

# Organic food-buying intention drivers: a study based on means-end chain theory

Organic food-  
buying  
intention  
drivers

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Received 30 August 2023  
Revised 16 January 2024  
Accepted 28 January 2024

## Abstract

**Purpose** – Understanding how attributes, consequences and values (A-C-V) influence the predisposition to purchase and buying intention of organic food consumers (OFC) is crucial for its stakeholders. This study aims to (1) investigate whether OFC perceptions of the A-C-V impact their predisposition to purchase and buying intention; (2) examine the mediating effect of predisposition to purchase on the relationship between OFC personal values and their buying intentions and (3) verify whether consumers with distinct levels of organic food-buying intention perceive differently of the A-C-V, predisposition to purchase and consumption frequency.

**Design/methodology/approach** – This quantitative study comprised 307 consumers who filled out a form about their perceptions of organic foods' A-C-V and their consumption frequency, purchasing predisposition and buying intention. Partial least squares structural equation modelling (PLS-SEM) tested the hypothetical model that resorted to the means-end chain (MEC) theory (Gutman, 1982). Cluster analysis based on OFC's buying intentions compared their perceptions of the A-C-V, purchasing predisposition and consumption frequency.

**Findings** – The OFC's perception of the attributes of these foods impacts the consequences of their consumption and values. Such values positively influence their purchase predisposition and buying intention. Predisposition to purchase measured the relationship between OFC values and purchase intention. Three OFC clusters were identified according to their buying intentions. Such groups perceive the A-C-V singularly and have different purchasing predispositions and consumption frequencies.

**Originality/value** – OFC values directly influence buying intentions. However, the predisposition to purchase strongly mediates the relationship between values and buying intentions, producing an indirect impact more notable than a direct one. It brings academic and managerial contributions to organic food stakeholders.

**Keywords** Organic food, Food marketing, Consumer attitudes, Personal values, Sustainability, Means-end chain theory

**Paper type** Research paper

## 1. Introduction

The word organic refers to how farmers cultivate and process agricultural products such as vegetables, grains, fruits, meat and dairy products, following organic agriculture standards established by public or private entities that regulate and certify such products. Therefore, the term “organic products” refers to those that follow the criteria and methods recommended



This work was funded by the National Council for Scientific and Technological Development - CNPq – Brazil (Financial Support), the Federal University of Mato Grosso do Sul (UFMS) and the Intrepid Lab - CETRAD Research Center.

British Food Journal  
© Emerald Publishing Limited  
0007-070X  
DOI 10.1108/BFJ-08-2023-0767

by those entities, such as production without conventional fertilisers, pesticides, hormones or genetically modified components (Jayakumar and Ezhilvani, 2018; Rana and Paul, 2017).

Ngobo (2011) states that organic products can be food products (e.g. dairy products, meats, vegetables, fruits and cookies, biscuits and nutritional supplements) or non-food products (e.g. personal hygiene, cleaning products and clothing). Jayakumar and Ezhilvani (2018) argue that organic foods are produced through ecologically correct and safe agricultural practices without using chemicals (e.g. pesticides and synthetic fertilisers) or genetically modified organisms. Furthermore, organic foods are made through natural methods such as crop rotation, composting and integrated biological management of pests and diseases, contributing to maintaining soil health and fertility. Rana and Paul (2017) corroborate that organic food production does not use radiation, industrial solvents or chemical additives. Therefore, organic agriculture adopts practices that promote ecological balance and conserve the biodiversity of ecosystems.

Jayakumar and Ezhilvani (2018) and Bryła, 2016 state that many consumers consider organic foods healthier than those produced by conventional means, as they do not contain chemical residues, additives or genetically modified components. For these reasons, many consumers have been consuming organic foods instead of conventional ones, avoiding possible negative impacts on health (Devi *et al.*, 2023; Valero-Gil *et al.*, 2023). The growth in the consumption of organic foods has been taking place when the food sector has been facing significant challenges in satisfying consumers' needs, desires and requirements. Consumers are increasingly informed, aware, demanding and sophisticated, looking for healthy, fresh, natural and tasty foods (Souki *et al.*, 2020).

Teixeira *et al.* (2022) state that it is essential to understand organic food consumers' (OFC) behaviour, including the factors that explain their purchase intentions. However, such demeanour depends not only on the products' attributes but also on consumers' perceptions of the consequences or benefits they provide and on the alignment with their values (Oliveira *et al.*, 2021). The attributes relate to the specific and intrinsic characteristics of organic foods. Consequences refer to the results obtained by consumers when consuming this type of food (e.g. improving nutrition, increasing food safety, not accumulating chemical residues in the body, taking care of health and augmenting physical and mental disposition). Finally, personal values denote the beliefs and attitudes that consumers have towards organic foods, such as having a healthy, balanced and happy life, being more responsible for life and contributing sustainably to future generations (Zheng *et al.*, 2021; Lin *et al.*, 2019; Bryła, 2016; Zanolli and Naspetti, 2002).

Oliveira *et al.* (2021) and Huang *et al.* (2019) argue that the means-end chain theory (MEC) aims to explain the relationship between attributes, consequences and values (A-C-V). This theory derives from the seminal works of Olson and Reynolds (1983) and Gutman (1982). It advocates that people create a hierarchical series of mental connections that link the characteristics of a product or service to the benefits they desire. In this sense, Reynolds and Gutman (1988) assert that consumers choose attributes that can achieve consequences or benefits that satisfy their values. Therefore, the MEC allows for identifying the most critical A-C-V for consumers' decisions, providing subsidies to develop products aligned with their values. However, no prior studies contemplated the perceptions of consumers about the A-C-V associated with organic foods and their impacts on the predisposition to purchase and the buying intention of this type of product. It is the first gap in the scientific literature that this study fills.

Dorce *et al.* (2021) claim that consumer attitudes mediate the relationship between the perceived benefits of organic food and consumer buying intention. However, no previous investigations demonstrated OFC values' direct and indirect effects on their buying intentions, mediated by a predisposition to purchase (attitude). Therefore, this is the second gap the present study aims to address.

