Study of the consumers of ready-to-drink juices and fruit nectars
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Abstract
Juices and fruit nectars are an important segment of the beverage market in Brazil. The aim of this study was to analyze and characterize the profile of consumers of ready-to-drink juices and fruit nectars. A semi-structured questionnaire was applied to 389 patrons, intentionally and conveniently, when they approached the shelves. The chi-square test was applied to associate sociodemographic variables and consumption profile of the beverages with the type of establishment. Logistic regression models were developed to evaluate the variables associated with nectar acquisition. The level of education and knowledge about the beverages were significantly related. Practicality was the main reason that led respondents to consume these drinks, followed by quality and price, with the latter being associated with the level of education. Nectar was the most purchased option, and this choice was associated with increasing age and education, price and practicality. The consumption of juices and nectars with no added sugar was lower compared with traditional beverages. The information in the labels of these beverages was not sufficiently clear, for most of the participants. The most mentioned brand by the interviewed was the one with better sensory preference, regardless of flavour and the blinded or informed analysis.  

Keywords: beverages; fruits; consumer; labelling; sensory. 

Practical application: The consumers do not know the difference between juices and fruit nectars. Quality and price were the main reasons that lead consumers to choose these beverages. The most mentioned brand in this study was the one with better sensory preference.  

1 Introduction
Due to the fast pace of life in today’s society, consumers have shown interest in acquiring more and more practical products (Silva et al., 2005). There is also a growing concern about the health and lifestyle of the population, as reflected by the search for healthier foods and drinks (Voorpostel et al., 2014). To please more consumers, industries have invested in the development of new products that have these characteristics, using marketing strategies for media coverage to influence consumer choices (Endo et al., 2009). Within the context of this global trend, consumers have sought more practical alternatives to beverages by considering more than taste and innovation (Ferrarezi et al., 2010). Also, beverage companies have invested in fruit processing to add value to their products to meet the current demand of the population. 

Therefore, even if the interest in the product is unchanged, the purchase intention can increase if a health benefit is expected by the consumer (Tuorila et al., 1998), as in the case of fruit beverages. 

A non-existent segment by the end of the 1990s, ready-for-consumption juices are gaining more space on the shelves and have a great market growth potential. According to the Federation of the National Survey of the São Paulo State Industries (FIESP), through the Brazilian Institute of Public Opinion and Statistics (IBOPE), 27% of the products that most aroused consumer desire when released on the market were juices (FIESP, 2010). Juices and nectars are an important segment of the beverage market in Brazil. In 2012, Brazilians consumed 1.06 billion litres of these beverages, which represents a R$ 3.8 billion movement in the economy (Abreu, 2013). In 2013, there was a 12.5% increase in the purchase of such products compared to the previous year (Associação Brasileira de Embalagem, 2014). Moreover, the industry has very significant prospects. Whereas the soft drink market grows by an average of 2% per year, the juices and nectars market grows by approximately 9% (Aaker, 2007). 

However, even considering the vast potential of the Brazilian market, there are few studies that address the behaviour and profile of consumers of juices and fruit nectars in Brazil. When applicable, these studies address only one type of flavoured drink, which restricts the evaluation of the entire market (Ferrarezi et al., 2013; Turra et al., 2011). To date, only one study published recently in this country considers the assessment in relation to all juice flavours. However, this study deals only with the consumer market characterization and does not include a sensory analysis of products (Carmo et al., 2014). 

The effect of information can be measured in different ways, including by comparing groups of consumers who received product information to those who did not receive information about 

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the product (Cox et al., 2012; Lee et al., 2015b). Thus, sensory analysis can be evaluated when the consumer is subjected to a blind assessment and an informed assessment.

Consumer behaviour studies are essential to understand what it takes to consume or not a particular product and what factors are involved in the process of buying a food. Thus, market research is a useful tool to elucidate the behaviour of consumers of food (Kotler & Keller, 2013).

Another fact to be noted is that both juices and nectars that are ready for consumption are available in Brazilian supermarkets, but the difference between these products is not described on the packaging. Therefore, there is still much to be explored in relation to the consumer market of juices and fruit nectars ready for consumption in Brazil.

Based on the above information, this study aimed to analyze and characterize the profile of consumers of juices and/or fruit nectars by associating the sociodemographic variables, behaviour and level of knowledge about the beverages between two different markets. In addition, the study aimed to evaluate the effect of brand information of these beverages on the preference of the consumers through a blind and informed sensory analysis.

2 Material and methods

2.1 Type of research and population

To understand the consumer profile of juices and fruit nectars ready for consumption, a quantitative and descriptive field research was performed. The population studied was composed of consumers who frequented two markets in the city of Vitória (Espírito Santo, Brazil). The selected markets have different characteristics; market A is a hypermarket located in an upper middle-class neighbourhood of the city, and market B is a supermarket located in a middle-class neighbourhood. The contact method used to survey participants was a personal interview. The approach used for this research was to survey the data, which were collected using a semi-structured questionnaire.

