Environmental awareness, consumption of organic products and gender

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Abstract

Purpose – It was aimed to propose and test a theoretical model to evaluate how some dimensions of environmental awareness influence the intention of consuming organic products using gender as a control variable.

Design/methodology/approach – The research was developed through quantitative methodology with the use of multivariate data analysis (PLS-SEM). The model uses a second-order construct. Although, it was conducted in a nonprobabilistic way using a convenience sample, with 213 university students.

Findings – It was confirmed the relation between the environmental awareness dimensions' influence and the intention to buy organic products that is also influenced according to the consumers' gender. There is a more positive effect and intensity in the organics' purchase by women.

Research limitations/implications – The nonprobabilistic nature in addition to the use of the convenience sample, factors that do not allow the generalization of the results, are some limitations. Moreover, the dimensions of environmental awareness proposed do not include all of the motivators about the organic consumption.

Practical implications – The results identified the factors that motivate the intention to consume organic products in Brazilian context and can contribute to managerial strategies formulation in order to increase the value perceived by the customer in relation to the consumption of these products.

Originality/value – This paper presents a deeper understanding about the dynamics between the factors that can guide the choice for organic products, besides providing a greater theoretical and empirical support tested by the use of a second-order construct.

Keywords Environmental awareness, Consumption of organic products, Buying behavior

Paper type Research paper

1. Introduction

The late 1940s marked the Green Revolution beginning with the introduction of new cultivation practices, which gained popularity between 1960 and 1970, through the development of mechanization and artificial farming techniques in the field (Pinheiro, Carneiro, Pinheiro, & Nascimento, 2018). Since then, problems related to the soil, air and water pollution intensified and, together with the industrial capitalist model, these problems began not only to promote changes in the natural environment but also in people buying behavior.

Throughout 20th century, discussions around sustainable development have expanded in the political and educational area worldwide, sensitizing the human being to issues of

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collective interest and stimulating critical and ethical thinking, with the discourse of achieving the satisfaction of human desires without compromising future generations (Santana, 2018).

In this context, concerns about the environment began to grow (Shelest, Ionov & Tikhomirov, 2017), and discussions incorporating the environmental theme are gaining space in different institutions, segments and levels, since how much more institutions debate the ecology, more it expresses itself as responsible with its surroundings pressures for changes mainly in the corporate and governmental environments (Silva, Czykiel, Figueiró, Santos & Galvão, 2013; Rotta, Batistela & Ferreira, 2017).

Through this scenario, organic production has gained popularity because it has a sustainable basis and, its principles are environmentally correct, socially just and it has an economically viable production (Pinheiro, Carneiro, Pinheiro, & Nascimento 2018). Thus, the consumers of this class of products present a purchasing behavior that combines environmental preservation with the transition to a more sustainable society (Scalco, Stefano, Sartori & Ceschi, 2017).

Therefore, the understanding of the intentional behavior of buying organic products is essential for the sustainable consumption realization (Hsu, Chang & Lin, 2019; Qi & Ploeger, 2019), since Brazil is the third largest producer of organic products and has the largest consumer market for organic products in Latin America (Branco, Watanabe & Alfinito, 2019; FiBL & IFOAM, 2019). Furthermore, Branco, Watanabe and Alfinito (2019), admit that the Brazilian consumer has a purchasing profile with particular motivators, such as the fact that 67% prefer going to specialized retailers in order to find a greater supply of healthy foods, as 76% of Brazilians affirm to read labels in order to evaluate the nutritional content. Moreover, for being a multifaceted construct, the buying behavior undergoes alteration according to the gender, because men and women have different needs (Gorni, Gomes & Dreher, 2012). These data reinforce the need for deeper investigations about the purchase drivers.

Thus, this research aimed to propose and test a theoretical model to evaluate how some dimensions of environmental awareness influence the intention of consuming organic products and how the gender influence it too. Therefore, the research questions are: *"What is the influence of the environmental awareness in the intention of consuming organic products?"* and *"What is the influence of the gender in the intention of consuming organic products?"*

The paper is structured in five parts, in addition to this introduction. In Section 2, it is presented the theoretical framework approaching the dimensions of environmental awareness and its relation with organic products consumption. Section 3 describes the methodological part of the study. The results are presented and discussed in Section 4. Finally, the study's final considerations are shown, indicating its contributions, limitations and suggestions for future studies in Section 5 that is followed by the references in Section 6.

2. Environmental awareness dimensions and its relation with organic products' consumption

The current context referred to the human confrontation with the natural environment has demanded the need to rethink, be and act from humanity on a world level, evoking a new more equitable "worldview" valuing the life as a collective maintenance commitment (Pinheiro, Carneiro, Pinheiro, & Nascimento 2018; Qi & Ploeger, 2019; Ruano, 2017; Santana, 2018). Since the Stockholm Conference in 1972, although with different denominations, the expression "sustainable development" was present, but this denomination became popular in 1992 after the United Nations Conference on the Environment in Rio de Janeiro (Barbieri & Silva, 2011), treating concerns about maintaining the future life (Furtado & Sampaio, 2018).

