



Analysis of chicken and turkey meat consumption by segmentation of Spanish consumers using food-related lifestyle

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Abstract

Aim of study: Commercially, chicken meat has a similar positioning to turkey meat, as both are healthy and low-fat meats. For this reason, we proposed analysing consumer behaviour with respect to each of these meats based on market segmentation.

Area of study: Spain.

Material and methods: We carried out a telephone survey with an error of $\pm 4.0\%$ at a confidence level of 95.5%, using the food-related lifestyle (FRL) instrument as part of the questionnaire. The statistical analysis techniques employed were different depending on the objective pursued: univariate, bivariate and multivariate analysis.

Main results: Five segments were obtained: “Manager cook” (24.5%), “Healthy cook” (20.8%), “Concerned with food, but not cooks” (22%), “Total detachment” (11.9%) and “Rational shopper with little interest in cuisine” (20.8%). Notwithstanding the similar positioning of chicken and turkey meats, there are significant differences in purchasing and consumption habits between FRL segments. Specifically, there were significant differences in the frequency of purchase, the usual shopping location, purchasing criteria and preparation methods.

Research highlights: Knowing the profile of these segments allows us to adapt the marketing mix (product, place, price and promotion) to each one. This is very useful for the companies due to the wide demand they face. First, they can choose the FRL segments to target and, second, they can define an appropriate marketing strategy according to these segments. In this way, market segmentation strategy based on food-related lifestyles may ensure companies a greater likelihood of success in the market.

Additional key words: positioning; marketing strategy; marketing mix; consumer profile; purchasing habits; consumption habits.

Abbreviations used: FRL (Food-Related Lifestyle); KMO (Kaiser-Meyer-Olkin); PCA (Principal Component Analysis)

Authors’ contributions: Conceived and designed the research: ABP, CEP and JBV. Designed the questionnaire: CEP, LMV and JBV. Performed the statistical analysis: LMV and CEP. Interpreted the data: ABP and LMV. Wrote the paper: ABP and JBV. All authors read and approved the final manuscript.

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Introduction

At present, companies need to segment the market due to the wide demand they face. Market segmentation is the process of dividing a market of potential customers into groups, or segments, based on different features. The segments created are composed of consumers who will respond similarly to marketing strategies as they have common interests, needs or locations (Bernabéu & Díaz,

2016). There are different techniques to segment consumers. Socioeconomic and demographic characteristics have been used traditionally (Kavak & Gumusluoglu, 2007). However, understanding the drivers of food consumption was and still is complex due to its multidimensionality. Currently, psychographic variables, values and lifestyles complement the sociodemographic variables in explaining food consumption patterns (Verain *et al.*, 2012).

In this sense, the food-related lifestyle (FRL) is an instrument that provides the food industry with information on the decisive factors in the consumer perception of value, understanding consumers as representing the final link in the food value chain (Grunert *et al.*, 1993; Brunso & Grunert, 1998). FRL has been tested in several countries, demonstrating its relevance and validity as a tool applicable in research into the food consumption lifestyles of consumers (Buckley *et al.*, 2007; Dimech *et al.*, 2011; Grunert *et al.*, 2011; Nie & Zepeda, 2011; Rongda, 2014; Grunert, 2019).

Scholderer *et al.* (2004) set out five domains to describe the cognitive structures of consumers: ways of shopping, cooking methods, quality aspects, consumption situations and purchasing motives. For all these domains, they proposed 23 dimensions with three questions per dimension, making up a final questionnaire of 69 items. These 69 questions or items are measured on a 7-point Likert scale, where 1 is "Completely disagree" and 7 is "Completely agree". Subsequently, other authors have used shorter questionnaires, with a smaller number of items, so as not to excessively extend the duration of the interview and, also, to adapt the FRL model to each local context (Bernués *et al.*, 2012; Schnettler *et al.*, 2012; Buitrago-Vera *et al.*, 2016).

In the meat sector, Montero-Vicente *et al.* (2018) showed how chicken and turkey present a similar positioning in Spain, as both are healthy and low-fat meats. In addition to their nutritional and dietary properties (Werner *et al.*, 2009), these types constitute an alternative to red meat (Larsson & Wolk, 2006; McAfee *et al.*, 2010). The market share (in kg) in Spain for chicken, turkey and beef are 37.8%, 8.5% and 14.8%, respectively (MAPA, 2020). Escribá-Pérez *et al.* (2017) stated that for each type of meat (chicken, beef, pork, turkey, rabbit and lamb), there is a different consumer profile. Due to the similar commercial positioning of chicken and turkey, we decided to analyse consumer behaviour towards each of these meats, using the FRL tool. In other words, the aim of this research was to pinpoint the significant differences in terms of the purchasing and consumption habits of chicken and turkey meats between FRL segments, given their similar positioning in the mind of the consumer. So far, no specific applications of FRL to these two types of meat have been found in the literature.

Material and methods

Study area and sample selection

We carried out a survey in peninsular Spain, in other words, throughout the Spanish mainland, excluding the Balearic Islands, Canary Isles, Ceuta and Melilla. The selected consumer profile is in charge of food purchasing

or shares this responsibility in households where chicken and turkey meat is consumed, even sporadically. The interviewees' ages ranged from 18 to 75 years. The interview was by telephone and held using a CATI (computer assisted telephone interview) system. The telephone numbers were selected at random from public telephone directories.

The sample size was 625 interviews, for an error of $\pm 4.0\%$ and a confidence level of 95.5%. The percentages of population with (p) and without the feature studied (q) were considered 0.5. The error was below the desirable limit of 4% indicated by Cea (2010) in social research. The sample was randomly selected with an equal allocation among the different Spanish geographical areas according to Nielsen classification (North East, East, South, Central, North West, North-Central, Madrid and Barcelona). Subsequently, the data were reweighted according to the actual population situation in each area in order to adapt them the current reality in Spain. The fieldwork was carried out in May and June 2018.

