DETERMINING CONSUMERS' PREFERENCES FOR FISH CONSUMPTION: A STUDY IN ANTALYA PROVINCE OF TURKEY

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ABSTRACT

It is clear that consumption of fishery products, which are important sources of food for meeting the nutritional needs of a rapidly growing population, is directly related to the development criteria of countries, such as awareness of proper nutrition and healthy living. However, Turkey as a developing country is still not benefiting sufficiently from aquatic products as human food despite being rich in water resources. In this context, this study was planned to determine socio-economic structures and fish consumption characteristics and habits of families living in city center of Antalya, one of the important cities of Turkey in terms of education, tourism, agriculture and fisheries. The study was performed during the years 2011-2012 and consisted of survey-derived data obtained from a total of 208 families living in 165 neighborhood residents in Konyaalti, Muratpasa and Kepez districts. The respondents were determined by a proportional stratified random sampling method. According to the survey results monthly fish consumption of the families was around 4.8 kg over the study period and 1.4 kg per capita. It was determined that first preference of the families was anchovy, followed by rainbow trout, farmed gilthead sea bream and Eurpean sea bass, mackerel and red sea bream in descending order. It was also determined that amount of fish consumption was directly proportional to family income status and education level. The most important impetus to consume fish was an opinion of fish being a healthy and delicious food with a high nutritional value.

Key words: Consumer preferences, fish consumption, Antalya

TÜRKİYE'DE TÜKETİCİLERİN BALIK TÜKETİMİ TERCİHLERİNİN BELİRLENMESİ: ANTALYA İLİ ÖRNEĞİ

ÖZET

Hızla artan nüfusun beslenme ihtiyacını karşılamada önemli besin kaynaklarından olan su ürünlerinin tüketilmesinin doğru beslenme ve sağlıklı yaşam bilinci gibi ülkelerin gelişmişlik kriterleri ile doğrudan ilişkili olduğu açıktır. Ancak gelişmekte olan ülkeler grubunda yer alan Türkiye, sucul kaynaklar açısından zengin olmasına rağmen su ürünlerinden insan gıdası olarak halen yeterince faydalanamamaktadır. Bu kapsamda, bu çalışma ile eğitim, turizm, tarım ve balıkçılık açısından önemli iller arasında yer alan Antalya ili kent merkezinde yaşayan ailelerin sosyo-ekonomik yapıları ve balık tüketim karakteristiklerinin ve alışkanlıklarının ortaya konması amacıyla yapılmıştır. 2011-2012 yılları içerisinde gerçekleştirilen çalışmanın materyalini, Antalya merkezinde yer alan Konyaaltı, Muratpaşa ve Kepez ilçelerinde 165 mahallede ikamet eden ve oransal tabakalı tesadüfî örnekleme yöntemi ile belirlenen toplam 208 aile ile yüz yüze yapılan anketten elde edilen veriler oluşturmaktadır. Araştırma sonuçlarına göre; anket yapılan dönemde ailelerin aylık balık tüketim miktarının 4,8 kg civarında, kişi başı aylık balık tüketim miktarının ise 1,4 kg civarında olduğu ortaya çıkmıştır. Ailelerin toplam tükettikleri balıklar içerisinde hamsi başta olmak üzere, sırasıyla alabalık, çupra kültür, levrek kültür, istavrit ve mercan balığının yer aldığı belirlenmiştir. Balık tüketimi ile ailelerin gelir durumu ve eğitim durumunun doğru orantılı olduğu, balık tüketimini etkileyen en önemli faktörlerin ise daha çok balığın sağlıklı bir besin olup, besin değerinin yüksek ve lezzetli olmasından kaynaklandığı belirlenmiştir.

