A profile of the Brazilian consumers of organic products

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The purpose of this paper was to describe the lifestyle of consumers of organic products in Brazil and identify the clusters within that market. To that end, a quantitative and descriptive study was carried out among 400 people responsible for buying food for their families, during June 2010. The data were analyzed using descriptive statistics and cluster analysis. The respondents were found to believe that organic products are tastier, safer for health and hygiene and look better than conventional products. Furthermore, some features of organic products were found to be rooted in the perceptions held by the respondents, such as the idea that consuming organic products would be good for the health and that their production would respect the preservation of the natural environment. The factors influencing the consumption of these products are: participation in social or environmental projects, level of information about proper nutrition and disease prevention and health, which is the most relevant issue in the consumption of these products. Organic products were found to be better evaluated in accordance with increasing levels of education, income and frequency of consumption. The results indicate the existence of four clusters: the “indifferent sick”, “convinced user”, “occasional user” and “aware rich non-user”.

Key words: Applied marketing, market segmentation, food, organic vegetables, health, natural environment, Brazil.

INTRODUCTION

While many studies have examined the demographic characteristics of consumers of organic products, few studies have discussed the psychographic aspects of such consumers. In an extensive literature review on consumers of organic products, Hughner et al. (2007) noted this fact and suggested that an approach focused on the lifestyle of consumers may provide a better generalization of consumer behavior. According to those authors, dimensions such as sources of information, consumption status, product concept and motivation to buy are essential when attempting to determine lifestyle.

Organic foods are considered to be those produced without the use of chemical fertilizers, antibiotics, hormones and other substances commonly used in food production (Archanjo et al., 2001). An organic product is perceived by consumers, primarily as a healthy and safe food when compared to products originating from “industrialized agriculture” (Hoefkens et al., 2009). Therefore, the concept of organic produce is associated with health, nature conservation, flavor and local development (Trevizan and Casemiro, 2009; Mondelaers et al., 2009).

Although some studies have arrived at favorable results that relate the consumption of organic products to health (Kummeling et al., 2007, Ness and Powles, 1997; Steinmetz and Potter, 1996), there is insufficient scientific evidence to recommend an unconditional change from “conventional” to organic products (Hoefkens et al., 2008; Williamson, 2007).
A review of empirical studies carried out by Krarup et al. (2008) shows that consumers of organic products are more nutritionally aware than non-consumers, and consequently the best diet has implications for their health, whether it consists of organic or conventional foods.

A growing number of consumers have sought to incorporate organic foods into their diet and that of their families due to the influence of the popular and specialized media, health professionals and/or their friends. This is shown by the growth in demand for such products around the world in recent years (Hugner et al., 2007). In developed countries, the rate of growth was over 63% between 2001 and 2005, as estimated by Kortbech-Olesen (2003).

In the United States, the share of organic food in total food sales increased from 0.8% in 1997 to 2.5% in 2005 and the prospects for this figure reaching 5 to 10% are strong (Nutrition Business Journal, 2006). The total organic industry grew 19% in 2007 and 13% in 2008, according to Nutrition Business Journal (PBT Consulting, 2010). Recent estimates from the International Federation of Organic Agriculture Movements (IFOAM) and the Food and Agriculture Organization (FAO) show that the demand for organic products worldwide should reach between US$ 61 and US$ 94 billion by 2010 (Buainain and Batalha, 2007).

In Brazil, as noted by Vilela (2002), there are virtually no reliable statistics on the demand for organic products. Estimates suggest a consumer market of US$ 250-300 million (compared with US$ 20 billion and US$ 18 billion in Europe) with growth of 25% per year (SEBRAE-SP, 2009; Salomão, 2006).

This paper aims to describe the characteristics of the lifestyle of consumers of organic products and identify clusters within that market in Brazil.

**MATERIALS AND METHODS**

We conducted a single cross-sectional quantitative-descriptive study (Malhota, 2009). The research universe consisted of the inhabitants from the urban area of Campo Grande, capital of Mato Grosso do Sul [MS], southwest of Brazil, at least 18 years of age, belonging to social classes A, B, C, D or E, who were, alone or jointly, responsible for buying food for their family. Four hundred (400) interviews were conducted, based on a 95% confidence level and maximum standard error of 5%, in June 2010.

