

Another trip to the mall: a segmentation study of customers based on their activities

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Abstract

In this exploratory study, a segmentation analysis of a shopping mall's customers is conducted according to the activities they performed during their visit, based on a methodology developed by Bloch et al. (*J. Retailing* 70 (1994) 23). This methodology is extended with measures of perceptions, emotions, and motivations. Activity-based clusters, obtained with the Variable Neighborhood Search metaheuristic applied to the *P*-median problem. (Hansen and Mladenović, 1997) proved to be significantly different along many psychographic dimensions (including atmospheric perceptions), and demographic variables. This profiling methodology successfully synthesizes many segmentation approaches that were used separately in previous studies. This results in a complete and distinct profile of each group that may be a useful tool for retail strategists.

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1. The mall under attack

The world of shopping malls has been changing dramatically in the last decade, buffeted by, among other things, the introduction of electronic commerce, the saturation of locations, and changes in consumers' shopping behavior. Competition from category killers, discount stores, and factory outlet centers represents a challenge for shopping mall managers.

For Wakefield and Baker (1998, p. 515), there are essentially three factors that explain the mall's declining role. First, consumers are increasingly busy, have less time for shopping, and therefore reduce the frequency of their visits to the mall. Moreover, too many malls are alike, and customers will go to the shopping center that offers the most product and service variety. Finally, Wakefield and Baker emphasize the fact that fewer consumers are going to the mall because they "enjoy their shopping experience". These factors are driving mall managers to develop strategies to differentiate from the competition. Indeed, in a recent survey (IBM/Retail Council of Canada, 1999), most retailers are shown to base their strategies on special services to enhance customer loyalty.

However, the development of new products and services should be based on a better understanding of the customer base. One of the most useful tools for understanding market diversity is segmentation. "Business can cope with this diversity by grouping customers with similar requirements and buying behavior into segments" (Dibb, 1998, p. 394). With a segmentation analysis, managers will know where they have to concentrate their efforts. As a matter of fact, one of the major strategies recommended to retailers by the Retail Council of Canada is to focus their efforts on niche markets and special customers.

2. Segmentation in the malls: from who to why

In spite of the need for a well-grounded segmentation model of shopping malls, the number of empirical studies of shopping malls is very limited (Wakefield and Baker, p. 516). Moreover, shopping behavior research frequently concentrates on individual stores, and not on the mall itself. Furthermore, most research in this area "dates back to the 1970s, 1980s and the early half of the 1990s" (Reynolds et al., 2002, p. 687).

Therefore, there is a need for new segmentation analysis approaches applied to shopping centers. The central question in such analysis is that of what should be the base for the classification of shoppers. Since the

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mid-fifties, segmentation techniques have focused on demographic variables (Stone, 1954; Smith, 1956); these studies gave a detailed taxonomy of customers (“who” is buying), but they could not explain why people shop (Hassay and Smith, 1996). Since then, “market researchers have made forays into psychology” (Mehrota and Wells, 1977, p. 50). In the field of psychographic research, a wide variety of variables have been used, such as “activities, interests and opinions”, (Wells, 1975a, b, p. 197). Following this trend, Bloch et al. (1994) developed a segmentation model that clusters customers by shopping activities they perform or not (e.g., going to the bank, having a snack). This means they classified shoppers according to “what” they do in the mall, instead of “who” they are. This method represents a significant improvement on previous models because it is based on behavioral variables (actions), and not merely descriptive variables, such as age and gender.

In addition to the clustering of shoppers, Bloch et al. (1994) measured the perceived benefits to the groups in terms of aesthetics, escape, exploration, flow, knowledge and affiliation. It should be noted that Bloch et al. did not find significant differences among the groups in terms of socio-demographic variables and atmospherics. However, they acknowledge the importance of atmospherics in retailing research: “additional research on the environmental psychology of malls using different measures and methods seems highly worthwhile given the substantial resources being devoted to mall design and rehabilitation” (Bloch et al., 1994, p. 37).

3. Activity-based clusters and store atmospherics

The present study is based on Bloch’s methodology of classifying customers, in the sense that we used the activities performed by the shoppers as the basis of the clustering. However, we took other measures (different from “factors of perceived benefits”) for the profiling of the groups. The variables were adopted from previous retailing studies, in particular, from the “store atmospherics” literature. These measures included socio-demographics, perceptions, motivations, emotions, and atmospherics (odors, music, decoration) among others. They complete the initial clustering proposed by Bloch et al., and they are helpful when the different profiles are characterized. Indeed, if customers who perform the same kind of activities have a significantly different socio-demographic profile, it will be easier to identify them for targeted marketing activities (promotions, advertising). Moreover, if the customers who concentrate on particular activities in the mall (such as browsing, or shopping) have significantly different perceptions and emotions, compared to the other shoppers, this information can explain the *motivations* of their behavior. Ultimately, with this study we would

like to answer to some basic questions concerning the clients of a mall: *who* (demographic profile) does *what* (activities) and *why* (motivations).

This article is organized as follows. The next section presents the objectives of the research. The following section develops the methodology of the study: the experimental conditions are explained, as well as the variables measured. The next section of the study concentrates on the clustering technique. The algorithm used in the study (*P*-median clustering) represents an improvement on other methods currently applied, because it was originally developed for binary variables (Yes/No), such as the activities. The next part of the analysis is focused on the profiles of the segments defined by the clustering. The groups are compared to the ones obtained in previous segmentation studies of shopping malls. Finally, the conclusions of the article are presented, as well as the managerial implications of this segmentation analysis.

4. Research objectives

The first objective of this study is to replicate the segmentation process in order to confirm whether grouping customers according to the activities they perform in a shopping mall yields stable and meaningful profiles.

The second objective consists in using the recently developed *P*-median clustering, based on the variable neighborhood search metaheuristic. This methodology has already been successfully applied in clustering studies with binary variables (Hansen and Jaumard, 1997; Hansen and Mladenović, 1997a, 1997b, 1998, 2001).

The third objective of the research is to establish whether the segments are significantly different in their socio-demographic profile. If this is the case, it would be possible to identify and target groups, and the segmentation would have a relatively direct practical application.

The fourth objective is to relate the clusters to perceptions of products and services, emotions and values. Finally, we probed the relationship between the activity-based clusters and the atmospherics of the shopping mall.

