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Summary

Following similar objective and methodology of the consumer survey in Italy of the task 5.2 of the PerformFISH Work Package 5, the consumer survey in Spain focused on the analysis of consumer perceptions, purchasing habits and preferences, based on exploring seabass and seabream consumption on the Spanish market.

The objective of the survey was to analyse consumer habits and preferences of seabass and seabream consumption in Spain to obtain relevant information on consumer demand and its influencing factors. The main aim of the survey was to understand the motivations at the bases of choices of Spanish consumers and capture the main factors affecting consumers' attitude to seabass and seabream products, with a particular emphasis on the role played by product origin and labelling.

To achieve this goal, a direct survey was conducted on a representative sample of the Spanish population (1 552 respondents), and based on the analysis of the data, the following key findings were concluded:

Consumer habits and consumption patterns of Spanish consumers regarding seabass and seabream products

- Spanish consumers are characterized as being eager consumers of fish and seafood products at home. In particular, 98.1% of the respondents consume fish and seafood products at home at least once a month, but of these, **86.3% consume fish and seafood products at least once a week.**
- One third of the respondents consume **seabass and seabream once a week** and another third of the respondents include seabass and seabream in meals at home at least 2 or 3 times per month.
- The favourite type of seabass and seabream product form is **fresh**, both whole and fillet. More than half of respondents consumed it at least 2 or 3 time in the past month, followed by **frozen** fillet (54.4% of the respondents consumed it at least once in the past month). The percentage of those who in the last month consumed a product ready to cook or to eat is lower (respectively 40.7% and 43.9%).
- Just under half of the respondents (48.7%) consume fish and seafood **outside of home 2 or 3 times a month.** Of these times, at least once the meal includes seabream or seabass.
- The percentage of seabass and seabream on the **total purchases** of fish products is very high, 39.4% of the sample every 3 -5 times which purchases fish products once includes seabass and seabream.
- A small percentage of the respondents, equal to **5.9%**, consume seabass and seabream **exclusively**, while the majority of the respondents (94.1%) consumes a big variety of fish and

seafood species. Hake tops the preference of Spanish consumers, followed by salmon, tuna, cod, pilchard, megrim, swordfish, anchovies, sole, monkfish and rainbow trout.

- Spanish respondents frequently buy fresh whole seabass and seabream, and **typically 2-3 fish species are bought per purchase** by six out of ten consumers. Seabass and seabream are typically prepared at home as **baked** and **grilled**. In comparison to the preference between seabass and seabream, consumers don't show a marked preference (relatively 49% and 51%).
- When making a purchasing decision, **quality** is the most important aspect affecting the choice of Spanish consumers, followed by taste and price/quality ratio. Emphasis on **health attributes** also guides Spanish consumers in their choice of place for purchase of seabass and seabream, in particular fishmongers and specialist stores, which represent the most favourable places.

Consumer preferences of seabass and seabream products

- Wild seabass and seabream are preferred by the large majority of Spanish respondents (54,6%), and only one out of ten interviewee prefers **farmed seabass** and **seabream**, while more than **one third** part of the respondents (35%) declare no preference regarding production method.
- Most of Spanish consumers are enthusiastic about trying **new seabass** and **seabream products** – eight out of ten respondents indicated their willingness to try new seabass and seabream products; for example, improved fresh products, snacks, ready meals, smoked fillets and other. Tasting of new products is mostly preferred **at home** by the majority of the respondents.
- Their personal experience represents the most widespread information source for Spanish people followed by internet, that were stated as the most important sources of information about the benefits of fish and seafood consumption, including seabass and seabream products, for four out of ten respondents. Consumers also relay on their family and friend's advice, as well as they value advices from store or fishmonger employees.
- Nearly all Spanish consumers read **labels of packaged fish** and seafood products, almost one third of the respondents reported that they always do it. **Best before date** is by far the most important information that they pay attention to, followed by the **origin of the product** and the **method of production**. When the respondents buy seabass and seabream without packaging, the **date of catch or harvest** is the most important information that they consider, followed again by the **origin** and **method of production**.
- **Image of seabass and seabream** product comprises many features. As stated by the respondents, **price** and **healthy attributes** are the most important elements that positively affects the image of the species, followed by the date of catch or harvest and country of production.

Consumer attitude regarding seabass and seabream products

- The most **influential factors affecting the purchase** of these species is the taste, followed by the date of catch or harvest, indication of country of origin and nutritional value. The next most important aspects include premium attributes of seabass and seabream.
- A quarter of the respondents are of the opinion that **information accompanying seabass and seabream** products is clear and easy to understand, however the other three quarter of the sample believe that the information accompanying purchases of seabass and seabream are understandable only in part. Eight out of ten respondents tend to trust in information provided by seller.
- Over half of the Spanish respondents stated preference for **national/local origin** of seabass and seabream, over a third of the respondents showed their preference for the **products from the EU**, and less than four out of ten respondents indicated their preference for products outside of the EU.

1 Background and literature

In this section the main factors influencing consumption of seabass and seabream, which emerged from the analysis of the literature, will be briefly recalled. They can be grouped into four domains, which involve a correspondent number of hypotheses that are placed as discriminating for the segmentation of the profiles of the respondents.

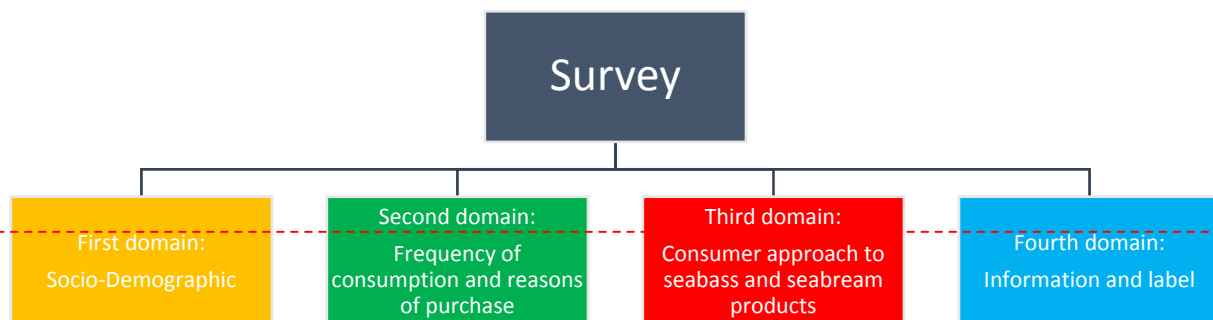
The **first hypothesis** is that the socio-economic characteristics of consumers influence their purchasing behavior (Adinolfi et al., 2011; Aounallah-Skhiri, Hajer, et al., 2011; Darmon, N., & Drewnowski, A., 2015). In addition to the mentioned variables (age, composition of households and income), the domain includes information on gender, place of living, degree of education. These factors are investigated in order to complete the framework of the main variable used in recent studies of the food consumer segmentation (Adinolfi et al., 2011; Darmon, N., & Drewnowski, A., 2015; Di Pasquale et al., 2014; KIRKPATRICK, Sharon I., et al., 2012; Mesías Díaz, Francisco J., et al., 2012).

The **second hypothesis** is that purchasing habits explain a significant part of consumption choices and offer fundamental information to explore food consumer attitudes (Adinolfi et al., 2011, Rortveit & Olsen, 2007; Pascucci et al., 2011). The corresponding domain includes information on the frequency of purchases (Rortveit & Olsen, 2007), on the purchase channel (Bruwer et al., 2012; Seitz, 2013), on the attributes and preferences that influence purchase behavior (Luten and Verbeke, 2011; Verbeke et al., 2008; Welch et al., 2002).

The **third hypothesis** takes into account the specific preferences of the respondents towards seabass and seabream products. The little empirical evidence found in literature (Mauracher et al., 2013) has suggested that the inclusion in the corresponding domain of a wide range of variables. Among these, the research takes into consideration the role of information channels (Maity, M. and Dass, M., 2014) and the attitude of respondents towards the innovation of products and processes (Cardoso et al., 2013).

Finally, the **fourth hypothesis** focuses on the attitudes of the consumers to seabass and seabream. The corresponding domain groups five variables that refer to the specific attributes of the products, to the transparency of the information that accompanies the product, to the trust in the sources of information and to the importance of the origin of the product. The variables included in this domain complete the picture of the information aimed at detailing the consumption of seabass and seabream.

chart 1- The domains involved in the research



2 Methodology

2.1 Structure of the consumer survey

The task 5.2 focuses on the analysis of consumer perceptions, purchasing habits and preferences, based on exploring seabass and seabream consumption.

The objective of this second step of survey is to analyse the consumer habits and preferences of seabass and seabream consumption in Spain. To achieve this objective, data was collected through a consumer survey by questionnaire.

The final version of the questionnaire, finalised at the end of November 2017, checked with a pilot survey, used in Italian survey, was translated in Spanish and further checked to verify all aspects were correct.

A further quality-check has been made by the field agency through a soft launch (154 interviews completed). The final electronic version of the questionnaire has been proposed to participants at the end of collecting self-administrated online questionnaires.

2.1.1 Questionnaire design

The questionnaire was composed of 37 questions. The questions were grouped into four sections, plus a filter question used in order to detect fish consumers and non-consumers. This resulted in the selection of a sample mainly composed of fish consumers rather than non-fish consumers.

The four sections of the survey were:

- Part 1: Social and demographic characteristics of respondents,
- Part 2: Consumer habits and consumption patterns regarding seabass and seabream products,
- Part 3: Consumer preferences of seabass and seabream products,
- Part 4: Consumer attitudes regarding seabass and seabream.

2.1.2 Study design

The survey was carried out in Spain, between May and June 2018. The methodology of survey administration was the same used for the survey in Italy. In particular, interviewees were contacted by a specialized agency, with Cawi (Computer Assisted Web Interview) methodology.

An initial contact e-mail requesting survey participation was sent to participants, each e-mail contained a hyperlink that logged the participant into the survey web site. Participants were informed of the survey and consent was given by completing the survey consent. In accordance with European Commission directives, the first page of the survey contained a consent form with ethical requirements (Annex I - II).

2.1.3 Recruitment

Participation quotas have been identified based on Eurostat data in order to obtain a representative sample of the Spanish population. The quotas were subsequently categorized in such a way as to coincide with the filing of the contracted company (table 1).

table 1 - Quotas of population

Gender		%
	Male	49%
	Female	51%
Age		
	18-24	15%
	25-34	32%
	35-44	27%
	45-54	16%
	55-64	8%
	65+	2%
Geographic location		
	North West	9%
	East	28%
	North East	10%
	Centre	12%
	South	22%
	Madrid Metropolitan	14%
	Canarias	5%

2.1.4 Exclusion criteria

People below 18 years of age and people exceeding quotas were excluded from the survey.

2.1.5 Sample size

The sample size was 1920 consumers. However, after a quality control, 31 interviewees were deleted either because they responded to the survey too fast or because they chose to abandon the interview. The final sample size was 1889 interviewees, 1552 fish consumers and 337 non consumers of fish and fish products.

table 2– Sample size

Fish consumption	frequency	percentage
yes	1552	80,8%
no	337	17,6%
speedsters	31	1,6%
Total	1920	100%

The fieldwork was finish with the following sample composition:

table 3 - Sample composition by gender

	% by Quota	Total Needed	Total Received to Date	Remaining	Current Split (%)
Gender					
Male	49%	735	762	-27	49%
Female	51%	765	790	-25	51%
Total	100%	1500	1552	-52	-3%

table 4 - Sample composition by age

	% by Quota	Total Needed	Total Received to Date	Remaining	Current Split (%)
Age					
18-25	18%	270	274	-4	17,7%
26-35	30%	450	463	-13	29.8%
36-45	28%	420	433	-13	27.9%
46-55	16%	240	253	-13	16,3%
56-65	6%	90	91	-1	5,9%
65+	2%	30	38	-8	2,4%
Total	100%	1500	1552	-16	-1%

table 5– Sample composition by region

Region	% by Quota	Total Needed	Total Received to Date	Remaining	Current Split (%)
North West	9%	135	160	-25	9,6%
East	28%	420	431	-11	27,7%
North East	10%	150	150	0	10,3%
Centre	12%	180	185	-5	11,9%
South	22%	330	331	-1	21,3%
Madrid Metropolitan	14%	210	221	-11	14,2%
Canarias	5%	75	74	+1	4,8%
Total	100%	1500	1552	-52	-1%

2.1.6 Statistics software

As for the survey conducted in Italy, statistical analysis was performed with SPSS Version 23 and SPAD version 5.0.

2.2 Methodology tools

In the same way as Italian survey analysis¹, a cluster analysis was performed in order to explore Spanish consumers' behaviour towards seabass and seabream products and by able to identify segments based on the perceptions of the respondents regarding seabass and seabream products. Applying the MCA-CA algorithm (multiple correspondence analysis-cluster analysis) allows to define typological groups based on dimensions previously selected and corresponding to the section of the survey:

- Section 1: Social and demographic characteristics of respondents;
- Section 2: Consumer habits and consumption patterns regarding seabass and seabream products;
- Section 3: Consumer preferences of seabass and seabream products;
- Section 4: Consumer attitudes towards seabass and seabream.

Subsequently, the dimensions obtained through the MCA-CA are used as active variables in a further cluster analysis¹.

¹ For more details on the method used, please refer to the Italian Report

2.2.1 Multiple correspondence analysis

Multivariate analysis techniques aim to simultaneously represent the variables and/or cases in an array in order to synthesize the information better. The result is obtained through the representation of variables and cases in a small number of new dimensions.

In the event that variables are to be synthesized these dimensions will be called factors or components, when you group the statistical units (case research) they are called groups or types. The cases are grouped by building types which are characterized by the presence inside of homogeneous cases compared to a number of variables chosen to discriminate them. Correspondence analysis belongs to the family of analysis "description". This type of analysis is not based on inferential criteria but is extremely valuable as on one side it allows us to use categorical variables, on the other hand it allows you to explore nonlinear relationships between most fundamental details relating to a particular object of analysis.

Specifically the multiple correspondence analysis, all the variables used are synthesized through the extraction of a number of factors that are combinations of procedures that are in the range of data used. Such combinations are calculated through preliminary matrix transformation "cases for variables" of departure in two new arrays: the full disjunctive and Burt ones.

In the first, whose size is given by the number of cases for the sum of all methods of variables submitted to analysis, assigns a variable to each column method present, ascribing to each case a value, equal to 1 if this presents that method, and 0 value if it doesn't present it. That means a full disjunctive method of encoding is applied. For each variable as a set of new variables is defined, "variable indicators" or "variable modes" which can only take 0/1 values, which means absence or presence of a given State-method on a particular property-variable. Then comes the array of Burt, or a multiple correspondence matrix. This is a multiple distribution of frequencies. Afterwards, the dispersion of each variable- mode is assessed, obtained previously with the full disjunctive encoding method, compared to their marginal totals.

All row and column profiles are also taken into account and the dispersion of the profiles themselves are analysed around their center of mass. These operations tend to re-evaluate the contribution of variables- mode with low frequencies and to reduce the impact of variable- modes with high frequencies, as they use the metric of chi-square which measures the distance between two profiles by weighing each element by the inverse of its significance of the total of frequencies. Identified factors, variable- modes and/or the cases can be projected as points within orthogonal factorial spaces among them, whose position is given by factorial coordinates produced on the basis of the various partnerships between variable- modes and extracted factors. Similarly to what happens in the factor analysis, these factors have the following characteristics: they are orthogonal, i.e. independent of one another, they are combinations of variable/modes included in the analysis, each of them replays, in a descending order, the maximum dispersion present in the array of Burt. In addition, each single factor has an eigenvalue that indicates the percentage of scattering produced by the same factor.

In ACM the quantification of dispersion is represented using the term inertia, equivalent to the concept of variance used for Cardinal variables. Once you know the number of factors considered sufficient in terms of inertia reproduced, you can proceed in the analysis of each of them, giving an

interpretation on the basis of variable-modes significantly to their mode formation. Then, using factorial coordinates, you can project on its plans examined two by two variable- modes (active and illustrative) and/or cases. Observing the positions of points against the axes and the distances between the same points, it inferred the structure of relationships between variable- modes used and between them and the factors. In General, it is assumed that the more one point is far from the source of an axis, the greater its contribution to the formation of the axis is; also that the greater the proximity between two variable- modes is, the greater their interdependence.

2.2.2 The cluster analysis

The cluster analysis is a multivariate analysis of the data type that finds wide application in many areas and that responds to the need to bring together the statistical units in homogeneous groups, reducing the complexity of the original information but safeguarding the substantial components. You minimize the "remoteness" internal to each group and maximise the distance between groups. To quantify this "logical distance" you can use similarity/dissimilarity measures for the quantitative variables and for quantitative distance measurements, defined between different statistical units.

A measure of similarity is achieved by comparing two generic objects A and B measured on p dichotomous variables. By combining measurements of co-presence, co-absence and discordance, it produces a range of measures of similarity between objects. In literature it shows some similarity indexes:

- a) index of Russel and Rao – a relationship between the number of attributes co-present and the total of the characteristics concerned;
- b) Sample matching-expresses the ratio between the sum of the number of co-presences and co-absences and the sum of the characteristics concerned;
- c) The Jaccard index-considers irrelevant the number of co-absences, so the absence of a date feature on both units confronting each other does not increase the similarity;
- d) The Dice Index - attaches greater weight to the parameters on the main diagonal;
- e) The Tanimoto index - is similar to the previous one, but attaches double weight to expressive parameters of discrepancies;
- f) The Kulczynski Index -expresses the ratio between co-attendance and the discrepancy.

A measure of distance is identified as the one inside a multidimensional space: d_{ik} (or the i -th row and k -th column) to make a synthesis of the information in a data array ($n \times p$), with n objects and p as variables. One can distinguish some fundamental properties of distance measurement:

- $d_{i,i} = 0$ which states that distances can't be negative;
- $d_{i,i} = 0$ which states that the distance of an object with itself is nothing;
- $d_{i,k} = d_{k,i}$ that enshrines the symmetry of a distance function, which equals the distance between i and k or between k and i ;

- $d_i < d_i + d_j$ called "triangle inequality", meaning that the distance between the object k and the object i is equal to or less than that obtained by diverting to any other object h .

In the case of dichotomous qualitative characters (where for each variable the presence-absence of a phenomenon, 1 = presence, 0 = absence is measured), for each pair of units h and k , the two answering vectors regarding the p variables observed can be represented in a 2 x 2 table as shown in the figure.

h/k	1	0	Tot.	
1	a	b	a+b	a = frequency of the phenomena simultaneously present in the two units
0	c	d	c+d	d = frequency of the phenomena simultaneously absent in the two units
Tot	a+c	b+d	p	b, c = frequency of the phenomena present in one unit but not in the other

The frequencies b and c indicate the aspects of diversity between the two statistical units concerned. The frequencies a and d indicate the extent of resemblance between the two units, but their meaning is not identical. In fact, the presence of a character always constitutes an aspect that helps to define the similarity, while the absence of a phenomenon in some cases may be of little or no interest in assessing the resemblance between two units.

The distance indicators most commonly used are many: one of the best known is the Euclidean one, i.e. when objects (expressed in formula as coordinates) are measured on p variables within a Euclidean space whose dimensions correspond to the distance of variables used in multidimensional space. Calculating the square root of the sum of squared differences calculated on the variables:

$$d(x_i, x_k) = ((x_{i1} - x_{k1})^2 + (x_{i2} - x_{k2})^2 + \dots + (x_{in} - x_{kn})^2)^{1/2}$$

An additional measure of absolute or Manhattan distance is defined by the sum of the absolute differences that exist among the dimensions considered:

$$d(x_i, x_k) = |x_{i1} - x_{k1}| + |x_{i2} - x_{k2}| + \dots + |x_{in} - x_{kn}|$$

A form of distance is that generalizes both the Euclidean and Manhattan ones, is Minkosky. It corresponds to the Euclidean distance in the case when q (positive number assigned) is equal to 2 and at the distance of Manhattan if it is equal to 1:

$$d(x_i, x_k) = (|x_{i1} - x_{k1}|^q + |x_{i2} - x_{k2}|^q + \dots + |x_{in} - x_{kn}|^q)^{1/q}$$

2.2.3 Segmentation techniques

The MCA-CA algorithm was applied for each dimension involved in the analysis. By grouping variables on the basis of their type, the resulting n groups of variables were performed by the MCA-CA algorithm. The result is the segmentation of each dimension into consumers' typologies. A second cluster analysis was performed involving the selected dimensions as active variables and the associated typologies as their modalities (Sabatini et al. 2005).

This type of analysis allows you to analyse datasets with a large number of categorical variables, also via the domain locator the ex ante based on variable types present and brings out the relationships among the domains, which wouldn't have emerged if all variables were used in a single cluster analysis.