The sample complied with the criterion of proportionality in terms of gender, age and place of residence, based on data from the IBGE (Brazil’s official statistical agency) and PLANURB (institute of urban planning in the city of Campo Grande-MS). The probability sampling method was adopted with multiple strata, with successive draws from sub-regions, blocks and homes, without replacement, according to *Critério Brasil* (ABEP, 2009). These strata are mutually exclusive, where each element of the population is assigned to a single stratum (Malhotra, 2009).

A structured questionnaire was used to collect data, with face-to-face interviews (direct examination) in the home. A filter question was used to identify whether the respondent was responsible for buying food in the residence.

In order to characterize the lifestyle of the consumer of organic foods, the following variables were addressed: a) socio-demographic characteristics, including gender, socioeconomic class, education, age and health status, b) consumption status, including the frequency of consumption, were measured using a discrete scale c) the level of consumer awareness, covering variables 1 to 8 in Table 1 was measured using a discrete scale, and d) the product concept (variables 9 to 16), to check the interviewee’s perception of organic products, was measured using a Likert scale from 1 (strongly disagree) to 5 (strongly agree) points. These variables were extracted from various national and international studies, particularly that of Pellegrini and Farinelli (2009).
Table 2. Average scores of the clusters.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGINFO</td>
<td>1.44a</td>
<td>1.52b</td>
<td>1.97b</td>
<td>2.00b</td>
</tr>
<tr>
<td>HEALTH</td>
<td>3.94</td>
<td>5.00b</td>
<td>4.98a</td>
<td>4.80b</td>
</tr>
<tr>
<td>CHEAP</td>
<td>2.29</td>
<td>4.81</td>
<td>1.07a</td>
<td>0.92a</td>
</tr>
<tr>
<td>TASTE</td>
<td>3.19a</td>
<td>4.73b</td>
<td>4.45b</td>
<td>3.21a</td>
</tr>
<tr>
<td>AGROTOXIN</td>
<td>2.62</td>
<td>4.85b</td>
<td>4.90a</td>
<td>4.82a</td>
</tr>
<tr>
<td>SAFE</td>
<td>3.29</td>
<td>4.92b</td>
<td>4.90a</td>
<td>4.76a</td>
</tr>
<tr>
<td>APPEAR</td>
<td>3.26</td>
<td>4.87a</td>
<td>4.67a</td>
<td>2.82</td>
</tr>
<tr>
<td>ENVIRON</td>
<td>3.44</td>
<td>4.92a</td>
<td>4.97a</td>
<td>4.76a</td>
</tr>
<tr>
<td>BRAND</td>
<td>3.42</td>
<td>4.75a</td>
<td>4.84a</td>
<td>1.90</td>
</tr>
</tbody>
</table>

Means followed by the same small-case letter in the line do not statistically differ among themselves according to the Tukey test at 5% probability.

Data analysis, carried out using the software Minitab (Minitab, 2010), was divided into two stages. The first sought to characterize the lifestyle of consumers of organic products by analyzing the source of information, consumption status, product concept and purchase motivation. For this step, bivariate analysis was performed using descriptive statistics and cross sectional analysis, with the Student t test and chi-square test being applied with a significance level of 0.05.

The second stage of analysis involved an attempt to identify segments of actual and potential consumers. For this purpose, agglomerative hierarchical cluster analysis (Hair et al., 2009) was performed using the variables from 8 to 16 (Table 1). Cluster analysis is intended to exhibit segments that show homogeneity (intra-segment) and external heterogeneity (Inter-segment). It begins with a segment for each respondent, in this case 400 segments, and then, while trying to minimize the internal variation of the groups formed, begins to group the closest until a single segment is formed (Hair et al., 2009).

To select the optimal number of segments, the percentage change in agglomeration coefficients was observed, which precisely indicates the heterogeneity within the segments, along with a graphical analysis of the results (Hair et al., 2009). After selecting the number of segments, they were identified through analysis of their consumption behaviors (Table 2) and their intersections with the other variables contained in the questionnaire.

RESULTS AND DISCUSSION

Lifestyle of consumers of organic products

Figure 1 shows the socio-demographic profile of the sample. Social classes A and B account for nearly 30% of the sample, while classes D and E constitute less than 16%. Just over 21% are elderly, and 30.5% are literate, that is they have no primary education. It is also important to note that half of the respondents have chronic degenerative diseases (diabetes, hypertension and cardiovascular diseases).

Regarding consumption status, it is interesting to note that the majority (74.5%) of respondents claims to have consumed organic products at some time, being frequently (20.3%), sporadically (28.8%) and rarely (25.3%). A study conducted by Teixeira (2006), in Teresina, capital of the state of Piauí, Brazil, shows that 27.3% of respondents had never bought organic products and just over 20% claim to consume them daily in their meals. These results are similar to those of the present study.

