

The role of the food risk and the sociodemographic variables on the attitude to healthy foods

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Abstract- This research is interested in the changes of the eating habits of the consumer further to numerous health crisis. The consumer became more and more aware of the impact of the food on the health and more and more distrusting. This distrust led the consumer to healthier food product such as: relieved or enriched products and the dietary products etc., which brings the form and well-being in order to minimize the risk.

In this context, a quantitative study of Tunisian consumers studied the effect of dietary risk as well as sociodemographic variables on attitudes toward healthy foods.

Index Terms- Attitude, Healthy foods Perceived risk, Sociodemographic variables.

I. INTRODUCTION

In recent years, the growth of the food sector requires a particular consideration [1]. Indeed, preserving the complexity of the behavior of the consumer, it is difficult to generalize the food habits of this one because a multitude of factors enter into account [2]. In particular, the sharp drop of the risk acceptability threshold following the improvement in the condition of life (Peretti-Wattel, 2001) . Also, the use of new technologies in the agri-food sector cause a mass production and standardization image that takes away the production of food to the final consumer [4]. In fact, the modern food is no longer identifiable and it has become, as the expression of Fishler (1976) an «OCNI» (edible Object not identified).

As well as, the successive food crisis (the mad cow crisis, the avian flu, the GMOS...) translates the mistrust of the consumer related to the food and the perception of new risks" the consumer eater must then satisfy two conflicting imperatives: to vary its supply (which impels him to innovate) as well as to ensure both its nutritional balance and its food security" (NAC, 2006). In this context the "eat well" is defined by a double aspect which is not only "eat healthy", relating to a consumption of fresh products in order to maintain the nutritional balance but also "eat safe" in order to minimize the risk of intoxication and the fear of the poisoning (GMOS) [5]. Under these mutations, the industrials can see the opportunity to explore a new field of food innovation with the aim of getting closer to consumers hence the emergence of healthy food products

II. THEORETICAL BACKGROUND

The place of the health dimension in food consumption

Many authors consider the health dimension as a multidisciplinary approach [6]. To better understand the place occupied by the health dimension, it would be interesting to do appeal to several disciplines in the social sciences who have studied this relationship in the food context.

The health dimension in the anthropology is apprehended according to the three strands of anthropology to know the paradox of the omnivore, the principle of incorporation and the thinking classification [6].

(A) The paradox of the omnivore: «The omnivore should be both innovative and conservative" (Fischler, 1994). Starting from this principle, the human being is faced with two contradictory situations: to vary its diet in order to maintain the nutritional balance at the same time to choose foods which minimize the fear of poisoning and the nutritional risk.

(B) The principle of incorporation: this incorporation is not only corporal but it makes account of a triple phenomenon namely: a biological phenomenon because we become what we eat, whenever we incorporate a food, "life and health that are at stake.; a social phenomenon which manifests in the place of the consumer in his entourage and finally a psychological phenomenon to the extent that "some magical thinking that induces the passage of food in the body which involves a transfer of physical, behavioral or moral properties" [4].

(C) The thought classification: the classification thinking is organized by categorization in the form of a "mental encyclopedia" to facilitate the identification of foods [7]. This phenomenon has aim to classify the food into two categories: the consumable and non-consumable (Poulain, 2000).

The health dimension in the marketing approach has been studied according to two opticals: optical product and optical consumer [6].

(A) Optical product: Ravoniarison (2012) based on the characteristics of the product, has emerged health according to two aspects: the health is an attribute of the quality of the food and health is considered as a benefit from the consumption of the product.

- An attribute of quality

The quality can be subjective or objective [8]. Several authors point out the distinction between these two forms: the subjective quality linked to the experience of the consumers and the individual beliefs whereas the objective quality is evaluated by the technical and functional characteristics of the product [9]. In this context, Ophuis & Trijp (1995) have placed the health dimension among the attributes of the quality of the food product, extrinsic and intangible, because these cannot be

evaluated only after the experience of the consumption of the product and not after the purchase experience.

The health aspect makes sense in the dietetic and nutritional value (Panigyrakis, 1989). As noted by Ravoniarison (2012) the health dimension is characterized by "its lack of harmfulness and its energy intake."

