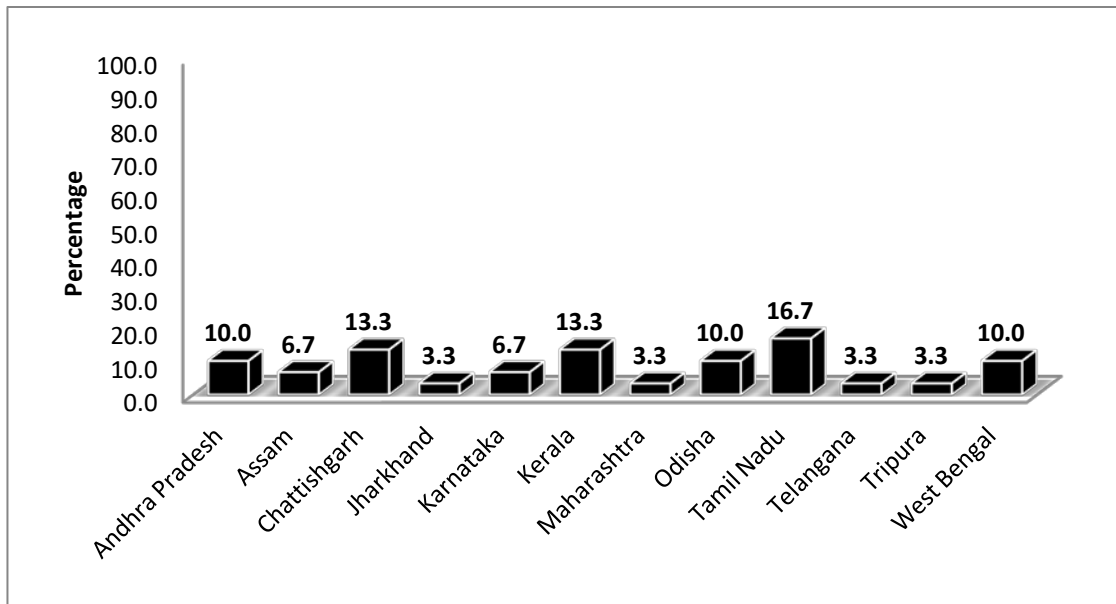
Samples were collected through primary survey 2016-17

*Figure 2. Respondents' profile sector wise*
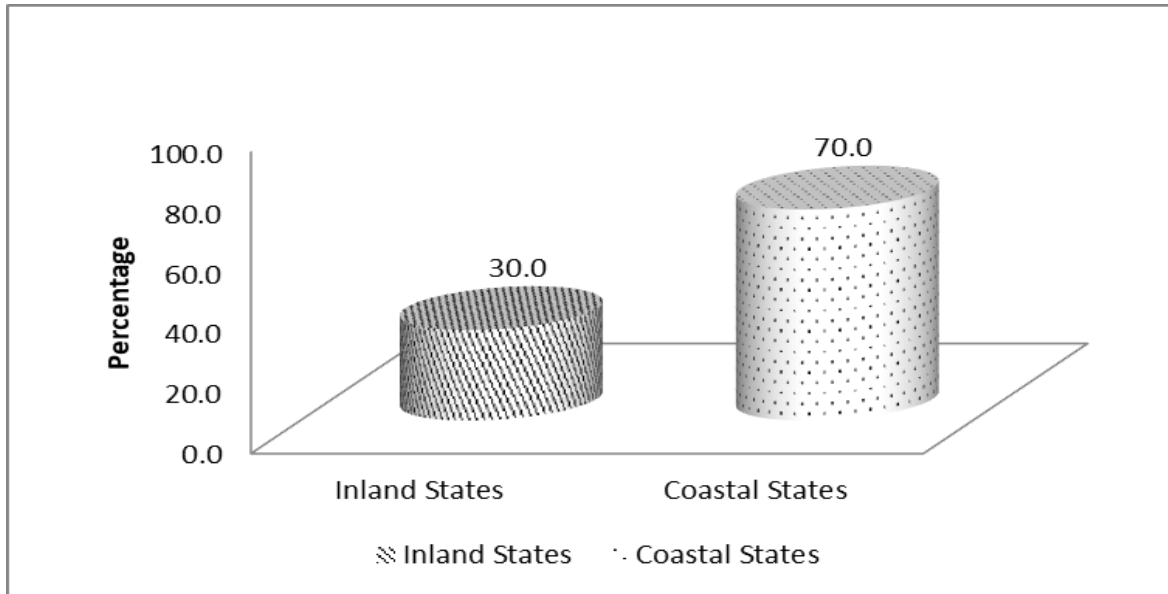
Samples were collected through primary survey 2016-17

