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Consumers of organic food and sustainable development in Brazil

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Abstract

Purpose – The purpose of this paper is to investigate the reasons why the Brazilian consumer of organic foods chooses this type of food in the retail sector, considering sustainable development.

Design/methodology/approach – This was a descriptive study including an exploratory phase. Regarding the methods of research, two focus groups (FGs) were developed in the qualitative phase, and then structural equation modelling was used by means of a cross-sectional survey in a quantitative design. The sample was non-probabilistic, intentionally non-random, for convenience and accessibility ($n = 560$). Organic food consumers were addressed in different types of food retail: supermarkets, restaurants and specialised retailers.

Findings – Only one of 12 hypotheses was not confirmed. The FGs provided important information for the development of the questionnaire used in the survey. The endogenous construct, intent to purchase, showed a correlation coefficient of 41 per cent ($R^2 = 41$ per cent), indicating that 41 per cent of their variations are explained by the exogenous constructs. It can be considered that one of the academic contributions of this research was to develop a model that will drive how the purchasing behaviour/consumption of organic food in Brazil occurs.

Practical implications – Considering the results of the variables of this research, retailers can create advertising campaigns that have an appreciation for the environment and quality of product and availability (logistics) in relation to organic food as the message content, because these variables can motivate the purchase. It is also suggested that the layout of the sales area in the retail premises highlights the organic food on the shelves, and the retailer's job could define the associations to the brands of organic foods, focusing on health and well-being.

Originality/value – As in Brazil there is little information on the behaviour of organic food consumers, the creation of a new model will assist entrepreneurs in their strategies and highlights a type of food that meets the principles of sustainability.

Keywords Consumer behaviour, Brazil, Sustainable development, Retail, Organic food, Healthcare
Paper type Research paper

1. Introduction

In many countries, there seems to be agreement on the need for sustainable development thinking. Even though some countries are still reluctant, at least, several meetings between heads of state, authorities, researchers and society already show that concern for sustainable development is a priority.

By understanding that organic food is considered a product that complies with the principles of sustainability and economic and social development, the objective of this research was to investigate the reasons why the Brazilian consumer of organic foods to choose this type of food, considering sustainable development. According to the International Federation of Organic Agriculture Movements (IFOAM, 2013), 80 per cent of farms that grow organic agriculture (1.8 million properties) are in developing countries and the global

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market for organic products reached €45 billion in 2011. In Europe, Germany is pointed out as an important market, totalling €6.6 billion, followed by France with €3.8 billion.

For the United Nations (UN, 2012), sustainability is defined as "a principle of a society that maintains the characteristics necessary for a fair social system, environmentally balanced and economically prosperous for a long period of time and indefinitely". Organic food has a supply chain, which brings agroecological concepts, protecting the environment, rural workers and providing a fair income. Thus, organic food can be considered healthy and sustainable according to the opinion of the consumers themselves (Zakowska-Biemans, 2011).

The Ministry of Agriculture (2013) in Brazil has developed projects and programs of technical assistance, financing and regulation of rural sustainable practices. As some of the fronts of the Brazilian Government, we can mention support for agroecology, encouraging the production and marketing of certified organic foods.

In this study the theory was concentrated in marketing, specifically in the school of consumer behaviour. Holbrook (1987, p. 131) cited the importance of the ontological significance of consumer research "as the study of the processes which occur acquisition, use and disposition of all types of products that have value for what the man wants".

2. Surveys of consumer behaviour of organic foods

After a literature review concerning the last ten years, it was found that the research on consumer behaviour of organic foods are concentrated in Europe, followed by Asia, North America and eventually South America.

Yin *et al.* (2010) developed a survey with 432 organic food consumers in China. The Chinese purchase intention is strongly affected by factors such as income, level of confidence in the organic food, degree of acceptance regarding price and health concerns. The consumers call themselves confident on the concept of organic food and believe that this type of food results in a healthier life.

