Perceived value in food retail: moderating effect of store format

Valor percebido no varejo de alimentos: efeito moderador do formato de armazenamento

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ABSTRACT
Objective - This paper’s purpose is to measure the value perceived by food retail consumers under the moderating effect of the store format. Methodology: An online survey was administered to 493 food retail consumers. For the data analysis it was used the quantitative technique of Structural Equation Modelling (SEM). The analyses were performed with the aid of Minitab software version 12.1 and SmartPLS version 3. Results: The highest explanation degree of the perceived value for the Super / Hypermarkets format was the variables Products and Store Environment, as was the case for Wholesale self-service format. However, it should be noted that the Wholesale self-service format had the lowest structural coefficients for all paths of the model, indicating that the factors have less explanatory power on the perceived value of the consumer compared to the Super/Hypermarkets format. A notable difference between formats was noticed.
in the factor a Additional services variable, showing its vocation aimed at lower costs. Theoretical/methodological contributions: The investigation developed a quantitative model that demonstrates the adequacy of the model’s component variables and that they vary according to the store format. The model developed can also be used as a basis for future research in other countries on food retail and other variations of retail. Relevance/Originality: This study is the first to investigate and measure the value perceived by food retail consumers, also taking into account the store format.

Keywords: perceived value, food retail, store formats.

RESUMO
Objetivo - O objetivo deste trabalho é medir o valor percebido pelos consumidores de varejo de alimentos sob o efeito moderador do formato de loja.
Metodologia: Foi realizado um inquérito em linha a 493 consumidores do sector alimentar. Para a análise dos dados foi utilizada a técnica quantitativa de Modelagem de Equações Estruturais (SEM). As análises foram realizadas com o auxílio do software Minitab versão 12.1 e SmartPLS versão 3. Resultados: O maior grau de explicação do valor percebido para o formato Super / Hipermercados foram as variáveis Produtos e Ambiente de Loja, como foi o caso do formato de autoatendimento por atacado. No entanto, deve-se notar que o formato de autoatendimento por atacado teve os coeficientes estruturais mais baixos para todos os caminhos do modelo, indicando que os fatores têm menos poder explicativo sobre o valor percebido do consumidor em comparação com o formato Super/Hipermercados. Uma diferença notável entre os formatos foi notada no fator de uma variável de serviços adicionais, mostrando sua vocação voltada para custos menores. Contribuições teóricas/metodológicas: A investigação desenvolveu um modelo quantitativo que demonstra a adequação das variáveis componentes do modelo e que elas variam de acordo com o formato da loja. O modelo desenvolvido também pode ser usado como base para futuras pesquisas em outros países sobre varejo de alimentos e outras variações do varejo. Relevância/Originalidade: Este estudo é o primeiro a investigar e mensurar o valor percebido pelos consumidores de varejo de alimentos, levando também em conta o formato da loja.

Palavras-chave: perceived value, comércio a retalho de alimentos, formatos de armazenamento.

1 INTRODUCTION
Food expenditure has a considerable impact on Brazilian families, corresponding on average to 19.80% of their budgets (Instituto Brasileiro de Geografia e Estatística - IBGE, 2010). To meet this demand, there are 84,500 food retail stores in Brazil, which provide 1.85 million jobs and account for 5.35% of GDP (Associação Brasileira de Supermercados - ABRAS, 2016). Retailers
operate in a competitive environment, in which changes in factors such as customers' needs, demographics, retail format, technology and mergers and acquisitions mean that it is important to understand and predict consumer satisfaction, in other words, how companies create proposals for value (Theodoridis & Chatzipanagiotou, 2009).

The ability to create value proposals and capture value are jointly responsible for the company’s unique position in the market, competitive advantage and sustainable success (Koschmann & Isaac, 2018).

In this respect, the importance of value is rooted in the influence of consumers’ perceptions with regard to their loyalty and attitudes towards the brand/company and, consequently, companies’ profits (Chen, 2013). These attitudes are related to the constructs that ensue from value, such as consumer satisfaction, repurchase intention and the possibility of recommending the company/brand to other potential consumers (Oliver, 2014).

Concerning strategic management to achieve a better perception of value by food retail consumers, this sector makes substantial investments in expanding and segmenting the market through different store formats with a view to meeting the needs for products and services by different target audiences more effectively (Parente, 2011) considering that shoppers seek different shopping experiences in each food retail format (Wong, 2020).

In this respect, Gomes (2016) clustered supermarket formats into four main segments to facilitate identification and these are the most widely used format by food retailers: neighbourhood supermarkets, supermarkets, hypermarkets and wholesale self-service stores. Each one is a mix of variables that retailers use to develop their business strategies to create proposals of value for different consumers (Deka, 2018).

Therefore, the aim of the present study is to measure the value perceived by food retail consumers, also taking into account the moderating effect of the store format.