2.2 Sample calculation and selection of the study population

To calculate the sample size, the totality of residents in Vitória (348.268.000 inhabitants - estimated data for 2014) was considered, according to the most recent data released by the Brazilian Institute of Geography and Statistics - IBGE (Instituto Brasileiro de Geografia e Estatística, 2014). The population was considered heterogeneous (split 50:50), with a sampling error of 5% (Gomes, 2013). Thus, the total number of participants to be interviewed was 383 people, and the actual number interviewed was 389 volunteers (200 in market A and 189 in market B).

The selection of interviewed participants was convenient and intentional. The researchers positioned themselves at the entrances to the juice and fruit nectar sales, where they approached the consumers when the consumers approached the shelves. The researcher invited the respondent to participate, briefly presented a Consent and Informed Term sheet and then presented the questionnaire. The survey was conducted from October 2014 to January 2015 on different days and times to cover a diverse selection of participants.

2.3 Development and implementation of the questionnaire

The questions in the semi-structured questionnaire addressed demographic data and both qualitative and quantitative data on the consumption of ready-for-consumption juices and fruit nectars. In addition, observation criteria during the interview were used. Care was taken that the questions did not contain any information about specific products, brands and prices to avoid influencing the information to be obtained and the consumer buying trial. Additionally, no information was given about the nutritional value of the products and their health effects.

A pilot test was performed by applying the questionnaire to a group of 20 to 30 people to evaluate the clarity of the questions and the application time. After the pilot, it was observed that all questions were sufficiently clear, and the interview reached the proposed optimal study time, which was a maximum of three minutes.

2.4 Evaluation of the influence of the brands

The brands and flavours of juices and/or fruit nectars most cited in previous questionnaires were tested (tasted) in the Laboratory of Technical Dietetics of the Health Sciences Center of the Federal University of Espirito Santo. Consecutive sorting-preference tests were applied (Minim, 2006): one blind type (no information about the brand of product) and one informed type (in which the brands were identified during the evaluation). The samples were served identified with coded numbers, randomly, under white lighting, in individual booths, and under refrigeration temperature (± 6 °C).

2.5 Statistical analysis

The data collected from the questionnaires were tabulated in Microsoft Excel and analyzed using the software SPSS version 21.0 and p < 0.05 values were considered significant.

Frequencies of sociodemographic characteristics and variables associated with consumption were evaluated using the Pearson’s Chi-square test, in each market. Also, possible associations between these variables were evaluated by the same test, with calculating the Odds Ratio (OR) and Confidence Interval (CI) of 95%, for all analysis.

In addition, a logistic regression analysis was applied by the enter method to evaluate the variables associated with the consumption of nectars (gender, marital status, years of education, age, price, quality, convenience and other reasons for purchase), and variables with a p value <0.20 were entered into the final model.

For the sorting-preference test, the results were analyzed using the Friedman test with the Newel and MacFarlane table. The differences between the sums of orders greater than or equal to the critical value indicate that there is a difference between the samples at a 5% probability.

2.6 Ethical care

This study followed the standards of the Code of Ethics of Market Research of the ICC (International Chamber of Commerce, 2008) and was approved by the Research Ethics Committee (CEP) of...
the Health Sciences Center of the Federal University of Espirito
Santo (CAAE n°: 32275014.2.0000.5060). This study was presented
with a great and continuous movement of people. In contrast,
to those responsible for the two markets and was approved by
market B, a supermarket, has an increased movement of people
a letter of consent.

3 Results and discussion

The sociodemographic profile analysis of consumers (Table 1)
showed that there was prevalence of females in both establishments,
with no significant differences between the assessed markets.
According to Fonseca et al. (2011), despite the modernity of
food habits, women continue to be mostly involved in food
family demands, such as shopping and organizing the menu.

Regarding marital status, more people with a partner (married or
common-law marriage) were observed in establishment A, and
more people were unmarried (widowed, single or divorced) in
establishment B, with p < 0.05 (Table 1). A likely cause for this
result is that establishment B is located near an educational
institution. This evidence is corroborated by the results of the
age analysis, in which both places had a higher proportion of
adults, and establishment B also had a higher percentage of
adolescents and the elderly (Table 1).