Shepherd *et al.* (2005) conducted a survey in Sweden with 2,000 respondents between 18 and 65 years old. Organic foods chosen for this research were milk, meat, potatoes and bread products because they are important in the diet of the Swedes. Were questioned purchasing criteria of consumers and the beliefs they had about organic. In the search results, according to Shepherd *et al.* (2005), one of the highlights was that consumers showed positive attitudes to organic food. However, there was no evidence that this positive attitude interfere with purchase itself. While respondents suggest that organic food is healthier, it was stated that the sale price should be the same as conventional food.

Another research can be seen in Tarkiainen and Sundqvist (2005). The authors investigated the behaviour of organic food consumers (bread and organic flour) in Finland. The authors applied the structural equation modelling (SEM) technique to understand the relationship between subjective norms, attitudes and purchase intentions of organic food consumers. Aertsens *et al.* (2011) developed their survey in Belgium and found that the attitudes of consumers towards the consumption of organic vegetables are generally positive, and the most positive factor was that the consumers recognise that the organics are produced without synthetic pesticides.

Hsieh and Stiegert (2011), in the USA, report that the organic consumers are susceptible to price changes, are more concerned with the quality of the food when compared to traditional consumers and purchase organics both in specialty stores and in supermarkets. The authors mention that large organisations have increased their organic food sales.

In research conducted in Poland with 1,010 consumers of organic food, Zakowska-Biemans (2011) points out that the Polish consumer has two barriers in

relation to the purchase of organic food: availability and lack of information on package labels. Consumers are often taken to ask the store clerks and sellers about organic foods that do not have adequate information on packages.

Research conducted in Brazil is targeted to consumers of organic attending fairs in the streets. Few studies were developed in supermarkets or specialty stores for organics. Some of the major Brazilian researchers of consumer behaviour of organic foods are Archanjo *et al.* (2001), Cuperschmid and Tavares (2002), Ruchinski and Brandenburg (2002), Zamberlan *et al.* (2006), Sluzzs *et al.* (2008), Ceschim and Marchetti (2009) and Krischke and Tomiello (2009).

Ruchinski and Brandenburg (2002) report that consumers of organic food internalises the movement in favour of ecology and has awareness of environmental preservation, a fact that was verified when consumers found that is willing to pay a higher price for organic.

3. Methodology

Descriptive study including an exploratory phase was the research design of this work. Regarding the methods of research, two focus groups (FGs) were developed in the qualitative phase, and then used was the SEM by means of a cross-sectional survey in a quantitative research (Hair *et al.*, 2012; Sharma, 1996).

The sample was non-probabilistic, intentionally non-random, for convenience and accessibility (Collis and Hussey, 2005). Organic food consumers who participated in the study were addressed in different types of food retail: self-service retailers (supermarket); street retailers (restaurants and markets) and specialised retailers (small businesses, retailers and wholesalers specialising in organic foods). The quantitative research based on the survey provided a collection of data which were analysed in SPSS for Windows 15® (Statistical Package for Social Sciences), and the SmartPLS application, indicated in the case of this study with respect to the analyses regarding structural equations (SEM).

4. Data analysis: FGs

In the reports of the FGs, the frequent words and terms, which were selected and grouped under the following categories: first, terms: health, nutrition, quality of life, second, values: human, economic, third, opinion: favourable, unfavourable. The Focus Group A (FGA) is composed of consumers of organic food, and Focus Group B (FGB) is non-consumers of organic food.

Prior to the tabulation of the data, participants' speech and debates were verified by means of the recording. We developed a report with the transcriptions of both FGs, which gave a good cross section of data with the recordings and images generated in the group meetings. Regarding the frequency with which the words most frequently mentioned by participants are measured (Stone *et al.*, 1970; Bardin, 1977), can note FGA situation 65 words/terms were mentioned by participants.

The organic foods most often mentioned by the FGA participants were sugar, green vegetables, chocolate and brown rice. For the interviewees organic food is not easily found in retail establishments in Brazil. Participants referred to certified organic foods, with a quality seal and both industrialised and non-industrialised organic products. Participants also mentioned people's and retail staff's (employees) lack of knowledge about the concept of organic food, its characteristics, as well as the location/availability of organic food in the retail outlet.

