Empirical Study of Consumer Buying Patterns in Latvian Shopping Centers

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Abstract: - This paper analyzes the results of an empirical study conducted in Riga shopping centers.. The objective of the study was to develop a model for the optimal store mix in shopping centers and describe the potential benefits of the model. Four goods categories are found to be most preferred by customers: food and beverages, manufactured goods and household chemicals, goods for home and clothing. Data analysis shows that almost 50% of all purchases are made in the food and beverage category. Recommendations on the optimal tenant mix in a shopping center are formulated.

Key-Words: - Consumer buying pattern, Jaccard coefficient, customer preferences

1 Introduction

Since 2008 Latvia has experienced the severest economic recession in Europe. Recently Latvia has seen a world-historical drop in GDP of more than 25 percent. According to the Central Statistical Bureau [1] compared to 2008 retail trade turnover at constant prices in 2009 fell by 28%.

The decrease in local consumption in Latvia affected shopping center development as well. At the beginning of 2009 shopping centers in Latvia had approximately 437 000 m2 of GLA (Gross Leasable Area) [2]. GLA for Latvia is lower than for most of the EU countries (in 2009 it was just 176 m2 per 1000 inhabitants). Thus, Latvia could definitely develop new trade centers and increase GLA.

Currently the largest shopping center operator in Riga is Linstow Center Management (LCM) SIA which operates 5 shopping centres: Mols, Galerija Centrs, Dole, Origo and Alfa. Linstow began active real estate operations in the Baltic region in 1996 [3]. The decision to invest significant capital in Latvia's real estate market was based on the belief of long-term opportunities in the Baltic region.

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The biggest challenge for shopping center management today is to create the "ideal" tenant mix in order to stay competitive and to attract customers. Knowing visitors' profiles of a particular trade center by gender, family status and shopping habits and preferences, the trade centre operator could make a model of the best shop clustering and location pattern for different customer groups.

In the present paper we report the results of two studies conducted in Riga in October-November 2009 and April 2010. The goal of the studies was to determine the relationships among different goods categories in a trade center as well as to find the goods categories preferred by three different customer groups: customers with children, women and men.

2 Shopping Center Theory and Practice

There are different methods of classification of shopping centers. Usually classification is done by size, location and tenant mix. A description of modern shopping centers in North America and Western Europe is provided in [5]. The model for shopping center space allocation is discussed in [6] where two types of tenants are shown to exist: anchor and non-anchor tenants. Anchor tenants create a drawing card for the center with the non-anchor tenants benefiting from locating near the anchor. There are different opinions how tenants should be located to increase profit and satisfy customers but the ideal solution has not yet been found.

The importance of a good tenant mix for a wider selection of goods in a shopping center is demonstrated in [7]. Empirical studies have shown that tenant variety affects the time consumers spend in the mall and their patterns of movement. It is also known that consumers have started to calculate their cost of shopping which includes money spent while shopping, time spent shopping and getting to and from shopping center and energy spent during shopping. Shopping center management needs to take into account that many customers try to minimize their shopping costs when making a shopping trip. Thus, an important question arises: what needs to be taken into account when developing the tenant mix for a new shopping center?

It is known that men and women have different buying habits [8]. In addition, consumer behavior of families with children is not the same as the behavior of single men or single women. Thus, it is important to understand customer profiles and their buying habits in order to develop a model for the optimal store mix. An empirical study was conducted in Riga at the end of 2009 to collect data about customers' most preferred store categories and find correlations among them.