Anahtar kelimeler: Tüketici tercihleri, balık tüketimi, Antalya

INTRODUCTION

With the rapid increase of the world population, nutritional needs of human beings are increasing. Therefore, people are working to benefit at the highest level from terrestrial sources in order to meet to the nutritional requirements. However, they are seeking alternative sources of nutrients to sustain human life because terrestrial resources are not enough to provide an adequate amount of the needs of the rapidly increasing population. Among the alternatives, the aquatic resources appear to be the first option of food sources. Approximately 75% of the world is covered with water and aquatic resources have a significant potential to meet the world's increasing food demand. Moreover, with their high nutritional value and digestibility, fish products play an important role in meeting part of a healthy food requirement. Indeed, per capita fish consumption in the world and EU are about 18.8 and 22.1 kg respectively, while it varies between 6 and 8 kg in Turkey (FAO 2012). According to this situation, the consumption rate of Turkey needs a 3-4 time increase to reach the world and EU levels. In Turkey, one of the most important factors affecting per capita fish consumption is the amount of annual anchovy fishing due to the highest production volume among the fish species. This study was conducted in Antalya (9th most populated city in Turkey and an important place for education, tourism and agriculture) and aimed to examine the basic family features and factors that effect choices and consumption rate of fish.

MATERIALS AND METHODS

For the research, neighborhoods where the families reside in Antalya and numbers of households living in those neighborhoods were identified based on official records of province, municipality, district chief and TÜİK records. Later, number of exemplary households was determined using a simple random sampling and surveys were conducted with randomly selected families between September 2011 and April 2012, a period that there was no fishing ban. In Turkey, in nearly all researchers use a simple random sampling based on the example ratio estimate (p) in consumer preferences. This method is also called as one-stage simple random sampling in many studies. Randomization model used in this method is expressed with the following formula (Yamane 1967).

$$n = \frac{N z^2 \, pq}{N d^2 + z^2 \, pq}$$

Where; n shows number of samples, z standard normal value calculated depending on the selected confidence level (this study was conducted with 90% confidence), p the probability of occurrence of the event of interest (fish consumption probability of any one of the families chosen), q the possibility of non occurrence of the event of interest (the possibility not to consume fish of any family selected) and accepted sensitivity (this study was conducted with 5%). This study involved families living in 165 neighborhoods in three main central districts of Antalya, Kepez, Konyaaltı and Muratpaşa. The samples consisting of 208 households were divided to 5 categories (a: most advanced, b: developed, c: intermediate level, d: underdeveloped, e: undeveloped) based on the development scales of TÜİK. Thus, it was intended to represent the entire population. Data collected by questionnaires were analyzed using SPSS 17 software package.

RESULTS

The study was conducted with 208 families stratified by socio-economic factors in and around Antalya. Findings of the study revealed average household size was 3.4 which is slightly lower that of Turkey average 3.7 (TÜİK 2013a). In this study, 54.5% of the respondents were male and the remaining 45.5% were women (Figure 1).
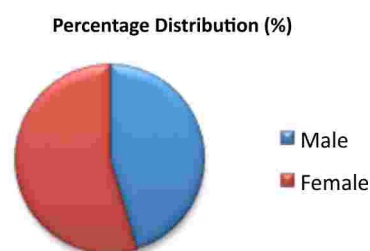

Figure 1. Gender status of the surveyed respondents.

Of the families, 82.6% defined the men as the family head while 17.4% as women. An analysis of the educational status of the male heads showed that 3.5% were illiterate, 23.8% primary school, 39.6% high school and 33.1% university graduates. As for the

female heads of households 11.1% were illiterate and 36.1% were high school and college graduates (Figure 2). Average monthly incomes of the families were found to be ₺1 794.30 The average share of monthly food expenditure was determined to be 27.1%, which is consistent with the finding (27.1%) of Adıgüzel et al. (2009). As of 2012, the share of food expenditure in Turkey was 19.6% (TÜİK 2013b).
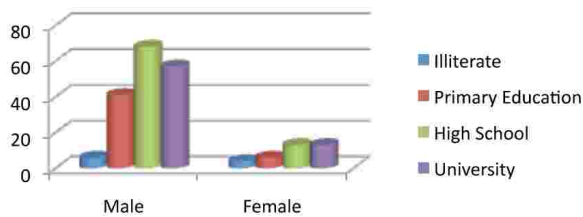