Pitanga (2016) argues that the environmental crisis is not strictly linked to "hyperconsumption", but to a knowledge crisis, more social than ecological, which has

brought to the fore the problems of social inequality that, in order to be reversed, requires global mobilization (Svanström, Lozano-García, & Rowe, 2008). On the other hand, Furtado & Sampaio (2018) attribute the repercussion of environmental issues to the media, a vehicle of communication that drives the purchase together with disrespectful organizational practices (Ritter, Hidalgo, & Haag, 2018).

However, it is known that consumption is a primordial activity for the human life maintenance, since it be carried out in a healthy way in service of vital needs. However, when fulfilling desires, consumption can become an impulsive and irrational act. In this context, conscious consumption proposes a reflection on the consumer lifestyle (Capucho, Baccaro, & Raminelli, 2018).

Sustainable development aims to change the behavior and habits of citizens in relation to consumption and production activities and is based on the three main pillars of sustainability: economic, environmental and social (Santana, 2018). However, such development takes different interpretations according to the perspective as analyzed and, therefore, contemplates respect for diversity, since each individual has its subjective form of interpreting sustainability according to its values (Dubey, Gunasekaran & Deshpande, 2017, Lopez-Cabrales & Valle-Cabrera, 2019).

In the middle of the return in relation to environmental, economic and social crises, the progress of environmentally friendly innovations was boosted (Capucho, Baccaro & Raminelli, 2018; Niu, Jiang & Li, 2010), making common concerns about sustainable development, which has manifested itself in several product segments, including the increased consumption of organic. Particularly in relation to food cultivation, until the middle of the last century agricultural practices was heavily dependent on the chemical industry (Durán & Wives, 2018). However, in order to achieve the proposal for more sustainable food production, organic farming began to expand (Campos, Hidalgo, Kist, Pedroso & Dalmoro, 2018; Kim, 2019; Scalco, Stefano, Sartori & Ceschi, 2017), by strengthening the affective ties between human and environment, as a way of initiation and deeper environmental awareness.

Organic production has ideological foundations in seeking to contribute to the society improvement beyond cooperation with the environment. Thus, organic producers are protagonists in the sustainable development dissemination (Campos, Hidalgo, Kist, Pedroso & Dalmoro, 2018; Pinheiro, Carneiro, Pinheiro & Nascimento 2018) and they are, also, contributing to the innovation in the sustainable food sector with crop systems specially directed to social, as well as, environmental nutritional responsibility (Scalvedi & Saba, 2018). On the other hand, in the systematic literary review of Campos, Hidalgo, Kist, Pedroso and Dalmoro (2018), it is revealed that, in addition to environmental awareness, there is a need for an entrepreneurial attitude of organic producers.

Consumers of organic foods, therefore, have an ideology behind the purchase of this products class and they like to have the privilege of belonging to the class of conscious consumers (Kim, 2019), forming a questioner consumer profile of urban life, who is concerned about the recurrent unsustainable way of life (Pinheiro, Carneiro, Pinheiro & Nascimento 2018).

The search for well-being – health, perception of quality, taste and high number of nutrients (Branco, Watanabe & Alfinito, 2019; Curvelo, Watanabe & Alfinito, 2019; Demirtas, 2018; Kim, 2019) – is among the organic products consumption motivators (Furtado & Sampaio, 2018), because the conscious consumers is aware of the product benefits for themselves and for the environment. Consequently, the consumer is concerned about his physical and mental health. In consumers concerned about the aesthetic benefits, the search for sustainable products must meet the expectations that touch on perceived values, in which the sustainable cosmetics sale gains market expansion (Furtado & Sampaio, 2018).

The study by Hsu, Chang and Lin (2019) draws attention to the significant health concern influence for healthy products consumption. With this, the offer of security for the consumer should be a priority in the business strategies formulation that should seek for a balance between economic profit and generation of value for the environment. Like this, the organics consumption, whether consciously or not, is positive for the environment and has significantly transformed the processes of food choice because it represents a food ideology that corroborates with a set of values (Pinheiro, Carneiro, Pinheiro & Nascimento, 2018).

However, the organic consumption dissemination is tortuous and has several obstacles that make the research on consumer behavior reflect, only in the theoretical scope, expectations that match a conscious profile (Tambosi, Mondini, Borges & Hein, 2015). In the literary review of Campos, Hidalgo, Kist, Pedroso and Dalmoro (2018), the cultivation technical difficulty, the production management lack and the public incentives absence are the entry barriers features in the organic foods' cultivation. The next obstacle, suggested by Hsu, Chang and Lin (2019), is that because of the nutritional difference between organic and conventional food not be scientifically proven, conventional products with a high-perceived environmental degree value, go beyond the sale of green products because they are more affordable.

