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INTEGRATED MODEL OF SALES FORECAST IN TERMS OF TRADE AREA ANALYSIS

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ABSTRACT

The literature of sales forecast in case of new shop mainly covers the question of how to make trade forecasts considering the trade area analysis.. For example, a few well-known method of this are that of planning on the basis of trade in goods, volume in terms of the regional purchasing power or the price projections. It will demand analysis and planning of a completely different nature, if a commercial enterprise wants to invest in an unknown area, so to speak, it wants to open a new business. In many cases, it is not just a question of management and controlling, but entrepreneurs have to make an impact study for getting authorization from the local government to open a commercial unit. Crucial points of this impact study are the forecast on expected trade and the presentation of planned numbers and their accuracy, so in this paper an integrated model is described helping the retailers to make sales projection.

Keywords:. Trade area, sales forecast, catchment area, new store

INTRODUCTION

It is important to define the market area of any potential location in case of opening new store. It is needed to know of any group of individuals who has the ability, desire and willingness to buy retail goods or services. The residents of any neighborhood, city, region, country, or group of countries may constitute a retail market. The retail trade is defined as the geographic area within which the retail customers for a particular kind of store live or work. The customer profile of a segment of the people within the geographic area that the store decides to serve is the target market. In this paper an example is demonstrated an integrated model to show how the residents and office workers are considered where a multinational company wants open a new hypermarket in a district of Budapest. I assumed for the model the planned basic retail square footage is 10.000 m2 with 200 m2 catering facilities and 100 m2 gas station area are relating to the new store.

1. TRADE IN LOCATION THEORY

Location theories typically cover the operational and spatial analysis of agricultural or industrial units. Economic operators are trying to find an optimal location by business calculations, and the recognition and conscious examination of thereof was a great step in the development of location

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theories. The circle of measurable (calculable) economic factors gradually broadened, and the unmeasurable characteristics came into prominence as well, but trade appeared in the development stages of location theories as no independent economic area for a long time. The spatial dimensions of the goods-producing economy (specialization, division of labor), the mass transportation of raw materials and finished products (transport infrastructure, transportation equipments), and the free movement of capital and workforce are all general requirements of economic activities (*Rechnitzer et al., 1999*). The agricultural location theories (first third of the 19th century) covered explanations on the spatial localization of the agricultural production, the sites, and the related connections; while the industrial location theories (first decades of the 20th century) covered explanations on the installation locations of industrial plants. The analysis of trade opportunities appeared first in examinations performed between the two World Wars (e.g. Lösch), and out of the factors for selecting a site they put the maximization of income into prominence, and instead of production they took the characteristics of consumption into account. By the optimization of informatics-based, i. e. mathematical models (e.g. Isard) – formed by considering all the factors needed for the determination of installation location – developed in the second half of the 20th century such functions in trade were supported as, for example, the territory management. Today location theories take such non-economic motivations and non-measurable factors (e.g. the influence of individual experience) into consideration that can be utilized by trade enterprises in their decisions about selecting a site (MEDVENE SZABAD K. - KOZÁK T, 2014).

2. TRADE AREA SELECTION CONSIDERATIONS

Demographic.

One of the most important variable is the demographic dimensions of a market to the retail manager considering whether the retail trade area is the central city, a growing suburb, or a quiet rural area, you must understand the people who live and work there. In order to identify the basic characteristics of a catchment area needed to be made judgement how far one of the customers would travel for the goods, the total market has been determined. Factors, such as current population, potential population, population density, age, income, gender, occupation, race, proportion of home ownership, average home value, and proportion of single versus multifamily dwellings are important considerations (LENGYEL, I. 2010):. The catchment area population is calculated in terms of records of statistical office detailing on district level in the model.

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Economy and Demand

Economic characteristics have a significant impact on country and region selection. The impact on trade area is even greater. The local unemployment rate will affect the local labour pool and the amount of money that consumers have to purchase products. The most important economic characteristics for the retailer are Gross Domestic Product per capita relating to per capita income and employment rates. The economy of an area under consideration for location should provide a general indicator of the long –range retail opportunities present within an area. The number, type, trends, and stability of industries that might affect business in the market area need to be considered (KIRÁLY, É – KOZÁK, T. 2014). Employment rates, total retail sales, segment retail sales, household income, and household expenditures all provide information from which the economic stability of the area can be ascertained. The buying power index (BPI) indicates the relative ability of consumers to make purchases. The BPI for examined statistical area is figured out GDP per capita on local and country level. The local GDP per capita is FT 2 291 489, on the local level FT 1 720 328, so the Buying power index (BPI): 133%.

