

**USING PROJECTIVE TECHNIQUES TO UNDERSTAND  
CONSUMER'S PERCEPTION OF HEALTHINESS AND WILLINGNESS  
TO USE FUNCTIONAL FOOD**

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# **USING PROJECTIVE TECHNIQUES TO UNDERSTAND CONSUMER'S PERCEPTION OF HEALTHINESS AND WILLINGNESS TO USE FUNCTIONAL FOOD**

## **Abstract**

This study aims to determine which cues consumers use to judge the healthiness of food, to assess the impact of food healthiness on the purchase intention and to determine the underlying dimensions that can predict consumers' perception of healthiness and willingness to use functional food. Four focus groups and ten in-depth interviews were led involving three projective techniques: association techniques, analogy and story completion. The findings reveal that food's healthiness is perceived through intrinsic and extrinsic cues of the food, demographic characteristics and personality traits. Moreover, it has been shown that healthiness can be a strong motive that may influence attitude toward functional foods and purchase behavior.

**Key words:** health perception, attitude, functional foods, projective techniques

## INTRODUCTION

Several authors describe food choice as a complex process which is influenced by a wide range of factors. For a better understanding of this process, Belk (1975), Bell and Meiselman (1995), Meiselman (1996), Shepherd and Raats (2006) and Sobal et al., (2006) merge the factors that influence food choice into three components: the person, the product (food), and the environment. This framework is useful as it helps to understand that food choice is influenced by the perceived product and environment through the personal characteristics (Rozin, 2007).

Referring to the food itself, the influences on food choice were summarized by Steptoe, Pollard, and Wardle (1995) into nine forces related to intrinsic and extrinsic food attributes. These motivational dimensions are health, mood, convenience, sensory appeal, natural component, price, weight control, familiarity and ethical concern.

In most situations, it seems that sensory properties are the most powerful influence on food choice (Rozin, 2007). However, in the recent years, due to the prevalence of several non-communicable diseases including obesity, diabetes, cardiovascular disease and cancer, there has been an increased interest in the health effects of the food. Moreover, recommendations of health authorities and communication industry have increased awareness of health issues (Tudoran, Olsen and Dopico, 2009). In fact, health influence becomes as important as taste influence in food choice and consumers increasingly demand healthy food.

In this context, functional foods play an important role because this new category of food products meets consumer demand for healthy eating. Such foods are commonly described as products that provide additional health benefits beyond basic nutrients. Diplock, Agget, Ashwell, Borneo, Fern, and Roberfroid, (1999) define functional food as food that “affect beneficially one or more target functions in the body, beyond adequate nutritional effects, in a way which is relevant to either the state of well-being and health or the reduction of the risk of a disease”.

Despite the economic recession which is impacting all food and beverage market, the global functional foods market is growing constantly worldwide. The consumers are increasingly focused on the desire to maintain and improve health to avoid becoming ill due to the economic downturn. Functional foods market was valued at \$164 billion in 2007 and is expected to grow to \$240 billion by 2012, which represent a compound annual growth rate of 7.9% during the five-year period (Marigny Research Group, Inc., 2009).

Although these optimistic figures, the success of functional food is not guaranteed because it depends on how consumer accept them. Moreover, functional foods are relatively emerging products that may require extensive research and novel processing technology. Consequently, marketers have to study consumers' perception, attitudes, acceptance and how they decide to purchase such foods to ensure sufficient demand and to avoid major failures in investments.

The aims of the present study were (1) to determine which cues consumers use to judge the healthiness of food, (2) to assess the impact of food healthiness on the purchase intention and, (3) to determine the underlying dimensions that can predict consumers' perception of healthiness and willingness to use functional foods.

Because such foods are emerging products, especially in Tunisia where the study is lead and because there is still no general agreement on what the term functional foods covers ("a large variety of products have been included under this umbrella", Menrad, 2003), exploratory research methods, projective techniques in particular were used as a first step to unravel this confusion.

The article is organized as follows. Section 2 provides a literature review of the concepts studied. Section 3 introduces the method background. Section 4 presents the results and discusses them and section 5 presents the conclusion and the implications for further research.

## **LITERATURE REVIEW ON HEALTH DIMENSION IN FOOD PRODUCTS**

Sensory proprieties were the most used attributes to judge food quality for a long time. However in response to increasing consumer and public health concerns about diet and health relationships, health influence on food choice has become a central issue in many studies. The aim of this literature review is to give a multidisciplinary overview of studies carried out on health dimension in food products and its perception from a consumer point of view. We start by presenting the healthiness as multidimensional attribute. Then we present healthiness as credence attribute inferred from intrinsic and extrinsic cues and perceived through personal characteristics.

### **Healthiness as multidimensional attribute**

The term of health has not the same definition from scientists and consumers point of view. While the scientific definition includes physical, mental and social dimensions as it is shown in the World Health Organization definition: "Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity", the consumers define health through many dimensions which vary considerably, including overall balance,

nutrient balance, low fat, weight control, naturalness, disease management and disease prevention (Falk *et al.*, 2001).

Many studies have been conducted to examine the way consumers perceive health dimensions of food. Bech-Larsen (2001) used laddering method to investigate Danes consumer's perception and motives for buying apples. The findings of the study show that according to the interviewed consumers, dimensions used to evaluate apples' healthiness are "organic / not spread", "vitamins" and "wholesome". Using the same method, Nielsen, Bech-Larsen and Grunert (1998) reported that "content of unsaturated fat", "content of cholesterol", "naturalness" are the dimensions used by consumer to evaluate vegetable oil's healthiness.

Roininen *et al.* (1999) adapted also laddering method to investigate the way Finnish consumers perceived the health aspects of food. The findings reveal that "naturalness", "good fat quality", "vitamin", "mineral", "fiber" and "low fat" were the most important dimensions.

Oakes and Slotterback (2001) demonstrated that "natural/unprocessed", "freshness", "vitamin and mineral content", "fat content", "caloric content", protein content" are the main characteristics used by American to evaluate food's healthfulness. The same study reveals that "freshness" and "fat content" are by far the characteristics most frequently chosen and that "protein" and "vitamin/mineral content" are the characteristics least frequently chosen. Moreover, according to the same authors, Americans aged between 14 and 64 use "freshness" rather than "fat content" when determining food healthfulness as "freshness" has overtaken fat content for American consumers.

In another study, Martinez-Gonzales *et al.*, (2000) reported that dimensions of healthiness depend on the country of origin of consumers. While "fiber" and "low fat" are the characteristics most chosen to judge food's healthiness in Central European countries, "balance" and "variety" are the most important characteristics in Mediterranean countries. Similarly, for Dutch consumers, "natural", "fresh", "nutritious", unprocessed", "vitamin" and "low fat" are the characteristics most frequently chosen (Sijtsema, 2003). More recently, Tudoran *et al.* (2009) used "naturalness" and "less fat" to measure perceived healthiness as they are the most common conceptualizations of product healthiness in literature.

