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Consumer Behaviour Towards Organic Food in Porto Alegre: an application of the Theory of Planned Behaviour¹

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Resumo: O estudo investiga o processo de tomada de decisão dos consumidores, suas atitudes e valores em relação ao alimento orgânico pelo uso da Teoria do Comportamento Planejado, adaptando a metodologia de um estudo da União Europeia. Foram entrevistados 450 consumidores em supermercados e feiras ecológicas em Porto Alegre, Brasil. Os resultados indicam um grande nível de penetração e uma atitude muito positiva em relação aos produtos orgânicos. Os entrevistados acreditam que os alimentos orgânicos são mais saudáveis, saborosos, mais naturais e ambientalmente corretos, apesar de serem menos atraentes visualmente e mais caros que alimentos convencionais. Os respondentes das feiras ecológicas representam um segmento específico com valores mais orientados para questões sociais. Os resultados mostram um alinhamento entre atitude positiva e comportamento do consumidor na amostra estudada. O estudo contribui para todas as partes envolvidas na cadeia de produtos orgânicos, já que o conhecimento dos atributos mais valorizados pelos consumidores pode apoiar o varejo a coordenarem a cadeia de suprimentos, estimulando mais produtores na adesão à certificação orgânica, melhorando suas práticas produtivas e renda. Consumidores também se beneficiam da oferta de alimentos orgânicos.

Palavras-chaves: Alimentos orgânicos, comportamento do consumidor, survey.

Abstract: *The aim of this study was to investigate consumers' decision-making process, attitudes and values towards organic food throughout the employment of the Theory of Planned Behaviour, adapting the methodology from a European project. 450 consumers were interviewed at supermarkets and farmers' markets in Porto Alegre, Brazil. Results indicate a high penetration level and very positive attitude towards organic products. Organics are believed to be healthier, tastier, more natural and environmental friendly,*

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although being less attractive and more expensive than conventional food. Respondents from the farmers' market represent a specific segment whose values are more oriented toward society. The findings showed an alignment between positive attitude and consumption behaviour among the surveyed consumers. The study finally contributes to the stakeholders in general, since the knowledge of the attributes more valued by consumers can help retailers to play the role of coordinators of this supply chain, stimulating producers to adhere to organic certification, helping them to upgrade their production practices and improve their income. Consumers are also benefiting from this offer in the market.

Key-words: *Organic food, consumer behaviour, survey.*

Classificação JEL: M390.

1. Introduction

It is widely recognized that patterns of food consumption have experienced rapid change over the past few years/decades as result of concerns on environmental sustainability, development, nutritional aspects and also health issues. Along with this trend, organic agriculture has been expanding quickly around the world. Statistical information on organic agriculture is now available in 141 countries. The area of agricultural land used for organic agriculture has increased by almost 1.9 million hectares from 2006 to 2007. Latin America has shown an increase of 1.4 million hectares of its area devoted to organic agriculture over this period, which represents a growth rate of 28%. In Europe, in turn, the increase was about 0.33 million hectares (4%) (WILLER and KLICHER, 2009). One of the consequences this trend has shown during the past decades is the increasing demand for academic research on consumers' preferences and organic food (SHEPHERD, MAGNUSSON and SJÖDÉN, 2005).

Organic food is defined as the product, both fresh and processed, obtained or made according to the standards of organic agriculture. According to the International Federation of Organic Agriculture Movements – Ifoam (2009), organic agriculture is a production system that sustains the health of soils, people and ecosystems, using organic pesticides and avoiding, for instance, the

use of antibiotics and growth hormones. It relies on tradition, innovation and science, looking up to benefits for people and for the environment, promoting the quality of life of all stakeholders involved in this chain. The organic producer must respect established norms in all production stages, from the seeding process until packaging, always concerning about the process' impact on the natural environment.

Consumer behaviour is considered an essential subject in several fields of study such as marketing, management, psychology and economy. There are many intrinsic mechanisms within behavioural processes; the study of these topics has thus become frequent and essential to understand consumer behaviour. A study conducted in 2002 by the Brazilian Environmental Ministry (BRASIL, 2008) identified that 73% of the Brazilian consumers show interest in purchasing organic products for consumption and that 81% seem to be motivated to buy it when the label informs that it was produced following the organic product's regulations and it is environmental friendly. More than half of the Brazilian organic production is exported and it is expanding. In 2001, the production of certified organic agriculture occupied 275.576 hectares and in 2007, 880.000 hectares. In 2008 this area reached the mark of 1.765.793 hectares (WILLER and KLICHER, 2009), twice as much as 2007.

Motivated by this expressive growth of the organic market, several studies concerning

consumer behaviour towards organic food have been conducted in many countries (BAKER et al., 2004; KRYSTALLIS and CHRYSSOCHOIDIS, 2005; HONKANEN et al., 2006; KRYSTALLIS, FOTOPoulos and ZOTOS, 2006; HUGHNER et al., 2007; WILLER and KLICHER, 2009), including Brazil (GUVANT, 2003; DAROLT, 2004; VILAS BOAS, SETTE and BRITO, 2006; LOMBARDI et al., 2007; SOARES et al., 2008). Such studies contain a focus of analysis whose emphasis is given to the values, motivations and beliefs of this consumer. Most of them have investigated how consumers perceive organic products and what are consumers' attitudes towards them. In general, the studies conducted in Europe revealed that purchase intention of organic foods were linked to health and environmental consciousness as well as safety and quality issues such as taste, flavour, freshness and price.

In Brazil, beyond usual concerns with health and food security, consumers are also worried about social issues and environment protection. These consumers normally have a more positive attitude in relation to the organic products. Nevertheless, there is still room for further investigations regarding consumer behaviour of organic products in developing countries. The growing importance of the organic food chain and the ongoing changes in consumers' lifestyle are constantly motivating studies of such nature. A more psychological approach, focusing on attitudes, beliefs and lifestyle may reveal a consumer of organic products different from the usual. In that sense, the constructs proposed by the Theory of Planned Behaviour (TPB) can help emphasize these aspects. The TPB is one of the most applied models in the literature (e.g., DE CANNIÈRE, DE PELSMACKER e GEUENS, 2009), especially when the goal is to explain human behaviour in the food area (AERTSENS et al., 2009; KRYSTALLIS et al., 2009; DEAN, RAATS and SHEPHERD, 2008; DREEZENS et al., 2005; THØGERSEN, 2000). The performing of a meta-analysis by Armitage and Conner (2001) corroborates the efficiency of the TPB model

to predict intentions and consumer behaviour towards organic products.