When asked if they consume industrialised organic products other than those found in open markets or in the supermarket green vegetable section, the FGA participants mentioned that they consume these foods from different kinds of retail establishments: supermarkets, specialised stores or open markets. The FGA participants

pointed out that they look for different types of organic food, such as fruits, vegetables, green vegetables, pasta, bread, sugar, jams, ready-to-serve juice, cookies, coffee and beef, among others.

Participants also complain about the location of organic products in retail outlets, or mention that organic food has no specific location like other products in the retail outlet layout. It is difficult to find a section specifically for organic products. For the consumers in the FGA, organic foods are even mixed with other foods such as light and diet ones. When asked by the moderator about the most important features of organic food, participants indicated in decreasing order: health; quality of life, wellness, lifestyle; respect for the environment/ecosystem.

Regarding the FGB, that is, the FG composed of consumers who do not have the habit of consuming organic food, a greater number of words/terms was transcribed when compared with the FGA. While the FGA mentioned 65 words/terms, the FGB mentioned 77. The most often mentioned products by the FGB participants were sweets (regardless of flavour) coffee, bread and sugar.

The FGB participants showed lack of knowledge about the meaning of organic food, however, some consumers said that organic food is the one that has no pesticides. Factors such as environmental protection and ecosystem, the importance of agroecological agriculture and concern for the rural population working with crops were not mentioned by the FGB participants. Besides these most common terms, matters concerning fast food meals in cafeterias, such as fast food chains, were also highlighted in the FGB participants' speech. Participants said they give in to fatty foods, usually fried, which are available at lower prices.

At the beginning of the FGB meeting, participants also emphasised problems related to poor health, sometimes due to hereditary issues, other times because of an unhealthy diet. The major diseases mentioned by the consumers interviewed were related to high cholesterol and a predisposition to hypertension. For the FGB participants it is important to have a healthier diet, as is the case of people who eat organic products and play sports more regularly.

The fact that most FGB consumers have high cholesterol contributed to a greater interest in the present study, since, according to the participants themselves, they are considering changing their eating habits to include the consumption of organic food. Another fact observed when filming the FGB, was that participants are willing to eat organic, however, the price variable should be observed. When FGB participants were asked about how much more they would pay for organic food, they mentioned that they could afford up to 20 per cent more to eat better.

5. Data analysis and results: survey

In this work, variables that were studied are: beliefs; attributes; reference groups; intent to purchase/consumption. The survey was limited to the city of Belo Horizonte, state of Minas Gerais with about 2.4 million inhabitants, in Brazil (Instituto Brasileiro de Geografia e Estatística (IBGE), 2012). The survey occurred during the months of September/November 2011, comprising 560 consumers. The recording and analysis of data occurred in the early months of 2012.

About the gender of the respondents, 74 per cent were women and 26 per cent were men. The frequency distribution with respect to the age of the interviewees pointed out those between ages 46 and 55 (27 per cent) as prevalent followed by the range between 36 and 45 (21 per cent). In the education level, 37 per cent respondents had completed a college degree, 63 per cent were postgraduates, including master and

