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The effect of consumer innovativeness in the acceptance of a new food product. An application for the coffee market in Spain

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Abstract

The current market situation has led the production sector to focus on developing new products that satisfy consumer demands and improve firms' competitive positions. This study seeks to analyze the role played by the consumers' innovative tendency in the acceptance of new food products. This was done through the use of means-end chain theory in an application for coffee in Spain. The results found indicate that consumers' cognitive structure is similar, regardless of their level of innovativeness when presented with a traditional product. However, this structure is more complex in the case of more conservative consumers as they project aspects of their personalities through the products attributes.

Additional key words: food product innovation; innovativeness; consumer behavior; means-end chain; laddering; Spain.

Introduction

The food industry sector is growing in competiveness, among other reasons due to the globalization and internationalization of markets and concentration of product ranges due to arrival on the scene of large firms both in the areas of distribution and production, as well as the existence of an ever more demanding customer, aware of what he or she is looking for in a food product. This has led to industrial agents feeling themselves forced to innovate and develop new food products to satisfy the desires and necessities of the markets and improve the competitive position of their firms (Baregheh *et al*., 2009; Naidoo, 2010).

Scientific and technological innovations have contributed significantly to improving the quality of life of consumers, providing benefits both individually and to society on a larger scale. Many of these innovations have been incorporated into everyday life with a high level of consumer acceptance, while other innovations have produced resistance in consumers. The same is true in the food sector, with some innovations being easily adopted by consumers while others are rejected. This has stimulated research aimed at understanding the acceptance of innovations by consumers both in the food industry and in other industries (Grunert *et al.*, 2008).

Consumer choices are becoming ever more variable and unpredictable due to significant lifestyle and demographic changes and improved communication, all of which make the consumer a very important actor in the food value chain (Imram, 1999; Capitanio *et al.*, 2009; Fortuin & Omta, 2009; Kühne *et al*., 2010). Thus, having better knowledge of what consumers want, their changing necessities and how an immediate response can be made to these changes, that is to say, developing a market orientation, has become necessary not only for the success of agri-food businesses, but also for their survival (Costa *et al.*, 2004). The success of innovations is based on understanding the consumer and then developing relevant products to satisfy the consumer's needs and desires, which leads to new products being accepted.

Research centered on consumers has focused on their mental characteristics, behavior and demogra-

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Abbreviations used: APT (association pattern technique); DSI (domain specific innovativeness); HVM (hierarchical value map); LOV (list of values); MEC (means-end chain); RVS (Rokeach value survey).

phics associated with the disposition to adopt innovations. One group of studies has related the adoption of new products with the socio-demographic characteristics of consumers (Dickerson & Gentry, 1983; Michon *et al.*, 2010). The variables that have usually been included have been income, age, family size, education etc. (Dickerson & Gentry, 1983; Gatignon & Robertson, 1991; Rogers, 1995; Steenkamp *et al*., 1999). The majority of studies carried out in recent years have indicated that personal characteristics have an influence on the weak or ambiguous adoption of innovations (Steenkamp & Burgess, 2002; Im *et al*., 2003; Clark & Goldsmith, 2006; Urala & Lähteenmäki, 2007; Bellows *et al*., 2010). It appears that a disposition to try new products within a product category is a more consistent predictor of innovating behavior (Goldsmith & Hofacker, 1991; Grewal *et al*., 2000; Goldsmith, 2001). This innovating tendency has normally been conceptualized through the concept of "innovativeness", usually measured through the use of scales.

Various studies have demonstrated the role of "innovativeness", the tendency towards innovation in consumers which has an important impact on the adoption of innovations (Venkatraman, 1991; Goldsmith & Hofacker, 1991; Roehrich, 2004; Dobre *et al*., 2009; Banterle *et al*., 2011). These authors indicate that innovativeness is affected by two different types of individual variables: the central disposition and the consumer's specific context (Lastovicka *et al.*, 1990). The central disposition is applied in a wide range of situations, contexts and behaviors and it remains more or less stable in the individual.

This study seeks to make progress in exactly this area by trying to determine the degree to which fundamental personal aspects of consumers have an influence on their choice structure for this type of product. The idea is to move forward from the traditional perspective developed by Lancaster (1966), which only considers the physical characteristics of the product, towards a broader perspective which analyzes the influence of personal aspects of the consumer on product attributes. This theoretical approach fits in with an environment in which consumers have more desires than necessities, which means that they look for additional functions that give added value to the product. Given the centrality of values in the cognitive structure of individuals, these provide a strong theoretical basis for understanding the specific dispositions of consumers, including their innovativeness (Barrena & Sánchez, 2009). Therefore, understanding the process of adoption, while taking into account central and fundamental aspects of the cognitive and decision making structure of consumers on the basis of their innovativeness, may help to produce a more effective segmentation, better positioning and more appropriate launch strategies for innovative food products.