**2 THEORETICAL BACKGROUND**

Consumers make associations regarding what companies offer them. In this respect, these associations have to do with the attributes of value that are
formed in consumers’ minds, and these are normally the result of the variety of functional attributes of a company (Orth & Grenn, 2009). Thus, adding value to a consumer’s experience through these functional attributes has become a fundamental factor in the efforts of retailers to achieve efficiency and survive (Wang & Yu, 2016).

The factors most frequently addressed in the literature and, therefore, the most significant will now be addressed, namely: Product, Price and Service (employees), Atmosphere (store environment) (Theodoridis & Chatzipanagiotou, 2009; Martínez-Ruiz et al., 2010; Hosseini et al., 2014).

With regard to Product factor, the variety and quality of products are taken into account by consumers when making their choices. The variety, according to McDonald (2006), has to do with the number of different items in a product category. In this respect, a large assortment (variety) of products can minimize the consumer’s perception of cost (such as time and effort) of each item purchased and facilitate the task of purchasing (enabling a comparison of products).

Regarding the quality, according to Koschmann and Isaac (2018), this denotes the intrinsic and extrinsic values linked to a certain brand/product, based on consumer perception, with the intrinsic value including the performance and durability of a product, while the extrinsic value includes a product’s brand name and guarantee. Also, there is a correlation between perceived quality and the price customers are willing to pay (Anselmsson & Johansson, 2009).

H1a: Product attributes are a significant dimension of perceived value by food retail consumers.

The pricing policy has to do with monetary cost, which is a relevant attribute when consumers make a purchase decision (Kim & Han, 2020). Koschmann and Isaac (2018) reinforced this aspect, as they considered price an important factor that influences the purchase decisions of different consumer groups.

In this respect, since there is a strong association between price and store image, marketers must give attention to the pricing model in order to cultivate the desirable price image in their consumers, both current and potential (Peter et al., 2018).
H1b: Pricing is a significant dimension of perceived value by food retail consumers.

Regarding the service factor, the relationship between consumer and retailer is strengthened when a service is provided that makes the consumer’s purchase experience more positive, and this can affect his future behaviour regarding repurchasing at the store (Hosseini et al., 2014).

Like price, the level of service changes according to the store format. In this respect, Brown (2001) pointed out that customers who purchase from small chains of grocery stores place greater importance on the quality of service than customers at large chains.

Another important point concerning service has to do with perceptions of salespeople’s performance. This is considered a critical and influential factor concerning satisfaction, since many consumers seek a social experience outside the home (Argo & Dahl, 2020).

In research conducted by Grosso et al. (2018) it was found that salespeople were the most relevant antecedents of satisfaction. Therefore, according to Argo and Dahl (2020), stores with friendlier and more helpful and communicative workers can attract and retain a higher number of consumers.

H1c: Service is a significant dimension of perceived value by food retail consumers.

The store atmosphere factor is a significant influencer of the consumer’s experience in the store (Jebarajakirthy et al. 2020). The authors also claimed that “Atmosphere” is a term used to describe the art of projecting a store to heighten customers’ sensorial sensation. In this sense, according to Theodoridis and Chatzipanagiotou (2009), it is created through a combination of visual elements placed in the physical space of the store, such as colours, displays and decorative elements, in addition to a stimulation of the senses, using the likes of aromas, air conditioning, music and lighting.

Furthermore, according to Koschmann and Isaac (2018), the environment and design of the store could be critical factors that influence consumer preferences regarding it in their perceptions of quality of services and products, price and the cost of the purchase experience. Thus, an adequate environment can positively increase the shopping experience (Orth & Green, 2009).
According to Hosseini et al. (2014), one of its main aspects is its location and other related factors, such as parking and transport. The findings of this study of Belwal and Belwal (2017) also indicate the importance consumers assign to parking facilities to the store image.

In this sense, regarding convenience in terms of location, consumers are influenced by factors such as travel time to the store, transport to arrive there and the physical location of the store (Marshall, 2019).

H1d: Store environment is a significant dimension of perceived value by food retail consumers.

With a focus on creating value through a store's attributes, Condi et al. (2018) proposed, applied and validated through in-depth interviews with 12 supermarket managers a specific value creation model for the field, with the constructs and variables extracted from the interviews using the content analysis technique. The new model was called the Value Creation Activities Model - Supermarket (VCAM-S).

The application of the VCAM-S identified 8 activities of value, divided into sub-activities, and this framework was used as an important basis for the constructs to be evaluated by consumers in the present study in order to create a model to demonstrate and measure value creation in food retail. Table 1 summarizes the 8 activities of value proposition that make up the VCAM-S.

