# 8 Fish consumption: Experiences from consumer behaviour studies

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Most Indians have a positive attitude towards seafood and consider it as an important part of healthy and balanced diet. The annual per capita consumption of fish for the entire Indian population is estimated at 5-6 kg whereas for the fish-eating population it is found to be 8-9 kg. Average annual per capita fish consumption is highest in Kerala state at 30 kg which is very high compared to that of other states of India (Shyam, *et al.* 2015). Issues of fish adulteration have been widely discussed by media and have created an increased health, safety and quality consciousness among consumers. These issues have created new drivers and barriers to fish consumption with fish consumers changing their fish purchase behaviour and market choice. The article discusses the emerging drivers and barriers to fish consumption using 'Theory of Planned Behaviour' (TPB) as a theoretical base. Later, the factors identified as influencing fish consumption were consolidated into a framework of fish consumption.

**Theory of Planned Behaviour**

The theory of planned behaviour (TPB) was introduced as an extension of Theory of Reasoned Action (TRA). The underlying concept of TPB says that person's intention to perform certain behaviour, which is defined as people's motivation, including the willingness to perform; is a latent variable and this variable is dependent on attitude and subjective norms (Ajzen, 1991; Petrovici, *et al*, 2004; Saba & Vassallo, 2002, Bonne *et al.*, 2007).

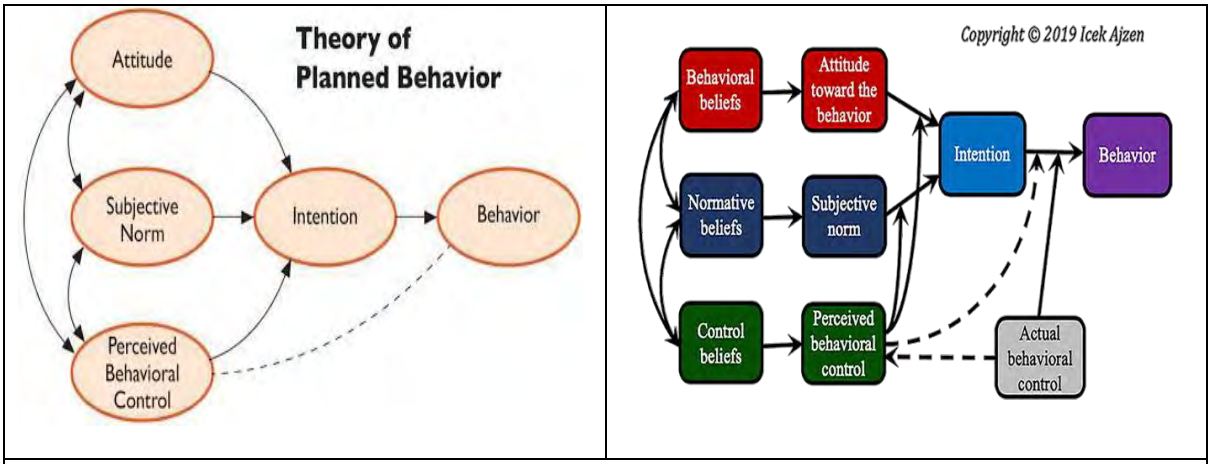



**Fig 1: Theory of Planned Behaviour**

The perceived behavioural control (PBC) as the third construct is the extension of the TRA model to develop the TPB model. The unique nature of TPB model is that it considers the noneconomic factors, which are overlooked in traditional economic models (Petrovici, *et al*, 2004).

