

INFLUENCE OF EXPECTATIONS CREATED BY LABEL ON CONSUMERS ACCEPTANCE OF URUGUAYAN LOW-FAT CHEESES

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ABSTRACT

This work focuses on how the expectation created by the label influences the consumer's acceptance and willingness to purchase low-fat Uruguayan cheeses. Six commercial low-fat cheeses were evaluated by a group of consumers who rated their expected liking by observing the label and the degree of liking on tasting the samples under blind and informed conditions. To identify the underlying relationships between product attributes and consumers' personal beliefs motivating their purchasing decision, laddering interviews were performed with another group of consumers. Results indicated that the label had a positive or neutral effect on consumers' hedonic perception. When hedonic expectations were not fulfilled, assimilation took place, either completely or incompletely, indicating that positive consumer expectations had a positive effect on acceptability ratings of these cheeses. For consumers, the two main components influencing the final decision on purchasing Uruguayan low-fat cheese were trust and expected pleasure. The brand, appearance and previous knowledge of the product were the characteristics on the label with most impact on consumers. In addition, certain brands and images on the label elicited differentiating responses, like the sense of natural or traditional manufacture, which motivated some consumers to purchase the product.

PRACTICAL APPLICATION

To develop or improve products, it is necessary to provide the characteristics consumers seek in a product. Sensory properties are considered determining factors when choosing a product; however, they are not the only ones. The label is one of the extrinsic components of a product, playing an important role in consumer buying behavior, acting as a means to attract attention and provide information. This work shows how the expectation created by the label affected the acceptance of Uruguayan low-fat cheeses. To develop products with a higher likelihood of success, it is important to know which label characteristics are relevant to consumers and their underlying motivation.

INTRODUCTION

In Uruguay, "queso magro" is a variety of cheese with low-fat content (10–25%), for which there is increasing demand due to consumers' interest in low-calorie and healthy products. This work is part of a study aiming to investigate the

factors that affect consumer acceptance of Uruguayan low-fat cheese. A previous study analyzed the influence of sensory characteristics on consumer acceptance of this type of Uruguayan low-fat cheese (unpublished results) and although sensory properties are considered determining factors in product choice, extrinsic product aspects also

play an important role in this process (Guerrero *et al.* 2000). Product packaging is one of the extrinsic aspects that can affect consumer buying behavior, acting as a way to attract attention and provide information, thus affecting the perception of product quality (Bower *et al.* 2003; Chrea *et al.* 2011). Furthermore, the opinion each consumer has about the nutritional characteristics or composition of the product (Siró *et al.* 2008; Vazquez *et al.* 2009), its safety (Wilcock *et al.* 2004) or brand (Torres *et al.* 2012) also conditions their choice at the time of purchasing. It is necessary to identify which extrinsic attributes (e.g. package or label information) are relevant to consumers in order to improve the likelihood of product acceptance (Carneiro *et al.* 2005).

Expectations could be regarded as pretrial beliefs about a product (Grunert 2002), and hedonic expectations refer to how much the product will be liked/disliked before trying it. The consumer response will depend on whether or not the product meets their expectations (Costell *et al.* 2010). Claims, illustrations and symbols convey important information on what one can expect of the product by looking at the package. Previous studies have shown that package characteristics and especially those related to the label can influence consumer expectation and hedonic evaluation of food products (Deliza *et al.* 2003; Villegas *et al.* 2008; Mueller and Szolnoki 2010; Varela *et al.* 2010; Torres *et al.* 2012). The label includes the brand, product information, design and aesthetics, and each of these factors can affect, either positively or negatively, the overall image of the product and likewise product expectative, acceptability and consumer choice. To understand how the characteristics on the label influence consumer response, laddering technique can be used. Laddering is a qualitative method that has previously been used to find self-relevant values that consumers

associate to certain food types like functional, organic or high-quality foods (Baker and Guenther 2004; Bitzios *et al.* 2011; Grunert *et al.* 2011). Laddering refers to an in-depth interview, used to develop an understanding of the structure of the concepts that are relevant for the respondent. It is based on the means-end chain (MEC) theory, which is a model of the consumers' cognitive structures focused on how product attributes (the "means") are linked to self-relevant consequences and personal values (the "ends") (Sørensen and Askegaard 2007). There are two main laddering alternatives, soft and hard laddering. Hard laddering relies upon a structured questionnaire, while soft laddering is based on a personal interview performed by an interviewer.

