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CONSUMER ATTITUDES ON BUYING FISH IN BANJA LUKA

Aleksandar Ostojić[1], Nebojša Savić[2], Željko Vaško[3]

Abstract

The objective of research presented in the paper is to determine the basic parameters affecting the purchase, supply and consumption of fish in the market of the city of Banja Luka (Bosnia and Herzegovina). The survey was conducted on a random sample of 100 respondents. The data were analyzed by univariante (frequency and distribution) and two-variant statistical methods and cross-tabulation. The conclusions are that for the purchase of fish, freshness is a primary factor, which is to be expected given the type of product as well as the origin, and price and type of fish. Out of all respondents, 41% said they were not informed enough about the fish as a food, while the remaining 59% said they got information through different media channels. It was found that consumers are generally informed about the importance of fish as a foodstuff through secondary promotion channels, i.e. "word of mouth". Consumers in Banja Luka prefer fresh fish, and the most consumed is freshwater fish. As a place of buying fish, both hypermarket and fish shops are equally represented. Factors of purchase may have a major role in creating consumer attitude towards fish and therefore, producers and sellers of fish are recommended too take into account the results of this and similar studies, in order to segment their markets and develop better marketing tools/strategies and thus make better approach of fish consumers to defined market segments.

Key words: *marketing, fish supply, consumers, Banja Luka.*

JEL: *C83, M31, Q13.*

Introduction

People use fish in their diet from ancient times. First, they just caught fish and later on they

1 Aleksandar Ostojić Ph.D., Associate Professor, University of Banja Luka, Faculty of Agriculture, Bulevar vojvode Petra Bojovića no. 1A, 78000 Banja Luka, Bosnia and Herzegovina, Phone: +387 51 330 926, E-mail: aleksandar.ostojic@agrofabl.org

2 Nebojša Savić Ph.D., Associate Professor, University of Banja Luka, Faculty of Agriculture, Bulevar vojvode Petra Bojovića no. 1A, 78000 Banja Luka, Bosnia and Herzegovina, Phone: +387 51 330 977, E-mail: nebojsa.savic@agrofabl.org

3 Željko Vaško Ph.D., Associate Professor, University of Banja Luka, Faculty of Agriculture, Bulevar vojvode Petra Bojovića no. 1A, 78000 Banja Luka, Bosnia and Herzegovina, Phone: +387 51 330 929, E-mail: zeljko.vasko@agrofabl.org

started to grow it from ancient times to the present fishery are being developed in parallel with the development of mankind. Some eat fish, and some is grown. Thanks to changes in human nutrition importance of aquaculture is increasing. Aquaculture as artificial breeding of fish and other aquatic organisms supplements the amount of fish bred in a natural way and to increase consumption of fish meat. Aquaculture has witnessed a steady growth in the world and the value of farmed fish to feed the world's population in 2012 was estimated at 137.7 billion dollars. The average annual growth rate in aquaculture for the period 2002 to 2012 was 6.1% (FAO, 2014). According to FAO (2014) offer the fish has average annual growth rate of 3.2% and is rising more rapidly than the world population. Fish consumption per capita in the world has increased from an average of 9.9 kg in the 1960s to 19.2 kg in 2012 (FAO, 2014). In Bosnia and Herzegovina fish consumption was in 2011 was 5.1 kg per capita (FAO, 2015). Fish and fishery products are an important source of animal protein, and thanks to that fish meat is an important component in the diet of people in the world.

