An analysis of criteria for supermarket selection of different groups of consumers in Brazil

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This study aimed to identify differences between the selection criteria used by supermarket consumer segments that have different geographic and demographic characteristics among themselves. To achieve this objective, a field survey was developed, with a sample of 750 individuals. For data analysis, discriminant analysis was developed, with the following geographic and demographic variables: gender, education level, the lifecycle of customers and the number of inhabitants of the city where consumers lived. Analyzing the results, it was possible to formulate twelve propositions related to the selection criteria used by specific supermarket consumer groups.

Key words: Brazilian supermarkets, discriminant analysis, consumer behavior, selection criteria.

INTRODUCTION

According to Supermarkets Brazilian Association (2009), the supermarket sector sales accounted for 5.5% of Brazil Gross Domestic Product in 2008. Also, according to Supermarkets Brazilian Association (2009), the Brazilian supermarket sector revenues reached in 2008 is US$ 68.1 billion, representing a real increase of 10.5% and a nominal increase of 16.3% compared to 2007.

Also in 2008, the number of stores reached 75,725 points (1.5% increase over 2007), with 876,916 employees (1% growth over 2007) and average net profit of 2.12% (the highest average net profit since 1999) (Supermarkets Brazilian Association, 2009).

In addition, it should be noted that, comparing 2008 to 2007, all basic and absolute indicators, such as revenue, number of checkouts, sales area, number of establishments and employees increased, confirming the continuing evolution of the sector. This can be reinforced by data from 2007 because in this year too, the same indicators showed significant expansion in relation to 2006 (Supermarkets Brazilian Association, 2009).

The data cited show the importance of the supermarket sector in the Brazilian economy and the growth trend for the coming years, increasing the need to study consumer behavior in this specific sector.

It should be emphasized that the study of consumer behavior in retail has gained greater relevance in recent years, since the competition has grown significantly (McGoldrick, 2002).

Analyzing the academic literature on consumer behavior in retail, it was found that there are few studies focused on variations in the supermarket selection criteria according to personal and external factors.

In this context, this study aimed to identify differences between the selection criteria used by supermarket consumer segments that have different geographic and demographic characteristics.

The main contribution of this research relates to the fact that it provides empirical data about the differences between the patterns of decision of different groups of consumers, encouraging the development of supermarket management practices focused on different target groups.

THEORETICAL

Consumer purchase process

According to Wells and Prensky (1996), Engel et al.
the process of consumer purchase. These authors proposed different models to explain the process of consumer purchase.

According to the model of consumer purchase process proposed by Wells and Prensky (1996), the first step occurs with the identification of a problem by the individual (a need or an unsatisfied desire). In the second stage, the individual perceives the problem; he starts a search for information in the marketplace about the options he can use to solve the problem. In the third stage, after to search information about the available options, the individual performs an analysis of his alternatives, using the information collected in second stage. Finally, in the last step of the model of Wells and Prensky (1996), the consumer chooses which product to buy, where and when to make the purchase.

Engel et al. (2005), extending the model proposed by Wells and Prensky (1996) and proposed another model, whose first stage is also related to the recognition of a need or desire not satisfied by the individual. In the second step, begins with a search for information, both internal and external, so that consumer can identify and solve his demand. As a source of internal information, we can mention the memories of the consumer, if the need already was met before. However, when the need arises for the first time and the individual has no previous experience or knowledge that assist in the resolution of the problem, he uses mainly external information sources. In the third stage, the individual interprets the acquired information through mental processes of learning. Then, in the fourth stage, the consumer evaluates each one of his alternatives, considering the information found about each product/service and each company. At this stage, however, it should be noted that the evaluation made by each individual about each identified alternative takes into account the most important criteria for each one (Engel et al., 2005).

In the fifth step, after assessing their alternatives, the customer makes his purchase. The sixth stage consists of the consumption, when the customer experiences the performance of the chosen option. Finally, in the last step, the consumer evaluates if the performance of the product/service/store selected met their expectations, generating satisfaction or dissatisfaction (Engel et al., 2005). Another model to to be studied, proposed by Schiffman and Kanuk (2009), includes the stages of consumer purchase, as well as the influences of cognitive and external factors, extending the discussion developed by previous models. In the model of Kanuk and Schiffman (2009), (1) the recognition of an unsatisfied need, (2) the search for information and (3) the evaluation of alternatives, are steps of the buying process that are influenced by individual cognitive factors, as motivation, perception, learning, personality and attitudes of consumers, and simultaneously influence the shopping experiences of the individual. These shopping experiences influence the cognitive processes of consumers. Thus, the experience developed by consumer in search and evaluation of alternatives will result in the development of cumulative knowledge in order to simplify the process in repeat purchase (Schiffman and Kanuk, 2009). Furthermore, cognitive processes, as well as the steps of problem recognition, information search and evaluation of alternatives, are influenced by socio-cultural environmental and organizations’ marketing efforts. In this sense, the process of consumer purchase is subject to external and cognitive influences. In the fourth stage, the consumer decides where, when and what buy and then performs the purchase. The fifth stage is the evaluation of the perceived performance, resulting in satisfaction or dissatisfaction (Schiffman and Kanuk, 2009), as shown in Figure 1.

Comparing the three models described, it is verified that the consumer purchase process begins when the individual perceives a problem to be solved (an unmet need or desire). Then, the individual search information in the external environment and internal information accumulated from past experiences. After obtaining the necessary information, the consumer examines his options in order to identify which one can best meet his needs. This step becomes very important for companies because it must know the selection criteria most relevant to it customers and potential customers, to ensure better performance in these aspects (McGOLDRICK, 2002).

As this research focused on the supermarket segment, next were detailed some of the key selection criteria used by consumers in the evaluation of different supermarkets.

Criteria for evaluation and selection of different supermarket stores

According Baltas et al. (2010), most consumers realize their purchases in more than one retail food store, however, these consumers often choose a main store, where it were performed most of their purchases.

The decision to perform most of shopping in one supermarket reflects consumer resistance to abandon his link in relation to a major supermarket, as this link brings economic and cognitive benefits, associated to the reduction of the effort required to meet specificities of new stores, such as layout, price and assortment (Baltas et al., 2010). In this sense, researchers identified several factors that are relevant in consumer choice of a major supermarket, where most of their purchases would be done. These elements were divided into constructs, as described subsequently.

Assortment

According to Bäckström and Johansson (2006) and Lee
The construct assortment influences consumer choice by a particular retailer, and this point involves many items. Westbrook (1981) and Carpenter and Moore (2006) report that the quality of products sold by retailers is a point that deserves attention, because customers are looking for companies whose products sold are of higher quality.

In addition, Guiry et al. (1992) and Clarke et al. (2006) argue that the variety of products and brands available is a key criterion in evaluation of a particular store. According Katsaras et al. (2001) and Fox et al. (2004), customers prefer retailers that offer a wide variety of products in its assortment, including newly launched products in the market.

Finally, McGoldrick (2002), examining the construct assortment, points out the need for retailers to remain in the sales area fresh and high quality products, ensures a good evaluation from customers.

Thus, it were verified that the assortment of products in retail is evaluated by consumers according to the following criteria: variety of products and brands, newly products availability, quality and freshness of products sold.

**Convenience**

Westbrook (1981) highlights the importance of construct
convenience in the choice of customers for one retail store, which includes the presence of parking. Along this line, Dabholkar et al. (1996) and Clarke et al. (2006) suggest that retailers should increase consumer convenience, through flexible opening hours of its stores and offering parking for customers.

In addition, Katsaras et al. (2001) suggest that the convenience related to time and distance involved in the choice of a retailer is a very important element in decision of the final consumer, which meets the statements of Moore and Carpenter (2006) and Lee (2009), who insert in construct convenience the store location.

Furthermore, in relation to the convenience provided to consumers by retailers, we can mention the presence of various establishments and restaurants inside its stores (Clarke et al., 2006; Carpenter and Moore, 2006), since this would optimize the time that customers spend to move to other places to go to other stores such as pharmacies and fuel stations.

Finally, also in relation to the construct convenience, Clarke et al. (2006) and Carpenter and Moore (2006) also cite the presence of facilities for children in retail stores, which would facilitate the purchases of consumers that take their children to the shops.

**Monetary aspect**

According to Churchill and Peter (2000), price refers to the amount of money given in exchange for goods and services, and is related to aspects external to the company and to the sensitivity of consumers. For Carpenter and Moore (2006), the price is a decisive factor in purchasing decisions of consumers. According to Bäckström and Johansson (2006), customers prefer retailers whose prices are perceived as fairest.

Carneiro et al. (2004) emphasize that price level set by a company generates significant impact on company’s demand, and Sardinha (1995) states that organizations should consider some indicators related to consumers to develop one successfully pricing policy, such as the type and degree of consumer needs, the actual spending power of consumers, as well as benefits and value added by the firm of the point of view of consumer.

Besides the price, according to Westbrook (1981) and Dabholkar et al. (1996), the period for payment of purchases provided by the retailer and the concession of credit are other aspects that make consumers evaluate retail companies more favorably.

Additionally, Fox et al. (2004) explain that promotional efforts are also essential elements in the customer's choice. Along this line, McGoldrick (2002) and Lee (2009) highlight the importance of offers developed by retailers.

**Communication and branding**

According to Guiry et al. (1992) and Dabholkar et al. (1996), the retailer should be able to inspire trust in their customers, developing and ethical behavior that is consistent with the message communicated to the market or, in other words, the retailer must fulfill what it promised, assuring reliability of its brand. Carpenter and Moore (2006) emphasize that retailers must use the media in order to project an established brand in the market, what can to be done using, among other resources, promotional events.

Additionally, Degeratu et al. (2000) suggest that customers choose to buy from retailers whose brand is known and traditional in the market. Finally, in relation to the construct communication and brands, Maillard (1988) and McGoldrick (2002) highlight the importance of the sale of own brands products associated with quality, which may make that the company's brand is also associated with a higher performance.

**Store environment**

According to Westbrook (1981), the sensations experienced by customers in the store environment of a retail company are extremely important for those have good shopping experiences, and these sensations are very relevant aspects in the customer's choice of a store to make their purchases.

In this same line, Baker et al. (1994), Degeratu et al. (2000) and Bäckström and Johansson (2006) argue that the store environment, including design, sensory attributes (lighting, colors, music and fragrance) and social attributes, is one of the criteria commonly used by clients to evaluate the quality of retail stores.

Dabholkar et al. (1996) complement the previous statements, arguing that the appearance and layout of the store are items that impact on the customer perception about a certain retailer. Bäckström and Johansson (2006) suggest that the store layout should be designed in order to facilitate the flow of consumers.

According to Carpenter and Moore (2006) and Lee (2009), the atmosphere related to the store environment is also an element that must be monitored very carefully by retailers due to its importance in the consumer's decision.

In addition, McGoldrick (2002), Carpenter and Moore (2006) and Clarke et al. (2006) emphasize the importance of the cleanliness on the evaluation of customers. Furthermore, Titus and Everett (1995) and Bäckström and Johansson (2006) argue that the organization of products and internal signage are attributes that facilitate the search of customers for products within the store.

Moreover, according to Titus and Everett (1995), when customers of retailers have difficulty in locating desired products or information, they tend to get frustrated, and with it, retailers are losing sales and even customers. Therefore, these authors explain that customers typically conduct several judgments about the qualities of store
environment, based on the legibility (the ease with which the customer is self-guided in-store) and the degree that a particular environment is capable of stimulating their senses.

These two dimensions (legibility and degree of stimulation) could be achieved through four items that must be worked by retailers: (1) spatial configuration of the store, (2) differentiation achieved by the shop in the sales environment through clear visual separation between different sections of the store and indicative signs, (3) visibility of products, and (4) internal promotional ads (Titus and Everett, 1995).

**Security**

The construct security relates to the feeling on the part of customers that the store is safe and that they are not at risk during the time that they are doing their purchases; in addition, the client must feel secure in relation to the path traveled until the store (McGoldrick, 2002; Carpenter and Moore, 2006).

Complementarily, Carpenter and Moore (2006) suggest that it is not enough that the retailer makes available a parking for consumers, because they expect that the parking must be safe and able to pass security to the client during his stay on the store.

**Interactions between customers and employees**

Westbrook (1981) and Guiry et al. (1992) argue that the interactions between employees and customers are essential so that these can have good consumer experiences during their stay in a particular store, and this relationship can be considered as a relevant factor in the choice of a retailer.

Complementarily, Dabholkar et al. (1996) and McGoldrick (2002) explain that retailers must ensure that their employees are always polite and that their posture be able to transmit confidence to customers.

Carpenter and Moore (2006) confirm the previous statements by suggesting that customers prefer stores whose employees are courteous, polite and ready to solve the problems presented. These authors argue that, beyond of relationship between customers and employees, the relationship between customers is also important, as customers evaluate the agglomeration of people present at the store during the time that they were making purchases, as well as the characteristics of these people.

**Level of customer service**

Clarke et al. (2006), Bäckström and Johansson (2006) and Lee (2009) highlight the importance of the construct level of services in the assessment of customers. Thus, each retailer must adapt his service package to the needs of their target clients and ensure that the level of services provided is sufficient.

Among the additional services that may be available to customers in the retail market, there is home delivery, availability of staff to package, a shopping service by telephone, financial services, among other (McGoldrick, 2002).

According to Westbrook (1981) and Dabholkar et al. (1996), in relation to the level of customer service, the retailer should be able to resolve any complaints noted by consumers, making them evaluate the company positively.

Westbrook (1981) also mentions that the facility with which the clients accomplish trading of products in the store is a very important attribute on the evaluation of consumers. Moreover, Guiry et al. (1992) argue that the availability of staff, ensuring a quick and effective service, it is an important aspect to be considered by clients during the evaluation of their alternatives.

Thus, we can see that there are several criteria that can be used by consumers to select a supermarket to realization of purchases. It should be noted, however, that the importance of these criteria for different consumer groups is related to intrinsic and extrinsic factors, detailed subsequently.

**Factors that influence consumer behavior**

According to McGoldrick (2002), consumer behavior is influenced by situational factors: (1) place: the local culture influence the attributes valued by consumers, (2) period: in different historical periods, consumers judged the same attributes as more or less relevant, (3) personal characteristics, and (4) purpose: consumers may have the intention to buy different quantities, spend more or less time searching, generate ideas or just search options, buy items more or less regular in their consumption baskets, or buy items more or less complex.

Van Kenhove et al. (1999) defend that customers who seek to buy more urgently valorize attributes such as proximity of shops and variety in the assortment of them, while customers who buy in larger quantities look for stores with wide product assortment and low prices.

McGoldrick (2002) highlights five variables that influence consumer behavior in retail: money, time (related to the distance and ease of access to retail stores), necessary effort, stress involved in purchasing, and risk related to the safety of parking and places where the shops are located and to the quality of products and services available in shops unknown.

According to Engel et al. (2005), there are two classes of factors that influence consumer purchase behavior: individual and environmental factors. Among individual factors, we can mention the different levels of resources available, the information that each consumer has
attitudes, mental processes, motivations and goals to be achieved, beyond personality, values and lifestyle. On the other hand, among the environmental factors we can cite the culture, social class and reference groups.

Complementarily, the main factors influencing consumer behavior, according to Kotler (2000), are: (1) cultural aspects, including culture, subculture and social class, (2) social aspects, including reference groups, family roles and status and (3) personal aspects, which include age, stage in the life cycle, occupation, economic circumstances, lifestyle, personality and self-image, and (4) psychological aspects, which include motivation, perception, learning, beliefs and attitudes.

According to Blattberg et al. (1978), there is a strong relationship between economic and demographic variables and consumer behavior. Blattberg et al. (1978) defend that rich consumers are less sensitive to the price factor and more influenced by the displays in the store environment, since these consumers seek to reduce the time spent searching for options. Additionally, according to Blattberg et al. (1978), older people tend to worry more about the price factor, as they have more time to compare alternatives.

Another example that shows the influence of demographic factors on consumer behavior is the biggest impact of the variable 'design' in the purchasing decisions of young people (Bäckström and Johansson, 2006). Furthermore, another demographic variable that must be highlighted is the gender because, according Paswan et al. (2009), most men prefer the small retail, while most women surveyed by the authors prefer the big retailers. Moreover, according to Pan and Zinkhan (2006), women make purchases more often.

In addition, Boatwright et al. (2004) suggest that competition in the sector also influences consumer behavior, since the greater the number of competitors, the easier it is to compare different retailers and consequently consumers are more price sensitive.

Analyzing specifically the supermarket segment, Baltas et al. (2010) suggest that consumers are influenced in their choice for a supermarket by the following main factors: (1) frequency of purchase, (2) average expenses, (3) family size, (4) gender, (5) importance given to the name of supermarket, (6) income, (7) age, (8) employment or job position, (9) satisfaction with the current main supermarket, and (10) satisfaction with the own brand products from the current main supermarket.

We opted for the realization of a self-administered field survey, which, according to Malhotra (2006), is a method of data collection that uses self-administered questionnaires, which do not require the assistance of interviewers.

In relation to the sample size, Hair et al. (2005) opined that when working with many variables that will be grouped by a factor analysis, a sample ranging between ten and twenty elements should be used for each variable in the study. Therefore, we chose a sample of 750 individuals, to ensure that even if some questionnaires were nullified by errors in completion, still would be possible to obtain at least fifteen answers to each of the thirty-eight variables of research.

The sampling method can be described as non probabilistic by convenience. Note however that, for the selection of elements of the sample, were also used the stratified sampling technique, because the researchers selected individuals in order to include representatives of different demographic and geographic strata.

It was noteworthy that the criteria used to stratify individuals were related to variables used in the discriminant analysis developed in the analysis of data (gender, stage of life cycle, population of the city inhabited and educational level).

To collect data, a questionnaire developed by the authors based on the theoretical framework previously researched and composed of closed questions on the type of Likert Scale were used.

It should be emphasized that for the preparation of the questionnaire, we opted for a seven-point scale because, as explained Hair et al. (2005), many respondents avoid the extremes, and the five-point scales end up becoming, on the practice, three-point scales, problem minimized with the use of seven-point scale.

The questionnaires used for data collection were delivered personally by the researcher to consumers who were part of the sample and were self-administered. To validate the developed questionnaire a pre-test with fifty consumers, was performed, chosen for convenience, who had the same characteristics of the elements that composed the final sample of the research.

The questions in the questionnaire are presented in Table 1, as well as the theoretical variables that gave rise to each question. It was worth noting that among the instructions for completion of the questionnaire, there was an orientation for individuals to respond based on their last experiences of shopping in supermarkets.

For data analysis, a factor analysis was initially conducted with the purpose of detecting the existence of certain underlying patterns in the research variables in order to group them into a smaller set of factors (Corrar et al., 2007).

Subsequently, based on defined factors, were developed a discriminant analysis, with the purpose of identify differences between the selection criteria used by supermarket distinct consumer segments.

It is noteworthy that, according to Hair et al. (2005), the discriminant analysis is a statistical tool used when seeking to identify the differences between groups means, which is the purpose of this study. To perform the discriminant analysis, individually, the following geographic and demographic variables: gender (Paswan et al., 2009; Baltas et al., 2010), education level (Kotler, 2000; Engel et al., 2005), the lifecycle of customers - if they already had children or not (Kotler, 2000; Baltas et al., 2010) and the number of inhabitants of the city where consumers who participated of this research lived (Kotler, 2000; McColdrick, 2002), were used. Finally, it should be mentioned that to develop the statistical analysis proposed in this paper, the authors used the statistical software SPSS for Windows.

RESULTS AND DISCUSSION

As mentioned earlier, the sample was composed of 750 individuals. However, only 708 responses were validated.

METHODOLOGICAL ASPECTS

This study aimed to identify differences between the selection criteria used by supermarket consumer segments that have different geographic and demographic characteristics. To achieve the objective defined was held a field survey, which can be understood as a method or procedure for collecting primary data from individuals, and the data collected may vary between beliefs, opinions, attitudes or information about their experiences (Hair et al., 2005).
Table 1. Theoretical variables and research questions.

<table>
<thead>
<tr>
<th>Selection criteria</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prices</td>
<td>Q1 - Product prices were low, if compared with prices in other supermarkets.</td>
</tr>
<tr>
<td>Cleaning</td>
<td>Q2 - The cleaning of the supermarket was good.</td>
</tr>
<tr>
<td>Location</td>
<td>Q3 - The supermarket was located near my home or work.</td>
</tr>
<tr>
<td>Number of check outs</td>
<td>Q4 - The time I had to wait in queues in the supermarket was small.</td>
</tr>
<tr>
<td>Security of store</td>
<td>Q5 - I felt safe during my shopping.</td>
</tr>
<tr>
<td>Parking</td>
<td>Q6 - The supermarket had parking available for customers.</td>
</tr>
<tr>
<td>Security of parking</td>
<td>Q7 - The supermarket parking was safe.</td>
</tr>
<tr>
<td>Layout</td>
<td>Q8 - The physical structure of the supermarket (shelves, runners, checkouts) was good.</td>
</tr>
<tr>
<td>Front of shop</td>
<td>Q9 - The front of the supermarket was attractive.</td>
</tr>
<tr>
<td>Advertisements</td>
<td>Q10 - The advertisements I saw about the supermarket were attractive.</td>
</tr>
<tr>
<td>Offers</td>
<td>Q11 - The promotions (offers) that the supermarket had were attractive.</td>
</tr>
<tr>
<td>Trust in retailer</td>
<td>Q12 - During my shopping, supermarket transmitted trust to me.</td>
</tr>
<tr>
<td>Supermarket brand</td>
<td>Q13 - The name or brand of the supermarket selected was very traditional.</td>
</tr>
<tr>
<td>Quality of products</td>
<td>Q14 - The supermarket was selling good quality products.</td>
</tr>
<tr>
<td>Freshness of products</td>
<td>Q15 - The supermarket was selling fresh products (including vegetables, fruits, bakery).</td>
</tr>
<tr>
<td>Cordiality</td>
<td>Q16 - The supermarket staff were very friendly and kind.</td>
</tr>
<tr>
<td>Reliability transmitted</td>
<td>Q17 - During the service, the supermarket staff transmitted trust to me.</td>
</tr>
<tr>
<td>Additional Services</td>
<td>Q18 - The supermarket offered additional services (home delivery, package employees, among others).</td>
</tr>
<tr>
<td>Period for payment</td>
<td>Q19 - The supermarket offered a great time for payment of purchases.</td>
</tr>
<tr>
<td>Problem solving</td>
<td>Q20 - The employees have shown themselves ready for attend my complaints.</td>
</tr>
<tr>
<td>Display of products</td>
<td>Q21 - The products sold were well organized in-store.</td>
</tr>
<tr>
<td>Recommendations</td>
<td>Q22 - The recommendations from other people (before and during my purchases) were great.</td>
</tr>
<tr>
<td>Own brand</td>
<td>Q23 - The supermarket was selling private label products of excellent quality.</td>
</tr>
<tr>
<td>Product exchange</td>
<td>Q24 - The supermarket offered great facility in the exchange of products.</td>
</tr>
<tr>
<td>Design in-store</td>
<td>Q25 - The internal design of the supermarket (color, format of the runners) was great.</td>
</tr>
<tr>
<td>Sensory attributes</td>
<td>Q26 - The aromas, music, lighting, among other items in the environment, were very pleasant.</td>
</tr>
<tr>
<td>Attendance</td>
<td>Q27 - The attendance provided by the staff was very good.</td>
</tr>
<tr>
<td>Quality of services</td>
<td>Q28 - The services provided by the supermarket were of excellent quality.</td>
</tr>
<tr>
<td>Facility for children</td>
<td>Q29 - In the supermarket, there were good facilities for parents with children (special stand and special areas).</td>
</tr>
<tr>
<td>Agglomeration of people</td>
<td>Q30 - During my shopping, the supermarket was not full of customers.</td>
</tr>
<tr>
<td>Internal decoration</td>
<td>Q31 - The interior design of the supermarket was nice.</td>
</tr>
<tr>
<td>New Products</td>
<td>Q32 - The supermarket was selling products considered entries in the market.</td>
</tr>
<tr>
<td>Internal signage</td>
<td>Q33 - In the supermarket, there was a great signage (plates for guide customers).</td>
</tr>
<tr>
<td>Fast food</td>
<td>Q34 - In the supermarket, there were restaurants or cafes.</td>
</tr>
<tr>
<td>Opening hours</td>
<td>Q35 - The supermarket was working with a long opening hours.</td>
</tr>
<tr>
<td>Extent of the assortment</td>
<td>Q36 - The supermarket was selling a large number of different products.</td>
</tr>
<tr>
<td>Depth of the assortment</td>
<td>Q37 - The supermarket was selling a large number of different brands of each product.</td>
</tr>
<tr>
<td>Presence of other stores</td>
<td>Q38 - In the physical space of the supermarket, there were other stores (fuel stations, pharmacies, etc.).</td>
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</tbody>
</table>

Source: Elaborated by the authors, 2010.

because of errors in completion, which corresponds to 94.4% from the total of questionnaires.

Considering only the validated questionnaires and characterizing the sample according to each of the four criteria used for stratify the selected elements, it was possible to verify that the sample was composed of 390 females and 318 males, representing, respectively 55.08 and 44.92% of the total respondents.

Regarding education level, the sample was distributed as follows: approximately 48.3% of respondents had until secondary school (complete or incomplete), while about 51.7% of respondents had graduate (complete or incomplete) or postgraduate.

Regarding the number of children of participants in this
study, we can see that most respondents had no children (55.9%), while those who had children accounted for 43.1% of the sample. Finally, in relation to cities of the respondents of this survey, it should be noted that the study included people from 18 different cities; approximately 49.86% of them lived in cities with more than 150,000 residents, while 50.14% of the participants lived in cities with fewer than 150,000 residents.

After characterization of the sample, factor analysis was applied in order to group the 38 research variables into a smaller number of factors, facilitating subsequent analysis. Afterwards, the rotation of the factors obtained in the initial solution was calculated using the method based on orthogonal Varimax procedure.

To decide the number of factors, we opted for the latent root criterion, being restrained only the factors whose eigenvalues were equal or greater than one, since eigenvalues smaller than one are considered insignificant (Hair et al., 2005).

To verify if the factor analysis would be an analysis technique appropriate for the problem studied were held tests of Bartlett's Sphericity and the Kaiser Meyer Olkin, whose results (sig. < 0.05, and KMO = 0.912) confirmed its adequacy in relation to the set of variables used (Corrar et al., 2007).

Additionally, was held Cronbach's Alpha test and, according to Corrar et al. (2007), the closer to one the value of the Cronbach's Alpha, the higher the internal consistency between the research variables and thus higher the reliability of the analysis to be developed from the factors obtained. The test result showed a Cronbach's Alpha value of 0.919, which indicates that the internal consistency between the research variables used is high, ensuring the reliability of the factors obtained.

Applying the factor analysis and analyzing the total variance explained by the factor solution developed, it can be seen that the factor solution used in this study, which included nine factors, could explain 59.5% of the total variance of data collected, which is very close to the ideal minimum of 60% (Hair et al., 2005), validating the factor analysis used. The nine factors obtained are shown in Table 2.

It should be emphasized that the factors were named and validated according to the theoretical framework previously developed by the authors of this paper. Moreover, it should be noted that with the realization of factor analysis, this study started to deal with the research variables grouped, in other words, the analysis developed from this point began to consider the factors extracted and not the individual variables.

After applying the factor analysis, we pass to the application of discriminant analysis, using separately each of the four aspects defined previously to aggregate individuals into groups (gender, stage of life cycle, population of the city inhabited and educational level) and analyze the differences between selection criteria used by different segments of consumers.

Performing the discriminant analysis taking gender as the variable discriminatory, we obtained one statistically significant Wilk's Lambda (0.983, sig. < 0.05), indicating that there were statistical differences between the two groups (men and women).

The factors entered into the discriminant function were (1) image and (2) the flow of customers in the shop, which are the two factors that showed significant differences between groups. It should be noted that the discriminant function developed was able to correctly classify 61.5% of subjects analyzed.

### Table 2. Factors extracted in factor analysis.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variables included in the factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship between customer and employees</td>
<td>Staff courtesy, quality of the attendance, trust in employees, employee readiness, quality of services, exchange of products.</td>
</tr>
<tr>
<td>Store environment</td>
<td>Internal decoration, design of the supermarket, sensory attributes in the shop, attractive front, physical structure, organization of products, internal signaling, recommendations of others, cleaning.</td>
</tr>
<tr>
<td>Assortment and convenience</td>
<td>Product variety, variety of brands, sale of newly launched products, opening hours, restaurants / cafes, facilities for parents with children.</td>
</tr>
<tr>
<td>Supermarket image</td>
<td>Quality of products sold, Freshness of goods sold, traditional name, security, location.</td>
</tr>
<tr>
<td>Monetary aspects and communication</td>
<td>Promotions, prices, advertisements, trust in the company.</td>
</tr>
<tr>
<td>Parking</td>
<td>Security of parking, presence of parking.</td>
</tr>
<tr>
<td>Flow of customers in the store</td>
<td>Number of customers in the store, time in queues.</td>
</tr>
<tr>
<td>Level of customer service</td>
<td>Period for payment, additional services.</td>
</tr>
<tr>
<td>Own brands and other stores</td>
<td>Sales of private label products, presence of other stores into the supermarket.</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors, 2010.
Analyzing the averages for each of the factors included in the discriminant function, we could verify that male individuals prefer to frequent supermarkets evaluated positively in the factor ‘flow of customers in the store’, while females give preference for supermarkets evaluated positively in the factor ‘image of the supermarket’. In this sense, it can be seen that male individuals prefer to frequent shopping with lower customer traffic and that require less time waiting in queues. Moreover, it is found that the female individuals prefer to frequent supermarkets whose sold products are perceived as higher quality and freshness, whose name is traditional in the market and whose shops are evaluated as safe and well located.

In addition was held a Discriminant Analysis adopting the education level as the variable discriminatory. This analysis also had one statistically significant Wilk’s Lambda (0.935, sig. < 0.05), indicating that there were statistical differences between the two groups (individuals who possess graduate or secondary education).

The factors entered into the discriminant function were (1) parking, (2) the flow of customers in the store, (3) the monetary aspects and communication (4) the level of services, which are the four factors that showed significant differences between the groups. It should be noted that the discriminant function developed was able to correctly classify 66.2% of subjects analyzed.

Analyzing the averages for each of the factors included in the discriminant function, it was found that individuals who possess graduate prefer to frequent the supermarkets evaluated positively in factors ‘parking’ and ‘flow of customers in the store’ while individuals who have secondary education prefer supermarkets positively assessed in the factors ‘aspects of monetary and communication’ and ‘service level’.

In this sense, it can be seen that individuals with graduate level prefer supermarkets that have secure parking, whose stores have lower flow of people and that require less time waiting in queues.

Moreover, individuals with secondary level of education prefer to frequent supermarkets that realize more offers and where prices are lower. In addition, individuals who are part of this group prefer supermarkets investing more in advertising and have established brands on the market, giving more confidence.

Furthermore, we can also verify that individuals with secondary education seek supermarkets that provide more extended payment terms and that provide additional services such as home deliveries.

After analyzing the consumers studied according to their level of education, was held a discriminant analysis adopting the stage of the life cycle of the consumer as a discriminatory variable. In this analysis, also obtained a statistically significant Wilk’s Lambda (0.919, sig. < 0.05), indicating that there are statistical differences between the two groups (individuals who have children or not).

The factors entered into the discriminant function were (1) the relationship between customers and supermarket staff, (2) the monetary aspects and communication, (3) parking, (4) the flow of customers into the store and (5) the level services, which are the five factors that had significant differences between groups. It should be noted that the discriminant function developed was able to correctly classify 69.9% of subjects analyzed.

Analyzing the averages for each of the factors included in the discriminant function, we can see that individuals who have no children prefer to frequent supermarkets evaluated positively in the factors ‘parking’ and ‘flow of customers into the store’ while individuals who have children, give preference to supermarkets evaluated positively in the factors ‘relationship between customers and employees’, ‘monetary aspects and communication’ and ‘service level’. In this sense, it is verified that individuals who have no children seek supermarkets that provide safe parking for clients, which have lower flow of people within their stores and require less time waiting in queues.

In its turn, individuals who have children prefer supermarkets where prices are lower and who make more offers. In addition, individuals who are part of this group prefer supermarkets investing more in advertising and that have established brands on the market transmitting greater confidence to consumers.

Additionally, we can also check that individuals who have children seek supermarkets that provide more extended payment terms and that provide additional services such as home deliveries and staff to pack in check-outs of their stores.

Finally, also analyzing the individuals who have children, it was found that they appreciate supermarkets whose care provided by their employees is of good quality, including factors such as promptness and courtesy.

After analyzing the criteria for choosing a supermarket according to the stage of the life cycle in which the consumers meet, there was a discriminant analysis by adopting the size of the cities where individuals lived as a discriminatory variable. It should be mentioned that in this work, the cities were divided into two groups: towns with more than 150,000 inhabitants and less than 150,000 inhabitants.

Wilk’s Lambda for this discriminant analysis also showed statistically significant (0.868, sig. < 0.05), indicating that there are statistical differences between the two groups (individuals living in cities with more or less than 150,000 inhabitants). It should be noted that the discriminant function developed was able to correctly classify 67.1% of subjects analyzed.

The factors entered into the discriminant function were (1) the relationship between customers and supermarket staff, (2) the monetary aspects and communication, (3) parking and (4) the presence of own brands and other stores, which are the four factors that showed significant differences between groups.
Analyzing the averages for each of the factors included in the discriminant function, we found that individuals living in smaller towns prefer supermarkets evaluated positively in the factors 'relationship between customers and employees', and 'monetary aspects and communication', while individuals living in larger cities prefer supermarkets evaluated positively in the factors 'parking' and 'own brands and the presence of other stores'. In this sense, it is found that individuals living in larger cities (over 150,000) choose the supermarket where their purchases will be made considering the existence of secure parking available to customers, sales of private label products of quality and availability of other stores (drugstores, fuel stations, among others) in the physical environment of the supermarket.