<table>
<thead>
<tr>
<th>Nº</th>
<th>Activity</th>
<th>Sub-activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Store attributes</td>
<td>Related to service (longer opening hours, cordiality, differentiated/personalized service, quality and fast); the store (its structure, internal circulation, comfort, display of products, convenience, layout, cleaning, lighting, sounds, smells, organization of the store, parking, location – easy and/or near access) and product (own products, quality, freshness, practicality, convenience, packaging, design, trust, origin, traceability, quality seal, sustainable, organic, regional, artisanal and ethnic).</td>
</tr>
<tr>
<td>2</td>
<td>Pricing</td>
<td>Related to price (accessible, low, correct, fair and competitive), research of prices practiced by the competition, discounts, progressive discounting practices, easy payment (more forms of payment, store's own credit card).</td>
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<td>3</td>
<td>Wide range of products</td>
<td>Related to assortment, variety and offer of products, availability of complementary products; own products; product mix with attributes of well-being (organic, practical and sustainable practices by manufacturers, ecological products, healthier products); with cultural attributes (offered according to ethic, regional and artisanal factors); with attributes of practicality</td>
</tr>
<tr>
<td>N°</td>
<td>Activity</td>
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<td></td>
<td>Innovation in products</td>
<td>Related to incremental product innovation and supply of new products/services.</td>
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<tr>
<td>4</td>
<td>Additional services</td>
<td>Related to service provision (information on the company and/or products on offer), services related to purchases (loyalty policies, discount clubs or discount cards), delivery service, availability of spaces integrated with other commercial activities (pharmacies, stores that sell clothing, gifts, food and banking services); interaction with specialist staff (gastronomy experiences and cooking classes from chefs).</td>
</tr>
<tr>
<td>5</td>
<td>Strategies/processes</td>
<td>Related to the positioning of the store and market segmenting to identify and perceive customers’ needs in order to create more effective marketing strategies to serve customers better.</td>
</tr>
<tr>
<td>6</td>
<td>Distribution channels</td>
<td>Related to the availability of different distribution channels (both direct and/or indirect); integration between physical and virtual stores and a combination of distribution/interaction channels (omni channel – enabling the integration of activities developed in physical stores, virtual stores, applications, digital tools and social media networks).</td>
</tr>
<tr>
<td>7</td>
<td>Communication</td>
<td>Related to personalized advertising; in-store merchandising; promotional campaigns; sales strategies; informing customers about special offers; interaction with consumers through social media; participation in social responsibility actions.</td>
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Source: Condi et al. (2018).

The first construct of the VCAM-S is Store attributes. However, given the importance of the sets of variables in this construct, regarding service, store environment and products, with these being the constructs of diverse studies on store image attributes (Theodoridis and Chatzipanagiotou, 2009; Martínez-Ruiz et al., 2010; Hosseini et al., 2014), it was decided that these sets of variables would have their own constructs.

Thus, the store attributes construct of the VCAM-S gave rise to the constructs of Products, Service and Store environment (H1a, H1c and H1d). The latter, also incorporating the variables found in the constructs of Innovation in products and Wide range of products from the VACM-S model with a view to simplification due to the possible overlap of variables that may be similar in the eyes of the consumer.

Another adjustment of the VCAM-S model for the present study involved the Distribution channels construct, given that the variables for this construct were mentioned very little by the managers interviewed in the study of Condi et al. (2018). Furthermore, they were related to aspects that optimize processes and would thus be difficult for consumers to evaluate.
Taking the present theoretical framework into account, the theoretical model, called the Food Retail Perceived Value (FREPEV), was proposed (Figure 1), based on the VCAM-S (Condi et al., 2018), with an adjustment of the constructs analysed in diverse studies on food retail store attributes. Therefore, it is expected that:

H1e: Additional services are a significant dimension of perceived value by food retail consumers.

H1f: The Strategies/processes adopted by the store are a significant dimension of perceived value by food retail consumers.

H1g: Store communication is a significant dimension of perceived value by food retail consumers.

Along with the activities of value proposed for food retail to measure perceived value, it is necessary to analyse the impact of this perceived value on abstract post-value constructs, which are generally addressed in the literature in the form of satisfaction, repurchase intention and recommendation (Oliver, 2014; Queiroz & Finocchio, 2018).

Satisfaction is considered as the consumer’s entire experience following an evaluation of something regarding whether it lived up to his expectations in relation to a service that was rendered. The construction of perceived value precedes the emotionally oriented evaluation, which is derived from satisfaction (Oliver, 2014). In this respect, perceived value precedes and influences the level of satisfaction with that service (Slack et al., 2020).

Thus, satisfaction is a construct that occurs after the consumer’s perception of value, with the management of satisfaction being supported by deep learning regarding the value perceived by the consumer (Queiroz & Finocchio, 2018). Therefore, it is expected that:

H2: The value perceived by a food retail consumer will have a positive effect on satisfaction.

Repurchase intentions reflect the consumer’s judgements on whether to acquire a product or service again, considering his current situation in addition to other possible circumstances (Singh, 2019). In this respect, repurchase behaviours may be influenced by the environmental conditions of the store that
act as a stimulus for consumers to spend more and remain longer in the store (Ariffin et al., 2016).

Therefore, enabling consumers to build a positive attitude towards the brand is one of the most important factors that enable them to develop a repurchase intention, even if they find other suppliers with similar conditions at lower prices (Joseph et al., 2020). Therefore:

H3: The value perceived by food retail consumers will have a positive effect on repurchase intention.