In addition, Branco, Watanabe and Alfinito (2019), confer credibility attributes, which are not perceived by the consumer unless he is informed, the difficulty of consumer confidence in the producer, which is also affected by the urbanization that physically distances consumers from producers (Branco, Watanabe & Alfinito, 2019). In the middle of this context, there is a need for organic certification that requires time and money (Ritter, Hidalgo & Haag, 2018).

Moreover, the lack of information about the benefits of organic products supports an anticonsumption barrier, since, according to Demirtas (2018) and Branco, Watanabe and Alfinito (2019), consumers have simplistic and restricted knowledge which involves only the exemption of pesticides instead of the positive consequences for health and nature. Thus, when seeking short-term benefits, several consumers prefer to substitute a healthy diet for faster drugs effects (Branco, Watanabe & Alfinito, 2019; Dalić, Radosavac, Knežević & Đervida, 2019).

As an example, Demirtas (2018) tests in his study the consumer knowledge influence about the organic in the intention to purchase these products. The results pointed out the positive importance of the interaction. Therefore, the author argues that advertising should focus on convincing the quality of these products to consumers still skeptical, thus developing the trust feeling. In addition, Demirtas (2018) defends the past experiences importance for the organic products consumption perpetuation, citing the familiarization importance with products, as if it mirrored the individual's values toward the environment.

In this way, the development of sustainability requires small primary attitudes that begin with critical reflections on consumerism oriented to the power and status possession (Carmona & Barreto, 2018). Practices of aware consumption can be expressed in several dimensions, which may even affect the realization of purchases of green products. In the domestic environment, for example, it is seen in recycling programs participation, reuse and saving in the water use, among others (Jacomossi, Morano & Barrichello, 2014), that is, individually, or within the home itself, through small changes in attitudes and habits (Santana, 2018; Shelest, Ionov & Tikhomirov, 2017).

A research carried out in 2018 by Akatu aimed at assessing consumer awareness and behavior toward conscious consumption, their perception and expectation about sustainability practices and corporate social responsibility. The research conducted a comparison with a study of 2012. Thus, results showed that there is a recent advance in relation to the consumption of products made with recycled material and organic products purchase, in addition to demonstrating that the concerns with garbage remains stable since 2012.

These concerns, in the study by Pato, Ros and Tamayo (2005), are enough for a behavior to be considered ecological, currently. In the study, carried out with Brazilian university students, only four background characterized the ecological behavior of participants: activism, saving

water and energy, urban cleaning, and recycling (Pato, Ros & Tamayo 2005). Regarding purchase intention, Curvelo, Watanabe and Alfinito (2019) argue that this dimension is important in the area of marketing, as it has the ability to predict sales. Specifically, with organic products, purchase intent can be affected by several elements. Being thus, in the present study, it was considered the engaged consumption, the domestic environment, the mobilization and the concern with the garbage as the dimensions of the environmental conscience and, therefore, the first hypothesis is:

H1. Environmental awareness positively influences the intention to consume organic products.

For example, the study by Pinheiro, Carneiro, Pinheiro and Nascimento (2018) analyzed how the connectivity with nature and the consideration about the future consequences are related to the organic food consumption behavior. The results confirmed the positive relationship effect adding, in addition, that individuals with immediate lifestyles seek a kind of refuge in organic food.

This whole scenario involves the consumer buying behavior, a complex study field, since the people individualities make them have different desires and needs that are influenced by internal and external factors (Demirtas, 2018; Hsu, Chang & Lin 2019; Furtado & Sampaio, 2018).

In this sense, the consumption habits of young people may vary in relation to gender, since men and women have some different needs (Gorni, Gomes & Dreher, 2012). Thus, although several scientists criticize the distinction between sex, arguing that it is a mere social imposition, it has culturally rooted the compromising woman role with the household tasks execution that involves the cleaners use the elaboration of a meal with quality, mainly of mothers (Demirtas, 2018), while men show greater interest in technology and automation (Gorni, Gomes & Dreher, 2012). As consumers, Melnyk, van Osselaer and Bijmolt (2009) argue that the female sex has an individual and more loyal focus, that is, women, usually, retain their service providers. On the other hand, men seek groups that resemble each other and easily change their places of purchase.

However, the differences in needs between genders, whether biological, innate or socially constructed, can imply; considerable behavioral differences, especially regarding to environmental awareness. Brough, Wilkie, Ma, Isaac and Gal (2016) attest that there is a prevalent stereotype about the association between green behavior and femininity, that is, there is, scientifically, proof of the potential association between green and femininity in such a way that both men and women can judge those who engage in ecological behavior as more feminine.