Regarding education range, there was a significant difference
between the two establishments (Table 1). It was evident that
market A had the highest proportion of people with college
degrees and that in market B, more people had completed high
school. This fact can be explained by the characteristics and
location of the markets. Market A, a hypermarket, is located
in a small shopping mall with a food court and other services,

### Table 1. Sociodemographic profile of the interviewed consumers of
juices and fruit nectars in markets A and B (Vitória - ES, 2015).

| Gender          | Market A (n=200) | Market B (n=189) | p* value |
|-----------------|------------------|------------------|----------|
|                 | n    | %   | n    | %   |        |
| Female          | 122  | 61.0 | 124  | 65.6 | 0.346   |
| Male            | 78   | 39.0 | 65   | 34.4 |         |

| Marital status | Market A (n=200) | Market B (n=189) | p* value |
|----------------|------------------|------------------|----------|
|                 | n    | %   | n    | %   |        |
| With a partner  | 123  | 61.5 | 86   | 45.5 | 0.002   |
| Without a partner | 77  | 38.5 | 103  | 54.5 |         |

| Scholarity      | Market A (n=200) | Market B (n=189) | p* value |
|-----------------|------------------|------------------|----------|
|                 | n    | %   | n    | %   |        |
| Elementary school | 13  | 6.5  | 39   | 20.6 |         |
| High school     | 79   | 39.5 | 103  | 54.5 | <0.001 |
| College degree/post-graduated | 108 | 54.0 | 47   | 24.9 |         |

| Age             | Market A (n=200) | Market B (n=189) | p* value |
|-----------------|------------------|------------------|----------|
|                 | n    | %   | n    | %   |        |
| Teenager        | 7    | 3.5  | 15   | 7.9  |         |
| Adult           | 171  | 85.5 | 146  | 77.2 | 0.048   |
| Elderly         | 20   | 10.0 | 28   | 14.8 |         |
| Not informed    | 2    | 1.0  | 0    | 0.0  |         |

*aChi-square test, considering the Odds Ratio and confidence interval of 95%; p<0.05 is consider significant.

Regarding the acquisition of beverages, fruit nectar was the
most selected product in both markets. However, in market A,
there was a greater selection of juices compared with in market
B (Table 2). Abreu (2013) stated that as the purchasing power
of the population increases, there is a tendency for the juice
consumption levels to approach the standards of developed
countries such that the consumption of these products will
also increase.

In the final model of the logistic regression analysis, the
variables associated with the acquisition of nectar were increased
age (OR = 1.03 and p = 0.007), years of study (OR = 0.84 and
p = 0.001) and product price (OR = 7.79 and p <0.001) and
practicality (OR = 3.52 and p <0.001) (Table 3).

When consumers were asked whether there was any difference
between the juice and nectar, most participants in both markets
responded affirmatively (Table 2). However, more consumers from
market B (47.6%) stated that there was no difference between
the products compared to 25.5% of consumers in from market
A. Table 4 shows an evident association between the level of
education and the responses to the difference between juices
and nectars, indicating that the higher the education level, the
higher the knowledge about the distinction between and/or
definition of juices and fruit nectars.

When asked, “What is the difference between juices and
nectars?”, over 75% of consumers in both markets gave an
incorrect response (Table 2). There was only a significant
association between the level of education and the success in
answering this question in market B (Table 4), in which people
with lower education levels were not able accurately to define
the difference between the products. Turra et al. (2011) showed
that 70% of respondents did not know the difference between
juice and nectar and that 90% considered it important to know
this differentiation.

According to the Ministry of Agriculture, Livestock and
Supply of Brazil - MAPA (Brasil, 2009), fruit juice is defined as
a non-fermented beverage that is not concentrated, not diluted
for consumption and is obtained from mature and healthy
fruit, or part of the plant of origin, by appropriate technological
processing, subjected to treatment that maintains its presentation
and conservation up to the moment of consumption. Nectar
can be characterized as a non-fermented beverage obtained from
water dilution of the edible part of the plant or its extract, with
added sugar, intended for direct consumption (ready to consume).
Accoding to the Brazilian Institute of Consumer Defense - IDEC
(Instituto Brasileiro de Defesa do Consumidor, 2014), the MAPA
does not establish an official methodology to identify the amount
of fruit in beverages, which, in the case of nectars, should range
from 20% to 40%; however, there is a law restructuring project
that will require larger percentages of fruit in the years 2015
and 2016. Those answers that most closely approximated the
current legislation were considered correct, even if the answers
were said informally.
### Table 2. Consume profile of juices and fruit nectars in markets A and B (Vitória - ES, 2015).