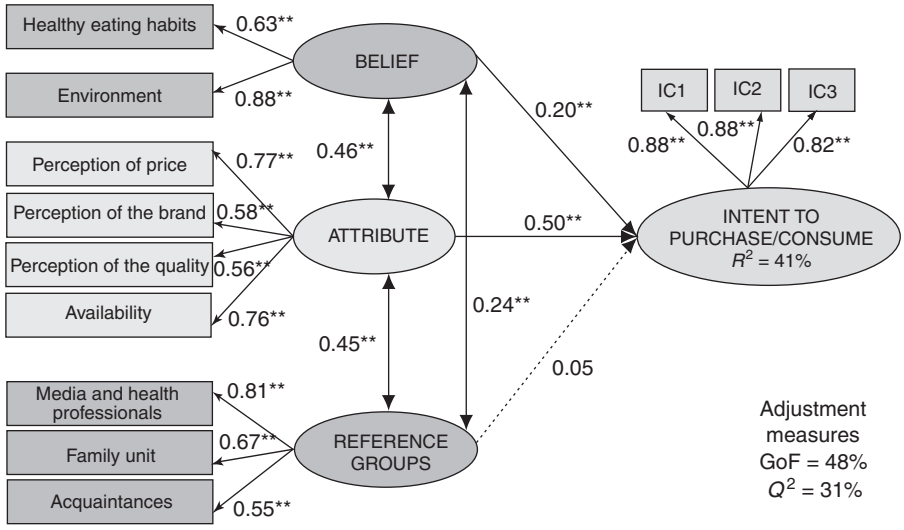
doctoral degrees. About question on income, 34 per cent have a household income above BRL 10,375 (€4,016 in 28 February 2013) and 32 per cent with incomes between BRL 6,225 (€2,409) to 10,375.00 BRL (€4,016).

5.1 Structural model

After verifying the Outer Model of the constructs of the first and second orders, it was possible to attest that they have adequate validity and reliability. That is because it only makes sense to evaluate the Inner Path Model after ensuring that the Outer Model has validity (convergent and discriminant) and reliability because if the measures representing the constructs of interest are inadequate, there is no reason to examine relationships between the constructs (Hair *et al.*, 2011). Thus, further analysis of the Inner Path Model was carried out.

The structural model of this study, also defined by the Behaviour Model of the Consumer of Organic Food (MCCAO) can be seen in Figure 1. In this model, loads for each exogenous construct in relation to intent to purchase/consume of organic food (endogenous construct) are presented, as well as the correlation coefficients between each exogenous construct.

The only endogenous construct of MCCAO, "Intent to Purchase/Consume", presented a R^2 of 41 per cent (Table I), indicating that 41 per cent of their variations are explained by exogenous constructs, and the other 59 per cent reflect other things that influence the intent to purchase/consume, but were not addressed in the model. This size of R^2 indicates a moderate to substantial power of prediction, according to Chin (1998), who highlights that the construct is explained by only one or two variables, therefore, a moderate value is acceptable. According to Lohmöller (1984), an appropriate model should provide an R^2 of at least 50 per cent (Dias, 2004). The MCCAO proposed in this study showed a value very close to that, which can be justified because it is an exploratory research on the subject.



Note: ***p*-value <1 per cent

Source: Prepared by the authors of the research with data from the survey worked in SmartPLS

Figure 1.
Structural model – Behaviour Model of the Consumer of Organic Food (MCCAO)

Out of the three exogenous constructs, only two showed statistically significant impact, and these were the Belief and Attribute constructs. Both loads were positive, and the impact of the Attribute construct (standardised loads of 0.50, p-value < 1 per cent) was greater than the magnitude of the impact of the Belief construct (standardised loads of 0.20, p-value < 1 per cent), for being closer to one. The Reference Groups construct had an impact of 0.05 (load very close to zero, although positive), not significant at 10 per cent, indicating it does not exert influence on the intent to Purchase/Consume.

In the case of the Belief construct, the Environment variable has a greater weight than the Healthy Eating Habits variable. This indicates that the Beliefs construct undergoes major changes when the consumer has a tendency to worry about the environment if this concern is similar to his/her health. Apparently, the belief linked to the environment has a greater weight than the belief related to the consumer's own health, which indirectly impacts the Intent to Purchase/Consume.

As for the case of the Attribute construct, there is the perception of price, and availability has greater weight than the perception of the brand and quality. This reveals that changes in the Attribute construct are more perceived when there is less concern about the price and an increased habit of buying/consuming in places that sell/offer organic products, than the importance given to smell, taste, brand or origin of the organic food. Indirectly, the first two (Perceived Price and Availability) are also more closely attached to the intent to purchase/consume.