Brough, Wilkie, Ma, Isaac and Gal (2016) still argues that due to the environmental destruction rates, researchers are seeking to identify a moderating effect that justifies this behavior including the gender as a variable. Thus, this context favored the second hypothesis formulation:

H2. There are differences in the relationship between environmental awareness and the intention to consume organic products in relation to gender, with a positive and more intense effect on women.

In summary, sustainable consumption does not aim to push back consumption activities, but to make them less environmentally aggressive and more socially egalitarian, based on a demand for provenance throughout the production chain of the products by consumers, which, in the sight of Furtado and Sampaio (2018), are the main stakeholders and business activities revenue generators. In this sense, corporate efforts are being directed toward a less dependence on natural resources like raw material (Furtado and Sampaio, 2018), characterizing the eco-efficiency proposal, which objectives the delivery of goods and services that contemplate human needs at competitive prices, that provide quality of life and environmental impacts reduction (De Souza Moraes *et al.*, 2018; Lopez-Cabrales and Valle-Cabrera, 2019).

However, the environmental re-education process has to change paradigms rooted in the individual. it is important that this reflection reaches, to be better achieved, young people who are still suffering the maturing criticality process (Capucho *et al.*, 2018; Ruano, 2017; Shelest, Ionov & Tikhomirov, 2017), once Scalvedi and Saba (2018) argue that the environmentally correct choice expansion will be achieved when the individual's cognitive system concretize the environmental variable importance in purchasing decisions. In the case of adults, the process of environmental re-education is tortuous because it depends on the family culture and the economic and social reality of the individual as a significant antecedent of their environmental awareness (Hoppe, Barcellos, Vieira & Matos, 2012; Kranjac, Vapa-Tankosic & Knezevic, 2017; Kim, 2019).

Thereby, according to Pitanga (2016) and Santana (2018), the Brazilian higher education institutions have broken paradigms regarding sustainability, creating a privileged space for reflections and for sustainable practices development that are being incorporated in the academic curriculum and, thus, the exercise of ecological awareness has been the main protagonist in the sustainable solutions that have already been implemented.

In the courses that involve the administrative area, in particular, the environmental theme incorporation proposes the need for the training of professionals capable to undertake sustainable actions in management activities, besides of transforming the student himself into a conscious, ethical and responsible consumer (Lima, Ferreira, Bezerra, Feitosa & Gómez, 2016; Salinas-Cabrera, 2016; Silva, Czykiel, Figueiró, Santos & Galvão 2013).

Hereafter, the methodological aspects used as an aid to achieve the objective of this study are presented.

3. Methodological aspects

The empirical research was developed through a quantitative methodology, with the use of multivariate data analysis. According to suggestions from Hair, Hult, Ringle and Sarstedt (2017), it was opted for the use of partial least squares-structural equation modeling (PLS-SEM) in order to identify degrees of prediction and explanation of presented constructs. Also, this model presents one hierarchical latent variable, where environment awareness is a second-order construct (high order constructs – HOCs) constituted by first-order constructs (low order constructs – LOCs) (Hair, Sarstedt, Ringle & Gudergan, 2018). In this case, relations between the HOC and the LOCs do not portray dependence, but hierarchy (Becker, Klein & Wetzels, 2012; Sarstedt, Hair, Cheah, Becker & Ringle, 2019), since the HOC does not exist without the LOCs. Due to the conceptualization and operationalization of the hierarchical model, this research model is classified as a model of hierarchical latent variables of a reflexive-formative type (Chin, 1998; Becker, Klein & Wetzels, 2012; Sarstedt, Hair, Cheah, Becker & Ringle, 2019). The LOCs constructs are reflexive, while the HOC construct is formative and it mediates completely the influence of the LOCs in the intention of consuming organic products construct.

Model's parameters were estimated by the two stages approach (Becker, Klein & Wetzels, 2012; Hair, Sarstedt, Ringle & Gudergan, 2018; Sarstedt, Hair, Cheah, Becker & Ringle, 2019). In the first stage (Figure 1a), the latent variable scores of LOCs were obtained in a model that did not consider the HOC. In the second stage Figure 1b), the latent variable scores obtained in the first stage were used as indicators for the HOC construct. The two stages approach has the advantage of estimating a more parsimonious model, since there is no need to represent LOCs (Hair, Sarstedt, Ringle & Gudergan, 2018; Sarstedt, Hair, Cheah, Becker & Ringle, 2019), besides being more adequate when the researcher's interest lies only on the relationships stating in the HOC (Becker, Klein & Wetzels, 2012; Sarstedt, Hair, Cheah, Becker & Ringle, 2019), which is the case of this model. Figure 1 presents the research model, showing the two stages. Visual representation facilitates understanding of the theoretical model proposed (Whetten, 1989).

first stage model

second stage model

(a)