On the basis of what has been set out above, this study seeks to analyze the role played by consumers innovativeness in the acceptance of food product innovations, as well as the possible differences in the cognitive structure of consumers on the basis of the type of food product which they are presented with (traditional product used as a control *versus* innovative product derived from the traditional one used as a control). In this way it will be possible to identify which attributes, benefits and values are taken into account by consumers according to their predisposition towards innovation as in general the success of a new product will depend on the degree to which it provides benefits sought by consumers and identifies itself with the life values they pursue. Various authors have indicated that values are the biggest influence on human behavior (Parsons & Shils, 1951; Pitts & Woodside, 1984; Ter Hofstede *et al*., 1999; Steenkamp *et al.*, 1999) in that they are final states of existence which play a dominant role in guiding choice patterns (Miele & Parisi, 2000; Fotopoulos *et al*., 2003).

In methodological terms this approach, which relates attributes with benefits and attributes, can make use of means-end chain theory (MEC), which establishes relations among the characteristics of the product or its specifications, the benefits which these symbolize and the values consumers seek through them.

Theoretical framework

The tendency towards innovation among consumers (innovativeness)

The innovative consumer plays a key role in the dissemination and adoption of new products. The concept of consumer innovativeness has been the subject of much research interest for decades and has been broadly developed in recent years (Roehrich, 2004). The first attempt to define the concept was produced by Rogers (1962), who defined innovativeness as "the degree to which an individual is a pioneer in the adoption of a new idea with respect to other members of the system". However, there is no consensus with regard

to the meaning of innovating character. It may be described as the early purchase of a new product or as the tendency to be attracted by new products (Steenkamp *et al.,* 1999). Hirschman (1980) and Manning *et al.* (1995) see this innovating character as the inherent desire to search for novelties and creativity. Steenkamp *et al.* (1999), for their part, see it a predisposition to buy new and different products and brands as opposed to sticking with previous choices and habits of consumption. The bulk of the research into consumer innovativeness has been carried out in the framework of consumer psychology and marketing. It has centered on innovativeness as an aspect of personality (Hirschman, 1980; Venkatraman & Price, 1990; Venkatraman, 1991; Manning *et al*., 1995; Steenkamp & Baumgartner, 1995; Steenkamp *et al*., 1999). Its objective has been to identify innovative consumers on the basis of their predisposition towards innovative products, as well as their predisposition towards innovative behavior (Foxall, 1988, 1995; Midgley & Dowling, 1993; Goldsmith *et al*., 1995; Manning *et al.,* 1995).

Innovative behavior has usually been measured by way of scales developed at different times by various authors. Roehrich (2004) developed an innovative scale for measuring the life and adoption of innovations (centered on the propensity to innovate at the level of general behavior) related to an attraction to any type of novelty and not to a specific product. The Kirton (1976) or KAI scale is fairly popular although its predictive power is low (Roehrich, 2004). One of the most widely used is the Domain Specific Innovativeness (DSI) scale [see Suppl. Table 1 (pdf online)] proposed by Goldsmith & Hofacker (1991) and repeatedly validated for goods and services (Goldsmith & Flynn, 1992, 1995; Flynn & Goldsmith, 1993; Huotilainen *et al.,* 2006). This scale predicts current adoption behavior fairly accurately.

The means-end chain

It was Gutman (1982) who first applied "means-end chain" (MEC) theory to the field of marketing and consumer research. He oriented the MEC towards the exploration of consumers' understanding of their own behavior. Thus, the MEC is a cognitive structure linking the consumer's knowledge of products to his knowledge of certain personal consequences and values.

The main premise of MEC is that consumers learn to select those products that present the attributes that allow them to achieve certain final values (Reynolds & Gutman, 1984; Ter Hofstede *et al*., 1998; Olson & Reynolds, 2001). The suggestion is that product knowledge is organized into a hierarchy of different levels of abstraction inside the consumer's mind (Young & Feigin, 1975; Howard, 1977; Gutman, 1982; Reynolds *et al*., 1995). In other words, consumers may understand products in terms of the perceived attributes, derived personal benefits, and realized personal values. The stronger and more direct the personal link, the higher the level of abstraction in the decision (Olson & Reynolds, 1983).

In the analysis of mental images, it is possible to divide each basic level of abstraction into distinct categories. In this respect, Walker & Olson (1991) proposed a six-level MEC. The three lower levels (concrete attributes, abstract attributes and functional consequences) form the consumer's product knowledge, while the three upper levels (psycho-social consequences, instrumental values and terminal values) comprise the consumer's self-knowledge[1]. Several studies have analyzed this sequence of associations in the consumer for different product categories (Flight *et al*., 2003; among others).

Methodology

Product choice and information gathering

With the objective of determining the role played by the innovating character of the consumer in the acceptance of new food products and the possible differences in cognitive structure which may appear when the consumer is presented with a new food product, two food products were selected. Firstly, a traditional product (coffee) used as a control and secondly, an innovation derived from it (coffee in capsules of the Nespresso

[1] The concrete attributes are the properties or characteristics which may be preferred or sought by consumers. The abstract attributes are properties of the product, service or behaviour which cannot be obtained without consuming the product and which must be inferred from internal or external information. The functional consequences are the benefits which consumers directly experience by consuming the products or services and are related to products' attributes. The psychological consequences are more personal and social and less tangible. The instrumental values are intangible ends related to ways of behaving to obtain final benefits and, finally, terminal values refer to final preferred states.

type). The choice of these two products was motivated by the fact that coffee is a widely known and consumed product in Spain both in its traditional form and the innovative form examined here. According to data produced by the Ministry of Agriculture, Food and the Environment of Spain (MARM, 2011), 82% of the population consumes coffee in its traditional format. The takeoff of the innovation (coffee capsules) occurred in the years 2004 and 2005 and it has tripled its Spanish market penetration in the past two years, already surpassing the barrier of 1.5 million regular users (representing 8% of the total volume of coffee consumption). It is expected that within five years it will have captured 20% of coffee sales.

