The role of brands for consumers across the Pyrenees

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Abstract— **Beef has been traditionally sold as an unbranded product. Nevertheless, the use of a brand would help to differentiate the product and achieve a higher degree of loyalty among consumers.**

The paper investigates the level of recognition and purchase of branded beef (with a quality label, distributor's or producer's brand), and relates it with quality perceptions and personal traits. A better understanding of the role that the brand occupies in consumers' awareness and purchase decisions and its relationship with quality perceptions and personal traits may be relevant to create successful brands targeted to specific segments. Thus, a survey was carried out in two Spanish regions (Aragón and Cataluña) and two French regions (Midi-Pyrénées and Languedoc-Roussillon), with different beef consumption habits, between September 2010 and February 2011, obtaining a total sample of 614 consumers. Main methods of analysis included two-step clustering, and bivariate association measures.

Cluster analysis revealed the presence of two market segments, tentatively named 'Connoisseur and purchaser of branded beef' and 'Novice and non-purchaser of branded beef'. These segments were characterized by a specific socio-demographic profile and distinctive quality perceptions. Not a common cross-regional segment was found although some coincidences existed. This result can be especially useful for beef producers and distributors to ascertain if they should develop a different marketing policy depending on the region.

Keywords— **Cluster analysis, brands, beef**

I. INTRODUCTION

Meat is mostly sold without carrying a brand or a quality label, especially in the case of the unprocessed meat [1]. Therefore, consumers may not obtain enough information to form their expectations at the place of purchase. Consumers compare these expectations with their perceived quality after consumption in order to obtain their satisfaction response, which could be the first step towards becoming loyal to the product [2].

Furthermore, beef may experience a high level of natural variation, which can cause a low consistency between quality expectations and the post-consumption evaluations. In the absence of a brand or a label, consumers need to search for other quality indicators, such as the production system or the feeding [3]. Even when the product is branded or labelled, the inherent variation of beef complicates consumer's quality perception process, as consumer may not be totally sure of obtaining the expected quality [4].

Brands and labels play a relevant role in determining quality perception [4]. However, the level of consumer's familiarity with these attributes may also affect their effectiveness. Quality labelling and branding may be more effective adding value for some consumers with a higher degree of knowledge and purchase of these products. Despite the effect of familiarity with a particular product category has been previously investigated [4], to the best of the author's knowledge, familiarity with brands and labels has not been widely examined yet.

This study applies cluster analysis to classify consumers with different levels of knowledge and purchase of branded beef, in two Spanish regions (Aragón and Cataluña) and two French regions (Midi-Pyrénées and Languedoc-Roussillon) contiguous to the Pyrenees. Consumers' profile of different clusters has also been analysed. Beef production can be considered a relevant economic activity in the four regions under analysis as it favours noticeably the development of the rural areas close to the border between France and Spain.

II. MATERIALS AND METHODS

A. The Survey

A representative sample of the regional population in terms of gender and age was recruited in the main cities of the four regions analysed (Aragón, Cataluña, Languedoc-Rousillon and Midi-Pyrénées), between September 2010 and February 2011. The survey was addressed to regular consumers of beef, involved in food shopping. The final sample is composed by 614 consumers, being 150 in each of the regions, with the exception of Midi-Pyrénées (164 consumers). Consumers filled a questionnaire in which, among other information, purchasing habits of beef, knowledge and purchase of beef brands and labels, and socio-demographic characteristics were requested. The variety of brands and quality labels which exist in each region, has been grouped into three categories: collective quality labels (e.g. Protected Geographical Indication, Label Rouge), private brands owned by the producer and private brands owned by the distributor.

B. Statistical analysis

Kruskal Wallis test has been applied to determine whether recognition and purchase of branded beef come from different populations depending on the region. Cluster analysis has been carried out in order to classify consumers according to their level of familiarity with brands and labels. In particular, two-step clustering has been applied in this study. Additional statistical analysis includes U-Mann Whitney test, which has been applied to investigate whether the attributes that consumers use as quality indicators when purchasing beef differ significantly across segments. Finally, the aforementioned clusters have also been crossed with socio-demographic characteristics to test for significant associations by means of a chi-squared statistic. Statistical analyses were conducted with SPSS 14.00.

III. RESULTS AND DISCUSSION

Kolmogorov-Smirnov test has been applied to the stated consumers' recognition and purchase of branded beef. This test revealed the absence of normality (p-value<0.05). Consequently, the use of non-parametrical tests is more suitable. Thus, Kruskal Wallis test has also been conducted. The presence of statistical significant differences across regions has been confirmed (p-value<0.05), and therefore a cluster analysis has been applied for each region separately.