The aim of this work was to investigate how Uruguayan consumers' expectations generated by the label influenced their acceptance of commercial low-fat cheeses. The study also sought to establish the personal values that consumers associate to label characteristics.

MATERIALS AND METHODS

Samples

Six Uruguayan commercial low-fat cheeses were evaluated. The selection criteria were based on a previous analysis of the commercial product range and on their availability in almost all big supermarkets in Montevideo. The samples were purchased from the market (coded from 1 to 6), taking into account expiry dates, and were stored under refrigeration (4 ± 1 C) until testing. Samples were evaluated at the same time frame from production, approximately 2 months. The characteristics of the label of each sample are described in Table 1.

TABLE 1. LABEL CHARACTERISTICS FOR THE SIX COMMERCIAL URUGUAYAN LOW-FAT CHEESES

Sample	Label appearance	Product description	Nutritional information content
1	Label in black on white. No image.	Low-fat cheese	For <i>portion</i> (30 g): Energy = 58 kcal, Carbohydrates = 0.8 g, Proteins = 8.1 g, Total fat = 3.0 g, Saturated fat = 1.8 g, Trans fat = 0.1 g, Fiber = 0 g, Sodium = 120 mg
2	Full colored label. No image.	Low-fat cheese with salt	For <i>portion</i> (30 g): Energy = 73.2 kcal, Carbohydrates = 0.8 g, Proteins = 8.0 g, Total fat = 4.2 g, Saturated fat = 2.7 g, Trans fat = 0 g, Fiber = 0 g, Sodium = 102 mg
3	Full colored label. Image of diced cheese.	Low-fat cheese	For <i>portion</i> (50 g): Energy = 101 kcal, Carbohydrates = 0 g, Proteins = 14 g, Total fat = 5.0 g, Saturated fat = 3.0 g, Trans fat = 0 g, Sodium = 167 mg, Calcium = 490 mg
4	Full colored label. No image.	Low-fat cheese with salt	For <i>portion</i> (30 g): Energy = 72 kcal, Carbohydrates = 0.6 g, Proteins = 9.9 g, Total fat = 3.3 g, Saturated fat = 2.1 g, Trans fat = 0 g, Fiber = 0 g, Calcium = 293 mg, Sodium = 180 mg
5	Full colored label. Image of countryside.	Low-fat cheese	No nutritional information
6	Full colored label. Image of diced cheese.	Low-fat cheese with salt	For <i>portion</i> (30 g): Energy = 80 kcal, Carbohydrates = 0.6 g, Proteins = 9.0 g, Total fat = 4.6 g, Saturated fat = 2.6 g, Trans fat = 0.3 g, Fiber = 0 g, Sodium = 129 mg

Consumer Acceptability

Evaluations were carried out in a standardized test room (ISO 2007). Eighty-four Uruguayan consumers participated in this study (45 women and 39 men, from 18 to 66 years old). Of these, 17% consume low-fat cheese everyday, 36% consume it more than 1 day per week, while the rest of them consume low-fat cheese less than once a week. Cheese samples were cut into sticks measuring approximately 1.5×1.5 cm and 5 cm in height, served at room temperature (20C) in transparent plastic dishes and coded with three-digit random numbers. Mineral water and crackers were provided for mouth rinsing. Cheese labels were coded with three-digit random numbers too. The presentation order of samples and labels was equilibrated among consumers following a Williams design (MacFie *et al.* 1989). Evaluations were done in three different conditions in two different sessions. The first session was divided in two parts. First, consumers were asked to taste and evaluate the acceptability of cheese samples without information (blind condition). Consumers evaluated the overall acceptability of the six samples of low-fat cheese using a hedonic 9-point scale ranging from “I dislike extremely” (*Me disgusta muchísimo*) to “I like extremely” (*Me gusta muchísimo*). Once consumers finished the blind evaluation, they were provided with the label of each cheese sample and were asked to rate how much they considered that they would like the product (expected condition).

The second session took place 1 month later (only 73 consumers completed the trial) when consumers were provided with the cheese sample and its corresponding label. In this case, they were asked to taste the sample and rate its acceptability, taking into account the label (informed condition).