Finally, this study verifies whether consumers with distinct levels of organic food-buying intention have differences in the frequency of consumption and their perceptions of A-C-V

and their predisposition to purchase this type of product. Thus, this is the third gap in the literature that this research fills.

This study aims to (1) investigate whether OFC perceptions of the A-C-V impact their predisposition to purchase and buying intention; (2) examine the mediating effect of predisposition to purchase on the relationship between OFC personal values and their buying intentions; (3) verify whether consumers with distinct levels of organic food-buying intention perceive differently of A-C-V, predisposition to purchase and consumption frequency.

The present study contributes academically by demonstrating that consumers' perception of the attributes of organic foods directly and positively affects the consequences or benefits they perceive and their values. This result confirms the MEC theory. Additionally, it reveals that the OFC values positively influence their purchase predisposition and buying intention of this type of product. This investigation reveals that the indirect effect of personal values on buying intention is greater than the direct effect, as the predisposition to purchase strongly mediates the relationship between OFC values and their buying intention.

Moreover, this investigation identifies three clusters of consumers according to their intention to buy organic food. The cluster with the highest organic food-buying intention is characterised by consumers consuming these products more frequently. This cluster also perceives more the attributes and consequences (benefits) of organic food consumption and considers it more strongly aligned with their values. Moreover, the cluster of consumers with a greater intention to purchase organic food exhibited a greater predisposition to purchase it.

This study also brings valuable managerial contributions to organic food production chain stakeholders, such as consumers, producers and their associations, retailers, restaurant managers and regulatory and certifying agencies. Such contributions are in this paper's conclusions section.

## 2. Theoretical background and research hypotheses

This study's hypothetical model employed the MEC to investigate consumers' perception of the A-C-V of organic foods and test the impacts on their predisposition to purchase and buying intention of this type of product (Figure 1).

### 2.1 MEC and the relationship between attributes-consequences-values

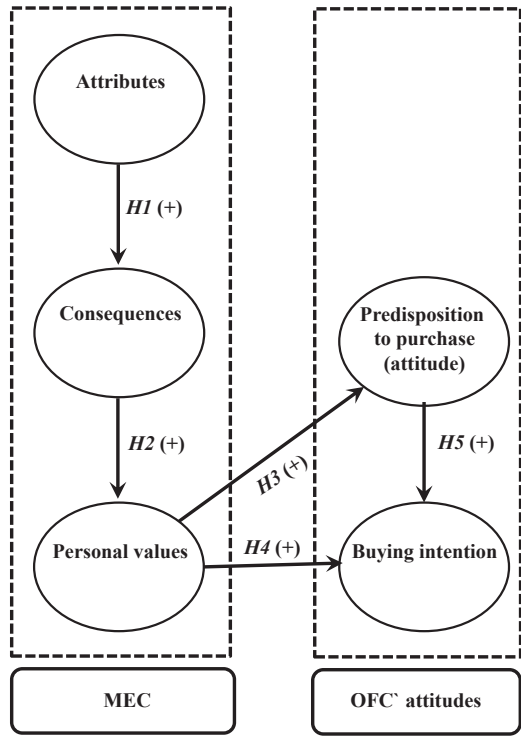
The MEC provides the conceptual basis for the first two hypotheses proposed in the present study, namely H1 and H2 (Gutman, 1982; Olson and Reynolds, 1983). According to this theory, consumers behave and make purchasing decisions influenced by the intrinsic attributes of products and their A-C-V. This theory advocates that consumers tend to opt for products and services that offer attributes that generate consequences (e.g. bring benefits or avoid undesired effects) and, as a result, satisfy their values (Oliveira *et al.*, 2021; Barrena *et al.*, 2017; Gutman, 1982). Hence, MEC argues that consumers do not buy products simply because they are intrinsically good but because of the consequences or benefits they offer and the personal values they satisfy (Oliveira *et al.*, 2021). Considering the above, the following regarding OFC's behaviour hypotheses are:

- H1. A direct and positive relationship exists between organic foods' attributes and the consequences consumers perceive regarding their consumption.
- H2. The consequences perceived by consumers regarding organic food consumption have a direct and positive relationship with their personal values.

### 2.2 Personal values and their relationship with the predisposition to purchase

Personal values are abstract elements that reflect principles and beliefs about states of existence or desirable behavioural models that guide people's lives. Thus, values represent

**Figure 1.**  
Hypothetical model



Source(s): Developed by the authors

what individuals consider essential, affecting their behaviour and decisions. According to the MEC, the values constitute the last stage of the A-C-V hierarchy. Accordingly, the values represent the final goals that consumers aim to achieve when buying or using a product or service (Oliveira *et al.*, 2021; Huang *et al.*, 2019).

The first step for consumers to buy products or services is to be predisposed to carry out this action. Accordingly, a predisposition to purchase is an attitude towards behaviour, which refers to the tendency or propensity of consumers to consider the possibility of purchasing certain products or services (Fleşeriu *et al.*, 2020; Ajzen, 1991). It is a subjective assessment that reflects the degree of receptiveness of consumers regarding the possibility of purchasing something. However, this possibility does not necessarily imply immediate purchase decisions and actions (Fishbein and Ajzen, 1975).

The predisposition to purchase is shaped by previous experiences, cognition, beliefs, personal values, emotions, social influences and situational context (Kamboj and Kishor, 2022; Fleşeriu *et al.*, 2020; Yilmaz and Ilter, 2017; Ajzen, 1991). In this sense, the following hypothesis is:

*H3.* OFCs' personal values impact their predisposition to purchase directly and positively.

*2.3 Personal values and their relationship with the buying intention*

Behavioural intentions are related to people's willingness and/or desire to perform specific actions in the future to achieve objectives or purposes. Consumers' behavioural intentions

have been the object of interest of managers and researchers in marketing and consumer behaviour in recent decades (Bagozzi, 1992; Ajzen, 1991; Fishbein and Ajzen, 1975). In this context, buying intention relates to the consumer's willingness and desire to purchase a specific product or service or engage in consumption behaviour in a given time (Chinelato *et al.*, 2023).

Fleşeriu *et al.* (2020) state that behavioural intentions are predictors of actual behaviour, as they reflect people's desire to act in line with declared intentions. However, intentions do not guarantee the implementation of actions, as external or internal factors also influence the achievement of declared intentions (Devi *et al.*, 2023).

Previous studies demonstrated that consumers' personal values influence their intentions to purchase organic food (Devi *et al.*, 2023; Kautish *et al.*, 2022; Ladhari and Tchetgna, 2017; Shashi and Singh, 2015). Thus, the following hypothesis is:

H4. OFCs' personal values directly and positively impact their buying intention.

#### *2.4 Predisposition to purchase and their relationship with the buying intention*

Attitudes refer to people's propensity to behave favourably or unfavourably towards particular objects stably or permanently over time (Fishbein and Ajzen, 1975). They are composed of cognitive (knowledge and beliefs) and affective (emotions and feelings) dimensions, directly influencing people's behaviour. The Theory of Planned Behaviour (Ajzen, 1991) proposed that people's attitudes precede their intentions regarding certain behaviours. Thus, a predisposition to purchase is an attitude that reflects consumers' openness to considering the possibility of purchasing certain products or services (Fleşeriu *et al.*, 2020).

Although the predisposition to purchase and buying intention constructs are related, they have crucial differences. Predisposition to purchase is an attitude with a more subjective character, referring to consumers' receptiveness to buying certain products or services. On the other hand, buying intention is more concrete, indicating the declared desire to purchase a specific product or service or engage in a consumption behaviour within a defined time (Dorce *et al.*, 2021; Chen and Lobo, 2012).

According to Kamboj and Kishor (2022), Teixeira *et al.* (2022) and Koklic *et al.* (2019), the predisposition to purchase organic food is an attitude directly and positively associated with buying intentions for this type of product. Therefore, the following hypothesis is:

H5. Consumers' predisposition to purchase organic foods directly and positively impacts their buying intentions.

### **3. Methodology**

This study is quantitative and descriptive, collecting data through a single cross-section. Their hypothetical model includes A-C-V related to the consumption of organic foods (Oliveira *et al.*, 2022). The MEC supports A-C-V (Huang *et al.*, 2019). The hypothetical model also tests the impacts of the A-C-V nomological chain on the predisposition to purchase and buying intention. Therefore, the measurement items of the constructs of this survey came from previous studies (Table 1).

The present study took place in Brazil. The researchers used Google Forms® to collect this survey's data. The electronic form had two filter questions about knowledge and consumption of organic foods to identify and select this study's target. In addition, the survey instrument included 25 items related to the hypothetical model and four questions about the socio-demographic profile of respondents (gender, age, family income and education) and behavioural profile (organic food consumption frequency). Moreover, this electronic platform

| Constructs                                 | Measurement items                                                                                                                                                                                                                                                                                | Number of items | Sources                                                                                         |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------|
| Attributes                                 | In your opinion, organic foods . . .<br>does not contain pesticides<br>are healthier<br>have a different flavour<br>are produced sustainably and consciously<br>are not genetically modified                                                                                                     | 5               | Adapted from <a href="#">Oliveira et al. (2022)</a> and <a href="#">Bryła (2016)</a>            |
| Consequences (benefits)                    | Consuming organic foods . . .<br>makes me feel confident because it is nutritious<br>allows for less accumulation of chemical residues in the body<br>provides a feeling of food security<br>makes it possible to take care of my health<br>allows me to eat healthily<br>improves my mood daily | 6               | <a href="#">Oliveira et al. (2022)</a>                                                          |
| Personal values                            | Consuming organic foods . . .<br>makes me feel good<br>brings me happiness<br>makes me contribute to future generations<br>gives me a more balanced life<br>makes me more responsible for life                                                                                                   | 5               | <a href="#">Oliveira et al. (2022)</a>                                                          |
| Predisposition to purchase                 | I am predisposed to buy organic foods<br>If I need food, I would be willing to buy organic food<br>Next time I need food, I will probably choose organic food<br>I consider organic foods to be an attractive consumption option                                                                 | 4               | Adapted from <a href="#">Santos et al. (2015)</a> and <a href="#">Chen and Lobo (2012)</a>      |
| Buying intention                           | I intend to buy organic food in the next three months<br>I plan to buy organic foods in the future<br>Organic foods will be my first purchase option when I need to buy food<br>Next time I need food, I will choose organic food<br>I will buy organic foods on my next purchase                | 5               | Adapted from <a href="#">Santos et al. (2015)</a> and <a href="#">Nasir and Karakaya (2014)</a> |
| <b>Source(s):</b> Developed by the authors |                                                                                                                                                                                                                                                                                                  |                 |                                                                                                 |

**Table 1.**  
MEC, constructs,  
measurement items  
and sources

has a resource that requires respondents to fill in all the questions indicated as mandatory. In this sense, there are no typing errors, missing values, or values outside the limits provided for in the scales ([Malhotra et al., 2017](#)). This investigation uses a seven-point Likert-type agreement or disagreement scale, with one (1) meaning “completely disagree” and seven (7) representing “completely agree”, as recommended by [Malhotra et al. \(2017\)](#).

This survey comprised 307 OFC accessed through the non-probabilistic snowball technique ([Malhotra et al., 2017](#)). Such authors argue that non-probabilistic samples can provide reasonable estimates about the profile of the population of interest. However, it is impossible to make inferences about the research results for this population. The participants disclosed this survey’s electronic form link to other OFC in their network of contacts. Finally,

the participation of OFC was voluntary and based on their interest in expressing opinions about their buying and consumption behaviour of organic food.

According to [Hair et al. \(2022\)](#) and [Chin and Newsted \(1999\)](#), assessing the sample size and the power of the statistical analyses is crucial. For this purpose, the researchers used the G\* Power 3.1.9.4 software ([Faul et al., 2009](#)). The construct with the most predictors in the structural model is buying intention, which is impacted by two constructs (predisposition to purchase and personal values). Considering the buying intention predictors, the significance level of 5%, the statistical power of 0.08 and the average effect size ( $f^2 = 0.15$ , which corresponds to a moderate effect of  $R^2 = 13\%$ ), the minimum size of the indicated sample is 94 cases. However, more demanding criteria considering a significance level of 1%, statistical power of 0.01 and the average effect size of  $f^2 = 0.15$  indicate that the minimum sample size should be 188 cases. [Ringle et al. \(2014\)](#) recommend expanding this size to obtain a more consistent model. This survey had 307 respondents, representing 3.27 times more participants than the less rigorous criterion and 1.63 times more than the most conservative parameter. The post hoc analysis of the G\* Power 3 revealed a statistical power of 0.999 for this investigation's model, confirming that the sample size is adequate.

This research's hypothetical model was tested through Structural Equation Modelling using Partial Least Squares (PLS-SEM), as suggested by [Henseler \(2021a\)](#) and [Hair et al. \(2019b\)](#). PLS-SEM estimates partial least squares based on regressions to explain the variance of unobserved constructs, minimising errors and maximising the  $R^2$  values of endogenous constructs ([Ali et al., 2018](#)). The authors used the ADANCO 2.3 software to analyse this survey's data, as it can analyse complex structural models, which have many relationships between variables and concomitantly estimate the research's structural and measurement models ([Souki et al., 2023a](#); [Henseler, 2021a, b](#)).

This study also included a cluster analysis of consumers, classified according to their intention to buy organic food ([Hair et al., 2022](#); [Souki et al., 2022](#); [Mooi et al., 2018](#)). Cluster analysis identified the number of OFC in each cluster and their socio-demographic and behavioural profiles.

## 4. Analysis and discussion of results

### 4.1 Description of the sample

This research's final sample consisted of 307 OFC residing in Brazil. The results show that 58.0% of respondents are women and 42.0% are men. Concerning the participants' age, 30.3% were between 18 and 25 years old, 12.4% were between 26 and 30 years old, 18.6% were between 31 and 40 years old, 20.2% were between 41 and 50 years old and 18.6% were over 50 years old. Regarding the monthly family income, 10.4% earn up to US\$ 360.00, 20.8% make between US\$ 360.01 and US\$ 720.00, 31.6% are in the income range between US\$ 720.01 and US\$ 1,800.00, 25.1% earn between US\$1,800.01 and US\$3,600.00 and 12.1% earn above US\$3,600.00. Concerning the interviewees' education, 7.2% have completed elementary school, 30.6% have completed high school or incomplete higher education, 25.1% have concluded higher education or unfinished postgraduate studies and 37.1% have terminated their graduate courses.

This study also reveals the participants' frequency of organic food consumption. Thus, 15.9% of respondents consumed organic foods daily, 31.7% consumed between two and three times a week, 21.4% once a week and 31.0% ingested less than once a week.

### 4.2 Estimation of the measurement model

Confirmatory factor analysis (CFA) estimated this study constructs' measurement model ([Henseler, 2021a](#)). The CFA checks the factor loadings ( $\lambda$ ) of the variables of the model's constructs, which must be greater than 0.6 ([Sarstedt et al., 2017](#)).



The results reveal that the factor loadings of the variables 2A (Attributes construct) and 1V (Personal Values construct) are lower than 0.6. Therefore, the researchers eliminated these variables from the measurement model. All others  $\lambda$  are more significant than 0.6, indicating that the model is adjusted for the other tests. The bootstrapping test evaluated whether the factor loadings had a  $t$ -test greater than 1.94, which means a  $p$ -value  $<0.05$  (Hair *et al.*, 2022). All the scale items had a  $t$ -test greater than 9,414 and significance ( $\alpha$ ) less than 0.000.

Subsequently, the Reliability and Convergent Validity of the constructs that compose the model were verified. Henseler (2021a) recommends ascertaining three reliability indicators: the Dijkstra-Henseler rho ( $\rho_A$ ), the Jöreskog rho ( $\rho_c$ ) and the Cronbach's alpha coefficient ( $\alpha$ ). Sarstedt *et al.* (2017) suggest that the values of  $\rho_A$  and  $\rho_c$  are more significant than 0.7. Table 2 demonstrates that all constructs'  $\rho_A$  and  $\rho_c$  values were more outstanding than 0.8250. Hair *et al.* (2022) advise that  $\alpha$  values be more significant than 0.7. All constructs in this study have  $\alpha$  values greater than 0.8044. Therefore, these indicators attest to the reliability of this study's measurement model.

The convergent validity of this investigation model constructs' indicators were evaluated using the average variance extracted (AVE). For this purpose, was used Fornell and Larcker's (1981) criterion which recommends that the AVE of the constructs must present values greater than 0.5. Table 2 reveals that all model constructs have AVE greater than 0.5640, demonstrating their convergent validity.

The researchers then checked the measurement model's discriminant validity (DV). Hair *et al.* (2019a) state that the DV indicates whether two constructs are statistically dissimilar. For this purpose, the authors resorted to the heterotrait-monotrait ratio of common factor correlations (HTMT and HTMT2) methods, as advised by Hair *et al.* (2022) and Henseler *et al.* (2015). According to Hair *et al.* (2022), high HTMT values suggest DV-related problems. Accordingly, Henseler *et al.* (2015) and Hair *et al.* (2019b) recommend that HTMT values be less than 0.90 if the model includes conceptually similar constructs and 0.85 when the constructs are more distinct. Table 3 demonstrates that all HTMTs amongst the model's constructs are lower than 0.85, except for the predisposition to purchase and buying intention (0.91). However, these constructs are conceptually similar, and their indicators have comparable semantics, making it difficult for this investigation's participants to discriminate. The HTMT2 test was also performed and showed results similar to those in the HTMT (Table 3).

Hence, this measurement model's constructs are valid, reliable and significant (Hair *et al.*, 2022; Henseler, 2021a).

4.3 Nomological model analysis and hypotheses test

Henseler (2021a) argues that the model's nomological analysis allows the researchers to understand how the constructs are related. The present study evaluated the structural model

**Table 2.**  
Reliability and  
convergent validity

| Constructs                    | Dijkstra-Henseler's<br>rho ( $\rho_A$ ) | Jöreskog's rho<br>( $\rho_c$ ) | Cronbach's<br>alpha ( $\alpha$ ) | Average variance<br>extracted (AVE) |
|-------------------------------|-----------------------------------------|--------------------------------|----------------------------------|-------------------------------------|
| Attributes                    | 0.8250                                  | 0.8648                         | 0.8044                           | 0.5640                              |
| Personal values               | 0.9144                                  | 0.9344                         | 0.9122                           | 0.7404                              |
| Consequences                  | 0.8824                                  | 0.9045                         | 0.8720                           | 0.6148                              |
| Predisposition to<br>purchase | 0.9013                                  | 0.9263                         | 0.8943                           | 0.7586                              |
| Buying intention              | 0.9482                                  | 0.9599                         | 0.9473                           | 0.8275                              |

**Source(s):** Survey data



|                        |                               |            |                    |                            |                               |                     | Organic food-<br>buying<br>intention<br>drivers                                                                       |
|------------------------|-------------------------------|------------|--------------------|----------------------------|-------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------|
|                        | Construct                     | Attributes | Personal<br>values | Consequences<br>(benefits) | Predisposition to<br>purchase | Buying<br>intention |                                                                                                                       |
| HTMT                   | Attributes                    | 1.000      |                    |                            |                               |                     | <hr/> <b>Table 3.</b><br>Discriminant validity:<br>heterotrait-monotrait<br>ratio of correlations<br>(HTMT and HTMT2) |
|                        | Personal values               | 0.642      | 1.000              |                            |                               |                     |                                                                                                                       |
|                        | Consequences<br>(benefits)    | 0.830      | 0.841              | 1.000                      |                               |                     |                                                                                                                       |
|                        | Predisposition to<br>purchase | 0.614      | 0.665              | 0.709                      | 1.000                         |                     |                                                                                                                       |
|                        | Buying intention              | 0.587      | 0.679              | 0.655                      | 0.913                         | 1.000               |                                                                                                                       |
| HTMT2                  | Attributes                    | 1.000      |                    |                            |                               |                     |                                                                                                                       |
|                        | Personal values               | 0.618      | 1.000              |                            |                               |                     |                                                                                                                       |
|                        | Consequences<br>(benefits)    | 0.820      | 0.839              | 1.000                      |                               |                     |                                                                                                                       |
|                        | Predisposition to<br>purchase | 0.604      | 0.660              | 0.699                      | 1.000                         |                     |                                                                                                                       |
|                        | Buying intention              | 0.585      | 0.676              | 0.639                      | 0.911                         | 1.000               |                                                                                                                       |
| Source(s): Survey data |                               |            |                    |                            |                               |                     |                                                                                                                       |

**Table 3.**  
Discriminant validity:  
heterotrait-monotrait  
ratio of correlations  
(HTMT and HTMT2)

through its path coefficients ( $\phi$ ) and significance ( $\alpha$ ). [Hair et al. \(2022\)](#) state that path analysis exhibits how one construct impacts another through arrows that indicate causality relationships. In this way, an exogenous construct can impact an endogenous construct positively or negatively. This investigation used the bootstrapping technique to estimate the model, calculating path coefficients and their significance through the standard error ([Hair et al., 2022](#); [Aguirre-Urreta and Rönkkö, 2018](#)).

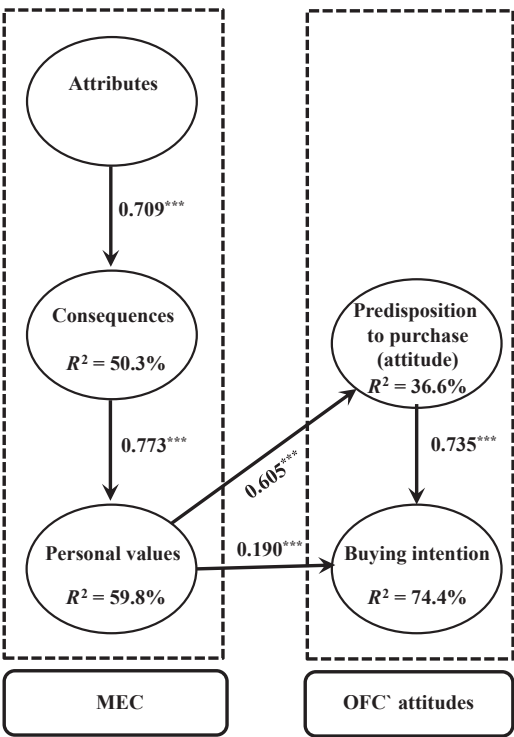
Furthermore, the researchers verified Pearson's Coefficient of Determination ( $R^2$ ) of the structural model's endogenous variables. [Ringle et al. \(2014\)](#) argue that the  $R^2$  is an indicator of the quality of structural models, as it allows evaluation of the portion of the variance of the endogenous variables explained by the exogenous variables. These authors point out that the greater the  $R^2$  of the endogenous variables, the better the capacity of the exogenous variables to explain them. [Cohen \(1988\)](#) established some parameters related to  $R^2$  values to classify the effect of exogenous variables on endogenous variables. Thus, the effect is negligible when  $R^2$  is equal to or less than 2%. When the  $R^2$  reaches 13%, the impact is medium. However,  $R^2$  values equal to or greater than 26% reveal a strong impact.

[Figure 2](#) presents the structural model's path coefficients ( $\phi$ ), their significance ( $\alpha$ ) and  $R^2$ .

As shown in [Figure 2](#), the structural model's exogenous constructs powerfully explain the endogenous ones because the  $R^2$  values of all endogenous constructs were much higher than the parameter that [Cohen \(1988\)](#) defines as having a substantial impact (26%). Hence, the following  $R^2$  values were obtained for the endogenous constructs of this study: consequences (50.3%), personal values (59.8%), predisposition to purchase (36.6%) and buying intention (74.4%).

[Table 4](#) presents the tests of the relationship between the model constructs. It includes the path coefficients between constructs, standard errors,  $t$ -tests and path significances, indirect effects, total effects and these relationships' effect size ( $f^2$ ). Such indicators support this study's hypotheses (H1-H5).

Standard error values for all relationships between constructs in this study were low ( $<0.05$ ), demonstrating that the error in model estimates is small ([Table 4](#)). The more minor the standard error, the greater the value of the critical  $t$ -test ([Hair et al., 2019a](#)). [Table 4](#) shows that all relationships between constructs had a  $t$ -test greater than 2.58, reflecting a  $p$ -value



**Notes(s):** \*\*\* - Path is significant at 0.1% ( $p < 0.001$ )  
 $R^2$  - Explained variance of the constructs  
**Source(s):** Research data

**Figure 2.**  
The structural model

(2-tails)  $< 0.05$ . These results confirm the validity and reliability of the path coefficients between the tested constructs.

Table 4 and Figure 2 reveal that most  $\rho$  are more significant than 0.6, indicating the impacts of exogenous constructs on endogenous constructs. Only the path coefficient ( $\rho$ ) demonstrates that the effect of personal values on buying intention has a value of 0.190. Despite this value being lower than those obtained in the relationships between the other constructs of the model, OFC personal values positively impact their buying intention.

Table 4 also indicates the total effect of the relationships between the model constructs through multiple regressions (Hair *et al.*, 2022). The total effect is the sum of the direct and indirect effects (Henseler, 2021a). The indirect effect occurs when variable X has an effect ( $a$ ) on variable M, and variable M has an effect ( $b$ ) on variable Y. Thus, the indirect effect of X on Y is the result of  $a \times b$ . In the present study, the total effects were between 0.605 and 0.774, influenced by the direct effects of exogenous constructs on endogenous ones. However, the indirect effects (0.445) exceeded the direct effects (0.190) regarding the relationship between personal values and buying intention constructs. Considering that the personal values construct (variable X) impacts the predisposition to purchase (variable M), which, in turn, affects buying intention (variable Y), the authors evaluated its possible mediating effect on that relationship.

| Relationships between constructs                                                                               | Path coefficients <sup>a</sup> | Standard error | T-test | p-value (2-sided) | Indirect effect | Total effect | Hypotheses   |
|----------------------------------------------------------------------------------------------------------------|--------------------------------|----------------|--------|-------------------|-----------------|--------------|--------------|
| Attributes → Consequences (benefits)                                                                           | 0.709                          | 0.048          | 14.836 | 0.000             | –               | 0.709        | H1 supported |
| Consequences (benefits) → Personal values                                                                      | 0.774                          | 0.029          | 26.801 | 0.000             | –               | 0.774        | H2 supported |
| Personal values → Predisposition to purchase                                                                   | 0.605                          | 0.046          | 13.160 | 0.000             | –               | 0.605        | H3 supported |
| Personal values → Buying intention                                                                             | 0.190                          | 0.043          | 4.444  | 0.004             | 0.445           | 0.634        | H4 supported |
| Predisposition to purchase → Buying intention                                                                  | 0.735                          | 0.034          | 21.661 | 0.000             | –               | 0.735        | H5 supported |
| <b>Note(s):</b> <sup>a</sup> The path coefficient corresponds to the direct effect of one construct on another |                                |                |        |                   |                 |              |              |
| <b>Source(s):</b> Research data                                                                                |                                |                |        |                   |                 |              |              |

**Table 4.**  
Tests of the  
relationship between  
model constructs

Baron and Kenny (1986) argue that mediation analysis divides the total effect of the relationship between an independent variable and another dependent variable into direct and indirect impacts influenced by a variable that mediate this relationship. In the present investigation, the criteria proposed by the authors mentioned above were adopted to verify the mediation of the predisposition to purchase construct in the relationship between personal values and buying intention. The results show that personal values directly and positively affect the mediator variable predisposition to purchase ( $\beta = 0.605$ ;  $\alpha < 0.001$ ). Moreover, personal values directly and positively affect buying intention without the mediating variable ( $\beta = 0.636$ ;  $\alpha < 0.001$ ). In addition, the predisposition to purchase directly and positively impacted buying intention ( $\beta = 0.735$ ;  $\alpha < 0.001$ ). Finally, a decrease in the path coefficient (from  $\beta = 0.636$  to  $\beta = 0.190$ ) was observed in the relationship between personal values and buying intention when the mediating variable predisposition to purchase was added. Such results prove that the predisposition to purchase mediates the relationship between personal values and buying intention.

Hair *et al.* (2022) propose a procedure to analyse the existence and intensity of mediation between constructs through the PLS-SEM. This procedure's first step is to determine the significance of the direct effect of one construct over the other without including the mediating variable in the model. If the direct effect is insignificant, the conclusion is that there is no mediation between the constructs. On the other hand, if there is a significant direct effect, the mediating variable must be included in the model, and the significance of the indirect effect must be assessed. If the indirect effect is insignificant, there is no mediation between the constructs. However, the variance accounted for (VAF) should be evaluated if the indirect effect is significant. Carrión *et al.* (2017) state that the VAF determines how much the mediation explains the variance of the dependent variable. To calculate the VAF, divide the indirect effect's value by the total effect's value. The constructs have no mediation if the VAF is less than 20%. If the VAF has values between 20% and 80%, there is a partial mediation between the constructs. Finally, VAF values greater than 80% indicate total mediation between the constructs.

In the present study, the significance of the direct effect of personal values on buying intention was verified without including the predisposition to purchase (mediating variable) in the model. Results revealed a significant direct effect of personal values on buying intention ( $\beta = 0.636$ ). Following the procedure recommended by Hair *et al.* (2022), the researchers included the mediating variable predisposition to purchase in the model to assess the significance of the indirect effect. The results showed an indirect and significant effect of personal values on the intention to buy organic food (0.445; sig. = 0.004). Therefore, the next step was to evaluate the VAF, dividing the indirect effect value by the total effect value. The VAF obtained was 70.19%. According to the classification by Hair *et al.* (2022), this result indicates the partial mediation of the predisposition to purchase on the relationship between personal values and the buying intention of OFC. This VAF value is very close to the upper limit of the parameter established by Hair *et al.* (2022) to classify the intensity of mediation between the constructs as partial (between 20% and 80%). Hence, the mediation found is partial but robust.

#### 4.4 Cluster analysis

To verify whether there were significant differences between OFC regarding their predisposition to purchase, purchase frequency and perceptions about attributes, consequences and personal values, the researchers conducted a cluster analysis according to their buying intention of this type of product.

According to Hair *et al.* (2022) and Mooi *et al.* (2018), cluster analysis allows identifying objects or similar cases based on predetermined variables. Thus, researchers can form

clusters with individuals similar to each other (minimum internal variance) but different between groups (maximum external variation) based on significant and heterogeneous samples. In this study, cluster analysis used Ward's hierarchical method to classify participants according to their intention to buy organic food. Notably, the similarity between groups of OFC was estimated according to the average distance between cases. Accordingly, subjects with smaller intervals were considered similar, and those with greater distances were classified into distinct clusters (Mooi *et al.*, 2018).

Cluster analysis found solutions with two, three and four clusters considering different levels of consumers' intention to buy organic food. The next step was to elucidate the most appropriate solution to meet this study's objectives (Souki *et al.*, 2022). Mooi *et al.* (2018) recommend several criteria for choosing the ideal number of clusters. These authors state that the clusters must be sufficiently different from each other (differentiable) and identifiable through observable variables, such as socio-demographic or geographic profile (identifiable). Moreover, the groups must be reachable (accessible) and likely to be served by organisations (actionable). Another criterion is that the clusters must be stable (reliable) in the long term. Finally, organisations must be able to meet consumer demands (relevant).

Considering the above criteria, the researchers evaluated the grouping options with two, three and four clusters. The four clusters solution violated the criterion that the groups are few (parsimonious) and differentiable, which makes them inaccessible and non-actionable. Although the alternative with two clusters showed socio-demographic differences (gender and age), the first cluster had fewer members than the second group, reducing its managerial relevance. Thus, the solution with three clusters proved to be the most suitable for the present study. Cluster A is composed of 75 individuals (24.4%), Cluster B of 66 respondents (21.5%) and Cluster C of 166 OFC (54.1%), comprising the 307 participants of this survey. Cluster A showed a low buying intention ( $\bar{X} = 2.99$  on a 7-point scale), whilst the members of Cluster B showed moderate buying intention ( $\bar{X} = 5.25$ ) and Cluster C revealed a high buying intention ( $\bar{X} = 6.58$ ).

Concerning the clusters' socio-demographic characteristics, most members of Cluster A – Low buying intention are men (53.3%), whilst Cluster B – Moderate buying intention exhibited a balance between gender (50.0%) and Cluster C – High buying intention was predominantly composed of women (66.3%). There were also significant differences between the clusters regarding age. It is because Cluster A – Low buying intention members are younger, primarily consumers aged between 18 and 25 (40.0%). Amongst consumers aged between 26 and 40 years old, it was found that 12.3% belonged to Cluster A – Low buying intention, 25.9% integrated Cluster B – Moderate buying intention and 61.8% composed Cluster C – High buying intention. The differences concerning the age profile of the clusters are statistically significant. It demonstrates that the members of Cluster A – Low buying intention belong to Generation Z and those of Cluster C – High buying intention belong to Generation Y (Zheng *et al.*, 2021). No significant differences between the clusters regarding family income and education level were identified.

The results also reveal behavioural differences between the clusters. Consumers from Cluster C – High buying intention consume organic foods more frequently than members of Cluster A – Low buying intention and Cluster B – Moderate buying intention. Thus, whilst 57.3% of the members of Cluster A – Low buying intention consume organic food less than once a week, 36.7% of the consumers of Cluster C – High buying intention consume this type of food between two and three times a week and 24.1% eat organic daily. Finally, Pearson's Chi-square test demonstrates a significance of 0.000 when comparing the consumption frequency of organic foods between clusters (Table 5).

This result is in line with that obtained by Koklic *et al.* (2019), which demonstrates that previous consumption of organic foods is directly and positively associated with purchase intentions for this type of food.

The results demonstrate that the solution with three clusters is the most adequate because it is parsimonious, sufficiently different from each other (differentiable) and identifiable through observable variables (e.g. gender, age and frequency of organic food consumption). Furthermore, such clusters are accessible and actionable by organisations. Finally, companies can supply the demands of consumers in these clusters (relevant).

Table 6 compares the means of the consumers' perception of the attributes, consequences, personal values and their predisposition to purchase amongst the clusters according to their buying intention. Consumers of the three clusters tend to agree that organic food does not contain pesticides, is healthier, has a different flavour, is produced sustainably and consciously and is not genetically modified, demonstrated by the high means of agreement with the attributes construct. However, consumers composing Cluster B – Moderate buying intention ( $\bar{X}$  = 6.22) and C – High buying intention ( $\bar{X}$  = 6.53) more strongly agree with the attributes construct than those belonging to Cluster A – Low buying intention ( $\bar{X}$  = 5.22).

Consumers in Cluster C – High purchase intention tend to agree more with the consequences and benefits of consuming organic foods than those in Clusters A and B. Hence, Cluster C members believe that such foods are more nutritious than conventional foods, accumulate fewer chemical residues in the body, provide food security, make it possible to eat healthily and take care of health, improving their mood daily.

**Table 5.**  
Frequency of organic food consumption according to buying intention clusters

| Frequency of consumption of organic food | Organic food buying intention clusters |                                       |                                   |
|------------------------------------------|----------------------------------------|---------------------------------------|-----------------------------------|
|                                          | Cluster A – low buying intention       | Cluster B – moderate buying intention | Cluster C – high buying intention |
| Less than once a week                    | 57.3%                                  | 30.3%                                 | 18.7%                             |
| Once a week                              | 14.7%                                  | 31.8%                                 | 20.5%                             |
| Between two and three times a week       | 17.3%                                  | 36.4%                                 | 36.7%                             |
| Daily                                    | 10.7%                                  | 1.5%                                  | 24.1%                             |
| <b>Source(s):</b> Survey data            |                                        |                                       |                                   |

**Table 6.**  
Attributes, consequences, values and predisposition to purchase according to organic food buying intention clusters

| Constructs                                                                                                                                                                                 | Organic food buying intention clusters |                                       |                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------|-----------------------------------|
|                                                                                                                                                                                            | Cluster A – Low buying intention       | Cluster B – moderate buying intention | Cluster C – High buying intention |
| Attributes                                                                                                                                                                                 | 5.22                                   | 6.22 <sup>a</sup>                     | 6.53 <sup>a</sup>                 |
| Consequences (Benefits)                                                                                                                                                                    | 4.99                                   | 5.82 <sup>a</sup>                     | 6.48 <sup>a,b</sup>               |
| Values                                                                                                                                                                                     | 4.05                                   | 5.31 <sup>a</sup>                     | 6.15 <sup>a,b</sup>               |
| Predisposition to purchase                                                                                                                                                                 | 3.76                                   | 5.62 <sup>a</sup>                     | 6.47 <sup>a,b</sup>               |
| <b>Note(s):</b> Results are based on two-sided tests that assume equal variances. For each significant pair, the minor category key appears in the category with the most significant mean |                                        |                                       |                                   |
| The significance level for a and b: $p < 0.05$                                                                                                                                             |                                        |                                       |                                   |
| Using Bonferroni's correction, the tests are adjusted for all pairwise comparisons in a row of each subtable                                                                               |                                        |                                       |                                   |
| <b>Source(s):</b> Survey data                                                                                                                                                              |                                        |                                       |                                   |

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The members of Cluster C – High buying intention consider, more than the components of clusters A and B, that consuming organic food helps them to feel good and happy, with a more balanced and responsible life, contributing to future generations. This result reflects a higher perception of Cluster C members about the convergence between the attributes and consequences of consuming organic food and their personal values. This remarkable congruence between the A-C-V observed in Cluster C justifies their grander predisposition to purchase, buying intention and frequency of consumption of organic foods.

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## 5. Conclusions

### 5.1 Academic contributions

This study contributes to MEC by substantiating a hierarchical A-C-V interrelationship in the context of organic food (Oliveira *et al.*, 2021; Gutman, 1982). First, it illuminates how the A-C-V hierarchy influences OFC attitudes by directly and positively affecting their purchase predisposition and buying intentions.

Second, it innovatively identifies a partial but robust mediating role of purchase predisposition between OFC values and their buying intentions, emphasising that indirect effects surpass direct ones. This result highlights the complexity of OFC decision-making processes.

Third, it differentiates OFC segments based on buying intention, adding specific nuances to MEC theory. The segment with the highest buying intent exhibits heightened discernment of organic food attributes, perceived consequences and benefits and congruence with their values. It demonstrates that the intensity of the connection between means-end chains varies between segments of consumers.

### 5.2 Managerial contributions

This study furnishes multifaceted managerial insights pertinent to organic food production chain stakeholders, including OFC, producers, retailers, restaurant managers and regulatory entities. It elucidates the interconnectedness between organic food attributes, their consequences and benefits, personal values and their impact on consumer attitudes, specifically purchase predisposition and buying intention. The study serves as an evidentiary base for OFC, empowering them to make informed decisions that align with their values, such as health improvement and ethical responsibility, thus underlining consumption as a manifestation of identity.

This study offers producers and associations a roadmap to influence OFC purchase behaviours positively. It involves tailoring organic food attributes to consumer values and effectively disseminating this information through strategic marketing initiatives. Marketing campaigns could underscore the health benefits and ethical considerations, enhancing OFC trust and overall well-being.

The study has particular relevance for retailers, who can target frequent OFC, as identified by cluster analysis. Retailers are advised to develop awareness campaigns for moderate and low-frequency OFC groups to nurture a more favourable A-C-V perception, thereby broadening the consumer base. Retail environments could be designed with thematic, informative spaces dedicated exclusively to organic products, enhancing the consumer experience and fostering greater buying intention.

Restaurant managers can capitalise on this survey findings by specialising in organic food or incorporating organic items into their menus, accentuating their commitment to sustainable and health-conscious practices. Service environments, or “servicescapes”, can employ eco-friendly materials and natural lighting to bolster the congruence between organic food attributes, consequences and OFC values.



Regulatory agencies benefit from this research by gaining insights that can inform criteria for organic food classification and certification, thereby safeguarding the authenticity of organic products. This study offers subsidies for educational initiatives to enhance producers' best practices and OFC's understanding of the multi-dimensional benefits of organic food consumption, consequently broadening overall awareness.

### 5.3 Research limitations and directions for future research

This study acknowledges some limitations. Firstly, the researchers collected this survey data via a single cross-sectional approach. Subsequent research could employ multiple cross-sections or longitudinal studies to comprehensively explore OFC's temporal behaviours. Secondly, the sample exclusively comprises frequent OFC from Brazil, not contemplating non-consumers or ex-OFC.

Future investigations could consider non-consumers, ex-OFC and OFC from different countries and cultures. Thirdly, whilst the current research focusses on organic food, the model's applicability could extend to other product categories or services, favouring external validation of the A-C-V relationships concerning purchase predisposition and buying intention.

Lastly, future scholarly endeavours could enrich the theoretical model by incorporating additional constructs or integrating frameworks like the MEC, the Stimulus-Organism-Response Theory (Chinelato *et al.*, 2023; Souki *et al.*, 2023b) and the theory of planned behaviour (Devi *et al.*, 2023; Valero-Gil *et al.*, 2023), to broaden the understanding of how consumers perceive and process stimuli, their cognitive and emotional responses and impacts on subsequent intentions and behaviour based on their values.

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