Retail potential of districts of Istanbul

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Abstract

After 1980s, globalisation and economic restructuring encouraged the growth of the number of shopping centres in Istanbul. As their number increased, retail market became more competitive, which resulted in a vital need to investigate retail potential of new shopping centre locations. This paper investigates the spatial distribution of existing shopping malls and tries to estimate the retail potential of those districts that do not have any shopping centre yet. Of the 32 districts that make up Istanbul, only 16 have shopping malls. Two historical districts and one summer resort area on the islands are excluded from the analysis. A gravity model is applied to determine the retail potential of the 13 remaining districts that do not have shopping centres yet. Income of the districts, distances to the existing and proposed shopping centres and their sizes are taken as variables in the analysis. According to the results of the study, the districts are ranked with respect to their retail potential. Future research investigating the impact of characteristics of shopping malls and demographic characteristics of consumers and distance on the shopping behaviours of customers would add further value to the research.

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INTRODUCTION

Istanbul, being at the intersection of international trade routes and the capital of three empires throughout history, has always had a very large market area and a variety of retail spaces ranging from street shopping to the world famous covered bazaars. In developed countries, the landscape of mass consumption, however, created a metropolitan society in which people were no longer brought together in central marketplaces and streets that surrounded them but, rather, separated by class in differentiated commercial subcentres.¹ After 1980s, globalisation and economic restructuring of Turkey increased Istanbul's integration with the world economy² and stimulated the transformation of retail organisation by shifting power from traditional small traders to large domestic and foreign firms.³ One of the reasons of the attractiveness of the retail market for large domestic and foreign companies has been the significant increase in per capita income in the country since 1980s.⁴ The transfer of western capital and the rapid transmission of the western consumption culture are apparent in different parts of the city. Increasing exposure to other cultures stimulated the growth of a new consumer culture and lifestyle under the influence of global consumption patterns. The spatial expression of this transformation was in terms of large shopping malls that are flourishing throughout the Istanbul Metropolitan area. The shopping malls as a social space provide good opportunities for family use and for people of different age and income groups through the variety in goods availability and services.⁵ Despite the rapid growth of shopping centres in Istanbul, there are still districts that do not have any shopping mall and this study estimates the retail potential of these districts.

Gravity type models are powerful tools in real estate research and particularly used to estimate sales for retail centres.⁶ The principle underlying retail gravity models is that the attractiveness of a retail centre is directly related to its size and inversely related to the distance shoppers must travel to patronise it.⁷ The retail gravity literature has been extensive and essentially based on Newton's Law of Gravitation dated in 1686.⁸ The gravity concept was first applied to retail marketing by Reilly in 1931.⁹ Reilly's Law is used to estimate a market boundary of two towns or cities competing for retail trade. According to Reilly, the delineation of the market boundary is a function of the distance between the towns and their sizes.¹⁰ The concept of Reilly's law and its derivatives have made significant advances in trade estimation and market-share determination,¹¹ sales forecasting techniques¹² and site selection models.¹³ As one of its earlier extensions, Huff,¹⁴ in 1966, reformulated Reilly's gravity model in terms of probability and it is widely applied in retail market potential analysis. Huff's model is developed to allow projections of the expected viability of the new centres and their influences on existing centres. It is a

more sophisticated application of the gravity principle, focusing on the propensity of consumers within various areas to use a particular shopping centre. It assumes that consumers will be able to choose between several competing centres and that their choice will be determined by the size and distance of the centres.¹⁵ A further interesting analysis from the 1960s was Lakshmanan and Hansen.¹⁶ As an attempt to estimate future shopping potential, they introduced a variable representing the projected retail expenditures in the various residential zones that made up the study area. The analysis focused on examining the long-term stability of location and facility size distribution. For each class of goods, their model assesses levels of turnover per square foot of floorspace as profitability thresholds, plotting these levels for the major centres in the Baltimore region.¹⁷ The Lakshmanan and Hansen Model had enormous empirical influence, and variations of the framework underpinned numerous regional and subregional shopping models, shopping centre impact studies and retailers' estimates of relative market share.^{18,19}