3 Customer Survey

Linstow Center Management developed the Galactico alliance in March 2007. Alliance Galactico is a service quality and client convenience symbol for all LCM operated shopping centers. The big advantage of the alliance is the possibility to reduce marketing expenses and therefore be more efficient. One of the marketing techniques which was introduced in all Linstow shopping centers in November 2006 and which attracted many customers is the Galactico Electronic Gift Card which is a modern version of the popular paper-based gift certificate. The new Gift E-Card allows the recipient to shop at more than 650 stores in any LCM shopping center. Another innovation is the Galactico Privilege Card which allows customers to pay less for the purchases they make and receive a refund for some of the money spent. The card offers discounts at all five Galactico shopping centers around the city (Alfa, Origo, Galerija Centrs, Mols and Dole) and grants a refund of 1% of the purchase sum in the form of the Galactico Gift card. Currently there are more than 20 000 customers who have Galactico Privilege Cards; approximately 40% are women without children, 20 % are men and 40% are customers with children.

The survey was conducted in October-November 2009. The goal of the study was to determine the relationships among different categories of goods available in different stores in shopping

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centers as well as to find customer preferences for categories of goods for different customer groups: customers with children aged 0-18 and women and men without children. The data were obtained from purchase transactions with the Galactico Privilege Card. The data were collected for three shopping centers: Alfa, Mols and Dole. However (due to space limitation) only results for Alfa are presented in this paper. In the present study the authors investigated purchases which were made only in October and November 2009 to avoid the effect of Christmas on purchases.

A stratified sampling technique was used and was performed with respect to the following demographic characteristics (three strata were chosen): (1) women who have no children aged 0-18, (2) men who have no children aged 0-18 and (3) customers (either women or men) who have children aged 0-18. The chosen strata are mutually exclusive and collectively exhaustive, every Galactico loyal customer is assigned to one and only one stratum and no one loyal customer is omitted. Three hundred Alfa visitors were selected randomly; (100 women, 100 men, and 100 customers with children ranging in age from 0 to 18), 300 Mols visitors (with the same distribution among women, men and customers with children) and 200 Dole visitors (100 women, 100 customers with children) were selected for the study. Women and men were chosen with a proportion of 50/50 for the group "customers with children". Random selection was based on a random number generation tool in Microsoft SQL Server Management Studio. A wide range of different goods categories was available in each center selected for the study.

Customer profiles in Alfa are shown in Figs. 1-3.

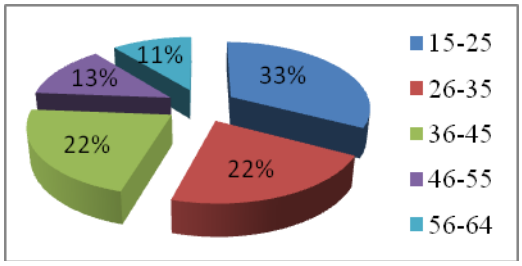

Fig.1. Alfa customers: distribution by age

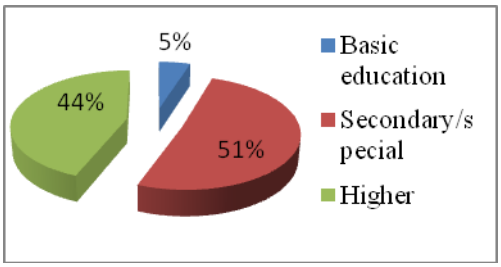

Fig.2. Alfa customers: distribution by education level.

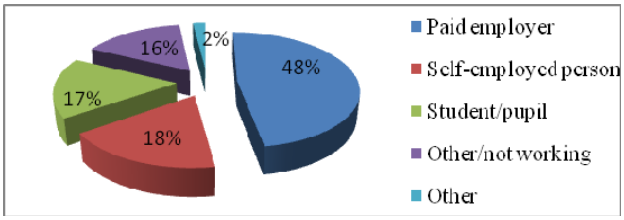

Fig.3. Alfa customers: distribution by employment characteristics.

Analysis of the data shows that 57% of all customers in Alfa are women; 53% do not have children. It follows from Figs. 1-3 that: (a) 44% of all customers are 26 to 45 years old; (b) 44% have higher education; (c) 48% are paid employees.