Questionnaire

The survey consisted of 64 questions, arranged into six groups, as follows: interviewee selection, purchasing habits, consumption habits, image, food lifestyles and identification data. When asking about chicken and turkey meat, we refer to both fresh and processed meat (hamburgers, sausages, sliced, marinated, breaded, etc.). This is because the consumption of both meats has evolved towards more elaborated products that involve time-saving on preparation ('ready-to-eat' food) (Magdelaine *et al.*, 2008). Both open and closed type questions were included.

In the FRL questions, we adapted the questionnaire of Scholderer *et al.* (2004), reducing the items from 69 to 23, divided in turn among each of the five domains considered. From each domain, we chose the item most appropriate for the Spanish context. We measured the items using a Likert scale with a range of 5 points, from 1 "Strongly disagree" to 5 "Strongly agree", as recommended by Cea (2010) for telephone surveys. The interviews lasted approximately 12 minutes.

Statistical analysis

After gathering the information, we initiated the process of data analysis and purging by examining the frequency of the responses to the food lifestyle block questions. The presence of 38 cases that included any response of the DK/DA (do not know/do not answer) type prompted us to rule out these cases (Hair *et al.*, 2014). As they did not exceed 10% of the total, their presence was

assumed to be totally random (Malhotra, 2008), leaving 587 valid cases.

The statistical analysis techniques employed were different depending on the objective pursued. First, we used univariate analysis for the description of the 23 items that measure the FRL from the basic statistics and frequency distributions. As a reliability analysis, to check the level of internal consistency or reliability of the FRL scale used, Cronbach's alpha was applied. If the measuring instrument is consistent, the Cronbach's alpha is greater than 0.7 (Hair *et al.*, 2014). Second, we applied multivariate analysis in the reduction of the 23 items and to obtain conglomerates or clusters using factor analysis techniques and cluster analysis, respectively (Bernués *et al.*, 2003; Brunner & Siegrist, 2011; Dimech *et al.*, 2011). These clusters are the market segments obtained according to food lifestyles. The factor analysis used was principal component analysis (PCA). Third and last, we used bivariate analysis to determine the sociodemographic profile and the chicken and turkey meat purchasing and eating habits of each of the segments. Specifically, we used cross tabulations and correlation tests following the examples of Sánchez *et al.* (2002) and Buitrago-Vera *et al.* (2016).

Results

Analysis and reduction of the number of items measuring food-related lifestyle

First, we calculated the Cronbach's alpha. It was 0.735, confirming the consistency of the FRL scale (Table 1). As an acceptable result was obtained, none of the 23 items considered were eliminated. In second place, we performed a factor analysis to reduce the items in the question about lifestyles to a smaller number of factors that retain maximum information, allowing us to subsequently perform a cluster analysis. The PCA's goodness contrasts were as follows: i) Kaiser-Meyer-Olkin (KMO) sample adequacy measure equal to 0.763; ii) Bartlett's test of sphericity gives a *p*-value equal to 0.000 at 95% confidence level. As the KMO is greater than 0.5 and the *p*-value was equal to 0.000, application of the PCA is justified (Uriel & Aldás, 2005).

Finally, we used varimax rotation to improve the interpretation of the factors. Thus, we obtained seven factors that explain 55.83% of the total variance. This result is acceptable, as in social sciences 60% or even less is considered

Table 1. Descriptive statistics for the items measuring food-related lifestyle (FRL)

	Min.	Max.	Average	St. dev.
I feel that sharing food with friends and family is an important part of my social life	1	5	4.70	5.31
I always try to get the best food quality at the best price	1	5	4.68	5.32
I prefer fresh products to canned or frozen products	1	5	4.63	0.74
I like purchasing in specialised stores where they can advise me	1	5	4.55	9.21
I prefer to buy natural products, such as preservative-free items	1	5	4.39	0.98
I like food shopping for my household	1	5	4.32	5.40
The woman is responsible for achieving a healthy and nutritious diet for the family	1	5	4.27	10.02
I consider it more important to choose food products for their nutritional value than for their flavour	1	5	4.21	7.55
The family is involved in preparing meals	1	5	4.11	10.01
I like going out to restaurants with family and friends	1	5	3.88	1.28
I like reading food product labels and knowing their composition	1	5	3.86	1.35
I like purchasing organic products if I have the chance	1	5	3.79	5.47
I only purchase and consume products that are familiar to me	1	5	3.78	3.91
I like cooking / trying out new recipes	1	5	3.77	5.48
I like trying new foods	1	5	3.69	1.32
I like to spend a lot of time cooking	1	5	3.62	7.63
I pay attention to changes in the price of foods that I usually buy	1	5	3.56	5.50
I find cooking very gratifying	1	5	3.52	4.00
I often decide which meals to make at the last minute	1	5	3.42	9.32
At home, we usually use ready-to-eat foods, such as salads	1	5	3.34	7.68
I usually decide what I'm going to buy when I reach the food shop	1	5	2.87	4.07
I prefer snacking rather than a formal meal	1	5	2.46	4.02
Advertising helps me decide which foods I'm going to buy	1	5	2.12	4.00

Cronbach's alpha = 0.735.

reasonable in terms of explanation of the variance (Hair *et al.*, 2014). The seven factors obtained were (Table 2): i) interest in cuisine; ii) interest in quality, healthy and organic products; iii) commitment to the purchasing process: advertising, quality and price, convenience products; iv) traditional/conservative household food management; v) little planning; vi) food as a social act; and vii) prefer snacking.

Obtaining the segments

To estimate the number of segments, we performed a cluster analysis applying hierarchical procedures, using as a measure of similarity between objects the Euclidean squared distance and the Ward Method as an aggregation method for cluster development. To check that the difference between clusters was significant, the Brown-Forsythe test for equality of population variance was carried out. As the test is statistically significant at 95% confidence level, it indicates that the means are significantly different and, consequently, the groups have different means. The calculations made reveal the existence of five segments, whose factor scores are shown in Table 3.