The information necessary to achieve the proposed objects of this study was collected through a personal survey carried out in Navarre in March and April of 2011.

The survey was directed at food buyers for the home and was divided into four parts. The first section asked about the frequency of the consumption of new food products as well as the values attributed to them when it was decided to buy them. The second section has various elements designed to find out respondents' attitudes to new food products and the spirit of innovation among consumers (measured with the DSI scale). This scale serves as a basis to segment the respondents on the basis of their innovativeness. The third part of the questionnaire is focused on the application of methodology to find out the MECs of consumers (interview laddering), and finally, the fourth part deals with the socio-demographic characteristics of the respondents.

The study used a convenience sample (Gutman & Alden, 1985) of buyers and consumers of coffee. Vannoppen *et al.* (1999) hold that convenience samples are permitted in the case of MEC methodology (measured through interview laddering) due to the complexity of the process and the fact that the respondents know the product and can thus express more ideas regarding it. In this case the final sample was made up of 98 people responsible for food purchases in the home, who responded to a personal invitation to participate sent by e-mail to staff (academic, administration and services) and students) of the Public University of Navarre. This sample size is similar to that used in the bulk of previous studies carried out with this technique (Table 1). It shows that the biggest difference is the higher percentage of participants with higher education in the sample analyzed, because the survey was conducted in the university. The table also shows a higher number of women in the sample; this is probably due to the fact that the survey was responded to by people in charge of household purchases and there are still a higher number of women in charge of this chore. However, even though the sample could be considered biased in terms of its educational level, other elements, such as household composition, age and gender, are similar to those in the population of Navarre as a whole.

Table 1. Characteristics of the sample and the Navarre (Spanish region) population as a whole

	Coffee sample	**Navarre**
Average age	40.03	40.50
Youngs (20-34 years old)	28.60%	24.19%
Adults (34-55 years old)	71.40%	28.62%
Size of household (average)	3.06	2.90
Level of education		
Elementary	—	18.67%
Intermediate	17.99%	52.24%
Higher	82.10%	29.09%
Gender		
Male	27.50%	49.77%
Female	72.50%	50.23%

The interview was carried out in groups of approximately 10 people. The content of the survey with its various parts was explained to them as well as how to respond to it. Special emphasis was placed on the laddering methodology with an example of the MEC being shown to participants in order to help ensure their understanding of the process. The interview lasted from 40 to 60 minutes.

Laddering

The MEC is usually measured by a qualitative interview known as laddering. Laddering is an in depth, semi-structured personal interview with the object of selecting the attributes-consequences-values associations made by the consumer with regard to the product. Laddering consists of three steps: the choice of the most import attributes, an in depth interview and an analysis of the results. The first step is to identify those attributes that are relevant for the product in question and to do this various techniques are used. In the second stage questions of the "Why is it important for you?" type are used to get participants to set out why the attributes selected in the first step are of importance

in terms of their consequences and related values. In the third, the concepts that arise from the interviews are classified into a small number of categories with the links in a matrix of involvement being established. This is followed by the construction of a hierarchical value map or HVM) (Nielsen *et al.*, 1998; Ter Hofstede *et al*., 1998; Chiu, 2004; Costa *et al*., 2004).

The attributes chosen for the design of the attributes values matrix were determined by the findings of the literature review and through consultation with experts[2] by way of a pilot study. Attributes were proposed for coffee (shown in Table 2). In the same way, through a review of the literature on the MEC and laddering, especially in cases where it was applied to products of this type, the 20 most relevant consequences were selected. Finally, for values, the list of values (LOV) proposed by Kahle (1985) and subsequently modified in the Rokeach value survey (RVS) was adopted. It includes nine personal values relevant to consumer behavior (Table 2).

This study uses hard laddering because, as noted by Russell *et al*. (2004), the technique is easier to apply, as the interview is shorter and the respondent feels less pressure (Botschen & Thelen, 1998). The specific technique chosen for this part of the questionnaire was the 'Association Pattern Technique' (APT) considered appropriate for use with samples of more than 50 individuals (Gutman & Alden, 1985). This technique uses

Table 2. Identification and classification of attributes, consequences and values selected in the study

Attributes		Consequences		Values	
Concrete Attributes	Price Taste Aroma Brand Label information Presentation of the packaging Geographical origin Coffee type	Functional Consequences	Appetising, enjoyable to drink It is a healthy food Good value for money I am well informed I can find it easily Everyone in the family likes it The brand is familiar to me It allows me to have more free time I am more focused and feel more awake It helps me with my nerves It helps me relax and rest	Instrumental values	It provides fun, pleasure and enjoyment I have a good quality of life and security It gives me emotion I am more successful
Abstract Attributes	Quality Ease of preparation Beneficial health effects Caffeine content Familiarity of the product It helps the economy of certain regions	Psychological consequences	I consume a quality product I have good eating habits It brings me happiness and satisfaction It evokes feelings in my memory I feel a sense of cultural identity No health risk Status symbol I feel I am doing the right thing I feel more cosmopolitan	Terminal values	I feel that I belong to a group in society My relations with others improve I feel a sense of personal realization and I fulfill my obligations I feel more respected by others I have a clean conscience and self-respect

[2] Academics with expertise in the behavior of consumers, producers and distributors of coffee.

two separate matrices: an attribute —consequence matrix and a value— consequence matrix.

