



Consumer Preference of Fish and Fish Products in Peri-Urban Households of Bhubaneswar, Odisha

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Abstract

Fish consumption surveys constitute an important information input for public policies on marketing, public health and product development. This paper examines the consumer preference for the value added fish products by conducting a survey of 150 consumers in the peri-urban areas of Bhubaneswar during the year 2018-19. All the consumers were aware about one or other parameters to assess the freshness of fish. Almost half of the consumers (46.67%) were aware that fish is a good source of quality protein, and 30% were of the opinion that fish is rich in omega 3 fatty acids and is good for neonatal brain development. About 10% of them consumed fresh fish every day. About 40% of the consumers responded that they consume value added fish products, dry fish, once in a month. About 7% of the consumers responded that they never consume dry fish as hygienically produced dry fish is not available in the market. All the consumers were interested in consuming one or other forms of value added products from fish, almost half of them (50%) preferring fish cutlet. Price, taste and health factor were perceived as the most important attributes of value added fish products. The consumers though willing to purchase value added fish products, were not ready to accept the prevailing market rates of these products in states outside Odisha. Strategies like promoting fish value added products will provide the much needed alternative livelihood options especially for fisherwomen.

Keywords: Consumer preference, value added products, peri-urban households, fisherwomen, enterprise development

Received 20 November 2019; Revised 24 March 2020; Accepted 25 March 2020

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Introduction

Fisheries has been playing a pivotal role in the economic development of India on account of its potential contribution to employment generation, income enhancement and foreign exchange earnings. As an important source of protein, fish will be a chief food item in the overall scheme of national food security to meet the nutritional needs of India's increasing population. More than 57% of households of Odisha state consume fish as the main source of animal protein in their diet in different forms either in fresh or traditionally preserved and processed forms. The annual per capita consumption of fish in Odisha is 13.49 kg which is much higher than the national average of 5.1 kg (Anon, 2018). There has been a shift in Indian consumer's demand towards convenience foods like ready to eat or value added products because of urbanisation, increase in number of employed women, decreasing living space etc. Value addition refers to processing of the product or addition of ingredients which increases the acceptability of the product in terms of either convenience or increase in shelf life (Majumdar, 2006). This ultimately results in increased economic value of the end product. There are varied numbers of value added products from fish. But the presence of value added fish products in the market is not as prominently felt as that of products from meat and vegetables. Fish consumption surveys (BOBP, 1992; Nikita & Annamalai, 2001;) provide an important information input for public policies on marketing, public health and product development. This paper examines the consumer preference for fish and fishery products in peri-urban households of Bhubaneswar city, Odisha.

Materials and Methods

Consumer preference for the value added fish products was studied through a survey among 150 consumers in the peri-urban areas of Bhubaneswar

city during 2018-19. They were exposed to products like hygienic dry fish, fish cutlet, fish momos, fish pickle, fish papad and prawn chutney powder and later surveyed using a pre-tested questionnaire. In general in Odisha none of these products are available in the markets except dry fish which is locally produced and does not meet the hygienic standards required.

The questionnaire covered the species preference for fresh and dried fish, frequency of consumption of fish and value added products, form in which consumed, ability of consumer to assess the quality of fish, perception towards health benefits of fish, important attributes of value added products, willingness to pay for value added products etc.

Results and Discussion

Perceptions of seafood quality are based on intrinsic attributes (sensory cues) including appearance, colour, smell, texture, tenderness and taste (Neilson et al., 2002; Trondsen et al., 2003). All the consumers were aware about one or other parameters to assess the freshness of fish. Half of the consumers were of the opinion that they should look for gill colour to assess the freshness of fish (Fig. 1).

Nearly 50% of the consumers (46.67%) were aware that fish is a good source of quality protein (Fig. 2). Fish is rich in all the essential amino acids. Amino acids are reported to have not only high nutritive value, but also provide several health benefits, such as reduction of blood cholesterol, anti-mutagenicity, reduction of coronary heart disease, and anti-obesity potential (Sarma et al., 2013). About 30% of the consumers were aware that fish is rich in omega 3 fatty acids and is good for neonatal brain development. Several observational studies have demonstrated independent beneficial associations of DHA levels in mother's blood during pregnancy or in cord blood during delivery or of maternal fish consumption during pregnancy with more optimal neurodevelopmental outcomes in offspring. These neurodevelopmental outcomes include better behavioural attention scores, visual recognition memory and language comprehension in infancy and childhood (Oken et al., 2005; Hibbeln et al., 2007). Nearly 33% consumers were of the opinion that they should consume more fish than any other animal protein as it is easily digestible too. About 23% of the consumers were undecided on whether people with chronic diseases like diabetes and hypertension should refrain from eating fish. Hence

awareness needs to be created among consumers on the positive effects of eating fish in preventing chronic and inflammatory diseases should be done to improve the consumption of fish by patients with chronic illness.