**Drivers and barriers to fish consumption**

Empirical evidence shows differences in the use of information sources by consumers depending on the food product, the communicated information about the food product and the potential health or safety risk of the food product (Gutteling and Wiegman, 1996; Jungermann *et al.*, 1996). With respect to fish, consumers mostly use personal sources of information, such as fishmongers and family and friends (Pieniak *et al.*, 2007). Pieniak *et al.* (2010 a,b) identified knowledge as a relevant determinant of fish consumption. Consumers with a higher level of knowledge about fish were found to eat fish more frequently. Knowledge studies focused mainly on production aspects, whereas consumer information and education campaigns have mainly been focused on the health and nutritional benefits of fish, as well as on convenience issues acting as barriers to consumption (Olsen, 2003; Verbeke and Vackier, 2005). Olsen (2004) identified four salient beliefs reasonable in forming seafood / food consumption attitude as: taste, distaste (negative affect), nutrition (Steptoe *et al.*, 1995) and quality / freshness. After the taste issues the nutritional aspects are the second prominent factor that affect consumer's food attitude, it is directly related to health and healthy eating behaviour (Olsen, 2001). The quality of the fish/seafood freshness is another prime determinate. In this regards, frozen fish are treated as "non-fresh" "bad quality" "tasteless" "watery" "boring" (Olsen, 1998). Olsen in 2004, found price, value for money and household income are not barrier in seafood consumption, while Verbeke & Vackier, in 2005, reported that price negatively affect the fish consumption attitude.

**Fish consumption: experiences from consumer behaviour studies**

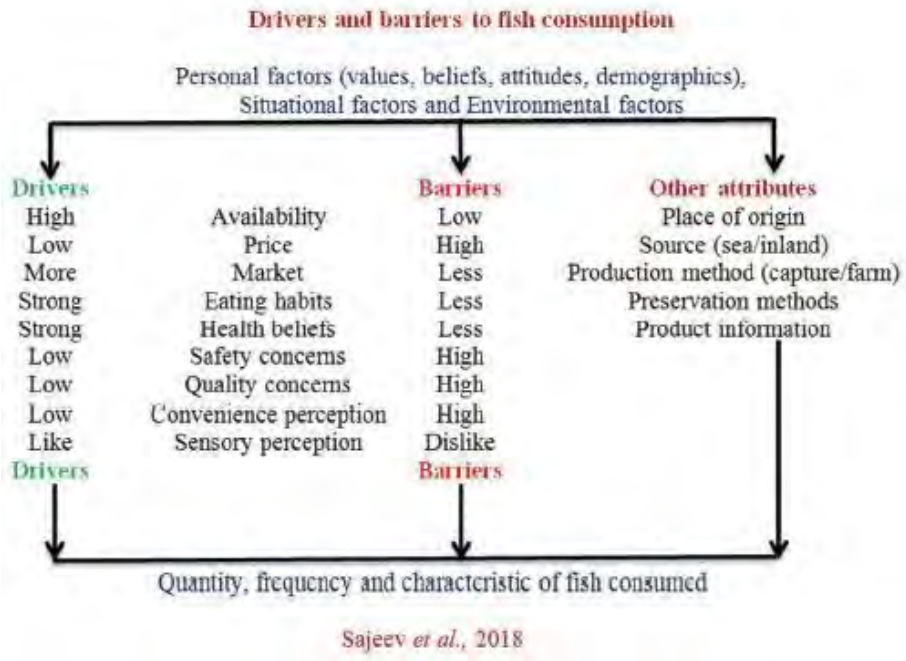
A study on knowledge and perception of fish consumers with respect to health benefits of fish consumption, safety and quality of fish and major drivers and barriers to consumption was done among consumers in Kerala State, India. The state was identified for the study due to its predominantly high fish consuming population having annual per capita fish consumption rates higher than global average. The major findings from the districts of Ernakulam, Kozhikode, Palakkad and Kottayam are as summarised below.

**Knowledge of fish consumers**: Majority belonged to high knowledge category with respect to knowledge on health benefits of fish in Ernakulam and Kozhikkode while majority in Palakkad and Kottayam belonged to medium knowledge group. With respect to knowledge on fish quality, majority in Ernakulam, Kozhikkode and Kottayam belonged to medium category while majority in Palakkad had high knowledge of fish quality aspects. Study on knowledge on fish safety revealed that while knowledge was high among consumers in Ernakulam, Kozhikkode and Kottayam districts, it was low among majority in Palakkad district.