According to Table 1, cluster 1 shows a higher level of knowledge and purchase of beef carrying any brand or quality label than Cluster 2 in all regions. Taking into account this fact, we tentatively name cluster 1 and 2 as 'Connoisseur and purchaser of branded beef' and relatively more 'Novice and less purchaser of branded beef', respectively.

Table 1. Declared knowledge and purchase of quality labels and branded beef within clusters across regions

Label/brand	*% of consumers within each cluster*							
	Aragon		Cataluña		Midi-Pyrénées		Languedoc-Roussillon	
	c1[a]	c2	c1	c2	c1	c2	c1	c2
Declared knowledge								
Quality label	98 ***	79 ***	98 ***	77 ***	100 **	92 **	100 ***	83 ***
Producer	92 ***	63 ***	96 ***	43 ***	100	99	97 ***	80 ***
Distributor	62 ***	40 ***	74 ***	30 ***	84	83	86 **	69 **
Declared purchase								
Quality label	83 ***	43 ***	89 ***	51 ***	100 ***	74 ***	97 ***	51 ***
Producer	71 ***	31 ***	89 ***	40 ***	84 ***	53 ***	56	46
Distributor	43 ***	19 ***	41 ***	11 ***	59 *	44 *	42 ***	18 ***

***, ** and * indicate statistical significance between segments at 1, 5 y 10%, respectively according to chi-square test.

[a] 'c1' and 'c2' refer to cluster 1 and 2, respectively.

Next, in Table 2 the two clusters previously defined are described in terms of the most relevant attributes used by consumers as quality cues of beef at the moment of purchase. U-Mann Whitney statistic has been performed, showing the presence of significant differences between clusters for each region. Nevertheless, non-significant attributes for some regions are maintained in order to get a more complete and detailed description of each segment.

Table 2 shows that the first cluster identified as relatively more 'Connoisseur and purchaser of branded beef', also agree more with the statements that the presence of a quality label, a producer's brand and a distributor's brand indicate a higher quality of the beef. Differences between clusters for these attributes are significant in the case of Aragón and also in Midi-Pyrénées but only for the producer's brands.

Table 2. Main attributes indicating quality at the moment of purchase within each cluster across regions

At the moment of purchase of beef, the following items indicate a higher quality[d] (mean values):	Aragón		Cataluña		Midi-Pyrénées		Languedoc-Roussillon	
	[a]Conno.	Novice	Conno.	Novice	Conno.	Novice	Conno.	Novice
Collective quality label	3.22** (0.63)	3.14** (0.56)	3.28 (0.51)	3.24 (0.67)	3.31 (0.51)	3.23 (0.52)	3.29 (0.46)	3.16 (0.51)
Distributor's brand	3.16** (0.49)	2.77** (0.65)	3.08 (0.64)	2.98 (0.79)	2.95 (0.81)	2.92 (0.70)	2.57 (0.51)	2.63 (0.66)
Producer's brand	3.14** (0.59)	2.95** (0.57)	3.06 (0.76)	3.02 (0.80)	3.04** (0.47)	2.96** (0.80)	2.91 (0.45)	2.99 (0.55)
Expiry date	3.43 (0.64)	3.41 (0.55)	3.64*** (0.61)	3.34*** (0.71)	3.60 (0.53)	3.40 (0.74)	3.44*** (0.71)	3.34*** (0.73)
Meat cut	3.27 (0.53)	3.25 (0.65)	3.38*** (0.49)	3.18*** (0.71)	3.40 (0.49)	3.36 (0.51)	3.22** (0.60)	3.02** (0.66)
Date of slaughter	3.20* (0.61)	3.10* (0.67)	3.25 (0.70)	3.16 (0.72)	3.21 (0.61)	3.15 (0.63)	3.29 (0.46)	3.08 (0.47)
Age at slaughter	3.28 (0.66)	3.15 (0.56)	3.26 (0.68)	3.04 (0.65)	3.17* (0.66)	3.04* (0.64)	3.09 (0.53)	2.94 (0.44)
Place of raising	3.25 (0.48)	3.17 (0.52)	3.42 (0.55)	3.38 (0.66)	3.38* (0.59)	3.19* (0.65)	3.40** (0.50)	3.14** (0.56)
Breed	3.13*** (0.56)	3.04*** (0.63)	3.24 (0.56)	3.17 (0.67)	3.34*** (0.59)	3.09*** (0.59)	3.31 (0.47)	3.12 (0.55)
Feeding based on pastures	3.43** (0.53)	3.25** (0.70)	3.60 (0.50)	3.48 (0.67)	3.45** (0.60)	3.27** (0.67)	3.49 (0.56)	3.41 (0.52)
Animal welfare	3.24 (0.53)	3.17 (0.73)	3.49 (0.50)	3.35 (0.67)	3.43 (0.65)	3.32 (0.72)	3.34** (0.60)	3.24** (0.52)