The carried out methodology allows you to extract a number of emerging behaviour profiles based on the four reference domains identified ex ante on the basis of the hypothesis resulting from the literature review on consumers' behaviour.

The four domains of our analysis are:

- Socio-demographic variables;
- Frequency of consumption and reasons of purchase variables;
- Consumer approach to seabass and seabream products variables;
- Information and label variables.

Every consumer is characterized by belonging to a typological group for each of the four domains mentioned above. The various combinations of this approach define behavioural typologies and offer a synthetic criterion for the classification of respondents.

3 Questionnaire Results

3.1 “Non-consumers” - respondents who do not consume seabass and seabream

One third of Spanish respondents, who do not consume seabass and seabream products, states these products are “too expensive”, while the sensory attributes of the species and intrinsic characteristics (smell, taste and bones) are regarded as other significant obstacles to not consume those products. One fifth of the respondents also considers those products are difficult to prepare.

One of the objectives of the survey was to understand the reasons for not consuming fish products, in particular, seabass and seabream. In order to achieve these results, the first question of the questionnaire asked interviewees if they purchase and consume seabass and seabream.

The people who selected “no” were asked for their reasons. There were 337 respondents who answered “no” to this question. The details of their demographic characteristics are presented in the tables below.

By a small margin, most non-consumers of seabass and seabream are male (52.2%). The majority of non-consumers are young, below the age of 46 (77.5%). One third (31.2%) of non-consumers live in the South of Spain, while the lowest share of non-consumers lives in Northwest of Spain (5.6%), Centre (6,5%) and Northern Centre (6.2%). Almost two thirds of non-consumers (72.4%) have a high level of education. Two thirds of non-consumers (75.9%) live in households consisting of 2 to 4 people, while 12.2% live alone. The 65% of the respondents, who do not consume seabass and seabream, do not have children in their households. Over half of non-consumers (58.2%) are employed, while 19.9% are students. More than half (53.7%) of non-consumers’ household income is approximately at the national average (EUR 26 700 per year), while almost one third (34.1%) are below the national average.

table 6- Gender

Gender			
	Frequency	Percentage	
Male	176	52,2	
Female	161	47,8	
Total	337	100,0	

table 7- Age

Age group		
	Frequency	Percentage
18-25	78	23,1
26-35	103	32,1
36-45	77	22,3
46-55	49	14,1
56-65	22	6,0
65+	8	2,4
Total	337	100,0

table 8–Macro Regions

Area		
	Frequency	Percentage
Northeast	91	27
Northwest	19	5,6
North (North Centre)	21	6,2
East	49	14,5
Centre	22	6,5
South	105	31,2
Madrid Metropolitan	30	8,9
Total	337	100,0

table 9– Education

Educational level		
	Frequency	Percentage
Primary	10	3
Secondary	83	24,6
University degree	170	50,4
Post-graduate degree/studies	74	22
Total	337	100,0

table 10 - Household

Household size (number of people living in the same household)		
	Frequency	Percentage
1	41	12,2
2	96	28,5
3	78	23,1
4	82	24,3
5	25	7,4
6	11	3,3
7	1	0,3
8	1	0,3
9	2	0,6
Total	337	100,0

table 11 – Presence of children

Children - (Do you have children living in your household?)		
	Frequency	Percentage
Yes, small children (younger than 7 years old)	49	14,5
Yes, school children	34	10,1
Yes, students or grown up children	58	17,2
No	219	65

table 12 - Occupation

Occupation		
	Frequency	Percentage
Working	196	58,2
Unemployed	61	18,1
Student	67	19,9
Pensioner	13	3,9
Total	337	100,0

table 13 - Profession

What is your profession?

	Frequency	Percentage
High skilled professional	54	16
Public services	41	12,2
Business - private sector	74	22
Farmer	2	0,6
Non worker	25	7,4
Total	196	100,0

table 14 – Household income

Category of your household income? (national average: about 30.000€/year)		
	Frequency	Percentage
Below the national average	115	34,1
Approx. the national average	181	53,7
Above the national average	41	12,2
Total	337	100,0

This cluster highlights that there are four main reasons for not buying or consuming seabass and seabream products (table 15):

- The first of the reasons refers to the economic factor, “too expensive price” was the most important factor for 30.6% of Spanish non-consumers of seabass and seabream among the reasons for not consuming those species;
- The next most important reasons for not choosing seabass and seabream products refers to sensory attributes, namely not liking the smell or taste of fish (28,2%);
- Lastly “too many bones” and “difficult to prepare” were the next important considerations for not consuming seabass and seabream for a quarter and one fifth of such consumers (respectively 25.8% and 20,5).

Other obstacles to consumption of seabass and seabream included vegetarian lifestyle (9, 6%) and fish allergies (4.8%). Small shares of non-consumers stated environmental, food safety, fish welfare concerns.

table 15 - Reasons for not purchasing BB products

Reasons for not purchasing and consuming seabass and seabream		
	Frequency	Percentage multiple choice
Too expensive	103	30,6
Do not like the smell or taste	95	28,2
Too many bones	87	25,8
Difficult to prepare	69	20,5
Food safety concern	18	5,3
Vegetarian	13	3,9
Allergic to fish in general	12	3,6
Environmental concerns	7	2,1
Fish welfare concerns	7	2,1

Respondents who answered that seabass and seabream is difficult to prepare are predominantly men (table 16) and in the younger age groups (table 17).

table 16 – Gender * Difficult to prepare

Gender * Difficult to prepare				
		Difficult to prepare		Total
		Not selected	Difficult to prepare	
Gender	Male	132	44	176
	Female	136	25	161
Total		268	69	337

table 17 – Age * Difficult to prepare

Age group * Difficult to prepare				
		Difficult to prepare -		Total
		Not selected	Difficult to prepare	
Age group	18-25	73	5	78
	26-35	79	24	103
	36-45	54	23	77
	46-55	36	13	49
	56-65	20	2	22
	65+	6	2	8
Total		268	44	167

An interesting fact is that presence of small children in a household is not a major factor in indicating "too many bones" as an obstacle to seabass and seabream consumption. Moreover, people who indicated "too expensive" as a limiting factor, belong to groups with a household income at or below the national average.

table 18 – Small children * Too many bones

Yes, small children (younger than 7 years old) - * Too many bones -				
		Too many bones - (Total
		Not selected	Too many bones	
Yes, small children (younger than 7 years old) -	Not selected	215	73	288
	Yes, small children (younger than 7 years old)	35	14	41
Total		250	87	337

table 19 – Household income * Too expensive

What is the category of your household income? (national average: about 30.000€/year) * Too expensive- (Reasons for not purchasing and consuming seabass and seabream)				
		Too expensive-		Total
		Not selected	Too expensive	
What is the category of your household income?	Below the national average	68	47	115
	About the national average	129	52	181
	Above the national average	37	4	141
Total		234	103	337

3.2 “Consumers” – respondents who consume seabass and seabream

3.2.1 Social and demographic characteristics of respondents

The social and demographic characteristics of the Spanish sample interviewed are summarized in the table below:

table 20- Social and demographic characteristics of the Spanish respondents (sample)

	Frequency	Percentage %
Gender		
Male	762	49,1
Female	790	50,9
Age group		
18-25	274	17,7
26-35	463	29,8
36-45	433	27,9
46-55	253	16,3
56-65	91	5,9
65+	38	2,4
Residential Areal		
Urban	1372	88,4
Rural	180	11,6
Area		
Northern-East	336	21,6



	East	183	11,8
	Northern-West	91	5,9
	North (North Centre)	156	10,1
	Centre	154	9,9
	South	411	26,5
	Madrid Metropolitan	221	14,2
Educational level			
	Primary	16	1,0
	Secondary	283	18,2
	University degree	755	48,6
	Post-graduate degree/studies	498	32,1
Household size			
	1	90	5,8
	2	364	23,5
	3	450	29,0
	4	503	32,4
	5	110	7,1
	6	23	1,5
	7	5	0,3
	8	3	0,2
	9	1	0,1
	10	1	0,1
	11	2	0,1
Children living in household			
	Yes, small children (younger than 7 years old)	382	24,6
	Yes, school children	342	22,0
	Yes, students or grown up children	403	26,0
	No	672	43,3
Occupation			
	Working	1198	77,2
	Unemployed	119	7,7
	Student	167	10,8

	Pensioner	68	4,4
Profession			
	High skilled professional	384	24,7
	Public services	264	22,0
	Business-private sector	542	45,2
	Farmer	8	0,7
	Not worker	354	
Household income			
	Below the national average	176	11,3
	About the national average	1064	68,6
	Above the national average	312	20,1

3.2.2 Consumer habits and consumption patterns regarding seabass and seabream products

3.2.2.1 Consumption of fish and seafood products, including seabass and seabream at home

The collected data show that the major part of the Spanish respondents (86.3%) consumed fish and seafood at home **at least once a week**. More than a half of the respondents (55.5%) serve fish and seafood products at home two to three times per week, while almost one third of the respondents (28.4%) consume fish and seafood once a week. The remaining 13.7% of the respondents consume fish and seafood at home less frequently (table 21).

table 21 - How often are fish products eaten (fish, molluscs and crustaceans) at home?

Frequency of eating fish and seafood in general, at home			
	Frequency	Percentage	Cumulative percentage
Everyday	39	2,5	2,5
2 to 3 times a week	861	55,5	58,0
Once a week	440	28,4	86,3
2 to 3 times a month	147	9,5	95,8
Once a month	35	2,3	98,1
Several times a year	29	1,9	99,9
Never/almost never	1	0,1	100,0
Total	1552	100,0	

Almost the entire sample of Spanish respondents (92.7%) consume seabass and seabream at home at least once a month. Of them, just under a half (47.9%) consume seabass and seabream at home at least once a week. Almost 15% of the respondents consume seabass and seabream two to three times a week (table 22).

table 22 - How often do you eat Seabass and Seabream at home?

Frequency of eating seabass and seabream at home			
	Frequency	Percentage	Cumulative percentage
Everyday	11	0,7	0,7
2 to 3 times a week	212	13,7	14,4
Once a week	520	33,5	47,9
2 to 3 times a month	476	30,7	78,5
Once a month	219	14,1	92,7
Several times a year	112	7,2	99,9
Never/almost never	2	0,1	100,0
Total	1552	100,0	

The presence of small children (younger than 7 years old) in the household does not seem to be a deterrent to consumption of seabass and seabream. More than 70% of consumers who do not have young children consume seabass and seabream very frequently, from every day to once a week, while 61.3% of families with small children consume seabass and seabream with the same frequency.

3.2.2.2 Type of seabass and seabream consumed

Whole fresh

The major share of the respondents (86.9%) reported that they consumed whole fresh seabass and seabream at least once during the month prior to the survey. Nearly 23% consumed those species once a week or more, and only 10.4% of the respondents stated that they never consumed those products.

table 23- How often did you eat seabass and seabream in the following forms during the last month? Fresh whole

Consumption of Fresh whole seabass and seabream			
	Frequency	Percentage	Cumulative percentage
Once a week or more	349	22,5	22,5
2-3 times a month	503	32,4	54,9
Once a month	496	32,0	86,9
Never	162	10,4	97,3
I don't know	42	2,7	100,0
Total	1552	100,0	

Frozen whole

Almost half of the respondents (48.3%) stated that they never consumed whole frozen seabass and seabream. The share of the respondents who consumed frozen whole seabass and seabream at least once in the month prior to the survey, compared to those who consumed fresh whole, dropped to 48.1%.

table 24 - How often did you eat seabass and seabream in the following forms during the last month? Frozen whole

Consumption of Frozen whole -			
	Frequency	Percentage	Cumulative percentage
Once a time or more	123	7,9	7,9
2-3 times a month	224	14,4	22,4
Once a month	400	25,8	48,1
Never	749	48,3	96,4
I don't know	56	3,6	100,0
Total	1552	100,0	

Fresh fillet

About the same percentage of the respondents who consumed fresh whole fish during the last month, claimed to have consumed seabass and seabream fillet (83.6%). Nearly 22% consumed those products once a week or more. Only 13,7% of the respondents never consumed fresh seabass and seabream fillets in the preceding month (table 25).

table 25 - How often did you eat seabass and seabream in the following forms during the last month? Fresh fillet

Consumption of Fresh fillet -			
	Frequency	Percentage	Cumulative percentage
Once a week or more	344	22,2	22,2
2-3 times a month	465	30,0	52,1
Once a month	488	31,4	83,6
Never	213	13,7	97,3
I don't know	42	2,7	100,0
Total	1552	100,0	

Frozen fillet

Compared to fresh fillets, consumption of frozen seabass and seabream fillet is less frequent. Nearly half of the respondents consumed frozen seabass and seabream fillet at least once a month. Whereas 16.9% of the respondents consumed frozen seabass and seabream fillets two to three times a month, nearly a 42% of the respondents never consumed those products (table 26).

table 26 - How often did you eat seabass and seabream in the following forms during the last month? Frozen fillet

Consumption of Frozen fillet			
	Frequency	Percentage	Cumulative percentage
Once a week or more	127	8,2	8,2
2-3 times a month	263	16,9	25,1
Once a month	455	29,3	54,4
Never	651	41,9	96,4
I don't know	56	3,6	8,2
Total	1552	100,0	

Products ready-to-cook and ready-to-eat

The percentages of the respondents, who consumed products ready-to-cook and ready-to-eat seabass and seabream products in the month prior to the survey, were almost the same (table 27 and

table 28). There was almost no difference between those who consumed a ready-to-cook product (40.7%) at least once and those who consumed a ready-to-eat product (43.9%). Even less is the difference between those who have consumed these types of products two to three times per month (20.3% and 20.7% respectively), and there is almost no difference between the respondents who consumed those products one or more times per week (7.6% and 7.7% respectively). There is also little difference between those who have never eaten these two product types (55.9% and 53% respectively).

table 27 - How often did you eat seabass and seabream in the following forms during the last month? Ready to cook meals

Consumption of ready to cook meals -			
	Frequency	Percentage	Cumulative percentage
Once a week or more	118	7,6	7,6
2-3 times a month	197	12,7	20,3
Once a month	317	20,4	40,7
Never	868	55,9	96,6
I don't know	52	3,4	100,0
Total	1552	100,0	

table 28 - How often did you eat seabass and seabream in the following forms during the last month? Ready to eat meals

Consumption of ready to eat meals -			
	Frequency	Percentage	Cumulative percentage
Once a week or more	119	7,7	7,7
2-3 times a month	202	13,0	20,7
Once a month	361	23,3	43,9
Never	822	53,0	96,9
I don't know	48	3,1	100,0
Total	1552	100,0	

3.2.2.3 Consumption of fishery products when eating out.

A relatively low share of Spanish respondents prefers to eat fish and seafood outside of home, compared to household consumption (table 29). A quarter of the respondents (25.6%) stated that they consume fish and seafood products away from home at least once week. In general, just under three quarters of the respondents (70%) consume fish and seafood outside of home at least once a month.

table 29- How often do you eat fish and seafood in general out of home?

Frequency of eating fish and seafood in general outside of home (restaurants, canteens, bars, etc.)?			
	Frequency	Percentage	Cumulative percentage
Everyday	11	0,7	0,7
2 to 3 times a week	136	8,8	9,5
Once a week	251	16,2	25,6
2 to 3 times a month	358	23,1	48,7
Once a month	330	21,3	70,0
Several times a year	367	23,6	93,6
Never/almost never	99	6,4	100
Total	1552	100,0	

When eating out, half of the respondents (50.6%) choose seabass and seabream at least once a month. Of these, 15.8% selected seabass and seabream at least once a week (table 30). Only 16.1% of the respondent never or almost never order seabass and seabream when eating out.

table 30 - How often do you eat Seabass and seabream away from home (restaurants, canteens, bars, etc.)?

Frequency of eating seabass and seabream outside of home (restaurants, canteens, bars, etc.)?			
	Frequency	Percentage	Cumulative percentage
Everyday	9	0,6	0,6
2 to 3 times a week	74	4,8	5,3
Once a week	162	10,4	15,8
2 to 3 times a month	227	14,6	30,4
Once a month	314	20,2	50,6
Several times a year	516	33,2	83,9

Never/almost never	250	16,1	100,0
Total	1552	100,0	

3.2.2.4 Composition of expenditure of fish products

For about four out of ten Spaniards consumption of seabass and seabream represents approximately a quarter or one third of their total consumption of fish and seafood products. For 7.3% of the respondents, consumption of these species exceeds half of their total consumption of fish and seafood products, while for 8.2% the consumption of seabass and seabream is less than 10% of the total.

table 31 - How would you estimate the share of seabass and seabream consumption in your total consumption of fish and seafood?

How would you estimate the share of seabass and seabream consumption in your total consumption of fish and seafood?			
	Frequency	Percentage	Cumulative percentage
Less than 10%	127	8,2	8,2
10-20%	407	26,2	34,4
20-30%	611	39,4	73,8
Around 50%	293	18,9	92,7
50 - 60%	67	4,3	97,0
Over 60%	47	3,0	100,0
Total	1552	100,0	

Almost a third of the respondents (39.8%) prefer buying seabass and seabream in whole fresh form (table 32). Less than three quarters of the respondents (72.7%) are used to buy fresh seabass and seabream as gutted. Over one third of the respondents typically buy seabass and seabream as fresh fillets (31.6%). More than one fifth of the respondents buy frozen fillets (21.9%). Almost one tenths of the respondents buy seabass and seabream as ready-to-cook and ready-to eat meals.

table 32- When you buy seabass and seabream, in what form do you buy them?

Typical product forms of seabass and seabream products for purchases		
	Frequency	Percentage of population
Fresh, whole	618	39,8
Fresh, gutted	1128	72,7
Fresh fillet	491	31,6
Frozen Fillet	340	21,9
Ready to cook meals	94	6,1

Ready to eat meals	64	4,1
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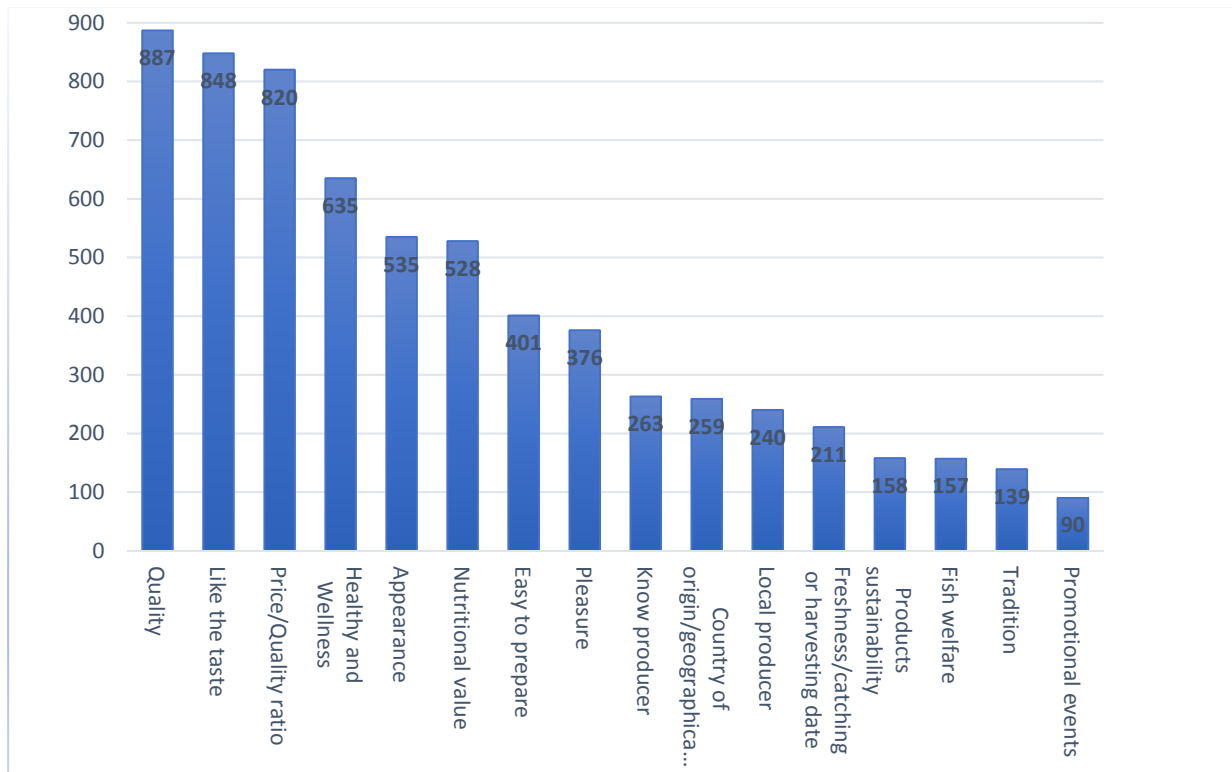
The majority of the respondents on average buy two to three fish for per purchase when buying whole seabass and seabream (table 33). This figure compares with the average household size of the nearly half of the respondents (44%), which consists of 2 or 3 people per household.

table 33 - If seabass and seabream are consumed whole, how many fish are bought/consumed in a typical meal per household

Number of fish bought/consumed in a typical meal per household			
	Frequency	Percentage	Cumulative percentage
1	307	19,8	19,8
2 - 3	946	61,0	80,7
3 - 4	247	15,9	96,6
more than 4	52	3,4	100,0
Total	1552	100,0	

The main factors influencing the consumer decision regarding seabass and seabream purchases include quality (57.2%), taste (54.6%), price/quality ratio (53.8%) and health and wellness (40.9%). In addition, the factors of appearance and nutritional value are among the top most important considerations for Spanish respondents. Promotional event was mentioned as the factor affecting the purchasing decision of seabass and seabream by the least number of the respondents (Chart 2).