5. Methodology

5.1. Sampling procedure

Questionnaires were collected in a shopping mall in Eastern Canada, during 4 weeks when no promotional activities were held in the mall. Shoppers were invited by graduate students of our school to complete the self-administered questionnaire on the mall’s premises. The quota of respondents was limited to 35 per day in order

not to modify the normal activity in the mall; 889 questionnaires were completed and usable.

The typical customer of the sample is a working woman, 25–34 years of age, with a college degree, and who spends 50\$ per visit to the mall.¹

6. Description of the segmentation study

Lilien and Kotler (1983) proposed that a segmentation study can be described in terms of *base variables and descriptive variables*.

6.1. Base of the segmentation

The base variables of the study (the ones that define the different groups) describe the activities performed by the customers in the mall. The scale used was adapted from Bloch et al. (1994). Seven items were selected from the 13 proposed by Bloch et al. (1994) to represent the activities available in the shopping center where the empirical data was collected. Customers were asked to answer to a series of “yes” or “no” questions related to activities performed in the shopping center during their visit. The activities proposed were: “going to the mall for the exercise”, “talking to other customers”, “going to the bank”, “browsing in the stores without buying”, “taking a snack”, “going to buy a product in a store”, or “making an unplanned purchase”.

To complete the study, visitors were also asked about the frequency of visits (seven-point scale from “very seldom” to “very often”), and the amount of their purchases.

6.2. Descriptive variables

Descriptive variables are useful to define who buys *what* and *why* (Tauber, 1972). Nantel (1995) classifies these variables in four categories: *geographic*, *socio-demographic*, *psychographic*, and *related to the benefits sought*.

6.2.1. Geographic variables

The questionnaire also included the postal code of the customers. With this data, and the information contained in a previous segmentation study of this shopping center (Nantel and Bédane, 1997), it was possible to know if the individuals were coming from the primary, secondary, or “external” zones of the mall. These zones were defined according to the percentage of customers coming from the different postal codes.²

¹For a detailed demographic profile of the sample, see Appendix A.

²The primary zone included the first postal codes (first three characters) that represented 70% of all the shoppers, the secondary zone the following 20%, and the rest were classified in the third group (external zone).

6.2.2. Socio-demographic variables

The socio-demographic variables included in the research were the ones suggested by Nantel (1995, p. 97): age, mother tongue, sex, annual income, education level, number of children under eighteen at home and occupation.

6.2.3. Psychographic variables

Wells (1975a, b, p. 197) gave a general definition of “psychographic” (variables) that will be adopted here: “psychographic research can be defined as qualitative research intended to place consumers on psychological—as distinguished from demographic dimensions”. The different items for measuring the psychographic variables are presented in Appendix B.

6.3. Perceptual, emotional and behavioral variables

6.3.1. Perceptions

The perception of products was measured on a scale originally developed by Bellizzi et al. (1983), and subsequently adapted by Spangenberg et al. (1996). The customers evaluated (on a scale of seven points) the style, selection, and the quality of products available at the mall.

The scale used to measure the perceived quality of service was adapted from Cronin and Taylor (1992). The clients were asked to rank the quality of the service in a seven-point differential scale from “very poor” to “excellent”. They were also invited to express their feelings towards the shopping center’s services in a scale ranging from “very satisfied” to “very unsatisfied”.

The perception of prices was also measured with a seven-point differential scale from “low” to “high”, compared with the competing shopping malls.

The perception of the environment of the shopping mall was included in the study. A scale developed by Fisher (1974) and used by Bellizzi et al. (1983) was adopted: eight items from Bellizzi’s study were selected.

6.3.1.1. Emotions. The scale adopted to measure emotions was originally developed by Mehrabian and Russell (1974). According to these researchers, individuals react to the environment along three main dimensions: Pleasure, Arousal, and Dominance (PAD).

- The first dimension (Pleasure) is related to the affective reaction to the environment (pleasant–unpleasant).
- The Arousal dimension measures the stimulation caused by the environment. Milliman (1982) gives an example of the measure of Arousal. In his study of the impact of music tempo on customer’s behavior in a supermarket, he found that slower tempos were associated with slower movement in the store. There

is a “*decrease in arousal*” when the rhythm of the music is slower.

- Dominance (the third dimension of PAD) measures whether the individual feels in control, or submissive in a particular atmosphere.

Donovan and Rossiter (1982) applied an abbreviated version of the PAD scale to retailing research. They found that “*shopping behaviors were related to measures of Pleasure and Arousal but not Dominance*” (Yalch, 2000). Accordingly, in this study an eight items PAD scale was used to measure only the Pleasure and Arousal dimensions.

6.4. Atmospheric variables

The customers were asked about their perception of the atmospheric variables in the mall: odors, music, and decoration. The influence of atmospheric variables on the perception of customers has been the subject of much research. In particular, the impact of music has been of great interest to researchers (Bitner, 1992; Dubé et al., 1995; Yalch and Spangenberg, 1990), as well as the impact of odors (Spangenberg et al., 1996).

For each atmospheric variable (odors, music and decorations) the shoppers answered three questions (Likert scales).

6.5. Density

The number of people in the mall at a specific time was integrated into the questionnaire, because it has a strong influence on the customers’ perception of the atmosphere (Eroglu and Harrell, 1986). There was not a special question about the perception of *crowding* in the questionnaire, but the mall’s administrator evaluated an estimation of *density* at different times. *Crowding* and *density* are different variables, but they are closely related. *Crowding* can be defined (Sierra, 2000, p. 5) as the feeling a customer can have when he perceives that the density is high, and he loses control of the situation. *Density* is a physical variable that indicates the distribution of people in a space. Based on their experience, and on measurement of traffic in the mall, the managers proposed different periods of density according to the hour and day of the week. The periods were classified in three categories: low, average and high density (see Appendix C).

6.6. Approach-avoidance reaction

The scale employed was developed by Donovan and Rossiter (1982) to assess the attraction of the mall (seven-point Likert scale).

6.7. Behavior

Lilien and Kotler’s final group of segmentation variables are the ones that describe the behavior of customers.

6.8. Shopping values

As mentioned previously, consumer behavior research has shifted from the question of “who buys?” to “why do they buy?”. Consequently, motivation is an important issue in retailing segmentation. In a recent article, (Fall 2002) Reynolds et al. concluded: “future studies should attempt to draw profiles based on characteristics other than attribute importance, such as shopping motivations (p. 695). In order to measure the shopper’s motivations, a simplified version of the scale developed by Babin et al. (1994) was adopted. The eight statements are five-points Likert scales. As Babin et al. suggested, there are two dimensions (or factors) that explain the majority of the variance of the items. The first factor (hedonist values) is composed of the first five statements, and the second one (utilitarian values) is composed of the rest of the items. These factors reflect customers’ main shopping values: enjoyment of shopping (hedonists) and shopping as a logistical necessity (utilitarians).