Soft Laddering

In parallel, another group of 41 consumers participated in this evaluation. Each consumer was interviewed in an individual session of 30–45 min. The six cheese labels were simultaneously presented to each participant. The interviewer asked the participant “If you were at the supermarket buying cheese, which of these cheeses would you choose? And from the remaining samples, which would you choose? And then?” Thus, the interviewer continued asking until the rank order of choice was completed for all six cheese samples. After that, each label was presented individually to the consumer, who was asked if he/she would buy or not the corresponding cheese. Finally, the reasons for buying or not buying the product were established using a series of “why” questions (Sørensen and Askegaard 2007).

Data Analyses

One-way analysis of variance (ANOVA) was performed on the acceptability data obtained under blind, expected and informed conditions. Significant differences among samples were determined by the Fisher test ($\alpha \leq 0.05$).

Differences between acceptability values for the “expected” and “blind” (E-B) conditions, between “informed” and “blind” (I-B) conditions and between “informed” and “expected” (I-E) conditions were calculated, and their significance was determined by the Student *t*-test ($\alpha \leq 0.05$).

Friedman ANOVA was applied to data of the ranking test and significance of differences between samples was determined by the Fisher test ($\alpha = 0.05$), as modified for non-parametric data (Meilgaard *et al.* 1999). Data from the laddering task were analyzed as proposed by Reynolds and Gutman (1988). Attributes, consequences and values having the same meaning were grouped together and coded. With this information, diagrams showing relationships among attributes, consequences and values (hierarchical value maps [HVMs]) were constructed. The cut-off points used in the HVMs were chosen as 10% of the size of the consumer sample (Reynolds and Gutman 1988).

Analyses were performed using XLSTAT, Version 2011 (Addinsoft [1995–2010], Paris, France).

RESULTS

Expectations Created by Label and Their Effects on Acceptability

When consumers evaluated the product under the blind condition, acceptance scores varied greatly among the commercial cheese samples ($F = 23.8$, $P < 0.0001$). Liking scores ranged from 3.9 to 6.8 (Table 2). Consumers clearly disliked sample 3 while samples 6 and 1 were the most liked. Results

TABLE 2. MEAN LIKING SCORES OF ACCEPTABILITY AND STANDARD DEVIATION FOR THE SIX EVALUATED SAMPLES FOR THE THREE EVALUATION CONDITIONS CONSIDERED

Sample	Acceptability		
	Expected (E)	Blind (B)	Informed (I)
1	3.9 ^e (2.0)	6.2 ^{ab} (1.5)	6.7 ^{ab} (1.7)
2	6.4 ^c (1.3)	5.4 ^c (1.9)	6.3 ^b (1.9)
3	7.0 ^{ab} (1.4)	3.9 ^d (2.0)	5.5 ^c (2.0)
4	5.9 ^d (1.9)	5.9 ^{bc} (1.7)	6.4 ^b (1.9)
5	6.6 ^{bc} (1.6)	5.7 ^{bc} (1.9)	6.8 ^{ab} (1.8)
6	7.2 ^a (1.5)	6.8 ^a (2.0)	7.0 ^a (1.6)

For a column, values not sharing a letter are significantly different ($P \leq 0.05$) according to Fisher's least significant difference values (0.41, 0.65 and 0.58 for expected, blind and informed values, respectively).

of the expected liking also varied significantly among samples ($F = 47.6$, $P < 0.0001$). Consumers rated two samples (6 and 3) with a high expected liking score (≥ 7) and rated one of the samples (1) with a low score (Table 2). These important differences among sample scores indicated that differences in the label (brand, information or appearance) clearly generated different consumer expectations. On observing label characteristics (Table 1), it seems that differences in appearance could explain the observed differences in expected liking. Unlike the other samples, samples 3 and 6 showed images of cheese on their labels that could result attractive to consumers, while the label on sample 1 was the only one printed in black on white and lacked an image.

Under the informed condition, the liking scores of samples also varied significantly ($F = 5.8$, $P < 0.001$) although in this case they varied in a narrower range (5.5–7.0) than in the expected and blind conditions (Table 2). Therefore, differences among samples were less pronounced when consumers were aware about what they tasted than for the blind and expected conditions. To study the effect of expectations on the acceptability of these commercial low-fat cheeses, mean scores for each sample were compared in the blind condition (B), in the expected condition (E) and in the informed condition (I). A significant E-B difference revealed that a disconfirmation occurred. When informed minus blind scores (I-B) were significant, this revealed the label affected the informed liking scores. An assimilation effect was revealed when $(I-B)/(E-B) > 0$ and this indicated that liking after exposure to label was influenced in the direction of expected liking. When assimilation was detected, informed minus expected scores (I-E) were calculated. Significant differences meant that assimilation was not complete and both the sensory hedonic dimension and label expectation had an impact on the informed scores.