Figure 2. Education status of family heads by gender

On the other hand according to the study, the share of food expenditure in total expenditure varied according to income groups and it climbed to 33.6% in the lowest income group. This ratio was 31.2%, 29.6% and 21.5% in low, medium and high income groups, respectively (Figure 3).
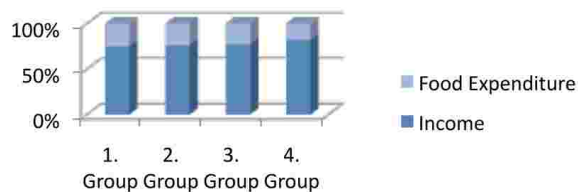

Figure 3. Monthly incomes and food expenditures

As far as only those who decided to buy fish in the respondent families are considered, it was seen that decision-makers were mostly both parents with a percentage of 49.5 followed by mother with 29.3% and fathers with 10.6%. As for the buying process, it was found that both parents together were in the first rank with 51.4%, followed by only fathers in the

second rank with 19.7%. This pattern is slightly different from that of decision making where only women was in second order (Figure 4).
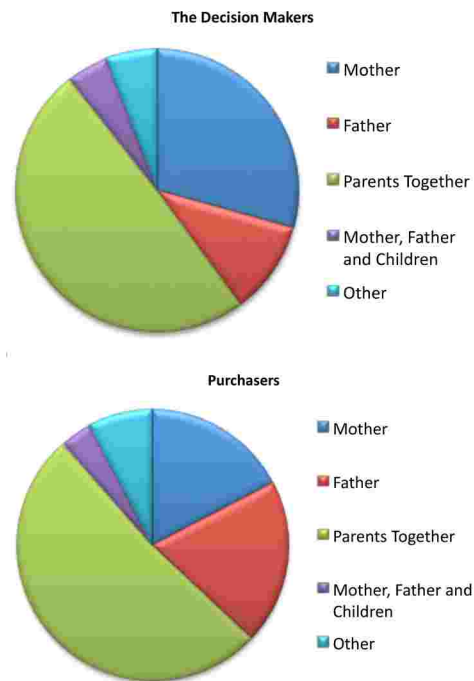

Figure 4. Percentages of decision-making and food buying process of the families

During the surveyed period (October-April), fish consumptions of families by income groups were examined and the monthly fish consumption amount was found as 4.8 kg and fish consumption per person as 1.4 kg. The amount of monthly fish consumption in the lowest-income group was 2.3 kg. It was 4.3 kg in the low-income group, 5.9 kg in the middle income group and 8.5 kg in the high-income group (Figure 5). In this context, it can be said that in urban areas of Antalya, the higher income the families have, the more fish they consume. It was concluded that the coastal location of Antalya and its ongoing development contributed to the amount of fish consumption.
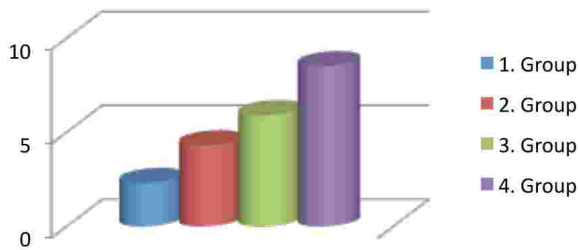
Figure 5. Average fish consumption according to income levels of the surveyed families

In Antalya, most widely consumed fish was marine origin. Looking at species level revealed that 34.2% of the families consumed anchovy, 9.8% rainbow trout, 8.8% farmed sea bream, 7.1% farmed European sea bass, 6% mackerel, 5.2% striped bream (Figure 6).
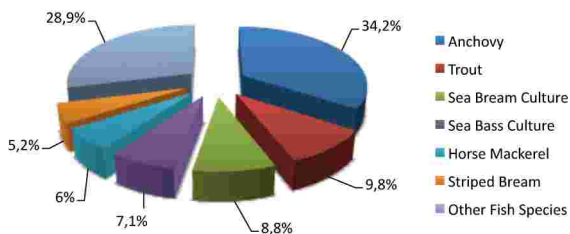