- A benefit of the product

At this level the health dimension is considered as "an added value, the particular of certain components present, inherently or otherwise, property in the food (natural or processed), which may bring or maintain a beneficial effect on health" [6].

The health benefit is apprehended in two aspects (1) the health benefit is considered "an objective characteristic favorable to health, quantified and scientifically proven" and at the same time (2) it may be considered as a perceived subjective quality relating to each individual experience.

This subjectivity is mainly due to the desired benefits, which in turn determined following an exploratory study by Arts-Chiss and Guillon (2003). These authors segment the market according to health food in "four distinct product benefits" (see table 1) [10].

Table I: Typology of consumers on the basis of the profits product on the market of health (Arts-Chiss and Guillon, 2003)

PROFITS PRODUCTS	EXAMPLES OF PRODUCTS CONCERNED
Balance and Health	Products lean ; fortified products; functional foods
Taste and Safety	Labelled products
Fitness and Nature	Dietetic products; functional foods; fat products; organic Products
Nature and tradition	Biological

(B) Optical consumer: By studying the consumer behavior, the health dimension can take two forms: health care is a desired objective and health is an attitudinal characteristic.

- An object of consumption

In this context, the health aspect translates into a motivational status, beyond obtaining gustative pleasure, the consumer having a goal is a positive health effect [6]. In the same order of ideas, some authors adds that "the health may exceed the status of simple attribute of the product" and is part of the personal goals of the consumer, and to achieve a goal "health", the consumer is faced with a multitude of choices, including practice of sport or well follow a healthy diet [11].

The purpose "health" is available in four attached goals namely: the balance, the security, the prevention of diseases and the correction of dietary [11].

- A characteristic of consumer attitudes

Besides of the motivational aspect, the health dimension has been identified among the characteristics notable attitudinal factors of the consumer [6]. Roininen et al (1999) have determined a grid of attitudinal factors related to health from three axis: a general health interest, light product interest, and natural products interest.

Specificities of Healthy Foods: Concepts and Definitions

Some authors say that at present, healthy foods are not intended only to satisfy hunger and provide necessary nutrients, but also prevent diseases concerning nutrition and improve the physical and mental well-being of consumers [12].

While the food market undergoes a stagnation in developed countries, the healthy food market is one of the growing segments of the food. Research has estimated that the food market is growing at a rate of 15–20% p.a. and is worth 60 Million dollars annually [6].

According To Ravoniarison (2010) there is no typology neither definition nor unanimous appellation of health foods, some authors speak of functional foods, other speak of products of nutrition-health or even of products to health claim.

Healthy food is "products of any medication or medical devices claim a beneficial action for health" [13].This is a product that is at the border of the food and medical product.

The position of how healthy food were presented can be seen in Figure 1. These foods may correspond to very different valuations on the part of consumers, ranging from the called negative motivations (medical, symbolically associated with the disease) to the more positive motivations (well-being, symbolically associated with the pleasure).