2. Species preference for consumption

Analysis of responses elucidates that 55.41% of the respondents preferred freshwater fishes while 44.59% were in favor of marine fishes which envisages respondents' fondness for freshwater fishes is more than marine fishes as shown in Figure 3.

Figure 3. Species preference for consumption based on habitat
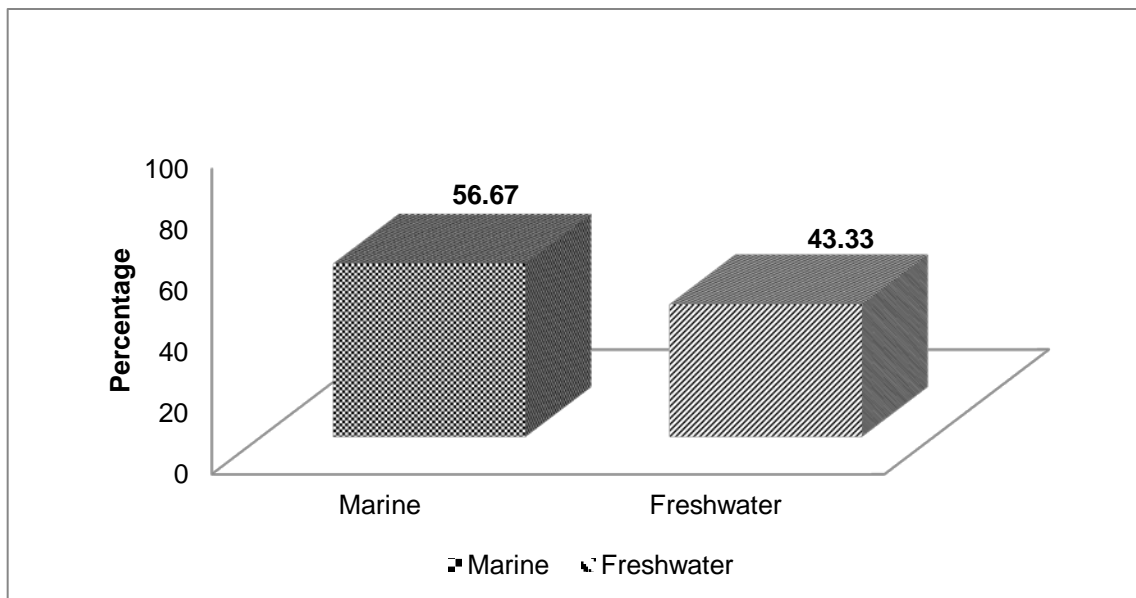
Samples were collected through primary survey 2016-17

Aquaculture has grown at a remarkable rate over the past decades. It has helped to produce more food fish, kept the overall price of fish down, and made fish and seafood more accessible to consumers around the world [5]. Similarly, the preferences of marine fish mostly came out of respondents from coastal regions since the availability is more. It is clear that there is a scope for expanding the freshwater fish market as there is more of consumer fondness for freshwater fish as shown in Table 1 and 2.