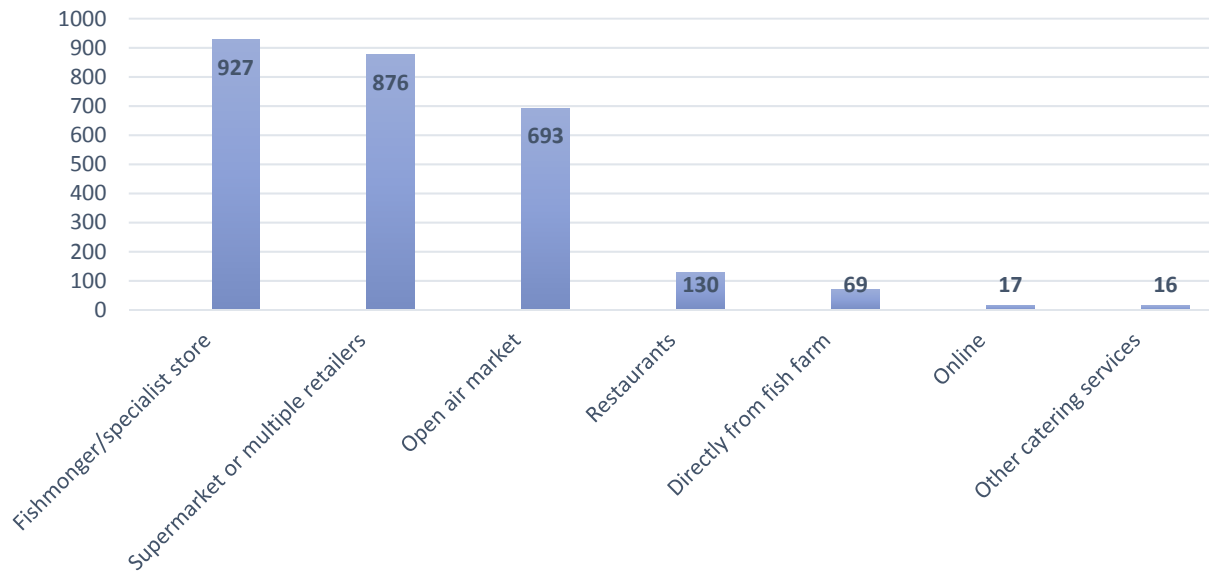
Chart 2 -- Factors affecting the purchase of seabass and seabream



3.2.2.5 Fish and seafood purchase places

About two thirds of the sample (59.7%) prefer to purchase seabass and seabream in fishmongers and specialized stores (Chart 3). Even the supermarket or multiple retailers are places where consumers frequently buy fish products and seabass and seabream (56.4%). Open air markets are also popular places, while are other distribution channels, including catering services and online sales are infrequently used by Spanish respondents (1%).

Chart 3 - Places preferred for the purchase of seabass and seabream



Premium attributes guide the choice of the place for purchase of fish and seafood products, in particular **freshness** (62.4%) and **quality** (59%). **Price** also plays an important role (43.9%), but is the third factor considered after freshness and quality (chart 4). **Good availability of product forms** is the less important reasons for Spanish respondents in their choice of preferred purchasing places.

chart 4- Reasons for purchase of seabass and seabream from preferred places



3.2.2.6 Types of fish products purchased

Almost 6% of the respondents buys seabass and seabream exclusively (table 34), while almost the entire pull of the respondents (94.1%) buy other fish and seafood as well as these species.

table 34 - Do you buy other species besides seabass and se bream?

Do you buy others species?

	Frequency	Percentage	Cumulative percentage
Yes	1460	94,1	94,1
No	92	5,9	100,0
Total	1552	100,0	

More than 70 species are mentioned by consumers (chart 5), but under one-third of these receive more than 30 citations and only 11 are mentioned at least 100 times. Hake, Salmon, Tuna, Cod and European pilchard over 200 citations and Hake is the most mentioned with 687 citations.

chart 5 - If you choose other species, except seabass and seabream, what species do you purchase (please specify several species)?

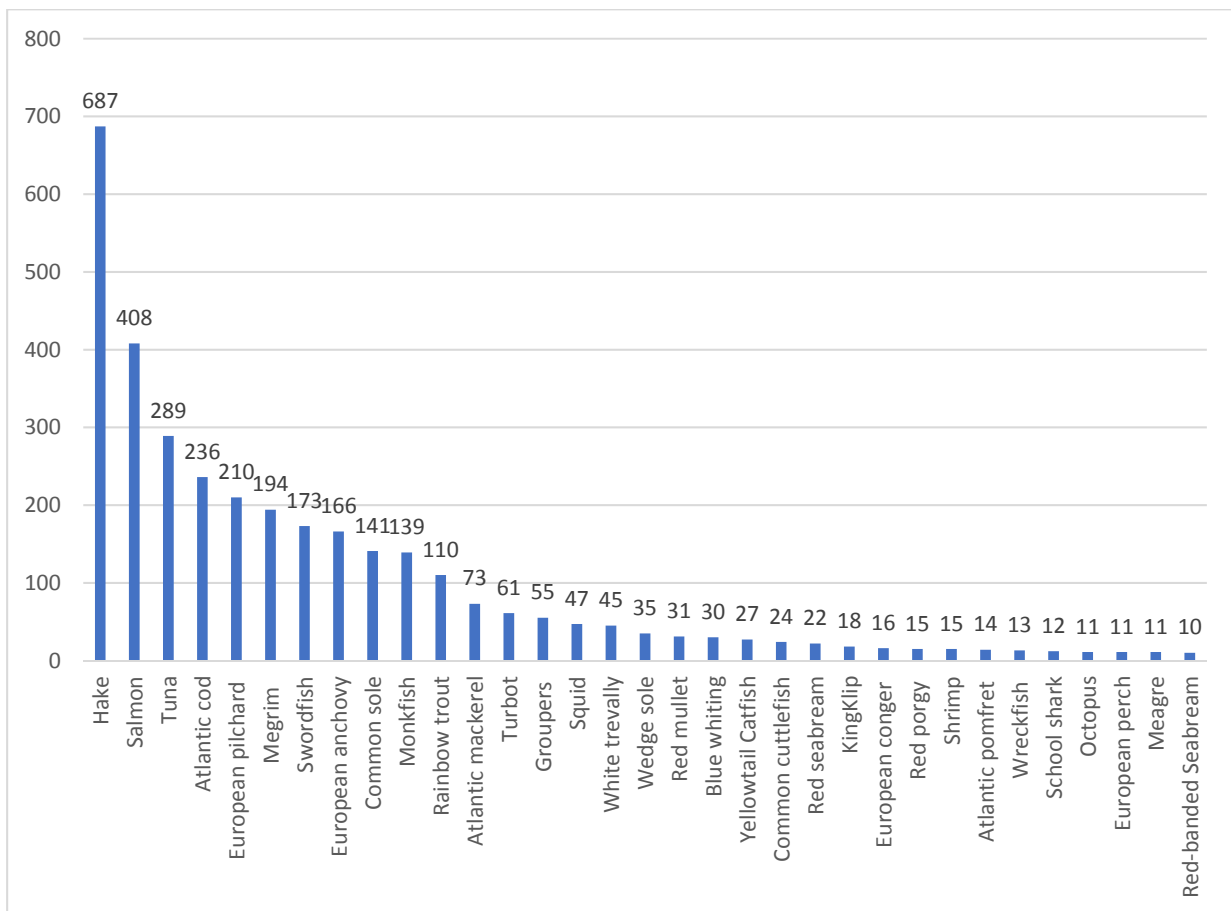


table 34 - Which specie do you prefer most among seabass and seabream?

Preference of species			
	Frequency	Percentage	Cumulative percentage
Seabass	761	49,0	49,0
Seabream	791	51,0	100,0
Total	1552	100,0	

There is almost no difference between consumers whom prefer seabream compared to seabass.

3.2.3 Consumer preferences of seabass and seabream products

Just over half of the respondents (54.6%) prefer wild seabass and seabream, while more than one third of the respondents (35%) have no preference between farmed and wild seabass and seabream (table 14).

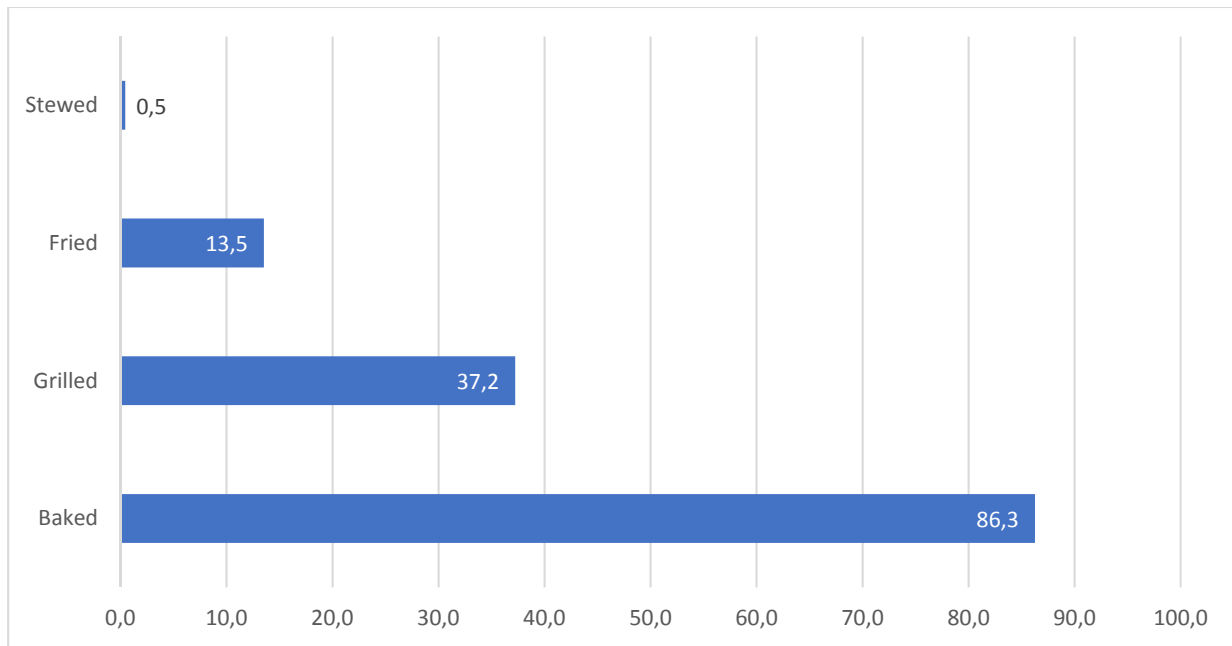
table 35 – Preferences regarding production method of seabass and seabream

What is your preference regarding production methods?			
	Frequency	Percentage	Cumulative percentage
Wild seabass and seabream	847	54,6	54,6
Farmed seabass and seabream	162	10,4	65,0
No preference	543	35,0	100,0
Total	1552	100,0	

3.2.3.1 Favorite type of preparation

More than 86% of the respondents indicated "baked" as their preferred type of preparation for seabass and seabream products (chart 6). Grilling of seabass and seabream is the next most popular way of preparation of seabass and seabream reported by 37.2% of the respondents. Moreover, 0.5% of the interviewees, under "other" indicate to prefer stewed fish, probably linked to traditional recipes

chart 6 – Preferred ways of preparation of seabass and seabream



The majority of the respondents (83.7%) show a high willingness to try new seabass and seabream products (table 36). In particular, people in the age groups 26-35 years and 36-45 (26% and 23.6% respectively) are most likely to try new seabass and seabream products (table 37). In general, more than two thirds of the respondents (68.9%) would prefer to taste new seabass and seabream at home rather than at other locations.

table 36 - Would you be willing to try new products based on seabass and seabream (such as fresh produce, snacks, prepared meals, smoked fillet, etc.)?

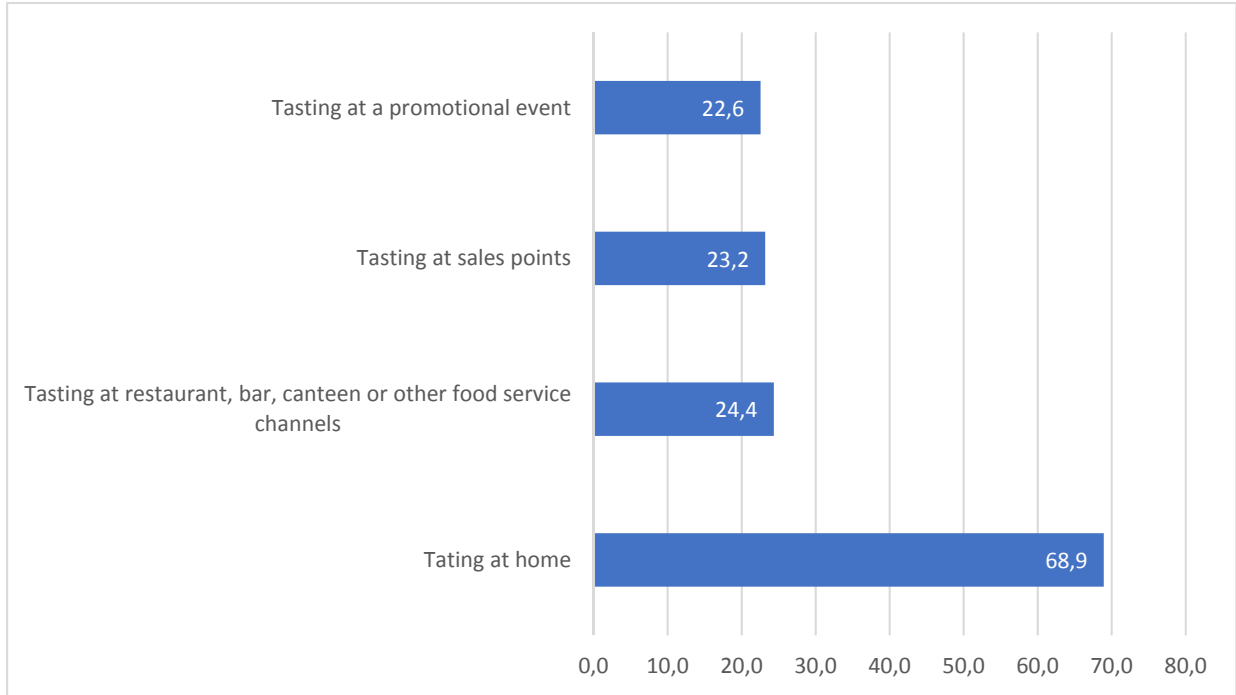
Are you willing to try new seabass and seabream products (for example improved fresh products, snacks, ready meals, smoked fillet, etc.)?			
	Frequency	Percentage	Cumulative percentage
Yes	1299	83,7	83,7
No	49	3,2	86,9
Don't know	204	13,1	100,0
Total	1552	100,0	

table 37 – Are you willing to try new seabass and seabream products (for example improved fresh products, snacks, readymade meals, smoked fillet, etc.)? * Age group

		Age group					
		18-25	26-35	36-45	46-55	56-65	65+
Are you willing to try new	Yes Total	233	403	367	200	69	27

seabass and seabream products?		15%	26%	23,6%	13%	4,5%	1,7%
	% in Age group	85%	87%	84,8%	79%	75,8%	71%

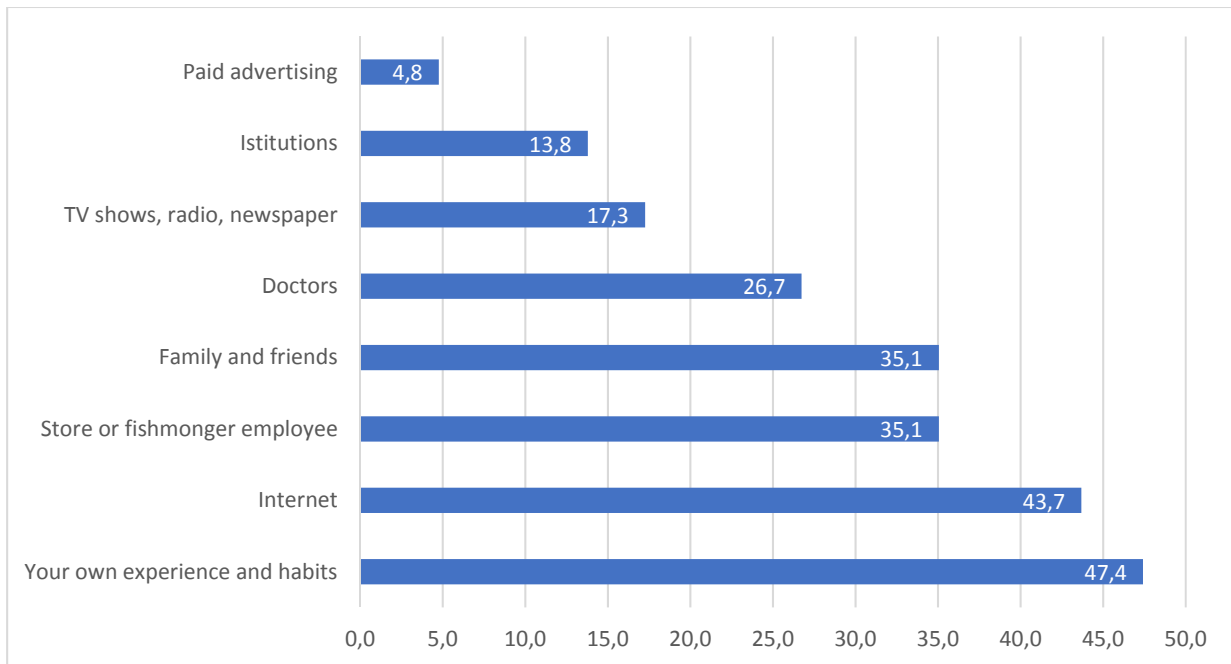
chart 7 - If you are willing to try new seabass and seabream products, where you would prefer tasting it?



3.2.3.2 Information

The “own personal experience and habits” (47.4%) followed by “internet” (43.7%) are the most frequently cited sources of information regarding the benefits brought by the consumption of fish and seafood (chart 8). The same share of the respondents (35.1%) indicates as third source of information the assistance from store or fishmonger employee (35.1%) and family and friends. Nearly a quarter of Spanish respondents regards doctors (26.7%) as sources of information about fish and seafood. Paid advertising is the last source of information considered only by 4.8% of Spanish consumers.

chart 8 - sources of information on the benefits and consumption of fish products (fish, molluscs and crustaceans)



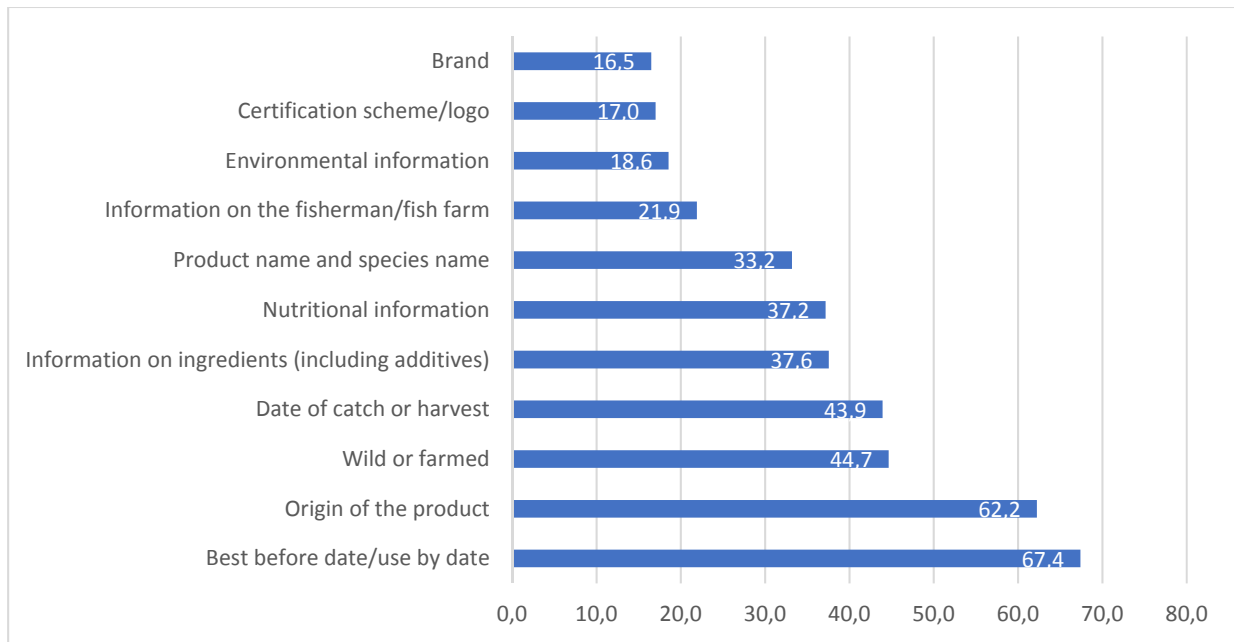
The majority of the interviewee frequently read the label of packed fish and seafood products (74.7%), nearly half of them (35.8%) always reads labels. Only a small part of the respondents (6.7%) stated that they read labels occasionally (table 38).

table 38 - How often do you read packaged seafood labels?