The aim of this study was to explore consumer behaviour towards organic food in Porto Alegre, capital of Rio Grande do Sul (the southernmost state in Brazil) aiming to understand its decision-making process, attitudes and values. The emphasis here is given to the TPB constructs (behavioural beliefs, norms and control) and how much they influence purchase intention and consumer behaviour towards organic products. First, we wanted to investigate consumption patterns of organic food (adoption and frequency) within two distinct marketing channels (supermarket and farmers' market). Consumers' attitudes and beliefs, including the attributes that influence the purchase and consumption of organic products were also investigated. Finally, consumers' values were assessed, as they play an important role in understanding consumer behaviour. The methodology used in the study was adapted from an EU funded project – the Condor Project and further information is presented at the methodology section.

The paper is organized as follows. Section 2 reviews consumer behaviour theories considering an international context and previous research on organic food; this section presents the Theory of Planned Behaviour (TPB) from Ajzen (1985), which is the most applied theoretical framework in consumer behaviour studies worldwide, as well as an overview about the basic human values, presenting the Schwartz Value Theory. Section 3 presents the methodology applied in this study and section 4 summarizes the main findings. Finally, section 5 draws the conclusions and suggests a research agenda for future studies.

2. Theoretical Background

2.1. Consumer behaviour towards organic food

Consumer behaviour is considered as one of the most complex and enigmatic areas inside marketing. Attempts to understand this issue

have led to the increase on the number of studies related to the subject. Consumer behaviour is regarded as one of the most important topics in these days as it can be seen at the Marketing Science Institute priority research list for 2009.

Although concerns with environmental protection and human health figured among consumer concerns in the US since the sixties (KLONSKY and TOURTE, 1998), the topic only became popular in the EU during the eighties (GREENAN et al., 1997). These concerns have only arrived to Brazil later on, during the nineties (GIVANT, 2003; DAROLT, 2004). Several studies make clear that one of the central issues of the 21th century is the challenge of environmental sustainability (CZINKOTA and RONKAINEN, 1995 apud KRYSALLIS and CHRISOHOUDIS, 2005). Organic food can be said to be the representation of environmental sustainability on the debates concerning food production. In addition, it integrates consumers' health and food safety concerns.

Consumer behaviour is directly linked to consumer's culture, family, environment as well as to their economic reality. According to Solomon (2002), people buy a product for its meaning and not for what it is capable of doing. A product, such as food, represents more to the consumer than its physiological function. Consumers point as decisive factors for the consumption of organic products their family health, environmental concern, safety and better taste of food (DAROLT, 2004; LOMBARDI et al., 2007). Attributes such as brand, image, certification, traceability and price are not among the most mentioned on the studies. It does not mean that those attributes are not important. In fact, it shows new trends to be explored by researchers.

2.2. Trust, beliefs and motivations towards organic food consumption

Grunert (2002) says that the perception of food quality occurs after the purchase, preparation and consumption. Consumers, to take their decisions at the time of purchase, should form

a concept known as expected quality. Quality, however, is usually composed by two elements: intrinsic and extrinsic quality. Intrinsic quality can be described as those attributes that are not directly perceived by the consumer, which are coupled to instruments such as labels and certifications. The absence of additives, chemical residues and food value, for example, are called intrinsic characteristics of food. Extrinsic quality, in turn, is described as those attributes easily perceived by the consumer, i.e., visible, such as colour, appearance, size, shape and price. These characteristics may not be sufficient for consumers to choose to purchase the product because it does not guarantee its safety or quality. Formal mechanisms such as governmental agencies or some public or informal monitoring, such as brand reputation, can contribute to consumer assessment.

Food quality is a relevant attribute in buying organic food. It is the relationship between expected quality and perceived quality that determine consumer satisfaction (OLIVER, 1993). The label guarantees that the consumer is buying an organic product. Especially in the case of certified organic food, the information asymmetry can be harmful, because the consumer is not able to identify the absence of chemical components in food – basic requirement in organic farming.

Market failures are the basis of the formation of the Transaction Costs Economics (TCE), which accepts that information is imperfect or asymmetrical. Herbert Simon (1957) broke-up the economists' belief of full rationality with the following two assumptions: the existence of opportunism and bounded rationality. These two factors occur when one or more parties know the underlying circumstances relevant to the transaction, although this information cannot be costlessly discussed by or displayed to others (WILLIAMSON, 1985). TCE sees man as a rational actor but the risk of opportunism is always present, especially under a condition of information asymmetry. The lack of information results on uncertainty which can be stated as an imperfect knowledge about an event. The

uncertainty surrounding a transaction can assume different levels. On one hand, for the buyer, it can be an uncertainty of quality, a reliable supply, timeliness or quantity. On the other hand, it can be the seller searching for a buyer. And for both agents, price can be uncertain (VIEIRA, 2008).

In this study, information asymmetry occurs when one or more agents has particular information's about credence, safety or product' value. Asymmetry creates an adverse selection problem in the market as informed investors' trade on the basis of their private information, such as quality (BROWN and HILLEGEIST, 2007). It is essential to ensure this quality. The relationship between the quality and uncertainty must be minimized (AKERLOF, 1970). Organic certification is a way of emphasizing, to guarantee the quality of the process production, establishing a relationship of trust between the producer and consumer of organic food, avoiding the informational asymmetry. Trusting in the certification process is very important to consumers, also due to the rapid growth of organic supply chain.

Consumer trust in products that are offered on the market is generally expressed through their concerns with the label. This assumes the certification process by which the product goes through, and also by who defines and controls this process and the use of standards. The importance of the label is highlighted by the product's regular consumers, expressing the fact that when a label is displayed on a product, the latter can be of higher quality and consumers will feel safer (GRUNERT, 2002; LOMBARDI et al., 2007; ESSOUSSI and ZAHAF, 2008). These details

about the level of trust show that the consumer is aware of who is deciding whether a product can be considered organic and if the standard procedure of certification is being properly implemented.

As Grunert (2002) states, the highest level of trust is linked to less satisfaction with available information and more demand with regard to additional information. When a consumer believes that information can be trusted, the information becomes much more useful and will be in higher demand (MAUTE and FORRESTER Jr, 1991). According to Vieira and Traill (2008), the relationship between consumers and producers is extremely important to build trust on the product. Trust in the company certification, in turn, is requisite to the organic market to exist. It is not enough for consumers to believe in the benefits of organic food, they need to be ensure that the food being bought and consumed is really coming from organic agriculture. The gap between monitoring and certified producers contributes to undermine the development of the organic market because it allows the action of opportunism.

As Figure 1 shows, search attributes are those that consumers can evaluate before purchasing. Experience attributes are those for which consumers can evaluate only when consuming the product. Credence attributes are those for which the consumption does not bring information on the quality (for example the use of pesticides). Because customers cannot detect credence attributes, extrinsic cues must be used to indicate the presence of these attributes. As extrinsic cues have nothing to do with the physical

Figure 1. Kinds of attributes

Search Attributes	Experience Attributes	Credence Attributes
Qualities, which are known before purchase	Qualities, which are known after purchase	Qualities, which are difficult to evaluate but the buyer can rely on third-party judgments
Increasing information asymmetry		

Source: Vieira (2006).

product, experience cannot be used to judge if the product contains the necessary attributes. In this case there is a need for reputation or labelling that the customer can trust.