### **Healthiness as invisible attribute inferred from intrinsic and extrinsic cues**

When consumer is facing an evaluation of the healthiness of a considered food, he cannot judge directly if it is healthy or not. There will be almost always resort to mental representations and particularly credence. That's why Oude Ophuis and Van Trij (1995) considered health as credence quality attribute. For them, the consumer has to rely on the

judgment or information of others to believe that the product contains such a quality attribute as there is no direct relation between consumption and effect. In other words, consumer cannot measure the long term effect of the product on his health. In the same way, Burns et al., (2002) used the term ‘invisible product characteristic’ when talking about healthiness of food and attested that health “must therefore be inferred from more concrete intrinsic and extrinsic cues”.

Intrinsic cues are related to the physical food product. They include appearance, color, structure, shape and size. According to Oude Ophuis and Van Trijp (1995), the relevance of this type of cues is easy to recognize particularly in the case of fresh food such as fruits, vegetables, meat and fish. Intrinsic cues influence considerably the perceived “freshness” of the food which represents a strong antecedent of the perceived healthiness. Healthiness of meat for example can be perceived through its freshness which is influenced by the color, the visible fat, the texture, and the cut of the meat (Acbrón and Topico, 1999).

Extrinsic cues such as price, brand, country of origin, store, nutritional information and production information may influence the perceived healthiness. Quite obviously, the most used extrinsic cue to influence health perception is nutritional information. Several studies have focused on the understanding and use of the nutritional information by consumer (e.g. Bruck, Mitchell, and Staelin, 1984; Bech-Larsen, Grunert, & Poulsen, 2001; Wansik, 2003; Drichoutis, Lazaridis, and Nayga, 2005, 2006) and the influence of such information on the attitudes, preferences and the intention to purchase food (e. g. Jensen, Kesavan, and Johnson, 1992; Mazis and Raymond, 1997; Roe, Levy and Derby, 1999; Wansik, 2003; Roossen, Marette, Blanchemanche and Verger, 2007; Verbeke et al., 2009). In all this studies, there is a general belief that health information increases the perception of food healthiness and produces more positive attitudes toward it.

Production information is another extrinsic cue that can influence the perceived healthiness because consumers have become more aware that production methods may have negative impacts on human health (Da Costa, Deliza, Rosenthal, Hedderly, and Frewer, 2001). For example, the information that the product is organic influences considerably its health value. Studies demonstrated clearly that organic foods are perceived as being healthier than conventional foods and showed that positive health beliefs represent the strongest predictor of attitudes and purchase of organic foods (Ekelund, 1989; Sparks and Shepherd, 1992; Davies, Titterington and Cochrane, 1995; Wandel and Budge, 1997; Shifferstein and Oude Opuis, 1998).

Moreover, brand represents an important extrinsic cue that can also influence perceived healthiness. As it was stated by many authors (e. g. Steenkamp, 1990; Erdem and Swait, 1998; Brdahl, 2003; Warlop et al. 2005; ), when consumer is unable to make judgment on food quality, brand name often becomes an important substitute quality indicator which may influence consumer's quality perception and food choice. This is particularly true in the case of judgment of the healthiness of food which is credence characteristic. Consumer cannot be sure that he will be healthier if he purchases and ingests a considered food. To reduce this uncertainty, he has to rely on information such as brand name to evaluate its healthiness. Conscious of this statement, many agribusiness companies have reinforced the associations between their brand and certain quality attribute such as health to differentiate their offer. By an effective communication strategy which consists on strengthening the link between the name of their brand and health attribute, firms like Danone or Nestlé have constructed a "healthy" brand name.

Finally, price is according to Oude Ophuis and Van Trijp (1995) "the probably best known extrinsic indicator of quality". Doods and Monroe (1985) confirm that when comparing two similar products, the higher-priced alternative is usually expected to be of better quality. Similarly, Zeithaml (1988) state that price appears as a relevant quality cue when consumer do not have adequate information about intrinsic quality cues, or when it is the only available cue. As a consequence, this extrinsic cue can represent by analogy to food quality perception an antecedent to the food healthiness perception which is a dimension of quality perception (Grunert, 2007). Confirming this statement, Ottman (1992) attest that since the consumers feel that the food offers perceived health, they are willing to pay premium price (Ottman, 1992).

### **Healthiness as perceived attribute through personal characteristics**

Personals influences on the perception of food healthiness can be divided into demographic characteristics such as age, gender, income, education, BMI (Body Mass Index), diet status, etc. (e.g. Worsley and Skrzypiec, 1998; Oakes and Slotterback, 2002; Urala and Lähteenmäki, 2004; Verbeke, 2005; Carels, Konrad and Harper, 2007) and personality traits such as, health concern, food neophobia, exploratory behavior, self efficacy, locus of control, health belief, etc. (e.g. Abusabha and Achterberg, 1997; Van Trijp and Steenkamp, 1992; Worsley and Skrzypiec, 1998; Rozin, 2007).

Although demographic characteristics have usually a clear predictive value in consumer behavior, they have not proven to be major predictors of food choice with very few

exceptions such as the large gender difference in concern about weight, which manifests in dieting and food choice, in the developed world (Rozin et al., 2003; Rozin, 2007). Few researches have attempted to counter this evidence, especially in the judgment of food healthfulness.

Rappoport, Peters, Downey, McCann and Huff-Corzine (1993) showed that women have more knowledge about the health value of foods and a border understanding of food healthfulness than men. The same authors reported that men have a “much simpler cognitive structure” than women when judging the healthiness of food. Similarly, the studies of Slotterback and Oakes (2000) and Oakes and Slotterback (2001a, 2001b, 2002) found recently the same results. According to these authors, women report being more health conscious, reading nutrition labels more often and eating healthier foods than men. Moreover, these studies showed that when evaluating food healthiness, women appear to depend on fat content more than other characteristics, while men look for information on vitamin, mineral and protein content on food labels.

According to the literature review of Oakes and Slotterback (2001b) on the influence of age on nutritional label use (Neuhouser, Kristal & Patterson, 1999), healthy eating habits (Hunt et al., 1997; Reime et al., 2000), dietary fat intake (Stafleu et al., 1994), motives underlying food selection (Stephoe, Pollard and Wardle, 1995), dieting status (Slotterback and Oakes, 2000) and importance of personal appearance (Tiggemann, 1992), there are many reasons to believe that age influences also the evaluation of food healthfulness. These studies showed clearly that there is a general belief on the fact that older people are more concerned about healthy eating as health issues related to disease represent a great concern for them in order to extend their lives. On the other hand, young people are less concerned about food healthfulness as they emphasize health only in terms of personal appearance through weight and body shape.