|                                | Market A (n=200) | Market B (n=189) | p*   |
|--------------------------------|------------------|------------------|------|
| **What consumers are buying?** |                  |                  |      |
| Juice                          | 45 22.5          | 9 4.8            | <0.001 |
| Nectar                         | 145 72.5         | 170 89.9         |      |
| Others                         | 10 5.0           | 10 5.3           |      |
| **What is the difference between juice and nectar?** |                  |                  |      |
| Yes                            | 149 74.5         | 99 52.4          | <0.001 |
| No                             | 51 25.5          | 90 47.6          |      |
| **People who correctly defined the answer** |                  |                  |      |
| Yes                            | 49 24.5          | 38 20.1          | 0.353 |
| No                             | 151 75.5         | 151 79.9         |      |
| **Is the product for own consumption?** |                  |                  |      |
| Yes                            | 174 87.0         | 175 92.6         | 0.700 |
| No                             | 26 13.0          | 14 7.4           |      |
| **Anyone else will consume?**  |                  |                  |      |
| Yes                            | 164 82.0         | 161 85.2         | 0.397 |
| No                             | 36 18.0          | 28 14.8          |      |
| **Who else will consume?**     |                  |                  |      |
| Family                         | 137 68.5         | 133 70.4         | 0.681 |
| Friends                        | 27 13.5          | 28 14.8          |      |
| Others                         | 36 18.0          | 28 14.8          |      |
| **Frequency of consume**       |                  |                  |      |
| Daily                          | 18 9.0           | 19 10.1          |      |
| Weekly                         | 78 39.0          | 74 39.1          | 0.001 |
| Monthly                        | 80 40.0          | 48 25.4          |      |
| Rarely                         | 24 12.0          | 48 25.4          |      |
| **Local of consume**           |                  |                  |      |
| At home                        | 178 89.0         | 180 95.2         | 0.023 |
| Outside home                   | 22 11.0          | 9 4.8            |      |
| **How did you know the brand?**|                  |                  |      |
| Midia                          | 14 7.0           | 3 1.6            |      |
| Pamphlet                       | 2 1.0            | 4 2.1            |      |
| Market                         | 150 75.0         | 170 90           | 0.001 |
| Indication                     | 16 8.0           | 5 2.6            |      |
| Others                         | 18 9.0           | 7 3.7            |      |
| **Consume no-added-sugar products?** |                  |                  |      |
| Yes                            | 73 36.5          | 39 20.6          | <0.001 |
| No                             | 127 63.5         | 150 79.4         |      |
| **Preference of beverages**    |                  |                  |      |
| Water                          | 143 71.5         | 143 75.6         |      |
| Juice/nectar                   | 44 22.0          | 33 17.5          | 0.532 |
| Soda                           | 13 6.5           | 13 6.9           |      |
| **Buying motive**              |                  |                  |      |

*p* Chi-square test, considering the Odds Ratio and confidence interval of 95%; p<0.05 is consider significant. NA: not applicable (consumers who do not read labels).
Table 3. Association between acquisition nectars ready for consumption and sociodemographic variables and buying motive, according to multivariate logistic regression, with consumers in the markets (Vitória - ES, 2015).

| Category            | Crude Odds Ratio | CI 95%       | p value | Adjusted Odds Ratio | CI 95%       | p value |
|---------------------|------------------|--------------|---------|---------------------|--------------|---------|
| **Gender**          |                  |              |         |                     |              |         |
| Female              | 1.4              | 0.83 - 2.34  | 0.20    | 1.12                | 0.63 - 1.98  | 0.70    |
| Male                | 1.0              |              |         |                     |              |         |
| **Marital status**  |                  |              |         |                     |              |         |
| With partner        | 0.86             | 0.51 - 1.43  | 0.56    | 0.81                | 0.44 - 1.48  | 0.49    |
| Without partner     | 1.0              |              |         |                     |              |         |
| **Age**             | 1.02             | 1.00 - 1.04  | <0.001  | 1.03                | 1.00 - 1.05  | 0.007   |
| **Years of study**  | 0.83             | 0.75 - 0.91  | <0.001  | 0.84                | 0.75 - 0.93  | 0.001   |
| **Buying motive**   |                  |              |         |                     |              |         |
| Quality             | 1.0              |              |         |                     |              |         |
| Price               | 10.55            | 3.92 - 28.39 | <0.001  | 7.79                | 2.82 - 21.44 | <0.001  |
| Practicality        | 3.24             | 1.80 - 5.82  | <0.001  | 3.52                | 1.90 - 6.51  | <0.001  |
| Others              | 2.73             | 1.03 - 7.23  | 0.043   | 2.04                | 0.76 - 5.67  | 0.17    |

*Chi-square test, considering the Odds Ratio and confidence interval of 95%; p<0.05 is consider significant. NA: not applicable (consumers who do not read labels).

Table 2. Continued...

| Category | n (Market A) | % (Market A) | n (Market B) | % (Market B) | p* |
|----------|-------------|--------------|--------------|--------------|----|
| Price    | 25          | 12.5         | 67           | 35.4         |    |
| Quality  | 72          | 36.0         | 26           | 13.8         | <0.001 |
| Practicality | 87   | 43.5         | 78           | 41.3         |    |
| Others   | 16          | 8.0          | 18           | 9.5          |    |

Reading labels

Yes | 114 | 57.0 | 70 | 37.0 | <0.001 |
No  | 86  | 43.0 | 119 | 63.0 |    |

The informations in labels are clear?

Yes | 59 | 29.5 | 44 | 23.3 | <0.001 |
No  | 56 | 28.0 | 24 | 12.7 |    |

* Chi-square test, considering the Odds Ratio and confidence interval of 95%; p<0.05 is consider significant. NA: not applicable (consumers who do not read labels).

In both establishments, most consumers were acquiring the product for their own consumption. However, they reported that in addition to their own consumption, other people such as family and friends would consume the beverage. Acquisition of the product for other occasions such as parties and meetings was also reported (Table 2).