The major variable in the Reference Groups construct was Media and Health Professionals, followed by Family Unity, and then Acquaintances. This reveals that despite the media, health professionals, family and acquaintances approving of or consuming organic foods, this is not reflected in a higher intention on the part of the respondent to generate an intention to buy/consume this type of food.

Besides verifying the relationships between exogenous and endogenous constructs, Hair *et al.* (2012) also suggest examining the relationships between the exogenous constructs of the model through correlation coefficients. All pairs of exogenous constructs of the model show significant correlations at the 1 per cent level. The highest ratios were observed for the pairs P1, between the Belief and Attribute constructs, 46 per cent, and P3, between the Attribute and Reference Groups constructs, with a coefficient of 45 per cent. However, the relationship between Belief and Reference Groups was lower (24 per cent), although it was also significant. Note that all coefficients were positive, indicating that the variables are correlated in the same direction.

In order to check the goodness of the adjustment the Goodness of fit (GoF) was used, and it can be calculated using the formula proposed by Amato *et al.* (2004), according to which the averages of AVEs and R^2 of the constructs of the model should be checked and the geometric sequence verified. This measure ranges from 0 to 100 per cent and, so far, there are no limits for considering a fit as good or bad. However, the closer to 100 per cent, the better the fit and the GoF model was 48 per cent.

Constructs							
Exogenous	Endogenous	Sample	Pop.	Dev.	Error	T-value	Sig. (%)
Attitude	Intent to purchase/consume	0.50	0.50	0.05	0.05	9.56	< 1
Belief	$R^2 = 41\%$	0.20	0.20	0.05	0.05	3.82	< 1
Reference group		0.05	0.06	0.04	0.04	1.26	> 10

Source: Prepared by the authors of the research with data from the survey worked on in SmartPLS

Table I.
Results of the hypotheses of the inner path model proposed

In order to check the predictive ability of the model the measure called Stone-Geisser's (Q^2) was used. This measure reflects whether the model was able to adequately predict the endogenous constructs as suggested by Hair *et al.* (2011). Furthermore, the authors point out that the measure must check the cross-validated redundancy measure and not the so-called cross-validated communality measure. The endogenous variable has an adequate predictive capacity when Q^2 has a value >0 (Henseler *et al.*, 2009). Therefore, we adopted a d of seven (7) and performed such analysis for the only endogenous construct of MCCAO, the Intent to Purchase/Consume, which presented a Q^2 of 0.31 (>0.00), indicating that MCCAO was able to adequately predict the construct (Table II).

All correlation coefficients between the exogenous constructs were positive. The most significant correlation coefficients occurred between the Belief and Attribute (46 per cent) constructs, and Attribute Groups and Reference (45 per cent), whereas the correlation between Belief and Reference Groups was less pronounced (24 per cent).

Accordingly, with respect to Beliefs construct, both the hypothesis *H1* (a concern for the environment has a positive impact on the belief in buying organic food) and *H2* (healthy eating habits have positive impact on belief in buying organic foods) are confirmed, but the weight was greater in *H1*, as consumers of organic food are more prone to consume/buy this type of food, more motivated by a belief in preserving and respecting the environment than in improving their health.

With regard to the Attribute construct, the Perception of Price (*H3*: the perception of the price paid for organic food has a positive impact on the attribute) and availability (*H6*: the availability of organic food has a positive impact on the attribute) influence over the consumer of organic foods to acquire/consume such foods at the expense of quality perception variables (*H4*) and brand (*H5*), even though these influence the consumer decision process, however, to a lesser degree.