While the majority of studies on food choice have shown that cost is the major barrier to healthy eating, there are few plausible explanations that may confirm the link between income and evaluation of food healthiness. Perhaps the major explanation can be the large difference of priorities on food choice between low-income and high income individuals. According to Bourdieu (1995), working class- individuals prefer “the heavy, the fat and the coarse” because they emphasize on the importance of the strength of the male body. Hence, they chose cheap and nutritious food to build and fuel such a physique. However, high-status individuals like professionals and senior executives tend towards ‘the light, the refined and the delicate’, as they maintain a ‘new ethic of sobriety and slimness’ which serves to set them apart from popular.



In addition to demographic characteristics, social and cognitive psychological studies have determined several cognitive predictors of health and diet-related behaviors. Abusabha and Achterberg (1997) clarified the distinctions among cognitive variables such as health value, self-efficacy, locus of control, health belief and illustrated them within the context of nutrition and health.

Health concern appears as one of the most important predictor of food perceived healthiness. It represents basically the importance of health to an individual but it reflects also individual's concern with health issues and the determination to maintain or improve health (Tudoran, Ottar Olsen, and Dopico, 2009). It includes consideration about immediate consequences on physical well-being such as allergic reactions, post-ingestional effects of the food and longer-term consequences on health such as chronic diseases prevention and weight control (Sobal, Bisogni, Devine, and Jastran, 2006). Several studies have examined the influence of health concern on the food choice (e.g. Lau, Hartman, and Ware, 1986; Falk, Bisogni, and Sobal 1996; Furst, Connors, Bisogni, Sobal, and Falk, 1996; Smartand Bisogni, 2001; Sparks, Conner, James, Shepherd, and Povey, 2001; Olsen, 2006; Sobal *et al.*, 2006; Sun, 2008). These studies use different conceptualizations when talking about the importance of health to individuals. While some authors use the terms of "health involvement" (Maddock, Leek, and Foxall, 1999; Olsen, 2003), or "health-conscious self-identity" (Sparks *et al.*, 2001; Olsen, 2006), others authors use the terms of "health concern" (Bower, Saadat and Whitten, 2003; Sun, 2008), "Health interest" (Roininen, Lähteenmäki, and Tuarila, 1999), or "health value" (Abusabha and Achterberg, 1997; Sobal *et al.*, 2006; Tudoran *et al.*, 2009). Leaving aside the conceptualizations used, there is a general belief that health concern influences positively attitudes toward healthy eating, functional foods in particular (Olsen, 2003; Sun, 2008; Ares, Giménez, and Gámbaro, 2009; Tudoran *et al.*, 2009; Verbeke, Scholderer, and Lähteenmäki, 2009).

Moreover, self-efficacy which was introduced by Bandura (1977) in his famous social cognitive theory refers to the individual conviction of being able to master specific activities, situations or aspects of his or her own psychological and social functioning. In other words, it reflects a person's belief in his or her ability to overcome the difficulties inherent in performing a specific task in a particular situation (Abusabha and Achterberg, 1997). Smith *et al.*, (1992) showed that more self-efficacy beliefs and expectations were associated with lower dietary fat and higher dietary fiber density. Besides, Sheeshka *et al.*, (1993) reported that self-efficacy was the most important predictor of intentions to adopt healthful eating choices.

Sanders-Phillips (1994) reported that lower self-efficacy scores were associated with lower levels of intent to change eating habits.

Health belief is another major construct that may influence perceived healthiness. According to the theory of reasoned action (Fishbein and Ajzen, 1975) and the theory of planned behavior (Ajzen, 1985), beliefs based on simple observation, scientific evidence or supposition about a food's attribute shape one's attitude toward that attribute. In fact according to Health Belief Model (Rosenstock, 1974), health attribute can be perceived through four health beliefs: perceived susceptibility to a considered illness, perceived severity of a considered illness, perceived benefits like preventing illness or improving health and perceived barriers.

## **MATERIALS AND METHODS**

The major aim of this study is to identify which cues Tunisian consumers use to evaluate the healthiness of food in general and functional food in particular and to understand how perceived healthiness can be a predictor of food purchase. In fact, we judged that qualitative methods, projective techniques in particular are suitable tools to meet this target.

According to Given (2008), "Qualitative research is designed to explore the human elements of a given topic, where specific methods are used to examine how individuals see and experience the world". Research studies that are qualitative are designed to discover what can be learned about the how and the why of human perception about a specific concept.

Several studies have used qualitative methods to produce emergent conceptualizations of how people think about and engage in food choices. According to Levy (2006), Jean Brillat-Savarin was the first researcher who used what we called in the recent decades qualitative techniques to unravel the complexity of food and eating. The most famous finding of his work "The physiology of taste", published in 1825 is "Tell me what you eat and will tell what you are". Later, Rogers (1967) uses projective techniques in interviewing farmers. More recently, the use of qualitative methods have increased spectacularly in food choice studies (e.g. Furst et al., 1996; Nielsen, Soren and Grunert, 1997; Nielsen, Bech-Larsen and Grunert, 1998; Bredhal, 1999; Bech Larsen, 2001; Grunert et al., 2001; Bisogni et al., 2002; Roininen, Arvola and Lähteenmäki, 2006 ; Sijtsema et al., 2007).

There are several techniques which can be discussed under "qualitative methods" umbrella such as personal interviewing, focus group interviewing, projective techniques, ethnography, case studies, photography, laddering and story-telling (Levy, 2006).

Projective techniques were selected for this study as they are the most suitable qualitative method to answer our research's questions. These techniques were borrowed by behavioral science literature from psychoanalysis clinical psychology between 1940 and 1960. After World War II, their use rises spectacularly in advertising agencies and market research firms (Rook, 2006). The most known study of this period was published in *Journal of Marketing* by Haire (1950). In his article, Haire subtly defines projective techniques as: "a test that involves presenting the subject with an ambiguous stimulus, one that does not quite make sense in itself, and asking him to make sense of it. The theory is that in order to make it make sense he will have to add it, to fill out the picture, and in so doing he projects part of himself into it. Since we know what was in the original stimulus, we can quite easily identify the parts that were added, and, in this way, painlessly obtain information about the person". In this definition, it's clearly explained that the major aim of projective methods is to access thoughts or feeling that are not easily accessible to research participants (Gorden and Langmaid, 1988). Similarly, Dichter (1960) defines projective techniques as a non-directive interview technique where the respondent can object himself onto another by revealing repressed or withheld thoughts, feeling and fears. The concomitant use of projective techniques can be explained by the fact that it exhibit more research design and task variety than any other qualitative method (Rook, 2006). These techniques have been categorized in five groups in terms of response types required of subjects (Gorden and Langmaid, 1988): association (word, picture, personification, etc.), construction (thematic story-telling, picture, collage, etc.), completion (sentence, story, conversation, bubbles, etc.), expressive (role-play, draw, etc.) and choice ordering.