Later, some of the gravity modelers also included a dynamic dimension into their formulation.^{20,21} By the end of 1980s, a wide variety of sophisticated Geographical Information Systems (GIS) databases, containing spatially organised information on store locations, transportation provision, consumer expenditure, etc., were available.^{22,23} To improve the accuracy of the basic gravity model, many researchers included additional variables. Revelle and his co-worker^{24,25} have constructed a group of models to examine competition among retail stores in a spatial market. Drezner,²⁶ in 1998, investigated the location of multiple competing facilities in an area where other facilities already existed. Later, researchers developed interaction models that embraced, among others, store size and location,²⁷ and multiple retail organisations.²⁸ Multipurpose shopping behaviour of consumers were also incorporated into the model.²⁹ A comprehensive review of retail location models is given by Brown in 1992.³⁰ Moutinho *et al.*³¹ explore alternative changes that could take place in the technology, methodology and the practice of retail location by the use of artificial intelligence techniques for strategic decision making. Later, Roy *et al.*³² in 2001 presented a simultaneous modelling of multipurpose/multistop activity patterns and quantities consumed. Moreover, the geographic interdependencies of retail market areas are investigated by Mushinski and Weiler in 2002.³³ Lately, there are also GIS models which are rapidly becoming a popular tool in the retail industry for site location analysis.³⁴ Yang³⁵ in 2002 analyzed shopping centre location distribution for a small city with respect to its environmental and retail supply quality. Furthermore, Lee and Pace³⁶ examine the distribution of sales for a retail chain using a spatial gravity model. Unlike previous empirical studies, their approach models spatial dependencies among both consumers and retailers. The results show that both forms of spatial dependence exert statistically and economically significant impacts on the estimates of parameters in retail gravity models. The importance of the distance parameter in retail gravity models is greatly understated. Thus, ignoring spatial dependence may lead to an overestimation of the deterministic extent of trade areas, and underestimate the importance of good locations.

Thus, the review of the literature illustrates that most of the studies on retail potential were carried out in developed countries. This present study attempts to investigate the retail potential of districts in Istanbul which do not have any shopping mall. Background information about the growth of population and service sector and distribution of shopping malls according to the concentric rings are given and then estimates the retail potential of the districts by the use of a gravity model. The final section is devoted to a conclusion and suggestions for further research.

BACKGROUND TO RETAIL MARKET OF ISTANBUL

Istanbul, the largest city of Turkey with a population in excess of 10m and its strategic location between Europe and Asia, is the country's most important socio-economic and cultural centre (Figure 1). The aggregated market in the Istanbul Metropolitan Area is the largest in Turkey. Most of the headquarter offices, the majority of the financial institutions and a dominant share of trade and business activities are located in Istanbul due to its international relationships, and thus it reflects all aspects of the evolution of commercial activity in the country.³⁷ The wholesale and retail trade components, together comprising over one-fourth of the total employment, have traditionally been the strongest sector in Istanbul's economy. Retailing is the most successful developing market among the other real estate markets. The prime yield of the retail sector in Istanbul is an average of 9.0–11 per cent³⁸ compared to 6.0 per cent in Rome, 4.5 per cent in London³⁹ and 4.0 per cent in Paris.⁴⁰ Rental levels in Istanbul's shopping centres currently range from \$243–1977 annually,³⁸ compared to an average of \$9250 for London, \$1539 for Rome³⁹ and \$11074 in Paris.⁴¹

Istanbul's tremendous growth after 1950s has affected socio-economic and cultural conditions, as well as the physical structure of the city. Istanbul's peripheral highways have had a significant impact on retail expansion patterns in the metropolitan area. The intersection of the highways appears to have attracted some retail and office space development as well as garden apartments. These mixed used complexes form the bases of new subcentres of the city. Although, in the 1970s, the historical Central Business District (CBD) of Istanbul started to decline as a result of the aforementioned suburbanisation movement, it began to recover after the 1980s with the help of revitalisation projects.^{42,43}

In 1984, the Turkish Government abolished its prohibitive approach to imports. Since then the country has achieved considerable progress in liberalising many of its product markets.³ Increasing exposure to other cultures stimulated the growth of a new consumer culture and lifestyle under the influence of global consumption patterns.⁵ Increasing car ownership, newly introduced credit cards, more international coverage on domestic television and more exposure to alternative lifestyles stimulated consumption in the shopping malls. People have adapted eagerly to the use of shopping malls, mainly due to modernity in these global spaces through consumption and leisure patterns provided by a more fashionable space than the traditional urban centres and the shopping streets.⁵ Although Istanbul has only 15 per cent of Turkey's population, it has

Figure 1: Location of Istanbul in Turkey (upper right) and Districts of Istanbul (bottom)

34 per cent of shopping malls⁴⁴ due to its economic superiority over the country and its greater exposure to globalisation.

Although the Istanbul Metropolitan Area has a complex structure, for market analytic purposes, it can be divided into three zones and the spatial distribution of shopping malls is illustrated according to concentric rings in terms of GIS techniques as follows (Figure 2). The historical core is up to 3km and consists primarily of traditional retail strips, covered bazaars and passages and does not have any modern shopping mall.