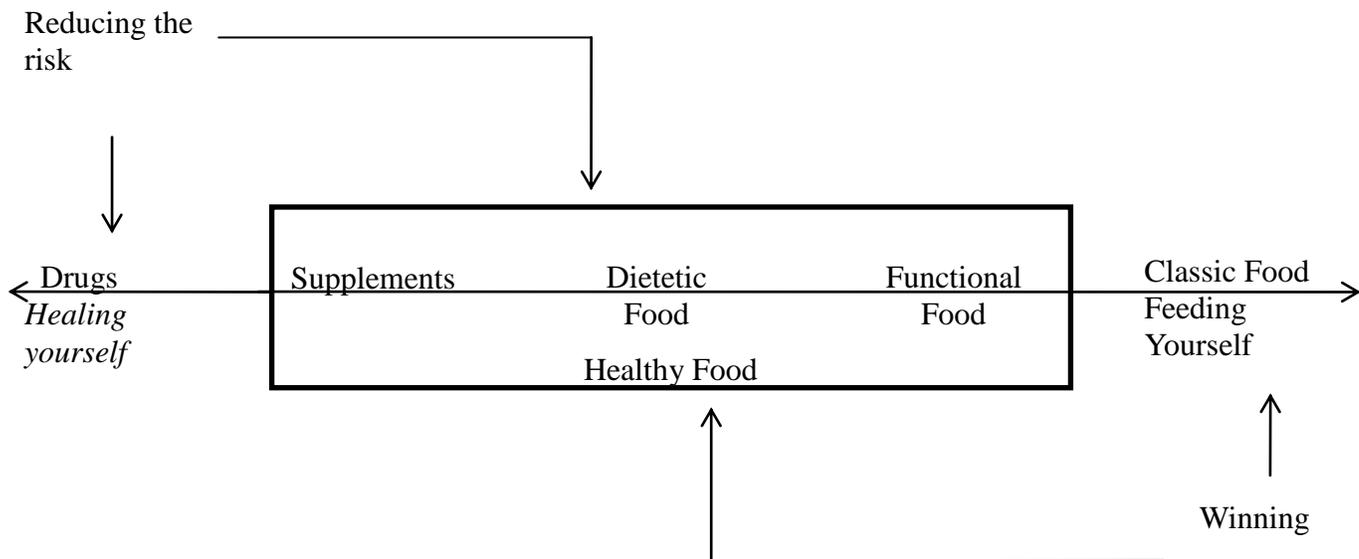


Figure 1: The positioning of healthy foods

Attitude

There have been several studies that have focused on attitude and its role to explain the consumer's purchase behavior. The concept of attitude can be one of many predictors of purchase process (Ajzen, 1991).

An attitude, by definition, is a favourable or unfavourable predisposition towards an object [14]. In other words, attitude is defined as a consumer's tendency to evaluate a particular entity with some degree of favour or disfavor (Eagly & Chaiken, 1993). In terms of understanding how consumer's attitudes, it is important to require the three dimensions of attitude such as: cognitive, affective and conative (Ajzen, 1993; Eagly & Chaiken, 1993).

Perceived risk

In practical terms, the perceived risk reveals a segmentation criterion or targeting strategies to reduce risk on specific segments (Peter & Tversky, 1979)¹.

The purchase of products under the theme food / health is considered a risky choice, as healthy foods are unfamiliar products against conventional products and consumers lack information on these goods [14]. The concept of "risk perception", first proposed by Baur in 1960, is a two-dimensional

concept consisting of two components: 1) uncertainty about the ability of new products to meet consumer expectations and 2) the importance of the consequences if the performance of the product does not conform to the minimum expected".

In other words, Roselius, (1971)² define perceived risk is as "consumer's subjective assessment of the consequences of wrong decisions or a product will not offer all the expected benefits". Different researchers provides a summary of various dimensions of perceived risk and proposed that risk resulting from his types (Jacoby & Kaplan, 1972).

Jacoby et Kaplan(1972) classified five types of risk as: (1) financial, (2) performance, (3) psychological, (4) physical and (5) social.

Beyond five types of risk , Roselius (1971) added two types of losses: risk time and opportunity risk.

With regards to food products, Kapferer (1998), Dandouau (1999) and Brunel (2000) mention five types of risks perceived by customers (1) physical, (2) psychological (3) social financial (4) and (5) performance.

In this way, some authors defined these types of risk as follows:

Performance risk arises when "the food products have not benefits requested by customer", financial risk occurs when

¹Volle.P(1995)

² Snoj B(2004)

“customers worry that money losses as a result of purchasing food products”, physical risk, also referred to as healthy risk can be defined as “a risk that the product gives consumers the danger”, social risk is the possibility that “the food product derogate of consumer from his friend’s group” [15].

The perceived risk can be understood through one or two main dimensions: functional risk, that is to say, the performance (Jacoby and Kaplan, 1972) and then the financial risk and psychological risk [16]. However, Derbaix showed that these dimensions depend on the type of product studied [17].

In summary, our research model, which will be described in the following section, derives its theoretical foundations from prior research in the theories of the consumer’s perceived risk [15] [16] [17].