Other authors (Bellenger et al., 1977; Bellenger and Korgaonkar, 1980) have found a similar pattern. One group is looking for products/services (functional shoppers), and the other (the recreational shoppers) is looking for fun, leisure, and social interaction. For Shields (1992), the benefits of convenience (easy access, controlled atmosphere, low prices) are “outstripped by the symbolic and social values of the shopping mall as a site of communication and interaction”.

6.9. Non-economic costs

In this section of the questionnaire, the “sacrifices” customers make when they go to the mall are measured. These “costs” are expressed in terms of time, convenience (selection, parking), and distance from home. The respondents expressed their agreement to five statements (seven-points Likert scales). The scale was adapted from Donovan and Rossiter (1982).

7. Clustering methods

As pointed out by Mitchell (1994a,b, p. 4), “an understanding of the statistical techniques involved is the first step in devising tailor-made psychographic segments”. Since the 1970s, cluster-based segmentation has been a very popular subject in marketing. Even in the earliest references (Sherman and Seth, 1977), it can be inferred that clustering is not a structured method of

data analysis; it has the advantage of flexibility but the results can rely too heavily on the sample.

One statistical approach currently found in cluster analysis (Bloch et al., 1994) is the so-called “tandem method” that consists of a two-step process: first a factor analysis, second a cluster analysis (usually Wards method). This approach has been criticized in recent articles (Arabie and Hubert, 1994; Green and Krieger, 1995; Schaffer and Green, 1998). One key problem with this method is that the preliminary factor analysis can “destroy pre-existing cluster structure” (Green and Krieger, 1995, p. 223).

As an alternative to the “tandem method”, a hierarchical cluster analysis could be performed with the binary variables (activities) that are the basis of the segmentation. However, the reliability of this method has been questioned (Mitchell, 1994a, b), and non-hierarchical methods have been dominant since the late 1980s (Schaffer and Green, 1998).

Therefore, it was necessary to find another method for building the clusters. Hansen and Jaumard (1997), Hansen and Mladenović (1997a, b), proposed a clustering algorithm for binary variables based on the variable neighborhood metaheuristic that has been developed in Operations Research.

8. P-median clustering

Often, prior to choosing a clustering method, one summarizes the available information in a matrix of pairwise dissimilarities between entities. Dissimilarities d_{kl} between entities k and l are real numbers that satisfy the conditions:

$$d_{kl} \geq 0, \quad d_{kl} = d_{lk}, \quad d_{kk} = 0$$

for all pair of values of k and l .

In the case of presence/absence (or binary) data, a much used dissimilarity is the Jaccard index. It is defined as follows: given two vectors of presence/absence observations for k and l X_k and X_l :

$$d_{kl} = d1 / (d1 + d_m),$$

$$\text{where } d1 = X_k \cdot X_l, \quad d_m = (X_k - X_l) \cdot (X_k - X_l).$$

In other words, the Jaccard index is equal of the number of cases where the two vectors are equal to 1 (presence) divided by the number of cases where either one of the two vectors (or both) are equal to 1. This dissimilarity measure is adopted in our study.

The model we use is the p -median. This model has been developed in Operations Research, mostly for location problems, but applies also to clustering. Given a set of N entities, a matrix of dissimilarities (d_{kl}) between pairs of them and a desired number of clusters p (a parameter), it provides a partition of the set of entities into p clusters which minimizes a precise criterion of

homogeneity. This criterion is the sum for all entities of the dissimilarity between them and central entities of the cluster to which they belong.

The p -median model is expressed mathematically as follows:

$$\text{Minimize} \quad \sum_{k=1}^N \sum_{l=1}^N d_{kl} X_{kl} \tag{1}$$

subject to the constraints:

$$\text{Minimize} \quad \sum_{k=1}^N X_{kl}, \quad l = 1, 2, \dots, N, \tag{2}$$

$$X_{kl} \leq X_{kk}, \quad k = 1, 2, \dots, N; \quad l = 1, 2, \dots, N, \tag{3}$$

$$\sum_{k=1}^N X_{kk} = p, \quad l = 1, 2, \dots, N, \tag{4}$$

$$X_{kl} \geq 0, \quad k = 1, 2, \dots, N; \quad l = 1, 2, \dots, N, \tag{5}$$

$$X_{kk} \in \{0, 1\}, \quad k = 1, 2, \dots, N. \tag{6}$$

See footnote³ on constraints.

Variables X_{kl} are equal to 1 if entity l is assigned to a cluster with center k and to 0 otherwise. The objective function (1) minimizes the sum for all entities of the smallest dissimilarity between them and the center of a cluster.

Model (1)–(6) is a large mixed-integer program: it comprises N^2 variables and $N + N^2 + 1$ constraints, $N^2 - N$ continuous and N binary variables. While small instances can be solved with a general-purpose mixed-integer programming package such as CPLEX, large ones require a specialized algorithm exploiting the model’s structure.

For larger instances, or for rapid solution of medium size instances one must resort to metaheuristics. One such metaheuristic is the variable neighborhood search (Hansen and Mladenović, 1997a, b; Hansen and Mladenović, 2001). Its principle is to systematically change neighborhoods in the search for a better solution. It uses a descent method such as INTERCHANGE for the p -median problem.⁴ The process ends when a given computer time is reached, or a given time since the last improvement has passed.

³Constraints (2) express that each entity l is assigned to a single cluster, with center k (or, in other words, to a single cluster center). Constraints (3) mean that no entity l can be assigned to a center k unless entity k has been chosen to be a center, and is assigned to itself. Constraints (4) express that exactly p cluster centers are chosen (or, in other words, one seeks a partition of the rest of entities into exactly p clusters). Constraints (5) express that no negative assignments of entities take place and constraints (6) that any cluster center is chosen entirely or not at all.

⁴Once a local optimum is reached, a set of nested neighborhoods is defined around it, e.g. by considering one center exchange, then 2, then 3, etc. in the p -median problem. A solution is drawn at random from the first neighborhood and a descent is made from there; if the local optimum found is not better than the incumbent one, the algorithm goes on to the next neighborhood and iterates; if it is, an improved local optimum has been found and the search is recentered around it.

9. Heuristic's results

Using the solution of the p -median model, one can find whether there is a structure in the dataset (are there groups of entities), and the best number of clusters.

- (i) Does the set of entities possess any structure?

To this effect, one may test if the answers are random or not: simulated data is used with Yes/No answers randomly generated with 50% probability for each. Dissimilarities are computed, and the curve of objective function values⁵ for this artificial data is compared to that of the observed data. Usually, there will be a large discrepancy. Second, one may tighten this test by assigning Yes/No answers at random with the same frequency as in the observed data. The curves will then be closer, and if they clearly differ it is the sign that the data gathered presents some structure. The curves obtained with the experimental data of this study (see Appendix D), show there is a significant difference between the *observed data and the random sample*; therefore, there is a structure and it is convenient to build groups of individuals.

- (ii) What is the best number of clusters?

Usually, the curve of objective function values as a function of p decreases at a decreasing rate. Points clearly below the line joining adjacent cases are of interest while those above are less so. In our case (Appendix D), either three or four clusters were the best number of clusters.

10. Findings

10.1. Activities and segments

The first aspect that was analyzed was the difference in the activity patterns among the groups. This is a way to validate the choice of the segmentation by activities performed in the mall. Chi-square tests were performed between the groups and each of the activities and they all were significant at the 0.05 level. For all the groups, the proportion of shoppers who “went to the bank” was low. This activity variable is therefore ineffective to discriminate between shoppers; it was thus deleted from the analysis.

The comparison of the activities performed by members of each group is presented in Appendix E. The results reveal four different behaviors. The shoppers of the first group (95 individuals, i.e. 11% of the sample) go to the mall for the exercise, to talk with other clients,

to have a snack, and to make some purchases. The average amount in purchases of group 1 is among the lowest (44\$) of all groups. The members of this group are especially motivated by social interaction and leisure and, as in the study of Westbrook and Black (1985), they can be referred to as “recreational shoppers”.

The customers of group 2 (168 individuals, 20.1% of the sample) go to the mall to talk with other shoppers, to browse products in the stores, to buy snacks and to make purchases (planned and unplanned). The average amount of expenses is the highest among the groups (67\$). These are the “best” customers for the mall: they seem to enjoy the life of the mall (browsing, chatting), and they buy products too. This group can be referred to as the “full experience mall shoppers”.

The customers of group 3 (239 clients, 28.59% of the sample) are concentrated on purchasing activities: they browse in the stores and make purchases too. However, they do not make unplanned purchases and their average expenses per visit are the lowest (39\$). This group can be called “traditional shoppers” because the customers use the mall for the two more usual activities in the mall (browsing and purchasing).

The customers of the last group (334 shoppers, 39.95% of the sample) go to the mall to buy something in a store. They can be identified to the “utilitarians” of Babin et al. (1994). These clients will be named “mission shoppers” because they only go to the mall to get the products they already planned to buy. Nonetheless, their average purchases are rather high (52\$).

It was therefore possible, with the clustering procedure used, to define significantly different groups of customers according to the activities they perform in the mall. Moreover, the groups have a comparable size and have similarities with previous typologies. We can conclude that the methodology was able to identify distinct and consistent patterns of activities among customers. Therefore, the first and the second objectives of the study were attained: confirming the Bloch segmenting methodology and implementing the P -median clustering in the segmentation process.

10.2. Socio-demographic variables

The groups of customers are already defined, but it is very important to be able to identify them in the mall in order to launch, e.g., a promotional program.

It is therefore encouraging to find that there were significant differences between the segments concerning their socio-demographic profiles (age, mother tongue, marital status, occupation and zone of origin, see Appendices F and G).

10.2.1. Recreational shoppers

The “recreational shoppers” have the lowest proportion of young people (aged between 18 and 35 years)

⁵The objective function, called “the star”, is defined as follows:

$$\sum_{kl} d_{kl} / |X_{kl}| = 1.$$

among all groups. This segment includes far more elderly people (65 years and more) than the other groups: 21% of them are over 65, versus 5–8% for the other groups. The “recreational” customers have an average proportion (80%) of French-speaking people, and are in almost 30% of cases widowers or divorced.

As could be expected from their advanced age, these customers have the lowest proportion of full-time workers (only 47.8%), and the highest proportion of retired people (more than 30%). Concerning the zone of origin of this segment, an important proportion (close to 25%) comes from the “external zone”⁶ of the mall.

10.2.2. Full experience shoppers

This segment is mainly composed of middle-aged people (between 35 and 54 years old). Though, overall, the majority of customers are French-speaking, the proportion of English-speaking individuals is higher in the “full experience shoppers” group (26.4%). The “full experience customers” have the highest proportion of married people (54.8%). It is one of the groups with the highest proportion of customers currently working full time (64.3%). Individuals from this segment are more likely to come from the secondary zone, compared to the other groups.

10.2.3. Browsers

Like the “full experience shoppers”, this group is mainly composed of middle-aged people (between 35 and 54 years old). This group has a proportion of French-speaking customers close to the average of the sample (80%). The “browsers” are more likely to be single than the other customers (proportion of 31.1%). Indeed, this group has a higher proportion of students than the other segments (12.9%). The majority of browsers (63.4%) come from the primary zone of the mall, a proportion close to the average for all groups (67%).

10.2.4. Mission shoppers

This segment includes a higher proportion of young adults than the other groups (33.5%): they are busy people who do not have the time to browse in the mall. This segment has a higher proportion of French-speaking people (close to 87%). Concerning their marital status, 52.8% of “mission shoppers” are married, a proportion similar to the average for all groups (53.3%). In most cases (67%), customers from this group have a full-time job, and very few (around 9%) stay at home. “Mission shoppers” come mainly from the primary zone (75%) of the shopping mall, a proportion higher than the average for all groups (67%). These customers go to the mall because it’s convenient

and they can find the specific products they are looking for.

10.3. Other socio-demographic variables

There was not any statistical evidence of a relationship between the activity group and gender, education level, number of children at home, or income of the respondents.

It can be concluded from this part of the analysis that the groups have important differences according to demographic variables. In this study significant differences were found (age, mother tongue, civil status, and occupation of the respondents). The second objective of the research has therefore been partially achieved.

10.4. Psychographic variables

The analysis of variance revealed significant differences in the perceptions, emotions, motivations, approach-avoidance behavior, and number of visits to the mall (Appendices F and G).

10.4.1. Recreational shoppers

These customers have a very positive perception of the mall, the highest of all groups (overall evaluation 6.46/10, and 6.15/10 for all customers). They found the mall more cheerful, more stimulating, more lively, brighter, and more interesting than the “traditional” and “mission” shoppers. The “recreational shoppers” are more likely than the others to come in idle periods (39.2%, compared to 31.9% on average for the other groups). The customers of this group visit the mall most frequently, compared to the “browsers” and the “mission” shoppers. Individuals from this group consider the mall a place where they would spend more money than expected, compared to other segments. For these customers, the trip to the mall was more an “escape”, an “adventure”, and an “enjoyable time”. “Recreational shoppers” consider the mall more distant from their homes. Their perception is consistent with the results for the zone of origin: 25% of the segment comes from the “external zone” of the mall.

10.4.2. Full experience shoppers

Like the recreational shoppers, these customers have a very positive perception of the mall: they found it more cheerful, more stimulating, more lively, more interesting and brighter than the “mission shoppers” and “browsers”. They are more excited and stimulated than the average shopper by their visit to the mall. Individuals from this segment visit the mall more frequently in crowded time periods (49.4%). They are the respondents who visit the mall most frequently (5.56/7, compared to 5/7 on average for all groups). Like the “recreational shoppers”, these customers consider the mall a place

⁶See definition on p. 6 (Descriptive variables).

where they would spend more money than expected. Concerning their motivations, the “full experience shoppers” think their visit to the mall is an “escape”, an “adventure”, an “enjoyable time”. They are seeking hedonistic pleasure (like the “recreational shoppers”), but are looking for purchases as well. The “full experience visitors” judge the mall to be closer to their homes. In fact, they are more likely to come from the secondary zone.

10.4.3. *Browsers*

The overall evaluation of the mall for these customers is the lowest of all groups (5.98/10). They do not consider the mall as cheerful, stimulating, or interesting as the “recreational shoppers”. For this group, the proportion of individuals that come in the different density periods (low, average, and high) is very similar: browsers do not have a particular time to visit the mall. The “browsers” visit the mall less frequently than the “recreational” or “full experience” shoppers. For them, the trip to the mall is less “an escape”, an “adventure” or an “enjoyable time” than for the other segments. They are mainly motivated by the purchases.

10.4.4. *Mission shoppers*

Like the “browsers”, this group gives one of the lowest ratings to the mall (6.1/10). They are not particularly excited or stimulated by the mall. An important part of the “mission shoppers” (31.4%) visit in the average time periods (Appendix F). Those visits are less frequent than the ones for the “recreational” or “full experience” shoppers. These results correspond with the ones of Roy’s (1994) empirical study on mall visits. He found that customers with functional motivations for shopping (the “mission shoppers” of our study) are not frequent mall visitors. Moreover, he found there was a positive correlation between shopping frequency and the degree of which an individual has *recreational motivations* in visiting the mall. As with other variables, the “mission shoppers” have the lowest opinion regarding the ease with which products may be found.

These results show the segments are significantly different according to their perceptions of products, prices and services, their emotions and their shopping motivations. Therefore the segments obtained differ along most of the psychographic dimensions measured in the research, satisfying the fourth objective of the study.

10.5. *Atmospheric variables*

For Bloch et al. (1994), the atmospheric perceptions of consumers are an important issue: “additional research on the environmental psychology of malls using different means and methods seems highly

worthwhile” (p. 37). However, in their study they did not find any significant difference between the segments concerning the “aesthetical benefits” of their shopping experience.

In our study, the segments have a different perception of atmospheric factors (odors, decoration, and music).

10.5.1. *Recreational shoppers*

Compared to other groups, these customers did not have a different opinion concerning the perception of music in the mall. However, they found the decorations more appropriate ($p = 0.018$), and they are also more bothered by odors ($p = 0.047$).

10.5.2. *Full experience shoppers*

This group is the one that found the decorations less appropriate. It is also the segment more bothered by odors. This negative perception should concern the shopping mall managers, because this is the group with higher average spending.

10.5.3. *Browsers*

This segment has perceptions of odors, music, and decorations very close to the average for all groups. Overall, consumers do not seem to have a very negative perception of odors: the average is above 4.8/7 for the question “The odors in the mall bother me” (where 1 = “Strongly disagree”, and 7 = “Strongly agree”). The decorations do not have such a positive evaluation: the average answer to the questions “the decorations are appropriate” or “the decorations make shopping pleasant” is only 3.5/7.

10.5.4. *Mission shoppers*

Customers of this group are significantly less bothered by odors than the ones of the other segments. They are also the customers that consider the decorations more appropriate.

We can conclude there are significant differences in the perceptions of the atmospheric variables between the segments. The last of the research objectives is attained partially (visual and olfactory perceptions).

11. Discussion

As noted by Reynolds et al. (2002, p. 687), it is difficult to compare the segmentation procedures developed for the profiling of customers of shopping malls because the approaches and methodologies were very different. However, there are some general characteristics of the segmentation analysis that are comparable, such as the base of the segmentation, the variables used to describe the segments, and the groups obtained.

The review of literature suggested three segmentation studies that are close and comparable to the present

study: Reynolds et al. (2002), Bloch et al. (1994) and Lesser and Hughes (1986); a summary of these segmentations is presented in Appendix H.

11.1. Description of the studies

11.1.1. Reynolds et al. (2002)

This segmentation was based on mall attributes (mall essentials, entertainment, and convenience among others). The variables used to describe the segments were related to the attitudes toward shopping, customer satisfaction, and intentions. Five groups of shoppers were obtained: “the Enthusiasts”, the “Basic”, the “Apathetic”, the “Destination” and the “Serious”.

11.1.2. Bloch et al. (1994)

Segmentation of Bloch et al. is based on the activities performed by the shoppers, like in our study. The segments were characterized according to the perceived mall benefits of the consumers: aesthetics, escape, exploration, flow,⁷ knowledge, and social. The perceived benefits were obtained through factorial analysis. Significant differences were found for escape, flow, epistemic, and social benefits. Four groups were obtained: “Minimalists”, “Mall Enthusiasts”, “Grazers” and “Tradionalists”.

11.1.3. Lesser and Hughes (1986)

Lesser and Hughes based their segmentation on 34 psychographic statements. These statements were related to the perception of price, brand, convenience, service, and by the interests of the customers (home improvement, hiking). These variables were used to describe the segments obtained. Six main groups emerged from this segmentation: “Inactive”, “Active”, “Service”, “Traditional”, “Dedicated Fringe” and “Price Shoppers”.

11.2. Comparison

11.2.1. Recreational shoppers

The “Recreational shoppers” of the present article go to the mall as an escape, just as the “grazers” of Bloch et al. However, they did not show a high score of impulse purchases like the “Grazers”. The “Recreational shoppers” are often older consumers, who are not particularly interested by shopping, just as the “Inactive customers” of Lesser and Hughes. In Reynold’s article, there are no groups close to the “Recreational shoppers” or the “Browsers” of our segmentation.

11.2.2. Full experience shoppers

The “Full Experience shoppers” of our study enjoy shopping, go to the mall frequently and have high average spending, like the “Enthusiasts” of Reynolds et al. They are similar to the “Mall Enthusiast” of Bloch’s article: both segments are very active in the mall, and shopping is a very important and pleasant activity for them.

11.2.3. Browsers

The “Browsers” of the present article do not have the same behavior of any of the segments identified by Bloch et al., Reynolds or Lesser and Hughes. These are customers who have a very particular characteristic: they concentrate on “window shopping”. They go to the mall in order to have more information about the products, or to discover new products. This group, not identified in previous studies, reflects the competitive environment the retailing industry is facing today. Customers are increasingly demanding and getting more choice; they therefore take more time to evaluate the products and gather data before taking a purchasing decision.

11.3. Mission shoppers

The “Mission shoppers” of the present article share something in common with Reynold’s “Apathetic shoppers”: they do not enjoy shopping, they are the least satisfied customers of all groups, and they go to the mall only because they have to buy something. These customers, like the “Traditionalists” of Bloch et al. emphasize in obtaining goods and make a high number of purchases.

11.4. General results for segments

Lesser and Hughes analyzed 21 segmentation articles of retailing customers and found “a relatively consistent portrait of the types of shoppers in the marketplace. *Inactive, active, traditional and service* shoppers were found in most of the studies” (p. 62). When we consider the results from Bloch et al., Reynolds et al., and the present study, we can see that this statement is still valid partially. In general, in all these studies, there is a group of customers who enjoy shopping and perform many activities in the mall (“active” or “enthusiast customers”). On the other hand, we have a group of customers in most studies who do not like shopping at all, and “their visit to the mall may simply be a necessary evil” (Bloch et al. p. 37); they are the “Inactive” or Apathetic” shoppers. Between these two opposite groups (Active and Inactive shoppers), we found groups of customers in the different segmentations who have a particular interest in visiting the mall. For example, we have the “Recreational shoppers” who

⁷Flow is defined by Bloch as a “pleasurable state of absorption”, p. 34.

are looking for an escape, the “Service shoppers”, who are looking for special services, and the “Price shoppers” who are looking for price discounts (Appendix H).

12. Conclusions and recommendations

As noted by Roy (1994, p. 154), the composition of clients in terms of segments has a direct impact on the basic positioning of the mall. Based on the information provided by the clustering analysis, marketing strategies can be inferred for each group of shoppers. Examples of such strategies will be developed in the following section.

12.1. Strategies

12.1.1. Recreational and full experience shoppers

Roy proposed to cultivate the high visit level of the recreational shoppers by adding stores and services that will satisfy their most important need: entertainment. Examples of such services could be a theater, games, or a music store. This strategy can be applied in our study to the “Recreational shoppers” (11% of the sample), and to the “Full Experience shoppers” (20% of the sample), because they are looking for fun at the shopping mall.

Furthermore, the “full experience customers” have a high level of hedonism and are not satisfied with the odors perceived in the mall. A program of smoking/non-smoking zones could be implemented, as well as the diffusion of scents in the mall (floral, citrus) in order to have a pleasant atmosphere for this segment. The satisfaction with atmospheric factors can encourage unplanned purchases, which are very frequent for this group of customers (93% of cases).

12.1.2. Browsers and mission shoppers

The “Browsers” have the lowest average spending and are not especially enthusiastic about shopping (29% of the sample). This group is particularly looking for convenience, and they spend their time in walking and looking at the stores: an improvement in the way finding of the mall can be used to better their shopping experience. The “Mission shoppers” go to the shopping center because they are looking for a particular product or service. They come mainly from the primary zone of the mall (60%), and they represent 40% of the sample. A strategy for attracting them could be a direct

marketing campaign. Mailings could be sent in the neighboring zone of the mall to inform potential customers about promotions and special products or services.

The segmentation procedure described above gives detailed information about consumers in the mall, but the challenges of implementing the results must be solved. Though there are not many academic papers on this subject, the article of Dibb and Simkin (1997) developed a procedure for the implementation of segmentation results. The methodology (ASP) consists in the analysis, definition of strategies for each group, and development of marketing mix programs by sales and technical managers.

The addition of new variables can complete the profile of customers. For example, the identification of customers with the image of the mall and its current customers (Sirgy et al., 2000, 1989) can help to understand customer’s motivations.

12.2. Concluding remarks

This study confirmed that activities are a very convenient basis for segmentation in retailing; the groups defined by their pattern of behavior have a significantly distinct demographic and psychographic profile. The link between activities, demographic variables, and atmospheric perceptions proved to be statistically significant, and it makes the activity-based segmentation model a more complete and useful tool for retail managers. Though more experimentation in other retail settings is needed to validate this segmentation model, the results are encouraging:

This study constitutes a step in the process of establishing a connection between some basic trends in the literature on consumer segmentation in retailing: “traditional” demographic segmentation, “psychographic” profiling, and “store atmospherics”. Further research is needed to build more comprehensive models for *grouping* shoppers, as complete and consistent as those recently developed to *explain* why people shop.

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Appendix A. Demographic profile of the sample

See Table 1.

Table 1
Demographic profile of the sample

Variable	Value	Proportion of the sample (%)
Mother tongue	English	18.5
	French	81.5
Gender	Female	61.2
	Male	38.8
Age	Age 18–24	13.6
	Age 25–34	20.1
	Age 35–44	27.5
	Age 45–54	19.5
	Age 55–64	11.4
	Age 65 and more	7.9
Marital status	Married	53.3
	Single	25.8
	Others	20.9
Education level	Primary	2.7
	Secondary	33.8
	College	34.8
	University	28.7
Occupation	At work	62.9
	Student	7.6
	Retired	16
	Unemployed	3
	At home	10.5
Family income (before tax)	< 30 000\$	28.9
	30 000–39 999 \$	16.9
	40 000–49 999 \$	14.6
	50 000–59 999\$	12.6
	60 000–79 999\$	14.8
	80 000 and more	12.2
Number of children at home	0	53.6
	1	18.5
	2	18.9
	3 and more	9

Appendix B. Psychographic variables scales

B.1. Perceptions ($\alpha = 0.8634$)⁸

Perception of products

How would you qualify the style of the products proposed in this shopping centre?

Outdated Up to Date

Is the product selection of this shopping centre:

Inadequate Adequate

The quality of the products available in this shopping centre is rather:

Low High

Perception of the quality of service ($\alpha = 0.8116$)

The quality of this shopping centre's service is

Very Poor Excellent

My feelings toward this shopping centre's services can best be described as:

Very unsatisfied Very satisfied

⁸Cronbach's alpha measures the reliability of the scale.

Appendix C. Density levels

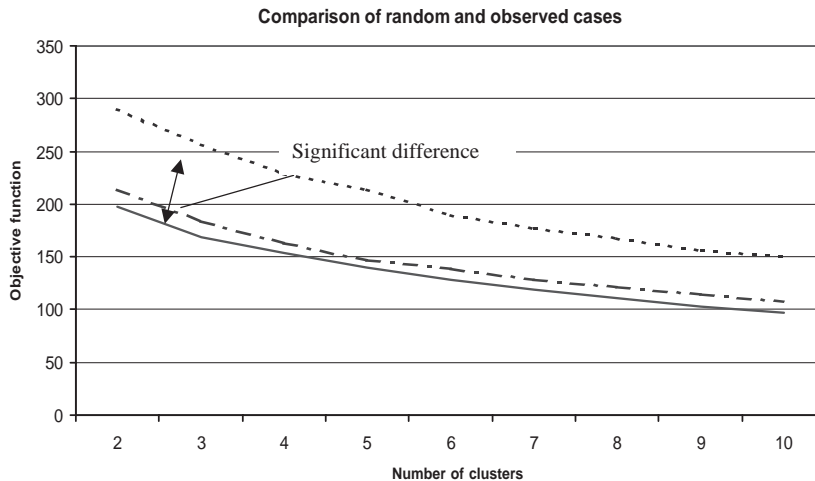
See Table 2.

Table 2
Density levels

Day	Hour	Density level (estimated)
Monday	All the day long	Low
Tuesday	All the day long	Low
Wednesday	All the day long	Low
Thursday	9:00–18:30	Average
	18:30–20:30	High
Friday	9:00–18:30	Average
	18:30–20:30	High
Saturday	9:00–12:00	Average
	12:00–15:30	High
	15:30–21:00	Average
Sunday	9:00–12:00	Average
	12:00–15:30	High
	15:30–17:00	Average

Appendix D. Objective function

There is a significant difference between the observed data and the random sample:
The data presents a structure and there are groups of entities (segments).



Appendix E. Activities and segments

See Table 3.

Table 3
Activities and segments

Activity	Do exercise (%)	Talk with other customers (%)	Browse (%)	Take a snack (%)	Go to the bank (%)	Unplanned purchase (%)	Purchase (%)
Full experience shoppers	30.5	75.3	77.6	70.7	37.9	92.5	83.3
Recreational shoppers	80.4	87	16.5	75.3	22.7	25.8	72.2
Traditional shoppers	24.8	19.8	100	14	27.3	25.6	67.4
Mission shoppers	8.5	10	0	7.6	17.9	20	80.9
Average	25.8	34.8	44.3	30	25.2	37	75.7

Appendix F. Segment profiles

See Table 4.

Table 4
Segment profiles

Variables	Browsers				Average for all groups
	Full experience shoppers	Recreational shoppers		Mission shoppers	
Number of individuals	169 (20.2%)	95 (11.3%)	239 (28.6%)	334 (39.9%)	837 (total)
Average spending	67\$	44\$	29\$	52\$	48\$
Zone of origin					
Primary	105 (60.3%)	59 (60.8%)	154 (63.6%)	255 (74.8%)	67%
Secondary	37 (21.3%)	14 (14.4%)	42 (17.4%)	44 (12.9%)	16%
External	32 (18.4%)	24 (24.7%)	46 (19.0%)	42 (12.3%)	17%
Age					
18–24	25 (14.8%)	3 (3.2%)	44 (18.4%)	43 (12.9%)	13.7%
25–34	31 (18.3%)	16 (16.9%)	50 (20.9%)	71 (21.3%)	20.1%
35–44	38 (22.5%)	22 (23.2%)	58 (24.3%)	112 (33.5%)	27.5%
45–54	36 (21.3%)	20 (21%)	52 (21.8%)	55 (16.5%)	19.5%
55–64	25 (14.8%)	14 (14.7%)	22 (9.2%)	34 (10.2%)	11.3%
65+	14 (8.3%)	20 (21%)	13 (5.4%)	19 (5.6%)	7.9%
Mother tongue	73% French	80% French	80% French	87% French	81%
Marital status					
Married	92 (54.8%)	50 (52.6%)	127 (53.4%)	177 (52.8%)	53.3%
Single	39 (23.2%)	17 (17.9%)	74 (31.1%)	86 (25.7%)	25.9%
Others	37 (22%)	28 (29.5%)	37 (15.5%)	72 (21.5%)	20.8%
Occupation					
Work	101 (64.3%)	43 (47.8%)	144 (62.1%)	219 (67%)	62.9%
Studies	6 (3.8%)	3 (3.3%)	30 (12.9%)	22 (6.7%)	7.6%
Retired	27 (17.2%)	27 (30%)	27 (11.6%)	48 (14.7%)	16%
Unemployed	7 (4.5%)	3 (3.3%)	6 (2.6%)	8 (2.4%)	3%
At home	16 (10.2%)	14 (15.6%)	25 (10.8%)	30 (9.2%)	10.5%
Density level					
Low	55 (31.6%)	38 (39.2%)	78 (32.4%)	106 (31.1%)	32.5%
Average	33 (19%)	22 (22.7%)	68 (28.2%)	107 (31.4%)	27%
High	86 (49.4%)	37 (38.1%)	95 (39.4%)	128 (37.5%)	40.5%
Selection of products (1–7)	5.55	5.61	5.31	5.31	5.39
Prices compared to competition (1–7)	4.46	4.44	4.37	4.19	4.32
Quality of service (1–7)	5.47	5.45	5.3	5.19	5.31
Overall evaluation (1–10)	6.39	6.46	5.98	6.1	6.16
Perceptions (1–7)					
Depressing–cheerful	5.37	5.5	5.06	5.15	5.21
Boring–stimulating	4.99	5.14	4.8	4.63	4.81
Unlively–lively	4.8	4.98	4.48	4.34	4.55
Dull–bright	5.04	5.18	4.84	4.67	4.85
Uninteresting–interesting	5.24	5.23	4.92	4.8	4.97
Emotions (1–9)					
Stimulated–relaxed	3.7	4.03	4.23	4.28	4.12
Excited–calm	4.4	4.84	5.33	5.07	4.98
Frequency of visits (1–7)	5.56	5.1	4.81	4.85	5.01
Approach-avoidance: spend more money than expected (1–7)	4.46	4.27	3.4	3.45	3.73
Values: shopping as an escape	3.57	3.63	3.32	3.02	3.29

Table 4 (continued)

Variables	Browsers				
	Full experience shoppers	Recreational shoppers		Mission shoppers	Average for all groups
(disagree/agree 1–5)					
Values: sense of adventure	2.73	2.94	2.37	2.15	2.42
(disagree/agree 1–5)					
Values: trip was a joy (disagree/agree 1–5)	3.81	3.88	3.61	3.72	3.72
Non-economic costs: mall located near my home (1–7)	5.71	5.24	5.55	5.85	5.67
Non-economic costs: it is easy to find the products I'm looking for (1–7)	5.26	5.13	4.87	4.87	4.98
Odors bothered me (agree/disagree, 1–7)	4.83	4.93	4.97	5.31	5.07
Decorations are appropriate (agree/disagree, 1–7)	3.63	3.14	3.35	3.1	3.28
Decorations make shopping pleasant (agree/disagree, 1–7)	3.62	3.46	3.37	3.6	3.52

Appendix G. Significance levels of statistical comparisons between segments

See Table 5.

Table 5
Significance levels of statistical comparisons between segments

Segment Variables	Significance level Anova for continuous variables, or Chi ² For categorical variables
<i>Socio-demographic variables</i>	
Zone of origin	Chi ²
Age	<5%
Mother tongue	<5%
Marital status	5.8%
Occupation	<5%
<i>Psychographic variables</i>	
Selection of products (1–7)	“p” of Anova (analysis of variance)
Prices compared to competition (1–7)	0.053
Quality of service (1–7)	0.035
Overall evaluation (1–10)	0.034
Perceptions (1–7)	0.03
Depressing–cheerful	0.036
Boring–stimulating	0.008
Unlively–lively	0.000
Dull–bright	0.006
Uninteresting–interesting	0.003
Emotions (1–9)	
Stimulated–relaxed	0.058
Excited–calm	0.001
Frequency of visits (1–7)	0.004
Approach avoidance: spend more money than expected (1–7)	0.000
Motivations: shopping as an escape (disagree/agree 1–5)	0.000
Motivations: sense of adventure (disagree/agree 1–5)	0.001
Motivations: trip was a joy (disagree/agree 1–5)	0.001
Non-e.costs: mall located near my home (1–7)	0.029
Non-economic costs: it is easy to find the products I'm looking for (1–7)	0.032
Odors bothered me (agree/disagree, 1–7)	0.047
Decorations are appropriate (agree/disagree, 1–7)	0.018
Decorations make shopping pleasant (agree/disagree, 1–7)	0.045
Density level (Chi ²)	<5%

Appendix H. Comparison of mall segmentations

See Table 6.

Table 6
Comparison of mall segmentations

Source	Ruiz, Chebat and Hansen	Reynolds et al. (2002) (segmentation for traditional malls)	Bloch et al. (1994)	Lesser and Hughes (1986)
Base of the segmentation	Activities performed in the mall	Mall attributes: mall essentials, entertainment, brand-name merchandise, convenience	Activities performed in the mall	34 psychographic statements performed in seven market segments
Other variables used to characterize the segments	Socio-demographic, perceptions (prices, services, products), emotions, atmospherics, values	Attitudes towards shopping satisfaction, repeat purchases and intentions	Perceived benefits: aesthetics, escape, exploration, flow, epistemic and social	Activities, Interests, lifestyle, perception of prices and services
Segments obtained	<p>1. <i>Recreational Shoppers</i> (11%) Go to the mall for the exercise and the social interactions; older customers</p> <p>2. <i>Mall enthusiasts</i> (20%) Enjoy the shopping experience and visit the mall frequently; middle aged</p> <p>3. <i>Browsers</i> (29%) Browsed and made some purchases; middle-aged customers</p> <p>4. <i>Mission shoppers</i> (40%) Go to the mall for planned purchases; young adults</p>	<p>1. <i>Enthusiasts</i> (30%) Rate all four mall attributes as important</p> <p>2. <i>Basic</i> (19%) Strong preference for mall essentials and convenience</p> <p>3. <i>Apathetic</i> (11%) Disinterested in all aspects of the shopping process</p> <p>4. <i>Destination</i> (15%) Perceive the mall as a “destination retailer”</p> <p>5. <i>Serious</i> (25%) Interested in convenience, brands an not entertainment</p>	<p>1. <i>Minimalists</i> (28%) Consume the mall least</p> <p>2. <i>Mall enthusiasts</i> (24%) High activity levels</p> <p>3. <i>Grazers</i> (20%) Information and social needs</p> <p>4. <i>Traditionalists</i> (28%) Desire for escape and boredom relief; high impulse purchases</p> <p>Emphasis is obtaining goods</p>	<p>1. <i>Inactive</i> (15%) Have restricted lifestyles and shopping interests; are often older consumers</p> <p>2. <i>Active</i> (12.8%) Have a demanding lifestyle. They enjoy shopping</p> <p>3. <i>Service</i> (10%) They demand a high level of in-store service when they shop</p> <p>4. <i>Traditional</i> (14.1%) They are interested in outdoor activities; they are uncomfortable spending money</p> <p>5. <i>Dedicated fringe shoppers</i> (8.8%) Want to be different; interested in brands</p> <p>6. <i>Price shoppers</i> (10.4%) They care about price and bargain</p> <p>7. <i>Other shopper types</i> Transitional shoppers (6.9%), convenience shoppers (4.8%), coupon-saver shoppers (5.4%), innovator shoppers (4.1%) and unclassified shoppers (7.7%)</p>

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