Recommendation occurs when consumers offer positive advice to possible consumers based on their own experiences of goods and services (Menidjel et al., 2019). Grewal and Roggeveen (2020) showed that recommendations influence consumer choices, especially in the pre-purchase stage. In this sense, in a decision-making process, consumers are more likely to trust recommendations from other consumers than the content of the supplier’s advertising.

Nevertheless, customers may not recommend a service to others, even when they are satisfied with it. In this respect, the perceived performance of a product or service needs to exceed the consumer’s expectations. Otherwise, there will be no positive actions such as a compliment or recommendation regarding the product or service (Menidjel et al., 2019). Therefore:

H4: The value perceived by food retail consumers will have a positive effect on recommendations.

2.1 STORE FORMAT

Every different need of consumers is considered exclusively for each occasion. Thus, the effectiveness of a food retail format depends significantly on the global value proposal sought by the consumer for a given occasion. In this sense, Graciola et al. (2020) pointed out that the relationship between perceived value and purchase intention is influenced by the store format, which means that the formats may generate a different perceived value which may impact differently on purchase intention (Escobar-López et al., 2021).

Regarding food retail formats, there are different forms of classification, with the main ones in the literature, due to their characteristics in the area of
sales, being invoicing, average number of items available, percentage of non-food sales, and number of check-outs and sections (Parente, 2011).

In this respect, to facilitate the use of concepts, Gomes (2016) clustered the formats into segments that were easily distinguishable and adjusted to the form most widely used in food retail: neighbourhood supermarkets, super/hypermarkets and wholesale self-service stores.

For the three main food retail formats proposed by Gomes (2016), using the studies conducted by Parente (2011), the basic features of the food retail formats used as a basis for the present study were derived.

Supermarket and hypermarket formats have large storage and parking areas, facilitating access for private vehicles. Their sales areas are large, ranging from 1,500 to 6,000 m² for supermarkets and over 5,000 m² for hypermarkets. Both have a large and varied product mix, with sections such as groceries, perishable food, as well as more non-food products in the miscellaneous goods and textile and electric and electronic goods sections. They have the lowest rate of workers per sales area (technology intensive), in addition to a relatively low price per unit, albeit made higher due to operating costs. The average receipt amount is high due to larger purchases in addition to products with higher added value. The store’s spatial area is extensive, serving large numbers of consumers who live far away. Due to their similarities, in this research these formats will be analysed together.

The format of wholesale self-service stores has a large area for parking and receiving goods. The sales area is large, usually between 2,500 and 6,000 m². It has a relatively low product mix compared with supermarkets and simpler facilities that require a low investment. There is a limited range of products and the focus is on lower prices. The average receipt amount tends to be high because of bulk supply purchases and sales to shopkeepers.

The diverse food retail formats have attributes that are analysed by consumers, which lead them to feel satisfied with the store. Therefore, it is expected that:

H5: The store format will have a moderating effect on the relationship between perceived value and the other variables in the model.
3 METHODOLOGY

The present study is of a quantitative and descriptive nature (Malhotra, 2019), investigating individuals who made purchases at supermarkets at least once in the thirty days prior to the research. These individuals made purchases on Brazilian territory and were over the age of eighteen.

To calculate the sample size, the statistical software G*Power: Statistical Power Analyses for Windows and Mac (Faul et al., 2009) was used. An effect size of $p=0.3$, error $e= 0.05$, and explanatory power of 0.95 were considered as parameters. As a result, a sample of 111 individuals was suggested. Considering this for each food retail store format, a total sample of 222 was generated. However, 493 individuals were sampled.