Constructs	Hypotheses	Results
Beliefs	*H1*: Concern for the environment has a positive impact on belief in the buying of organic food	Confirmed
Beliefs	*H2*: Healthy eating habits have positive impact on belief in the buying of organic food	Confirmed
Attributes	*H3*: The perception of the price paid for organic food has a positive impact on the attribute	Confirmed
Attributes	*H4*: The perception of the brand of product of organic origin has a positive impact on the attribute	Confirmed
Attributes	*H5*: The perception of quality has a positive impact on the attribute	Confirmed
Attributes	*H6*: The availability of organic food has a positive impact on the attribute	Confirmed
Reference groups	*H7*: Media and health professionals have a positive impact on reference groups	Confirmed
Reference groups	*H8*: The household has a positive impact on reference groups	Confirmed
Reference groups	*H9*: Acquaintances of the consumers of organic food have a positive impact on reference groups	Confirmed
Intent to purchase/consume	*H10*: The belief of consumers of organic food has a positive impact on the intent to purchase/consume food	Confirmed
Intent to purchase/consume	*H11*: The attitude of consumers of organic food has a positive impact on the intent to purchase/consume this kind of food	Confirmed
Intent to purchase/consume	*H12*: The reference groups of consumers of organic foods have a positive impact on their intent to purchase/consume	Not confirmed

Source: Prepared by the authors of the survey

Table II.
Testing the hypotheses proposed MCCAO: summary of results

Regarding the Reference Groups construct, it did not have the same satisfactory results compared to the other constructs of the MCCAO. The statistics of the Reference Groups construct were less striking than the other constructs of the first order. The influence of the media, health professionals, the family core and acquaintances to the consumer of organic foods occurs, however, it is less impressive than the other constructs (Belief and Attributes). Thus, the *H7*, *H8* and *H9* hypotheses were confirmed by the MCCAO.

With respect to the latter construct and, in this case considered endogenous of the model proposed, the Intent to purchase/consume proved to have a stronger correlation with the Attribute construct (50 per cent) and (20 per cent) with the Belief construct. With the Reference Groups construct, the correlation was not considered in terms of explanation (5 per cent). In this case, the *H10* and *H11* hypotheses of this construct, Intent to purchase/consume, were considered confirmed, while the *H12* hypothesis, due to the low correlation with that construct, was not confirmed.

6. Conclusions

The model proposed to assess the impact of variables affecting the intention to purchase/consumption of organic food from the perspective of the consumer of this type of food was valid. Only one of 12 hypotheses of this research was not confirmed. The FGs provided important information for the development of the questionnaire used in the survey. Studies on the consumer behaviour of organic foods mentioned in the theoretical framework contribute to a review of research on the topic and provide opportunities for researchers in future research advances.

The endogenous construct Intent to Purchase/Consume showed a correlation coefficient of 41 per cent ($R^2 = 41$ per cent), indicating that 41 per cent of their variations are explained by the exogenous constructs which, according to Chin (1998), is justified in view of this being an exploratory survey on the topic at hand. It can be considered that one of the academic contributions of this research was to develop a model that could drive how the purchasing behaviour/consumer consumption of organic food in Brazil occurs.

The profile of the consumer of organic food identified in the survey, as well as the analysis of their buying behaviour/consumption can contribute to the formulation of marketing actions related to current and prospective customers. Retailers can create advertising campaigns that have the appreciation for the environment and quality and availability in relation to organic food as the message content, because these variables motivate the consumer's intent to purchase, as seen in this study.

It is also suggested that the layout of the sales area in the retailers highlights the organic food on the shelves and places that allow access to materials that show the consumer information and data on the benefits of this type of food. It is the retailer's job to define the associations to the brands of organic foods and choose brands that value health and well-being.

Since this is a descriptive survey with an exploratory phase aiming to reveal new insights about the consumer of organic food, it is noteworthy that the proposed MCCAO has a predictive power assessed as moderate to substantial. It should then be considered a valid model in view of the objective of this survey (Chin, 1998).

One of limitations refers to the period of conducting the survey. A longitudinal research in this direction can be a good alternative. Doing this research in other cities, even in different countries, may reveal specifics not found in the present study. Extending the research to other countries is crucial to compare data. It is also advisable to develop a research aimed at targeting different types of organic foods. In this survey we studied organic foods without specifying the types.

A final suggestion for further studies rests with the selection of more variables and constructs that might engage or develop and refine the model proposed in this work. One of the possible options is to increase the number of individuals surveyed, thereby having a sample that allows making new correlations between variables.

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