Frequency of reading of the label of packed fish and seafood products			
	Frequency	Percentage	Cumulative percentage
Always	556	35,8	35,8
Frequently	603	38,9	74,7
Sometimes	289	18,6	93,3
Occasionally	104	6,7	100,0
Total	1552	100,0	

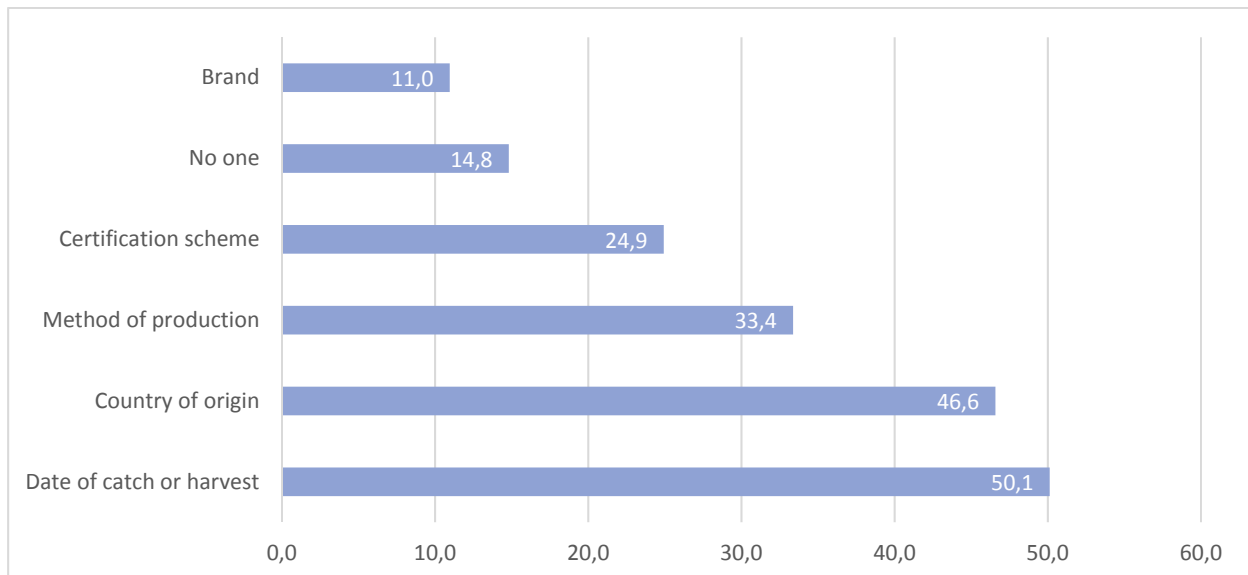
“Expiration date” is the main information to which the respondents (67.4%), pays attention on packaged products (chart 9), followed by the origin of the product (62.2%), method of production, wild or farmed (44.7%) and date of catch (43.9%). The factors to which the respondents pay less attention is the brand (16.5%) certification schemes/logo (17%) and environmental information (18.6%).

chart 9 - information to which the population pays more attention on packaged products



When the respondents buy seabass and seabream without packaging, the date of capture or harvest (50.1%) and the country of origin of the species (46.6%) are by far the most important information for them (chart 10). Consistent with previously stated, i.e. that the brand is the least important information on the packaging of fish products, it appears to be the information less missed by consumers in the products without packaging (11%).

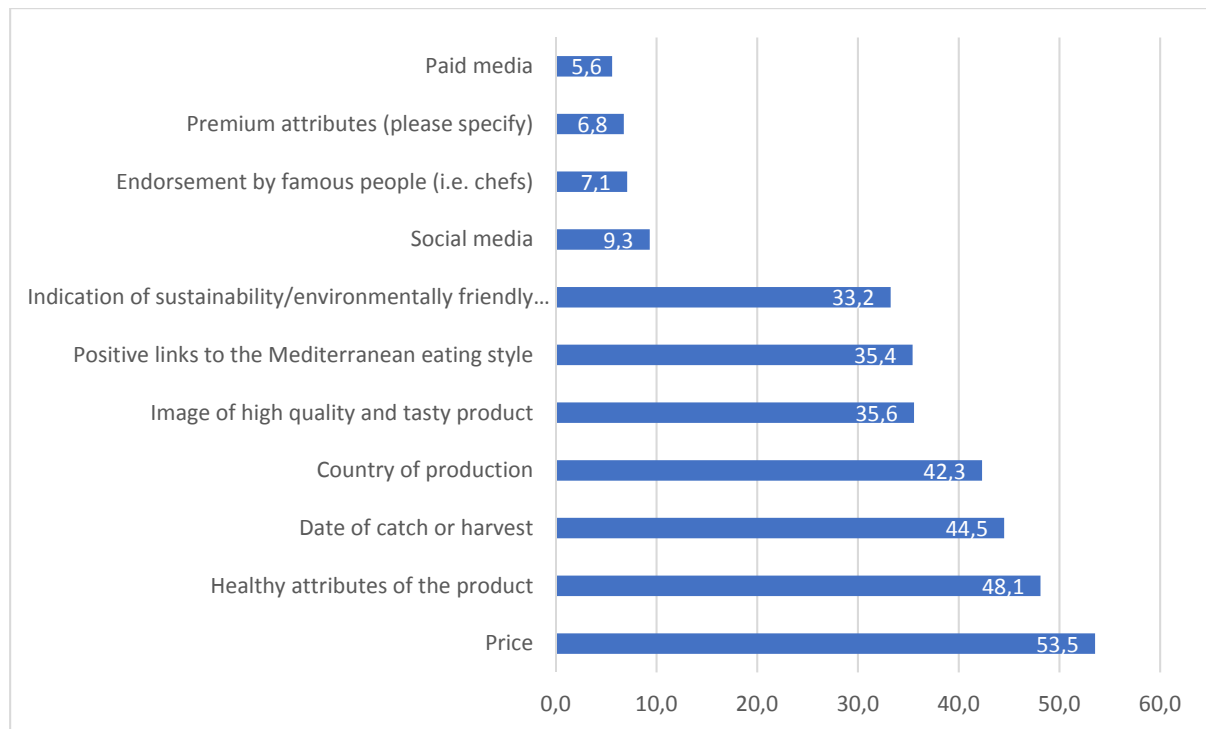
chart 10 - information that is missed in products without packaging



The most influential factors affecting the image of seabass and seabream products (chart 11), are the price (53.5%), healthy attributes of the products (48.1%), the date of capture or harvest (44.5%) and country of origin/production (42.3%). Image of high quality and tasty products (35.6%), as well as positive links to the Mediterranean eating style (35.4%) and indication of sustainability and environmentally friendly farming (33.2%) are important influential factor for the image of the for over

one third of the respondents. A relatively minor effect would be associated with social media (9.3%), support of famous people (7.1%), premium attributes (6.8%) and paid media (5.6%).

chart 11 - factors that could positively influence the image of seabass and seabream



Information about the **country of production** is very important for the respondents in all age groups. Its importance increases as the age of the respondents increases (table 39). Likewise, the importance of the date of catch or harvest and healthy attributes of the product, increase their importance as the age increases (table 40 and table 41). While, the importance of paid media decreases for middle age groups and increasing in younger and oldest groups (table 42).

table 39 – Country of production (Factors affecting the image of seabass and seabream products) * Age group

	Age group					
	18-25	26-35	36-45	46-55	56-65	65+
Country of production Yes	103	181	183	116	53	21
Total						
% in Age group	37,6%	39,1%	42,3%	45,8%	58,2%	55,3%

*table 40 - Date of catch or harvest * Age group*
Date of catch or harvest - (Factors affecting the image of seabass and seabream products) * Age group

			Age group					
			18-25	26-35	36-45	46-55	56-65	65+
Date of catch or harvest	Yes	Total	109	186	187	134	53	22
		% in Age group	39,8%	40,2%	43,2%	53%	58,2%	57,9%

*table 41 Healthy attributes of the product * Age group*
Healthy attributes of the product - (Factors affecting the image of seabass and seabream products) * Age group

			Age group					
			18-25	26-35	36-45	46-55	56-65	65+
Healthy attributes of the product	Yes	Total	136	196	199	144	51	21
		% in Age group	49,6%	42,3%	46%	56,9%	56%	55,3%

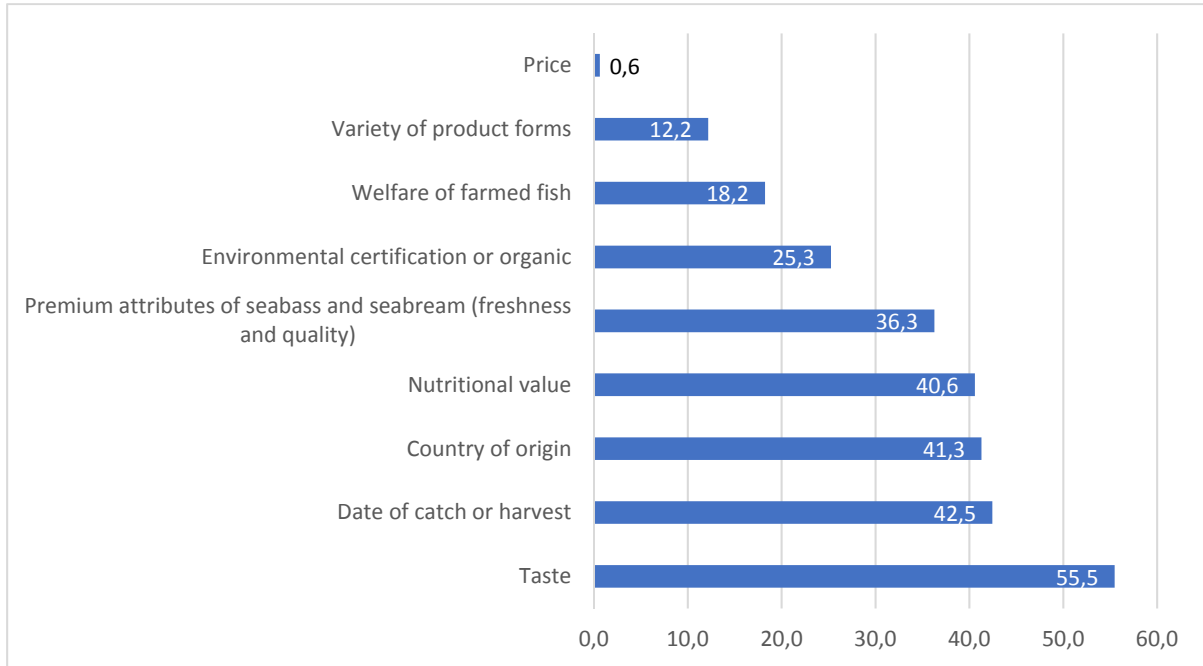
*table 42 – Paid media * Age group*
Paid media - (Factors affecting the image of seabass and seabream products) * Age group

			Age group					
			18-25	26-35	36-45	46-55	56-65	65+
Paid media	Yes	Total	18	37	17	9	3	3
		% in Age group	6,6%	8%	3,9%	3,6%	3,3%	7,9%

3.2.4 Consumer attitudes regarding seabass and seabream

The factors that have the greatest impact on the purchase of those species (chart 12) include the taste (55,5%), the date of capture or harvest (42.5%) and an indication of the country of origin (41.3%).

chart 12 - the most important aspects of the product when choosing seabass and seabream



Only one out of four respondents consider that the information accompanying purchases of seabass and seabream are clear and easy to understand. More than half of the respondents, however, consider that information is comprehensible only partly (table 43).

table 43 - Do you think that the information accompanying the purchase of seabass and seabream is clear and easy to understand?

Do you think information, accompanying seabass and seabream products you buy, is easy and clear to understand?			
	Frequency	Percentage	Cumulative percentage
Yes, definitely	380	24,5	24,5
Yes, to some extent	807	52,0	76,5
No, not really	274	17,7	94,1
No, not at all	30	1,9	96,1
I do not know	61	3,9	100,0
Total	1552	100,0	

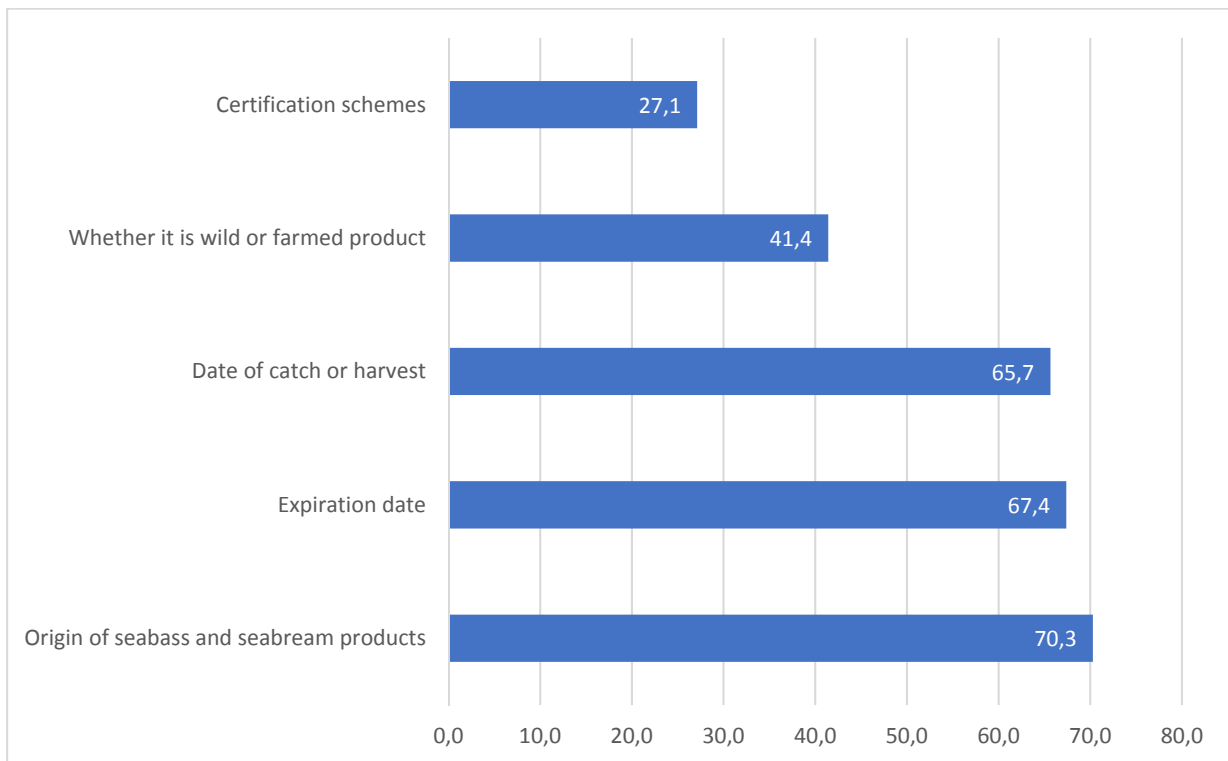
Purchases of these species are characterised by a strong trust in the sellers (77.4%). However, 14.8% of the respondents answered that they didn't know whether to trust sellers or not (table 44).

table 44- Do you trust in information provided by seller?

Do you trust in information provided by seller?			
	Frequency	Percentage	Cumulative percentage
Yes	1201	77,4	77,4
No	122	7,9	85,2
I don't know	229	14,8	100,0
Total	1552	100	

When examining information on the label of seabass and seabream products, (chart 13) consumers look for the country of species (70.3%), the expiry date (67,4%) and the date of capture or harvest (65.7%).

chart 13 - information that is important to find on the label of seabass and seabream



As a last information, it is possible to highlight that the half of sample (51.4%) claims that prefers the national or local origin of the species (table 45), followed at by the EU origin (32.8%), while non-EU origin of the species had by far the least preference among the Spanish respondents (4%).

table 45- What is your preference as regards to the origin of seabass and seabream?

What is your preference in terms of origin of seabass and seabream?			
	Frequency	Percentage	Cumulative percentage
Products from the EU	509	32,8	32,8
Products from outside of the EU	62	4,0	36,8
National/local product	798	51,4	88,2
No preference	183	11,8	100,0
Total	1552	100,0	

4 MCA-CA results

In this paragraph we will be presented the results obtained through the MCA-CA analysis².

The “**Socio-demographic**” domain provides a picture of relationships between consumers and their demographic and social characteristics. The resulting classification identified six typologies in this domain, mainly based on the household characteristic linking with the respondents that derive from these variables. The six groups are:

- Young families;
- Mature Families;
- Couples and Singles;
- Couples and Single Seniors;
- Students,
- Unemployed

The **Young families** are characterized by a lower average age (26-45). Three quarters of households are characterized by the presence of children under the age of 7. The prevailing condition is occupied, in this group there is a widespread presence of civil servants.

The **Mature Families** are characterized by the average age of the respondents between 45 and 55. The reference households see the presence of teenagers. The household is mainly constituted by 4 people. The prevailing condition is occupied, and for the most part in the private sector.

² For methodological details, please consult the Italian report

Couples and single workers have an average age of between 26 and 35 years old with a high level of education. No group members have children and two thirds of the group live in pairs.

Couples and Single Seniors belong to higher age groups (over 65 years) with a prevalence of man. None of them has young children and 70% of the group declare that they do not have them at all. The families are mainly composed of two people and the level of education most widespread is secondary education. Almost all of the group is retired.

Students single young people have an average age between 18 and 25 years, in this group a women are the majority. The educational level is higher, prevalently university degree.

Unemployed the prevailing condition is unoccupied, the majority of this group is made up of women of which one third live in rural areas. The cluster shows a lower income than the other groups (below the national average) and the level of education most widespread is secondary education.

The domain "**Purchasing habits**" focuses on the main factors driving consumption frequencies and habits. Four typological groups were performed:

- Freshness oriented consumers;
- Occasional consumers;
- Regular consumers;
- Intensive consumers

Freshness-oriented consumers are those who ascribe at this attributes the highest importance. The consumers included in this group are characterized by never purchase frozen products, ready to eat or ready to cook meals. The freshness is the most relevant factor to driving consumption, in fact, they prefer fresh products, both fillet and whole; although, they buy fish at the supermarket for convenience of the store. The people who make up this group consume fish and seafood at home with a frequency that varies from 2-3 times per month up to once a week (one third of the sample). Almost 40% of them consume seabass and seabream two or three times a month at home and several times a year outside of home.

Occasional consumers are individuals who eat fish rarely and prefer to buy it fresh whole. The members of this group are characterized for consumes seabass and seabream both at home and outside of home.

Regular Consumers is a group of individuals characterized by a good frequency of purchases of fish products, in particular seabream and seabass. They declare to consume fish products 2 or 3 times a month or more, of which at least once seabass and seabream. They do not show a preference for particular type of product. In the last month they have consumed the product in all its forms available (filet, entire, ready, fresh and frozen).

Intensive consumers are individuals with a high frequency of fish consumption and in particular of Seabass and seabream. They said they had eaten more than once a week the product in all its forms available (filet, entire, ready) in the last month, with preference for fresh products. In this group respondents who more frequently consume fish products in general, seabass and seabream in

particular are consumed, away from home. Respondents prefer to buy products that they will eat at home, directly from the fisherman/fish farm or to the open air market.

The domain "**Consumer preferences towards seabass and seabream**" focuses on the specific field of consumption of seabass and seabream. The most significant factor for the purposes of stratification of the respondents is the willingness to experiment with new products. Four groups were extracted:

- Consumers averse to innovation;
- Experiential Consumers beware of labels;
- Innovative consumers beware of certifications;
- Innovator consumers beware of health

The **consumers averse to innovation** are those who claim they don't know or don't want to try new products based on bass and bream. The members of this group are particularly attentive to the origin of the products, they prefer national or local products. In general, do not consider significant the endorsement played by famous people in shaping the reputation of products made of seabass and seabream.