Defining the Trade Area

Since a market comprises the number of people and they spend able income, estimating where customers will shop is of critical importance to retailers. Scholars have developed many tools for defining the size of a trade area (Levy, M. – Weitz, B. 2009).

Reilly‟s law

Among the most simple of the models is Reilly‘s law. Reilly‘s Law states that a customer will travel a distance to shop based on the population of the shopping area and the distance between areas. In essence, it specifies a break point will travel to the city on the same side. In this paper this method was not used because the new store would be opened in the inner part of Budapest.

Huff‟s model

It is called gravity models because they attempt to look at the retail customers and where they will be pulled by the gravity of retail centers. A slightly more complex alternative to Reilly‘s Law was developed by David Huff. Huff‟s model considers the size of the shopping center, how long it would take a customer is looking for. Huff‘s model gives retailers an approximate probability of how likely it will be for a consumer to travel to a specific shopping center. The formula used to calculate Huff‘f model is shown below. in the example (table 1) assuming the market size is FT 102 036 539.

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	Existing Store A	Existing Store B	Existing Store C	New Store
Planned Retail Sq. Footage				10 000
Existing Retail Sq.Footage	6 000	8 000	12 000	
Travel Time to original shop	10	10	10	
Travel Time to new shop				10
Relative effect of travel time	2	2	2	2
Market size of areas (HUF th)				
Store attractiveness	60	80	120	100
Probability of shopping in new shop	16,67%	22,22%	33,33%	27,78%

Table 1, Base figures to HUFF gravity model

The calculations below indicate that a customer living in examined district neighbourhood would travel to shopping center in 10 minutes.. Another way to interpret the result is to say that 28 percent of the residents would travel to new shopping center to purchase the type of goods represented by a gamma of Comparing the percentage estimate for new shopping center with the other three shopping centers, we can assume based on the new store market share the estimated sales: FT 28 343 483.

Concentric circles and the use of geo demographics

I also introduce the idea of concentric circles and used of geo demographics. One way to analyse a market area is to use maps and census tracts to construct concentric zone maps. Survey data from existing stores can determine how far customers will travel to shop. Obviously this depends on the type of goods and the pulling impact of the location. Customers will travel much farther to shop for home entertainment equipment in a regional mall than to pick up medicine at a pharmacy.

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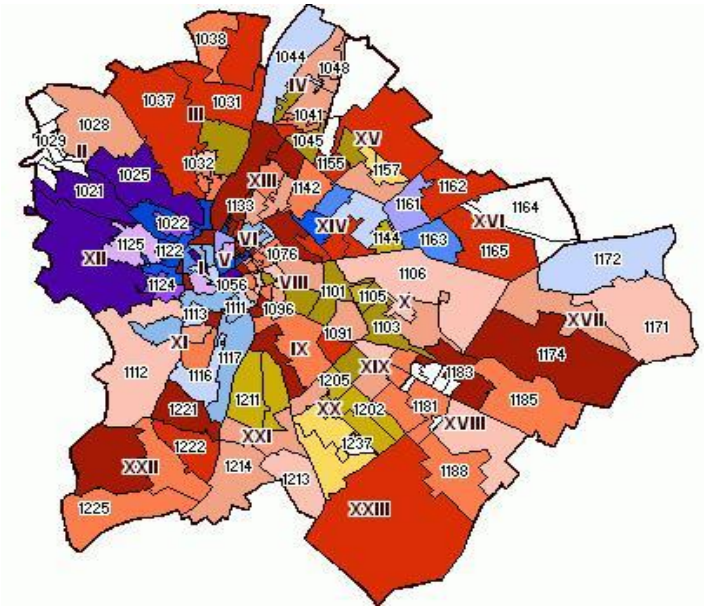

Exhibition 1: Map for Trade Area identification

Notice how the interstate highways or river (i.e. Danube in our model) could limit accessibility. The actual sales potential of the store is also going to be limited by the number and location of competitors. The term geo demographics is derived from the demographics of population coupled with the geographic dimensions of populations. Retail location decisions commit large amounts of capital, and once made, the decision is fixed for a significant period of time.