Organic food can be classified as credence attribute, whereas its key attributes cannot be evaluated by consumers even after purchase and consumption. Associated with this fact is trust. Organic food consumer need to believe in the product label. Belief is a subjective trial between two or more objects. It is based on the knowledge about attributes and characteristics of a product in expectation terms (AJZEN, 2008). What a consumer knows or has learned about a product determine their beliefs about it. The beliefs in relation to a product determine how favourable the attitude will be (FISHBEIN and AJZEN, 1975).

There are several beliefs associated with organic food. Among them we can mention better flavour, higher quality, better for health, more expensive, environment-friendly and more attractive (GRANKVIST and BIEL, 2001). As Steenkamp (1990) mentions, descriptive beliefs are those beliefs that result from direct observation (and via any of the five senses) of the product characteristics. By trying on the product before buying or tasting it, for example, consumers can form descriptive beliefs about the brand and its type of quality attributes based on experience and not on a belief. However, sometimes consumers do not have the opportunity to taste the food before buying. Furthermore, enjoying the experience does not add any information about credence attributes, which results in lack of information for the consumer, regarding to the experience's attributes. Food beauty or quality is not based just on visual perception, but also on producer's reputation and on the certification company. There are several studies which confirm many of these quality claims for organic food (ALFÖLDI et al., 2006; NIGGLI et al., 2008), but there are also studies that shows there is no strong evidence that organic and conventional food differ in concentrations of various nutrients (DANGOUR et al., 2009).

Academic research has shown that the major motivations for buying organic products are: (a) the product is healthy, is good for health, (b) is more nutritious, (c) quality and taste of food are considered higher when compared with conventional products, (d) consumer is concerned about environmental issues such as soil contamination with no pesticides, and (e) social issues – development of small farmers (FOTOPOULOS et al., 2003; KRYSTALLIS, FOTOPOULOS and ZOTOS, 2006; LOMBARDI et al., 2007; DEAN, RAATS and SHEPHERD, 2008). Shepherd; Magnusson and Sjödén (2005) have demonstrated that benefits to health are more related to attitudes and behaviour in relation to organic food than environmental issues. As Thøgersen (2000) argues, consumer will only care about an ecological, such as organic certification if his/her values are related to environmental sustainability. When he/she realizes that those certified products are really contributing to the cause, he/she will buy them.

In general, consumers attribute positive qualities and characteristics when they are asked about organic food quality and safety aspects. These positive attributions, such as tasty, safe and fresh, are often interlaced with expectations of the organic production process, which includes environmental concerns. Interestingly, a positive perception is generally found among consumers, even though it is not always confirmed by their respective purchasing and eating behaviour (NIGGLI et al., 2008). This is one of the problems in the organic food context, the gap between attitudes and behaviour: consumers are positive about organic food, but usually do not buy it. This discrepancy is apparently explained by the fact that most consumers do not consider the question "organically produced" as a determinant criterion for purchase, and organic food is not seen as a substitute for conventional food as regards to taste and shelf-life, two attributes of a great importance (SHEPHERD, MAGNUSSON and SJÖDÉN, 2005). Recent studies also indicate that individuals, as citizens, present a weak link between their "speech" and their actual food

choices (KRYSTALLIS et al., 2009). It means consumers do not always act the way they think or say.

2.3. Theory of Planned Behaviour (TPB)

The connection between attitudes and behaviour has been discussed continuously in the social and behavioural sciences over the past fifty years or so (BUSCHT, 1998). Attitudes do predict behaviour towards their objects and two major research programs succeeded to clarify attitude-behaviour relationships. Rosenberg and Hovland (1960) were the first researchers to propose the Tripartite Model, where attitudes are considered affective, cognitive and behavioural responses toward an object. The model is a trichotomy of feeling, knowing and acting. Affect represents the emotional response, gut reaction, of how an object makes a person feel. The Cognition means the beliefs, assumed knowledge, perceptions and thoughts, and Behaviour signal the overt actions, intentions.

This model was the basic inspiration for the later Theory of Reasoned Action (TRA), that suggests that a person's behaviour is determined by his/her intention to perform the behaviour and that this intention is, in turn, a function of his/her attitude toward the behaviour and his/her subjective norm. In order to gain deeper understanding of the factors influencing behaviour, it is required to look for the determinants of the attitudinal and normative components. Those determinants are beliefs that individuals hold about themselves and their environment, in other words, information individuals have about themselves and the world in which they live. Therefore, beliefs are viewed as underlying a person's attitudes and subjective norms, and they ultimately determine intentions and behaviour (AJZEN and FISHBEIN, 1980).

The Theory of Planned Behaviour is the most widely known extension of the TRA, and was proposed by Ajzen in 1985. The author inserted an additional construct, Perceived Behavioural Control (PBC) to the model in order to account

for situations where an individual has less than complete control over the behaviour. The TPB is normally taken to predict and explain consumer behaviour about food choice (THØGERSEN, 2000; DREEZENS et al., 2005; DEAN, RAATS and SHEPHERD, 2008). It is expected that the relative importance of attitude, subjective norm and perceived behavioural control varies in the prediction of intention, according to the different behaviours and situations (AJZEN, 1985).

According to the Theory of Planned Behaviour, human behaviour is grounded in three constructs: (1) behavioural beliefs, (2) normative beliefs, and (3) control beliefs. Behavioural beliefs are those attitudes towards the behaviour. Normative beliefs are the subjective norms or perceived social pressure. Control beliefs refer to the perceived behavioural control or self-efficacy. The power exercised by attitudes, subjective norms and perceived control will therefore, determine behaviour intent (AJZEN, 2001). The behavioural beliefs lead to a favourable or non-positive behavioural attitude, the normative beliefs result in perceived social pressure or subjective norms. Finally, beliefs about control induce the perceived control over behaviour. This means that behaviour intention will be stronger as much as perceived control is higher and when the attitudes and subjective norms are favorable too.

The TPB is one of the most applied models in the literature (e.g., DE CANNIÈRE, DE PELSMACKER and GEUENS, 2009), especially when the goal is to explain human behaviour in the food area (THØGERSEN, 2000; DREEZENS et al., 2005; DEAN et al., 2008; AERSTENS et al., 2009; DE BARCELLOS, PEDROZO and VAN DER LANS, 2009). The performing of a meta-analysis by Armitage and Conner (2001) corroborates the efficiency of the TPB model to predict intentions and consumer behaviour towards organic products. In general lines, consumers can be said to attribute positive qualities and characteristics when they are asked about organic food quality and safety aspects. These positive references, such as tasty, safe and fresh, are often interlaced

with expectations of the organic production process, which includes environmental concerns. Interestingly, a positive perception is generally found among consumers, even though it is not always confirmed by their respective purchasing and eating behaviour (NIGGLI et al., 2008).

The gap between attitudes and behaviour is seen as one of the main challenges in the organic food market: consumers are positive about organic food, but usually do not buy it. This discrepancy is apparently explained by the fact that most consumers do not consider the question "organically produced" as a determinant criterion for purchase, and organic food is not seen as a substitute for conventional food as regards to taste and shelf-life, two attributes of great importance (SHEPHERD, MAGNUSSON and SJÖDÉN, 2005). Recent studies also indicate that individuals, as citizens, present a weak link between their "speech" and their actual food choices. This means consumers do not always act the way they think or say they do (KRISTALLIS, BARCELLOS, KÜGLER, VERBEKE and GRUNERT, 2009).

Although there are several studies exploring consumer behaviour towards organic products in Brazil (such as VILAS BOAS et al., 2008) few of them investigated psychographic characteristics, in which the emphasis is given to values, motivations and beliefs of this kind of consumer. A review of the literature in the aforementioned databases and keywords did not identify any study on consumer behaviour related to organic products in the TPB perspective applied to the Brazilian context. A more psychological approach, focusing on attitudes, beliefs and lifestyle may reveal a consumer of organic products different from the usual and the constructs proposed by the TPB can help emphasize these aspects (ARMITAGE and CONNER, 2001). Hence, the attitude-behaviour approach used in this study is based on the TPB and Figure 1 presents the proposed model.

2.4. Basic human values:

The Schwartz Value Theory

Consensus regarding the most useful way to conceptualize basic human values has emerged gradually since the 1950's (for a review see SCHWARTZ, 2005, 2007). Overall, values are considered beliefs and they refer to the desirable and abstract goals people strive to attain. The abstract nature of values distinguishes them from concepts like norms and attitudes, which usually refer to specific actions, objects, or situations (SCHWARTZ, 2007).

The Theory of Human Values of Schwartz is based on the studies of one of the most prominent researchers in the Social Psychology area (ROKEACH, 1973). The Schwartz' Value Theory defines values as desirable, trans-situational goals, varying in importance, serving as principle's guide in people's lives. It means that values serve as standards or criteria to individuals since they guide the selection or evaluation of actions, policies, people, and events. In addition, values can be ordered by importance relative to one another. They form an ordered system of value priorities that characterize people as individuals. This hierarchical feature of values also distinguishes them from norms and attitudes (SCHWARTZ, 2007).

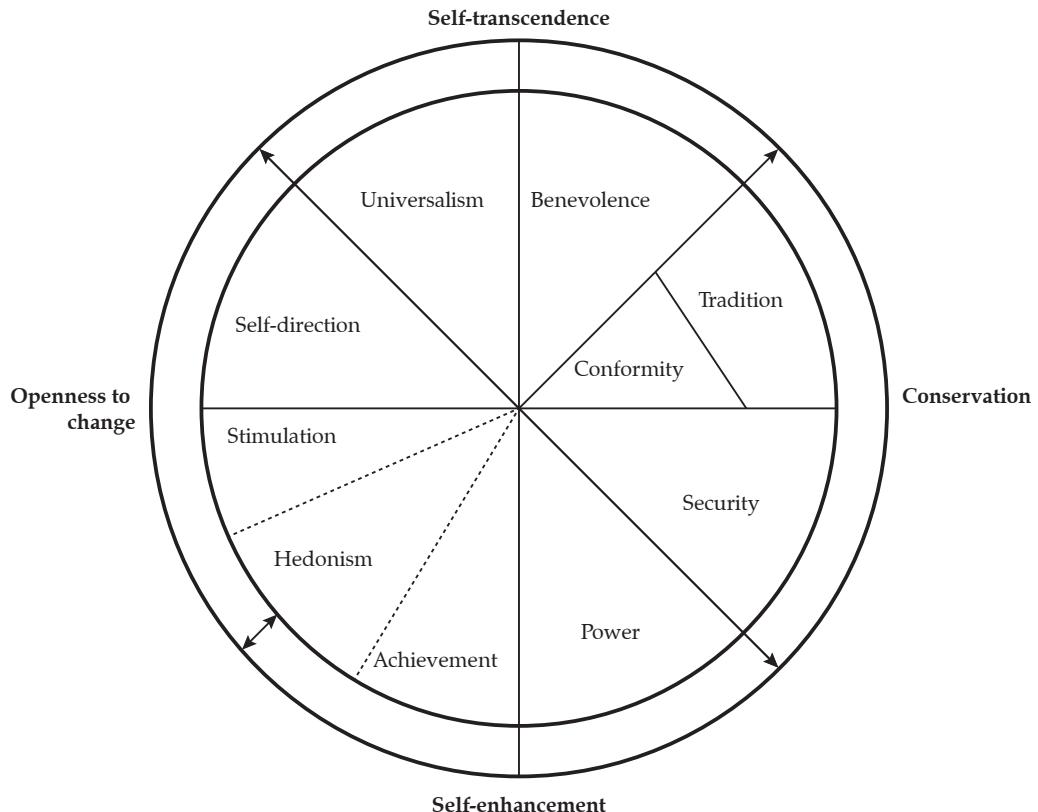
According to the theory, there are ten motivational types, which would include all the core values recognized in cultures around the world. The ten motivational values are derived from three human beings' universal needs, which are inherent to each individual. These consist on (1) biological needs; (2) social interaction coordination requisites, and (3) survival and welfare groups' needs.

The ten motivational values are subsequently divided into four dimensions. They can be described by their central motivational goal, which is the crucial content aspect distinguishing them. The Self-Transcendence dimension

emphasizes equality, social justice and helpfulness and represents the Universalism and Benevolence values. Opposite to this dimension is Self-Enhancement, which is related to success, ambition, authority and wealth (Achievement and Power values). Conservation, in turn, emphasizes the devoutness and humility, the obedience and the social order, favouring the maintenance of the *status quo* (Tradition, Conformity and Security values). Finally, Openness to Change dimension is related to an exciting way of life, just as creativity and freedom, corresponding to Stimulation, Self-direction as well as the pleasure given to the Hedonism value. Therefore, these four higher order value types form two bipolar conceptual dimensions. This type of order is

derived from the location of values depending on their (negative) correlation within the circle – hence values situated on one side of the circle will be strongly negatively correlated with values on the opposing side of the circle, yet positively correlated with values located nearby. In practical terms, this means that a person who assigns high scores to values which are located in the “security” value type is also likely to regard values located in the “conformity” value type as “guiding principles of his life” - and s/he will be unlikely to assign high scores to values located in the “stimulation” or “self-direction” value types. Figure 2 indicates the theoretical model of relations among ten motivational types of values and the respective four dimensions.

Figure 2. Theoretical model of relations among ten motivational types of values



Source: Adapted from Schwartz (2007).

3. Research method

3.1. The Condor Project

This study partially replicates the methodology from Condor Project – Consumer Decision Making on Organic Products – in the context of Porto Alegre. The Condor Project, an EU funded project, is one recent and important international study conducted on consumer behaviour toward organic food. The project combines the development of segmentation approaches for consumers according to their values, based on Schwartz Value Theory, as well as the emotional associations and moral issues, based in the Theory of Planned Behaviour (TPB) from Ajzen (1985). The Condor Project gives information about the role represented by the

values, affective and moral issues in consumer decision-making on organic food, providing new marketing insights to this kind of product. Results can be useful to all supply chain agents – consumers, industry and retail chains.

The Condor Project has been conducted in eight EU countries: the United Kingdom, Denmark, Finland, Sweden, Germany, Spain, Italy and Greece. The project goal is to further study several issues not addressed in the existing literature. The first of these issues is to understand consumer decision-making on organic foods, both processed and fresh. The second is to model consumer choice of organic foods across eight EU member states, measuring attitudes, values, affective responses and moral concerns (THØGERSEN, 2006). Our study was therefore motivated by the project's objectives, since

Table 1. Socio-demographic profile of the respondents in both distribution channels

Variable	Categories	Supermarket % (n=263)	Farmers' Market % (n=187)
Gender	Male	20.9	31.0
	Female	79.1	69.0
Age	18 – 30	22.4	15.5
	31 – 45	35.0	30.5
	46 – 65	35.0	46.5
	> 65	7.6	7.5
Residents in the household	2 persons	4.2	2.1
	3 persons	8.7	7.0
	4 persons	35.0	35.3
	5 or more	52.1	55.6
Children in the household	0 – 5 years	15.2	10.1
	6 – 12 years	20.6	18.2
	13 – 18 years	13.3	16.0
	19 – 24 years	16.8	20.9
Highest Completed Education Level	No Formal Schooling	8.8	13.9
	Primary School or lower	28.1	29.4
	Secondary School	52.8	46.0
	University	9.5	9.6
	Post-Graduation	0.8	1.1
Monthly household income (€)	up to 404	6.5	6.4
	405 – 1211	30.8	31.5
	1212 – 2019	33.8	37.5
	more than 2020	28.9	24.6

Source: Prepared by the authors.

we have applied the model and methodology independently, but aiming to compare the results in the near future.

3.2. Data Collection

One of the motivations for this study is the growing interest of local and international retail chains in understanding organic consumer behaviour issues in the Brazilian reality. Hence, an international retail chain with widespread presence in Brazil (a total of 400 shops located in 18 out of 26 States) provided operational support for data collection in their supermarket stores. Organic food sales in retail chains represent 45% of the Brazilian organic market. At the same time, the organic farmers' markets are also relevant in this context, representing 26% of the total sales (WILLER and KILCHER, 2009). Hence, data were also collected in two organic markets, as they represent a traditional marketing channel for organic products in Brazil and tend to attract more "environmentally conscious" customers (DAROLT, 2001). This was something we tested looking for different results according to the channel studied.

The initial stage of this research was exploratory and included the theoretical and organic agriculture review as well as the adjustment of the Condor questionnaire to the Brazilian context. The questionnaire contained items which intended to measure attitudes and beliefs towards organic food, consumption frequency and consumer's values. To complete the survey, socio-demographic questions were additionally asked. The questionnaire focused on the purchase of fresh organic tomatoes, one of the products investigated at Condor project and widely recognized as a pesticide susceptible product. The master questionnaire were developed in English and translated into the national languages by using the procedure of back-translation. Researchers carefully tested

the questionnaire through personal interviews with 15-20 respondents in each of the countries in order to identify and eliminate potential problems and to ensure linguistic equivalence.

A total of 450 respondents (187 at supermarkets; 263 at farmers' market) answered the questionnaires throughout personal interviews, which were conducted by a professional market research company over ten days. Six days were spent interviewing respondents in seven different stores of a supermarket chain and four days were used to collect data in two distinct organic farmers' market in Porto Alegre, capital of Rio Grande do Sul State. This city was elected to this research because there is located the pioneer farmers' market in Brazil. Porto Alegre was also the first city in Brazil to create an Environment Secretariat. Because awareness about sustainability is high amongst the population of Porto Alegre, it is considered a good city to survey consumers in regard to organic food, as participants' feedback can provide important managerial information to the other supply chain members.

Respondents were interviewed during their usual purchase ritual. They received in hands the scale from each questionnaire section to help them choosing their answer. A filter question was used in the data collection, asking the individuals the following question "do you know what organic food is?" In the case of "yes" answers, the participants were asked to present a brief definition. As participants were trained to judge correct and incorrect answers, they could discard the cases of incorrect responses and interview only those customers providing a correct definition of organic food. Screening away those who did not know the concept was actually an effective means to focus in on the segment of consumers that is in the market for organic food. Hence, these results probably provide a more accurate picture of the actual market situation for organic food in a big-city in Brazil than a representative sample of the whole population would have done.

3.3. Variables

3.3.1. Frequency of consumption

Organic food market penetration was measured by means of the question: "From the following alternatives, please choose the one that best describes your shopping habits as regards organic food". The alternatives were: (1) I have never bought, nor considered buying organic food; (2) I have not yet bought, but I have considered buying organic food, (3) I have already bought organic food, but I will not buy anymore; (4) I buy organic foods few times a year, (5) I buy organic foods one or a couple of times a month, (6) I buy organic foods weekly, and (7) I buy organic food more than once a week. Non-consumers of organic food (i.e., those who selected alternatives 1 and 2) represented 3.56% of the sample (17 respondents) and were excluded from the analysis.

3.3.2. Beliefs

The nine behavioural beliefs, called by Ajzen and Fishbein (1980) *modal salient beliefs*, are based on the attributes of search, experience and belief of foods, show how much the consumer believes or not in the benefits of organic agriculture. In this dimension, all items have the same initial format, such as "How likely is that organic tomatoes...". The first item is regarded to the absence of pesticides in organic food. The second referred to expensiveness. The third, if organic tomatoes taste better than conventional ones, was followed by belief in the environment-friendly production way. Freshness time and attraction level were both measured. Beliefs such as "healthier" and "natural" were also asked. At least, the fact of not been really organic was also brought up. All responses were made on a 7-point scale, ranging from "extremely unlikely" to "extremely likely".

3.3.3. Attitudes towards buying organic food

Attitudes were divided into five constructs, all measured by a 7-point Likert Scale. The first one,

buying intentions, was measured by two items, with response categories ranging from "extremely unlike" to "extremely likely". *Attitudes towards buying fresh organic tomatoes* were measured by means of seven items, reflecting affective, cognitive and moral evaluations. One item was excluded from this construct for statistical reasons (non-normal distribution). *Perceived social norms* to buy organic food products was measured by two items, one reflecting descriptive and the other injunctive norms, presenting response categories ranging from "I should not buy" to "I should buy" and "strongly disagree" to "strongly agree". The construct *Perceived barriers for buying organic food products* was composed by four items, with response categories ranging from "difficult" to "easy", as well as "strongly disagree" to "strongly agree". Finally, the *Subjective knowledge* or *Perceived uncertainty* construct was measured by a five-item scale developed by Flynn and Goldsmith 1999 apud Thøgersen (2006). The response categories ranged from "strongly disagree" to "strongly agree".

3.3.4. Values

Finally, for measuring values' dimension, a complete version of Schwartz's Portrait Value Questionnaire (PVQ) was used (SCHWARTZ, 2005). The PVQ includes short verbal portraits of 40 imaginary persons. Each portrait describes person's goals, wishes or aspirations that point implicitly to the importance of a value. For each portrait, respondents are asked: "How much like you is this person?". A six-point graded scale of answers was used, ranging from "not like me at all" to "very much like me".

4. Results and discussion

4.1. Socio-demographic profile of the sample

The population sample interviewed consisted of individuals of at least 18 years old which were in charge of or sharing the responsibility of the household's grocery shopping in the two

analysed distribution channels. The data collected was analysed using the software SPSS 16. Table 1 presents the socio-demographic profile of this sample.

The profile reflects the prevalence of women in the sample in both supermarket chain and farmers' market cases (79.1% and 69%, respectively). It also reflects the medium educational level of the respondents, since more than 45% have completed the secondary school. Most of the households have five or more individuals (family households) and the ages vary between 31 and 65 years old in the case of the supermarket chain respondents. The farmers' market case, in turn, presents a narrower age range (older group), between 46 and 65 years old. Approximately 34% of the respondents do not have children or the children do not live with them. In the supermarket chain case, most of the children are between 6 and 12 years old. Within the farmers' market the age range varies between 19 and 24 years old, consistent with an older sample, as indicated above. The monthly household income is quite similar in both cases, with most of respondents presenting monthly

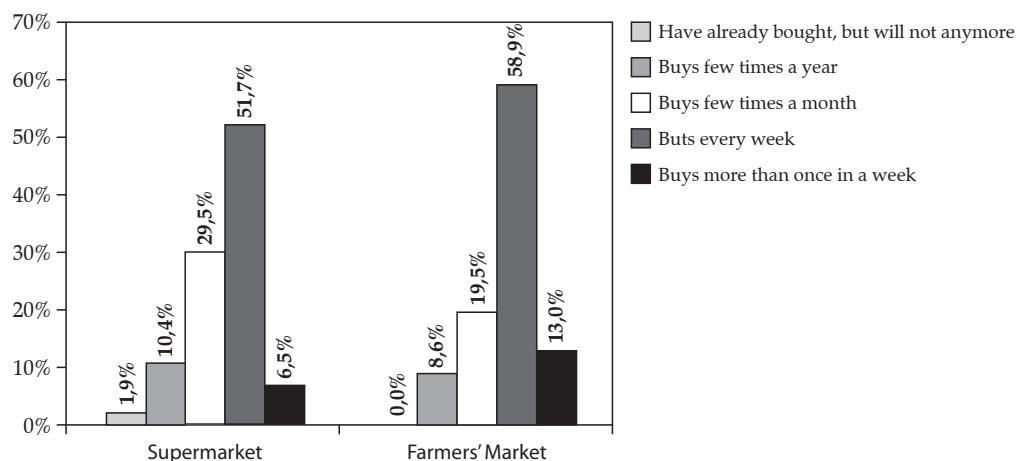
household incomes from 1212 to 2019. Regarding household status, in Brazil, young people most lived at home with either both or at least one of their parents and do not purchase food products. It is also important to mention the low cost of unskilled labour which allows that professionals such as maids are quite common in the high income households and among their duties is purchasing and cooking food for the family. This may explain the low education respondents found in both channels.

4.2. Respondents' purchase frequency of organic products

Figure 3 shows the purchase frequency of organic food in both analyzed distribution channels (penetration level).

Results indicated that most respondents in the supermarket chain and farmers' market buys organic food regularly, "every week" (51.3% and 59.3% respectively), followed by 30% and 19.3% of respondents that buys it "few times a month". This indicates a high penetration level within respondents' household.

Figure 3. Consumer adoption of organic food in two distribution channels in Porto Alegre



Source: Prepared by the authors.

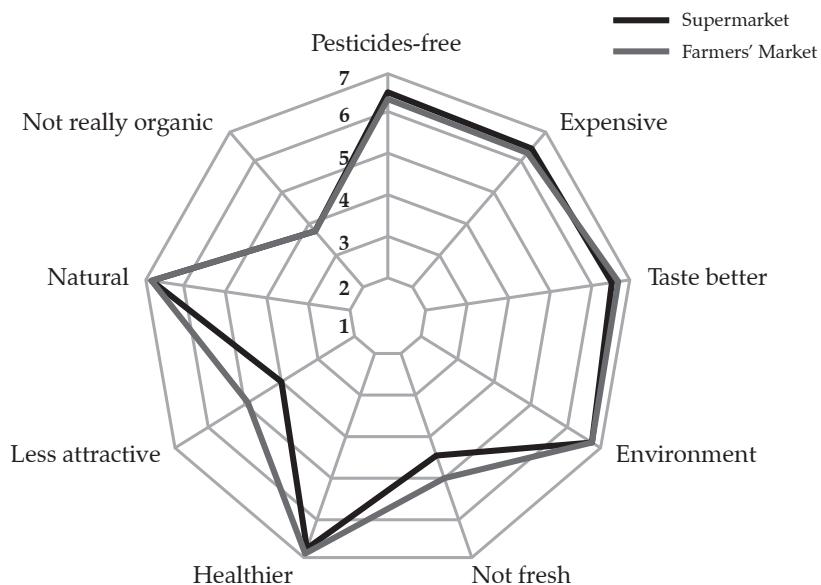
4.3. Dimensions of beliefs

Figure 4 presents the results obtained with the nine behavioural beliefs investigated.

The highest mean value (6.82 for supermarket and 6.73 for farmers' market) was found in the item "Healthier" indicating that respondents believe that organic foods are indeed better for consumers' health if compared to conventional products. The lowest mean was obtained in the item which asked how likely was that tomatoes sold as "organic" were not really organic. Respondents considered this option highly "unlikely" (3.82 for both) indicating a belief in the organic certification process. Such results end up confirming that organic products rely on credence attributes, at least in the Brazilian market. Respondents believe that organic products are healthier, tastier, more natural and better for the environment, although being less attractive and more expensive than conventional ones, something that corresponds to the Brazilian market reality.

Finally, as shown in Figure 4, beliefs related to consumption of organic products seem to be very similar for respondents in both distribution channels. Therefore, variance analysis (ANOVA, p -value=0.05) was carried out to investigate possible significant mean differences. Significant differences between the distribution channels were found in only three items: "Pesticides-free" (6.54 for supermarket and 6.32 for farmers'), "Less attractive" (4.79 for farmers' market and 3.94 for supermarket) and "More natural" (6.74 for supermarket and 6.58 for farmers' market), indicating that respondents from the supermarket chain believe organic products are a bit more attractive, more natural and pesticide free if compared to the means attributed by respondents in the farmers' market. Respondents from the farmers' market seem to be a bit more sceptical, perhaps due to their slightly higher level of "subjective knowledge" about organic food. Respondents from the supermarket tend to have a more stereotypical, romantic view of natural products.

Figure 4. Belief importance in each organics' distribution channel



Source: Prepared by the authors.

Table 2. Descriptive Statistics

Buying intention	Supermarket		Farmers' Market	
	Mean	S.D.	Mean	S.D.
I intend to buy OT instead of conventional ones in the near future (definitely do not/ definitely do)	6.02	1.27	6.07	1.36
I will buy OT instead of conventional ones in the near future	6.08	1.25	6.11	1.29
<i>Cronbach's Alpha</i>	0.809		0.749	
Attitudes towards buying organic tomatoes				
Buying OT instead of conventional ones would make me feel... (bad/good)	6.43	0.83	6.43	0.98
Buying OT instead of conventional ones would feel like doing the morally right thing	6.48	0.96	6.39	1.29
Buying OT instead of conventional tomatoes would make me feel... (unpleased/pleased)	6.51	0.94	6.63	.070
Buying OT instead of conventional ones would make me feel like a better person	6.30	1.15	6.44	1.08
Buying OT instead of conventional tomatoes would be... (harmful/beneficial)	6.74	0.90	6.53	0.718
Buying OT instead of conventional ones would feel like making a personal contribution to something better	6.58	0.90	6.53	1.01
<i>Cronbach's Alpha</i>	0.803		0.804	
Subjective norm				
Most people who are important to me think that I should buy OT	5.75	1.36	5.56	1.52
Most people who I value would buy OT instead of conventional ones*	6.16	1.28	5.76	1.70
<i>Cronbach's Alpha</i>	0.512		0.425	
Availability				
OT are generally available in the shops where I usually purchase foods*	4.94	2.10	3.82	2.21
In general, for me to buy OT instead of conventional ones would be easy*	5.14	1.86	4.51	2.09
Buying OT would require extra effort* R	4.04	2.43	3.59	2.20
If I want to, I could easily buy OT instead of conventional ones	5.83	1.53	5.27	1.99
<i>Cronbach's Alpha</i>	0.495		0.640	
Subjective knowledge / Perceived uncertainty				
I do not feel very knowledgeable about organic food*	3.18	2.21	2.73	2.05
Compared to most other people, I know less about organic food *	3.79	2.36	3.21	2.29
I know pretty much about organic food * R	2.95	1.97	2.38	1.62
When it comes to organic food, I really don't know a lot	3.15	2.27	2.76	2.15
Among my circle of friends, I'm one of the "experts" on organic food* R	4.06	2.01	3.31	1.87
<i>Cronbach's Alpha</i>	0.839		0.750	

Means based on a 7-point Likert scale. * Means difference at the 5% level was significant.

R = reverse item. OT = organic tomatoes. Supermarket: n=263. Farmers' Market: n=187

Source: Prepared by the authors.

4.4. Dimensions of attitudes

Table 2 presents the mean, standard deviation and reliability analysis for the attitude scales.

Acceptable construct reliability was found in both distribution channels (range: 0.512 to 0.839), except "Perceived social norms" for farmers' market (0.425) and "Perceived barriers" for supermarket (0.495). The fact that the "Perceived social norms" is a two-item scale probably induced the observed lack of consistency. In the

latter, the reverse item (Buying OT would require an extra effort) reduced the scale reliability as its correlation with the other items was found too small. If deleted, reliability would increase to satisfactory levels (Cronbach's alpha 0.565 and 0.690 for supermarket and farmers' market, respectively).

Results presented at Table 2 show a positive intention towards organic food purchase and consumption (range: 6.02 to 6.11), consistent

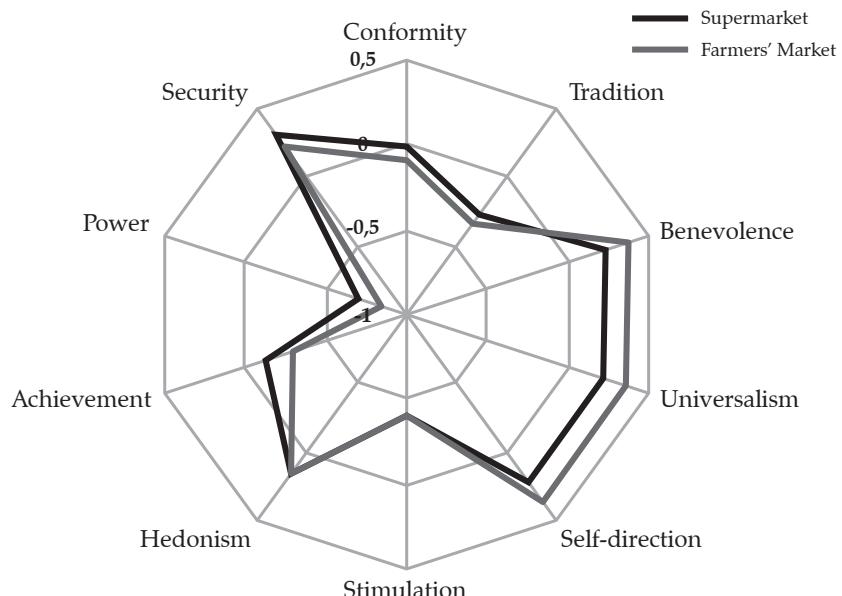
with the high penetration level presented in the aforementioned Figure 3. Consumers seem to socially accept organic food and demonstrate to have a perceived control about organic food purchasing. High means values (range: 6.30 to 6.74) also demonstrated a positive attitude towards buying organic tomatoes, with no statistical significant differences between channels. With regard to barriers for buying organic food, respondents perceived more availability at supermarket, probably due to products seasonality, which are more evident at farmers' market. Uncertainty is more noticeable among supermarket respondents. At farmers' market, respondents seem to have more refined subjective knowledge about organic food, but they don't title themselves as "experts" (3.31) on this theme. Only one item of the "Perceived uncertainty" construct didn't present significant difference ($p\text{-value}<0.05$). This item possibly has been misunderstood by the respondents.

4.5. Dimensions of values

The average for each value is showed at Figure 5.

The analysis of the data shows that, among Schwartz's ten motivational types, "Self-direction" (0.2415) was the dominant value guiding respondents' purchase of organic food in the supermarket chain, whereas in the farmers' market, the dominant value was "Benevolence" (0.3748). The lowest index was found in the "Power" type for both distribution channels. Statistical significant differences ($p\text{-value}<0.05$) between groups were found in four motivational value types: Benevolence; Universalism; and Self-direction obtained higher means in the farmers' market group, confirming that these respondents represent a different consumers' segment, more oriented towards societal issues. On the other hand, the value "Achievement" obtained a higher mean for the supermarket chain group.

Figure 5. Centered value scores of Schwartz's ten motivational domains



Source: Prepared by the authors.

Interestingly, results confirm that respondents from the farmers' market represent a specific segment not only in regard to their buying characteristics (frequent, "heavy users" of organic products) but also in relation to their behavioural profile. Consumers showed very positive attitudes towards organic products and values oriented to society, signalling a more collective way of life.

5. Conclusions

The preceding literature review sheds light on several key issues and elucidates our current state of knowledge pertaining to consumer behaviour towards organic food, pointing to gaps in the understanding of this field of study.

The literature points out that there is a gap between attitudes and behaviour, meaning that consumers are positive about organic food, but usually do not buy it. The findings of this study showed an alignment between positive attitude and consumption behaviour among the surveyed consumers. It also shows an overlapping of individual values over collective ones, following results by a previous study carried out in Brazil (VILAS BOAS; SETTE; BRITO, 2006). Individual attitudes towards buying organic food are primarily based on beliefs about benefits (healthy, at first place, as well as environment friendly and natural), while beliefs about visual or risks are much less influential (such as less attractive and not been really organic). It also suggests that values regarding benevolence are associated to collective beliefs while those related to self-direction and hedonism refers to individual beliefs. In this study, consumers purchasing in farmers' market are older and more interest on collective issues than consumers shopping on supermarkets, where individual values were more present. Although this difference according to the distribution channel was seen, Brazilian consumers interviewed show consistency on their beliefs and values towards a positive attitude and knowledge on organic food.

The study findings also provide significant contribution to the stakeholders involved on the production of organic products, being those small or medium family landholdings, retailers or the food processing industry itself. For example, the knowledge of attributes more valued by consumers can help retailers to play the role of coordinators of this supply chain stimulating producers to adhere to organic certification, helping them to upgrade their production practices and improve their income. Public policies can be implemented to foster the production of organic products, aiming to satisfy the demand and availability of the products in the market.

Those interested in sustainability issues and focused on the development of the organic food market can use the results to support managerial strategies to deal with the growing demand for organic food. Urban Brazilian centers shows openness and willingness to buy these products (WILLER and KILCHER, 2009). At the retail level, an initial phase in the distribution of organic food was driven by small food specialty shops and health food stores. However, large food retail chains (multinationals such as Carrefour or Walmart, selling mainly conventional products) entered the market and are gaining market share as part of their positioning strategy.

In terms of theoretical implications, the hypotheses were tested and results shows that the replication of the CONDOR's TBP Theoretical Model in the Brazilian context presents good fit indexes, partially validating the model. The proposed model is adequate to explain consumer behaviour towards organic tomatoes in Porto Alegre. Only the constructs perceived uncertainty and subjective norm does not have a significant influence on buying intention, as well as the construct availability in regard to behaviour. The results clearly shows that subjective norms are not well accepted in the Brazilian context, showing that third people's opinions are not decisive in organic products' buying intentions. Personal evaluation, based on subjective knowledge about this matter is therefore more decisive,

suggesting that marketing strategies should be oriented towards the final consumer. Frequency of purchase (behaviour) is weakly determined by buying intentions, demonstrating the existing gap between consumers' discourse (attitudes) towards organic products and their actual behaviour (frequency of purchase) - i.e., people's behaviour is not always consistent with their attitudes. Consumers often experience internal tensions when balancing their own desires with moral behaviour that favours societal well-being and evidence is clear that consumers' ethical concerns and attitudes are not always manifest in actual behaviour (e.g. CARRIGAN and ATALLA, 2001).

While comparing these preliminary findings with the Condor project, it is important to distinguish household lifestyle and income in Brazil. The family size is generally larger in number of people, young adults live with their parents and food shopping may be in charge of a maid. Besides these differences, the results found were not as different from the EU as expected. This issue should be clarified and deserves in-depth research. On the other hand, as in European context, the unawareness and unavailability of organic food is considered main reasons for not buying organic. This finding represents an opportunity for supermarkets chains to improve their supply chain management in order to reduce the uncertainty of consumers finding the organic product on their shelves. This supply guarantee would possibly attract to the supermarkets those consumers more collective-oriented that buy on farmers' market.

An additional objective of the present study was to compare some of the results obtained within the Condor Project in the context of Porto Alegre, providing a comparison between organic consumption trends in developed and developing countries. One of the most import conclusions from the Condor Project in Europe is that consumer choices of organic foods seem to be grounded in similar reasons in all analysed countries. Individual attitudes towards buying organic food are based on benefits beliefs (e.g.,

healthier, tastes better, eco-friendly). Beliefs about risks and costs are less influential. The results show, however, that decisions about buying organic food are not only based on individual attitudes: social reasons seem to be more relevant. The project results also came up against the unawareness and unavailability of organic food; both have been considered reasons to give up before even trying consuming them (THØGERSEN, 2006). Similar results were found in Porto Alegre.

Finally, organic certification is still a new issue in Brazil but those consumers who buy these products have already developed knowledge and trust on a credence attribute. This suggests that a more transparent process with more information provided to end consumer would increase the organic market in Brazil.

6. Limitations and future avenues for research

It is important to state that this study focused on the consumer behaviour towards organic food products, with analyses based on a non-probability sample of respondents in Porto Alegre, Brazil. Hence, our findings apply specifically within the demographic characteristics of the sample, and descriptive generalizations to the broader public must be treated with caution. In the future, multivariate statistical analysis (such as factor and cluster analysis) could be applied, aiming to uncover distinct market segments within organic consumers.

In addition, further research on organic consumption should include other emerging countries, such as China, India, among others. The understanding of organic consumer behaviour in these countries comparing to more developed such as EU and US consumers would show if there is a trend on the way this market evolves.

If consumers hold several ethical concerns/pro-social attitudes but fail to behave accordingly, then the existing theories of ethical consumer

decision-making must evolve to explain this discrepancy (CHATZIDAKIS, HIBBERT and SMITH, 2007). In that sense, an important theoretical contribution of this work is the application of the Theory of Planned Behaviour in organic food research in the Brazilian context, showing theory applicability. Yet, future studies should consider the addition of other explanatory variables on the ethical consumer decision-making context, such as ethical obligation and self-identity (see for instance DE MAGISTRIS and GRACIA, 2008).

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