Experiential consumers attentive to labels while being inclined to experiment with new products based on seabass and seabream, express preference to do it at home. Respondents in this group pay particular attention to the origin of the products and prefer European products, including farmed product. Information sources already used are advertising.

Innovative consumers beware of certifications are consumers who are willing to try new products based on seabass and seabream, but preferably at home. Environmental and animal welfare certifications are factors that drive purchase decisions. Indication of sustainability, origin and expiry date are the additional information to supplement the bulk information awaited by consumers of the group who believe that providing such information is crucial to improve the image of the product. Moreover, most of this group prefers wild seabass and seabream

Innovator consumers beware of health are consumers largely inclined to try new products based on seabass and seabream, they prefer these products cooked with a method considered very healthy, that is baked. Respondents in this group pay particular attention to the premium attributes of the products (quality, taste, nutritional value, healthy and wellness, ...) and state that nutritional value, premium attributes and date of catch are the most important aspect when they chosen seabass and seabream. The presence of the information about healthy attributes can improve the image of seabass and seabream.

Finally, the domain of "**Consumer attitude towards seabass and seabream**", focused on the relationships between the consumer and information about attributes of products made from seabass and seabream. In particular, the groups are divided based on the approach to information system and the attribute regarded as most relevant.

The following four different typologies have been performed:

- Consumers careful about label information;
- Self-assured consumers;
- Consumers careful about Freshness and origin;
- Ethical consumers

Consumers careful about label information are those who state to read the labels frequently and feel comfortable with the information system they have access to because they find labels easily understandable. Probably, the habit of reading labels derives from a diffidence towards the information given by the seller. The preferred sources of information are as we have seen the labels, but this group also takes information from the mass media (TV, radio and newspapers) also through advertising. This is probably one of the factors that leads the group to declare that it misses the brand when it purchases unpacked fish products.

The group called **Self-assured consumers** is made up of people who do not feel the lack of any information when they buy unpacked seafood products. Such confident could derive both from a deep personal knowledge of the fish product, and from the trust placed on the information provided by the sellers. In addition, people belonging to this group declare to read the labels of fish products only sometimes or occasionally. Further factor that determines not to miss information in products without packaging.

The group of **consumers careful about Freshness and origin** is characterized by a strong focus on information regarding product freshness. That consumers pay particular attention to information relating to the date of catch and best before date, and believe that finding this information on the label is of paramount importance. An additional factor to which the group pays particular attention is the origin of the product and the method of production (wild or farmed). The same information is that who group members miss when they buy products without packaging.

The members of this group feel that the information associated with the purchases of sea bass and sea bream are insufficiently understandable.

The **ethical consumer** group respondents bring together people who proved to be attentive to the issues of environmental sustainability and animal welfare. They are attentive to the presence of ethical certification and they consider fundamental that the content should be written on the label. After all, these consumers declare they always read the labels and find them understandable. Moreover, consumers belonging to this group show particular attention, in their choices, to the origin and freshness of the product.

Using the obtained domain as active variables and the associated group of consumers (typologies) as modalities a further cluster analysis was performed allowing us to summarize the sample in nine emerging consumer typologies of seabream and seabass products, as described below.

chart 14 - Sample segmentation for each of the selected domains: multiple correspondence analysis – cluster analysis algorithm



CLUSTER 1: PREMIUM CONSUMERS

Cluster size: 20.94% (325 individuals)

The group sees the prevalence of couples and single workers (66.5%), aged between 26 and 35, and characterized by a high level of education (post graduate degree). The frequency of purchase and consumption of fish products of this group is quite high, 2-3 times per week at home. In particular, a good part of the members of the group consume seabass and seabream both at home (2-3 times a month), and away from home (once a month). The members of the group show a marked preference for national or local products. They are likely to try new products and show a preference for doing it at home. These consumers prefer the fresh product (both whole and fillet), do not like frozen products or even products ready to eat or ready to cook. Their buying choices are driven by premium attributes, quality, freshness and taste are decisive factors in determining the decision to purchase a product. They prefer to make purchases in fishmonger and specialized shops, but pay particular attention to the quality / price ratio.

The most used sources of information for purchases of fish products are their personal experience, internet, store or fishmonger employee.

CLUSTER 2: CONSCIOUS CONSUMERS

Cluster size: 18.43% (286 individuals)

The attention to the label information is the prominent feature of the group, which is characterized by almost all the individuals (92.7%) read frequently the label, and feel comfortable with its use. In the same way, almost all of the group does not believe in the information provided by the seller. The propensity to read the labels of these consumers probably helps to make them aware of the diversified supply of fish products. For this reason, although this group pays particular attention to the origin of the products, unlike the other groups, it conceives the origin in a much wider way and prefers European products, including farmed products, but does not disdain extra EU products. When they purchase unpacked fishes, they miss the brand. Moreover, the group is characterized by a high frequency of young families with children under the age of 7, who consume fish products at least once a week, and mainly seabass and seabream. Most of the group does not use ready to cook or easy to prepare products.

CLUSTER 3: CONFIDENT CONSUMERS

Cluster size: 9.67% (150 individuals)

The third cluster is formed exclusively by self assured consumers (100%), aged between 26 and 45 (100%), workers (at least 95.89%). The members of this group share the same attitude towards information regarding fish products. The absence of information in unpacked products is treated as unimportant gap that manifests itself when buying fresh products.

This approach is consistent with the little importance that the members of the group assign to the information presents on the label which they read only sometimes or occasionally.

While they strongly trust the information provided by the seller and make their purchases driven by taste.

The only information they consider important to find on labels is the method of production, wild or farmed. Although, half of the cluster declares to don't have a preference between farmed or wild fish.

Two thirds of the sample believe that price is an important factor that can affect the image of the product. About half of the sample consumes seabass and seabream at home at least once a week.

CLUSTER 4: TRADITIONAL CONSUMERS

Cluster size: 14.69% (228 individuals)

Demographic characterization of this cluster is the exclusively presence of mature families (100%), on average comprising 3-4 individuals and most of them (90.07%) have students or grow up children. Almost 96% of people that fall into the group are workers.

The group shows a consistent propensity to consume fish products at home, at least 2-3 times a month, but does not show a homogeneous behaviour towards innovation. Most consumers are willing to try new seabass and seabream products, but a small part of the sample is averse to innovation. In the same way, the cluster does not express a homogeneous preference for the place where to taste these new products.

The group is looking for information and shows a consistent propensity to read information about freshness of the products, indeed, the group pays attention to the date of capture and the product's expiry date. Another information to which they give very important value is the origin of the product.

These are the needs that are most unsatisfied when the members of the group buy unpacked products. Most of the consumers in this group make purchases of fish products in specialist stores and in open air markets.

CLUSTER 5: SENIOR CONSUMERS LED BY QUALITY

Cluster size: 4.18% (65 individuals)

The group is composed exclusively of respondents over the age of 56, predominantly males. Respondents are mostly retired people with a secondary education level. One third of the cluster consumes seabass and seabream at home at least once a week.

The willingness to experiment with new products is very low, how low is the use of products with a high service content, sure enough, they never purchase ready to eat or ready to cook meals. As those belonging to the cluster do not show themselves willing to experiment with innovative products, in the same way prefer traditional preparations, mainly baked. The most relevant attributes in leading consumer choices are freshness and quality. They consume fresh products, both fillet and whole, and paid attention to the ratio between price and quality. Freshness is also very important topic deemed

of interest in the process of finding information about the product. Additional attribute that can improve the image of seabass and seabream for the group is information about healthy properties. The source of information mainly used to know the benefits of consumption of fish products is their personal experience (62%).

CLUSTER 6: ETHICAL CONSUMERS

Cluster size: 9.09% (141 individuals)

This group does not have a precise demographic physiognomy. About 85% of the group is aged between 18 and 45 and the cluster includes students, employed and unemployed. The group consists mainly of families, with at least one child (75,9%), chiefly younger than 7 years old (61,7%).

The presence of small children does not negatively affect the consumption of fish products. Indeed, it could be one of the factors influencing the frequency of consumption, which in this group is the highest among all groups, as it varies from regular to intense, ie from 2-3 times a month up to everyday.

The characteristic of this group is the focus on sustainable methods of production, affecting both the environmental aspects and those related to fish welfare. The need for clarity in the signals transferring knowledge about these topics on the label is perceived by most of the members of the group.

The relationship with the information is also characterized by the attention paid by the group for the origin and dates of capture and product expiration.

The group is also willing to try new products based on seabass and seabream, and shows a marked preference to try them at home.

CLUSTER 7: YOUNG INFORMED CONSUMERS

Cluster size: 10.95% (170 individuals)

The cluster consists of young respondents (100%), 18-25 years old, exclusively students living in a household. The majority of respondents are female and the level of education of members belonging to the group is high. One of the most significant features of this group is the confidence in the system of information available about the food. All cluster components show a high reliance on information provided and a large part of them are sure to easily understand the information accompanying purchases of seabass and seabream. However, the most widely used sources of information are not official channels, but internet, fishmongers, family and friends.

The cluster is aimed at rewarding the freshness in consumer choices and prefers whole fish and fish fillets. Both types of products are consumed regularly by members of the group, at least 2 or 3 times a month. There are no special guidelines to describe the information used by the cluster, but it should be pointed out that the production method, freshness and origin are important discrimination for the choices made by the group that prefers wild products. Among the most relevant choice drivers is freshness.

CLUSTER 8: RESPONSIBLE FOR PURCHASE - ATTENTIVE TO LABELS

Cluster size: 7.54% (179 individuals)

Demographic characterization of this cluster is the predominantly presence of woman, all of people that fall into the group are unemployed (100%). The level of education prevailing of members the group is the secondary education level. The family unit is mainly of couples without children living at home and families of 3 people. No members of the group have small children or school children. The characteristics listed above make this group the one with the lowest income compared to all the other groups. Half of the sample claims to have an income below the national average. The income characteristic does not seem to affect the frequency of consumption of fish products, which are consumed regularly at least 2-3 times a month, as is the case for other groups, with a special predilection towards fresh products (both whole and fillets), but without preference toward method of production, half of the group have not preference between farmed or wild fish.

An interesting detail of this group is the widespread and differentiated attention to information regarding fish products.

The members of the group show attention to all types of information, the date of capture, freshness and origin are important factors as are information on production methods, environmental certifications and animal welfare, but also information concerning health.

CLUSTER 9: OCCASIONAL CONSUMERS

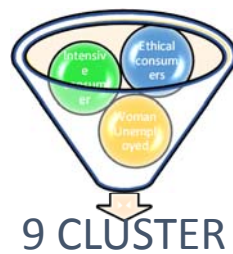
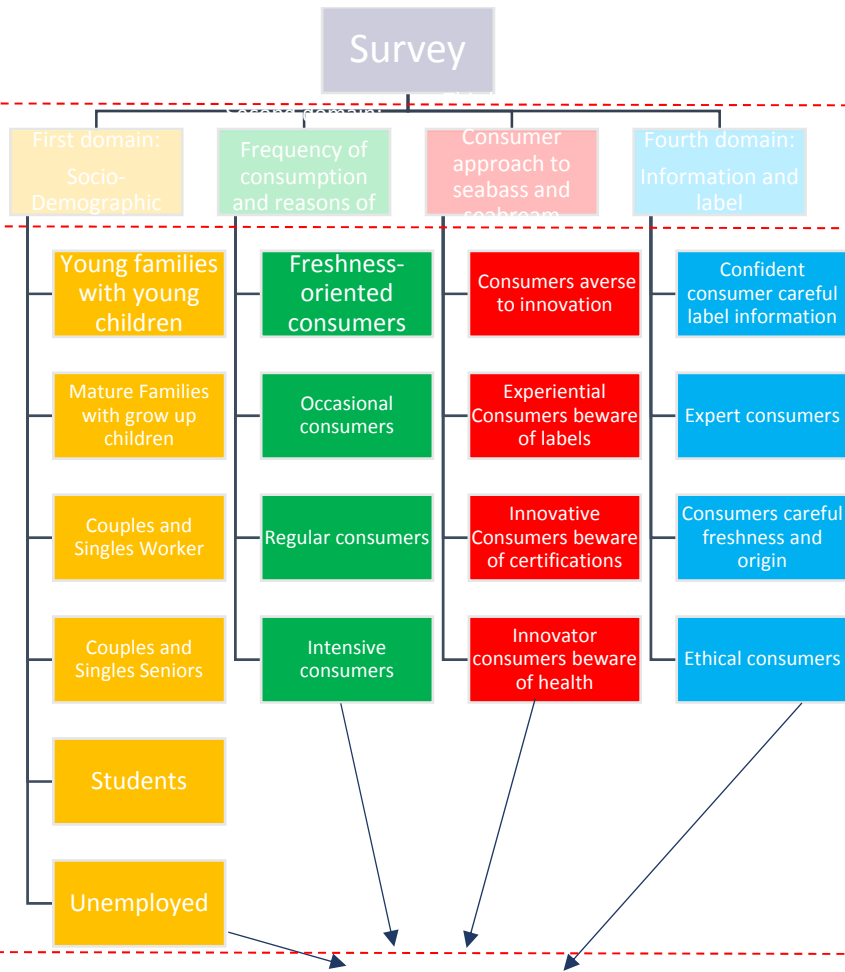
Cluster size: 4.45% (69 individuals)

The present group is characterized by a rather basic consumption frequency of fish products, the lowest among all groups. 100% of consumers in this cluster have an occasional consumption of fish products, at most once a month. Although consumption takes place both at home and away from home.

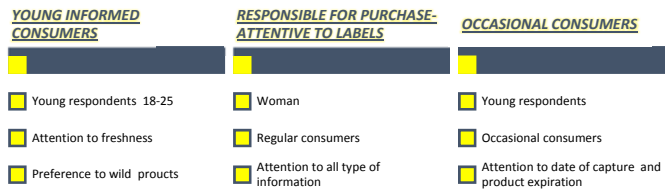
The demographic characterization of this cluster is the presence of many young people both couples (with and without children) and single, mainly employed. The relationship with the information is characterized by the attention paid by the group for the origin and dates of capture and product expiration.

One third of the cluster is characterized by minor importance attributed to the system of information accompanying the product. This is manifested in non detection of an informational gap for purchases without packaging.

Consumers in this group were generally interested in trying new products based on bass and bream.



<u>PREMIUM CONSUMERS</u>	<u>CONSCIOUS CONSUMERS</u>	<u>CONFIDENT CONSUMERS</u>
<ul style="list-style-type: none"> cuples and single workers Attention to premium attributes Attention to freshness 	<ul style="list-style-type: none"> young Families Attention to the label Attention to the origin 	<ul style="list-style-type: none"> Rspondents aged between 26-45 No attention to label No preference between farmed or wild product
<u>TRADITIONAL CONSUMERS</u>	<u>SENIOR CONSUMERS LED BY QUALITY</u>	<u>ETHICAL CONSUMERS</u>
<ul style="list-style-type: none"> Mature families Attention to freshness purchases in specialist stores 	<ul style="list-style-type: none"> Respondents aged over 56 Low use of high service products Traditional cooking 	<ul style="list-style-type: none"> Respondents aged 18-45 Regular and intense consumers Environment and sustainability certification



5. Brief comparison between Italian and Spanish population

The two populations surveyed have a very similar composition, in particular regarding gender, age, household composition, area of residence, employment and income bracket. The major differences are noted, however, with regard to the level of education and the profession (table 46).

table 46 Social and demographic characteristics of the Italian and Spanish respondents (sample)

	Italian Percentage %	Spanish Percentage %
Gender		
Male	48,9	49,1
Female	51,1	50,9
Age group		
18-25	15	17,7
26-35	31,7	29,8
36-45	26,8	27,9
46-55	16	16,3
56-65	8,2	5,9
65+	2,2	2,4
Residential Areal		
Urban	84	88,4
Rural	16	11,6
Educational level		
Primary	2,6	1,0
Secondary	49,2	18,2
University degree	37,9	48,6
Post-graduate degree/studies	10,2	32,1
Household size		
1	5,5	5,8

	2	16,6	23,5
	3	28,3	29,0
	4	35,8	32,4
	5	11,7	7,1
	6	1,2	1,5
	7	0,7	0,3
	8	0,1	0,2
	9	0,1	0,1
	10	0,1	0,1
	11	0,1	0,1
Children living in household			
	Yes, small children (younger than 7 years old)	29,0	24,6
	Yes, school children	24,1	22,0
	Yes, students or grown up children	24,6	26,0
	No	43,1	43,3
Occupation			
	Working	72	77,2
	Unemployed	12,5	7,7
	Student	11,9	10,8
	Pensioner	3,6	4,4
Profession			
	High skilled professional	19,1	24,7
	Public services	14,7	22,0
	Business-private sector	37,5	45,2
	Farmer	0,7	0,7
	Not worker	28	
Household income			
	Below the national average	20,8	11,3
	About the national average	59,2	68,6
	Above the national average	20,0	20,1

Also the dynamics of consumption of fish products, and in particular of seabass and seabream, at home and away from home are extremely similar (table 47, table 48, table 49, table 50).

table 47 - How often are fish products eaten (fish, molluscs and crustaceans) at home?

Frequency of eating fish and seafood in general, at home		
	Italian Percentage	Spanish Percentage
Everyday	3,1	2,5
2 to 3 times a week	42,0	55,5
Once a week	36,2	28,4
2 to 3 times a month	12,0	9,5
Once a month	4,5	2,3
Several times a year	2,2	1,9
Never/almost never	0,1	0,1
Total	100,0	100,0

table 48 - How often do you eat Seabass and Seabream at home?

Frequency of eating seabass and seabream at home		
	Italian Percentage	Spanish Percentage
Everyday	1,7	0,7
2 to 3 times a week	18,5	13,7
Once a week	34,2	33,5
2 to 3 times a month	25,3	30,7
Once a month	12,9	14,1
Several times a year	7,3	7,2
Never/almost never	0,2	0,1
Total	100,0	100,0

table 49- How often do you eat fish and seafood in general out of home?

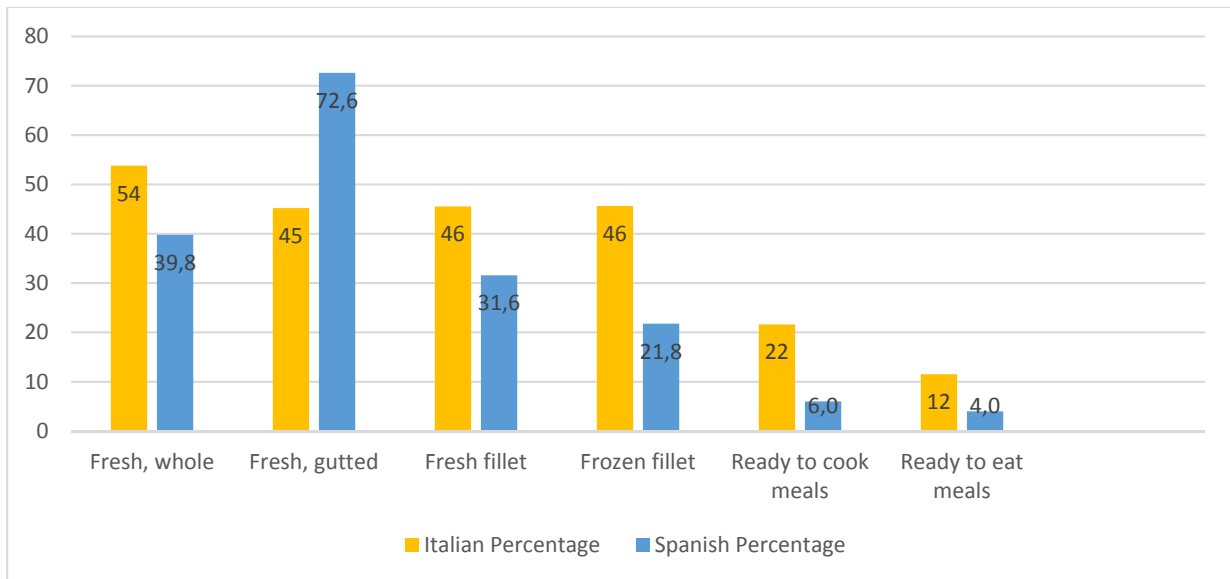
Frequency of eating fish and seafood in general outside of home (restaurants, canteens, bars, etc.)?		
	Italian Percentage	Spanish Percentage
Everyday	1,9	0,7
2 to 3 times a week	16,9	8,8
Once a week	17,5	16,2
2 to 3 times a month	19,4	23,1
Once a month	18,8	21,3
Several times a year	19,9	23,6
Never/almost never	5,5	6,4
Total	100,0	100,0

table 50 - How often do you eat Seabass and seabream away from home (restaurants, canteens, bars, etc.)?