The first ring is from 3 to 10km, which covers the area occupied by the city in the 1950s before the commencement of rural migration. This zone is linked closely to the core and the periphery by subway, bus and ferry. This zone has 44 per cent of the city's gross domestic product (GDP), 37 per cent of population, 52 per cent of service sector, 43 per cent of retail employment and 51 per cent of leasable space of shopping malls. This zone also consists of attractive retail strip-corridors in addition to shopping malls associated with office and residential developments and serving large market areas.

The second ring is taken as the peripheral area beyond the first ring and it has the 42 per cent of the city's GDP, 60 per cent of the population, 37 per cent of the service sector, 42 per cent of retail employment and 49 per cent of leasable space of shopping malls. Thus, this analysis illustrates that the second ring has less shopping mall space than the first ring with respect to its population. In other words, nine districts that do not have any mall are located in this zone. The existing shopping malls constitute the base for new subcentres supplied by the peripheral highways and mixed used development. With this new pattern of urban growth, shopping centres are coming into being by reason of the increase in suburban population and the resultant increase in purchasing power

Figure 2: Spatial distribution of existing shopping malls (black dots) in Istanbul. Source: Istanbul Metropolitan Municipality, City Planning Directorate, 2006

located there rather than by reason of any flight of downtown business. The impact of the increase in the car numbers makes possible a redistribution of expanded commercial and industrial activity over a greater area surrounding the metropolitan core. Within this large spectrum of retail distribution, the retail structure of Istanbul is divided between a small number of affluent subcentres due to the concentration of income and extensive areas served by traditional shopping streets and markets.⁴⁵

With the increase in car ownership, the growth of suburban population, the growing desire for western-style products and demographically prosperous and western-aware population, the number of large shopping malls in Istanbul continues to increase. With this process international retailers have started to enter the market and are working in partnership with successful Turkish developers.

The French companies Carrefour and Continent introduced the first hypermarket operations at the beginning of the 1990s with the Metro Group following shortly behind them. Both companies have liaised with national players who are more familiar with the local market and practices. Carrefour has entered the market through a joint venture with Sabanci Holding and Metro through an alliance with Tepe Group. Bauhaus opened the first nonfood out-of-town DIY and furniture superstores, and Swedish retailer IKEA entered the market in 2005. In addition, big name fashion retailers such as Armani, Benetton, Cacharel, Camper, Debenhams, Diesel, DKNY, Escada, Gas, Gucci, Hugo Boss, Lacoste, Laura Baresse, Levi's, Louis Vuitton, Mango, Marks & Spencer, Massimo Dutti, More & More, Naf Naf, Premaman, Versace, Stefanel, Nike, Roberto Cavalli, Tods, Tommy Hilfiger, Top Shop, Zara are the other foreign companies currently trading in Istanbul.³⁸

Recently opened shopping centres (Cevahir, Tower and Kanyon) have accelerated the newcomer brands. Tchibo, Laura Baresse and Debenhams, Harvey Nichols, Barnes & Nobel, Hakkasan, Intersport, Conbipel, Douglas, Furla, Caesar Paciotti, Pilgrim, Natalys and Segafredo are examples of brands that have recently entered the market.³⁸

RETAIL POTENTIAL OF THE ISTANBUL'S DISTRICTS

The urban form and shopping malls have influenced each other's development interactively with respect to the development of subcentres throughout the city supported by side functions, modern housing projects, office buildings, expressways and subways. The determination of the retail potential of the districts is an important subject for the success of the new shopping malls and to protect the existing ones as well as an efficient development of the urban structure.

The locational decision is the most complex and critical decision a retailer can make. A superior decision facilitates access to existing customers, serves as one mechanism for capturing sales from competitors and enhances visibility to those (potential customers) traveling through the area.¹⁰ Site location analysis, particularly with the increased availability of computer-based techniques, can provide invaluable information to assist retail management with its decision-making process.³¹

Previous models take into consideration income, population and demographic characteristics in order to investigate retail potential of areas. Ingene and Yu⁴⁶ observe that sales per capita and total sales are functions of income per capita and total income, respectively. There are also studies which investigate consumer characteristics, including population age, education, occupation and ethnicity to determine consumer behaviour.^{5,47}

In this study, the Huff model is used to determine the retail potential of 13 districts that do not yet have a shopping mall (Table 1). Two historical districts with extensive traditional malls and shopping streets and a resort islands district are not included in the analysis. The size of the existing malls and GDPs of the districts are given in Table 1. The location of the existing malls is illustrated by the use of GIS techniques in Figure 2. The size of each new shopping mall is taken as 50,000m² in the calculation of the retail potential of the districts. The purchasing power of the districts is taken as 20 per cent of the GDP of the districts. The formulation of retail potential of districts is given as follows:

$$S_{ij} = C_j \frac{\frac{F_j}{d_{ij}^\alpha}}{\sum_{i=1}^n \frac{F_j}{d_{ij}^\alpha}}$$

where S_{ij} is the retail potential attracted from district i to shopping mall j , C_j is the purchasing power of district j , F_j is the surface area of shopping mall j and d_{ij}^α is the distance between district i and shopping mall j .