As a data collection instrument, a structured questionnaire (Malhotra, 2019) was used, comprising 55 items in the environment of the value creation process for food retail (Table 2), measured by a 5-point Likert scale, and 5 items to identify the socio-economic profile of the sample. Initially, a pilot study was carried out with 20 respondents, to validate the collection tool. However, there were no reports of difficulties.
<table>
<thead>
<tr>
<th>Variables</th>
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<tbody>
<tr>
<td><strong>Serv1</strong> - The employees are friendly and cordial</td>
<td><strong>Pric1</strong> - Prices are affordable.</td>
<td><strong>Com1</strong> - The store offers many promotions.</td>
</tr>
<tr>
<td><strong>Serv 2</strong> - Employee service is fast</td>
<td><strong>Pric2</strong> - The price-quality ratio is high (fair price).</td>
<td><strong>Com2</strong> - The store offers promotions in benefits form (example: buy and win).</td>
</tr>
<tr>
<td><strong>Serv 3</strong> - Employees have knowledge about the products and services offered</td>
<td><strong>Pric3</strong> - Prices are lower compared to competitors.</td>
<td><strong>Com3</strong> - The store has weekly, monthly or specific day offers.</td>
</tr>
<tr>
<td><strong>Serv 4</strong> - The store’s opening hours are ideal</td>
<td><strong>Pric4</strong> - Has discount practices.</td>
<td><strong>Com4</strong> - The store promotes itself and communicates offers through traditional advertisements (radio, tabloids, pamphlets, billboards, TV).</td>
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<tr>
<td><strong>Serv5</strong> - Integrated/shared spaces with other activities enhance the store experience.</td>
<td><strong>Serv1</strong> - Provides information-related advice or services.</td>
<td><strong>Com5</strong> - The store provides interaction through social media.</td>
</tr>
<tr>
<td><strong>Env1</strong> - It has a good infrastructure</td>
<td><strong>Serv2</strong> - Provides loyalty programs (example: loyalty card, discount clubs or discount card).</td>
<td><strong>Sat1</strong> - I am satisfied with the store.</td>
</tr>
<tr>
<td><strong>Env 2</strong> - Allows good internal circulation</td>
<td><strong>Serv3</strong> - Provision of delivery services.</td>
<td><strong>Sat2</strong> - The store meets my expectations.</td>
</tr>
<tr>
<td><strong>Env 3</strong> - The products disposition is bold, convenient and easy to access.</td>
<td><strong>Serv4</strong> - Provides integrated/shared spaces with other commercial activities (example: pharmacies, stores, food services).</td>
<td><strong>Sat3</strong> - I consider the store to be ideal.</td>
</tr>
<tr>
<td><strong>Env 4</strong> - It has good lighting and cleanliness</td>
<td><strong>Serv5</strong> - Integrated/shared spaces with other activities enhance the store experience.</td>
<td><strong>Sat4</strong> - Provided me with a good experience.</td>
</tr>
<tr>
<td><strong>Env 5</strong> - It has a good location (easy access)</td>
<td><strong>Str1</strong> - The store carries out actions to meet the needs of customers (example: consumer research).</td>
<td><strong>Rep1</strong> - If I could, I would like to continue shopping at this store.</td>
</tr>
<tr>
<td><strong>Env 6</strong> - Good location (near)</td>
<td><strong>Str 2</strong> - The store meets your needs exactly the way you want it.</td>
<td><strong>Rep 2</strong> - I rarely consider buying from another store.</td>
</tr>
<tr>
<td><strong>Env 7</strong> - Parking is accessible</td>
<td><strong>Str 3</strong> - The store employs actions focused on sustainability, environment and social responsibility.</td>
<td><strong>Rep 3</strong> - I believe that I will buy from this store again.</td>
</tr>
</tbody>
</table>

**Table 2. Variables used in the study**

**Service**
- Serv1 - The employees are friendly and cordial
- Serv 2 - Employee service is fast
- Serv 3 - Employees have knowledge about the products and services offered
- Serv 4 - The store’s opening hours are ideal

**Pricing**
- Pric1 - Prices are affordable.
- Pric2 - The price-quality ratio is high (fair price).
- Pric3 - Prices are lower compared to competitors.
- Pric4 - Has discount practices.
- Pric5 - Has payment facilities (more forms of payment, such as vouchers and own card).

**Communication**
- Com1 - The store offers many promotions.
- Com2 - The store offers promotions in benefits form (example: buy and win).
- Com3 - The store has weekly, monthly or specific day offers.
- Com4 - The store promotes itself and communicates offers through traditional advertisements (radio, tabloids, pamphlets, billboards, TV).
- Com5 - The store promotes itself and communicates offers through digital media (example: Facebook, Instagram and Whatsapp).

**Satisfaction**
- Sat1 - I am satisfied with the store.
- Sat2 - The store meets my expectations.
- Sat3 - I consider the store to be ideal.
- Sat4 - Provided me with a good experience.

**Repurchase Intention**
- Rep1 - If I could, I would like to continue shopping at this store.
- Rep 2 - I rarely consider buying from another store.
- Rep 3 - I believe that I will buy from this store again.

**Store environment**
- Env1 - It has a good infrastructure
- Env 2 - Allows good internal circulation
- Env 3 - The products disposition is bold, convenient and easy to access.
- Env 4 - It has good lighting and cleanliness
- Env 5 - It has a good location (easy access)
- Env 6 - Good location (near)
- Env 7 - Parking is accessible

**Additional services**
- Serv1 - Provides information-related advice or services.
- Serv2 - Provides loyalty programs (example: loyalty card, discount clubs or discount card).
- Serv3 - Provision of delivery services.
- Serv4 - Provides integrated/shared spaces with other commercial activities (example: pharmacies, stores, food services).
- Serv5 - Integrated/shared spaces with other activities enhance the store experience.

**Products**
- Prod1 - Good presentation/display of products
- Prod2 - It has the advantage of having private label products

**Strategies/Processes**
- Str1 - The store carries out actions to meet the needs of customers (example: consumer research).
- Str2 - The store meets your needs exactly the way you want it.
- Str 3 - The store employs actions focused on sustainability, environment and social responsibility.
For the data collection, the non-probabilistic survey (Malhotra, 2019) method was used, with the “snowball” method, in which the initial participants recommend new participants. The questionnaire was hosted by the Google Forms tool and each respondent answered about their favourite store format.