(b)
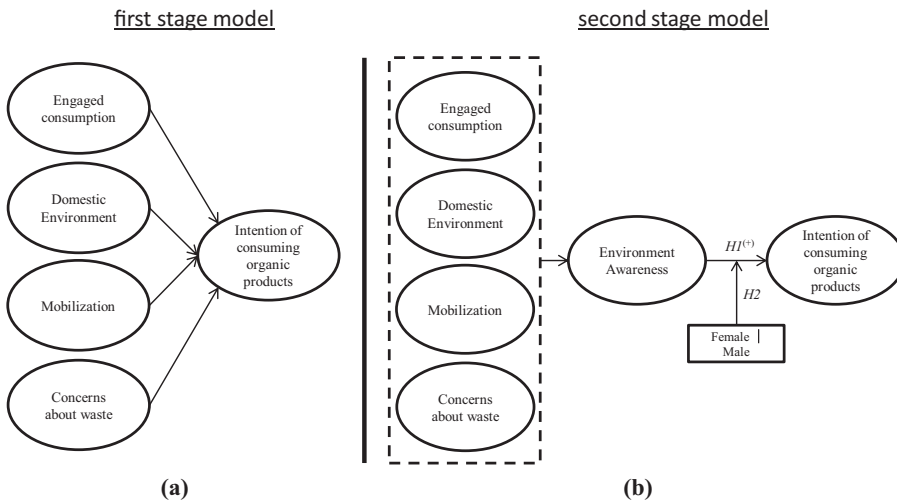
Figure 1.
Conceptual model of
the research

The research was conducted in a nonprobabilistic way and with a convenience sample, through personal interview with 213 university students. To evaluate the sample size and statistical power of the analysis, an evaluation with the G*Power 3.1 software (Faul, Erdfelder, Buchner, & Lang, 2009) was conducted and based on the recommendations by Chin and Newsted (1999), Cohen (1988), and Hair, Hult, Ringle and Sarstedt (2017). Considering four predictors, a significance level of 5%, a statistical power of 0.8, and an average effect size ($f^2 = 0.15$, which is equivalent to $r^2 = 13\%$), the minimum size of the sample required is 77. As the final sample used comprised 213 people, it is suitable for estimation by partial least squares path modeling (PLS-PM). The analyses a posteriori (post hoc) for the sample obtained indicate that: (1) any r^2 higher than 5.42% would be detected as significant, keeping the power of 0.8 and the significance level of 5% and (2) to the average effect size the power is of 0.998, which is well above the value 0.8, recommended by Chin and Newsted (1999).

The Software SmartPLS 3.0 M3 (Ringle, Wende, & Becker, 2015) was used to calculate and validate the statistical tests, developed using the technique of structural equation by multivariate analysis.

Next section presents the results description and the analysis.

4. Results description and analysis
The measurement instrument was adapted from Gonçalves-Dias, Teodósio, Carvalho and Silva (2009). In the original study, the authors used five dimensions to determine the environmental awareness level: engaged consumption, concern about garbage, boycott via consumption, mobilization and domestic environment. All dimensions were used in our research, with the exception of boycott via consumption. The intention of consuming organic products dimension was developed by the authors based on the literature review and it was validated by experts.

A first step in the empirical analysis involves the evaluation of measures included in the conceptual model. Confirmatory factor analysis (CFA) was used to evaluate the psychometric properties of constructs, with SmartPLS 3 software (Ringle, Wende & Becker, 2015). All measures were tested in the same model and were restricted to load on their respective factor (Brady & Cronin, 2001). CFA results and descriptive statistics are presented in Table 1.

The construct concern with waste had no indicator eliminated, while the other constructs had at least one indicator reduced.

The next step in the empirical exercise concerns the analysis of the conceptual model. The framework presents one second-order indicator and one reflective indicator. Thus, the model was tested by the structural equation modeling (SEM) technique, since traditional SEM techniques are adequate to test hierarchical models (Brady & Cronin, 2001).

The internal consistency, composite reliability, convergent validity and discriminant validity of the reflective construct (intention of consuming organic products) were evaluated with SmartPLS 3 software (Ringle, Wende & Becker, 2015). Internal consistency was assessed by Cronbach's alpha and values between 0.70 and 0.90 are considered satisfactory for studies in more advanced stages (Fornell and Larcker, 1981; Hair, Hult, Ringle & Sarstedt, 2017; Nunally & Bernstein, 1994). The composite reliability assesses whether the indicators associated with each construct actually represent them (Bagozzi & Yi, 1988). The composite reliability values should be at least 0.70 to indicate that the items are sufficient to represent their respective constructs (Hair, Hult, Ringle & Sarstedt, 2017). The average variance extracted (AVE) is one of the criteria for testing the convergent validity of a construct (Fornell & Larcker, 1981). AVE values higher than 0.50 are acceptable to indicate that a large amount of the mean variance of the indicators is captured by each factor and not by the measurement error (Hair, Ringle & Sarstedt, 2011). All the mentioned values are within the ones established by the authors (Table 2).

The convergent validity, collinearity, statistical significance and relevance of the formative construct (environment awareness) were also evaluated with SmartPLS 3 software (Ringle, Wende & Becker, 2015). This analysis is already part of the second stage. The convergent validity was estimated from the value of the formative construct's path coefficient. Path coefficient values greater than 0.8 provide support for the convergent validity of the formative construct (Hair, Hult, Ringle & Sarstedt, 2017). The value of the second-order level construct path coefficient, environment awareness, was 0.853, supporting the convergent validity of the construct. The value of the variance inflated factor (VIF) was used to assess the collinearity of the construct. If $0.2 < VIF < 5$ the collinearity of the construct is adequate (Hair, Hult, Ringle & Sarstedt, 2017). The VIF values for all first-order level constructs were within the acceptable range.

To evaluate the statistical significance of the entrepreneurship supportive university environment construct, the bootstrapping technique was used. Initially, the relative importance (outer weight coefficient) of each item was analyzed. When the relative importance is significant, there is empirical support for keeping the indicator in the model (Hair, Hult, Ringle & Sarstedt, 2017). Following the recommendations of Hair, Hult, Ringle and Sarstedt (2017), all items were retained in the model.

The structural model was evaluated to provide consistent evidence that the environment awareness is positively related to intention of consuming organic products. The criteria used to evaluate the structural model were: collinearity, significant factor loadings, structural coefficients and coefficient of determination of the model (r^2).

To evaluate collinearity, the values of the VIF for each subpart of the structural model were analyzed. All values are within the range established by Hair, Hult, Ringle and Sarstedt (2017), being below 5. The values of the significant factor loadings and the structural coefficients were obtained by the bootstrapping technique. For this, Student's t-statistical analyzes the hypothesis that the significance of path coefficients is equal to zero. Values of T-value higher than 1.96, at a significance level equal to 5%, reject the hypothesis and indicate that the path coefficients are significant (Efron & Tibshirani, 1998; Hair, Hult, Ringle & Sarstedt, 2017). Table 3 presents the T-values for the relationship in the model.

Results indicate that the relationship between environment awareness and intention of consuming organic products is significant, supporting Hypothesis 1. This result confirms the proposal of Pinheiro, Carneiro, Pinheiro and Nascimento (2018), in which the authors argue that the affective attachment of the individual to nature, whether through small attitudes in

Questions	Standardized path loading	Critical ratio	P-value	Mean	Standard deviation
Domestic environment[a]					
(DE1) I avoid taking time to shower	0.672	10.91	0.000	0.669	0.062
(DE2) I avoid having the refrigerator open for long	0.766	15.876	0.000	0.765	0.048
(DE3) I avoid letting the lights on in environments that are not used when I'm at home	0.711	10.644	0.000	0.703	0.067
(DE4) I avoid leaving the tap open while I brush my teeth	0.755	12.148	0.000	0.752	0.062
Engaged consumption[a]					
(EC1) I have paid more for environmentally correct products	0.682	15.711	0.000	0.681	0.043
(EC2) I try to buy products made from recycled material	0.697	14.615	0.000	0.698	0.048
(EC3) I avoid using a product manufactured by a company that pollutes the environment	0.778	23.647	0.000	0.776	0.033
(EC4) I don't buy products from a company when I know it pollutes the environment	0.612	11.532	0.000	0.608	0.053
(EC5) I have already convinced others not to buy products that harm the environment	0.783	31.493	0.000	0.783	0.025
(EC6) Concerns about the environment interfere with my purchase decision	0.861	44.752	0.000	0.862	0.019
(EC7) I read the label carefully before deciding to buy	0.584	10.435	0.000	0.582	0.056
(EC8) I try to reduce my consumption of scarce natural resources	0.651	13.78	0.000	0.65	0.047
Mobilization[a]					
(MB1) I talk about the importance of the environment with other people	0.871	48.173	0.000	0.872	0.018
(MB2) I mobilize people for the conservation of scarce natural resources	0.878	43.86	0.000	0.878	0.020
(MB3) I have already denounced actions that were harmful to the environment	0.643	12.31	0.000	0.642	0.052
(MB4) I catch the attention of people throwing paper on the floor	0.578	7.671	0.000	0.576	0.075
Concerns about waste[a]					
(CW1) When there is no bin near by, I keep the paper I do not want in my pocket anymore	0.868	18.498	0.000	0.861	0.047
(CW2) I avoid throwing paper on the floor	0.907	25.851	0.000	0.901	0.035
(CW3) I help keep the streets clean	0.567	7.020	0.000	0.569	0.081
(CW4) I do not play empty beer cans or soda on the floor	0.686	6.771	0.000	0.674	0.101
Intention of consuming organic products[b]					
(ICOP1) Fruits, vegetables and herbs	0.709	13.849	0.000	0.709	0.051
(ICOP2) Tubers and grains	0.761	17.362	0.000	0.755	0.044
(ICOP3) Nuts and nuts	0.728	15.928	0.000	0.725	0.046
(ICOP4) Herbs, seasonings and teas	0.814	28.972	0.000	0.813	0.028
(ICOP5) Cereals, salts and meal	0.765	15.909	0.000	0.759	0.048
(ICOP6) Oils and vinegars	0.668	9.442	0.000	0.659	0.071
(ICOP7) Cosmetics and personal hygiene	0.585	8.089	0.000	0.579	0.072