One of the issues to be considered when constructing a hierarchical value map is where to fix the cut-off point, which indicates the number of linkages registered before a connection ceases on the map (Leppard *et al*., 2004). It is hard to decide which is the most significant or relevant frequency of connections or direct relations between two levels of abstraction that needs to be included on an HVM. A high cut-off level (a high frequency of links) simplifies the map because it means that it will contain fewer links, but important information may thereby be lost. A low cut-off level (which means that low frequencies are shown on the map) results in a complex map that is difficult to interpret. Previous research has shown various ways to decide the cut-off point (Pieters *et al*., 1995), most studies agreeing that the best option is to take the one that enables the researcher to find the solution that yields the maximum amount of information without presenting interpretation problems (Audenaert & Steenkamp, 1997; Reynolds & Gutman, 2001).

The cut-off point in our case was determined by means of a method proposed by Leppard *et al.* (2004), known as "top-down ranking." This method works on the premise that a group of respondents will not necessarily create the same number of linkages at two different levels of abstraction (typically, more linkages are made at lower levels of abstraction than at higher levels). Thus, it may not be appropriate to use the same cut-off point when the number of linkages varies across different levels of abstraction. This method determines the cut-off point based on the notion of the "importance" of the linkage. The most important linkage is associated with the largest entry. In other words, importance is defined by the order in the ranking of the data entry cells. Thus, different orders produce different HVMs. HVM1 displays the most important linkages and it is also the least complicated and easiest to interpret of all the possible HVMs, and so the process continues, repeating itself through all the levels. The advantage of this method is that it enables us to observe how the most important linkages between each pair of levels gradually emerge, while also allowing us to compare groups with the same cut-off level. Furthermore, this cut-off level captures a sufficient amount of the initial information shown in the final variance included in the model.

The MECANALYST PLUS 1.0.8. program was used for the data analysis.

Results

Segmentation of consumers according to their innovative nature

Table 3 shows the results obtained (averages and standard deviations) of DSI scale for the analyzed sample. The most considered aspect it is the possible purchase of a new food, still without having proved it, being the only one that exceeds the average value of the scale. The rest of propositions of the scale presents values lower than the average.

As has already been pointed out, the consumers were first segmented according to their innovation tendency. To do this a factor analysis of the principal components of the innovation tendency (DSI) (Table 4) was first carried out.

The results of the factor analysis show that two factors provide 72.70% of the initial information. The first factor (50.21% of the variance) covers those aspects that refer to the consumer's innovative tendency: being the first to buy new food products, buying more new products that those around them and buying more new food products than most people. The second factor (22.49% of the variance), refers to the consumer's tendency towards being less innovative and more conservative: not buying new food products even when these are available, being the last to find out about new

Table 3. Average and standard deviation of DSI scale

	Average	SD
I buy new food products before most people do	2.01	0.96
I am the first in my circle to buy new food products	2.10	1.05
Compared to those around me, I buy more new food products	2.26	1.01
Even when there are new food products in the shops I do not buy them	2.24	1.05
I am the last person in my circle to find about new fashions	2.14	1.10
I would buy a new food product even without having tried it	3.05	1.23

Table 4. Factor analysis of the principal components of the DSI scale

	Factor 1 Innovation tendency	Factor 2 Conservative tendency
I am the first in my circle to buy new food products	0.919	–0.085
By comparison to those around me, I buy more new food products	0.916	–0.200
I buy new food products before most people do	0.865	–0.135
Even when there are new products in the shop I do not buy them	–0.064	0.896
I am the last person in my circle to find about new fashions	–0.159	0.863
I would buy a new food product even without having tried it	0.377	–0.381
% Variance	50.21%	22.49%

KMO: 0.724, Cronbach's alpha, 0.757.

fashions and not buying new food products without having tried them.

On the basis of these two factors a k-means segmentation was carried out. It found two clearly differentiated segments, as is shown in Table 5. The first segment has positive values with regard to factor 1 (innovative tendency) and negative with regard to factor 2 (conservative tendency), with the second segment being exactly the reverse. It is for this reason that the first of the two segments (made up of 39.36% of the sample) has been called "innovators" and the second segment (60.64% of the sample) has been called "conservatives".

Characterization of the segments

A characterization of the sample was then carried out on the basis of its socio-demographic characteristics, consumption habits and attitudes towards new food products with significant differences being seen between "innovators" and "consumers" in terms of age and level of education. The innovators are younger and have a higher level of education (Table 6).

With regard to consumption habits, difference can also be seen between the segments. The innovators have higher consumption rates both for fair trade coffee and coffee in capsules, which would indicate differentiated behaviors on the basis of their innovative tendency and the innovative tendencies presented in the product examined. With regard to the establishments where coffee is consumed, differences between the segments are only seen with regard to those which sell ethnic food, which are often visited by the innovators (Table 6).