On the other hand, residents of smaller cities (under 150,000 inhabitants) value the quality of care provided by the supermarket staff, lower prices and greater number of offerings. In addition, individuals who are part of this group prefer supermarkets investing more in advertising and that have established brands on the market transmitting greater confidence to consumers.

After analyzing the results provided by discriminant analysis performed, some propositions might be developed. It should be emphasized that those should be tested in future research in order to consolidate the results obtained in this study.

First, analyzing the results regarding the gender of consumers, we found that women value items such as quality of supermarket's assortment and security, while men are more worried with the time spent during shopping. In this sense, three propositions could be formulated:

- **P₁**: Men prefer supermarkets where they can make their purchases quickly.
- **P₂**: Women prefer supermarkets whose mix of products is of high quality.
- **P₃**: Women give more importance to aspects such as location and security of stores.

Then, analyzing the results about the level of education of consumers, it was established that individuals with graduate education prefer supermarkets that provide safe parking for consumers and less flow of people. On the other hand, individuals with secondary education prefer supermarkets investing more in advertising, where their purchases will be made considering the existence of secure parking available to customers, sales of private label products of quality and availability of other stores (drugstores, fuel stations, among others) in the physical environment of the supermarket.

In relation to these findings, three main propositions could be formulated:

- **P₄**: Individuals with university education prefer supermarkets where they can make their purchases quickly.
- **P₅**: Individuals with secondary level of education valorize more monetary elements in their decision to buy at a certain supermarket.
- **P₆**: Individuals with secondary level of education are more influenced by the advertisements made by supermarkets.

Additionally, analyzing the results obtained relative to the stage of the life cycle of consumers, it was found that individuals who have children valorize the relationship with the supermarket staff, as well as elements related to the variable 'price' (prices, offers and time to payment) and services. It should be noted that individuals who have children usually spend more in supermarkets, which may explain the greater importance attached to monetary items.

On the other hand, individuals who have no children valorize the availability of secure parking and looking for a supermarket in which the flow of people is smaller. Considering these findings, it was proposed that:

- **P₇**: Individuals who have no children prefer supermarkets where they can make their purchases quickly.
- **P₈**: Individuals who have children valorize more monetary elements in their decision to buy at a certain supermarket.
- **P₉**: Individuals who have children valorize the feeling of familiarity in relation to supermarket staff (courtesy, promptness and trust).

Finally, analyzing the results related to the size of the cities where consumers live, it was found that individuals living in smaller towns valorize the relationship with the supermarket staff, as well as elements related to the variable 'price'. It is noteworthy that in smaller cities, compare prices between retailers becomes easier than in larger cities, where there are many competitors.

On the other hand, individuals living in larger cities prefer supermarkets that share its space with other stores (drugstores, fuel stations, lottery, etc.), which reduces the time spent in the displacement between different retailers. In this sense, it was possible to make the following propositions:

- **P₁₀**: Individuals living in larger cities prefer supermarkets that share its space with other stores.
- **P₁₁**: Individuals living in smaller cities prefer supermarkets that share its space with other stores.
- **P₁₂**: Individuals living in smaller cities prefer supermarkets where they can make their purchases quickly.
- **P₁₃**: Individuals living in smaller cities prefer supermarkets that share its space with other stores.
The propositions developed here evidence that there are significant differences between selection criteria used by different segments of consumers in Brazilian supermarket retail.

In addition, these propositions evidence that demographic and geographic variables, such as gender, stage of life cycle, population of the city inhabited and educational level, influence consumer behavior in Brazilian supermarket retail and must be considered by supermarket retailers in segmentation process.

**FINAL CONSIDERATIONS**

Understanding consumer behavior in different retail sectors is essential, since the number of competitors increases and consumers now have more options when choosing where to make their purchases. In this sense, a subject that deserves attention in the study of consumer behavior in retail is related to criteria used in decision involving the choice of a retail store, since consumers tend to expect a superior performance in these aspects. However, different criteria are used by different segments of consumers, because personal and extrinsic factors influence their buying behavior.

The results of this study evidence that demographic and geographic variables influence consumer behavior in Brazilian supermarket retail.

In addition, analyzing the results obtained through statistical analysis, it was possible to formulate twelve propositions related to the selection criteria used by consumer segments that have specific geographic and demographic characteristics.

Thus, this research becomes relevant, as it examines empirically how demographic and geographic variables influence consumer behavior, collaborating with studies that examine the impact of these variables on the patterns of consumer choice.

As a limitation of this research, we cite the facts that were used a non-probability sampling technique, which does not allow generalizing the results. In this sense, the propositions developed here should be used as a starting point for future studies in order to consolidate the results obtained in this research.

**REFERENCES**