Table 1. Respondent's fondness for different freshwater species

Fishes	No of Respondents	Percentage (%)
Rohu	4	22.08
Catla	4	22.08
Tilapia	2	10.39
Mrigal	2	9.09
Magur	1	6.49
Others*	4	29.87
Total	17	100.00

* Others include species like Ompakpabda, Pangasius, Wallagoattu

Analysis of fondness of the respondent for various freshwater fish species envisages that most of the respondents got the likeness for Rohu (*Labeo rohita*), as well as Catla (*Catla catla*), i.e., 22.08% followed by Tilapia (10.39%). Few of these findings are similar with the results founded Needham & Funge-Smith, 2014 [7].

Table 2. Respondent's fondness for different marine species

Fishes	No of Respondents	Percentage (%)
Mackerel	3	15.71
Tuna	2	12.86
Shrimp	1	8.57
Pomfret	1	7.14
Sardine	1	5.71
Others*	6	50.01
Total	13	100.00

*Others includes crabs, clams and oysters

A similar analysis of fondness of the respondents for various marine fish species envisages that most of them got the likeness for mackerel (15.71%) followed by tuna (12.86%) and shrimp (8.57%). Few of these findings are similar with the results founded Needham & Funge-Smith, 2014 [7].

3. Preference for forms

Analysis of RBQ for a form of fish preferred by respondents suggested that people preferred fresh fish over other processed forms viz., frozen, dry and canned products followed by dry fish consumption. Accordingly, ranks were given to the different forms of fish by the respondents for analyzing consumer preferences for the form for which is most preferred as shown in Table 3.

Table 3. RBQ score for respondent's preferences for different forms of fish

Forms	RBQ (%)	Rank
Fresh Fish	79.33	1
Frozen Fish	43.33	3
Dry Fish	48.00	2
Canned Products	26.67	4

4. Selection criteria for fish consumption

During the selection of fish species for consumption, more people choose species as per the taste (94.67%) which is followed by the availability (72.67%) and affordable price (65.33%).

However, knowledge about how to prepare (37.33%) also emerged as criteria for selection and few responses were recorded for own catch or free catch (26.67%) as one of the criteria as shown in Table 4.

Table 4. RBQ score for reasons for preferences for different fish species

REASONS	RBQ (%)	RANK
A	94.67	1
B	72.67	2
C	65.33	3
D	26.67	5
E	37.33	4

Taste=A; Availability=B; Affordable Price=C; Own Catch/ Get It Free=D; Know How to Prepare=E

5. Selection criteria for a form of fish consumed

Respondents' reported the reasons for selecting a different form of fish for consumption was primarily by taste (91.33%) followed by availability (81.33%) and affordable price (57.33%) and know how to prepare (37.33%). Surprisingly, a few responses suggested own catch or free catch (28.67%) as one of the criteria as shown in Table 5.

Table 5. RBQ score for reasons for preferences for different forms of fish

REASONS	RBQ (%)	RANK
A	91.33	1
B	81.33	2
C	57.33	3
D	28.67	5
E	37.33	4

Taste=A; Availability=B; Affordable Price=C; Own Catch/ Get It Free=D; Know How to Prepare=E

4. Conclusion

Fish provides essential nutrients which are beneficial and healthy for our life. This desirable property of fish fosters consumption of fish among the respondents. The study reveals that respondents prefer freshwater fishes more due to their taste, availability, affordability and the know how to prepare it as compared to marine fishes. In this regard, some suitable strategies should be made like increasing the availability of fishes through online marketing, direct marketing; availability of various recipes of preparing marine fishes in the form of books or leaflets as marine fishes contains a considerable amount of omega 3 and omega 6 fatty acids which are beneficial for preventing heart diseases and cholesterol.

The other suggestions for better facilitation of fish marketing and consumption can be the creation of awareness about the nutritive value of fish, availability of processed fish product (value addition and hygienic condition), year-round availability of fish, and advertisement through mass media.

5. References

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