Based on this information, we can describe the five segments obtained: i) Segment 1 (“Manager cook”) is characterised by individuals with an interest in cuisine, engaged in the purchasing process and who understand food as a social act; they make up the largest segment, representing 24.5% of the total; ii) Segment 2 (“Healthy cook”) members stand out for their interest in cuisine and in quality, healthy and organic products, as well as their low commitment to the purchasing process; this segment represents 20.8% of the total; iii) Segment 3 (“Concerned with food, but not cooks”) members stand out for their interest in quality, healthy and organic products, commitment to the purchasing process and little interest in cuisine; in fact, segment 3 members scored the highest in the “Prefer snacking” factor; they make up the second largest sample (22%); iv) Segment 4 (“Total detachment”) consists of individuals with zero or little interest in any aspect of food, cooking or purchasing; they make up the smallest segment (11.9%); v) Segment 5 (“Rational shopper with little interest in cuisine”) consists of individuals with a highly traditional/conservative and highly planned food management at home, with little interest in cooking and quality, or healthy and organic products; this segment represents 20.8% of the total.

Sociodemographic characteristics of segments

To define the sociodemographic profile of the segments, the variables considered were “age”, “sex”, “educational level”, “presence of children under 18 years of age in the home”, “number of people in the home”, “geo-

graphic area” and “locality type according to number of inhabitants”. Only the first four variables gave rise to significant differences among the segments (Table 4).

The youngest segment is “Total detachment”, as it is the one with the highest percentage scores in the lower age ranges. Some 14.3% of this segment is in the 18-24 age range, 32.9% is in the 25-34 range (the highest percentages in both intervals compared to the other segments) and 20% in the 35-44 interval. The second youngest sector is “Healthy cook”, with 25.4% in the 35-44 age range and 20.5% for each of the 25-34 and 45-54 intervals. The third youngest segment is “Concerned with food, but not cooks”, as there is 24.8% of the segment in both the 35-44 age range and the 45-54 interval. The fourth youngest segment is “Manager cook”, as 45.8% of this segment falls into the 45-64 age range. The least young segment is “Rational shopper with little interest in cuisine”, as it has the highest percentages in the older age groups compared to the rest of the segments.

As for sex, the segment with the greatest male presence is “Total detachment”, as 45.7% are men, while 54.3% are women. The segment with the highest female presence is “Rational shopper with little interest in cuisine”, with 77%. In the remaining segments, the distribution is approximately 70% women and 30% men. All segments have the highest percentages in the higher educational levels (FP2/ Secondary and Higher). The exception is “Rational shopper with little interest in cuisine”, whose highest percentage is found in “primary” studies (29.5%). The segments with the highest presence of children under 18 in the home are “Manager cook” (38.2%), “Healthy cook” (33.6%) and “Concerned with food, but not cooks” (30.2%).

Chicken and turkey meat purchasing habits of the segments

The variables considered when analysing the purchasing habits of the segments were “purchasing frequency”, “usual purchasing location”, “purchase criteria” and “purchase formats”. Only the first three variables gave rise to significant differences among the segments.

Regarding the “purchasing frequency” variable (Table 5), the frequency was set as follows: once a week or more, every two weeks, once a month, once every 2 months, once a year and never. From the outcomes obtained, we can deduce that the purchasing frequency of fresh chicken meat is independent from the segment. For the rest of the meats analysed (fresh turkey meat, turkey preparations and chicken preparations), a very similar behaviour pattern is observed. The segments with the highest frequency (once a week or more and every two weeks) shopping for fresh turkey meat are “Manager cook” (63.2%), “Concerned with food, but not cooks” (51.2%) and “Total detachment” (48.5%). In contrast, the other two

Table 2. Principal component analysis of the items measuring food-related lifestyle

Variables	Factors						
	Interest in cooking	Interest in quality, healthy and organic products	Committed to the purchasing process: advertising, quality and price Convenience products	Traditional/Conservative food management at home	Little planning	Food as a social act	Prefer snacking
I like to spend a lot of time cooking	0.887	0.127	0.009	0.035	-0.017	-0.005	0.056
I find cooking very gratifying	0.887	0.113	0.050	0.025	-0.058	0.067	0.043
I like cooking / trying out new recipes	0.802	0.216	0.068	-0.180	0.065	-0.011	0.075
I like food shopping for my household	0.501	0.113	0.269	0.101	0.049	0.090	-0.299
I prefer to buy natural products, such as preservative-free items	0.114	0.743	-0.030	0.123	-0.012	0.015	-0.016
I like purchasing organic products if I have the chance	0.122	0.694	-0.029	-0.266	0.130	0.006	0.032
I like reading food product labels and knowing their composition	0.094	0.656	0.184	-0.059	-0.222	-0.110	-0.020
I consider it more important to choose food products for their nutritional value than for their flavour	0.065	0.640	0.210	-0.065	-0.010	-0.076	-0.019
I prefer fresh products to canned or frozen products	0.076	0.480	-0.067	0.137	0.216	0.219	-0.085
I like purchasing in specialised stores where they can advise me	0.162	0.456	0.141	0.237	-0.016	0.134	0.042
I pay attention to changes in the price of foods that I usually buy	0.144	0.208	0.664	0.055	-0.043	-0.197	-0.088
Advertising helps me decide which foodstuffs I'm going to buy	-0.023	0.019	0.640	0.072	0.154	0.070	0.354
At home, we usually use ready-to-eat foods, e.g. salads	0.009	-0.066	0.524	-0.141	0.196	0.371	0.116
I always try to get the best food quality at the best price	0.156	0.189	0.502	0.155	-0.054	-0.006	-0.276
I only purchase and consume products that are familiar to me	0.027	0.094	0.173	0.645	0.148	0.247	-0.039
The woman is responsible for achieving a healthy and nutritious diet for the family	0.097	0.114	0.218	0.642	0.120	-0.016	0.054
The family is involved in preparing meals	0.084	0.083	0.218	-0.541	0.111	0.200	-0.034
I like trying new foods	0.272	0.301	0.116	-0.481	0.244	0.034	0.114
I usually decide what I'm going to buy when I reach the food shop	0.106	-0.012	0.084	0.009	0.798	-0.005	-0.177
I often decide which meals to make at the last minute	-0.109	0.019	0.039	0.038	0.740	-0.028	0.225
I feel that sharing food with friends and family is an important part of my social life	0.182	0.062	0.047	0.089	-0.099	0.749	-0.141
I like going out to restaurants with family and friends	-0.084	-0.008	-0.055	-0.058	0.030	0.724	0.187
I prefer snacking rather than a formal meal	0.092	0.002	0.045	0.030	0.014	0.063	0.828

Variables with the highest factor loadings appear in bold.