Eternal question is when, where, why and how people eat fish, and answers are given to a number of researches and studies. Many researchers have studied the consumption of fish, specifically or as part of general research on food consumption. Feucht and Zander (2014) explored the attitudes of German consumers of fish in relation to sustainable production of fish and fish consumption associated with ethical principles (taking care of the well-being of fish (Eng. Fish welfare). Guzel et al. (2012) compared the fisheries sector in Japan and Turkey and showed that Japanese eat 70.9 kg of fish per capita, nine times more often than people in Turkey, while Aydin et al. (2011) state that fish consumption in Turkey 6 kg per capita, is higher among people with higher incomes and higher levels of education. They came to an interesting conclusion that in Turkey, eating fish is misinterpreted as a luxury food. Can et al. (2015) found that the consumption of fish meat in the city of Antakya in Turkey is (only) 2.98 kg/year or 13% of the total annual consumption of meat. According to Tomić et al. (2015) Croatia, although the sea country has an average annual consumption of fish of 8-10 kg per capita, compared to a European average of 20 kg per capita. In their research, the taste and image of healthy food are the two most common determinants of fish consumption. Tešić et al. (2012) found that increasing consumption of fish in Serbia mostly depends on production and consumer purchasing power. Projections of fish consumption in the United States (Biing-Hwan et al., 2003) predict its fastest increase of all types of meat, and in reality they are confirmed. The main driver of the increase in consumption of fish is high income and diet-health knowledge. In Spain, expenditure on fish make up 13.3% of total spending on food and 35% of total expenditure for meat (Radwan et al., 2008). The same study confirms that consumption of fish increases, despite an increase in its prices. In Belgium, according to Verbeke et al. (2005), consumers have a strong belief that the fish are healthy and nutritious, and women eat fish more often than men. Rizoff et al. (2015) found that household size has both a negative and a positive revenue impact on the consumption patterns of fish and meat in Slovakia. In Egypt, the consumption of fish also shows a significant increase, almost double over 15 years, and has increased by half a kg per capita per year (Alboghdady and Alsahry, 2010), where the fish shows a substitutive relationship with all other meat types. According to Pieaniak et al. (2013) in eight EU countries (N=3,213) consumers eat fish usually once

a week or more than once a month (47%) and their consumer knowledge of fish generally varies significantly depending on the observed countries. Yaqin et al. (2014) found that in China, people usually eat fish once a week, buying it in fish markets, prefer proximity in relation to the place of residence and freshness. Dey et al. (2008) analyzed the cross demand in Asia by country taking into account the numerous socio-economic factors.

The above and other researches confirm that the demand for fish significantly increased and that many factors affect the trend. The authors also surveyed factors, frequency and structure of consumption of fish in Bosnia and Herzegovina (Ostojić et al., 2015a, 2015b) and this work contains the results of the continuation of those their research.

Waters in Bosnia and Herzegovina are among the cleanest in Europe. Fishing in Bosnia and Herzegovina has still not got its place, or its character that objectively belongs to it considering the potential for fish production. Bosnia and Herzegovina has great potential of water for the development of fisheries, in particular freshwaters, the possibility of the development of production and supplying the market with quality domestic products.

Material and Methods

For the purpose of this study, they survey was conducted, by which the data on the habits and attitudes of consumers regarding the offer, purchase and consumption of fish were collected. The survey was conducted in the city of Banja Luka (northwest part of Bosnia and Herzegovina), on a random sample of 100 respondents. For the study, a structured questionnaire of 20 questions was used, of which 19 closed questions and one open-ended. Questions from the questionnaire are grouped into several groups: socio-demographic characteristics of respondents, frequency of purchase, and fish species, place of purchase and the quantity and purchase preferences. Respondents of the survey completed it with the presence of independent interviewers ("face to face") with the aim of obtaining objective results.

The objective and subject of the research is to determine the basic parameters that influence the purchase, supply and consumption of fish on the Banja Luka market, or study of consumer attitudes about the offer, conditions of purchase and frequency of fish consumption.

The data were analyzed by univariante (frequency and distribution) and two-variant statistical methods and cross-tabulation. Data analysis was performed by using the statistical program of SPSS 17.

Results and Discussions

Socio-demographic characteristics

The survey was conducted in the city of Banja Luka in north-western Bosnia and Herzegovina and the second largest city in Bosnia and Herzegovina (200,000 inhabitants). The survey included 100 respondents, of which 56% of female and 44% of male respondents. The largest number of respondents is within the age group of 36-45 years. More than 50% of respondents have a secondary school education and live in a household with four members. Most of the

respondents live in suburban areas (64%) and the lowest in the rural areas (3%) (*Table 1.*).

Table 1. Socio-demographic characteristics of the respondents (N=100)

Socio-demographic characteristics		Structure (%)
Sex	Women	56
	Men	44
	Total	**100**
Age group	< 25 years	32
	25 – 35 years	14
	36 – 45 years	22
	> 45 years	32
	Total	**100**
Education	Elementary school	14
	Secondary school	60
	University degree	26
	Total	**100**
Civil status	Married	52
	Single	48
	Total	**100**
Member of household	One member	5
	Two member	12
	Tree member	20
	Four member	55
	More than 4 members	8
	Total	**100**
Place of residence	Town	33
	Suburban area	64
	Village	3
	Total	**100**

Source: Authors, based on survey data.

Of the total number of men (44), 47.7% or 21 of them are married, and 52.3% or 23 are not married. Unlike the men, of the surveyed women (56), 55.4% or 31 of them are married, and 44.6% or 25 are not married. Looking at the ratio of married and males and females, the participation of women is dominant (59.6%) who are married, and the reason is the growing number of surveyed females (31) compared to the total number of those who declared that they marriage. When it comes to unmarried people person's structure is 47.9% of single men and single women 52.1%. Tomić et al. (2015) in their study had the highest share of respondents who lived in the households of 3-5 members (69%), whereas in this study, the largest number of respondents lives in the households with four members (55%).

By linking the age of the respondents and a sex (*Table 2.*), the largest representation of female respondents were over the age of 45 years (32.1%). Representation of male respondents was similar in the group of those of 25 years and more than 45 years.

Table 2. Age of respondents by sex

			Sex		Total
			Male	Female	
Age	<25	Total (n)	16	16	32
		% within the age group	50,0%	50,0%	100,0%
		% within the sex group	36,4%	28,6%	32,0%
	26-35	Total (n)	6	8	14
		% within the age group	42,9%	57,1%	100,0%
		% within the sex group	13,6%	14,3%	14,0%
	36-45	Total (n)	8	14	22
		% within the age group	36,4%	63,6%	100,0%
		% within the sex group	18,2%	25,0%	22,0%
	>45	Total (n)	14	18	32
		% within the age group	43,8%	56,3%	100,0%
		% within the sex group	31,8%	32,1%	32,0%
Total		Total (n)	44	56	100
% within the age group			44,0%	56,0%	100,0%
% within the sex group			100,0%	100,0%	100,0%

Source: Authors, based on survey data.

The frequency of purchase and type of fish

By analyzing the behaviour of consumers in the purchase of fish in the Banja Luka market and preferences for the types of fish that usually are consumed, it may be noted that most respondents consume fish once a week. In this case it can be said that respondents express the two extremes i.e. They are either "lovers" and consume fish once a week or they are not too thrilled with fish and eat it very rarely, every ten to fifteen days during the month. If the last two groups are merged, is noticeable that 45% of respondents eat fish very rarely in the nutrition (*Table 3.*). It is particularly interesting because it is not about the Mediterranean area, and in this area the habit of consuming fish in fresh condition is not expressed, as shown by studies conducted in Zadar (Franičević, 2012), where 39% of respondents consumed fish once a week, 25% polled consumed fish 2-3 times a month, 22% of them consumed fish 2-3 times a week, 12% of respondents said they rarely consume fish, and only 2% of respondents consumed fish every day. Pieaniak et al. (2013) reported that the majority of respondents in eight European countries consume fish once a week or more than once a month (47%).

Table 3. Frequency of purchase and preparation of products for market

		Fish condition			Total
		Fresh cleaned	Fresh non cleaned	Frozen	
Frequency of fish consumption	1 a week	28	6	9	**43**
	2 - 3 per week	8	3	1	**12**
	2 - 3 per month	17	3	4	**24**
	1 a month	11	0	10	**21**
Total		**64**	**12**	**24**	**100**

Source: Calculation by authors, based on survey data.

If we consider the level of preparation of fish for the market, research shows that the largest number of respondents buy fresh cleaned fish, and this is particularly dominant with those consumers, who consume fish once a week. It can also be noted that respondents, who rarely consume fish (once a month), require fresh cleaned or frozen fish i.e. the product of a higher level of preparation for consumption. It is evident that there is almost no difference between fresh cleaned and frozen fish i.e. consumers in this group do not prefer fish that is not cleaned, i.e. it could be said that both forms of fish can be saved and deferred consumption at a propitious moment. Tešić et al. (2013) state that in order to increase fish consumption, special attention need to be paid to the range of offers, especially packaged fish.

One of the questions was about consumers' "ranking list" of the most popular fish consumed. When it comes to the type of fish that is usually bought, we see that there are dominated by three types of fish (trout, hake, and carp). The first priority of the respondents is trout, hake and then the carp. For the second choice, the respondents stated: trout, carp and hake. The third priority for them is: carp, hake and trout (*Table 4.*).

Table 4. Selection of fish by species

		Selection 1	Selection 2	Selection 3
Fish species	Sea bass fish	2	3	3
	Bream fish	2	4	5
	Hake	36	23	19
	Trout	51	30	11
	Mackerel	0	7	9
	Perch	2	1	2
	Catfish	1	4	5
	Carp	6	28	46
Total		**100**	**100**	**100**

Source: Calculation by authors, based on survey data.

Hake is generally chosen because of the price, i.e. it is the cheapest fish, less for taste and more because of the habits and quick preparation and possibility of storing and using the product in a suitable moment to prepare lunch. The last of the top three priorities on the list was the carp because of both the cost and taste. Couple of respondents said that catfish and perch are very tasty fish, but they are not popular and there is not enough supply of the Banja

Luka market. The research (Franičević, 2012), which was conducted in Croatia, shows that respondents usually buy: sardine (31.1%), hake (27.6%), carp (14.4%) and trout (4.8%).

Since the respondents mentioned the first three types of fish in three offered variants on the total number of surveys, we received 300 responses. The presented data show that the most commonly consumed fish in the area of Banja Luka is trout with a share of 30.7%, i.e. that nearly one third of respondents cited this type of fish as one of the priorities in consumption. The second one is carp (26.7%) and the third one is hake (26.0%) (*Table 5.*). Ostojić et al. (2015b) indicate that consumers in the northern part of the Republic of Srpska, in most cases prefer fresh freshwater fish. Yaqin et al. (2014) in his research report that 60.4% of respondents preferred the consumption of freshwater fish, because of freshness and taste.

Table 5. The most significant choices of fish consumers

Fish species	Frequency (N)	Share (%)	Cumulative (%)
Sea bass fish	8	2,7	2,7
Bream fish	11	3,7	6,3
Hake	78	26,0	32,3
Trout	92	30,7	63,0
Mackerel	16	5,3	68,3
Perch	5	1,7	70,0
Catfish	10	3,3	73,3
Carp	80	26,7	100,0
Total	**300**	**100,0**	

Source: Calculation by authors, based on survey data.

Analysis of variance (F=22.096, p=0.000) in terms of the type of fish that consumers prefer (I, II and III selection) demonstrated a statistically significant difference (α=0.01). A statistically highly significant difference in the level of significance α=0.01 (Tukey test) occurred in most combinations, except the combination of II and III of choices in which there was no statistically significant difference.

Regardless of what type of fish, the respondents believe (90%) that the fish is a healthy product, provided that women have stronger attitude on fish as a healthy food (48%) in terms of nutritional importance, which is in accordance with the results of Verbeke et al. (2005). Only 10% of respondents did not have a defined position on fish as a healthy food. Also, Tomić et al. (2015) suggest that there is a personal sense of responsibility for feeding the family and the offer of fresh fish in the household. Feucht and Zander (2014) stated in their research that respondents in Germany believe that farmed fish does not taste right or that nature gives a taste of the product.

Place of purchase and quantity

When it comes to buying fish, the consumers most often choose a hypermarket with 51%, followed by the fish market with 49% of respondents, which is consistent with the research of consumer attitudes in Italy (Gaviglio and Demartini, 2009) which also states that the fish

is usually bought in stores as well as the research of Can et al. (2015), who state that the fish are mainly bought in fish markets and supermarkets (80%).

Table 6. Structure (%) of purchase and the quantity of purchased fish

Indicators	Place of purchase fish	Structure (%)
Place	Hypermarket	51
	Fish shop	49
	Total	**100**
Purchased quantities of fish	< 1 kg	54
	1 - 2 kg	38
	> 2 kg	8
	Total	**100**

Source: Calculation by authors, based on survey data.

The consumers mainly buy smaller quantities of fish i.e. up to 1kg (54% of respondents), followed by 38% of respondents who declared themselves to buy 1-2 kg fish in one purchase, while 8% of respondents purchased more than 2 kg of fish in a single purchase (*Table 6.*). Čaldarović et al. (2007) has come up with similar findings, that the Croatian respondents usually buy up to 1 kg (44.6%) of fish in one purchase. Very few respondents expressed support for the purchase of fish over 2 kg (16.8%), which indicates that they usually buy fish for one meal (Ostojić, 2015b).

Preferences for shopping

Respondents ranked the five factors by scoring them as follows: "1 - the least important" to "5 - the most important" that influence their decision when buying fish. As the dominant factor when buying fish ,respondents emphasized the freshness of the fish, which received an average score of 4.86, which is certainly not unexpected, considering the type of product. The least important characteristics of the decision when purchasing fish for people in the Banja Luka market is type of fish with an average score of 3.88, which suggests that if you have decided to consume the fish, you will not give up if you do not find the fish you want in the market and that it is "easy" to replace it with another type of fish that is available to them as per the price and quality. It is also notable that the largest dispersion as evaluation factor is "type of fish" (SD=1.12). The, respondents cited that origin of the fish is an important factor in the decision when purchasing fish, which is in accordance to the Franičević (2012), who also notes that consumers prefer domestic fish in relation to imports, fresh fish compared to frozen, as it is the case in this study. Also, Ostojić et al. (2015), in previous researches referred to Banja Luka, noted that 59% of respondents opted for fresh fish, 36% in Prijedor, and 60% in Bijeljina.

Table 7. Respondents rating the importance of factors influencing the decision to purchase fish

	Minimum	Maximum	x	SD
"Freshness"	2.00	5.00	4.86	0.43
"Origin"	2.00	5.00	4.18	0.86
"Price"	1.00	5.00	4.08	0.96
"Type of fish"	1.00	5.00	3.88	1.12

Source: Calculation by authors, based on survey data.

It is interesting that the factor of "price" is in third place although when they were asked the question about the prices, they declared that it was high. It is evident that consumers still care more about the origin and freshness of the fish, and then the price of fish, although the general view is that the price of fish in the market Banja Luka is high (*Table 7.*). Statistical analysis showed no link between factor of prices and income of respondents ($\chi^2 = 0.262$), although it was expected, which may be the reason why the price ranks only on the third place in priorities in buying the fish. Analyzing consumer preferences towards the origin of the fish in the northern part of the Republic of Srpska, nearly 57% of respondents prefer fish from local ponds i.e. domestic origin, while 30% do not pay attention to the origin (domestic/import) for the purchase of fish (Ostojić et al., 2015b).

When we talk about awareness about fish as a food item, 59% of respondents gave a positive response, and 41% said they are not informed enough about fish as a food item. 21% of them are informed about the fish through friends or acquaintances, 19% via the Internet, 9% on the television or radio. Then 6% through newspapers or magazines, and only 3% use professional literature for information on the importance of fish in the diet (*Table 8.*).

Table 8. Structure (%) informing consumers about the importance of fish in the diet

Indicator		Structure (%)	
Are you informed about the importance of fish in the diet	NO		41
	YES		59
	TV	9	
	Newspapers	6	
	Internet	19	
	Friends	21	
	Technical literature	3	
	Other	1	
	Total	**59**	**100**

Source: Calculation by authors, based on survey data.

Conclusions

Results of the study show that more women participated in the study (56%). The majority of respondents expressed that they live in the suburb (66%) and to have a high school degree.

Respondents most commonly consumed fish once a week (43%) and prefer fresh cleaned fish (64%). As for the reason why eating fish as a food item, consumers stand the taste and nutritional value. Even 90% of respondents said that the fish belong to the category of healthy food. Place of purchase of fish is the fish market (49%) and hypermarkets (51%), and the purchased a quantity of fish is usually up to 1 kg. Socio-demographic factors did not have a statistically significant impact on the location and frequency of purchases and consumption of fish. Analysis of variance in terms of the type of fish preffered by consumers demonstrated statistically significant difference. The freshness stands out as a crucial factor when purchasing a fish, while the majority of respondents agree that the supply of the market in fishery products as medium. The most commonly consumed fish is trout, then carp and hake. Consumers' habits are related to the purchase of freshwater fish species that are commonly grown in our area, which showed the importance of the origin as the factor in the decision when purchasing fish. The exception is that consumers buy hake, as far as marine fish species are concerned, primarily because of price advantage. Hake is purchased frozen, while the most common trout is bought in the fresh state. Statistical analysis showed no dependency on monthly income and prices of fish. The majority of respondents (59%) declared that information about the fish as a food item they usually get as the recommendation by friends. However, in order to boost fish consumption, it would be needed to implement specific marketing activities that would be directed at familiarizing the consumers about the importance of fish in the daily diet.

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STAVOVI POTROŠAČA O KUPOVINI RIBE U BANJOJ LUCI

Aleksandar Ostojić[4], Nebojša Savić[5], Željko Vaško[6]

Rezime

Cilj istraživanja predstavljenih u radu je utvrđivanje osnovnih parametara koji utiču na kupovinu, ponudu i potrošnju ribe na tržištu Banje Luke (Bosna i Hercegovina). Metodom anketiranja slučajnog uzorka obuhvaćeno je 100 ispitanika. Podaci su obrađeni jednovarijantnim (frekvencije i distribucije) i dvovarijantim statističkim metodama i dvosmjernom tabulacijom. Zaključci istraživanja su da su za kupovinu ribe presudni, u prvom redu svježina, što je i za očekivati s obzirom na vrstu proizvoda kao i porijeklo, i cijena i vrsta ribe. Od ukupnog broja ispitanika, 41% se izjasnilo da nije informisano o ribi kao prehrambenom artiklu, dok se preostalih 59% izjasnilo da se informišu preko različitih medija. Utvrđeno je da se potrošači najčešće informišu o značaju ribe kao prehrambenog artikla sekundarnim vidom promocije, tj. "od usta do usta". Potrošači u Banjoj Luci preferiraju svježu ribu, a najviše konzumiraju slatkovodnu ribu. Kao mjesto kupovine ribe podjenako su zastupljeni hipermarket i ribarnica. Faktori kupovine mogu imati bitnu ulogu u stvaranju odnosa potrošača prema ribi i stoga se preporučuje proizvođačima i prodavcima ribe da uzmu u obzir rezultate ovog i sličnih istraživanja, da segmentiraju svoje tržište i da osmisle što bolje marketinške instrumente/strategije i na taj način još bolje približe ribu potrošačima prema definisanim segmentima tržišta.

***Ključne reči*:** *marketing, ponuda ribe, potrošači, Banja Luka.*

4 Vanredni profesor, dr Aleksandar Ostojić, Univerzitet u Banjoj Luci, Poljoprivredni fakultet, Bulevar vojvode Petra Bojovića 1A, 78000 Banja Luka, Bosna i Hercegovina, Telefon: +387 51 330 926, E-meil: aleksandar.ostojic@agrofabl.org

5 Vanredni profesor, dr Nebojša Savić, Univerzitet u Banjoj Luci, Poljoprivredni fakultet, Bulevar vojvode Petra Bojovića 1A, 78000 Banja Luka, Bosna i Hercegovina, Telefon: +387 51 330 977, E-meil: nebojsa.savic@agrofabl.org

6 Vanredni profesor, dr Željko Vaško, Univerzitet u Banjoj Luci, Poljoprivredni fakultet, Bulevar vojvode Petra Bojovića 1A, 78000 Banja Luka, Bosna i Hercegovina, Telefon: +387 51 330 929, E-meil: zeljko.vasko@agrofabl.org

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