Note(s): [a]Likert scale responses from 1 (totally disagree) to 7 (totally agree). The students responded how much they agreed with the statements
[b]Likert scale responses from 1 (never) to 7 (oftentimes). The students responded regarding the probability of consuming the following categories of organic products

Table 1.
Standardized CFA path loadings and descriptive statistics

the domestic environment or through manifestations in favor to the environment foment the consumption of organic products, especially in relation to food choices.

In another example, Sharma and Kelly's (2014) research aimed at discovering attitudes of perceptions about sustainability education in management students. More than half of them had no knowledge about sustainable development until they entered in higher education. The study also revealed that the students suggest an improvement in environmental debates, since some teachers only deal with subjects such as recycling, making the class repetitive. The same students had positive results regarding education for sustainability, contemplating the need to change unsustainable habits for the future maintenance. The students also pointed out the lack of practical content with real examples claiming several flaws in the subjects of education for sustainability, a fact defended in the study Sousa Filho, Coimbra, Mesquita and Luna (2015), who defend the need, first, the educator awareness.

In order to test if there are differences between the relationships according to the gender, multigroup analyzes were performed, according to the suggestions of Hair, Sarstedt, Ringle and Gudergan (2018). Table 4 presents the analysis' results of the constructs' significant relationships among groups of respondents.

According to the results (Table 4) it is possible to affirm that there are significant differences in the relationships between the constructs depending on the gender, supporting Hypothesis 2. The effect of environment awareness in intention of consuming organic products is more strongly positively in female group than in the male group.

The results obtained here are related to the study conducted by Gorni, Gomes and Dreher (2012), who quantitatively analyzed the gender difference among university students in relation to behavior, discourse and practice on sustainable consumption and, as a result, women are more concerned about this issue and, in general, the students interviewed show little personal effort toward behavior change.

Furthermore, Dalić, Radosavac, Knežević and Đervida (2019) conducted a study that sought to understand which sources of information are most used in searches for organic products. The results indicated that women, because they are more informed and have a greater interest in contents related to aesthetics, health and well-being, are more likely to

	Construct	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Table 2. Summary of the evaluation of measurement models	Intention of consuming organic products	0.868	0.893	0.512

	Path	Sample mean	Standard deviation	T-statistics	P-values
Table 3. Coefficients of the structural model – between constructs	Environmental awareness → Intention of consuming organic products	0.413	0.051	7,601	0.000

	Path	Path coefficients – difference (female–male)	P-values
Table 4. Analysis of relationships according to gender	Environmental awareness → Intention of consuming organic products	0.176	0.050

consume organic products. Moreover, the authors found that the average age of these women is under 30 years of age, that is, they live in a context of greater environmental awareness, especially in social media. Rahnama (2017) also assessed the propensity of women to consume a particular organic food. The author found that they are more detailed at the time of consumption and are more attentive to issues related to functional, social, emotional, conditional, epistemic, environmental and health value. Also, women pay more attention in taste, price and quality from in their purchases.

This research, therefore, elucidates that environmental awareness does not lead to the intention of consuming organic products, especially among male consumers, whose possible explanation is based on the theory of Brough, Wilkie, Ma, Isaac and Gal (2016), who claim that there is a gap relating gender and environmental behavior, due to the male need to maintain their gender identity, that is, the cognitive association between green behavior and femininity, prevents men from adopting ecological behavior for losing their manhood fear.

To evaluate the coefficient of determination (r^2), the analysis was based on the studies of Cohen (1988) and Faul, Erdfelder, Lang and Buchner (2007), which determine that f^2 values equal to 0.02, 0.15 and 0.35 are considered as small, medium and large effects, respectively. These values of f^2 represent values of r^2 equal to 2%, 13% and 25%, respectively. According to the analyses, the intention of consuming organic products construct presented an r^2 of 0.149, considered medium.

The complete model resulting from the empirical approach is presented in Figure 2.

The synthesis of the study hypothesis tests is presented in Table 5.

The final remarks are presented hereafter.