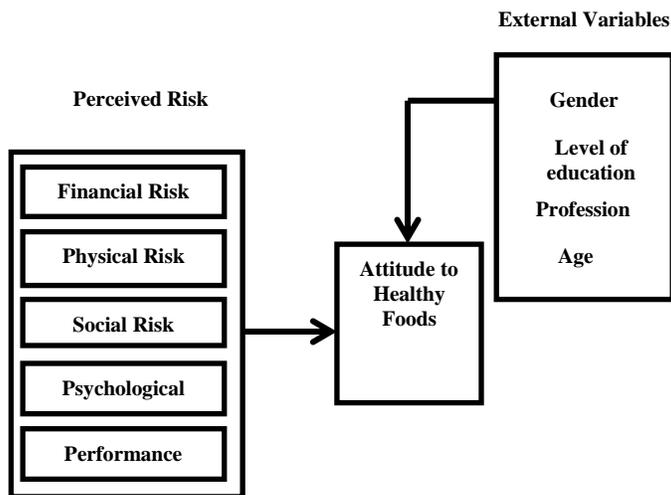


Figure 3: Research Model

Research Hypothesis

Effect of perceived risk on the attitude toward healthy foods

The research started exploring the field of healthy foods by examining perception and attitudes of consumer to these products [10].

Many papers highlighted that the importance of the concept of perceived risk as a vital risk of food consumption [17] [15].

Research has supported the attitude-risk relationship, showing that risk do have a negative impact on consumer’s attitude toward food product [16], the hypotheses will be made as follows:

H1: The Perceived risk negatively influences the consumer attitude to healthy foods

H1.a: The financial risk negatively influences the consumer attitude to healthy foods.

H1.b: The physical risk negatively influences the consumer attitude to healthy foods

H1.c: The risk of performance negatively influences the consumer attitude to healthy foods.

H1.d: The psychological risk negatively influences the consumer attitude to healthy foods.

H1.e: The social risk negatively influences the consumer attitude to health foods

Effect of sociodemographic variables on the attitude

For determining link of customer's attitude, with sociodemographic variables consisting of: gender, profession, age, level of education [18] [12] [8]. It is therefore hypothesized that:

H2.a Women have a more favorable attitude towards healthy food than men.

H2.c: There is a relationship between profession and the consumer attitude to healthy foods.

H2.b: More age increases more the attitude towards healthy foods increases

H2.d: More level of education increases more the attitude towards healthy foods increases.

III. METHODOLOGY

At this level, we will expose the methodology to be followed in order to meet the objectives of the research and present the results of the survey conducted on field from a sample composed of 150 individuals whose 56.7 per cent are women and 42.7 per cent are men. More than half of the sample (54 %) is aged between 21 and 35 years while only 7% of respondents have more than 60 years, 25.3 per cent of them are students, 21.3 per cent of senior executives and 20.7 per cent are middle managers.

Wishing to measure the perception of the risk on healthy foods, we used the scale of measurement for Stone and Mason (1995) after having adapted it to the needs of our study. All items were measured on a 5point Likert scale, anchored at 1= strongly disagree and 5= strongly agree (Annex 1).

The differential semantic scale is appropriate to measure the attitude toward the healthy foods, it is intended to measure the direction and intensity of the attitude with expressions literally opposed between them there is a point of neutrality (Table2).

Table 2: Scale of attitude

	Items
Overall Attitude	Unfavorable / Favorable
	Bad /Good
	Negative /Positive

The goal of purification and reliability of the measurement scales is to determine the dimensionality and the reliability of the measurement scales used through Principal component analysis (ACP) and Cronbach's alpha coefficients (Annex2).

Table 3. Dimensionality and internal consistency of the measurement scales

Variable	Number of items	Cronbach's Alpha
Attitude	3	$\alpha =0.840$
Perceived risk	15	$\alpha =0.930$

IV. RESULT AND ANALYSIS

Effect of perceived risk on the attitude toward healthy foods

The relationships that may exist between the attitude and the perception of risk are the subject of the first five assumptions namely H 1.a, H 1.b, H 1.c, H 1.d and H 1.e (Tab4)³.

H1.a: The financial risk negatively influences the consumer attitude to healthy foods.

The ANOVA table shows that the obtained model is significant. (Meaning = $0.012 < 0.05$) as well, Beta is equal to (-0.205). Therefore the financial risk has a slight negative impact on the attitude toward healthy foods.

H1.b: The physical risk negatively influences the consumer attitude to healthy foods.

The ANOVA table shows that the obtained model is significant. (Meaning = $0.011 < 0.05$) and Beta is equal to (-0.209). Therefore the physical risk has a slight negative impact on the attitude toward healthy foods.