This study consists of two parts: Four focus groups and ten in-depth interviews. The both qualitative methods often work well in combination. We preferred use focus groups as a first step, followed by further data collection with in-depth interview. The outcomes of focus groups are explored and lighted during the in-depth interviews. Besides, we used some finding of focus groups as input in techniques involved in in-depth interviews. The technique of story completion involved in in-depth interview for example was widely inspired of focus groups' outcomes.

### **Focus groups**

Four focus groups were conducted in Tunis with a total of 24 participants. Participants were selected with different age, gender and socio-economic characteristics. There were 14 women and 10 men (58% vs. 42%). Ages ranged from 18 to 64 (mean age = 41). In order to promote

homogeneity in each group, participants were chosen with similar demographic characteristics as it is recommended by several studies (e.g. Morgan, 1988, 1997; Krueger et al., 2000; Stewart et al., 2007). Homogeneous groups allow respondents to realize that they all come from a similar area and background and create more dynamic environment that enables spontaneous issues to arise from the discussion and participants to share feelings and experience that are of importance to themselves. In fact, focus groups were differentiated by age and socio-economic situation. We formed one group of younger males and females (18-30) with low or middle socio-economic situation, one group of younger males and females with higher socio-economic situation and two groups of older males and females (30-64) with different socio-economic situation in each group.

The focus groups sessions last approximately two hours. Each session started with a general introduction to avoid any expectation that the group will be formal and acting as a test of the participants' competence (Puchta and Potter, 2004). The introduction which consists of presenting the moderator, the study, the method and the participants helps to generate a situation that is relaxed and informal. After the introduction, the discussion started with open questions concerning the relation to food, food choice and healthy food choice in particular. They were designed to be easy to answer in order to encourage everyone to participate in the discussion and to alleviate difficulties associated with speaking in front of a group of strangers and help to build up a good rapport between participants (Wilkinson, 1998).

The next phase of focus groups involved two projective techniques: association and analogies construction. Two forms of association were involved: word association and image association. Word association is the most practical and effective projective tool for market researchers. Introduced by Houghton in 1936, this method consists in presenting a word to respondents and asking them the first words, thoughts, feelings or images that come in mind. The answers provide a long list of vocabulary which helps researchers to generate a set of items concerning the studied concept. In this study, participants were asked to give the first thoughts that come in mind when they see or hear the word "healthy food". This term was used instead of "functional food" because the definition of this category of food products seemed not clear for the participants as there is a large variety of food under the umbrella of functional food that Tunisian consumers are getting confused. This exercise is a kind of brainstorming that helps us to generate a large number of ideas concerning functional food and the perception of healthiness in this category of food. The participants were asked to focus on extending or adding to ideas without judgment. An extension discussion was held

after the association's exercise to evaluate the generated items and get more detailed information about the reasons of their selection.

Word association was followed by image association. This technique is similar to word association except for the stimulus used. Instead of words, pictures were shown to participants. A random sample of pictures was presented to participants with two categories of foods and beverages: dairy and juices (Fig. 1). Each category included four functional products with different health claims and one control product. Brands were deleted to neutralize their effects on the pictures' perception. For each picture, participants were asked to give thoughts, words, feelings, etc. that come in mind. If no ideas relating to healthiness of the shown food are forthcoming, moderator can suggest questions like "Is it good for health, why?", "How do you evaluate the healthiness of this food, by which cues?" etc.



**Fig. 1.** Pictures of dairy and fruit juices with different health claims presented in image association exercise

After word and picture associations, the next exercise belongs to the construction's category. It consists on creating analogies. Generally, analogies are in the form of metaphors or similes. Regardless of their exact form, analogies have two components: the target and the base. The target is the unfamiliar domain under mental investigation and the base is the familiar domain to which the target is compared.

In analogy, the base domain and target domain are equated in some way. This "equality" can be a mapping of attributes or a mapping of relationships (Gentner, 1983). In our study, the base is a "planet" and the target is "functional food". In fact, the aim of analogy is identifying equality between these two terms. The participants are asked how "functional food" would be like if it were to be a "planet" and have to describe of the atmosphere, natural resources,

habitants, nations, etc. The purpose of this analogy is to understand respondents' mindset and feelings about functional food and the healthiness aspect of this category of food. By this way, views, perceptions and attitudes are revealed without direct questioning. In the end of this exercise, participants were requested to elucidate their analogies by explaining the reasons of the choice of this kind of planet, with this atmosphere and habitants.

In the end of the discussion, a reformulation which consists in a transition from the analogy to reality was done to make ensure that everyone understand their ideas and to confirm that they express the meaning intended. Finally, the list of generated items and major findings were discussed.

### **In-depth interviews**

Ten in-depth interviews were also conducted in Tunis. Participants were selected with different age, gender and socio-economic characteristics. There were 7 women and 3 men (70% vs. 30%). Ages ranged from 20 to 58 (mean age = 39). The majority of the recruited participants had middle or high socio-economic situation as they had to have developed a good familiarity with functional foods. Moreover, participants should actively participate in the food buying decision of the household. The interviews lasted approximately 1 h 30.

Similarly to the focus groups, the discussion started with open questions concerning the relation to food choices values such as taste, convenience, etc. and the relationship between health and food. In the next phase of the interview, the technique of completion was used. This technique is defined as a verbal stimulus containing words that present either the beginning of a story or sentence. Piaget (1932) introduced story completions to study moral judgment. The technique was later borrowed by Madeline Thomas in 1937 to clinical psychology. It suggests that when individual is asked to impose a completion to a story, his response is a projection of his thoughts, feelings, anger, beliefs, attitudes and desires (Frank, 1984). The interpretation of the outcomes of this technique is made by examining the proposed problem-solving and decision making. Two techniques are used: the formal analysis by evaluating the length of completion, time, range of words, etc. and the content analysis to understand attitudes, perceptions, wishes, reactions to external states, fear, etc.

During the interview, respondent was furnished with six incomplete stories and asked to complete them (see Appendix). The six stories are related to the six dimensions of attitude toward functional foods that were identified in the findings of focus groups. These dimensions were termed similarly to the dimensions identified by Urala and Läteenmäki (2004). The first dimension is related to the perceived reward of using functional foods. The second dimension

is related to the perceived risk in functional foods. The third dimension is related to the confidence in functional foods. The fourth dimension describes the fact that functional foods are perceived as necessity. The fifth dimension describes the fact that functional foods can be a part of healthy diet. The sixth and final dimension is related to the perception of functional foods' taste. The aim of this exercise was to project respondent into the imaginary person mentioned in the story (Gordan and Langmaid, 1988). The respondent had to use his or her imagination to find an end to the presented stories. The idea was to use stories as discussion stimuli to better understand the different dimensions of attitude toward functional foods. By completing each story, respondent reacted indirectly to the different attitudes he or she may have toward this category of foods.