The survey data were analyzed with two objectives in mind: (a) find preferred goods categories in shopping centers (even if a customer has made a purchase only in one category) and (b) analyze purchases made on a multi-purpose shopping trip (if purchases were made in two or more goods categories in one particular day). The analysis of data can help to identify preferred goods categories for women, men, and customers with children and find relationships between categories of goods in order to explain observed purchasing behaviour and develop a model of the ideal tenant mix.

All goods available in Alfa were divided into 20 categories as follows:

(1) Accessories, jewellery, hats, and bags; (2) books and stationary; (3) catering (different cafés and restaurants); (4) cigarettes, cigars, tobacco; (5) children's clothes, footwear, toys, children's entertainment; (6) clothes for men, women, various, youth, and underwear; (7) flowers, plants, gardening goods; (8) food-stuffs and beverages; (9) footwear; (10) glasses and optics; (11) goods for home; (12) luxury goods; (13) manufactured goods and household

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chemicals; (14) perfumery and cosmetics; (15) pharmacy; (16) press; (17) services (footwear repair, hairdressers, solarium, beauty salon, sewing services and similar); (18) small electronics, PCs, multimedia, photo goods, mobile phones; (19) sporting goods, tourism, fishing and hunting goods; (20) pet shops and pets.

The number of purchases in Alfa for the three customer groups of: (a) women without children, (b) men without children and (c) customers with children was 1,846, 1,229 and 1,417 respectively. Note that the total number of purchases registered with the Galactico Privilege Card in the survey was 11,222 for Alfa, Mols and Dole.

4 Similarity Analysis

In a multi-purpose shopping trip (when purchases are made in two or more goods categories) Jaccard's coefficient is calculated to find similarities between any two categories of goods [9]-[11].

Let us assume that there are two categories of goods (G1 and G2). The binary attributes of G1 and G2 are either 1 or 0 depending on whether a purchase from a particular category is made or not. We introduce the following notations. Let M_{11} be the total number of cases where both categories have a value of 1 (at least one purchase from both categories G1 and G2 is made). Similarly, M_{10} represents the total number of cases where the attribute of G1 is 1 (at least one purchase is made from category G1) and the attribute of G2 is 0 (no purchases from category G2). The meaning of the notations M_{01} and M_{00} is then clear. The Jaccard similarity coefficient, J, is defined as follows

$$J = \frac{M_{11}}{M_{01} + M_{10} + M_{11}}. \quad (1)$$

The Jaccard coefficient can be used to assess similarity between two sets (purchases made in G1 and G2). The null hypothesis can be formulated as follows: two sets are not similar. There are two critical regions defined by the lower and upper critical values of the Jaccard coefficient with probability levels P of 0.05, 0.01, or 0.001 (see [11]). The null hypothesis is not rejected in a case where the calculated value of the Jaccard coefficient for goods categories is located between two critical values and is rejected otherwise. If the null hypothesis is rejected then purchases distribution between two goods categories is not distributed by chance (there is a similarity between G1 and G2) and the authors could conclude that customers do not make purchases accidentally. Calculations show that in all cases for core categories (such as food, clothing, manufactured goods and goods for home) Jaccard coefficients are found to be statistically significant. For all groups of customers the food-stuff category has the largest Jaccard coefficient with such categories as clothes, manufactured goods and pharmacy.

4 Consumer Preferences

In this section we present the results of an online consumer survey conducted in April 2010. One of the objectives of the study was to answer the following questions: (1) What is a customer's typical shopping behaviour – do they combine purchases of non-food and food goods in one shopping trip? Analysis of Galactico loyal customers' preferences in Alfa, Mols and Dole showed the huge importance of the food and beverages category in every customer's purchase trip.

Before the study LCM management had only turnover figures and their proportions among different goods categories and it was known that the food and beverages category usually represents approximately one third of the shopping center's turnover. The research results showed that approximately 50% of all purchases were made in that category in Alfa, Mols and Dole.