Table 3. Factor loadings of the segments

Factor	Manager cook	Healthy cook	Concerned with food, but not cooks	Total detachment	Rational shopper with little interest in cuisine
Interest in cooking	0.63	0.42	-0.84	-0.45	0.00
Interest in quality, healthy and organic products	0.10	0.44	0.46	-1.34	-0.28
Committed to the purchasing process: advertising, quality and price Convenience products	0.73	-0.96	0.38	-0.62	0.04
Traditional/conservative household food management	-0.40	0.04	-0.28	-0.32	0.90
Little planning	-0.04	0.29	0.20	0.61	-0.80
Food as a social act	0.41	0.25	-0.30	-0.24	-0.28
Prefer snacking	0.05	0.12	0.18	0.11	-0.44
Total	144	122	129	70	122
Total %	24.5%	20.8%	22.0%	11.9%	20.8%

Table 4. Sociodemographic characteristics of segments (%)

Variables	Manager cook	Healthy cook	Concerned with food, but not cooks	Total detachment	Rational shopper with little interest in cuisine	Total
Age (yr old)**						
18-24	9.7	9.0	3.1	14.3	4.1	7.5
25-34	16.7	20.5	16.3	32.9	7.4	17.4
35-44	17.4	25.4	24.8	20.0	13.9	20.3
45-54	23.6	20.5	24.8	12.9	23.8	22.0
55-64	22.2	17.2	21.7	12.9	27.9	21.1
65-75	10.4	7.4	9.3	7.1	23.0	11.8
Sex*						
Male	27.1	29.5	27.9	45.7	23.0	29.1
Female	72.9	70.5	72.1	54.3	77.0	70.9
Study level*						
No qualifications	1.4	1.6	2.3	1.4	1.6	1.7
Primary	20.8	10.7	19.4	12.9	29.5	19.3
FP1/						
Secondary 1	17.4	14.8	9.3	8.6	13.9	13.3
FP2/						
Secondary 2	20.8	27.0	20.2	21.4	27.9	23.5
Higher	39.6	45.9	48.8	55.7	26.2	42.1
DK/DA	0.0	0.0	0.0	0.0	0.8	0.2
Presence of children under 18 in the household*						
Yes	38.2	33.6	30.2	20.0	20.5	29.6
No	61.8	66.4	69.0	80.0	79.5	70.2
DK/DA	0.0	0.0	0.8	0.0	0.0	0.2

*, **: Significant differences ($p < 0.05$, $p < 0.01$, respectively). FP1 = a basic Vocational Education and Training available in Spain. FP2 = Vocational Education and Training. DK/DA = Do not know / Do not answer.

Table 5. Purchasing frequency of segments (%)

Variables	Manager cook	Healthy cook	Concerned with food, but not cooks	Total detachment	Rational shopper with little interest in cuisine	Total
Fresh turkey meat**						
Once a week or more	50.7	33.6	38.0	21.4	32.0	37.0
Every 2 weeks	12.5	14.8	13.2	27.1	13.1	15.0
Once a month	11.1	12.3	14.0	11.4	12.3	12.3
Once every two months	4.2	9.0	5.4	8.6	2.5	5.6
Once a year	3.5	2.5	6.2	5.7	11.5	5.8
Never	18.1	27.9	23.3	25.7	28.7	24.4
Turkey meat preparations**						
Once a week or more	39.6	27.0	38.8	38.6	22.1	33.0
Every 2 weeks	16.7	12.3	16.3	8.6	19.7	15.3
Once a month	11.8	14.8	10.9	20.0	5.7	11.9
Once every two months	4.2	4.9	3.1	0.0	3.3	3.4
Once a year	4.9	0.8	4.7	2.9	4.9	3.7
Never	22.9	40.2	26.4	30.0	44.3	32.5
Chicken preparations**						
Once a week or more	36.1	28.7	22.5	35.7	21.3	28.4
Every 2 weeks	18.1	8.2	20.9	12.9	10.7	14.5
Once a month	8.3	16.4	10.1	18.6	10.7	12.1
Once every two months	5.6	1.6	3.9	2.9	0.8	3.1
Once a year	4.2	1.6	3.9	2.9	4.1	3.4
Never	27.8	43.4	38.8	27.1	52.5	38.5

*, **: Significant differences ($p < 0.05$, $p < 0.01$, respectively).

segments, “Healthy cook” and “Rational shopper with little interest in cuisine” present lower percentages in this purchasing frequency and the highest percentages in the “Never” interval (27.9% and 28.7%, respectively). When asked about turkey preparations, the segments with the highest frequency (once a week or more and every two weeks) shopping for fresh turkey meat were “Manager cook” (56.3%), “Concerned with food, but not cooks” (55.1%) and “Total detachment” (47.2%). In contrast, the other two segments, “Healthy cook” and “Rational shopper with little interest in cuisine”, present lower percentages for this shopping frequency and the highest percentages in the “Never” interval (40.2% and 44.3%, respectively). Finally, this same behaviour was repeated with chicken preparations. The segments with the highest frequency (once a week or more and every two weeks) shopping for chicken meat preparations are “Manager cook” (54.2%), “Concerned with food, but not cooks”

(48.6%) and “Total detachment” (43.4%). Again, the other two segments showed lower percentages for this purchasing frequency and the highest percentages for “never”.