Finally, to generate more items of perceived healthiness in food in general and functional foods in particular, the same association techniques used in focus groups were involved. Respondent were asked to reveal the first thoughts, words, images, feelings that come in mind when they hear the word "healthy food". The same set of pictures of dairy and juice products used in focus groups were then presented. The respondent was requested to generate all ideas that come in mind when he or she was viewing the pictures of the product.

## **RESULTS AND DISCUSSION**

Focus groups and in-depth interviews were very informative. They provided large and rich amounts of data on food healthiness perception and attitudes toward functional foods. For a better understanding of generated ideas, data have been divided on three main themes: (1) health effects versus other food choice motives, (2) impressions on food healthiness and (3) attitudes toward functional foods.

### **Health effects versus other food choice motives**

Almost all participants were aware of the importance of healthful food choice for their individual diet but also their family needs. They expressed their fear about the increased risks of several diseases including cancer, diabetes and cardiovascular disease and attested that resistance to such diseases could be enhanced by choosing healthy foods.

Furthermore, the participants had different levels of knowledge concerning nutritional needs. Their health knowledge consisted of ideas formed from sources like television, books and press but also consisted of common-sense knowledge learned from family and friends, in particular and cultural norms in general concerning what makes a healthy diet, how to obtain healthy foods, and how to combine them to meals that preserve or promote health.

Although the majority of participants had good knowledge and strong beliefs concerning the benefits of healthy eating to maintain a healthy life, these beliefs did not necessarily guide their choices. This gap between knowledge, attitude toward healthy eating and dietary behavior can be explained by several factors. Some participants, for example, clearly attested that their eating habits are unhealthy due to different reasons including other food choices motives such as sensory appeal, price, convenience, familiarity, mood or ethical concerns (Stephens, Pollard and Wardle, 1995).

The following extracts illustrate how participants placed importance on other motives versus health benefits in making food-related decisions. The citations were translated from French. A number describing age and gender refers to participants. For example, number-F-42 refers to a 42 year old woman. “F” or “I” refers to the focus group or the in-depth interview in which the informant participated.

#### *Health vs. sensory appeal*

I3-H-31: “Good for health means that it not tastes great.”

F3-16-H-29: “...I usually buy my sandwich in the same Fast Food, perhaps I should eat in healthier restaurants, but they make so delicious sandwiches especially with cheese (laugh).”

F1-2-F-53: “I usually buy guava juice not especially for health benefits but for taste. For me the juice should not be tasteless, you know joyless.”

F1-6-F-39 “It is quite difficult to choose healthy foods. I want to eat healthy but at the same time, taste and flavour should also be there... Whole grain bread for example is less tasty than white bread.”

#### *Health vs. price*

I2-F-23: “Sincerely, I admit that my eating habits are very bad... As a student, you know I have a little budget and buying healthy foods may be challenging.”

I6-F-21: “I want to lose weight, become healthier... In the beginning of the month, I usually go to healthy restaurants and take care of my choices by buying healthy foods like fruits, fish, and light juices but a couple of days later, money begins to dry up (laugh) and I go down the road of eating the food that was the most affordable and so the most unhealthy.”

F1-1-H-48: “I bought enriched milk for my kids but it is really more expensive than normal (conventional) milk. Taking into account the quantity of milk we consume in my family, I cannot continue to buy it regularly.”



### *Health vs. convenience*

F3-14-F-29: “I want to find the way to help me lose may fat and change my unhealthy ways, but as I am a PhD student, I spend the majority of time studying and when I go home, I am generally exhausted and stressed, so I just eat the easiest thing to prepare, which is generally pastry and then sleep.”

F3-13- F-33: “Anecdotally, I believe that whatever you do, whatever you say, you will finally eat the most easy to buy and prepare.”

### *Health vs. familiarity*

F2-7-H-41: “I don’t really care about nutrition claims. I usually buy the same food products. You know I’m very particular about food. If I don’t know the product, I won’t buy it.”

### *Health vs. mood*

I4-F-20: “When I find myself irritable and cranky, I eat more foods; you know more unhealthy foods, such us chocolate and sweet things.”

F4-19-H-32: “When I am studying, eating particular foods may be a way of suppressing my stress. It’s a chance to let off steam by only eating a hamburger with French fries and a soda.”

### *Health vs. ethical concerns*

F3-17-F-50: “In the past, I usually bought the same yoghurt, I admit that it is the tastiest and healthiest one in Tunisian market but when their prices rose sharply, I gave up buying this yoghurt. Currently, their prices are astronomical in comparison to other brands. I won’t encourage food sales monopoly... Actually by displaying this price levels, this brand clearly favors the upper class. You know, indirectly they say that the poor should not eat my yoghurt...”

F4-20-F-35: “I’m not sure that milk fortified with vitamins and minerals is good for me... Food must be natural and nowadays manufacturers don’t know what else they can think up to keep consumers amused. They make more and more less natural products. They only think to seduce consumers but they don’t think to human health.”

## **Impressions on food healthiness**

The projective techniques, association in particular, generate a long list of 75 items related to ideas behind what are widely known as “healthy foods”. For a better understanding of the meaning of these items, the generated list was merged into four groups: categories of healthy foods, dimensions of healthiness, motives related to healthy foods choice and consumers of healthy foods (Table. 1).

<b>Categories of healthy foods</b>	<b>Dimensions of healthiness</b>	<b>Motives related to healthy foods choice</b>	<b>Consumers of healthy foods</b>
- Fruits and vegetables	- Fresh	- Weigh control	- Women
- Milk	- Natural	- Well-being	- Older
- Cereal	- Low-fat	- Energy	- Children
- Soy milk	- Organic	- Intellectual performance	- Rich
- Fish	- No pesticide	- Physical performance	- Well educated people
- Salad	- Vitamin content	- Avoid cancer	- Vegetarian
- Rice	- Minerals content	- Avoid obesity	- Persons suffering of cancer
- Whole grain bread	- Easy to digest	- Avoid intestinal problems	- Persons suffering of heart disease
- Organic food	- Calorie content	- Avoid heart disease	- Obese persons
- Labeled food	- Energetic	- Avoid high blood pressure	- Persons who give value to health
- Fresh food	- Low in sugar	- Avoid cholesterol	- Persons involved with food choice
- Gluten-free food	- Unprocessed (not genetically modified)	- Avoid diabetes	- Persons who seek variety
- Fruit juice	- No chemical additives	- Good quality of skin	- Persons who seek innovation
- Light beverage	- Probiotic	- Good quality of nails	- Persons who have a healthy life
- Margarine	- Bifidus	- Good quality of hair	
- Yogurt	- Nutritious		
- Food enriched with omega 3	- No cholesterol		
- Local food	- Omega 3		
- Olive oil	- Antioxidant		
- Food fortified with vitamins	- Fiber		

**Table 1.** Example of items related to healthy foods

This categorization is useful as it helps to understand that healthy foods are perceived as specific foods which are popularly believed to provide essential nutrients and to support health like fruits and vegetables, dairy, organic foods, local foods, etc. The category most frequently mentioned as healthy foods was fruits and vegetables (n=43).