Figure 6. Percentages of the amount of fish consumption according to fish species

Accordingly, anchovy was most preferred fish in our study area due its cheaper price compared to other fish species. This is different from the situation in provinces located in far from the coastal areas where mostly rainbow trout is preferred. In the families examined, 25.7% of fish origin was farm raised. 32.3% of the families prefer to consume fish at the weekends, 17.2% consumed on weekdays. The percentage of those who said it does not matter whether they consume fish during the week or weekend was 50.5%. When we looked at the relation of monthly fish consumption and education level of the householder, the proportion of the families in the highest education group was 45.9%, followed by 36.6% in secondary, 16.0% in the primary and 1.4% in the illiterate groups (Figure 7).
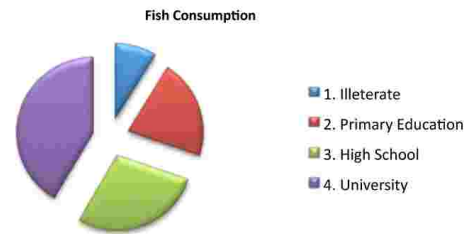

Figure 7. Fish consumption rate according to education level of the families

Opinions of the families about fish consumption were also examined. Within those who attended the research and held positive opinions about fish consumption, 33.2% underlined that price compliance was important, 51.8% stressed that nutritional value was very important, 40.2% said that taste and flavor were very important and 56.4% underlined the health benefits of the fish. Accordingly, when impetuses of the families to consume fish were ranked, the first was health benefits of fish, followed by high nutritional value, taste and flavor in descending order. Lastly, it appeared that fish prices ranked as the fourth important reason (Figure 8).
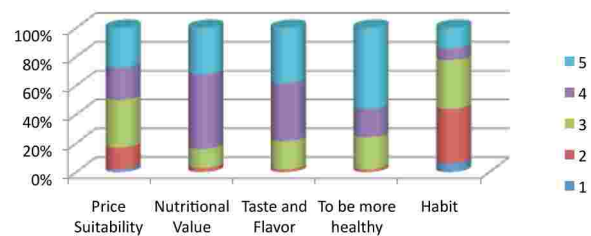

Figure 8. Importance levels of positive factors affecting fish consumption of the families **1.** Not important at all, **2.** Not important, **3.** Important, **4.**Very important, **5.** Extremely important

Within the respondents who held negative opinions about fish consumption, 35.7% underlined expensiveness of fish, 41.7% stressed that changes in taste and flavor was important, 31.3% pointed to the difficulty of cooking fish, 32.1% underlined that inappropriateness of the fish for a variety of meals (a belief like while red and white meats can be used in many kind of meals, fish meat is only eaten alone), 32.1% noted the absence of fish- eating habit and 51% stressed a stinking smell during fish cooking (Figure 9).
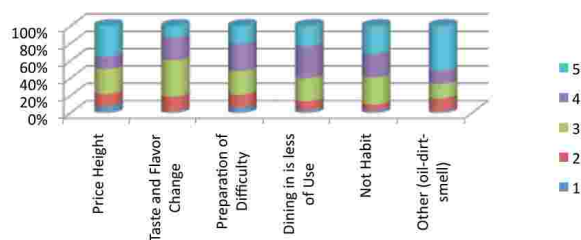
Figure 9. Importance levels of negative factors effecting of fish consumption of the family
1. Not important at all, **2.** Not important, **3.** Important,
4.Very important, **5.** Extremely important