Most of the respondents were female (61.4%) and the most expressive age group in the sample was 18 to 28 years (31.0%). As for marital status, 53.4% declared that they were either married or in a civil union. The most common maximum level of schooling in the sample was a complete graduate degree (35.7%). Concerning economic class, almost half of the sample (48.3%) was categorized as Class B.

Regarding the behavioural characterization of the sample, 39.6%, said that they make purchases once a week, while 25.5% make purchases twice a month. Those who make more than one purchase a week account for 18.9% of the sample. This shows that the predominant behaviour in the sample is make a number of small purchases during the month (once a week and more than once a week).

To gauge the existence of common method variance, Harman’s single factor test was performed, using (unrotated) principal component exploratory
factor analysis, in which all the indicators are clustered into a single dimension. As the generated factor presented a variation of only 17.9%, below the critical limit of the test (50%), it was possible to conclude that the study did not suffer from this bias (Podsakoff et al., 2003).

Owing to the different independent variables and their interpellations, the structural equation modeling (SEM) method was used. As the normality test showed that the sample does not present normal distribution (Kolmogorov-Smirnov test p<0.05), a partial least squares (PLS) model was used for goodness of fit (Ringle et al., 2014; Hair et al., 2014).

To evaluate the fitness of the model, the Average Variance Extracted (AVE) was used, which gauges on average to what extent the variables are positively related to their respective constructs and Discriminant Validity (DV) to compare the factor results of a variable within the original construct of the model with its other constructs (Ringle et al., 2014). To gauge the reliability of the model, Composite Reliability was employed. Finally, the $R^2$ was analysed, which evaluates the variance of the endogenous variables explained by the structural model (Hair et al., 2014).

4 RESULTS AND DISCUSSION

To gauge the fitness of the model, it was submitted to the following analyses: Convergent Validity, Discriminant Validity and Composite Reliability. When the model was adjusted to the established criteria, the results of the SEM were analysed (path significance).

<table>
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</thead>
<tbody>
<tr>
<td>1. Communication</td>
<td>0.805</td>
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</tr>
<tr>
<td>2. Products</td>
<td>0.693</td>
<td>0.800</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Additional services</td>
<td>0.633</td>
<td>0.663</td>
<td>0.759</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. Store environment</td>
<td>0.622</td>
<td>0.766</td>
<td>0.469</td>
<td>0.875</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5. Strategies/ Process</td>
<td>0.754</td>
<td>0.735</td>
<td>0.724</td>
<td>0.628</td>
<td>0.816</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Pricing</td>
<td>0.648</td>
<td>0.638</td>
<td>0.435</td>
<td>0.674</td>
<td>0.606</td>
<td>0.830</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7. Recommendation</td>
<td>0.683</td>
<td>0.623</td>
<td>0.481</td>
<td>0.599</td>
<td>0.644</td>
<td>0.657</td>
<td>0.948</td>
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<tr>
<td>8. Repurchase intention</td>
<td>0.655</td>
<td>0.666</td>
<td>0.482</td>
<td>0.717</td>
<td>0.637</td>
<td>0.694</td>
<td>0.819</td>
<td>0.896</td>
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</table>
The first aspect to be analysed for the goodness of fit of the SEM is the Convergent Validity, which is obtained through observations of Average Variances Extracted (AVEs). Once the AVEs measure over 0.50, it can be said that the model convergence is satisfactory (Ringle et al., 2014). It should be noted that the generated model presents a satisfactory result, with the lowest AVE being 0.576, presented by the latent variable Additional services, and rising to 0.899 for the latent variable Recommendation.

After ensuring the Convergent Validity, it is necessary to evaluate the Composite Reliability, which is used to evaluate bias in the sample or shows whether the set of responses is trustworthy (Ringle, Silva and Bido, 2014). For the model to be considered satisfactory, the value must be higher than 0.70 (Hair et al., 2014). In the model in question, it was considered satisfactory in that all the variables had an index higher than 0.815.

The third stage in the fitness analysis is Discriminant Validity. This is understood as an indicator of the independence of the latent variables (Hair et al., 2014). For this analysis, the most recommended criterion is that of Fornell and Larcker (1981), in which the square roots of the AVEs are compared for each latent variable (values in the diagonal) with the correlations between them. The square roots of the AVEs must be higher than the correlations between the latent variables. As shown in the Table 1, in all the cases the values of the square roots of the AVEs are the highest in their line and column, showing a degree of heterogeneity among the latent variables, with their components more strongly related to a better defined one, with its correlation not significantly distributed among other latent variables.