Besides, when talking about “healthy foods”, respondents usually mention intrinsic and extrinsic cues of foods. It is a way to say that they use these cues to evaluate food’s healthiness. Most frequently mentioned cues are “natural” (n=56), “nutritious” (n=51), “low fat” (n=43), “vitamin content” (n=38); “without additives” (n=35), “fresh” (n=28); “low in sugar” (n=25), “easy to digest” (n=21), “unprocessed” (n=19). Similarly to literature (e. g. Roininen et al., 1999; Bech Larsen, 2001; Oakes and Slotterback, 2001; Tudoran et al., 2009), Tunisian consumers used the same cues to judge food’s healthiness but not in the same order. While consumers in other studies favoured cues like “freshness” and “unprocessed”, Tunisian respondents favoured cues like “natural”, “nutritious” and “low fat”.

Moreover, word and image association highlighted the motives that can drive participants to choose healthy foods. As it has been shown above, the healthiness dimension is a credence characteristic in food products as consumer cannot perceive healthiness directly in the food but expects that this food will have in short or long term positive effects on his or her health if he or she ingests the food. The most frequently mentioned motives are related to (1) daily and future health enhancement (physical performance, intellectual performance, and energy), (2) illness control (cancer, heart disease, high blood pressure, cholesterol, and intestinal problems), (3) weigh control, (4) well-being and (5) appearance improvement (skin, hair, nails, developed muscles).

Finally, this projective technique reveals that as shown by literature (Van Trijp and Steenkamp, 1992; Hanse, 1994; Worsley and Skrzypiec, 1998; Verbeke, 2005; Carels, Konrad and Harper, 2007; Köster and Mojet, 2007; Rozin, 2007), perceived healthiness can be influenced by demographic characteristics and personality traits. The respondents perceived healthy foods as foods addressed to women (n=31) more than men, older than younger (n=27), well educated individual (n=18) and individual with higher socio-economic situation (n=13). Moreover, perceived healthiness can be influenced by personality traits like health beliefs (perceived susceptibility to a considered illness, perceived severity of a considered illness, perceived benefits like preventing illness or improving health (Rosenstock, 1974), (n=32); “health concern” (or value) (n=16); food involvement (n=11) and variety seeking (n=8).

### **Attitudes toward functional foods**

While some functional foods (e.g. foods enriched with Omega 3, foods enriched with vitamins and minerals or functional ingredients (e.g. antioxidants, Probiotics, Bifidus,) were mentioned by participants, the term “functional foods” did not appear spontaneously in focus groups and in-depth interviews. This fact is due to the confusion in the designation of this term. As the majority of Tunisians are French speakers, participants used the term healthy foods to describe all foods that promise health benefits including functional foods as functional foods are generally called “health foods” in French language (*aliments santé*). Besides, there is an important ambiguity of what are functional foods in comparison to organic foods, dietetic foods, local foods, light foods, etc. and what are the meaning of the different health claims. To avoid this confusion, participants were provided with the French definition of functional foods (Roberfroid, 2008). The pictures of functional foods presented in the association exercise also help to distinguish functional foods from other healthy foods. Once the term functional foods enlightened, the participants used the term “*aliments fonctionnels*” to refer to functional foods and “*aliments santé*” to refer to what are widely known as healthy foods.

The findings of projective techniques mainly reveal that the general attitude toward functional foods seems positive toward certain functional ingredients such as “Omega 3” and “fiber”. This result was not expected because functional foods are emergent products in the Tunisian market. The major reason for functional food acceptance can be the fact that this new category of product meets Tunisian consumers demand for healthy life and healthy eating. In other words, participants perceived certain rewards in these food products such as well-being in the case of fortified foods with vitamins and minerals or enriched foods with fiber and avoiding illness in the case of Omega 3 foods.

Besides, some participants with current health problems such as cholesterol, diabetes, cardio vascular disease, digestion problems consider functional foods as a necessity. They attested that they purchase regularly functional foods to treat or control their health problems.

Other participants referred to the fact that consuming functional foods participate in maintaining their “healthy lifestyle”. They stated that there are several ways to live a healthy life such as not smoking, exercising, having a healthy weigh but above all eating healthy.

Although the discussions included many positive statements concerning the fact that functional foods are perceived as a necessity, as a part of healthy life or a mean to obtain benefits like well being, maintaining or improving health, projective techniques particularly

story completion reveal complex and sometimes contradictory impressions toward functional foods.

Health claims and scientific discourses on functional foods do not necessarily produce reassurance and confidence in the respondents mind. The questions of trustworthiness on the health claims shown on functional foods were evident in the discussions. Terms related to confidence (trust, confidence, true, etc.) were largely evocated during the interviews (n=52). The majority of participants seemed sceptical about the efficacy of the promised health effects of functional foods. They attested that they do not trust functional food marketing and stated that they were wary about the fact that they cannot verify whether functional ingredients are really present in the food and in case of the presence of these functional ingredients how to be sure that the information on health effects of these ingredients are true.

Moreover, studies showed that recent food scandals, particularly Bovine Spongiform Encephalopathy (BSE), commonly known as mad-cow disease and Genetically Modified (GM) food have clearly increased perceived risk in food and food neophobia (negative response to novel foods). Data provided from focus groups and in-depth interviews was concordant with these statements. Respondents seemed suspicious about the safety of functional foods. The term “risk” was evocated many times by participants (n=36) who seemed afraid of unknown effects that functional foods as novel and “modified” food may have on health.

Finally, similarly to literature, there is almost always a dilemma between health and pleasure (Niva, 2007). According to some respondents, sensory properties may decrease willingness to try functional foods. Many young participants contested the fact that health is the most important motive for food choice and attested that they prefer conventional foods because they are tastier than functional foods.

As it has been shown above, the large quantity of ideas generated from projective techniques reveals that general attitude toward functional foods can be merged into six dimensions (Table. 2). For a better understanding of the categorization of Urala and Lähtenmäki (2004) and to verify that Tunisian consumers have the same attitude’s dimensions toward functional foods, the findings of focus groups and literature (Urala and Lähtenmäki, 2004) were used as input for story completion technique involved in in-depth interviews. Some extracts of in-depth interviews and focus groups related to each dimension are presented in Table 2.