When analyzing the perception of respondents about their frequency (status) of consumption, it is noted that, although there is great homogeneity in the responses, people who had never consumed organic products have significantly lower scores for almost all the variables related to investigated attributes (variables 9 to 16). This seems to show that when they start to consume organic products, people perceive them more positively than non-consumers, regardless of whether consumption is occasional or frequent.

When assessing the distinction between the consumers and non-consumers of organic products, Tacconi (2004) also found this difference in perception, especially in relation to the price, with non-consumers judging them to be more expensive than the consumers. This pattern was also found in a study by Hoefkens et al. (2009), where the perception that organic products are superior to conventional products was found to have a positive relationship with the level of consumption.

In relation to the concept of organic products, it can be seen that the respondents not only nurture a positive image of organic products, but also perceive them as being superior to conventional ones. Thus, for the respondents, organic products are tastier, safer for health and hygiene and look better than conventional products. Furthermore, some features of organic products were found to be rooted in the perception of the respondents, such as the idea that consuming organic products would be good for the health and that their production would respect the preservation of the environment, mainly because they are produced without the use of agrotoxins.

Several consumer studies (Jensen et al., 2011; Brown et al. 2009; Knopp et al., 2004; Archanjo et al., 2001)
have found that organic products are consumed precisely because they are perceived as healthier, of greater nutritional value and bring well-being due to their flavor or because they are free of agrotoxins and do not harm the environment.

When performing a cross-analysis between the image consumers have of organic products and the socio-demographic data, we find high homogeneity in terms of gender and age. Regarding education, it can be seen that as the higher the level of education among the sample, the greater is their perception that organics are good for health, are safe for health and hygiene and are produced without the use of agrotoxins and so help preserve the environment. The perception that these products are tastier was also higher among people who had at least primary education. The variables related to price and brand only differ among the post-graduates, who believe that the brand does not matter and that organic products are more expensive than conventional ones. The perception related to the appearance of organic products was the only factor that displayed the same pattern of behavior in all the levels of schooling.

Several studies have shown the influence of education on the consumption of organic products (Pearson et al., 2011; Ngobo, 2011; Yin et al., 2010; Gracia and Magistris, 2007), that is, education level is significantly higher among people who consume organic products than among non-consumers. This behavior may be related to greater concern among more educated people in relation to the environment, as well as their level of information about the harmful effects of agrotoxins on health and the attributes of the organic products themselves (Darolt, 2001a).

Regarding socio-economic class, it is clear that the cutoff point for almost all the attributes of product concept (9 to 16) is between classes B and C, that is, there are two groups with different perceptions: upper class consumers (A and B) and medium-low class consumers (C, D and E). For the factors related to health, taste, appearance and form of production (more sustainable), the upper class (A and B) presented higher scores. That is, the higher the income of the population, the better the concept regarding organic produce.

The opposite is true in relation to price and brand perception, that is, the higher scores found in the lower-middle class segment (C, D and E). Furthermore, regarding food safety and agrotoxin-free production, the middle-lower is divided, with the upper classes (A and B), obtaining the highest scores, followed by the middle class (C) with a middle score, and the lower classes (D and E), with the lowest scores. This, once again shows that the income level of consumers influences their perception of organic products compared to conventional ones.

This positive relationship between the consumption of organic products and income has also been found in other studies (Haghiri et al., 2009; Suszek, 2006). This
occurs, according to Trevizan and Caremiro (2009) and Aryal et al. (2009), because the price of organic products is higher than that of conventional products, making their consumption by low-income people difficult. Moreover, being more demanding and having greater access to information, consumers with higher purchasing power seek healthier consumption in organic products.

With reference to the purchase motivation, the results reveal that more than half (56%) claims to participate in activities related to social and environmental causes. By means of the chi-square test, participation in such activities was found to be related to the social class and educational level of the respondents (Figure 2), since the people that participate in such projects have higher income and education levels. Furthermore, there is also a significant relationship between such activities and the consumption of organic products, since among those who participate in social or environmental projects, there are more people who have consumed organic products than among those do not participate.

This "environmental behavior" or aware behavior, has also been identified as a factor in the decision to organic food consumption in other studies (Magistris and Gracia, 2008; Tsakiridou et al., 2008; Pearson et al., 2007; Hugner et al. 2007; Soler et al., 2002; Squires et al., 2001). According to Darolt (2001b), members of this group of consumers, even when living in cities, seek contact with nature. A study by Lombardi et al. (2003) showed that concern for the environment is the factor that most influences the decision to purchase organic produce.