Finally, the attitudes of the two segments to new food products are examined, with the data presented in Table 6. It shows that conservatives are more reluctant to try new food products than innovators. The former have less trust in new food products, they prefer safe food products, already known to them and even functional food products seem dangerous, though efficient, to them. These beliefs confirm the more conservative tendency of this group.

Hierarchical value maps (HVM)

This section presents the results of the HVMs for traditional coffee and coffee in capsules for innovator and conservative consumers. This will analyze whether the cognitive structure of subjects varies when they are presented with an innovation and on the basis of their innovative character. Previously, in Table 7 the cut-off points for the fifth level were shown, that is, they show all the attribute-consequence and consequence-value linkages at and above the frequency of the one ranked

Table 5. Segmentation of respondents on the basis of their innovation tendency

	Segment 1 Innovators (39.36%)	Segment 2 Conservatives (60.64%)	Snedecor's F	Sig.
F1: Innovative tendency**	0.982	–0.637	159.08	0.000
F2: Conservative tendency***	–0.276	0.179	4.868	0.030

***, ** Indicate the existence of significant differences between the segments with a maximum level of error of 1% and 5% respectively.

Table 6. Characterization of the segments

	Segment 1 Innovators (39.36%)	Segment 2 Conservatives (60.64%)	F/χ^2	Sig.
Scale of resistance to novelties				
There are too many new food products these days	3.02	3.14	0.156	0.694
New food products are a ridiculous fashion	1.78	2.12	2.411	0.124
I prefer safe and familiar food***	2.48	3.24	9.608	0.003
I have a lot of doubts about noveltie**	2.05	2.57	6.064	0.016
Traditional food is the best in the world	3.02	3.33	1.471	0.228
Functional foods are efficient but dangerous**	1.55	2.15	7.552	0.007
Food these days is artificial by comparison with food in the past	2.67	2.89	0.710	0.402
Health concerns create unnecessary stress	2.89	3.08	0.659	0.419
I drink normal coffee	97.3%	94.7%	0.361	0.548
I drink coffee that comes in capsules*	54.1%	35.1%	3.632	0.059
Do you go out to eat at weekends? Where?	75.7%	68.4%	0.577	0.448
Traditional food restaurant	64.9%	52.6%	1.374	0.241
Fast food restaurant	16.2%	7.0%	1.997	0.158
Ethnic food restaurant***	40.5%	12.3%	9.995	0.002
Vegetarian food restaurant	10.8%	3.5%	2.002	0.157
Gender			0.460	0.498
Men	23.5%	30.2%		
Females	76.5%	69.8%		
Income level			0.721	2.772
Medium	55.2%	65.1%		
High	44.8%	34.9%		
Education level*			3.058	0.396
Medium	8.8%	22.6%		
High	91.2%	77.4%		
Age*			0.096	0.080
Young people	44.4%	26.8%		
Adults	55.6%	73.2%		

F/χ^2: ratio between Snedecor's F and chi-square. ***, **, * indicate the existence of significant differences between the segments with a maximum level of error of 1%, 5% and 10% respectively.

fifth in importance. The cut-off point obtained following the methodology proposed by Leppard *et al.* (2004) is different for each level of abstraction and group of respondents, while allowing for comparison between maps. Thus, the cut-off point for the attribute-consequence relationship is 21 for the innovators and 36 for the conservatives in the case of ordinary coffee and 13 and 17, respectively, for coffee in capsule form. In the case of the attribute-consequences relationship the cut off points are at 19 for the conservatives and 28 for the innovators in the case of ordinary coffee and 10 and 17, respectively, for coffee in capsule form. Almost all of these linkages are made by over 30.0% of the group in each case, thus satisfying the minimum requirement suggested by the majority of authors.

Fig. 1 (a,b) shows the hierarchic value maps for innovator and conservative consumers of ordinary coffee at the fifth cut off point. Fig. 2 (a,b) gives the same results for the case of coffee in capsules. In order to allow all the elements to appear on the map, the percentage of respondents that established the link is given. As can be seen from Fig. 1, the HVMs for innovator and conservative consumers of traditional coffee are very similar. The only difference between the two is that the innovator consumers see the aroma of the coffee as important, as this is how they perceive it as an appetizing product. The rest of the attributes, consequences and values in the two HVMs are similar.

An initial analysis of the results shows interesting similarities between the two groups. With regard to

Table 7. Cut off points and total percentage of cases for the various levels of abstraction for each segment and product analyzed

		Ordinary coffee				Coffee in capsules			
		Segment 1 Innovators (39.36%)		Segment 2 Conservatives (60.64%)		Segment 1 Innovators (39.36%)		Segment 2 Conservatives (60.64%)	
		CP[a]	%[b]	CP	%	CP	%	CP	%
Level 1	AC[c]	32	82.1	53	89.8	20	51.3	29	49.2
	CV	31	79.5	44	74.6	18	46.2	29	49.2
Level 2	AC	29	74.3	47	79.7	19	48.7	20	33.9
	CV	24	61.5	34	57.6	15	38.5	21	35.6
Level 3	AC	26	66.6	43	72.8	15	38.5	19	32.2
	CV	22	56.4	33	55.9	13	33.3	19	32.2
Level 4	AC	23	58.9	40	67.8	14	35.9	18	30.5
	CV	21	53.8	32	54.2	11	28.2	18	30.5
Level 5	AC	21	53.8	36	61.0	13	33.3	17	28.8
	CV	19	48.7	28	47.5	10	25.6	17	28.8