Regarding the frequency of use, market B had an evident increase in weekly consumption compared to market A, which had a more frequent monthly consumption (Table 2). 39% of respondents in both establishments had a weekly consumption, but a smaller portion of consumers (9 and 10% in markets A and B, respectively) had a daily consumption. A study in the city of Viçosa (Minas Gerais, Brazil) showed that the most frequent consumption of juices and fruit nectars was 3 to 5 times a week (Carmo et al., 2014).

The results also showed an evident association between the frequency of consumption and gender only in the market B, with higher frequency of consumption for women. This might be connected to the main concern of women to consume healthier products; i.e., the exchange of soda for fruit nectar is believed to be a healthier option. This statement was reported by the interviewed participants during the survey. The frequency of consumption was also associated with the age of those interviewed in market B, in which adults were the highest consumers of these products (Table 4).

In both establishments, consumers reported mostly consuming these beverages at home. However, compared with market B, market A had more consumers who consumed these products outside the home (Table 2).

There was a significant association between the location of consumption and the gender of the interviewed participant in
Table 4. Association between sociodemographic profile and consume variables of juices and fruit nectars in each evaluated market (Vitória - ES, 2015).

| Variables          | MARKET A (n=200) | MARKET B (n=189) |
|--------------------|------------------|------------------|
|                    | Gender (%)       | Marital status (%) | Scholarty (%) | Age (%)       |
|                    | Female | Male | With partner | Without partner | Eilem./high school | College/Post-graduation | Teen./elderly | Adult |
|                    |        |      |            |               |                 |                      |              |       |
| What consumers are buying? |
| Juice              | 13.0   | 9.5  | 12.5       | 10.0          | 8.5            | 14.0                 | 1.5          | 21.0  |
| Nectar             | 44.0   | 28.5 | 46.5       | 26.0          | 36.0           | 36.5                 | 12.0         | 60.5  |
| Others             | 4.0    | 1.0  | 2.5        | 2.5           | 1.5            | 3.5                  | 1.0          | 4.0   |
|                    |        |      |            |               |                |                      |              |       |
| Is there any difference between juice and nectar? |
| Yes                | 46.5   | 28.0 | 48.5       | 26.0          | 30.5*          | 44.0*                | 12.0         | 62.5  |
| No                 | 14.5   | 11.0 | 13.0       | 12.5          | 15.5*          | 10.0*                | 2.5          | 23.0  |
| Correctly defined the answer |
| Yes                | 13.0   | 11.5 | 17.0       | 7.5           | 9.5            | 15.0                 | 4.4          | 18.0  |
| No                 | 48     | 27.5 | 44.5       | 31.0          | 36.5           | 39.0                 | 14.1         | 63.2  |
| Frequency of consume |
| Rarely             | 8.0    | 4.0  | 7.0        | 5.0           | 6.5            | 5.5                  | 2.0          | 10.0  |
| Daily              | 4.0    | 5.0  | 6.0        | 3.0           | 4.5            | 4.5                  | 1.0          | 8.0   |
| Weekly             | 24.0   | 15.0 | 23.0       | 16.0          | 16.5           | 22.5                 | 5.0          | 34.0  |
| Monthly            | 25.0   | 15.0 | 25.5       | 14.5          | 18.5           | 21.5                 | 6.5          | 33.5  |
| Buying motive      |
| Price              | 6.0    | 6.5  | 9.0        | 3.5           | 7.0            | 5.5                  | 2.5          | 10.0  |
| Quality            | 20.0   | 16.0 | 21.5       | 14.5          | 15.5           | 20.5                 | 4.5          | 31.5  |
| Practicality       | 29.5   | 14.0 | 28         | 15.5          | 19             | 24.5                 | 6.0          | 37.5  |
| Others             | 5.5    | 2.5  | 3.0        | 5.0           | 4.5            | 3.5                  | 1.5          | 6.5   |
| How did you know the brand? |
| Midia              | 4.5    | 2.5  | 2.0        | 2.0           | 2.0            | 5.0                  | 1.0          | 6.0   |
| Pamphlet           | 0.0    | 1.0  | 1.0        | 0.5           | 0.0            | 0.0                  | 0.0          | 1.0   |
| Market             | 46.0   | 29.0 | 44.5       | 37.8          | 35.5           | 39.5                 | 12.0         | 63.0  |
| Indication         | 6.0    | 2.0  | 3.1        | 2.3           | 5.0            | 3.0                  | 1.5          | 6.5   |
| Others             | 4.5    | 4.5  | 3.1        | 3.3           | 3.5            | 5.5                  | 0.0          | 9.0   |
| Local of consume   |
| At home            | 52.0*  | 37.0* | 55.0       | 34.0          | 40.5           | 48.5                 | 14.0         | 75    |
| Outside home       | 9.0    | 2.0  | 6.5        | 4.5           | 5.5            | 5.5                  | 0.5          | 10.5  |

*Results in bold with asterisc are significant, considering the Odds Ratio and confidence interval of 95% (Chi-square test at 5% probability).
the market A (Table 4); mostly women consumed the product both at home and outside the home, possibly because of their greater concern with food and lifestyle.

It was also shown that most consumers of both establishments did not consume juices and/or fruit nectars with no added sugar. However, among those who consumed these beverages, the majority were from market A (Table 2). There was an association, only in market A, between the consumption of these beverages and gender, and women were more likely to consume no-added-sugar beverages compared with men (Table 4). Nunes & Gallon (2013) also showed that females were more interested and consumed more low-calorie products, lower in fat and sodium. This might be associated with women’s greater concern with health and body aesthetics.

Food preferences seem to play an important role in food choice. Therefore, a preference for unhealthy food can be part of the reason for a person’s unhealthy diet even though they may know about the relationship between food and health (Honkanen & Frewer, 2009).

Water was the most cited consumer-preferred beverage, followed by juices/fruit nectars and then soda (Table 2). In a study performed in the city of Juiz de Fora (Minas Gerais, Brazil), juices were indicated as the preferred beverage, whereas water occupied second place and, as in the current study, soda was in third place (Endo et al., 2009). Such evidence might be related to a portion of the population having a growing concern over health due to increases in diseases associated with diet and lifestyle.

When asked about the reasons that led them to purchase the product, practicality was the reason most often cited in both markets (43.5% A and 41.3% B), followed by quality for the market A (36%) and price for market B (35.4%) (Table 2). The preference for quality or price suggests that people with higher socioeconomic status have a greater concern for the quality of food consumed, whereas people with lower socioeconomic status are more concerned about price. Furthermore, it is suggested that the education level of the people interviewed might be associated with a higher socioeconomic level (unanalyzed data), putting the education level of the people interviewed might be associated with health and body aesthetics.

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When asked about the place where the participants had first encountered the brand that they were acquiring, it was noted that their own market was the main place where people were aware of the existence of the product (Table 2). This finding suggests that the advertising of such products is still retracted due to increases in diseases associated with diet and lifestyle. Other brands are known only at the point of sale.

The label is an important health and food safety tool providing instructional information on how to use, how to store food products, differentiate individual products and provide consumers information about brands and foods needed to make informed purchasing choices (Mackey & Metz, 2009). Regarding reading labels, it was noted that in the market A, a greater proportion of consumers read and analysis the labels of juices and nectars before buying (Table 2). In this market, there was an association between this variable and the level of education, indicating that the greater the years of study (and the level of study), the greater the interest and concern about reading the information on food labels (Table 4).

For Miller & Cassady (2015) nutrition knowledge could support the use of nutrition information on food label use in at least three ways. First, prior knowledge could enable consumers to pay attention to important information on a food label, and to ignore marketing features that do not reflect salient nutritional qualities, which in turn minimizes information overload. Second, prior nutrition knowledge can facilitate comprehension of, and memory for, food label nutrition information. Third, prior nutrition knowledge could support the application of the comprehended and remembered information to food choice.

It was noted that in the market A compared to market B, most consumers reported a lack of clarity regarding the labels (Table 2). In the same market, an association was also observed between gender and perception of clarity of the information provided on the labels for those who read it (Table 4). Most of the women said that the labels should be clearer in terms of the present nomenclature. This evidence is in accordance with the study of Nunes & Gallon (2013) performed in Caxias do Sul (Rio Grande do Sul, Brazil), which showed a partial understanding of labels by the interviewees due to lack of clarity of the information presented therein. This fact goes against the real goal of labels, which are designed to be elements of communication between the products and consumers, thus providing information in a clear and truthful manner about what people are consuming (Carneiro et al., 2013).

When asked about the preferred flavours, the answers were grape (37.5%), orange (18%), mango (11.05%), peach (10.08%) and passion fruit (7.2%).

When asked about the most remembered brands, 27 brands were cited by consumers in both markets. The three brands most prominent were: brand A (38.0%), brand B (11.3%) and brand C (3.8%). However, brand B is a soy-based beverage and

| Samples (flavour/brand) | Sum of orders (blind analysis) | Sum of orders (informed analysis) |
|-------------------------|-----------------------------|----------------------------------|
| **Grape flavour**       |                             |                                  |
| Brand A                 | 64*                         | 61*                              |
| Brand D                 | 94*                         | 86*                              |
| Brand E                 | 82*                         | 93*                              |
| **Orange flavour**      |                             |                                  |
| Brand A                 | 72*                         | 67*                              |
| Brand D                 | 89*                         | 89*                              |
| Brand E                 | 79*                         | 84*                              |
| **Mango flavour**       |                             |                                  |
| Brand A                 | 77*                         | 74*                              |
| Brand D                 | 59*                         | 61*                              |
| Brand E                 | 104*                        | 105*                             |

Table 5. Results of the sum of the orders from sorting-preference test for grape, orange and mango flavours nectars of the most cited and acquired brands during the interviews (Vitória - ES, 2015).

Least significant difference: 21; Number of trials: 40; Pairs of sum of orders followed at least by one letter, in the same column (for each flavour), do not differ by Friedman test at 5% probability.
consequently does not fall in the category of juices and nectars. Possibly, this brand was one of the most cited due to frequent advertising in television media. An interesting fact was that approximately 7.7% of the participants interviewed did not remember any brand because what mattered was only the price of the product. The same was observed by Lee et al. (2015a), who reported that price was the main factor that influenced the intention to purchase fruit juices in the Chinese market. However, it was observed that only 24.5% of the interviewed participants were in fact buying the brand they had cited as the most remembered. Brand A, the one most remembered by consumers, also invests massively in television commercials and other advertising. In the present study, the authors also noted that consumers who do not have a specific assessment of a product usually rely on the brand as a quality indicator.

In the study of Carmo et al. (2014), the same brand A was also the most frequently cited as most preferred by respondents. However, in this study, the most purchased brands were brands D and E, which, at the time, were on sale in the markets. According to Silva (2014), the brand is a name, term, sign, symbol or design that identifies the product and along with the packaging has a significant role in the decision to purchase a product. The brand is still considered an indicator of quality, especially for those consumers who have not tasted the product. For Watkins et al. (2016) a brand is regarded as more than a name given to a product; it encompasses a whole set of physical and socio-psychological attributes, emotions and beliefs, and it is often these symbolic meanings of consumer goods and brands that consumers use to build and maintain their identity.

Thus, the three most cited (remembered) brands and the three most acquired brands (brands A, D and E) during the study were selected for the blind and informed sensory analysis. For each brand, the most cited and preferred flavours, such as grape, orange and mango, were tasted.

Analysis of the results of the informed and blind sensory analysis (Table 5) showed that the brand A was preferred in all evaluations for all tastes, regardless of access to information on the product and brand. However, it was noted that when the evaluators tasted the beverages without information about the product, brand D was less preferred, particularly for the grape and orange flavours. However, when the evaluators were informed about which brand they were tasting, brand E became less preferred, even more so than brand D. When the mango flavour was tasted, in addition to brand A, brand D was also preferred. In contrast brand E was the least preferred, independent of access to information about the brand of products. Ferrarezi et al. (2013) observed that in addition to price, the brand and the information provided on the product influenced the intention of buying orange juice in Brazil. The brand is usually associated with the quality of a product, but in this case, the criterion of choice was also associated with the flavour of the beverage.

4 Conclusions

Marketing strategies, especially nutritional marketing, can influence the purchasing decisions of consumers. However, the level of education, age, gender and even income (data not analyzed) are important variables in the buying process. It was evident that regardless of social class or age, practicality is the primary motivation for consuming juices and nectars. However, what determines the buying decision and the brand choice was, in most cases, the price, which is also related to the education level of those interviewed. Fruit nectar was the most consumed product, and women purchased most of the product. Women were also the most likely to analyze the labels and packaging, noting the need to improve the information, particularly the information concerning the fruit content existence, presence of additives, sweeteners and detailed descriptions. Brand A, which invests more in advertising, was linked to a product with better sensory acceptance for all flavours tasted. For the other brands, acceptance was dependent on the beverage’s flavour. It is the role of the beverage industries to provide clear and understandable information for the entire consumer population. However, due to a lack of studies in this area and a lack of information and clarity in the legislation, more investment is needed for research of both the beverage industry and more consumer markets.

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References

Aaker, D. A. (2007). Criando e gerenciando marcas de sucesso. São Paulo: Futura.
Abreu, G. M. (2013). Posicionamento de marca no mercado de sucos e nectares: uma análise do caso “do bem”. Revista Augustus, 18(35), 75-90. Retrieved from http://apl.unisuar.edu.br/revistas/index.php/revistaaugustus/article/view/264
Associação Brasileira de Embalagem – ABRE. (2014, March 31). Consumo de sucos prontos cresce 12.5% em um ano. ABRE Embalagem & Mercado. Retrieved from http://www.abre.org.br/noticias/consumo-de-sucos-prontos-cresce-125-em-um-an
Brasil, Ministro da Agricultura, Pecuária e Abastecimento. (2009, July 14). Regulamento a Lei nº 8.918, de 14 de julho de 1994, que dispõe sobre a padronização, a classificação, o registro, a inspeção, a produção e a fiscalização de bebidas (Decreto nº 6.871 de 4 de junho de 2009). Diário Oficial [da] República Federativa do Brasil.
Carmo, M. C. L., Dantas, M. I. S., & Ribeiro, S. M. R. (2014). Caracterização do mercado consumidor de sucos prontos para o consumo. Brazilian Journal of Food Technology, 17(4), 305-309.
Carneiro, A. P. G., Abreu, D. A., Soares, D. J., Costa, E. A., Silva, L. M. R., Barbosa, L. C., Sousa, P. H. M., & Figueiredo, R. W. (2013). Evaluation of labels, chemical, physical and chemical rheology of grape nectar sold in the city of Fortaleza-CE. Brazilian Journal of Food Technology, 24(2), 241-249.
Cox, D. N., Melo, L., Zabaras, D., & Delahunty, C. M. (2012). Acceptance of health promoting Brassica vegetables: The influence of taste perception, information and attitudes. Public Health Nutrition, 15(8), 1474-1482. PMID:22230576. http://dx.doi.org/10.1017/S1368980011003442.
Endo, É., Bertoldi, M. C., Pinheiro, N. M. S., Arruda, A. C., & Minin, V. P. R. (2009). Caracterização do mercado consumidor de "água
aromatizada: hábitos e motivações para o consumo. *Ciência e Tecnologia de Alimentos*, 29(2), 365-370.

Federação das Indústrias do Estado de São Paulo – FIESP. (2010). *Brazil food trends 2020* (176 p). São Paulo. Retrieved from http://www.brasilfoodtrends.com.br/

Ferrarezi, A. C., Santos, K. O., & Monteiro, M. (2010). Critical assessment of the Brazilian regulations on fruit juices, with emphasis on ready-to-drink fruit juice. *British Journal of Nutrition*, 23(4), 667-677.

Ferreiriz, A., Minim, V. P., Santos, K. M., & Monteiro, M. (2013). Consumer attitude towards purchasing intent for ready to drink orange juice and nectar. *Nutrition & Food Science*, 43(4), 304-312. http://dx.doi.org/10.1108/NFS-03-2012-0021.

Fonseca, A. B., Souza, T. S. N., Frozi, D. S., & Pereira, R. A. (2011). Modernidade alimentar e consumo de alimentos: contribuições sócio-antropológicas para a pesquisa em nutrição. *Ciência e Saúde Coletiva*, 16(9), 3853-3862.

Gomes, I. M. (2013). Como elaborar uma pesquisa de mercado (92 p). Belo Horizonte: SEBRAE Minas. Retrieved from http://wp.ufpel.edu.br/mlaura/files/2014/04/Como-elaborar-uma-pesquisa-de-mercado.pdf

Honkanen, P., & Frewer, L. (2009). Russian consumers’ motives for fruit juice. *Food Qual. Pre.* 583-591. http://dx.doi.org/10.1016/j.foodqual.2014.08.006.

Mackey, M. A., & Metz, M. (2009). Ease of reading of mandatory information on Canadian food product labels. *International Journal of Consumer Studies*, 33(4), 369-381. http://dx.doi.org/10.1111/j.1470-6431.2009.00787.x.

Miller, I. M. S., & Cassady, D. L. (2015). The effects of nutrition knowledge on food label use: a review of the literature. *Appetite*, 92, 207-216. PMid:26025086. http://dx.doi.org/10.1016/j.appet.2015.05.029.

Minim, V. P. R. (2006). *Analise sensorial: estudos com consumidores* (308 p). Viçosa: UFV.

Nunes, S. T., & Gallon, C. W. (2013). Conhecimento e consumo dos produtos diet e light e a compreensão dos rótulos alimentares por consumidores de um supermercado do município de Caxias do Sul, RS - Brasil. *Nutrire*, 38(2), 156-171.

Silva, E. M. M. (2014). O marketing nutricional. In E.M.M. Silva (Ed.), *Marketing para quem entende de nutrição* (chap. 6, pp.67-88). Rio de Janeiro: Rubio.

Silva, P. T., Fialho, E., Lopes, M. L. M., & Valente-Mesquita, V. L. (2005). Suco de laranja industrializados e preparados sólidos para refrescos: estabilidade química e físico-química. *Ciência e Tecnologia de Alimentos*, 25(3), 597-602.

Tuorila, H. M., Andersson, A., Martikainen, A., & Salovaara, H. (1998). Effect of product formula, information and consumer characteristics on the acceptance of a new snack food. *Food Quality and Preference*, 9(5), 313-320. http://dx.doi.org/10.1016/S0950-3293(98)00015-9.

Turra, C., Fernandes, E. A. N, Tagliaferro, F. S., Vian, C. E. F, Bacchi, M. A., & Moreira, C. F. (2011). Informational asymmetry in the Brazilian orange juice market. *International Journal of Fruit Science*, 11(1), 17-29. http://dx.doi.org/10.1080/15538362.2010.530088.

Voorpostel, C. R., Dutra, M. B. L., & Bolini, H. M. A. (2014). Sensory profile and drivers of liking for grape nectar among smoker and non-smoker consumers. *Food Science and Technology*, 34(1), 164-173. http://dx.doi.org/10.1590/S0101-20612014000100024.

Watkins, L., Aitken, R., Robertson, K., Thyne, M., & Williams, J. (2016). Advertising’s impact on pre-schoolers’ brand knowledge and materialism. *International Journal of Consumer Studies*, 40(5), 583-591. http://dx.doi.org/10.1111/ics.12303.