To determine the “usual purchasing location” (Table 6), we established the following options: traditional shop or store, local supermarket, markets and supply centres, street markets, big chain supermarkets and large hypermarkets. When buying fresh turkey meat, all the segments tended towards big chain supermarkets. The second option preferred was the traditional shop or store. The exception was the “Total detachment” segment, where the second option preferred was the local or neighbourhood supermarket (19.2%) and, as a peculiarity, the highest percentage appeared when choosing the supermarket (69.2%). When purchasing fresh chicken meat, the “Rational shopper with little interest in cuisine” (46.3%), “Manager cook” (45.8%) and “Healthy cook” (40.8%) segments opted for the traditional shop, whereas

Table 6. Usual purchasing location of segments (%)

Variables	Manager cook	Healthy cook	Concerned with food, but not cooks	Total detachment	Rational shopper with little interest in cuisine	Total
Fresh turkey meat*						
Traditional shop	34.7	30.7	33.3	11.5	33.3	30.6
Local supermarket	18.6	25.0	23.2	19.2	24.1	22.1
Markets and supply centres	6.8	18.2	7.1	9.6	8.0	9.7
Street markets	0.0	0.0	0.0	1.9	0.0	0.2
Big chain supermarkets	55.9	40.9	46.5	69.2	43.7	50.0
Large hypermarkets	5.1	3.4	7.1	3.8	4.6	5.0
DK/DA	0.8	0.0	2.0	0.0	1.1	0.9
Fresh chicken meat**						
Traditional shop	45.8	40.8	39.7	18.8	46.3	40.3
Local supermarket	18.3	24.2	21.4	18.8	23.1	21.3
Markets and supply centres	8.5	20.0	9.5	8.7	11.6	11.8
Street markets	0.0	0.0	0.0	1.4	0.8	0.3
Big chain supermarkets	44.4	36.7	41.3	63.8	33.1	42.0
Large hypermarkets	5.6	3.3	4.8	2.9	3.3	4.2
DK/DA	0.0	0.0	0.8	0.0	0.0	0.2
Turkey preparations**						
Traditional shop	27.3	19.2	20.2	8.2	23.5	21.1
Local supermarket	22.7	23.3	30.9	22.4	27.9	25.6
Markets and supply centres	6.4	12.3	5.3	0.0	2.9	5.8
Street markets	0.0	0.0	0.0	0.0	2.9	0.5
Big chain supermarkets	60.0	57.5	47.9	71.4	47.1	55.8
Large hypermarkets	7.3	2.7	12.8	4.1	5.9	7.1
DK/DA	0.9	0.0	0.0	0.0	4.4	1.0
Chicken preparations**						
Traditional shop	39.8	27.5	28.2	9.8	37.9	30.4
Local supermarket	22.3	20.3	32.1	17.6	24.1	23.7
Markets and supply centres	7.8	14.5	6.4	2.0	5.2	7.5
Street markets	0.0	0.0	0.0	0.0	1.7	0.3
Big chain supermarkets	51.5	49.3	44.9	74.5	44.8	51.8
Large hypermarkets	4.9	4.3	7.7	3.9	1.7	4.7
DK/DA	0.0	0.0	0.0	0.0	1.7	0.3

*, **: Significant differences ($p < 0.05$, $p < 0.01$, respectively). DK/DA = Do not know / Do not answer.

“Total detachment” (63.8%) and “Concerned with food, but not cooks” (41.3%) preferred the big chain supermarkets. When shopping for turkey preparations, all segments do so habitually, first of all in the big chain supermarkets and, in second place, in the local supermarket, except for the “Manager cook” segment, which prefers the traditional shop (27.3%). Finally, all segments habitually purchase chicken preparations in the big chain supermarkets. The second most visited option is the traditional store for the

“Manager cook” (39.8%), “Rational shopper with little interest in cuisine” (37.9%) and “Healthy chef” (27.5%) segments and the neighbourhood or local supermarket for “Concerned with food, but not cooks” (32.1%) and “Total detachment” (17.6%).

The “purchasing criteria” considered were: geographical origin, price, advice from the butcher, livestock rearing information, trust in the purchasing premises, whether the item is organic or not, nutritional information,

appearance of the piece, manufacturer's brand, retailer/supermarket brand and others. All these criteria are measured using a Likert scale where 1 is "Not important" and 5 is "Very important".

When asking about turkey purchasing criteria (Table 7), the geographical origin, rearing details and nutritional information are very important for all segments, except for the "Total detachment" segment, which considers them not at all important. Advice from the butcher is highly important for all segments, with the exception of "Total detachment", where 32.1% deemed it not at all important and 26.4% quite important. Whether the item is organic or not is very important for all segments, except for "Total detachment" and "Rational shopper with little interest in cuisine". Price is considered very important by all segments except for "Healthy cook" and "Total detachment", which are positioned in an intermediate situation (slightly important and quite important). The only criterion considered quite important and very important by all segments is the trust in the purchasing premises. The "others" criterion was not found to be significant.

When asked about chicken purchasing criteria (Table 8), the geographical origin, rearing details and nutritional information were very important for all segments, except for the "Total detachment" segment, which considered them not at all important, as occurred with turkey meat. Advice from the butcher was highly important for all segments, with the exception of "Total detachment", where 27.7% considered it not at all important and 26.2% quite important. Whether the item is "ecological" (organic) or not was very important for all segments, except for "Total detachment" and "Rational shopper with little interest in cuisine". In terms of price, we observed the same pattern as with turkey meat, as it was considered very important by all segments except for "Healthy cook" and "Total detachment", which assumed an intermediate positioning (slightly important and quite important). The criteria giving rise to most disagreement among the segments are the manufacturer's brand and retail brand. The criteria considered quite important and very important by all segments are the trust in the purchasing premises and the appearance of the item. The "others" criterion was not found to be significant.

Chicken and turkey meat consumption habits of the segments

The variables taken into account to analyse the consumption habits of the segments were "preparation methods", "consumption frequency", "reasons for consumption" and "barriers to consumption". The first variable is the only one that gave rise to significant differences among the segments, and only in reference to chicken meat.