Attitudes toward functional foods	Extracts of interviews
<p>Perceived values in functional foods: Functional foods with their specific health effects could represent a perceived benefit or value such as well-being, avoiding illness, improving health and performance.</p>	<p>F1-3-F-42 "... I pay attention to my son's breakfast ... I give him milk with added vitamin so he can be in a good form for school..."</p> <p>I8-F-22 "I have gone on a diet during the last year to lose weigh... when I take a coke or juice, I look if it is sugar free. I always watch out for that"</p>
<p>Confidence in functional foods: This dimension describes consumers' beliefs in the promised health effects.</p>	<p>I7-H-43 "...organic milk ... how do you know that it is really organic?"</p> <p>I1-F-49 "Firms do everything to sell their products, ... we cannot verify if it is true..."</p>
<p>Necessity for functional foods : This dimension describes how essential consumers think that functional foods are for them.</p>	<p>F4-22-H-52 "you know with all the diseases I have, cholesterol... high pressure blood... I think that I have to buy omega 3 spread"</p> <p>I2-F-53 "I have digestion problems, you know not really serious... I think that I cannot digest milk... a friend recommended me to try "Candia milk"..."</p>
<p>Functional foods as a party of healthy diet: The use of functional foods is a part of a healthy diet.</p>	<p>I2-F-53: "I'm absolutely riveted by healthy lifestyle. All these stars who tell you that they stay young because they have healthy life. It's hard not to get caught up in it... functional foods help give me the nutrients that are needed to live a long, healthy life."</p>
<p>Absence of nutritional risks in functional foods : Functional foods may have harmful effects</p>	<p>F1-4-F-42 "10 vitamins and 4 trace elements... It is overdosed of components... that's not really good for health"</p>
<p>Health effects vs. taste : Health benefit can be a determinant of willingness to compromise on taste</p>	<p>F2-11-H-31 "... It facilitates digestion but this juice is off-flavor..."</p> <p>F3-16-H-29 "all these products don't have good taste ..."</p>

**Table 2.** Attitudes toward functional foods

## CONCLUSION

In recent years, some chronic diseases including obesity, diabetes, cardiovascular diseases and cancer have increasingly affected both developed and developing countries. To reduce the incidence of these diet related-diseases, governments, media and food industry have played a major role in creating consumer healthy diet awareness. The first key objective of this study was to assess the importance Tunisian consumers attach to health dimension in food choice in order to verify if a real awareness on health issues exists among Tunisians. Moreover and according to literature, food healthiness perception varies considerably among different cultures. Consumers may use different cues to infer food healthiness. A further objective of this study was to gain insight into how Tunisian consumers make sense of food's healthiness and to identify the most determinant cues Tunisian consumers consider in food healthiness evaluation. Finally, this paper aimed to determine to what extent perceived healthiness can influence attitude toward functional foods and purchase intention. This category of food was chosen as it is marketed with health-related claims. Thus, it was considered interesting to explore Tunisian consumers' attitude toward different functional foods with different health promoting ingredients and claims.

Word and image associations, analogy and story completion were useful projective tools to shed light on these issues. In the three projective techniques, respondents were provided with various verbal and visual stimuli and situations to reveal their unconscious feelings and attitudes toward health dimension in foods in general and functional foods in particular. Findings reveal that the majority of participants were aware of the importance of healthful food choice to reduce risk of disease or to promote health. However, positive attitudes toward healthy eating do not necessarily lead to healthy eating choices. Many participants attested that they are not ready to compromise other food choice motives such as taste, convenience, price, mood, familiarity or ethical concern for health benefits in making food-related decisions. Besides, results show that healthiness is perceived by intrinsic and extrinsic food cues, nutritional information and production methods in particular. Dimensions such as "natural", "nutritious", "vitamin and mineral", "low fat", "fresh", and "organic" are used to judge food's healthfulness. Moreover, results show that personal characteristics influence perceived healthiness. Gender has a clear predictive value in health perception. Similarly to literature women report being more health conscious and reveal that they read nutrition labels more often than men. Personality traits can also be cognitive predictors of health behaviors. Respondents associate "healthy foods" to personal characteristics such as health value, self-

efficacy and health beliefs. Finally, when defining functional foods and presenting a set of pictures of different functional foods with different health claims as stimulus to participants, various impressions emerged. As the concept of functional foods still unclear because of the large variety of products marketed under this designation and as it is hard for consumer to verify the promised health effects, many contradictory attitudes emerged from the discussions. While functional foods were perceived as necessary, as a part of a healthy diet and as food products that offer health rewards, several mistrustful and suspicious statements were made concerning the safety of these foods, the confidence in their promised health effects and the possibility that they may be inferior in taste. Consequently, six attitude's dimensions toward functional foods were discerned in focus groups and in-depth interviews including perceived reward from using functional foods, confidence in functional foods, necessity for functional foods, functional foods as a part of healthy diet, risk effects of functional foods and taste of functional foods in comparison to conventional foods.

### **Implications to theory, management practice and policy**

Understanding consumers' perception of healthiness and attitude toward functional foods is likely to have significant impacts to theory, management practice and policy.

The theoretical framework presents a rich overview on health dimension in food products. Because of the complexity of food choice, an interdisciplinary approach was adopted. The contributions of cognitive psychology, sociology, consumer research, nutrition science and food technology were examined to understand food healthiness perception and evaluation and to assess the importance of this dimension versus other food dimensions in food choice. The literature review suggests products characteristics and consumer's background as factors that may influence how healthiness of food is perceived. Product characteristics are related to intrinsic cues such as appearance, color, structure, shape and size and extrinsic cues such as price, brand, country of origin, store, nutritional information and production information. Personal influences on the perceived healthiness of food include demographic characteristics such as age, gender, income, education, BMI (Body Mass Index) and diet status and cognitive predictors of health and diet-related behaviours such as health concern, self-efficacy and health beliefs.

In addition to theory implications, many recommendations for management practice could be drawn from the findings of this study. One of the results of this paper shows that Tunisian consumers' health awareness is rising. However, deep concern about food's healthiness does not match actual Tunisian food choices. This "attitude-behaviour" gap was attributable by



participants to several factors that inhibit healthful choices including price, inferior taste, less of convenience, less of familiarity or ethical concern. As a result, it is important for manufacturers to take into consideration these factors to improve competitiveness of healthy versus conventional alternatives.

Furthermore, this study reveals which factors are leading to consumers' confusion as to what really are functional foods. The first reason of confusion is the multiplicity of products marketed as good for health which not allow consumers to distinguish functional foods from dietetic, organic or light foods. The second reason consists on the fact that the majority of participants seemed suspicious about the real presence of functional components in food. In other words, how can they be sure that the functional food is actually functional? The last reason of confusion is how to measure beneficial or harmful health effects? Identifying these factors may help manufacturers to unravel the misunderstanding, to reduce mistrust and to enhance consumers' willingness to pay premium price for functional food products. Thus, firms should communicate more effectively to help consumers identify functional foods and understand the impact of such foods on health.