<table>
<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Satisfaction</td>
<td>0.756</td>
<td>0.716</td>
<td>0.535</td>
<td>0.713</td>
<td>0.735</td>
<td>0.727</td>
<td>0.821</td>
<td>0.843</td>
<td>0.930</td>
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<tr>
<td>10. Service</td>
<td>0.603</td>
<td>0.657</td>
<td>0.497</td>
<td>0.752</td>
<td>0.635</td>
<td>0.628</td>
<td>0.556</td>
<td>0.613</td>
<td>0.631</td>
<td>0.937</td>
</tr>
<tr>
<td>Composite Reliability</td>
<td>0.891</td>
<td>0.918</td>
<td>0.816</td>
<td>0.949</td>
<td>0.874</td>
<td>0.884</td>
<td>0.962</td>
<td>0.877</td>
<td>0.947</td>
<td>0.857</td>
</tr>
<tr>
<td>Cronbach’s alpha</td>
<td>0.917</td>
<td>0.934</td>
<td>0.871</td>
<td>0.958</td>
<td>0.908</td>
<td>0.917</td>
<td>0.973</td>
<td>0.924</td>
<td>0.962</td>
<td>0.903</td>
</tr>
<tr>
<td>Average Variance</td>
<td>0.648</td>
<td>0.640</td>
<td>0.576</td>
<td>0.766</td>
<td>0.665</td>
<td>0.690</td>
<td>0.899</td>
<td>0.803</td>
<td>0.864</td>
<td>0.700</td>
</tr>
</tbody>
</table>

Source: Authors.
After the certification of the Discriminant Validity, Convergent Validity and Composite Reliability, the fits of the SEM were finalized, moving on to the analysis of the structural model (Ringle et al., 2014).

Table 4. Path Analysis

<table>
<thead>
<tr>
<th>Path</th>
<th>Coefficient</th>
<th>t value</th>
<th>p value</th>
<th>r²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Value → Communication</td>
<td>0.845</td>
<td>51.323</td>
<td>0.000</td>
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</tr>
<tr>
<td>Perceived Value → Products</td>
<td>0.903</td>
<td>87.856</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Perceived Value → Additional services</td>
<td>0.726</td>
<td>30.014</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Perceived Value → Store environment</td>
<td>0.872</td>
<td>59.530</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Perceived Value → Strategies/Process</td>
<td>0.857</td>
<td>62.363</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Perceived Value → Pricing</td>
<td>0.793</td>
<td>36.483</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Perceived Value → Repurchase intention</td>
<td>0.729</td>
<td>26.441</td>
<td>0.000</td>
<td>0.531</td>
</tr>
<tr>
<td>Perceived Value → Satisfaction</td>
<td>0.831</td>
<td>44.440</td>
<td>0.000</td>
<td>0.690</td>
</tr>
<tr>
<td>Perceived Value → Service</td>
<td>0.809</td>
<td>31.947</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors.

As shown in Table 4, all the relationships were significant. The latent variables that were highlighted due to their higher degree of explanation of perceived value were: Products and Store environment. The former had a structural coefficient of 0.903 and the latter 0.872. Based on these results, all dimensions of the perceived value (FREPEV) were significant, confirming the H1a-H1g hypotheses.

Regarding the post-value constructs, perceived value affects satisfaction (H2), repurchase intention (H3) and recommendation (H4), explaining 83.1%, 77.4% and 72.9% of these, respectively.

To test H5, a Multigroup analysis was performed with the total sample divided by store formats, with two sub samples being composed of 295 supermarket/hypermarket and 198 wholesale self-service.
The results in Table 5 demonstrate that for both formats, all dimensions of the perceived value were significant. In addition, the perceived value had a positive effect on satisfaction, repurchase intention and recommendation in both cases. The results also demonstrate that there were significant differences in the model due to the store format, supporting hypothesis 5 of this research.

With regard to the Supermarket/Hypermarket format, the Products and Store environment variables presented the latent variables with the highest degree of explanation of perceived value, with the first variable mentioned having structural coefficients of 0.919 and the second of 0.898. Thus, it appears that these are the most influential factors in the perception of value by a consumer in those store formats.

It should be highlighted that the structural coefficient of the latent variable Additional services, which had an index of 0.789, representing a considerably higher value compared with the other format (0.655) and showing that consumers of this format, placed greater value on aspects of additional services than consumers of wholesale self-service store format.

For the correlation with post-value constructs, this model presented all the structural coefficients with indices higher than 0.7, with emphasis on the variables Satisfaction and Repurchase intention, with a coefficient greater than 0.7.
indicates that a positive variation in perceived value will help to explain over 70% of the positive variation in the repurchase intention and satisfaction of food retail consumers in this format.

In addition to these measurements, it is important to note that the Repurchase Intention and Recommendation variables had the highest structural coefficient with perceived value among the formats that were analysed, being 0.837 and 0.777, respectively.

Finally, regarding the wholesale self-service store format, it should be highlighted that it has lowest structural coefficients for all paths. This indicates that this factor has less explanatory power regarding consumers’ perceived value compared with the other format. This factor corroborates the literature, as the range of services and the facilities are simpler and more limited, as the focus is on lower costs (Parente, 2011; Gomes, 2016).