Frequency of eating seabass and seabream outside of home (restaurants, canteens, bars, etc.)		
	Italian Percentage	Spanish Percentage
Everyday	1,9	0,6
2 to 3 times a week	9,2	4,8
Once a week	14,1	10,4
2 to 3 times a month	16,1	14,6
Once a month	18,0	20,2
Several times a year	26,1	33,2
Never/almost never	14,6	16,1
Total	100,0	100,0

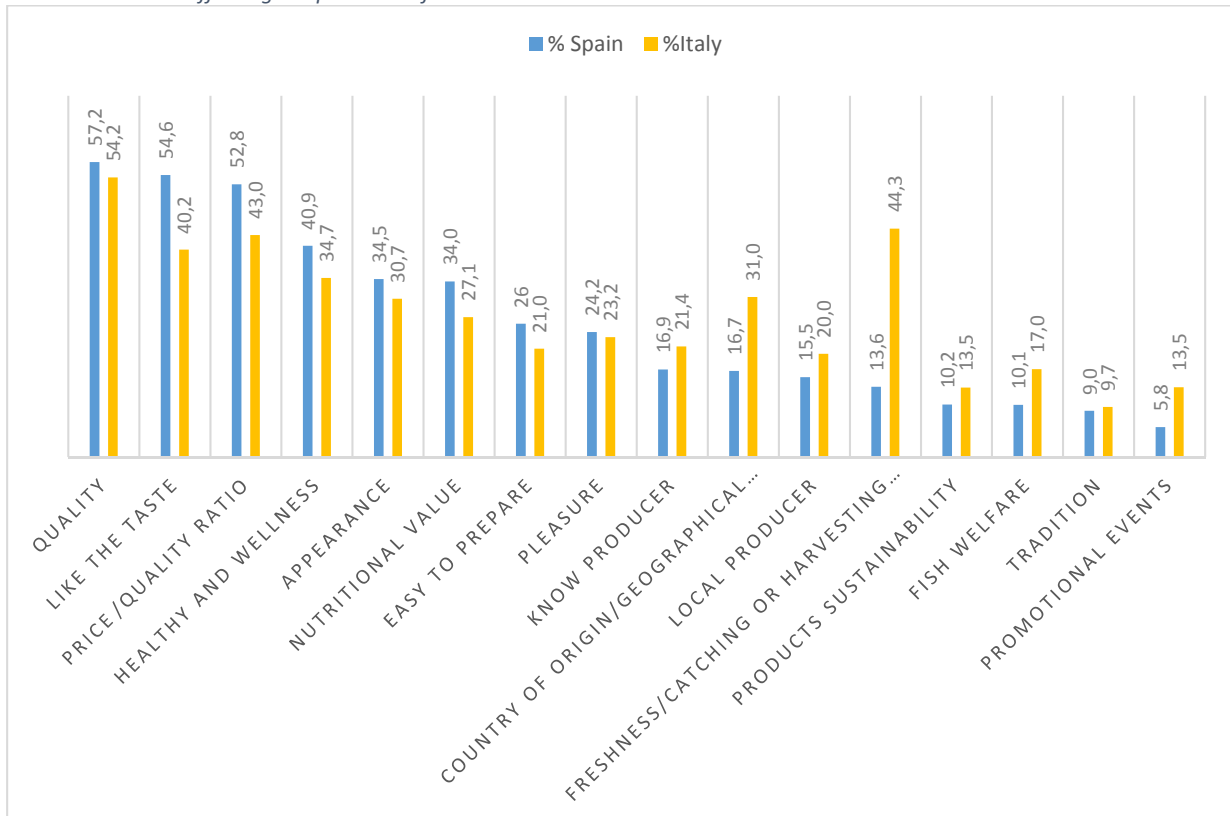
The first difference between the populations emerges by analysing the data relating to the type of product purchased, in relation to the seabass and seabream (chart 15).

chart 15 - Typical product forms of seabass and seabream products for purchases



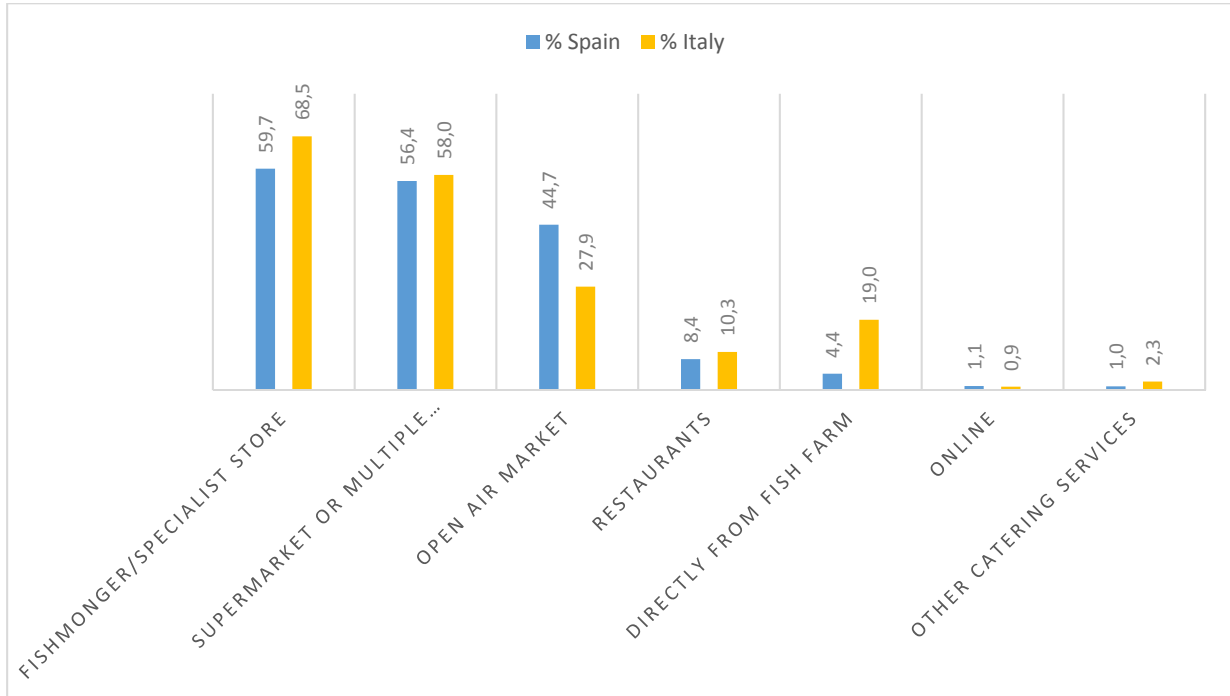
Slight differences can also be seen with regard to the factors influencing the purchase choices for seabass and seabream. In particular, we can see that the first factors that influence purchase choices are mainly the same, albeit with some differences in the percentage of those who indicate them. However, factors “Country of origin/geographical area of origin” and “Freshness/catching or harvesting date” are more important for the Italian population than for the average of the Spanish population (chart 16).

chart 16 – Factors affecting the purchase of seabass and seabream



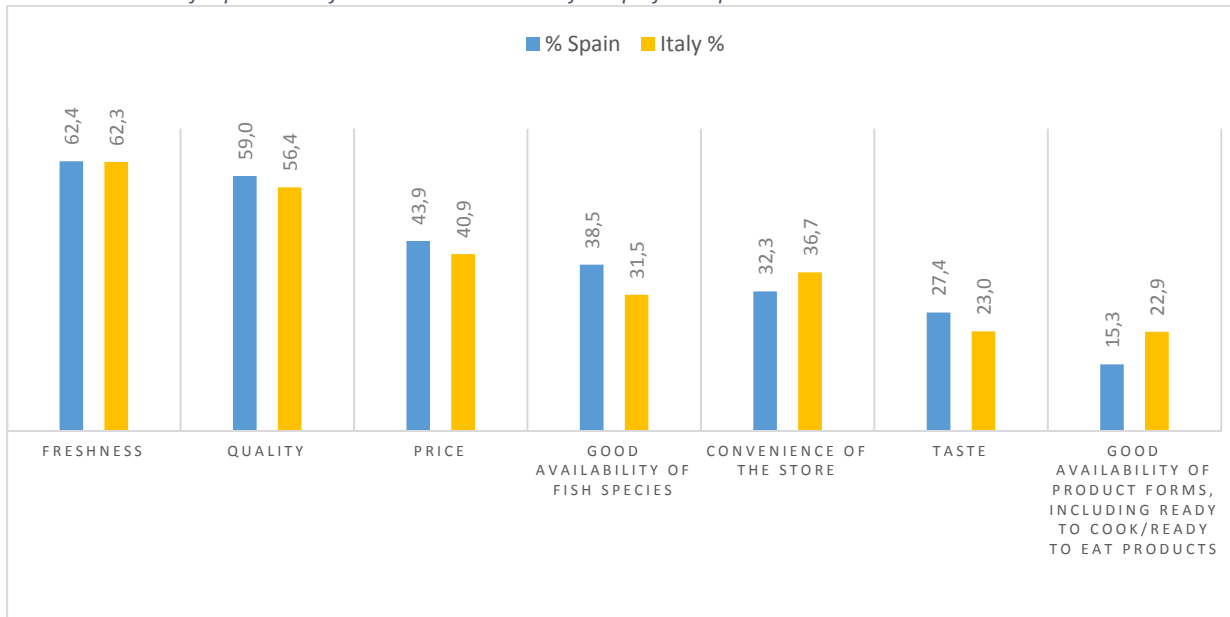
Both populations make purchases mainly in fishmonger or specialized shops and supermarkets. But unlike the Italian population, which shows a slight preference for fish markets, the Spanish population prefers open-air markets (chart 17).

chart 17 - Preferred places to purchase seabass and seabream



The reasons that drive the choice of the place where to make purchases of seabass and seabream, are predominantly the same (chart 18).

chart 18 - Reasons for purchase of seabass and seabream from preferred places



Over 90% of both populations buy other fish species in addition to seabass and seabream (chart 19). Among the most purchased species we can notice the strong differences (chart 20).

chart 19 - Do you buy others fish species?

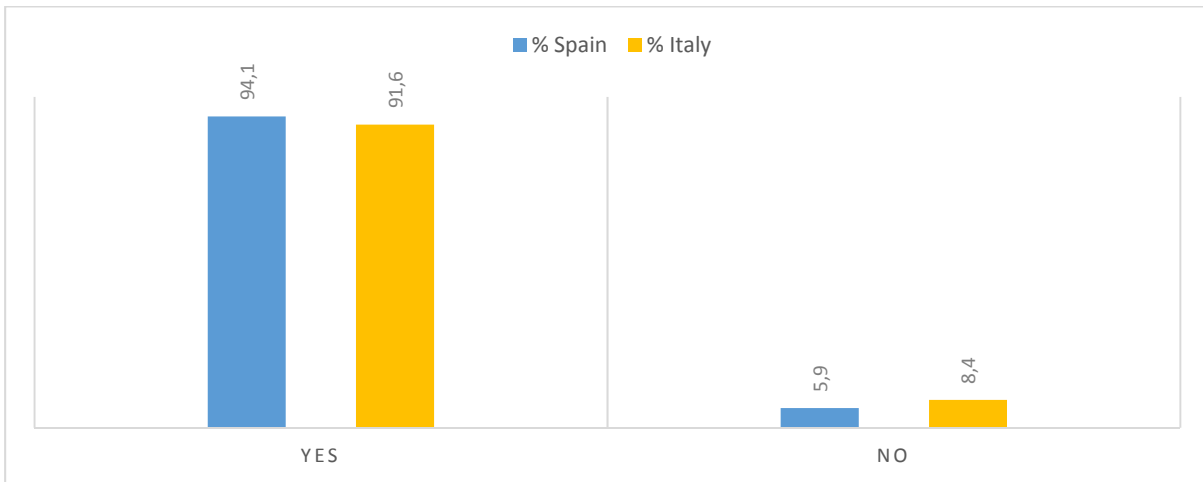
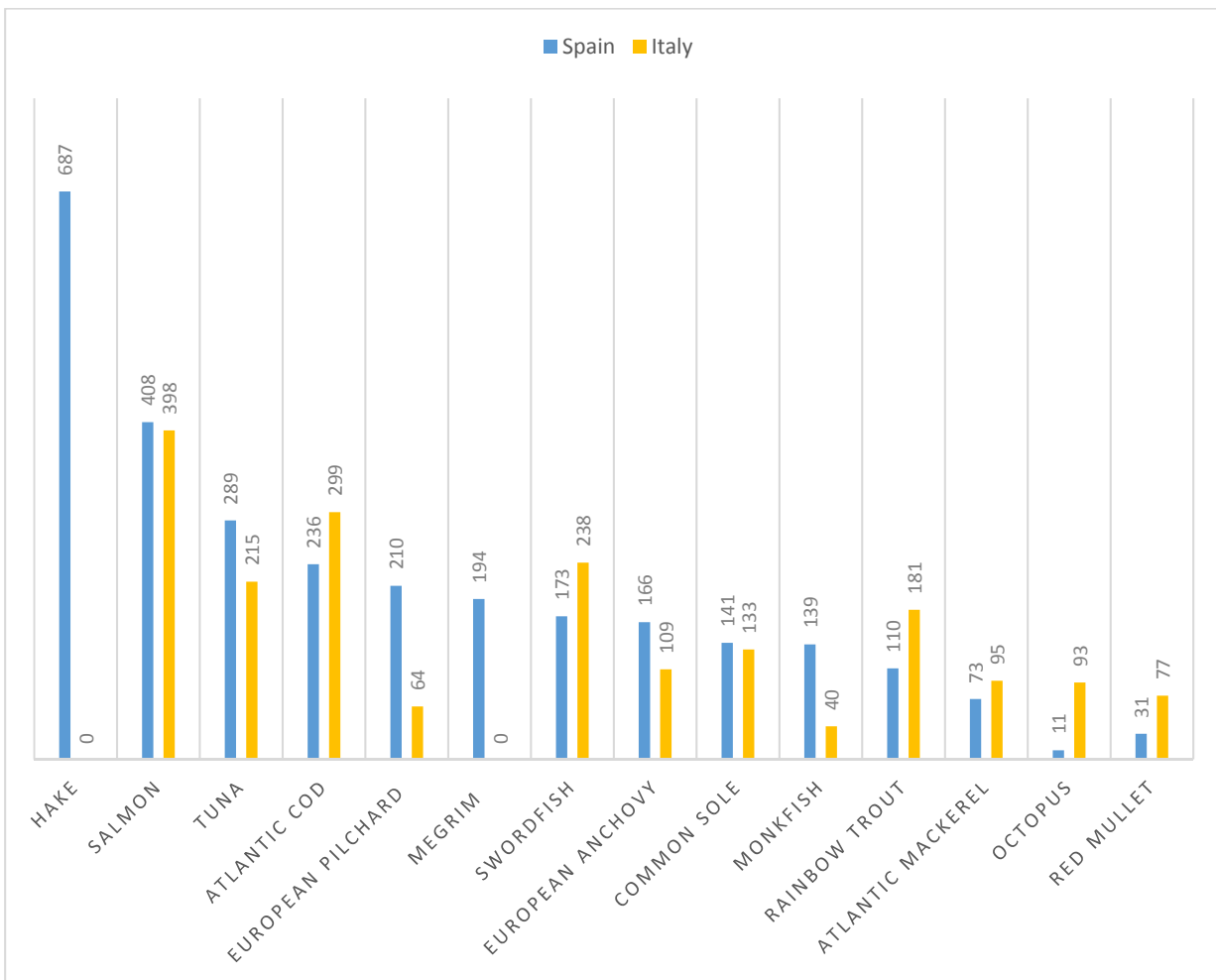
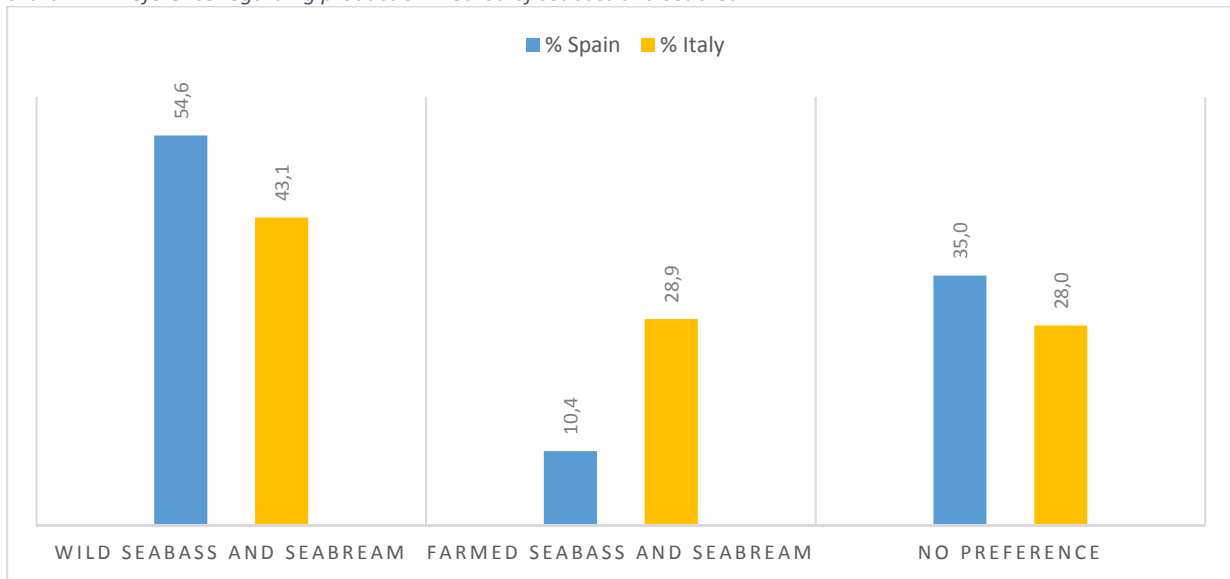


chart 20 - If you choose other species, except seabass and seabream, what species do you purchase?



Both populations show a clear preference for wild products, but the Italian population declares a greater preference for farmed products compared to the Spanish population (chart 21).

chart 21 - Preference regarding production method of seabass and seabream

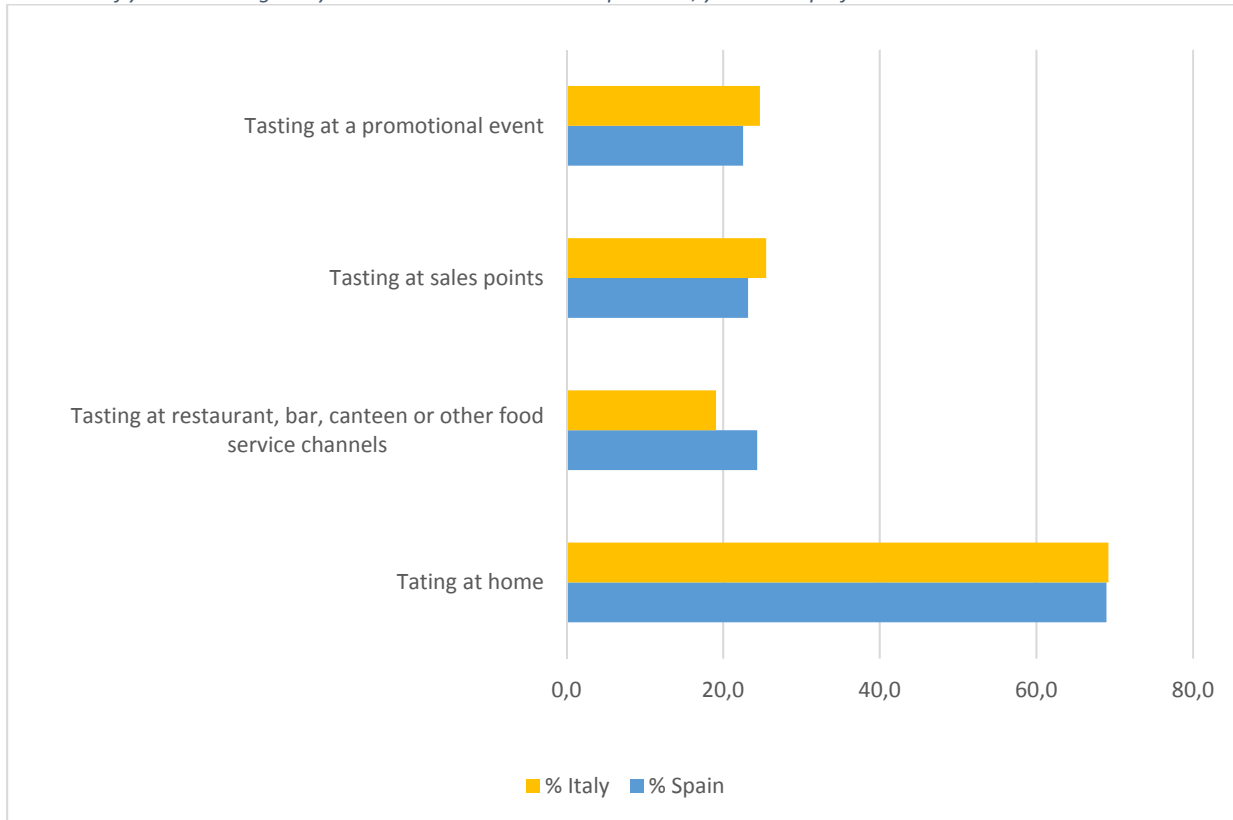


The propensity of both populations to try new products is very similar, and the percentages of those who indicate the different places where they can make these tastings are very similar (table 51, chart 22).

table 51 Are you willing to try new seabass and seabream products (for example improved fresh products, snacks, ready meals, smoked fillet, etc.)?