H1.c: The risk of performance negatively influences the consumer attitude to healthy foods.

In this case, the obtained model is not significant. That is to say the risk of performance has no impact on the consumer attitude to healthy foods.

H1.d: The psychological risk negatively influences the consumer attitude to healthy foods.

In this case, the adjusted R-square is (0.020) this means that psychological risk accounts for only 2% of the variance of the dependent variable "consumer attitudes towards healthy foods." The ANOVA table shows that the resulting model is significant. (Meaning = $0.046 < 0.05$) Thus Beta is equal to (-0.163). So the psychological risk has a slightly negative impact on the attitude toward healthy foods.

H1.d: The social risk negatively influences the consumer attitude to health foods

The resulting model is not significant. The social risk has no impact on the attitude toward healthy foods.

Effect of sociodemographic variables on the attitude

These assumptions have studied the link between attitude and each type of sociodemographic variables. These assumptions are H 2.a, 2.b H, H 2.c, 2.d H

H2.a: Women have a more favorable attitude towards healthy food than men

According to the results of averages comparison test, the t-test is equal to 0,829 above the threshold (0.05), therefore, we accept H₀; that is to say, the averages are equal in the two groups. This means that the consumer attitude to healthy food does not vary as a function of the gender. The health concern affects both men and women with the same degree.

To test the remaining hypothesis, variance analysis (one-way ANOVA) has been used out to investigate the relationship between a metric variable (attitude) and non-metric variable has more than two categories namely (the level of education, occupation and age).

The results of the test shows that these variables: Level of education, occupation and age do not have any significant

influence on consumers' attitudes toward healthy foods therefore the hypothesis H2.b, H2.c and H2.d are overturned (so the hypothesis, H2.b, H2.c and H2.d are set aside).Tab3(Annex3).

V. CONCLUSION

At the end of this research we were interested in changes that have affected the food and the feeding behavior of consumers, these last few years.

To cope with these changes in the pattern of consumption of food products, the manufacturers are trying to meet the expectations of consumers, marketers of the agri-food continually innovating by developing new products benefiting from an attribute health and well-being (developing new products boasting an attribute health and well being)

Our contributions on empirical plan can be summarised as follows: we noted a certain awareness of the link between food and health, and an orientation towards the consumption of healthy foods. But the consumer remains suspicious and collects the minimal risks that affect slightly its attitudes to healthy foods. This is explained by the lack and the contradiction of information concerning these products at the level of their manufacturing and their composition [19]. This leads the consumer to research of the credibility and reliability of the part of the food industry.

The relationships between the sociodemographic variables and the attitude toward healthy foods have been overturned which contradicts the results of some research [8] [12] [18].

The variable age: Our hypothesis is overturned this is worth saying that there is no consistency between the age and the attitude toward the healthy foods. In a general way the older people more likely to favor the health dimension in order to minimize the risk of certain diseases [6]. However our research has shown that the health concern affects all the age groups in the same way. This is coherent with the work carried out by many authors [20] which have emphasized that "The more young people are focusing on the health pole to the detriment of the social pole" but on its side, it would be interesting to understand the origins of this outcome, if it is "the result of an effect of age or generation". In the same context, young people are more interested in healthy food in the purpose to have the physical form and promote the well being and energy [6].

The gender variable: many authors show that women generally pay more attention to the food than the men [19] [6] [20].

In other words women accept a degradation in terms of the organoleptic properties in order to have a health benefit (Poulsen, 1999 and Verbeke, 2005). This attitudinal divergence surveys do not reflect on how is the consequence of a sociological source: "women are thus more affected by the social pressures urging for slimmin » [6]. They are attached to the nutritional values while men are more sensitive to the "values of comfort and abundance" associated to the pleasure, [20]

The result of our research shows that the averages between groups (man and women) are equal. This is convergent with a study carried out recently with the Italian consumers which is not highlighting any link between the frequency of the consumption of functional foods and the gender [19]. The men are also looking for healthy food but they are looking more particularly of

³ Annex3

functional foods "targeting of specific effects" while women are interested in a variety of products [21].

Level of education and income: Many are the authors who put in relationship the socio-economic variables and the food behavior. In the opposite, other research obtain no link between the level of studies and the attention to nutritional labelling (Jensen et al. 1996).

In the same context, Niva (2008) explains that this weighting of effects of socio-economic factors in the food depends on the type of food.

The results as regards the influence of sociodemographic variables on the attitude toward the health foods remain controversial since it is a new trend in the area of food. This distinction is reflected by the cultural difference as well as the effect of the psychological variables in other words "the eater international does not exist; in contrast, there are strong local characteristics that generate strong international disparities "

The main limitation of this research relates to the size and the structure as well as to the geographical extent of the sample (150 persons resident in Greater Tunis). This sample does not allow to generalize the results on the whole of the population studied. The limited size of the sample could also be the source of a lack of precision in the results.

By elsewhere in the framework of future research, it would be interesting:

- To increase the sample size in order to be able to specify the results.
- To develop a scale to measure health risk specific to the context of Tunisia
- To explore other factors that may influence the purchase of health foods to know the conscience of health, food security, the perceived relevance of healthy eating.

REFERENCES

- [1] W.-K. Chen, Linear Networks and Systems (Book style).
- [2] C. Boue and al "The right food prices or the price of eating well" record net April. www.museum.agropolis.fr/.../juste_prix_aliments/JustePrixAlim.pdf.
- [3] H. Poor, An Introduction to Signal Detection and Estimation. New York: Springer-Verlag, 1985, ch. 4.
- [4] C. Gallen "The need for reinsurance food consumption" French Review of Marketing, Vol.3, No. 4, 2001,pp.183-184
- [5] P. Joly "The requirements of the company's safety of food of animal origin" Scientific and Technical Journal, vol. 22, No. 2, 2003,pp.373-386
- [6] A. Ravoniarison. "The experience of consumer health and nutrition for a consideration of personality traits," 9th International Congress Marketing Trends, Venice

- [7] C. Gallen "The role of mental representations in the process of choosing a multidisciplinary approach applied to the case of food products", Research and Application of Marketing, vol.20, No. 3, 2005.
- [8] C. Padilla Bravo and al "Assessing determinants of organic food consumption using data from the German National Nutrition Survey II" Food Quality and Preference, vol. 28, 2012, pp.60-70
- [9] K. Brunsø "Consumers' food choice and quality perception" papier de recherche n° 77, MAPP, Aarhus School of Business, Denmark
- [10] N. Arts-Chiss and F. Guillon "Healthy eating, being a market segmentation: an approach based on product benefits and perceived risk" Congress on Marketing Trends, Venice, 28-29 November, 2003.
- [11] El Dahr "The role of personal goals of their hierarchy and categorical processes in product evaluation: an application to the category of health foods." Thesis at the University of Montpellier, 2007
- [12] A. Azzurra and P. Paola "Consumers' behaviors and attitudes toward healthy food products: The case of Organic and Functional foods "EAAE Seminar, 113th, 2009
- [13] M. Serre and D. Walle-Wodka "Marketing of Healthy Products" Paris, Dunod, 2008
- [14] R. Treillon "Innovation and market of healthy food" French Review Of Marketing, vol. 1, No. 182, 2001
- [15] M. Bergadaà. and B. Urien "The vital dietary risk perceived consumption: emergence, adaptation and management" French Review of Management, 32.162, 2006, p.127.
- [16] R. Stone. and J.B. Masson " Attitude and Risk: Exploring the Relationship " Psychology And Marketing, vol.12, n°2; 1995,p.135
- [17] P. Volle "The concept of perceived risk in consumer psychology: history and theoretical status" Research and Application Marketing, vol10, No. 1/95, 1995
- [18] L. Sirieix "Food consumption: problematic, approaches and voice search" Marketing Research and Application, vol.14, No. 3, 1999, pp. 41-58
- [19] A. Annunziata, R. Vecchio "Factors Affecting Italian Consumer Attitudes Toward Functional Foods" Journal of Functional Foods, 3, 3, 2011, pp 223-228.
- [20] A. Facy "The impact of the medicalization of food discourse on the social representation of eating well in the variables age, gender and social class" Master of Research, University of Rouen
- [21] M. Niva " Can we predict who adopts health-promoting foods? Users of functional foods in Finland" Scandinavian Journal of Food and Nutrition, 50, 1, 2006, pp. 13-24

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