***, ** and * indicate statistical significance between segments at 1, 5 y 10%, respectively according to U-Mann Whitney test.
[a] 'Conno.' and 'Novice' refer to 'Connoisseur and purchaser of branded beef' and 'Novice and less-purchaser of branded beef', respectively.
[b] Standard deviation is reported between parentheses.
[c] Consumers' responses were measured within a Likert scale ranging from 1= Totally disagree to 5= Totally agree. Level 3 is indifference, and has been eliminated for the mean calculus, which is finally based on four levels.
[d] No significant differences were found for butcher's advice, cooking advice, the establishment's aspect, a redder colour, the presence of fat, a higher price, and the presence of a nutritional label

Table 3. Consumers' socio-demographic characteristics within each cluster across regions

Socio-demographic characteristics[b] (% consumers)	Aragón		Cataluña		Midi-Pyrénées		Languedoc-Roussillon	
	[a]Conno.	Novice	Conno.	Novice	Conno.	Novice	Conno.	Novice
Age								
18-34 years old	16***	32***	22	23	29	43	56*	49*
35-64 years old	67***	42***	70	69	57	47	33*	48*
More than 65 years old	18***	26***	8	8	14	10	11*	3*
Occupation								
Non-worker	29***	58***	59*	43*	40	35	39	47
Worker	71***	42***	41*	57*	60	65	61	53
Education								
No education or primary	19	24	13*	11*	3	3	6**	3**
Secondary	43	39	67*	50*	63	63	25**	48**
University degree	38	37	20*	39*	34	34	69**	49**
Income								
<1500€	24*	37*	22	22	25*	35*	36	39
1500 - 3000€	62*	45*	65	57	45*	50*	25	24
>3000€	14*	18*	13	21	30*	15*	39	37

***, ** and * indicate statistical significance between segments at 1, 5 y 10%, respectively according to chi-square test.
[a] 'Conno.' and 'Novice' refer to 'Connoisseur and purchaser of branded beef' and 'Novice and less-purchaser of branded beef', respectively
[b] No significant differences were found for gender

This finding suggests that there is a certain degree of correspondence between consumers' level of familiarity with brands and labels and the search for these brands/labels as quality indicators. Furthermore, on average a quality label is considered to have a stronger influence on quality perception than distributor's or producer's brands, while the latter type has a more powerful impact than the distributor's brand. This result agrees with [5], who considered that although distributor's brands are becoming more relevant in recent decades, they are still perceived as a lower quality brand in comparison with the producer's brand.

However, due to the difficulty of evaluating beef quality at the moment of purchase, other relevant attributes may also help as cues. According to the results, the main attributes influencing significantly quality evaluation are expiry date and meat cut (in Cataluña and Languedoc-Rousillon), breed, feeding based on pastures (in Aragón and Midi-Pyrénées), animal welfare (Languedoc-Rousillon), and place of raising (both French regions). These attributes are significantly more relevant for consumers more familiarized with branded beef.

Interestingly, the chi-square test also reveals a significant association between the cluster membership and socio-demographic characteristics, (See Table 3). Comparing with the second cluster, consumers belonging to the cluster named 'Connoisseur and purchaser of branded beef' are more likely to be between 35-65 years old (except in the case of Languedoc, who are more likely to be younger than 35). They have also attained primary or secondary level of education (or university degree for Languedoc) in a higher percentage, and enjoy a middle-upper level of income (more than 1500€) also in a larger percentage.

There is not a clear general trend in terms of occupation between segments.

CONCLUSIONS

Brands and labels play an important role in helping to evaluate beef quality, especially among those consumers who are familiar with them. Results showed that there is a certain degree of consistency between consumer's level of recognition and purchases of branded beef and its effect on the search for brands and labels as quality cues mainly in Aragón and Midi-Pyrénées. However, other relevant attributes that also act as powerful beef quality indicators are place of raising, expiry date, meat cut, breed, and type of feeding, with some differences across regions. Consumers with prior knowledge and experience purchasing brands are characterised by a distinctive socio-demographic profile. Thus, they are middle-aged, with an intermediate level of education (except for Languedoc-Rousillon), and relatively better-off.

Taking into account these results, producers should target branded beef to a specific segment of consumers, which could be more receptive to their product. Despite the presence of some differences across regions, creating a loyal customer basis that relies on labelling and branding could be an effective marketing policy in all regions. Likewise, policy makers may put a greater effort into communicating the quality schemes peculiarities. Similarly, producers and retailers could create an alliance to promote their brands. A global strategy is particularly needed in those areas close to the border. Results might apply to other meat products, mainly those which are sold unprocessed. Nevertheless, this study needs to be viewed as preliminary and exploratory, while the use of a larger sample would be advisable to corroborate the results obtained.

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