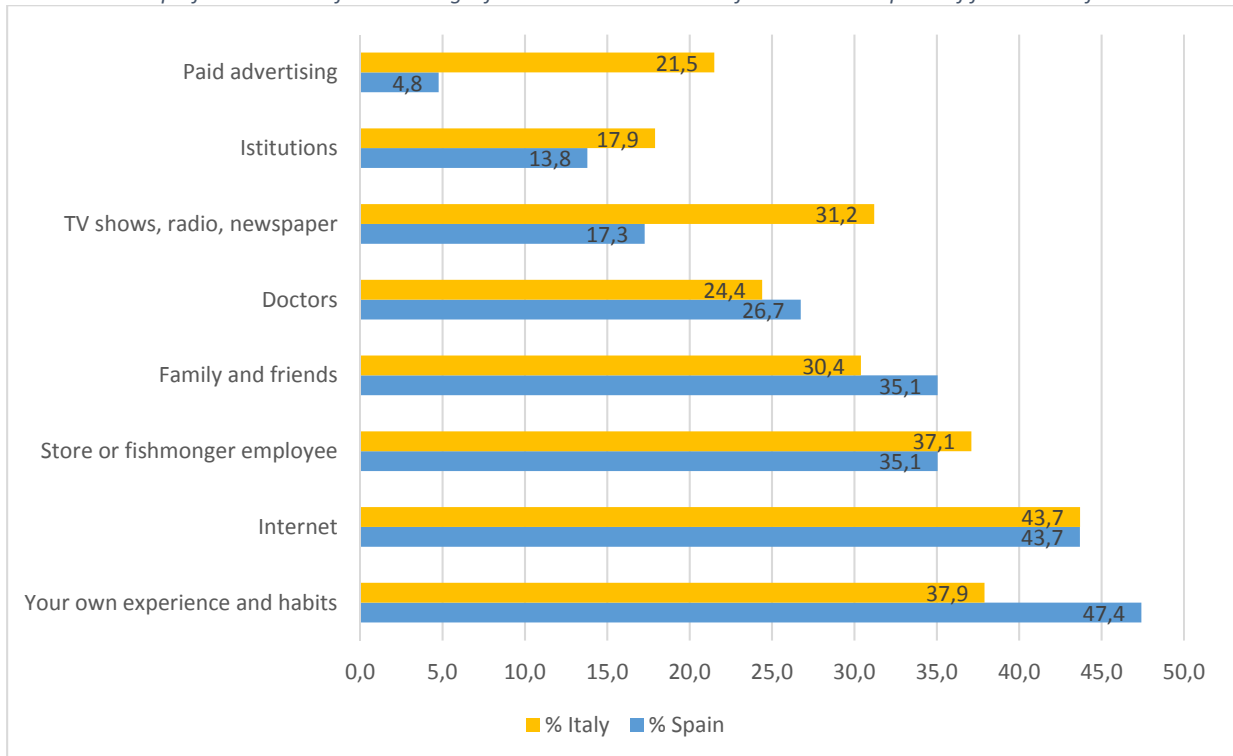
Willingness to try new products			
	Italian Percentage		Spanish Percentage
Yes	83		83,7
No	4		3,2
Do not know	13		13,1
Total	100		100,0

chart 22 – If you are willing to try new seabass and seabream products, you would prefer



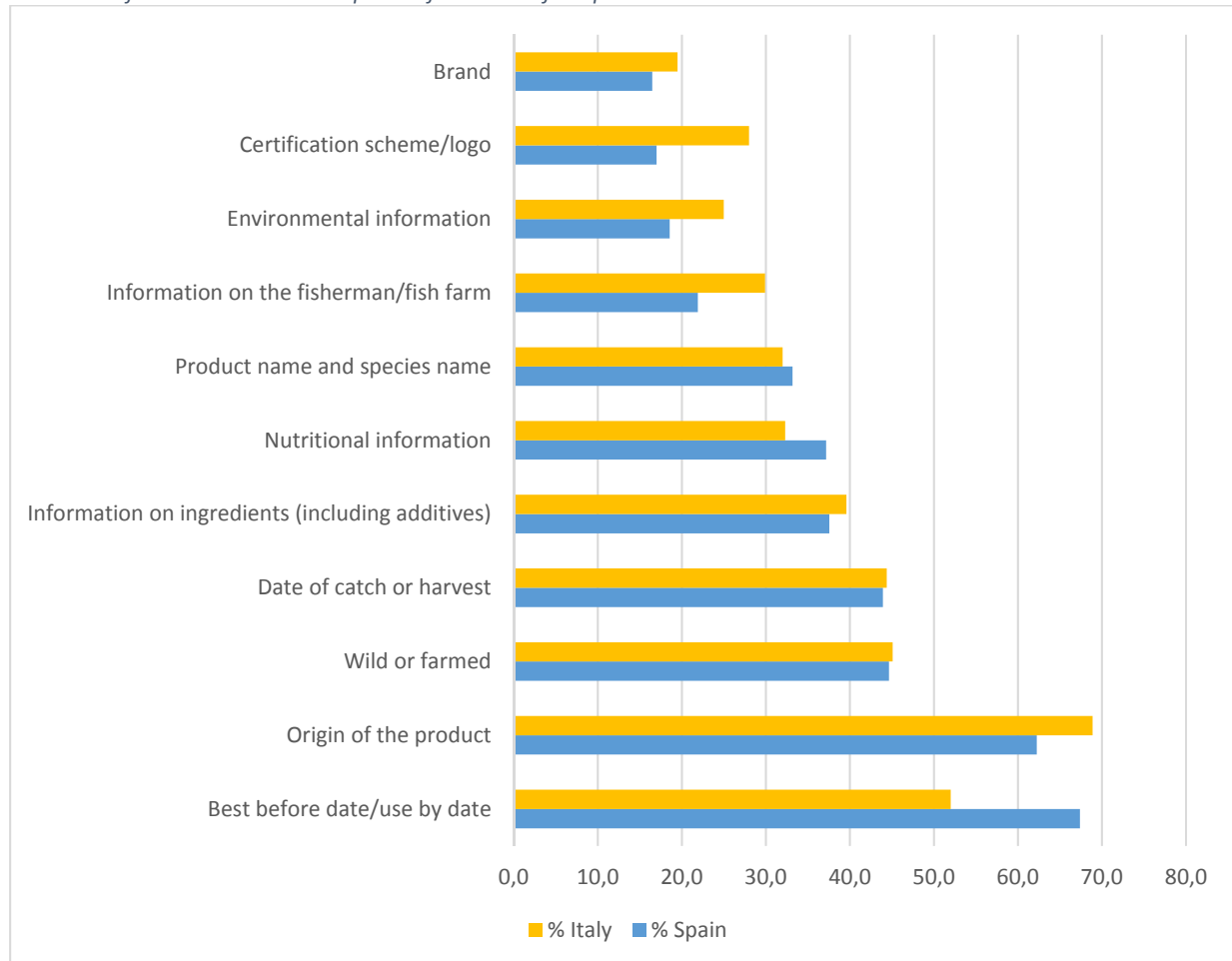
Unlike the Spanish population, the Italian population shows a greater propensity to obtain information through mass media and advertising, while Spanish respondents acquire information through their own experiences and habits (chart 23).

chart 23 - Most preferred sources for obtaining information about the benefits and consumption of fish and seafood



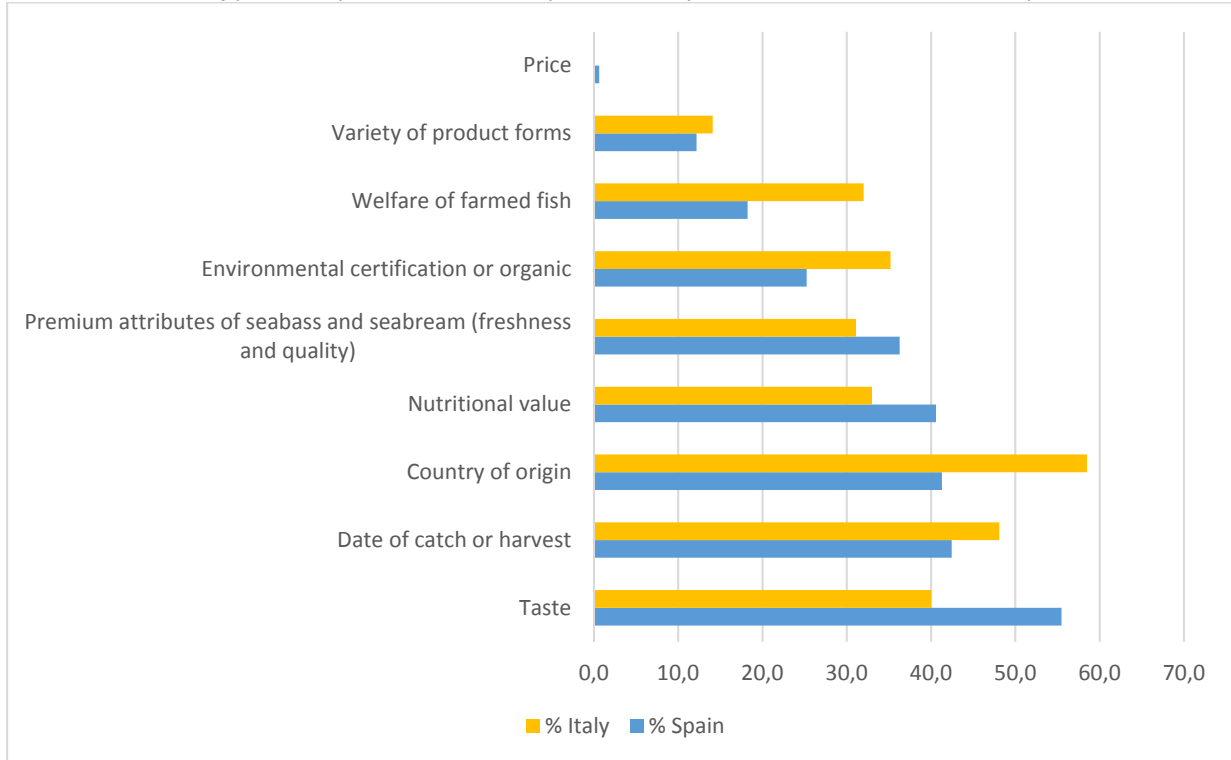
Except for the percentages of those who indicate the individual response possibilities (on average higher for the Italian population), the interest placed by the interviewees on the information on the label sees the same trend, with more attention to the expiration date, the origin of the product and production method, and less attention to the brand, certification schemes and environmental information. It should also be emphasized that for Italian respondents, origin is the factor to which they pay more attention, while the Spanish respondents indicate the expiry date in the first place (chart 24).

chart 24 - Information observed on packed fish and seafood products



Similarly, the trends of the most important factors in driving the purchase choices of seabass and seabream are very similar. For both the groups of interviewees the less important factors are price, variety of product forms and production method (even if these factors are less relevant for the Spanish population than for the Italian one), and the most relevant factors are taste, the date of capture and the country of origin. However, among the latter we can see some important differences: for Italian respondents the main factor is the origin, while for the Spanish respondents it is the taste (chart 25).

chart 25 - What kind of product aspects are the most important when you choose seabass and seabream products?



For both groups of respondents, the least important factor to find on seabass and seabream labels is the indication of certification schemes and the most important is the origin of the product. In fact, most of the respondents indicate that they prefer the national or local product and do not indicate non-EU products among their preferences (chart 26, chart 27).

chart 26 - How important is it to find the following information on the product label accompanying seabass and seabream products

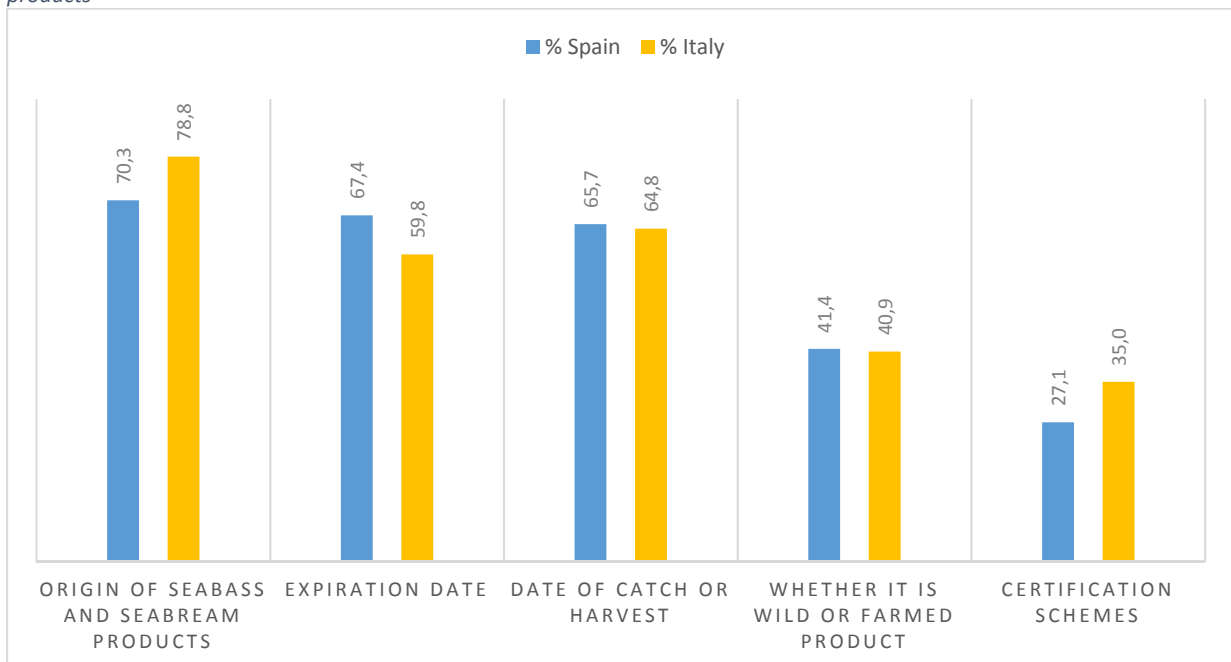
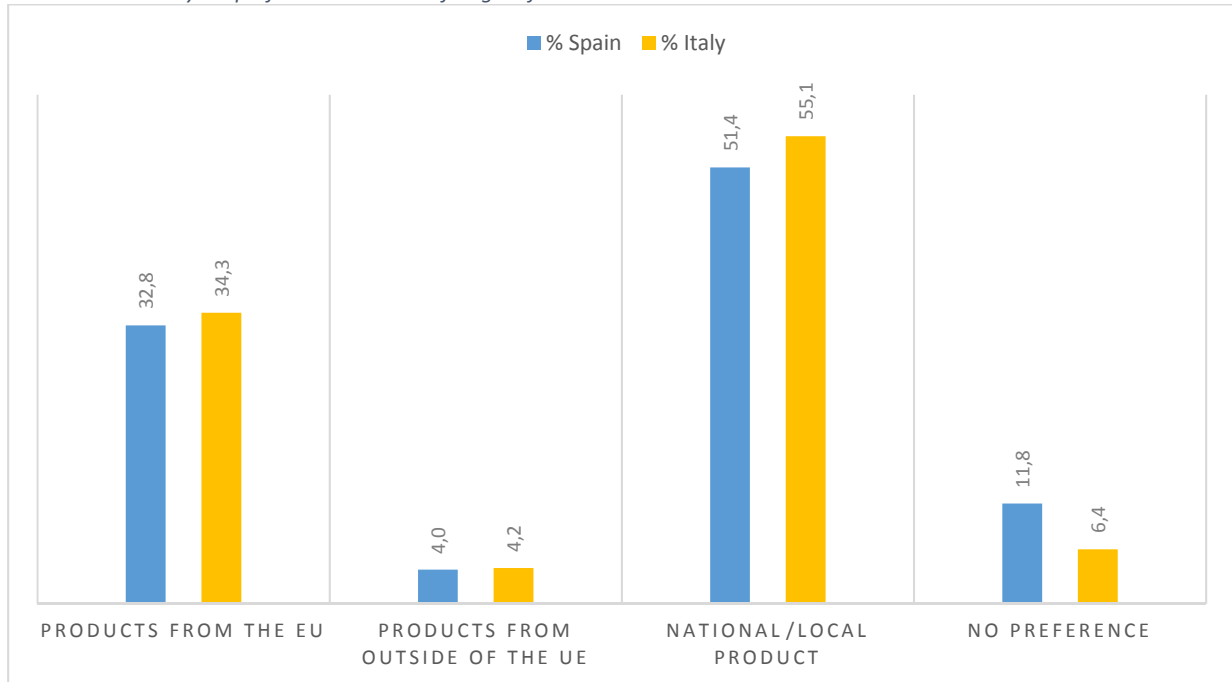


chart 27 - What is your preference in terms of origin of seabass and seabream?



ANNEX I

Ethical Requirements in English



Project: “Consumer Driven Production: Integrating Innovative Approaches for Competitive and Sustainable Performance across the Mediterranean Aquaculture Value Chain”.

Funded by: This project has received funding from the European Union’s Horizon 2020 research and innovation programme under Grant Agreement no. 727610.

Led by: the University of Thessaly, Katerina Moutou, kmoutou@bio.uth.gr

The objective of the project is to increase competitiveness of the Mediterranean aquaculture sector by tackling biological, technical and operational weaknesses that underline the stagnation of marine fish production in the last decade, while addressing social and environmental responsibility and contributing to “Blue Growth”.

Online consent form for participation in the interview

You are invited to take part in a research survey “Consumer perceptions about seabass and seabream products”. The objective of the interview is to analyse consumers’ views and preferences towards seabass and seabream products as well as consumers’ purchasing choices. This will support the industry in developing new products to satisfy consumer needs to meet expectations from the side of consumers.

- i. Your participation will require approximately 10 minutes and is completed online at your computer.
- ii. There are no known risks associated with this survey.
- iii. Participation in this interview is voluntary.
- iv. If you wish, you can withdraw from the interview at any time.
- v. Your responses will be kept strictly confidential, and digital data will be stored in secure computer files.
- vi. Any report of this research that is made available to the public will not include your name or any other individual information by which you could be identified.

Please feel free to print a copy of this consent page to keep for your records. For further information, please contact the University of Bologna, Mr. Felice Adinolfi at felice.adinolfi@unibo.it

Clicking the “**Next**” button indicates that you are 18 years of age or older, and indicates your consent to participate in this survey. *[Modify this sentence if the “click to continue” button is called something other than “Next” or if the participant needs to check a “Yes” box.]*



ANNEX II

Ethical Requirements in Spanish



Proyecto "Producción impulsada por los consumidores: Enfoques innovadores e integrados para un rendimiento competitivo y sostenible a través de la cadena de valor de la Acuicultura Mediterránea".

Financiado por: Este proyecto ha recibido financiación por el programa de investigación e innovación Horizonte 2020 de la Unión Europea en el marco del acuerdo de subvención no. 727.610.

Dirigido por: Universidad de Tesalia, Katerina Moutou, kmoutou@bio.uth.gr

El objetivo de este proyecto es aumentar la competitividad del sector acuícola mediterráneo abordando las debilidades biológicas, técnicas y operativas destacadas por el estancamiento de la producción de peces marinos en la última década, enfrentando al mismo tiempo la responsabilidad social y ambiental y contribuyendo al " crecimiento azul ".

Formulario de consentimiento informado para la participación en la encuesta en línea

Usted está invitado a participar en una encuesta de investigación "La percepción del consumidor sobre los productos ictiológicos".

El objetivo de la entrevista es analizar las opiniones y preferencias de los consumidores con respecto a los productos pesqueros, así como las opciones de compra de los consumidores. Esto apoyará a la industria en el desarrollo de nuevos productos para satisfacer las necesidades y expectativas de los consumidores.

Su participación tomará aproximadamente 10 minutos y se completará en línea desde su ordenador.

- i. No hay riesgos conocidos asociados con esta encuesta.
- ii. La participación en esta entrevista es voluntaria.
- iii. Si lo desea, puede retirarse de la entrevista en cualquier momento.
- iv. Sus respuestas se mantendrán estrictamente confidenciales y los datos digitales se almacenarán en archivos seguros.
- v. Cualquier informe de esta investigación puesto a disposición del público no incluirá su nombre u otra información individual con la que pueda ser identificado.

No dude en guardar una copia de esta página de consentimiento en su archivo.

Para obtener más información, póngase en contacto con la Universidad de Bolonia, con el Prof. Felice Adinolfi escribiendo a felice.adinolfi@unibo.it

Al aceptar participar en la encuesta, declara que tiene al menos 18 años de edad.

ANNEX III

Draft questionnaire in English

Part 1: Consumer habits and consumption patterns regarding seabass and seabream products

- 1. Purchase and consumption of seabass and seabream (single option)**
 - a) Yes
 - b) No

- 2. Reasons for not purchasing and consuming seabass and seabream (multiple choice)**
 - a) Too expensive
 - b) Too many bones
 - c) Do not like the smell or taste
 - d) Difficult to prepare
 - e) Allergic to fish in general
 - f) Vegetarian
 - g) Food safety concerns
 - h) Fish welfare concerns
 - i) Environmental concerns
 - j) Others (please specify)

- 3. Frequency of eating fish and seafood at home in general (single option)**
 - a) Everyday
 - b) 2 to 3 times a week
 - c) Once a week
 - d) 2 to 3 times a month
 - e) Once a month
 - f) Several times a year
 - g) Never/almost never

- 4. Frequency of eating seabass and seabream at home (single option)**
 - h) Everyday
 - i) 2 to 3 times a week
 - j) Once a week
 - k) 2 to 3 times a month
 - l) Once a month
 - m) Several times a year
 - n) Never/almost never

- 5. How often did you eat seabass and seabream in the following forms during the last month?**
 - 5.1 Fresh whole**
 - a) Once a week or more
 - b) 2-3 times a month
 - c) Once a month
 - d) Never
 - e) I do not know

5.2 Frozen whole

- a) Once a week or more
- b) 2-3 times a month
- c) Once a month
- d) Never
- e) I do not know

5.3 Fresh fillet

- a) Once a week or more
- b) 2-3 times a month
- c) Once a month
- d) Never
- e) I do not know

5.4 Frozen fillet

- a) Once a week or more
- b) 2-3 times a month
- c) Once a month
- d) Never
- e) I do not know

5.5 Ready to cook meals

- a) Once a week or more
- b) 2-3 times a month
- c) Once a month
- d) Never
- e) I do not know

5.6 Ready to eat meals

- a) Once a week or more
- b) 2-3 times a month
- c) Once a month
- d) Never
- e) I do not know

6. Frequency of eating fish and seafood in general outside of home (restaurants, canteens, bars, etc.) (single option)

- a) Everyday
- b) 2 to 3 times a week
- c) Once a week
- d) 2 to 3 times a month
- e) Once a month
- f) Several times a year
- g) Never/almost never

- 7. Frequency of eating seabass and seabream outside of home (restaurants, canteens, bars, etc.) (single option)**
- h) Everyday
 - i) 2 to 3 times a week
 - j) Once a week
 - k) 2 to 3 times a month
 - l) Once a month
 - m) Several times a year
 - n) Never/almost never
- 8. How would you estimate the share of seabass and seabream consumption in your total consumption of fish and seafood (single option)?**
- a) Less than 10%
 - b) 10-20%
 - c) 20-30%
 - d) Around 50%
 - e) 50 - 60%
 - f) Over 60%
- 9. Typical product forms of seabass and seabream products for purchases (multiple choice)**
- a) Fresh, whole
 - b) Fresh, gutted
 - c) Fresh fillet
 - d) Frozen fillet
 - e) Ready to cook meals
 - f) Ready to eat meals
 - g) Others (please specify)
- 10. If seabass and seabream are consumed whole, how many fish are bought/consumed in a typical meal per household (single option)**
- a) 1
 - b) 2 - 3
 - c) 3 - 4
 - d) More than 4
- 11. Factors affecting the purchase of seabass and seabream (multiple choice)**
- a) Freshness/catching or harvesting date
 - b) Quality
 - c) Price/quality ratio
 - d) Like the taste
 - e) Easy to prepare
 - f) Healthy and wellness
 - g) Tradition
 - h) Pleasure
 - i) Products sustainability

- j) Fish welfare
- k) Nutritional value
- l) Promotional events
- m) Appearance
- n) Country of origin/geographical area of origin
- o) Known producer
- p) Local producer
- q) Others (please specify)

12. Preferred places to purchase seabass and seabream (multiple choice)

- a) Supermarket or multiple retailers
- b) Open air market
- c) Fishmonger/specialist store
- d) Directly from fish farm
- e) Restaurants
- f) Other catering services
- g) Online
- h) Other (please specify)

13. Reasons for purchase of seabass and seabream from preferred places (multiple choice)

- a) Freshness
- b) Quality
- c) Taste
- d) Good availability of fish species
- e) Good availability of product forms, including ready to cook/ready to eat products
- f) Convenience of the store
- g) Price
- h) Other (please specify)

14. Which species do you prefer most (single option):

- a) Seabass
- b) Seabream

15. If you choose other species, except seabass and seabream, what species do you purchase (please specify several species)?

—

Part 2: Consumer preferences for seabass and seabream products**16. What is your preference regarding production methods (single choice)?**

- a) Wild seabass and seabream
- b) Farmed seabass and seabream
- c) No preference

17. Preferred ways of preparation of seabass and seabream (multiple choice)

- a) Grilled
- b) Baked
- c) Fried
- d) Other (please specify)

18. Are you willing to try new seabass and seabream products (for example improved fresh products, snacks, ready meals, smoked fillet, etc.)?

- a) Yes
- b) No
- c) Do not know

19. If you are willing to try new seabass and seabream products, you would prefer: (multiple choice)

- a) Tasting at home
- b) Tasting at sales points
- c) Tasting at a promotional event
- d) Tasting at restaurant, bar, canteen or other food service channels

20. Most preferred sources for obtaining information about the benefits and consumption of fish and seafood: (multiple choice)

- a) TV shows, radio, newspaper
- b) Internet
- c) Store or fishmonger employee
- d) Family and friends
- e) Doctors
- f) Your own experience and habits
- g) Paid advertising
- h) Institutions

21. Importance and impact of packaging and other information on labels of packed fish and seafood products:

- a) Frequency of reading of the label of packed fish and seafood products (single choice)
 - Always

- Frequently
- Sometimes
- Occasionally

b) Information observed on packed fish and seafood products (multiple choice)

- Product name and species name
- Brand
- Wild or farmed
- Information on the fisherman/fish farm
- Best before date/use by date
- Date of catch or harvest
- Nutritional information
- Information on ingredients (including additives)
- Origin of the product
- Certification scheme/logo
- Environmental information

c) If you buy seabass and seabream unpacked, which information do you miss from non-branded seabass and seabream products?

- Country of origin
- Date of catch or harvest
- Certification scheme
- Brand
- Method of production
- Other (please specify)

22. Factors affecting the image of seabass and seabream products (multiple choice)

- Endorsement by famous people (i.e. chefs)
- Country of production
- Date of catch or harvest
- Premium attributes (please specify)
- Healthy attributes of the product
- Image of high quality and tasty product
- Positive links to the Mediterranean eating style
- Indication of sustainability/environmentally friendly production farming
- Price
- Paid media
- Social media
- Other (please specify)

Part 3: Consumer attitude regarding seabass and seabream

23 What kind of product aspects are the most important when you choose seabass and seabream products? (multiple choice)

- a) Premium attributes of seabass and seabream (freshness and quality)
- b) Country of origin
- c) Date of catch or harvest
- d) Welfare of farmed fish
- e) Environmental certification or organic
- f) Nutritional value
- g) Taste
- h) Variety of product forms
- i) Other (specify)

24 Do you think information, accompanying seabass and seabream products you buy, is easy and clear to understand? (single option)

- a) Yes, definitely
- b) Yes, to some extent
- c) No, not really
- d) No, not at all
- e) I do not know

25 Do you trust in information provided by seller (single option)?

- a) Yes
- b) No
- c) I do not know

26 How important is it to find the following information on the product label accompanying seabass and seabream products (multiple options)

- a) Origin of seabass and seabream products
- b) Date of catch or harvest
- c) Expiration date
- d) Certification schemes
- e) Whether it is wild or farmed product

27 What is your preference in terms of origin of seabass and seabream? (single option)

- a) Products from the EU
- b) Products from outside of the EU
- c) National/local product
- d) No preference

Part 4: Consumer profiles**1. Gender**

- a) Male
- b) Female

2. Age group

- a) 18-25
- b) 26-35
- c) 36-45
- d) 46-55
- e) 56-65
- f) 65+

3. Residential Area

- a) Urban
- b) Rural

4. Place of residence: region, city, etc. (please specify)

5. Educational level

- a) Primary
- b) Secondary
- c) University degree,
- d) Post-graduate degree/studies

6. Household size (number of persons living in the same household)

- a) 1
- b) 2
- c) 3
- d) 4
- e) 5
- f) Other (please specify)



7. Do you have children living in your household?

- a) Yes, small children (younger than 7 years old)
- b) Yes, school children
- c) Yes, students or grown up children
- d) No

8. Occupation

- a) Working
- b) Unemployed
- c) Student
- d) Pensioner

9. What is your profession?

- a) High skilled professional
- b) Public services
- c) Business – private sector
- d) Farmer
- e) Other (please specify)

10. What is the category of your household income?

- a) Below the national average
- b) About the national average
- c) Above the national average

ANNEX IV

Questionnaire in Spanish

Parte 1: hábitos y patrones de consumo relacionados con los productos de lubina y dorada

**1. ¿Compra y consume lubina y dorada?
(Opción única)**

- a) Sí
- b) No

2. ¿Puede indicar las razones por las cuales no compra ni consume lubina y dorada? (Opción múltiple)

- a) Son demasiado caras
- b) Tienen demasiadas espinas
- c) No me gusta el olor o el sabor
- d) Son difíciles de preparar
- e) Soy alérgico al pescado en general
- f) Soy vegetariano
- g) Por preocupaciones sobre seguridad alimentaria
- h) Por preocupaciones con respecto al bienestar de los peces
- i) Por preocupaciones medioambientales
- j) Otra opción (especifique)

3. ¿Con qué frecuencia suele comer pescado y marisco en casa? (Opción única)

- a) Todos los días
- b) De 2 a 3 veces por semana
- c) Una vez por semana
- d) De 2 a 3 veces al mes
- e) Una vez al mes
- f) Varias veces al año

g) Nunca/casi nunca

4. ¿Con qué frecuencia come lubina y dorada en casa? (Opción única)

a) Todos los días

b) De 2 a 3 veces por semana

c) Una vez por semana

d) De 2 a 3 veces al mes

e) Una vez al mes

f) Varias veces al año

g) Nunca/casi nunca

5. Durante el último mes, ¿con qué frecuencia ha comido lubina y dorada de las siguientes formas?

5.1 Entera fresca

a) Una vez por semana o más

b) De 2 a 3 veces al mes

c) Una vez al mes

d) Nunca

e) No lo sé

5.2 Entera congelada

a) Una vez por semana o más

b) De 2 a 3 veces al mes

c) Una vez al mes

d) Nunca

e) No lo sé

5.3 Filete fresco

a) Una vez por semana o más

b) De 2 a 3 veces al mes

c) Una vez al mes

d) Nunca

e) No lo sé

5.4 Filete congelado

a) Una vez por semana o más

b) De 2 a 3 veces al mes

- c) Una vez al mes
- d) Nunca
- e) No lo sé

5.5 Plato preparado para cocinar

- a) Una vez por semana o más
- b) De 2 a 3 veces al mes
- c) Una vez al mes
- d) Nunca
- e) No lo sé

5.6 Plato preparado para comer

- a) Una vez por semana o más
- b) De 2 a 3 veces al mes
- c) Una vez al mes
- d) Nunca
- e) No lo sé

6. ¿Con qué frecuencia come pescado y marisco fuera de casa (restaurantes, cantinas, bares, etc.)? (Opción única)

- a) Todos los días
- b) De 2 a 3 veces por semana
- c) Una vez por semana
- d) De 2 a 3 veces al mes
- e) Una vez al mes
- f) Varias veces al año
- g) Nunca/casi nunca

7. ¿Con qué frecuencia come lubina y dorada fuera de casa (restaurantes, cafeterías, bares, etc.)? (Opción única)

- a) Todos los días
- b) De 2 a 3 veces por semana
- c) Una vez por semana
- d) De 2 a 3 veces al mes
- e) Una vez al mes
- f) Varias veces al año
- g) Nunca/casi nunca

8. ¿Cuál considera que es la proporción de consumo de lubina y dorada frente al consumo total de pescado y marisco? (Opción única)

- a) Menos del 10 %
- b) 10-20 %
- c) 20-30 %
- d) Alrededor del 50 %
- e) 50 – 60 %
- f) Más del 60 %

9. Cuando compra lubina y dorada, ¿cómo las compra? (Opción múltiple)

- a) Fresca y entera
- b) Fresca y limpia
- c) Filete fresco
- d) Filete congelado
- e) Preparada para cocinar
- f) Preparada para comer
- g) Otra opción (especifique)

10. Si consume lubina y dorada enteras, ¿cuántas unidades compra/consume en una comida familiar típica? (Opción única)

- a) 1
- b) 2 – 3
- c) 3 – 4
- d) Más de 4

11. ¿Cuáles de estos factores influyen en su compra de lubina y dorada? (Opción múltiple)

- a) Fecha de caducidad/fecha de captura o recolección
- b) Calidad
- c) Relación calidad-precio
- d) Sabor
- e) Facilidad de preparación
- f) Salud y bienestar
- g) Tradición
- h) Placer
- i) Sostenibilidad de los productos
- j) Bienestar de los peces
- k) Valor nutricional
- l) Eventos promocionales
- m) Aspecto
- n) País de origen/área geográfica de origen
- o) Productor conocido
- p) Productor local
- q) Otra opción (especifique)

12. ¿Dónde prefiere comprar lubina y dorada? (Opción múltiple)

- a) Supermercado o hipermercado
- b) Mercado
- c) Pescadería/tienda especializada
- d) Directamente del productor
- e) Restaurantes
- f) Otros servicios de catering
- g) En línea
- h) Otra opción (especifique)

13. ¿Cuáles son las razones por las que prefiere comprar lubina y dorada en estos lugares? (Opción múltiple)

- a) Frescura
- b) Calidad
- c) Sabor

- d) Buena disponibilidad de género
- e) Buena disponibilidad de productos, incluidos platos preparados para cocinar
- f) Comodidad de la tienda
- g) Precio
- h) Otra opción (especifique)

14. ¿Cuál de las dos especies prefiere? (Opción única)

- a) Lubina
- b) Dorada

15. Si compra otras especies, además de lubina y dorada, ¿cuáles compra (especifique el máximo número posible)? _____

Parte 2: preferencias del consumidor por los productos de lubina y dorada

16. ¿Cuál es su preferencia en cuanto a los métodos de producción? (Opción única)

- a) Lubina y dorada salvaje
- b) Lubina y dorada de piscifactoría
- c) No tengo preferencias

17. Métodos de preparación preferidos para la lubina y la dorada (Opción múltiple)

- a) A la parrilla
- b) Al horno
- c) Frita
- d) Otra opción (especifique)

18. ¿Estaría dispuesto a probar nuevos productos de lubina y dorada (p. ej., productos frescos mejorados, refrigerios, platos preparados, filetes ahumados, etc.)?

- a) Sí
- b) No
- c) No lo sé

19. En caso de estar dispuesto a probar nuevos productos de lubina y dorada, ¿dónde preferiría hacerlo? (Opción múltiple)

- a) Probarlos en casa
- b) Probarlos en puntos de venta
- c) Probarlos durante un evento promocional
- d) Probarlos en restaurantes, bares, cantinas u otros canales de catering

20. ¿Qué fuentes prefiere consultar para obtener información sobre los beneficios y el consumo de pescado y marisco? (Opción múltiple)

- a) Programas de televisión, radio, periódicos
- b) Internet
- c) Personal del punto de venta
- d) Familiares y amigos
- e) Médicos
- f) Su propia experiencia y hábitos de compra
- g) Publicidad de pago
- h) Instituciones

21. Importancia e impacto del envasado y de la información del etiquetado de los productos de pescado y marisco envasados:

A. ¿Con qué frecuencia lee el etiquetado de los productos de pescado y marisco envasados?

(Opción única)

- a) Siempre
- b) Frecuentemente
- c) A veces
- d) Ocasionalmente

B. ¿A qué información presta atención en el envasado de los productos de pescado y marisco?

(Opción múltiple)

- a) Nombre del producto y nombre de la especie
- b) Marca
- c) Salvaje o criado
- d) Información sobre el pescador/piscifactoría
- e) Fecha de caducidad
- f) Fecha de captura o recolección
- g) Información nutricional

- h) Información sobre los ingredientes (incluidos los aditivos)
- i) Origen del producto
- j) Plan/logotipo de certificación
- k) Información medioambiental

C. Si compra lubina y dorada sin envasar, ¿qué información echa en falta?

- a) País de origen
- b) Fecha de captura o recolección
- c) Plan de certificación
- d) Marca
- e) Método de producción
- f) Otra opción (especifique)

22. ¿Cuáles de los siguientes factores podrían influir positivamente en la imagen de los productos de lubina y dorada? (Opción múltiple)

- a) El apoyo de personajes famosos (p. ej., cocineros)
- b) País de producción
- c) Fecha de captura o recolección
- d) Características premium (especifique)
- e) Características saludables del producto
- f) Imagen de producto de gran calidad y sabor
- g) Relación positiva con la dieta mediterránea
- h) Indicación de sostenibilidad/producción responsable con el medioambiente
- i) Precio
- j) Publicidad de pago
- k) Redes sociales
- l) Otra opción (especifique)

Parte 3: Actitud del consumidor hacia la lubina y la dorada**23. ¿Qué aspectos del producto son más importantes a la hora de elegir lubina y dorada? (Opción múltiple)**

- a) Características premium de la lubina y la dorada (p ej., frescura y calidad)
- b) País de origen
- c) Fecha de captura o recolección
- d) Bienestar de los peces de piscifactoría
- e) Certificación medioambiental u orgánica
- f) Valor nutricional
- g) Sabor
- h) Variedad de formatos
- i) Otra opción (especifique)

24. ¿Cree que la información incluida en los productos de lubina y dorada que compra resulta fácil y clara de entender? (Opción única)

- a) Sí, sin duda
- b) Sí, en parte
- c) No realmente
- d) No, para nada
- e) No lo sé

25. ¿Confía en la información proporcionada por el vendedor? (Opción única)

- a) Sí
- b) No
- c) No lo sé

26. ¿En qué medida es importante encontrar la siguiente información incluida en el etiquetado de los productos de lubina y dorada? (Opciones múltiples)

- a) Origen de los productos de lubina y dorada
- b) Fecha de captura o recolección

- c) Fecha de caducidad
- d) Planes de certificación
- e) Si el producto es salvaje o cultivado

27. ¿Cuál es su preferencia en cuanto al origen de la lubina y la dorada? (Opción única)

- a) Productos de la UE
- b) Productos no comunitarios
- c) Producto nacional/local
- d) Ninguna preferencia

Parte 4: perfiles de consumidor

28. Sexo

- a) Hombre
- b) Mujer

29. Rango de edad

- a) 18-25
- b) 26-35
- c) 36-45
- d) 46-55
- e) 56-65
- f) Mayor de 65

30. Área de residencia

- a) Urbana
- b) Rural

31. Lugar de residencia: región, ciudad, etc. (especifique) _____

32. Nivel de educación

- a) Primaria
- b) Secundaria
- c) Grado

d) Estudios de postgrado

33. Tamaño del hogar (número de personas que viven en el mismo hogar)

a) 1

b) 2

c) 3

d) 4

e) 5

f) Otro (especifique)

34. ¿Tiene hijos viviendo en su hogar?

a) Sí, niños pequeños (menores de 7 años)

b) Sí, niños en edad escolar (primaria)

c) Sí, adolescentes o adultos

d) No

35. Empleo

a) Trabajando

b) Desempleado

c) Estudiante

d) Jubilado

36. ¿Cuál es su profesión?

a) Profesional altamente calificado

b) Servicios públicos

c) Sector privado

d) Agricultor

e) Otra opción (especifique)

37. ¿Cuál es nivel de ingresos de su hogar?

a) Por debajo de la media nacional



- b) Alrededor de la media nacional
- c) Por encima de la media nacional

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