The last reason for not consuming fish ranked the first. Other reasons were ordered as taste of fish, a belief of inappropriateness of the fish for a variety of meals, and expensiveness. When the relationship between educational status of families who consume fish and the place they purchase fish was examined, it was found that the families with low education level opted to buy fish mostly from neighborhood markets. Conversely, families with higher education levels tended to buy from supermarkets (Figure 10). When opinions of the families to increase their fish consumption in the future were asked, 38.5% emphasize an income increase, 24.5% dietary habits, presentation as ready meal and diversification of processed products according to consumer tastes, 21.2% occurrence of health problems and 15.9% an increase in prices of other meats. In terms of predictions of the families for fish consumption in the future, 15.9% stated a decrease, 38.5% an increase and 45.7% no change. This results show that fish consumption rate may gradually increase in the future in Antalya.
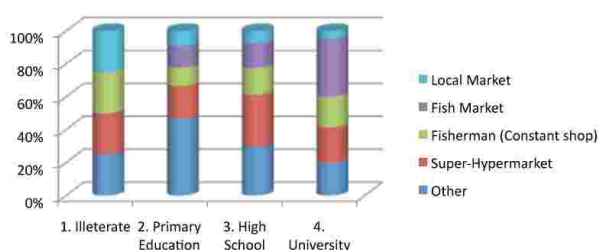

Figure 10. Distribution of places for fish purchasing according to educational levels of fish consuming families
*: Fish Farms, Port etc.

DISCUSSION AND CONCLUSIONS

It is now well known that fish consumption rate is directly related to awareness level of a country in terms of proper nutrition and healthy lifestyle. However as a developing country Turkey has not fully achieved satisfactory fish consumption level. The present study showed monthly fish consumption of the families was around 4.8 kg in Antalya. This average level dropped 2.3 kg in the lowest income group, slightly increased to 4.3 kg in the low-income group, 5.9 kg in the middle income group and reached 8.5 kg in the high- income group. The results confirmed that the higher income and education level the families have, the more fish they consume (Özkan et al. 2006). The most important factors affecting the consumption of fish appeared to be health benefits and flavors of fish and their high nutritional value. On the other hand, factors that negatively affect fish consumption were stated in a descending order as a bad smell during cooking, lack of taste, inclusion of fish into a limited number meals compared with red and chicken and expensiveness. It was observed that the high-income and educated families preferred supermarkets and fisherman shops for buying fish while those low-income preferred neighborhood markets. Accordingly it can be concluded that education levels of the family heads in Antalya are high. The percentages of the family head graduated from college were 33.7% in Isparta and 33.3% in Burdur and 37.1% respectively (Hatırlı et al. 2004, Orhan and Yüksel 2010). Monthly consumption rates by regions vary in Turkey. For example it was reported as 1.9 kg and 2.4 kg in Trabzon and Giresun (Adıgüzel et al. 2009, Aydın and Karadurmuş 2013) and 0.3 kg in Tunceli located in the Eastern Anatolia region (Yüksel et al. 2011).According to a work by Hatırlı et al. (2004), fish consumption per capita was 1.03 kg in Isparta located in the Mediterranean region and 1.2 kg in Antalya. Previous studies in Burdur, Tokat, Istanbul, Trabzon and Giresun reported anchovy was the most consumed fish species (Orhan and Yüksel 2010, Erdal and Esengün 2008, Aydın and Karadurmuş 2013) while rainbow trout was the first in the province of Elazığ in the Eastern Anatolia (Şen et al. 2008). Another finding of the present study was that there was a direct relationship between levels of education and fish consumption. This is accepted as an indicator of the consciousness about the health-benefits of fish consumption (Orhan and Yüksel 2010). Healthiness

of the fish, at the top of the list of consumer preference was observed (39.85%) in Burdur, the neighboring province of Antalya. The list continues with taste (31.8%), and family habits (16.0%), and lower price of fish compared to the other foods of animal origin (15.6%), respectively (Orhan and Yüksel 2010). In a survey conducted in Trabzon, the participants argued that fish farming and capturing need to be increased so that fish consumption can increase and fish prices remain stable (Aydın and Karadurmuş 2013).

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