[a] CP: cut-off point. [b] Percentage of respondents considering a link at this level. [c] AC: attributes-consequences, CV: consequences-values.

attributes, there are similarities concerning the interest shown in concrete ones such as "taste", "price", "brand" and "information on the label". Furthermore, the abstract attribute "ease of preparation" was the only attribute identified by both groups. No differences were seen between the two groups regarding consequences. Both groups identified the same functional consequences: "it is appetizing and enjoyable to drink", "the relationship between price and quality is good", "it is a healthy food", "it makes my life simpler", "I am well informed" and "the brand is familiar to me". The psychological consequences were also the same for both groups: "I consume a quality product", "I have good eating habits", "it brings me happiness and satisfaction" and "it does not have health risks". With regard to values, both groups mentioned the same instrumental values: "it brings me pleasure, entertainment and enjoyment" and "I have a good quality of life and security".

There are no large differences to be seen between the two ladders formed. Both groups relate "taste" to a functional consequence, "it brings me entertainment, pleasure and enjoyment". Furthermore, the innovators appreciate the importance of another concrete attribute, "aroma" and form a variation of the previously mentioned ladder with it in the place of "taste". These results seem to indicate that there exist no significant differences between the innovators and conservatives with regard to normal coffee.

The hierarchical value maps for innovator and conservative participants with regard to coffee in capsule form are presented in Fig. 2. With regard to attributes, the concrete predominate over the abstract in both groups (four concrete and two abstract in both groups). With regard to similarities between the two groups, the concrete attributes "taste", "aroma" and "brand" and the abstract attributes "quality" and "ease of preparation" were mentioned by both. With regard to differences, the concrete attribute "information on the label" and the abstract attribute "caffeine content" were only identified by the innovators, while the conservatives attributed importance to the abstract attribute "quality" and the concrete attribute "price".

With regard to consequences, functional consequences predominate over psychological ones in the innovator group (seven functional, five psychological) while among the conservatives the balance is even between the two types of consequences (five functional, five psychological). There are similarities between the two groups with regard to some functional consequences: "it is appetizing, I enjoy drinking it", "it allows me more free time", it is a healthy food" and "the brand is familiar to me". Both groups identified the following psychological consequences: "it brings me happiness and satisfaction", "I have good eating habits", "I consume a quality product" and "status symbol". With regard to the differences between the two groups, the innovators highlighted two extra functional conse-