Another factor that influences the consumption of organic products is the respondents' level of information. Those who reported having information about correct nutrition and disease prevention are more likely to belong to a group of organic consumers. A similar result was found in a review of empirical studies carried out by Krarup et al. (2008), in which it was found that consumers of organic products are more nutritionally aware than non-consumers. When performing linear regression using
the frequency of consumption as the dependent variable, Teixeira (2006) noted that probability of buying organic foods increased with the greater the level of knowledge, which was found to be the factor with the highest explanatory power in that study.

Despite these various factors, the present study shows that health is the most important issue for the consumption of organic products. Other research carried out in several countries (Chakrabarti, 2010; Magnusson et al. 2003; Fotopoulos et al. 2003; Zanoli and Naspetti, 2002; Bourn and Prescott, 2002) have found the same result.

This behavior occurs due to a number of factors. In Brazil, a trend towards healthier eating has been noticed, which started with the highest income classes, but that is now reaching the low-income population (Oliveira, 2010), and as we know, organic foods are associated with health and safety by most consumers (Hoefkens et al., 2009, Magnusson et al., 2001). Moreover, concern about health has been the main reason for the consumption of organic products especially among people with lower consumption frequency or who are starting to consume this type of product (Schifferstein and Oude Ophuis, 1998), which is the case of more than 50% of this sample.

This result is also linked to the fact that, with the greater dissemination of information, consumers are now also concerned with the processes by which the food they eat is produced, especially with issues such as contamination by pesticides, chemical fertilizers or any other type of chemical, of which organic production is free (Chakrabarti, 2010, Fotopoulos et al., 2002).

Furthermore, this study also reveals that the only factor in which organic products is at a disadvantage is their price, which is perceived as being higher than that of conventional products. Moreover, price is considered a major constraint for the consumption of organic products, according to Sangkumchaliang and Huang (2012) and Borguini (2002).

**Customer segmentation**

To check for the possible existence of distinct segments among the respondents, an agglomerative hierarchical cluster analysis was carried out, according to Hair et al. (2009), using the variables from 8 to 16, related to the concept of organic products. Once the analysis was completed, the clustering coefficients, which indicate the degree of homogeneity of the segments/clusters formed, together with the graphical analysis of results, indicated four clusters.

When examining the possibility of segmentation among Sicilian consumers of organic products, Chinnici et al. (2002) also found four clusters. The first, “pioneers”, who occasionally consume organic products and are mainly motivated by curiosity; the second cluster, “nostalgic”, is made up of older people who associate organic food with natural products consumed in the past; the third “health conscious”, have consumed organic products for some time and shop at specialty stores, the fourth “pragmatist”, is more concerned with price, which hampers the consumption of such products.

The same number of segments was found by Nie and Zepeda (2011) in the USA. The first, the “Rational consumer”, cares about the taste and health benefits/goodness of food and considers disease prevention and physical fitness when planning his/her diet; the second, the “adventurous consumer,” attributes greater value to the health and safety of food and is the cluster that most consumes organic products; the third, the “careless consumer” is concerned only with the convenience and taste of food, has little interest in cooking and does not follow any type of diet; the last, the “uninvolved conservative”, is concerned with convenience, freshness and food safety, and is the segment with the lowest levels of income and education.

After selecting the number of segments, it was necessary to characterize them. To this end, the average of the scores assigned to each segment was analyzed (Table 2) and later, in an attempt to better understand each cluster, the chi-square test was used to evaluate the association with the variables related to consumer status, purchase motivation and the socio-demographic data.

The first segment, “indifferent sick/unhealthy”, is the largest in the sample (34.9%). In this group, 72.93% are women, 90.98% have completed secondary education and 57.89% belong to class C. Most do not participate in social (66.17%) or environmental (90.23%) activities. More than half state that there is someone in the family with some kind of chronic degenerative disease, hypertension constituting 36.84%, while 92.48% use allopathic medicines. In this segment, 87.22% believe they have information on how to prevent diseases and the main sources are the TV (61.65%) and health workers (14.29%). This segment includes the lowest number of people who claim to have information about correct diet (76.69%) with the main source also being the TV.

When looking at the scores given by this group, it may be noted that, except for the variables price and brand name products, all the awarded scores were low (around 3), suggesting the indifference of this segment regarding the subject.