Trade Area	Distance /km	Population	Size of Number of Households	Number of Households
primary	-3	130 428	2,18	59 889
secondary	3-5	25 860	2,18	11 874
fringe	5-	18 683	2,18	8 579
Total		174 971		80 342

Table 2: Population of Trade Area in terms of zones

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Within the trade area, with target market defined, a retailer can stock merchandise and provide specific services to meet the needs of those potential customers (Table 2). Because the product portfolio of new stores includes significant share of foods I calculated both people end household numbers.

3.. Estimating Market Potential

Once the retail trade area has been identified and the relative segmenting variables applied, certain quantitative factors must be considered to decide if the area is suitable. These factors include the retail market potential of a retail trade area and the retail sales potential. Retail market potential is the total dollar sale that can be obtained by all stores selling a particular retail product, product line, or group of services within the retail trade area if everything was maximized (BERMAN, B. – EVANS, J. R. 1983). Therefore, retail sales potential is a part of retail market potential. A retail sales forecast is the specific estimate of sales volume that a retailer expects. Because the retailer is new in the area or because of the entry of a new competitor, the sales forecast may be less than the estimate of retail sales potential.

There are two major determinants of the market potential for a trade area: the number of potential customers within the area and the amount of money consumers spend for the product or product line in question. For example, a retailer can estimate the market potential by multiplying the number of potential consumers in the trade area by the average amount they spend for the product.

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Net Income (th FT) per capita	1 388
Estimated Consumption per capita	
Foods and alcohol free drinks	253
Alcohol drinks and tobacco products	115
Apparels and shoes	47
Furnishing	
Transportation (i.e. gasoline)	119
Culture, entertainment	
Catering	101
Other	
Total	634
Population	174 971
Total Trade Area Consumption (TH FT)	110 958 515
Total Trade Area Store Sales (TH FT)	22 191 703

Table 3: Consumption and sales in Trade Area

Population statistics are commonly used in arriving at market potential and are expressed on a per capita, a per household, or a per family basis. Estimating sales potential is FT 22,2 billion (Table 3).

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Competition exists when more than one store compete for the same market segment or target market. In some situations, a firm might like to be only one of its type in a given market area. This is particularly the case for specialty or convenience goods. On other occasions, however, good strong competition will enhance the overall business potential of a given area because it will draw shoppers from a greater distance to compare prices or stores. This is particularly the case with goods for which people often make shopping comparisons. Maps may be developed to show retail locations of competitors by relative size and merchandise mix.

CONSUMPTION	Relative share of FMCG products %	Floor Area	Sales per m2	Estimated size (Th. HUF)
				-
III. Buying basket estimated portion				-
Foods and alcohol free drinks	100%	10 000	952	9 517 429
Alcohol drinks and tobacco products	17%			1 586 238
Apparels and shoes	17%			1 586 238
Furnishing	0%			-
Transportation (i.e. gasoline)	17%			1 586 238
Culture, entertainment	0%			-
Total		25 860	952	14 276 143
Purchase Power Index %				133%
Modified Market Size				19 015 927

Table 4: Supply side sales estimation

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One measure of the competitive structure of the market is the index of retail saturation (IRS), which examines the level of competitions and the retail sales in a given geographical area. There are several ways to formulate this measure. The typical IRS is calculated as area sales divided by a measure of competitive saturations (usually total square feet). The formula is: total market potential in the market area divided by total square feet of stores selling goods, so the estimated sales FT 19 Billion.

Summary

We must be careful that your market potential and sales potential estimates do not overstate the true marketplace for your community. Regarding site selection the consideration of strategic factors presented in the article may help in a more complex professional grounding for the corporate planning on the one hand, and in the transparent communication of the administrative decisions (e.g. the processes of “plaza stop” -like decisions) on the other hand. This latter may have evaluation aspects by which both the entrepreneurs and the representatives of the government (the Committees) can get clear methodological guidelines about how the opening of a new shop can contribute in the development of a settlement, and what impact it has on the realization of the investor's business goals in terms of sales size. These can be examined only together, because their multiplier effect is produced by their mutual effects on each other but in this paper the sales forecast methods are highlighted.

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