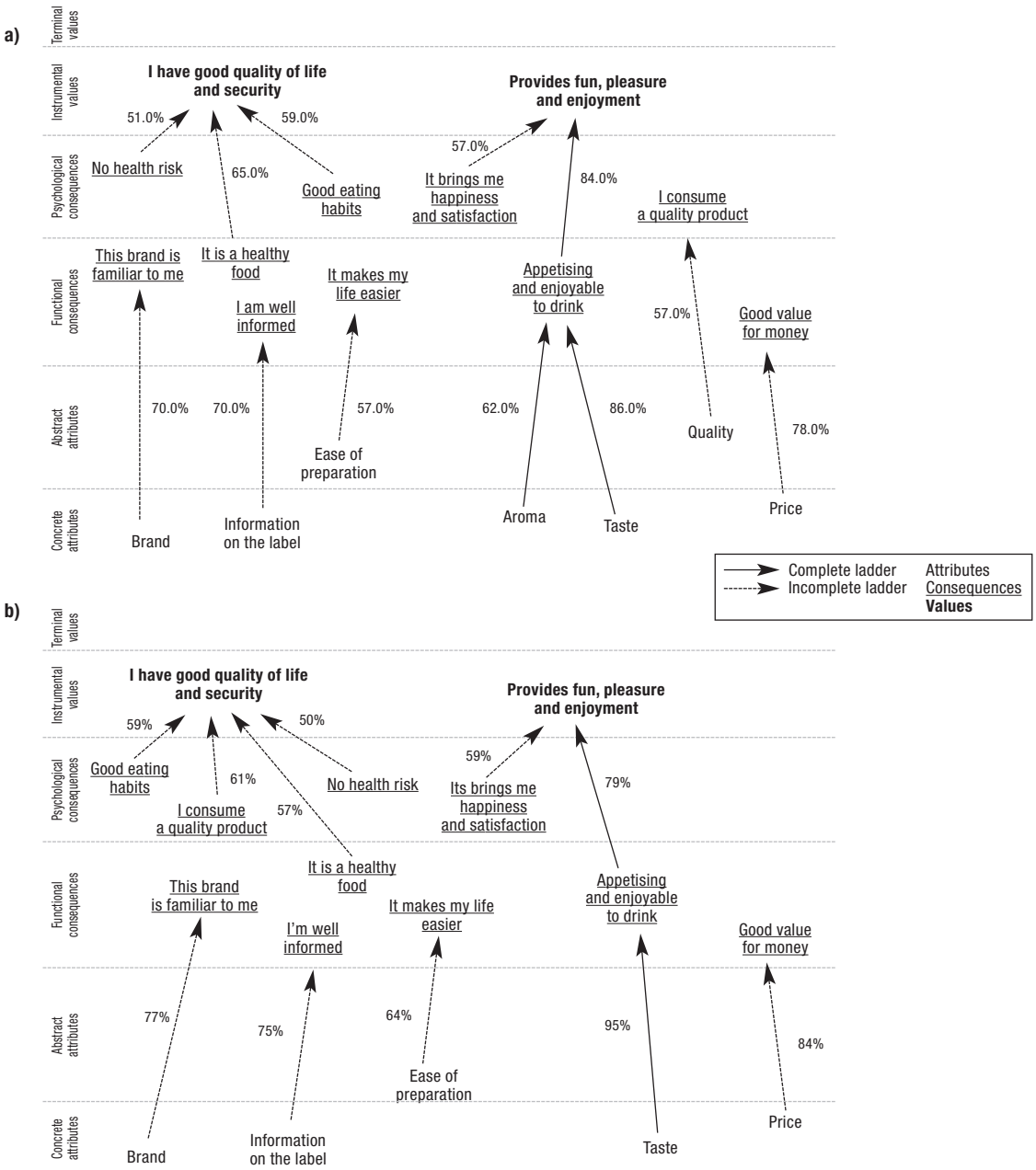

Figure 1. Hierarchical value map of level 5 for traditional coffee: innovator consumer segment (a) and conservative consumer segment (b).

quences: "I am informed" and "I am more focused and I feel more awake". Furthermore, the innovators indicated that they feel that are "…doing the right thing" by consuming coffee in capsule form and the conservatives said that they felt "...more cosmopolitan". With regard to the values established by both groups, two instrumental values are shared by the two groups: "it brings me entertainment, pleasure and enjoyment" and "I have a good quality of life and security." Furthermore, the terminal value, "I feel that I belong to a group within society" was mentioned by both groups and the innovators mentioned an extra terminal value, "I have a clean conscience, dignity and respect for myself."

With regard to the ladders formed by the innovators and conservatives, it can be seen that both formed chains that related "taste" and "aroma" with the functional consequence "it is appetizing, I enjoy drinking it" and

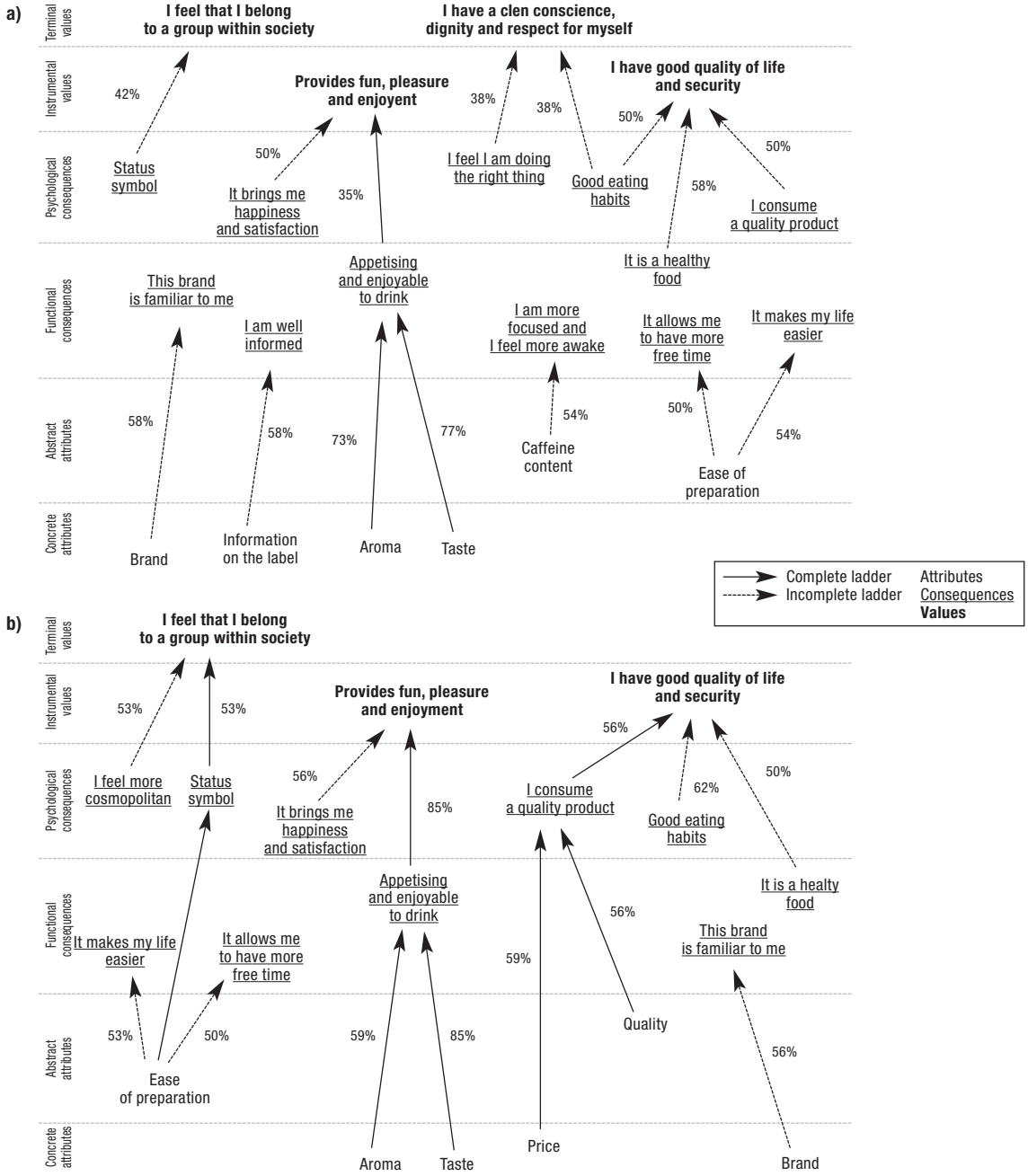

Figure 2. Hierarchical value map of level 5 for coffee in capsule form: innovator consumer segment (a) and conservative consumer segment (b).

the instrumental value "it brings me entertainment, pleasure and enjoyment". The conservative consumers established three additional ladders. The first of these related "ease of preparation" with "status symbol" and forming part of a group within society. The other two ladders related the "price" and "quality" of coffee in capsule form with the feeling of consuming a quality product and so having a good quality of life and security. From these results it can be deduced that innovators place more value on aspects related to product information (information on the label, being informed) and also that they felt they were doing the right thing by consuming this kind of innovative product. Conservatives, by contrast, revealed the importance to them of the "price" and "quality" of the product, key aspects for them when it comes to acquiring the product.

It is worth adding to the foregoing that the aspects analyzed seem to indicate that when the product is a habitually consumed one (traditional coffee) the cognitive structure of consumers is similar regardless of whether they are conservative or innovative. Differences arise when conservative consumers are presented with an innovative product (coffee in capsule form). They then display a more complex cognitive structure.

Discussion

In recent years the food industry has been faced with an ever more competitive and globalized market. At the same time consumers have shown themselves to be ever more demanding and with concerns about quality and the possible health effects of the food they consume. For all these reasons producers are seeing themselves forced to develop new products, with the intention of meeting consumers' needs and assuring themselves of a good market position.

However, the evidence shows that a large percentage of new food products launched onto the market fail. It is for this reason that in depth knowledge of the real necessities of consumers with regard to possible food product innovations is required. The literature seems to indicate that socio-demographic variables (age, gender, etc.) have only weak predictive power with regard to the adoption of new products and so it would seem necessary to focus on consumers' attitudes to innovation. In general, a positive impact on the adoption of innovations based on the propensity of the consu0 mer to innovate has been observed. Given that consumers' attitudes to innovation are related to their personal values and attitudes, an analysis of the cognitive response produced by exposure to a new product could throw light on consumers' decision making structures.

Following this line of reasoning, this study sought to analyze the possible differences in the cognitive structures of consumers in relation to their innovation tendency, with the aim of identifying the criteria taken into account in the process of consumption when presented with a traditional product (coffee) and a food product innovation (coffee in capsules of the "Nespresso" type). First, segmentation was made according to their innovativeness nature. The majority of the sample is conservative, which is in accordance with the findings in the literature, which has found that the spirit of conservatism normally prevails among consumers (Capitanio *et al*., 2009). The results are in harmony with the results of previous studies (Gatignon & Robertson, 1991; Rogers, 1995; Steenkamp *et al*., 1999), which found that in general younger consumers tend more towards innovation and have a higher level of education.

Thus an application of MEC was carried out which established relations between attributes, consequences and values obtained from a laddering interview for two types of consumers, innovators and conservatives, determined *a priori* on the basis of their innovative tendency.

The results obtained in the form of Hierarchical Value Maps allow the conclusion to be drawn that the cognitive structure of consumers is similar regardless of their innovation tendency when presented with a traditional food product. However, the cognitive structure becomes more complex when conservative consumers are presented with an innovative product. In other words, in the buying process involving a new food product, the less innovative consumers project more aspects of their personalities through the attributes of the new product. This would seem to suggest that having a lower innovative tendency implies a more complex cognitive process, possibly as a result of taking more time to make their choice, related to their reticence when faced with innovation.

Furthermore, regardless of their innovative tendency, consumers adopt the product proposed to them for hedonic reasons (taste and pleasure when they consume it), for its convenience, and due to the importance the place on the brand. More conservative consumers place greater importance on price and product quality, viewing the decision to buy as being based on a good price-quality relationship. Furthermore, this group seeks to feel itself more cosmopolitan when it consumes the innovative product (coffee in capsule form). These findings should be taken into account by publicity campaigns aimed at increasing the consumption of this kind of product among more hesitant consumers. It must also be emphasized that the innovative product induces a feeling of belonging to a social group, and this should be taken into consideration when marketing strategies are being designed for the launch of innovative food products such as the one analyzed.

Finally, the limitations of this study arising from the sample analyzed must be mentioned. Future studies will require broadening in order to corroborate the results found here. It would also be necessary to analyze

other food products to see if the cognitive structure varies depending on the type of product analyzed. That is to say, it would be necessary to analyze the cognitive structure for each specific proposed innovation, in order to establish the best communication strategy and positioning in each case.

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