The second segment, the “convinced user”, represents 21% of the sample, in which 72.5% are women, 92.5% have completed secondary education and 85% belong to classes C, D, E. Again, most members do not participate in social (65%) or environmental (87.5%) activities. Just over 40% state that there are family members with a chronic degenerative disease (20% with hypertension and diabetes). In this group, 95% use allopathic drugs and 86.25% believe they have information on how to prevent diseases, the main sources being the TV (67.5%)
and health workers (13.75%). The people who claim to have information on how to eat properly account for 83.75% and the main information source is TV.

When examining the scores given to the variables, we find they are all extremely high (close to 5) and that the perception of this group is very similar to that of cluster 3, differing only in the level of information, this second group judged to be smaller, and especially in relation to price, since this is the only cluster that judges organic products to be cheaper than conventional ones.

Segment 3, the “occasional user”, represents 27.8% of the sample. In this group, 73.58% are women, 19.81% have at least higher education and 89.63% belong to the middle-upper classes (A, B and C). Approximately half participate in social projects (51.89%) and the majority (86.79%) do not participate in environmental activities. About 50% say there is someone in the family with some kind of chronic degenerative disease, particularly hypertension (31.13%). This segment has the lowest percentage of use of allopathic medicines (89.62%). More than 94% believe they have information on how to prevent diseases and the main sources are the TV (73.58%) and specialized professionals (10.38%). The people who claim to have information about eating correctly represent 88.68% and the main sources are the TV (62.26%) and specialized professionals (16.98%)

This group, like the segment “convinced user”, attributes high scores to almost all the variables related to the concept of organic (9 to 16), the only difference being in relation to the perception of price, since the average score (1, 07) indicates that, for cluster 3, organic products are not cheaper than conventional ones.

Finally, the fourth segment, the “aware rich non-user”, is the smallest of the four, representing 16.3% of the sample, and has the lowest percentage of women (61.29%). Nearly 21% have, at least, higher education and 56.45% belong to the upper classes (A and B). Just under half (48.39%) participates in social projects and most (86.79%) are not involved in environmental activities. About 50% state that there are people in the family with some kind of chronic degenerative disease, 29.03% with hypertension and 17.74% with diabetes. This segment has the highest percentage of use of allopathic medicines (98.39%). The same percentage (98.39%) believes they have information on how to prevent diseases, the main source of which is TV (82.26%). People who claim to have information on how to eat properly represent for 95.16%, the highest percentage of the four segments, with the main source being the TV (74.19%).

When looking at the scores given by this group, it is interesting to note that the low scores were attributed to factors related to taste, appearance and brand while the highest scores were given to health, safety and the fact that organic products are free of agrotoxins and preserve the environment.

There are some differences between the segments identified in this study in Brazil and those characterized by Chinnici et al. (2002) in Italy and Nie and Zepeda (2011) in the USA. This may be due to cultural - especially when it comes to food - and economic differences between the three peoples. This represents an opportunity for future studies to include other countries and cultures, in order to make interesting comparisons for both scholars and in relation business strategies, especially since food globalization is the subject of several studies in Brazil (Bleil, 1998) and around the world (Poulain, 2004).

Conclusion

The purpose of this study was to describe the lifestyle characteristics of consumers of organic products and identify the segments within this market in Brazil. To that end, we carried out a quantitative and descriptive study among 400 people who bought food for their respective families, during June 2010. Data analysis was performed using descriptive statistics and cluster analysis.

The results show that 74.5% of the people that consume organic products believe that they taste better, are safer in terms of health and hygiene and look better than conventional products. Moreover, it is clear that some characteristics of organic products are rooted in the perception of the respondents, such as the idea that consuming them would be good for the health and that their production would respect the preservation of the natural environment, mainly because they are produced without the use of chemical fertilizers and pesticides.

Factors influencing the consumption of these products are: participation in social or environmental projects, the level of information about correct nutrition and disease prevention. Health is the most important issue related to the consumption of these products, and the only factor representing a disadvantage is the price. The higher the levels of education, income and frequency of consumption of the respondents, the higher they rate organic products. Four different clusters with distinct preferences and socio-demographic characteristics were identified: Indifferent sick, convinced user, occasional user and aware rich non-user.

Another important point is the low rating given by all the clusters to the level of information about these products. This also constitutes an opportunity for corporate communication strategies as well as government policies related to informing the population of the benefits of organic products for health and the environment.

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