5. Final remarks
The next and final section addresses the final considerations of this study, which confirmed the relation between the environmental awareness dimensions influence and the intention to
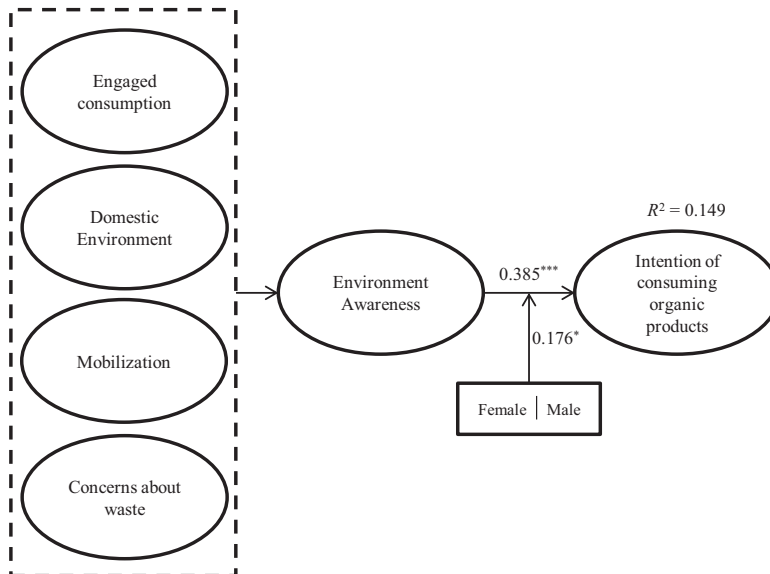
Note(s): * = significant at 5%; ** = significant at 1%; *** = significant at 0.1%; NS = not significant

Figure 2.
Complete empirical model

buy organic products that is also influenced according to the consumers' gender. In this case, it was verified, from the validation of a theoretical model, that there is a more positive effect and intensity in the organics' purchase by women.

Similar to the search results from Dałić, Radosavac, Knežević and Đervida (2019), Gorni, Gomes and Dreher (2012) and Rahnama (2017), women are more likely to consume organic products. This finding supports the theory from Dałić, Radosavac, Knežević and Đervida (2019), who argue that the greater dissemination of the organic products consumption culture depends on the consumer's knowledge about these products. In other words, and in an attempt to make a managerial contribution, the research identified men as a public less engaged in the organic products consumption. In this way, marketing efforts could be directed to this class, in an attempt to expand this market, through male education about the benefits of consuming organic products disassociating the concept of green and femininity. Furthermore, although the sample was constituted of students, the fact that women, especially to those who are mothers and concerned about their family's health, are more engaged consumers, also reinforces the need about targeting efforts marketing in this category, too.

According to Hair, Sarstedt, Ringle and Gudergan (2018) suggestions, the PLS-SEM technique was used to identify degrees of prediction and explanation of the presented constructs, since this statistical technique allows the simultaneous analysis of a large number of relationships in a conceptual model. Thus, the model proposed here is composed of a hierarchical latent variable, in which environmental awareness is a second-order construct made up of first-order constructs. In this case, relationships between second- and first-order constructs do not depict dependency but hierarchy, since second-order constructs do not exist without first-order formative constructs (Sarstedt, Hair, Cheah, Becker & Ringle, 2019).

As mentioned, the research was conducted with young graduates in Management. Thus, it is worth noting that although the students are from the same course and university, as there are many elective subjects, it is possible that their perception of environmental awareness in the classroom is different. In addition, today's young people are protagonists of the consumerist era and, therefore, there are not many references about their vision facing sustainability.

Based on the theoretical framework, it was possible to identify that, despite environmental awareness being in its initial stage and having different opinions and forms of interpretation, sustainable education is the only way to base a sustainable future, being promising for the change of feelings, senses and values (Pitanga, 2016).

Although the innumerable researches that use the relationship between human and nature as a study object, there is still a gap between the debate and the environmental awareness, which must be integrated in moments of consumption (Dalmoro, 2018). In this sense, the present study collaborates theoretically with a deeper understanding about the dynamics between the factors that can guide the choice for organic products, besides providing a greater theoretical and empirical support for futures the research studies in the area. Therefore, the results obtained here identify the factors that motivate the intention to consume organic products in the Brazilian context and can serve as a contribution to the managerial strategies formulation in order to increase the value perceived by the customer in relation to the consumption of these products.

Despite the zeal and methodological rigor in its elaboration, this research has limitations, as the nonprobabilistic nature in addition to the use of the convenience sample, made up of

Hypothesis	Description	Result
H1	Environmental awareness positively influences the intention on buying organic products	Confirmed
H2	There are differences in the relationship between environment awareness and intention on buying organic products regarding gender	Confirmed

Table 5.
Synthesis of the study's hypothesis tests

students, factors that do not allow the generalization of the results. Moreover, the dimensions of environmental awareness proposed here do not include all of the motivators about the organic consumption. Therefore, it is suggested to apply the measurement instrument used in this study in other cultural contexts, even in different Brazilian locations, including other dimensions, in order to compare the differences between the influences on the conventional and organic products purchase.

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