Table 1: Shopping mall gross leaseable area and GDP of the districts

Districts	Gross leaseable area (m ²) ⁴⁴	GDP (2003) (\$million) ⁴⁸
<i>1. Ring</i>		
Sisli	155,300	183.33
Besiktas	112,089	85.56
Kadikoy	84,250	171.11
Uskudar	38,500	65.19
Zeytinburnu	29,048	101.85
Bayrampasa	11,079	73.33
Fatih	ND	87.59
Gungoren	ND	48.89
Kagithane	ND	50.93
Eyup	ND	36.67
<i>2. Ring</i>		
Bakirkoy	109,407	177.22
Maltepe	60,500	28.52
B. Cekmece	58,031	38.70
Umraniye	48,930	48.89
Silivri	45,000	16.30
Kartal	39,690	71.30
Bahcelievler	17,500	55.00
G.O.P.	14,000	67.22
Sariyer	11,000	26.48
K. Cekmece	7,500	61.11
Avcilar	ND	59.07
Bagcilar	ND	50.93
Beykoz	ND	24.44
Catalca	ND	16.30
Esenler	ND	24.44
Pendik	ND	38.70
Sultanbeyli	ND	28.52
Sile	ND	8.15
Tuzla	ND	14.26

ND, no data available.

The results of the model are given in Table 2 and represented by the use of GIS techniques in Figure 3. According to the results, the districts that are centrally located and close to the higher income districts have higher potential than the peripheral districts such as Gungoren, which has \$28.60m retail potential. Fatih has the second highest retail potential, but no vacant plot is available for a shopping mall. In Fatih, traditional street retailing is set to continue to dominate the characteristic of the retail industry in the future. Bagcilar, which is an adjoining district to Gungoren, has the third highest potential with \$17.56m. In the case of building a shopping mall in either Gungoren or Bagcilar, a negative impact would be experienced in the peripheral districts such as Buyukcekmece, Kucukcekmece, Sariyer, Silivri whereas a positive impact would be experienced in central districts such as Besiktas, Sisli, Bayrampasa. In addition, adjoining districts such as Bakirkoy, Bahcelievler and Zeytinburnu are likely to be affected positively too.

According to the figures given in Table 2, Gungoren with its adjoining districts of Esenler and Bagcilar has a retail potential of \$58.50m justifying the building of one shopping mall. Since the model did not take into account new residential developments, the retail potential is expected to be higher than this figure.

Table 2: Retail potential of the districts for the proposed shopping malls with 50,000 m²

Districts	Retail potential (\$million)
Gungoren	28.60
Fatih	21.60
Bagcilar	17.56
Kagithane	17.40
Avcilar	14.92
Esenler	12.34
Pendik	11.38
Tuzla	11.36
Eyup	10.90
Sultanbeyli	9.92
Beykoz	8.75
Catalca	7.82
Sile	5.10

Figure 3: Retail potential of districts of Istanbul. The size of the bars illustrates the retail potential of the districts. The higher bar shows the higher district's potential as dollars

The districts with higher retail potential provide opportunities at the national and international level for the success of new retail investments and more efficient development of the urban retail structure. In order to attract shopping mall developments to peripheral districts with less economic potential, it is necessary to provide additional support through a mixed use approach which the Istanbul Municipal Government is planning to do so. At the same time, it is expected that recent upper income housing development projects in the periphery will encourage further shopping mall construction and stimulate new subcentres development.

CONCLUSION

The 1990s has witnessed the increase in the number of shopping malls in Istanbul primarily as a result of globalisation, liberalisation of economy and increasing income in Istanbul. Moreover, the consumption behaviour of the inhabitants of Istanbul makes a good reason for the success of this type of development. Shopping malls provide modern colourful, climate controlled and guarded consumption and leisure spaces, which attract customers from different income and age groups of Istanbul's society. Istanbul with its large population and its rapidly growing retail market offers a great potential for the new investors. Istanbul is and will continue to be the national and regional hometown of multinational companies from all sectors. Since income is concentrated within a small number of extremely wealthy districts, retail structure is divided between a small number of shopping malls, which are located in affluent subcentres and extensive areas served by traditional markets.

Continuous expansion of the city, the development of a multicentre urban structure, the decaying inner city, changes in population density and lifestyles have affected the spatial distribution of needs, purchasing power and demand for retail facilities. