Research on Fish Consumer Profile Evaluation in Romanian Plain Area

Silvius STANCIU
sstanciu@ugal.ro
Costel NISTOR
costel.nistor@ugal.ro
Loredana DUMITRASCU
loredana.dumitrascu@ugal.ro
Nicoleta STĂNCIUC
nicoleta.stanciuc@ugal.ro
Isabelle METAXA
imetaxa@ugal.ro
Dunărea de Jos Universityof Galaţi

Abstract. Research aimed at shaping a fish consumer profile in the Romanian Plain area. 150 people were interviewed. Preferences evaluation was conducted by means of a questionnaire with 27 questions. Favorite fish species, purchasing place and manner, favorite preparation choices, consumption frequency and place have been identified.

Keywords: customer profile, preferences, fish consumption, purchasing and preparation choices

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1. Introduction

Fish is an important food product for Romanian consumers since ancient times. The historical evidence discovered is proving the continuity of this food consumption from the Neolithic period until nowadays. Although a traditional food product for Romanians, there were found changes in the recent period in the consumer preferences, dictated by economic considerations, the development of local fishy sector and the emergence of new variants of fish processing and marketing.

2. Arrangements for fish marketing in the assessed area

Fish meat was an important food product for human consumption due to its specific nutritional, dietary and sensory properties. Typically, fish meat is associated with dietary nutrition. Fish meat means the trunk, fins and mandibles muscles of different species of fish. Unlike warm-blooded animal meat, fish meat is spoiling more easily, requiring special storage and selling conditions. Fish processing aims at preserving the fish (by different methods) or manufacturing of fish industrial products. The selling options found in the area are:

- Living fish, delivered alive in basins or tanks with water at a temperature of 18 – 20 °C which is changed as often as possible to remove mucus and mud and to ensure the oxygen needed for survival.
- Fresh fish, after fishing, placed in wooden crates, aluminum or cardboard boxes, in alternating layers with layers of ice. Even in these conditions, fish selling should be done quickly, because it is a perishable food product.
- Fish products – fish preserved by refrigeration, with or without salting, frozen products, semi-preserved or preserved fish. The preservation methods used aim at maintaining a proportion as high as possible of the initial characteristics of the raw material, while extending the shelf life. The fish products observed in the selling points of the assessed areas were usually processed by salting, drying, smoking, marinating, pasteurization or sterilization heat treatment.

The observed selling options highlighted the perishable nature of fish, the lack of adequate transport facilities, quantity and assortment fluctuations in supply, the limited availability of adequate

storage facilities, etc.. The clear demand on the market is influenced by seasonality, freshness and consumer preferences. Fresh or living fish selling is performed through direct channel, the fish being delivered on markets to specialized stores owned by fishy farms. Large amounts of fish are delivered sometimes to retailers. The contractors play a key role in fish selling.

Figure 1. *Images from the sections specialized in fish selling*

Figure 2. *Fish products frequently sold in specializes stores / sections*

3. Experimental conditions

The research took place in the Romanian Plain, Bucharest and surrounding counties, Prahova and Ilfov. We used a questionnaire-based preferences testing version, about 150 consumers being interviewed. 100 questionnaires were processed, which were appropriate in terms of data completion and respondents subjectivity. Prahova-Ilfov region is one of the most populated and urbanized areas in Romania. The total area surface is about 5500 square kilometers, with a total number of habitants of approx. 3 million people (of which nearly two thirds live in Bucharest). In terms of the sexes, the population is characterized by a slight predominance of female population. Most of the people live in cities (over 70%), their income being obtained mainly from the industry (over 54%) at an average wage higher than that from the national economy *(source www.inse.ro*.)

The two counties have an important hydrographic potential. Thus, the hydrographic basin area of Prahova County is of 3,350 square kilometers, mainly covered by Prahova River (over 75%) and by small areas of the Cricovul Dulce, Ialomita and Buzău basins. The length of watercourses that cross the county is 1,786 km. The main rivers in the Prahova basin are Prahova, Doftana, Teleajen Cricovul Sărat and Vărbilău. Prahova is the largest receiver of the rivers in the county, with a length of 183 km, of which only the first 6 and the last 16 km are located in Brasov and Ilfov County. It springs from Predeal, with the following tributaries: Azuga, Cerbu, Izvorul Dorului, Talea and Câmpinița. In addition to rivers, Prahova County also has a number of lakes: Balta Doamnei, Curcubeul and Sărăcineanca, Lacul Brebu, Lacul Peştelui and Lacul Bisericii. On the excavations of the old mines in Slănic the following lakes are formed: Baia Baciului, Baia Verde and Baia Roşie. Paltinu (Doftana Valley) and Măneciu-Izvoare (Teleajen Valley) barrier lakes complete the water resources of the county. The major rivers in Ilfov County are Dâmbovița and Colentina, and the larger lakes Cernica, Snagov and Căldărușani. The county is also crossed by Ialomița River and its tributary Gruiu. The lakes are fluviatil or artificial lakes, the most important being: Buftea, Snagov, Căldărușani, Mogoşoaia, Chitila, Pantelimon, Scrovistea, Ciolpani, Colentina.

Natural fish fauna is represented by: trout, bullhead, grayling, barbell, zander, carp, tench, fry, pike, eel and various invertebrates: clams, snails, pond bulls, crabs, etc.

The important companies distributing and selling fish in Prahova County are: SC Macromex SRL, SC Market Ideal SRL , SC Salmar Prod SRL , SC Amorel SRL , SC Pasoco SRL , SC Ascent SRL , SC Pescom Ana SRL , SC Golden Fish Rom Impex SRL , SC Nisetcom SRL , SC Master Foods Industries SRL , SC Grup XL Company SRL , SC Rondel Prodimpex SRL. (*source www.listaproduse.ro)*

Figure 4. Pictures of Bucharest fish markets

In Bucharest-Ilfov area, a number of companies in the field are operating; with higher turnover we can quote: Atalanta International SRL, Bivuac Impex SRL, Costiana SRL, Kaviar House SRL, Mim Team SRL, Negro 2000 SRL, Steel '94 SRL, Pescarom SRL (*source www.listaproduse.ro)*

4. Presentation of the questionnaire used

The questionnaire is an extensive market research tool with flexible nature that allows primary data collection through questions structured according to well-defined principles in order to arouse interest and to engage the subjects investigated to respond to questions honestly and clearly. The basic advantages leading to frequent use in market research are: low cost compared to other instruments, thematic richness of collected data, availability of data handling and processing, possibility of repeated administration to the same subjects / different subjects; in panel-type research, the questionnaire is able to collect information from quantitative and qualitative information carriers. It can be applied in selective research conducted among consumers or businesses to investigate the knowledge and study of economic relations between demand, supply and market participants.

The investigation is the most used method to obtain primary data and involves the existence of a questionnaire and a representative sample of the population considered for a descriptive or explanatory research. The sample components can be contacted directly by phone, by mail, Internet, etc. The issue of sampling is a distinct phase of research that involves the determination of the subjected to research and the identification of the sampling frame or base from which the sample units are chosen. An important issue is the determination of the sample size, so that it is representative of the population studied.

The research used a questionnaire with closed questions, easy to process. The sample used consisted of 150 respondents, from which 100 filled forms were processed. The sample size was dictated primarily by economic considerations. The questions and and the response processing are presented below.

1. Do you eat fish or fish products? On this question with two possible answers, 97% of respondents alternately answered
2. What species of fish do you prefer? If you like several species, give them a number in descending order of preference (from 1-12): Sole, Crucian, Carp, Novac, Trout, Sanger, Herring, Catfish, Salmon, Sturgeon, Zander, Others

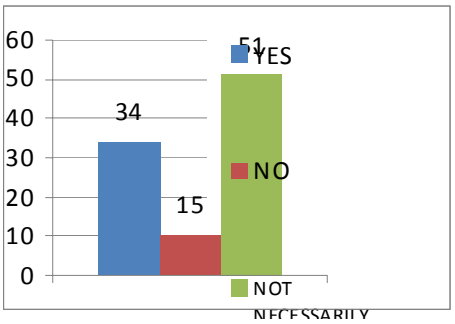


Figure 5. *The price influence*

3. The price of fish and fish products is crucial for their acquisition? (A. Yes B. No C. Not necessarily). For the majority of the respondents (51%), the price is not a decisive factor for acquisition, the common motivation being the benefits of fish in human nutrition. The graphic illustration of the responses is shown in Figure 5.

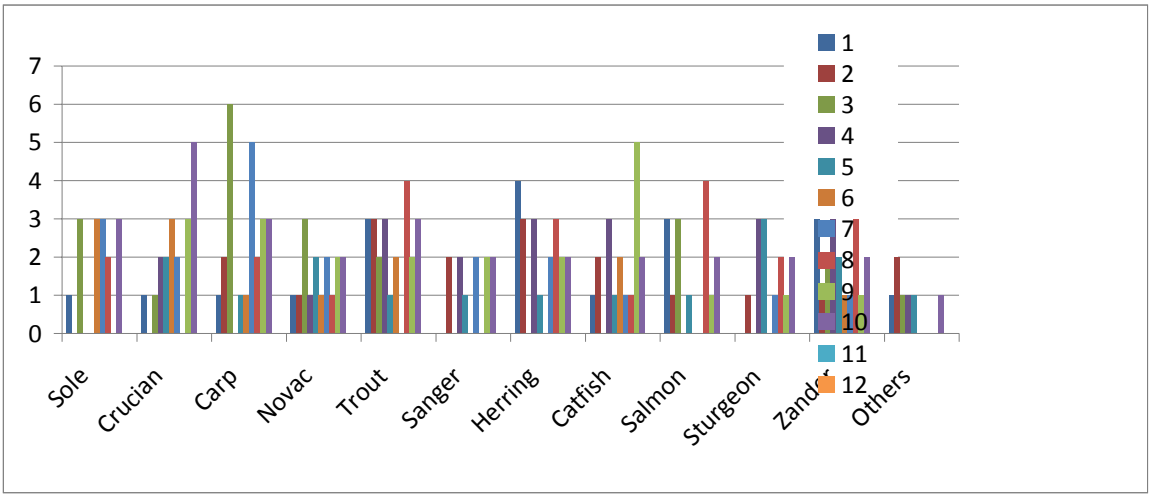


Figure 6. *The quantifying of the consumer preferences for different species of fish*

4. What is your favourite processing option for fish and fish products consumption? (a) Smoked b) Preserved, c) Boiled, d) Grill, e) Baked, f) Marinated, g) Roasted, h) Salted, i) Others)

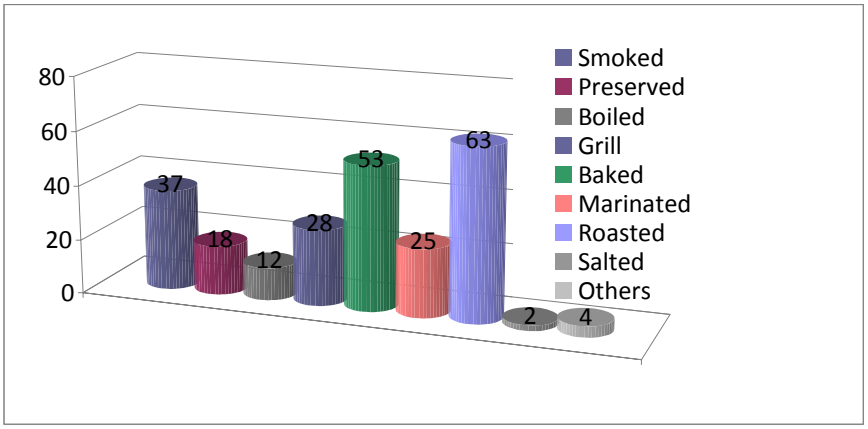
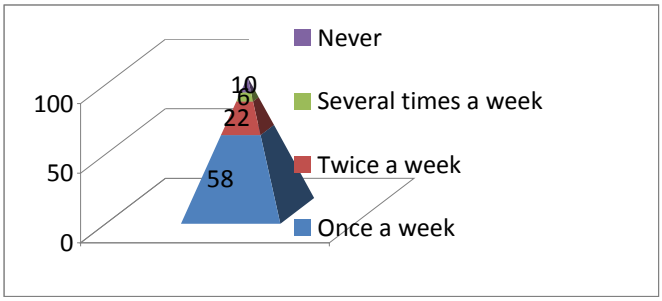
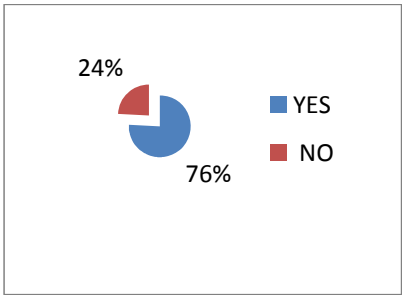


Figure 7. *Consumer favourite fish processing options*

5. How many times a week do you usually eat fish? (Once, Twice, Several times, Never).





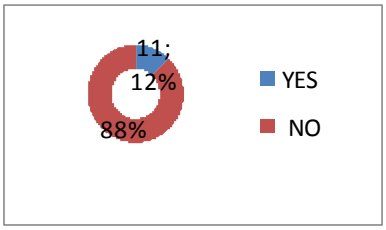


Figure 8. *Frequency of fish consumption*

6. Do you associate the fish and fish products consumption with a certain day of the week? (A) Yes - Please indicate the days b) No)
7. Do you associate the fish and fish products consumption with a certain season of the year? (A. Yes - Please indicate the season b. No)
The answers to questions 5, 6 and 7 show that respondents are consuming fish seasonally, often in a certain day of the week.
8. Where do you prefer to eat fish and fish products? (A. At home b. In catering units)

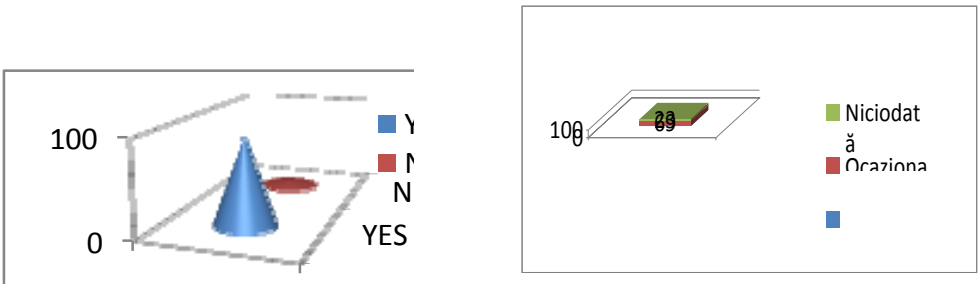
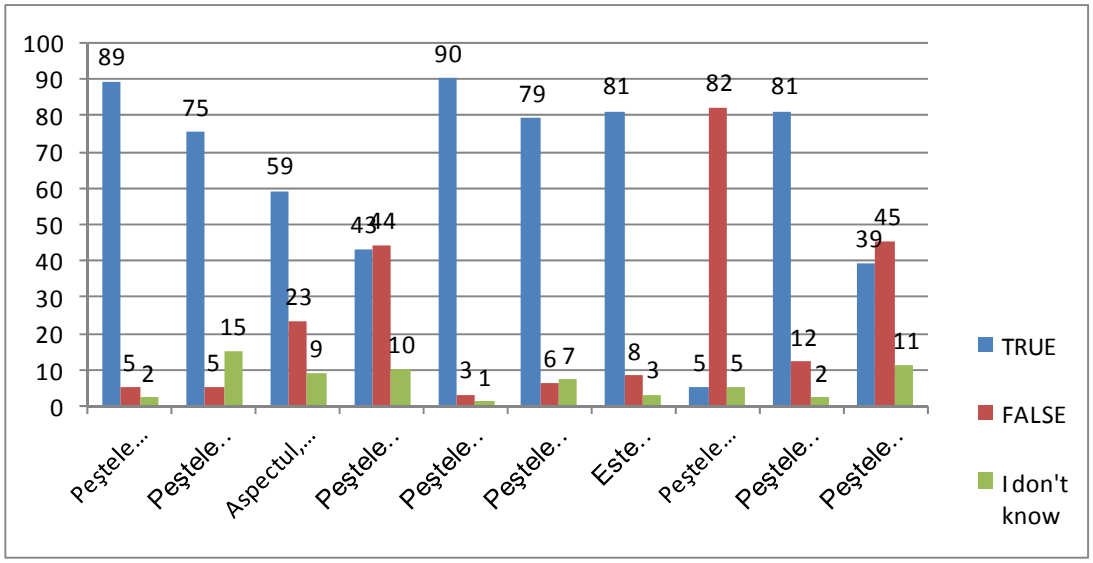


Figure 9. *Highlighting the place of consumption*

9. When you go in catering units, do you eat fish? (A. Frequently b. Occasionally c. Never)
The answers to questions 8 and 9 show that generally the sample assessed consume fish at home and only occasionally in catering units.

10. Assess the following statements by True, False or *I don't know*:

	T	F	I don't know
a) it is easy to prepare fish for consumption			
b) fish is a high quality product			
c) appearance, presentation and packaging are attractive			
d) fish has unpleasant odor			
e) fish has a specific flavor			
f) fish has a very high nutritional value			
g) it is recommended to eat fish for health reasons			
h) fish has few bones			
i) it is easy to prepare fish at home			
j) fish is cheap compared to other foods of animal origin			



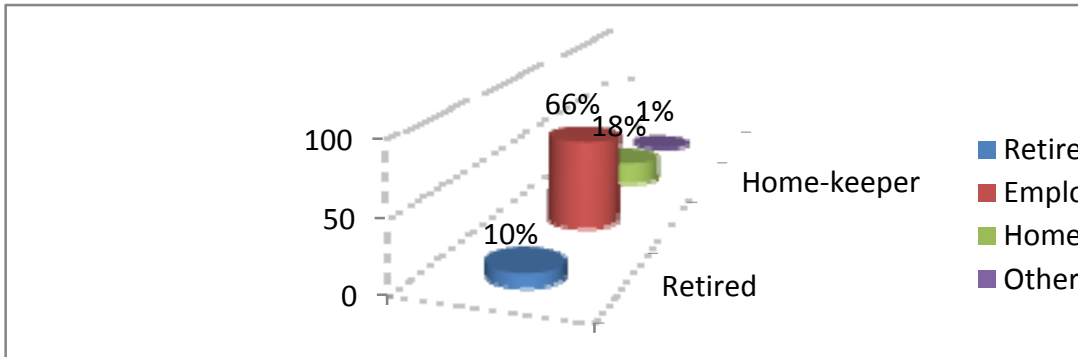
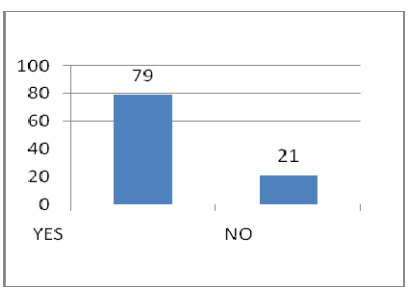
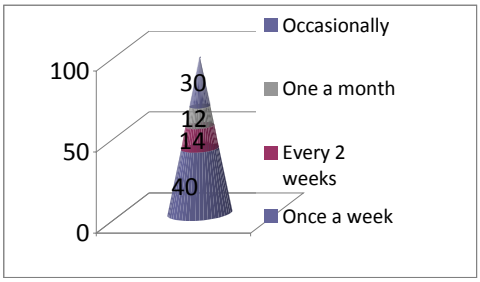


Figure 10. *Information on nutrition and purchases*

11. The person responsible for fish and fish products supply n your household is a person retired, employed, home-keeper or with other occupation:
12. The answers to the question "Do you find easily the favorite fish or fish product in selling points?" denote the availability of products in commercial areas (Figure 11.1)



11.1



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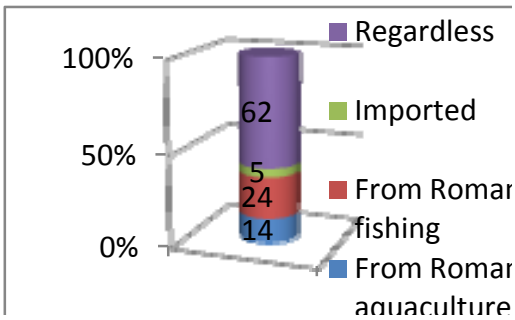
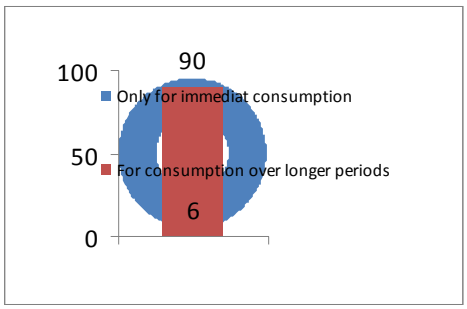


11. 3



11.4

Figure 11. *Availability of fish products (11.1), frequency of purchase (11.2), origin (11.3) and the quantity purchased (11.4)*

13. How often do you buy fish? (A. Once a week b. Every two weeks c. Once a month d. Occasionally)
14. What kind of fish do you buy? (a. From Romanian aquaculture b. From Romanian fishing, c. Imported, d. Regardless)
15. How much fish do you usually buy? (a. For immediate consumption b. For consumption over longer periods)
16. What kind of merchandising option do you usually prefer for the fish you are buying? (a. living, b. Refrigerated, c. Frozen, d. Salted, e. Smoked, f. Preserved, g. Other)

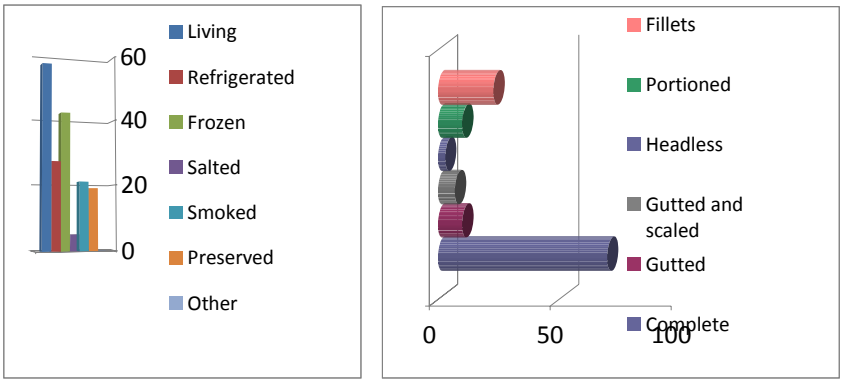


Figure 12. Preferred merchandising options

17. In what form do you prefer to buy fish? a. Complete b. Gutted c. Gutted and scaled d. Headless e. Portioned f. Fillets

18. What other fish products do you buy? a. Unprocessed roe b. Roe salad c. Seafood d. Other: e. I don't use

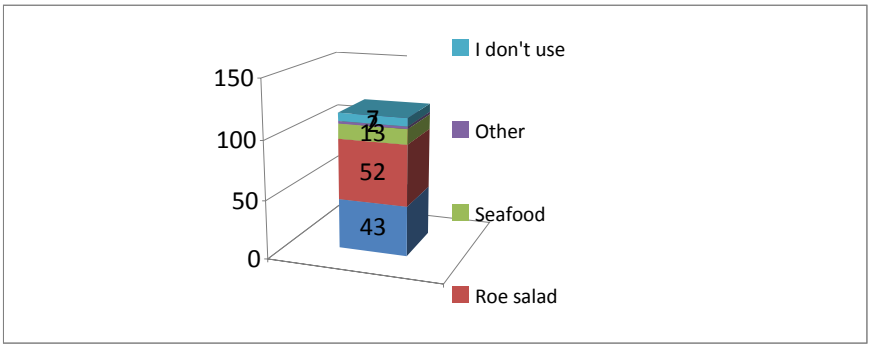


Figure 13. *Other fish products consumed*

19. The answer to the question „Where do you normally buy fish and fish products?" (a. Supermarket b. Specialized stores c. Fish farms d. Local sellers / fishers e. Individual fishing f. Other) leads to the conclusion that the main buying place is the supermarket, at the expense of others variants (figure 14)

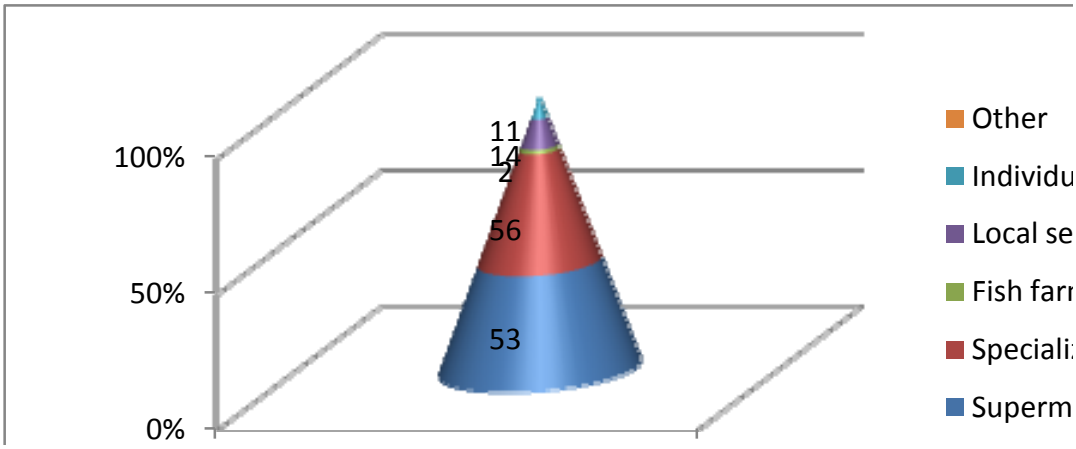
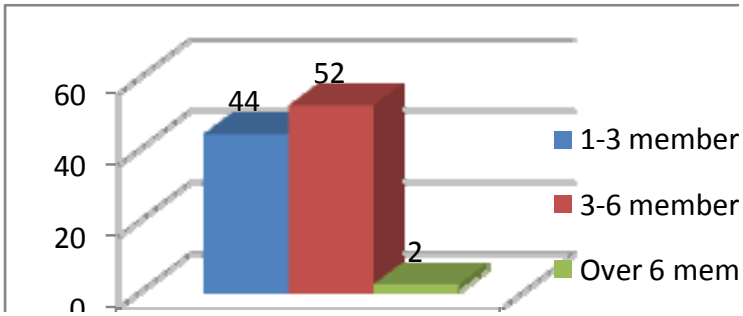


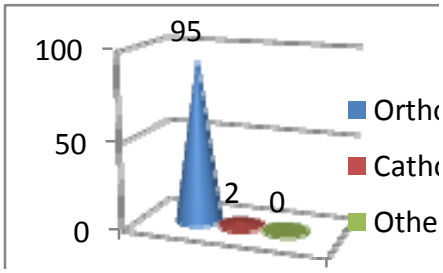
Figure 14. *Fish purchasing place*

The answer to question 20 "Do you live in an area bordered by a stream?" (a. Yes b. No) leads to the conclusion that 59% of respondents live or are born in a place close to the water

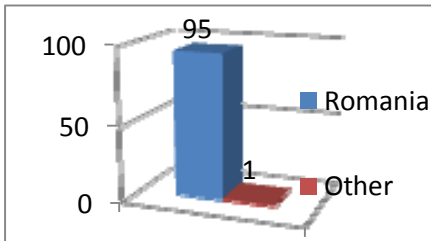
21. How many members are in your family? (a. 1-3 b. 4-6 c. over 6 members)



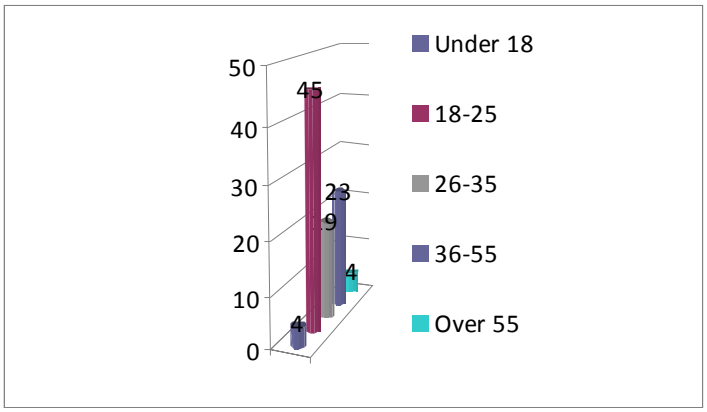
22. Your religion is:
a) Orthodox b) Catholic c) Other



23. Your nationality is:
a. Romanian b. Other

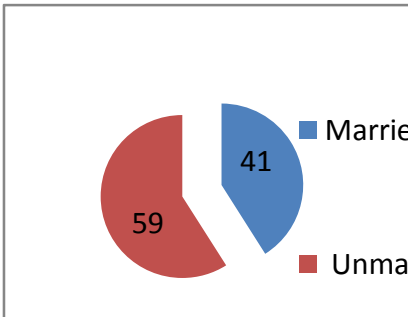


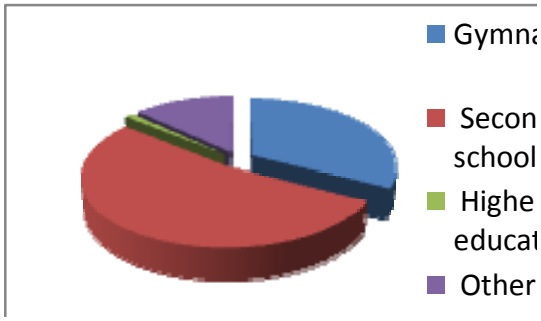
24. How old are you: a. Under 18 b. 18 - 25 c. 26-35 d. 36-55 e. Over 55



25. Your marital status is:
a. Married b. Unmarried

26. Your education level is:
a. Gymnasium b. Secondary school
c. Higher educatio d. Other





27. Your sex is: a. Male b. Female

The answers showed among respondents a greater willingness to respond for female (75%) than male (25%) respondents.

5. Fish consumer profile in Prahova-Ilfov area

In Romanian households in Romanian Plain area, the person responsible for fish and fish products supply is an employee, possibly a home-keeper or a retired person. Hypermarket type shops and fisheries are the most frequently visited in order to buy fish. Young people, persons with higher education and higher than average income are the followers of hypermarkets, while people with average income buy especially in fisheries. Mackerel is preferred by people with primary education and those with low

incomes, pangasius is used mainly by women, trout by people with higher education, and tuna and catfish is appreciated to a greater extent by men.

The acquisition act is planned before reaching to the specialized section or shop, 66% of buyers preferring a particular species of fish. The decision may be influenced by promotional offers for a third of buyers. Fish consumption is justified based on nutrition and health reasons. The main advantages mentioned for fish meat are the ease of preparation (29% of respondents), the taste (24% of respondents), and the ease of digestion (23 persons).

The amount of fish purchased covers only immediate consumption; storage is not considered for later consumption.

Romanians usually buy whole fish, at the expense of gutted or portioned fish on grounds of hightlighting the species and freshness.

The origin does not affect the purchase, the price being the main constraint. Most consumers prefer herring, trout and carp, in heat processing (fried or baked). Based on economic considerations, fish is consumed once a week, without any association with certain days or seasons of the year.
The fish is served in own households at the expense of catering units.

The fish consumer pattern in the area in question is a woman 18-35 years old, highly educated, orthodox religion, coming from families of 1-3 people and living / born in an area bordered by a stream, which may partly explain the preference for fish.

6. Conclusions

The study tried to identify the main specific features of the fish consumer in the Romanian Plain area. A quantitative analysis was used, based on a questionnaire with 27 closed questions, 100 complete questionnaires being processed. Romanian consumers prefer fish consumption as an alternative to other animal products, but price is a serious impediment for most respondents. Income level and education level are factors favoring increased consumption of fish. Acquisition of fish products is predominant in supermarkets or specialized stores. The consumer has well expressed preferences for fish species, processing, preparation option that can only be partially influenced by promotions applied to fish products.

Acknowledgment
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