The "Manager cook" segment mainly prepares chicken by stewing (48.6%), grilled/barbecued (45.8%) and baked/roasted (40.3%). The "Healthy cook" prepares it on the grill/barbecue (68.3%), stewed (55.8%) and battered or breaded (40.0%). "Concerned with food, but not cooks" prepares chicken grilled/barbecued (60.9%), stewed (42.2%) and baked/roasted (35.9%). "Total detachment" mainly cooks chicken by grilling/barbecuing (56.5%), stewing (36.2%) and frying (33.3%). Finally, the "rational cook with little interest in cuisine" prepares chicken by stewing (62.3%), grilled/barbecued (60.7%) and battered or breaded (42.6%) (Table 9).

Discussion

The main aim of the research was to describe consumer behaviour with respect to chicken and turkey meats based on market segmentation, using FRL instrument, due to the similar commercial positioning of both meats. The FRL items with the highest average were "I feel that sharing food with friends and family is an important part of my social life" (4.70) and "I always try to get the best food quality at the best price" (4.68). These first two items coincide with those obtained by Buitrago-Vera *et al.* (2016) and Montero-Vicente *et al.* (2019), who analysed the Spanish consumer. The first item is consistent with the findings reported by Díaz (2014) in reference to Spaniards' views on eating as a social activity. The second item is consistent with Pasamon (2010) who reported the search for an intelligent and efficient purchase by the Spanish people.

The five FRL segments obtained are "Manager cook", "Healthy cook", "Concerned with food, but not cooks", "Total detachment", and "Rational shopper with little interest in cuisine". With respect to other studies (Grunert *et al.*, 1993; Brunso *et al.*, 2004a,b; Scholderer *et al.*, 2004), the basic structure of the segments being published seems to be relatively stable in all countries as demonstrated by Grunert (2019). The segments obtained differ in their participation with food and in the extent to which they have a conservative or innovation-focused approach to food. Grunert (2019) noted that a typical segment-based solution distinguishes segments called conservative, adventurous, rational, those not involved and careless. In our study, there is a certain parallelism with the aforementioned segments, although the interest in cooking in the first two segments is worthy of note. The number of consumer segments in Spain is usually between four and five. When Bredahl & Grunert (1997) studied food lifestyles in Spain, they found five segments of consumers. Four types of consumers have been differentiated according to their lifestyles related to lamb consumption (Bernués *et al.*, 2012; Ripoll *et al.*, 2018). Buitrago-Vera *et al.* (2016) also found four segments when analyzing the rabbit meat

Table 7. Turkey purchasing criteria by segments (%)

Variables	Manager cook	Healthy cook	Concerned with food, but not cooks	Total detachment	Rational shopper with little interest in cuisine	Total
Geographical origin**						
Not important	18.8	20.0	16.1	46.6	27.8	23.3
Not very important	8.3	6.0	7.6	19.0	10.3	9.3
Slightly important	17.3	25.0	19.5	19.0	11.3	18.4
Quite important	21.1	16.0	27.1	5.2	19.6	19.4
Very important	34.6	33.0	29.7	10.3	30.9	29.6
Price**						
Not important	6.8	5.1	6.8	12.1	4.2	6.5
Not very important	1.5	9.1	7.6	3.4	6.3	5.6
Slightly important	19.5	31.3	17.8	34.5	20.8	23.4
Quite important	24.1	28.3	33.9	27.6	31.3	29.0
Very important	48.1	26.3	33.9	22.4	37.5	35.5
Butcher's advice**						
Not important	6.3	10.4	9.6	32.1	9.7	11.4
Not very important	4.0	5.2	3.5	7.5	5.4	4.8
Slightly important	10.3	20.8	8.8	15.1	11.8	12.9
Quite important	30.2	20.8	35.1	26.4	22.6	27.6
Very important	49.2	42.7	43.0	18.9	50.5	43.4
Rearing information**						
Not important	15.4	21.2	12.2	39.3	22.8	19.9
Not very important	9.2	8.1	12.2	23.2	17.4	12.8
Slightly important	12.3	13.1	24.3	25.0	17.4	17.7
Quite important	23.1	24.2	23.5	5.4	17.4	20.3
Very important	40.0	33.3	27.8	7.1	25.0	29.3
Trust in purchasing premises**						
Not important	1.5	2.0	0.9	3.5	0.0	1.4
Not very important	0.8	4.0	0.9	3.5	1.0	1.8
Slightly important	10.5	6.0	9.4	22.8	10.3	10.7
Quite important	25.6	28.0	41.9	38.6	23.7	31.0
Very important	61.7	60.0	47.0	31.6	64.9	55.2
Organic**						
Not important	12.9	11.0	6.9	28.6	32.3	16.5
Not very important	3.8	5.0	7.8	28.6	16.1	10.1
Slightly important	22.0	17.0	26.7	21.4	16.1	20.9
Quite important	24.2	25.0	23.3	16.1	14.0	21.3
Very important	37.1	42.0	35.3	5.4	21.5	31.2
Nutritional information**						
Not important	5.3	6.0	6.1	33.9	12.8	10.3
Not very important	2.3	5.0	4.3	23.2	8.5	6.8
Slightly important	9.1	16.0	19.1	21.4	17.0	15.7
Quite important	28.8	24.0	34.8	14.3	23.4	26.6
Very important	54.5	49.0	35.7	7.1	38.3	40.6

*, **: Significant differences ($p < 0.05$, $p < 0.01$, respectively).

Table 8. Chicken purchasing criteria by segments (%)

Variables	Manager cook	Healthy cook	Concerned with food, but not cooks	Total detachment	Rational shopper with little interest in cuisine	Total
Geographical origin**						
Not important	13.5	18.3	10.9	44.9	26.4	20.4
Not very important	4.3	3.3	6.3	13.0	9.1	6.6
Slightly important	14.9	21.7	13.3	21.7	9.9	15.7
Quite important	18.4	13.3	25.8	8.7	19.8	18.1
Very important	48.9	43.3	43.8	11.6	34.7	39.2
Price**						
Not important	6.4	3.3	4.7	8.7	4.1	5.2
Not very important	2.8	10.8	5.5	4.3	1.7	5.0
Slightly important	14.2	33.3	18.1	30.4	24.0	23.0
Quite important	26.2	21.7	29.1	31.9	29.8	27.3
Very important	50.4	30.8	42.5	24.6	40.5	39.4
Butcher's advice**						
Not important	5.2	8.5	12.2	27.7	13.8	11.9
Not very important	2.2	2.6	4.1	10.8	4.3	4.1
Slightly important	10.4	17.9	9.8	15.4	10.3	12.4
Quite important	26.7	20.5	26.8	26.2	20.7	24.1
Very important	55.6	50.4	47.2	20.0	50.9	47.5
Rearing information**						
Not important	10.7	10.9	7.2	33.3	24.6	15.6
Not very important	4.3	10.1	12.0	27.5	11.9	11.6
Slightly important	15.7	19.3	15.2	18.8	18.6	17.3
Quite important	25.0	21.8	35.2	14.5	19.5	24.2
Very important	44.3	37.8	30.4	5.8	25.4	31.3
Trust in purchasing premises**						
Not important	1.4	1.7	0.8	5.8	0.0	1.6
Not very important	2.1	0.8	0.8	2.9	2.5	1.7
Slightly important	9.2	10.0	9.4	29.0	4.1	10.7
Quite important	26.2	24.2	37.5	33.3	25.4	29.0
Very important	61.0	63.3	51.6	29.0	68.0	57.1
Organic**						
Not important	11.4	8.3	9.4	32.8	31.4	16.9
Not very important	4.3	5.8	4.7	23.9	11.9	8.6
Slightly important	20.7	20.8	21.9	26.9	22.0	22.0
Quite important	24.3	22.5	25.8	9.0	13.6	20.2
Very important	39.3	42.5	38.3	7.5	21.2	32.3
Nutritional information**						
Not important	3.6	7.6	7.1	29.4	19.2	11.5
Not very important	3.6	8.5	4.0	22.1	4.2	7.0
Slightly important	9.3	15.3	16.7	30.9	21.7	17.3
Quite important	26.4	19.5	33.3	11.8	20.8	23.6
Very important	57.1	49.2	38.9	5.9	34.2	40.6

*, **: Significant differences ($p < 0.05$, $p < 0.01$, respectively).

Table 8: Continued

Variables	Manager cook	Healthy cook	Concerned with food, but not cooks	Total detachment	Rational shopper with little interest in cuisine	Total
Product appearance*						
Not important	0.7	0.8	0.8	1.4	1.6	1.0
Not very important	0.7	0.0	1.6	0.0	1.6	0.9
Slightly important	4.3	4.2	6.3	10.1	1.6	4.8
Quite important	11.3	20.0	19.5	30.4	14.8	17.9
Very important	83.0	75.0	71.9	58.0	80.3	75.3
Manufacturer's brand**						
Not important	17.0	16.4	13.9	31.3	26.7	20.0
Not very important	9.6	19.8	15.6	29.9	13.8	16.4
Slightly important	20.7	23.3	24.6	23.9	23.3	23.0
Quite important	27.4	19.0	28.7	6.0	12.9	20.3
Very important	25.2	21.6	17.2	9.0	23.3	20.3
Retailer/supermarket brand**						
Not important	14.6	20.5	12.4	28.4	22.8	18.7
Not very important	10.9	9.4	10.7	20.9	14.0	12.4
Slightly important	16.1	24.8	22.3	25.4	22.8	21.8
Quite important	27.0	18.8	31.4	16.4	15.8	22.7
Very important	31.4	26.5	23.1	9.0	24.6	24.5

*, **: Significant differences ($p < 0.05$, $p < 0.01$, respectively).

sector. Although there may be different or emerging segments in each country, the FRL instrument is probably the most complex and best validated instrument for international segmentation in the food domain (Brunsø *et al.*, 2004a,b; Grunert, 2019).

Taking into account the interest of consumers towards quality, healthy and organic products, we can observe how 42.8% of consumers have a high interest. This percentage is the result of the sum of Segments 2 and 3 ("Healthy cook" and "Concerned with food, but not cooks"). On the

Table 9. Chicken preparation methods by segments (%)

Variables	Manager cook	Healthy cook	Concerned with food, but not cooks	Total detachment	Rational shopper with little interest in cuisine	Total
Grill/Barbecue	45.8	68.3	60.9	56.5	60.7	58.1
Fried	35.4	37.5	27.3	33.3	30.3	32.8
Breaded	34.0	40.0	33.6	31.9	42.6	36.7
Stewed	48.6	55.8	42.2	36.2	62.3	50.1
With sauce	33.3	34.2	28.1	14.5	29.5	29.3
Hotplate	37.5	33.3	28.1	26.1	24.6	30.5
Oven/Roasted	40.3	32.5	35.9	29.0	41.8	36.7
Cold cuts	0.7	1.7	0.8	0.0	1.6	1.0
Steamed	0.0	0.0	0.0	0.0	0.0	0.0
In broths/ soups/purees	0.7	0.8	1.6	0.0	2.5	1.2
In salad	2.1	0.8	0.8	0.0	0.0	0.9
In paella	2.8	2.5	1.6	1.4	3.3	2.4
DK/DA	3.5	5.8	2.3	2.9	5.7	4.1

*, **: Significant differences ($p < 0.05$, $p < 0.01$, respectively). DK/DA = Do not know / Do not answer.

contrary, 32.7% have no interest in these issues. This percentage includes segments 4 and 5 (“Total detachment” and “Rational shopper with little interest in cuisine”). This interest responds to the trend described by Font-i-Furnols & Guerrero (2014). On the one side, this data may be of great interest to companies when developing new products and also in the development of communication campaigns appropriate to each type of consumer (according to their FRL segment). On the other side, this information is also relevant for Public Administrations and interprofessional associations when developing communication campaigns to promote both types of meat.

When analysing the “purchasing frequency” variable, a very similar behaviour pattern is observed for fresh turkey meat, turkey preparations and chicken preparations. The segments with the highest frequency (once a week or more and every two weeks) shopping are “Manager cook”, “Concerned with food, but not cooks” and “Total detachment”. The other two segments showed lower percentages for this purchasing frequency and the highest percentages for “never”. Perhaps the less frequent shopping for chicken and turkey meat from the “Healthy cook” and “Rational shopper with little interest in cuisine” segments may be due to their interest in other healthier foods, or a different management of the purchasing process.

To determine the “usual purchasing location”, although the supermarket holds sway, we can see how most segments still choose the traditional store when shopping for fresh chicken meat. This information is consistent with the information provided by the Ministry of Agriculture, Fisheries and Food, Spain (MAPA, 2020). In 2019, the channel with the highest proportion of purchases for fresh chicken meat was the supermarket and self-service with 50.50% of them and a negative variation (-1.91%). The second most important channel is the traditional store with 22.53%. It also has a negative evolution of 3.40%.

The “purchasing criteria” is very different depending on the segments. Nevertheless, the only criterion considered quite important and very important by all segments for both kinds of meat is the trust in the purchasing premises. Iqbal *et al.* (2010) analysed the consumer response to pre-sliced turkey ham according to colour and texture. Both attributes were important to consumers. Appearance of the item may be included within the purchasing criteria, a criterion that was not significant in our research on turkey meat, as occurred with the manufacturer's or retailer's brand. The importance of the origin of chicken meat is also a key issue in the buying-decision-making process in central and eastern European countries (Vukasovič, 2010). Other authors highlight the place of purchase (Glitsch, 2000), nutritional aspects (Pereira & Salay, 2008), rearing information (Magdelaine *et al.*, 2008), quality and prices (Yeung & Morris, 2001; McCarthy *et al.*, 2004), when purchasing chicken meat. Given the importance that almost all segments give to information on

rearing and nutritional aspects in both types of meat, more complete and accurate meat labelling should be encouraged, as proposed by Font-i-Furnols & Guerrero (2014).

Regarding the consumption habits of the segments, the “preparation methods” variable is the only one that gave rise to significant differences among the segments, and only in reference to chicken meat. This may be due to the bird flu crisis that took place in the chicken sector, as Yeung & Morris (2001) discovered that consumers felt able to reduce exposure to food safety risk through personal control in the handling and preparation of chicken meat after purchase. The preference of all segments for cooking chicken by grilling/barbecue and stewing is clear. In “reasons for consumption” and “barriers to consumption”, like/dislike, taste and health options were included as suggested by Puputti *et al.* (2019) and Sánchez *et al.* (2019). However, they didn't give rise to significant differences among the segments.

Despite the similar positioning of chicken and turkey meats, there are significant differences in purchasing and consumption habits between FRL segments. Although Escribá-Pérez *et al.* (2017) demonstrated the existence of a different consumer profile for each type of meat, within each meat type there are still different behaviours for each FRL segment. Specifically, there are significant differences in the frequency of purchase, the usual shopping location, purchasing criteria and preparation methods. The purchasing frequency of fresh chicken meat is independent from the segment, which is not the case for the rest of the analysed meats. All the segments tended towards big chain supermarkets when purchasing turkey (fresh and preparations) and chicken preparations. However, most segments still choose the traditional store when shopping for fresh chicken meat. The only criterion considered quite important and very important by all segments for both kinds of meat is the trust in the purchasing premises. Lastly, all segments prefer cooking chicken by grilling/barbecue and stewing.

The implications and importance of this research is that knowing the profile of these FRL segments allows us to adapt the marketing mix (product, place, price and promotion) to each one. Defining an appropriate marketing strategy according to the segment we intend to target may ensure us a greater likelihood of success in the market. Following a market segmentation strategy based on food-related lifestyles is very useful for the companies due to the wide demand they face. First, there are 42.8% of consumers who have a high interest in quality, healthy and organic products. Precisely, consumers find these attributes in chicken and turkey meats. An interesting line to develop is the organic products from these kinds of meat. Second, more complete and accurate meat labelling could be performed giving more information on rearing and nutritional aspects in both types of meat. Third, the different ways of preparation of chicken could be taken into

account when designing its packaging. Fourth, knowing the purchasing frequency could also be interesting in order to adapt the packaging to each kind of FRL segment. Fifth, the advertising campaigns or sales promotions could be placed in supermarkets and traditional stores to reach the target customers. Finally, the description of the FRL segments and their preferences can help companies, public administrations and interprofessional associations to design such communication campaigns.

One limitation of the study is that the FRL instrument is from the 90's. This is the reason why elements such as sustainability or animal welfare are not included to define the segments. Other limitation is its complexity. As it covers 23 dimensions in five domains, it is a barrier to its application in many cases. Future research lines would be linked to improving the FRL instrument (Grunert, 2019; Montero-Vicente *et al.*, 2019). For example, create a core questionnaire that could be complemented with modules depending on the objective of the research (modular approach) and include current key issues on the consumption of meat for the consumer (sustainability, health issues, animal welfare, the reduction of the routine use of antibiotics due to their effect on human health and animal welfare, ...) (Manteca & Jones, 2013). These proposals should be proved in different countries as the initial development of the FRL was validated by Grunert *et al.* (1993) and Brunso & Grunert (1998).

In summary, although chicken and turkey meats have a similar positioning in the mind of the consumer as healthy and low-fat, there are significant differences in purchasing and consumption habits between FRL segments. Knowing these differences allows us to better adapt the marketing strategy to each kind of consumer. This is very useful for the companies due to the wide demand they face. First, they can choose the FRL segments to target and, second, they can define an appropriate marketing mix (product, place, price and promotion) according to these segments. In this way, market segmentation strategy based on food-related lifestyles may ensure companies a greater likelihood of success in the market. Even so, constant market research is necessary to analyse the evolution of consumer needs and concerns.

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