The latent variables with the highest degree of explanatory power of perceived value presented by the model were Products and Store environment, with the former having a structural coefficient of 0.875 and the latter 0.836. These facts contrast with the literature, as this format has a relatively limited product mix compared with supermarkets and simpler facilities and lower investments (Parente, 2011; Gomes, 2016).

It is also important to note that, regarding post-value constructs, for this format, satisfaction is the one most closely related to perceived value (R² of 0.787), since perceived value explains 78.7% of satisfaction. However, the indices were considerably lower regarding purchase intention and recommendation (0.486 and 0.468, respectively), showing that perceived value has significantly less explanatory power for these factors than it does for Supermarkets and Hypermarkets. In the former, perceived value is more strongly transformed into repurchase intention (rate of 70.9%) and recommendation (rate of 65.9%).

5 CONCLUSIONS

The purpose of the present work was to measure perceived value by food retail consumers under the moderating effect of store formats. Based on the results presented in this study, the first finding was that over 40% of the
consumers samples make their purchases at wholesale self-service stores, followed, with a difference of only 0.7%, by consumers who make their food purchases at supermarkets. Fewer consumers shop at hypermarkets (19.3%).

The study proceeded with an analysis of Structural Equation Modelling (SEM). The theoretical model, which was given the name Food Retail Perceived Value (FREPEV), was analysed under the moderating effect of each food retail store format.

The model generated for the Supermarket/Hypermarket format presented Products and Store environment as the latent variables with the highest degree of explanatory power for perceived value, with the former having a structural coefficient of 0.919 and the latter 0.898. The results show that these factors have the greatest influence on the value perceived by consumers of this store format. Regarding the correlation with the post-value constructs, all the factor loadings of this model were higher than 0.7. This indicates that a positive variation in perceived value will be related to positive variations in the repurchase intention, recommendation and satisfaction of food retail consumers.

With regard to the wholesale self-service store model, it should be highlighted that it has the lowest beta for the additional services variable of the models analysed, indicating that this factor has less explanatory power for perceived value than the other models. The latent variables with the highest degree of explanatory power of perceived value presented by this model were Products and Store environment, the former having a structural coefficient of 0.875 and the latter 0.836. It is also important to highlight that, in relation to the post-value constructs for this format, satisfaction is more strongly related to perceived value (structural coefficient of 0.787).

Through the peculiarities presented in each model, strengthened by the Multi-Group analysis of the correlation between the valued attributes regarding store format, it is clear that the store format is a fundamental feature in the conception and analysis of value creation for a food retail store.

This study contributes to the field by adding further discussion to the current corpus of research in the field of food retail consumer behaviour. It also addressed the analysis of the process of measuring perceived value in an unprecedented way, as most studies on value creation were conducted to identify
the factors that generate perceived value, but without measuring them or creating a robust model that helps explain how variables relate to value.

Through the theoretical model validation, the key factors that facilitate the creation of value in food retail can be better understood. This knowledge will help food retailers to formulate more solid strategies to increase the value perceived by the consumer, so that satisfaction, the repurchase intention and the recommendation in relation to their stores are reinforced.

This can be sought, for example, by adding greater attention mainly to points of the factors most correlated with the consumer perceived value, which are Store environment and Products, through measures that seek, in relation to the Store Environment, to improve the store infrastructure, its disposition of products and accessibility (location, access and parking) and, as for Products, improve the presentation of products, variety and assortment, provide new products and products with practicality attributes.

After the strategic improvements made by retailers in the most relevant factors to the consumer perceived value, the other factors, following their relevance for each store format, should also be improved. This, as some factors are more likely to create value for the consumer in one store format compared to another format. As, for example, the Additional services factor, which includes investments in loyalty programs, delivery services, integration of the store space with other activities that can increase the level of consumer experience. Strategies taking into account these points will have a considerable impact on the perceived value of consumers in Super and Hypermarkets, while they will have little influence on the customers perceived value in the wholesale self-service store.

The limitations of the study included a lack of variety in the data, as the sampling was done by convenience and using the snowball method. Furthermore, some of the scales used were taken from studies conducted outside Brazil, which could result in not adequately representing Brazilian consumers because of the differences in cultural and behavioural aspects. However, the application of the present study in the country may also have helped to adapt it to the Brazilian reality.

Finally, for future studies, the model could be applied to a probabilistic sample to ensure a greater variety of variables to be addressed in the study and
the development of models with increasingly less research bias. Moreover, other post-value constructs, such as loyalty, could be added to the model to broaden the scope of its operationalization, allowing increasingly better management of the more abstract concepts of marketing.
REFERENCES


Gomes. V. B. (2016). *As atividades das grandes empresas do ramo supermercadista e a rede urbana brasileira no período recente*. [Dissertação de Mestrado, Universidade Estadual Paulista Júlio de Mesquita Filho (UNESP)]. https://repositorio.unesp.br/handle/11449/149806