In the present study, results show different situations for different samples (Table 3). For samples 4 and 6, the difference between consumer expected liking and blind liking was not significant. That means that these products met consumer expectations. The expectative of sample 6 was the highest and it was fulfilled by the product, while in the case of sample 1 the difference between E-B was negative (positive disconfirmation). On observing the label, consumers expected to dislike the product, but when they tasted the cheese sample they liked it. In this case, I-B was not significant, indicating that the negative expectation caused by the label did not affected actual acceptability of the sample. Furthermore, the informed score was determined by the sensory hedonic dimension. For samples 2 and 5, the difference E-B was significant and positive, which means that the expected liking according to label was higher than the actual liking when tasting the product (negative disconfirmation). For these samples, the difference I-B was also significant and $(I-B)/(E-B) > 0$, indicating that the discrepancy between

TABLE 3. MEAN VALUES (M) AND SIGNIFICANCE (P , PROBABILITY ACCORDING TO T-TEST) OF DIFFERENCES BETWEEN ACCEPTABILITY VALUES OF SAMPLES OBTAINED UNDER DIFFERENT CONDITIONS

Sample	E-B		I-B		I-E	
	M	P	M	P	M	P
1	-2.3	<0.001	0.5	0.073		
	Disconfirmation (+)		N.S.			
2	1.0	<0.001	1.5	0.020	0.4	0.490
	Disconfirmation (-)		Assimilation		Complete assimilation	
3	3.1	<0.001	1.6	<0.001	-1.5	<0.001
	Disconfirmation (-)		Assimilation			
4	0.0	0.930	0.5	0.08		
	N.S.		N.S.			
5	1.0	<0.001	1.1	0.00	0.1	0.630
	Disconfirmation (-)		Assimilation		Complete assimilation	
6	0.4	0.140	0.2	0.47		
	N.S.		N.S.			

B, blind; E, expected; I, informed; N.S., not significant.

expected and actual liking of the product was assimilated by the consumer and the informed liking moved in the direction of the expected liking. Furthermore, there was not a significant difference between I-E, indicating that the assimilation was complete.

Sample 3 presented the largest difference between blind and expected liking scores (negative disconfirmation). The label created high hedonic expectations in consumers who disliked the sample on tasting it in the blind condition. The difference between I-B was also significant and positive, indicating that assimilation occurred. However, in this case, the difference between the informed condition and the expected condition (I-E) was significant, indicating that assimilation was not complete and the liking of cheese when the label was available fell between the blind score and the expected score.

These results reveal the impact the label has on consumer acceptability of Uruguayan low-fat cheese. When consumers were only provided a label to react to, expected liking for the cheese varied widely, indicating that the characteristics on the label only had a positive or neutral effect on consumers' hedonic perception. When hedonic expectations were not fulfilled, assimilation took place, either completely or incompletely. Thus, positive consumer expectations had a positive effect on rated acceptability of this type of cheese, as previously observed for other food products (Monaco *et al.* 2004; Villegas *et al.* 2008; Varela *et al.* 2010).

Label Characteristics Affecting Willingness to Purchase

The expected scores varied widely among cheese samples, indicating that some of the characteristics on the label had an impact on consumer response. It may be supposed that

TABLE 4. ORDER OF CHOICE AND BUYING INTENTION OF CHEESE SAMPLES ACCORDING TO ITS LABEL INDICATED BY CONSUMERS (N = 41) DURING LADDERING INTERVIEWS

Sample	No. of times label was chosen at first or second position	No. of times label was chosen at fifth or sixth position	No. of participants that would buy the cheese
1	10	23	28
2	2	18	24
3	21	9	29
4	7	20	27
5	15	11	34
6	27	1	41

these elements can affect each consumer differently depending on his/her personal motivations and values. In this second part of the study, a laddering technique was used to provide information about consumers' motivations for purchasing or rejecting the cheese product on the basis of its label.

Results of ranking tests of participants also showed that the order of choice varied among labels (Table 4). Sample 6 occupied the two first positions of choice more frequently than the rest of samples, while sample 1 occupied more frequently the two last positions. For all cheese samples, the percentage of consumers that indicated they would buy the

cheese was high ($\geq 59\%$), although variations were observed among samples (Table 4). Consumers' responses indicating their reasons for buying or not buying each sample were analyzed and summarized independently by two researchers, according to the levels of abstraction (Attribute – Consequence – Value) of the MEC theory. Overall, nine attribute codes, 12 consequence codes and seven value codes were elicited from the whole set of responses, considering both the reason for buying and not buying the samples (Tables 5 and 6, respectively). A total of 18 ladders were obtained. Then, dominant connections were graphically represented in a tree diagram, termed a HVM. The cut-off points were set on four relations (10% of the size of the consumer sample). The general HVM maps with the constructs for buying and rejecting the samples are shown in Figs. 1 and 2, respectively. Individual HVM maps were also obtained for each sample, although they are not shown to avoid repetition of Table 5. It was observed that the basic cognitive areas of trust and pleasure appeared in every HVM, but they were constructed in a different way depending on the attributes that consumers found on each label.

Trust is a feeling about satisfaction because of its ability to moderate risk in the buying process (Afzal *et al.* 2010). Brand was the attribute leading to consumer trust. For an important proportion of consumers, a known brand meant

TABLE 5. CONSUMERS' MOTIVES TO PURCHASE THE CHEESE SAMPLES ACCORDING TO THEIR LABELS

Attribute	Consequence	Value	Frequency of occurrence (%)	Frequency of occurrence for each sample					
				1	2	3	4	5	6
Brand known	Good quality	Trust	22.7	12	7	22	0	0	23
Brand known		Trust	13.1	7	14	0	8	8	0
Information is clear	Good quality	Trust	1.8	0	2	1	0	0	2
Brand known	Good taste	Pleasure	9.9	6	1	6	10	11	0
Product known	Good taste	Pleasure	11.0	4	2	0	0	0	19
Label appearance	Good taste	Pleasure	7.4	0	0	3	0	4	14
Label appearance	Image of cheese/good taste	Pleasure	2.5	0	0	5	0	0	2
Brand	Traditional manufacture good taste	Pleasure	0.4	0	0	0	1	0	0
Brand	Traditional manufacture	Social impact	4.3	0	0	0	3	4	5
Label appearance	Image of country/nature/natural product	Quality of life	3.2	0	0	0	0	9	0
Low-fat content	Weight control	Good looking	0.4	0	0	1	0	0	0

TABLE 6. CONSUMERS' MOTIVES TO REJECT PURCHASING CHEESE SAMPLES ACCORDING TO THEIR LABELS

Attribute	Consequence	Value	Frequency of occurrence (%)	Frequency of occurrence for each sample					
				1	2	3	4	5	6
Product known	Bad taste	Not pleasure	7.1	0	5	12	3	0	0
Product unknown	I should try		6.0	1	4	0	6	6	0
Label ugly	Bad taste	Not pleasure	6.0	9	5	0	3	0	0
Information not clear		Distrust	2.1	0	2	0	4	0	0
Brand name	Low quality	Distrust	1.4	0	0	0	4	0	0
Product unknown	Bad quality	Distrust	0.4	1	0	0	0	0	0
Brand	The price is high		0.4	0	0	0	0	1	0

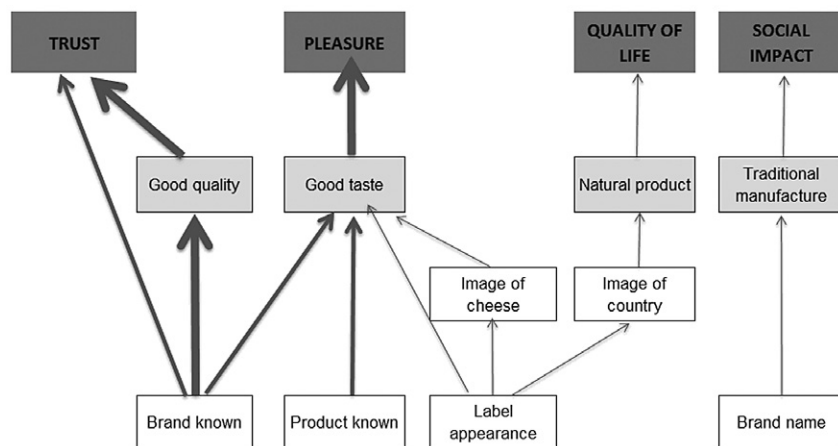


FIG. 1. LADDERING PLOT OF CONSUMER MOTIVATIONS FOR BUYING URUGUAYAN LOW-FAT CHEESE ACCORDING TO THE LABEL CHARACTERISTICS

a good quality product and created trust. In all cases, trust in brand appeared as a reason to buy the sample, and for most samples (except 4 and 5) it was the most frequently mentioned reason (Table 5). For some consumers, the fact that the information shown on the label was clearly presented also gave the sensation of trust. This occurred for samples 2, 3 and 6 but at a very low frequency.

Pleasure also motivated a proportion of consumers to purchase cheese samples. The brand or previous knowledge of the product led consumers to think that the product would taste good. For some of consumers, the attractive image on the label (samples 3, 5 and 6) caused the sensation that the product would taste good and be pleasurable. More concisely, some consumers indicated that the product image on the label (a piece of cheese or diced cheese) made them think that the product would taste good.

For samples 4, 5 and 6, the brands conveyed an image of traditional manufacture, which made some consumers consider the social impact/implications. The image of the countryside on the label of sample 5 led to some consumers to

think that it was a natural product and to confer it the value of “quality of life.” It should be noted that only one consumer paid attention to nutritional information and declared that he would buy the sample because it had the lowest fat content. However, for most consumers, nutritional information was not relevant to their purchase decision, probably because they considered low-fat cheese to be a healthy product by itself and thus they did not need any extra information to convince them of this fact. Similarly, some authors found that information about nutritional composition did not affect consumer buying decisions nor acceptability in the case of products with a “healthy image” like yogurts (Kähkönen and Tuorila 1999; Bayarri *et al.* 2010).

The reasons for not buying the cheese were the feelings of distrust and lack of pleasure. The nonattractive label and the previous negative experience of a known product were the reasons why consumers thought the product would not taste good and that it would be unpleasant. The “name” of the product, the lack of clear information or the

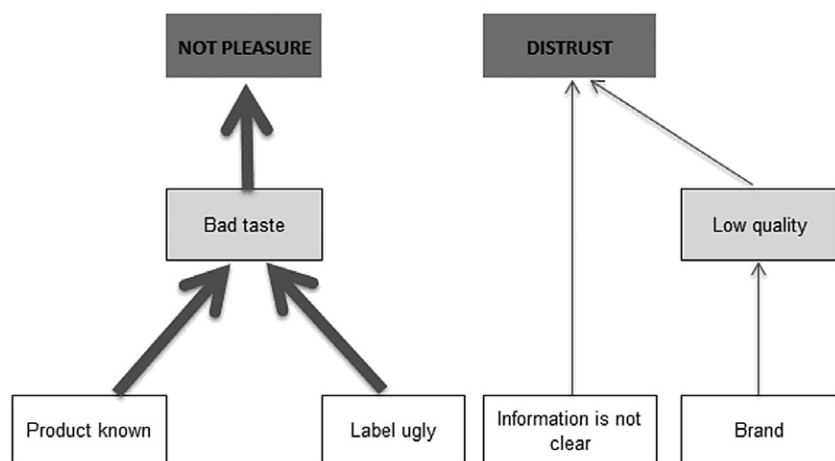


FIG. 2. LADDERING PLOT OF CONSUMER MOTIVATIONS FOR NOT BUYING URUGUAYAN LOW-FAT CHEESE ACCORDING TO THE LABEL CHARACTERISTICS

lack of previous knowledge made consumers distrust the product.

For consumers, the two main components in the final purchasing decision of the Uruguayan low-fat cheese were trust and pleasure. Therefore, market positioning should pay attention to these personal consumer priorities, which are conveyed through certain characteristics on the label, mainly the brand, the appearance and previous knowledge of the product. In addition, brand and appearance of the label can elicit certain differentiating features, like the sense of natural or traditional manufacture that can also motivate a proportion of consumers to purchase the product.

CONCLUSION

Consumer expectations created by the label differed widely among the commercial Uruguayan low-fat cheeses evaluated. The influence of these expectations on final acceptability of product depended not only on the label but also on the sensory characteristics of the cheese. In general, positive consumer expectations created by label had a positive or neutral effect on acceptance of the cheese sample. Negative expectations did not affect the final acceptance of cheese because taste outweighed the negative impact of label. Trust and pleasure were the two main values motivating a consumer to purchase a Uruguayan low-fat cheese product. The attributes leading to consumers trust were mainly brand, appearance and previous knowledge of the product. In addition, label design can lead people to think that the product will taste good or bad and thus imagine the pleasure they could experience from it. In this case, an image of the product on the label (pieces of cheese) was the main feature that made the label attractive to consumers.

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