**Consumer perception on health benefit of fish, its quality and safety:** 84.5 per cent of the respondents perceived that 'Fish is the most nutritious food' while 86.75 per cent of the respondents perceived that 'Eating fish is recommended for all age groups'. 65.5 per cent of the respondents perceived that 'Fish consumption reduces the risk of cardiovascular diseases'. Similarly, 68 per cent of the respondents perceived that 'Eating fish is recommended for all age groups' while 19.5 percent of the respondents were undecided about this**.** 77.55 per cent of the respondents perceived that 'Fish is healthier than red meat'**.** 64.25 per cent of the respondents perceived that 'Regular fish consumption stimulates brain development' while 25.5 percent of the respondents were undecided about this statement. 70.5 per cent of the respondents perceived that 'Local fish is better than other states fish'. 67.25 per cent of the respondents perceived that 'Cleanliness of market contributes to quality of fish' and 60.5 per cent of the respondents perceived that 'Consumers are unable to properly assess the fish quality in market'. Majority of the respondents disagreed on the statement 'Farmed fish is of lower general quality than wild captured fish'. 71.25 per cent of the respondents perceived that 'Fish quality is influenced by time taken to reach market'. 56 per cent of the respondents perceived that 'There is no quality certification system to convey the freshness of fish'. Surprisingly; only 48 per cent of the respondents agreed that 'Authorities have left consumers to be duped by vendors' w.r.t fish quality'. 71.75 per cent of the respondents perceived that 'Eating some fishes causes allergy in many people'. 55.25 per cent of the respondents perceived that 'Fish contain heavy metals and many harmful contaminants'. 69 per cent people perceived that 'fish in our markets contain adulterants' and 66.25 per cent people perceived that 'there is no certification system to convey the safety of fish'. 69.25 per cent of the respondents agreed that 'Spoilt fish from other states is widely sold in Kerala markets' whereas 67.5 per cent believed that 'Government machinery is not effective in ensuring safe fish to consumers'.

**Drivers and barriers to fish purchase and consumption: '**Transreg' procedure revealed that for Keralites; 'price of fish' was the most important driver or barrier for consumers while 'sensory perception', 'source of fish (marine/inland)', 'availability of favourite fish' and 'safety of fish' were the other most important drivers. When the coastal and non-coastal districts were compared, there was marked difference in the drivers and barriers with 'Source of fish (marine/inland)' being the most important driver in coastal districts while 'Safety of fish' emerged as the most important driver for consumers of non-coastal districts. For consumers in Ernakulam; 'Source of fish (marine/inland)'was the most important driver while in Kozhikkode 'health benefits from eating fish' acted as the biggest driver. In Palakkad 'place of origin' of fish was the most important driver while 'market accessibility' was the most important driver in Kottayam.

The review of the drivers and barriers to fish consumption using 'Theory of Planned Behaviour' as a base provided a framework for quantity, frequency and characteristics of fish consumed (Sajeev *et. al*., 2018). Personal factors like values, beliefs, attitudes and demographics had huge influence on fish consumption. Factors like availability, price, market, eating habits, health beliefs, safety and quality concerns and sensory and convenience perception acted as both driver as well as barrier in varying degrees.




Fish consumers mostly use personal sources of information such as fishmongers and family and friends to arrive at a purchase decision. Consumer knowledge is an important determinant of fish consumption. Consumer information and education campaigns have mainly been focused on the health and nutritional benefits of fish. However, convenience issues (such as fish preparation, quality evaluation and fish species) have been found as an important barrier to fish consumption. Other attributes like place of origin (local/outside), source of the fish (marine/inland), production method of fish (capture/farm), preservation methods (frozen/chilled) and product information (information available/not available). All the above factors in combination decide the quantity, frequency and characteristic of fish consumed.

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