Taking into account such a high preference for the food and beverages goods category the authors are certain that this category has a very high importance as an anchor store in shopping centers. Thus, the authors conclude that the food-stuff category should be located centrally

in a shopping center so that customers can reach the food store easily from anywhere in the center. A good example of such a location could be the Ullemiste center in Estonia where all stores are located around the Rimi hypermarket [12].

Next, we analyze customer preferences for non-food goods. An example can be seen in Fig. 4 where the distribution of customer preferences (Alfa customers with children) is shown.

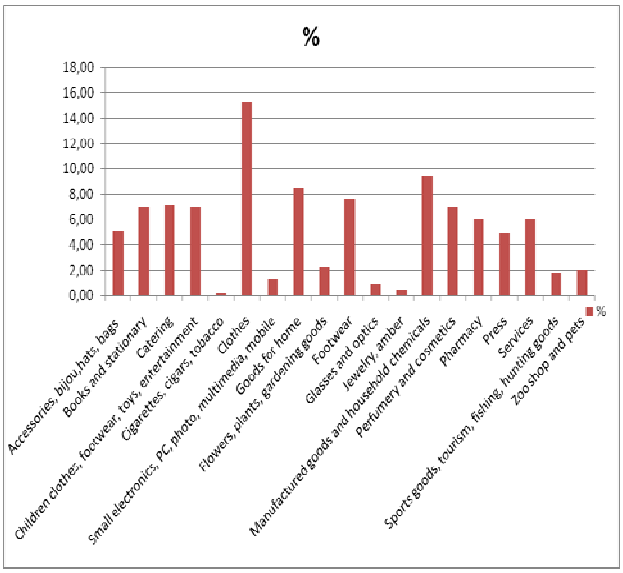

Fig.4. Distribution of customer preferences (Alfa customers with children) between non-food and beverages categories.

As can be seen from the figure, the most preferred categories in the non-food category are “clothes” (15.25% of all non-food categories) and “manufactured goods and household chemicals” (9.42% of all non-food categories).

The analysis of non-food categories’ preferences has highlighted another most preferred customer’s choice which is the clothing category. The authors conclude that the importance of clothing cannot be overestimated and that apparel stores are becoming more and more important in shopping centers because of their ability to generate comparison shopping [13]. In Alfa and Mols the clothing category was found to be the most preferred among non-food categories regardless of customer gender and existence of children. In Alfa it was between 12.68% and 15.97% of all non-food categories;, in Mols it was between 15% and 20.33%.

4 Conclusion

Based on theoretical aspects and empirical analysis as well as on optimal store mix models for different customers groups which reflect customers preferences and shopping behaviour in multi-purpose shopping trips in three shopping centers, the recommendation for the universal (fits each customer group) optimal store mix could be the following.

1. Customer preferences show the importance of four goods categories: **foodstuffs and beverages, manufactured goods and household chemicals, goods for home and clothing.** These categories are assumed to be the magnet stores/categories (which attract customers to a shopping center) for each shopping center. These magnets could be placed at opposite sides of the center, but the central location should be from the food-stuff and beverages category. We suggest that each of these categories should have a strong anchor which attracts customers to the store, and to the shopping center. Taking into account the importance of the anchor in a shopping center its selection is a crucial success factor.
2. Despite opinions mentioned in the literature that a shopping center should concentrate only on core retail/service categories which could maximize profit of the shopping center, the authors suggest providing consumers with a broad selection and variety of different categories of goods (20 different categories are used in our analysis). The mix of goods categories should include both comparison goods and convenience goods in order to satisfy different customer needs.
3. Comparison shopping is one of the main motivations for visiting a shopping center. Comparison clusters increase demand from customers in each goods category and increase the turnover of every tenant in those clusters. The authors recommend locating all stores from one goods category side by side in the shopping center in order to create comparison clusters.

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