Consumers (33.33%) were of the opinion that the variety of value added fish products available in the market is limited when compared to chicken and vegetable products (Table 1). This is true in the case of state like Odisha, where the only form of value added product from fish available is dry fish, as mentioned earlier. Consumers were aware (26.67%) that the value added products are convenience products which are easy to cook or ready to consume. Nearly 30% of the consumers opined that they will be willing to buy value added products of fish if they are available at prices comparable to that of chicken or vegetable products. About 30% of the consumers agreed that they are willing to consume value added fish products if the safety of the products are assured. Majority of them (36.67%) were of the opinion that the value added products from fish should be available locally for them to consume. This confirms that Odisha has a potential market for different value added fish products.

About 10% of the consumers ate fresh fish everyday (Fig. 3). About 30% of the consumers responded that they preferred to have fresh fish once or twice in a week mainly because of the religious beliefs prevalent in Odisha against eating non-vegetarian food on specific days of the week. Almost 90% of the consumers preferred buying fresh fish from the market. The reason attributed was the ease of access, availability of fresh fish and the availability of dressed fish. Only 10% of the consumers were willing to buy from retail outlets. About 40% of the consumers responded that they consume dry fish once in a month (Fig. 4), which is the only value added fish product available in the market. About 7% of the consumers responded that they never consume value added fish products as hygienic products are not available in the market.

All the consumers were interested in consuming one or other forms of value added products from fish (Fig. 5). From among the products served to them, half of the consumers (50%) evinced interest in consuming fish cutlet and about 43% in solar dried fish.

In Odisha, around 35,000 tonnes of fish is marketed in dried form annually (Anon, 2018). About one-

third (33.30%) of consumers preferred prawn and marine fish for dry fish (Fig. 6). Marine fish species like anchovies, ribbon fish, herrings etc are the most used ones for dry fish production mainly because of the bulk production of these species (Ghorai et al, 2014). The traditional methods of fish drying is undertaken in an unhygienic way, where the fish is sun dried and exposed to pests, microbes, animals and other impurities. Only 6.67% of consumers preferred the dried catla, rohu or mrigal as these are the most favoured fishes for fresh consumption in the state.

Taste, price and nutritional information on the pack were considered as most important attributes of solar dried fish (Fig. 7). Variety of fish was least important for the consumers (40%). Price, taste, health factor and appearance are the most important attributes as perceived by consumers in prawn pickle. Price, taste and health factor are the most important attributes in prawn chutney powder as per the consumers' perception. Taste was the most important attribute perceived by the consumer in fish cutlet and the variety of fish used scored the least. Price, appearance and health factor are the most important attributes of fish momos and price and taste formed the most important attributes in fish papad. As per the survey report, price, taste, health factor were perceived as the most important attributes of overall value added fish products. On the contrary, in a study conducted on consumer preference for value added fish products in Oman, the price of the product was the least important attribute perceived by the consumers of Oman (Boughanmi et al., 2017). Geethalakshmi et al. (2013) in their study reported that certified quality as an important criteria to improve market opportunities for value added fish products in Palakkad, Kerala as the young and earning age group were ready to pay 10-15% more for a quality assured fish product. Similarly Mugaonkar et al. (2011) reported nutritional value to be the most important factor in purchasing of fish and fish products among consumers of Mumbai city.

In India, about 17% of the total fish catch is used for production of dry fishes. (Bharda et al, 2017). It has demand both inside and outside the country and is considered as a good source of protein. In the production of dry fish, the important points to be remembered are the quality and amount of salt to be added per kilogram of fish, the hygienic handling and drying protocols, which will result in a consumer safe and high quality product. Almost,

80% of the consumers were not willing to pay a higher price for hygienically dried fish (Table 2). This points to the lack of awareness of consumers about the advantages of hygienic drying of fish. The consumers, though willing to purchase value added fish products, were not ready to accept the prevailing market rates of these products in states outside Odisha. The main reason that could be attributed is the non existence of these kinds of products in the markets of Odisha which makes it impossible for the consumers to assess the price. A report by Sabat et al. (2008) says that around 41% respondents in a consumer preference survey in north Indian states suggested that they are willing to pay upto 20% extra for value added products from fish. As per the study conducted by MS Swaminathan Research Foundation, production of fish value added items have been helping in livelihood enhancement of fisherwomen of Nagapattinam District in Tamil Nadu, India (Selvaganapathy & Krishnan, 2015). Among the fisherwomen of Kerala, value added fish producers were found better empowered (46.78%), followed by retailers (45.09%), vendors (43.92%) and dry fish makers (43.42%) (Salim & Geetha, 2013).

It can be concluded that demand for value added fish products exists among urban consumers of Odisha. It shows scope for enterprise development in the area especially by involving poor fisherwomen if they are equipped with the necessary skills, financial and market linkages. Awareness on the health benefits of eating fresh fish by children and adults through mass media programmes, availability of the local products at an affordable price, special focus on the maintenance of quality of the value added products, capacity building of interested beneficiaries for hygienic production of these products and hand holding for market and credit linkage may be considered to increase consumption of fish and fishery products of Orissa.

Acknowledgements

The authors place on record their gratitude to Department of Scientific and Industrial Research (DSIR), New Delhi for the financial support granted for conducting this study and Director, ICAR-CIWA for providing all necessary facilities.

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