The results of this study may also help manufacturers to identify the most determinant attributes of functional foods for Tunisian consumers. According to the participants in focus groups and in-depth interviews, carrier product (milk, juice, yoghurt, spread, etc.), type of enrichment (omega 3, fiber, vitamin, antioxidant, etc.) and health claim (no claim, health benefit claim, prevention risk claim) may influence consumer attitude and intention to buy functional foods. Thus, it is important for producers to determine the best combinations (carrier x ingredient x health claim) to encourage improvement in consumer acceptance of functional foods. Besides, this paper provides a list of demographic and cognitive variables that may influence perception of healthiness and attitude toward functional foods. Indeed, manufacturers may achieve a better market segmentation on the basis of these criteria.

Finally, concerning policy implications, this study may help government to understand Tunisians' relation to food and health and identify the approaches that should be employed to change unhealthy food choices. Moreover, Tunisians' confusion and lack of trust on functional foods mainly leads to an unclear and inconsistent regulation of the functional foods market. Consequently, government should design a clear labeling regulation concerning the type of functional ingredients allowed including vitamins, minerals, essential fatty acids, fiber, various plants extracts, etc. and in which carrier products they can be. Furthermore, regulation should bring to light a clear list of health claims based on evidence accepted by the whole scientific community to avoid not accurate claims that could mislead consumers. By

this way, consumers' information and protection could be enhanced in order to facilitate functional food choices.

### **Methodological considerations and limitations**

A qualitative approach was appropriate for this study but led to some limitations related mainly to reliability and validity of the collected data. While these two terms are generally applied to quantitative data, many researches promote their use to enhance the rigour of qualitative researches.

In order to increase reliability (also called dependability), which refers in qualitative research to the stability of data over time, triangulation was adopted by using three different projective techniques in conjunction with two different methods of data collection: in-depth interviews and focus groups. Moreover, all discussions were moderated by the same person (one of authors), in the same conditions. However, authors' characteristics and background may influence the collection and the interpretation of data. The results of this study may be influenced by the outcomes of other studies. For example, the dimensions of attitude of Tunisian consumers toward functional food were largely similar to the dimensions found by Urala and Lähteenmäki (2004). Besides, the complexity of data collected from projective tools may lead to an important degree of subjectivity in data interpretation particularly in the case of analogy and story completion.

Concerning internal validity (also called credibility), to maximise the accuracy and the defensibility of findings about the studied individuals, homogenous focus groups regarding age and socio-economic situation were formed. Moreover, as it is difficult to obtain accurate information by direct questioning because of the social desirability which may inhibit respondents' spontaneity and lead them to hide their real thoughts and feelings and give socially acceptable and standard answers, the use of projective techniques helps obtaining more accurate and credible information.

Finally, external validity (also called transferability) which refers to the fact that the findings of the study can be generalized to all population was maximized by recruiting participants with different age, gender and socio-economic situation. However, due to the voluntary nature of the study and resource constraints, the number of participants in focus groups and in-depth interviews was too small (n=34) to be representative of the whole Tunisian consumers and to ensure theme saturation and the composition of in-depth interviewees regarding gender was different of focus groups' respondents composition (7 women and 3 men). Moreover, all participants were recruited in Tunis which may also limit the generalizability of the findings.

### **Implications for future research**

This paper is a part of a doctorate research. According to the findings of this exploratory study, several areas of research require further investigation. As many themes including importance of health dimension in food choice, healthiness perception and attitudes toward functional foods were studied at the same time in both in-depth interviews and focus groups, understanding consumers' perception of functional foods may require deeper investigation. A next step will be a laddering study in order to identify consumer's cognitive structures concerning functional foods by exploring the sequence: "attitude, consequence, value" and to understand the motives behind the purchase of functional foods.

Furthermore, a quantitative survey could confirm and extend the findings of this study. A conjoint study would be interesting to enlighten consumers' perception of healthiness and willingness to try various functional foods by combining different carrier products, different ingredients, different processing methods and different health claims. The study of socio-demographic and cognitive influences on the functional foods' evaluation may also be interesting in effectively segmenting and marketing functional foods.

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## APPENDIX

### STORIES USED IN THE EXERCISE OF STORY COMPLETION

#### **1<sup>st</sup> dimension: Perceived reward from using functional food**

1<sup>ère</sup> histoire : Un jour, vous invitez un de vos amis chez vous. Vous lui présentez un « Milk shake ». Votre ami est bien embarrassé. Il veut bien en goûter mais il a peur car il ne digère pas bien le lait surtout quand il est frais. Qu'est ce vous lui suggérez ?

#### **2<sup>nd</sup> dimension: Perceived risk in functional food**

2<sup>ème</sup> histoire : Mme Ben Ammar veut bien acheter du jus de fruits enrichis aux vitamines et aux minéraux à ses deux enfants. Ils sont en pleine croissance et dépensent beaucoup d'énergie. Mais, une chose l'intrigue. Ces produits ne sont pas tout à fait naturels. Ils devraient certainement comporter un risque pour leur santé. Elle demande conseil à son médecin...

#### **3<sup>rd</sup> dimension: Confidence in functional food**

3<sup>ème</sup> histoire : Tarek critique souvent les choix alimentaires de sa femme et trouve qu'elle exagère un peu sur les prix. Finalement les yaourts aux bifidus actifs qui soit disons facilitent la digestion et dont le prix est le double d'un yaourt ordinaire n'ont pas eu d'effet clair. Elle se plaint toujours de ballonnement après les repas copieux malgré sa consommation régulière de ce yaourt. Sa femme, un peu agacée par sa radinerie lui répond...

#### **4<sup>th</sup> dimension: functional food is perceived as a necessity**

4<sup>ème</sup> histoire : Mr Ben Jannet est devant le rayon des œufs au super marché. Il est indécis. Son ami qui comme lui a du cholestérol lui a conseillé les œufs aux Oméga 3 et même de la margarine aux Oméga 3. Il ne sait pas s'il doit en essayer. Il commence à lire minutieusement l'étiquette descriptive collée sur le plateau d'œufs ...

#### **5<sup>th</sup> dimension: functional food as a part of healthy diet**

5<sup>ème</sup> histoire : Le plus important chez le couple Tounsi c'est d'avoir une hygiène de vie parfaite. Ils font régulièrement du sport, font des exercices de relaxations et sont clients fidèles des centres de thalassothérapie. Ils sont très minutieux quant à leurs choix alimentaires. Ils suivent un régime alimentaire strict qui leur garantit les apports nutritionnels journaliers nécessaires pour préserver une bonne santé, consomment régulièrement des produits biologiques et prennent même des compléments alimentaires sous forme de gélules. Un couple d'amis à eux trouve que c'est un peu exagéré, après tout ...

#### **6<sup>th</sup> dimension: functional foods' taste**

6<sup>ème</sup> histoire : Sami, jeune étudiant est en train de déjeuner avec une amie. Cette dernière commande deux boissons gazeuses sans sucre. Sami n'est pas vraiment d'accord...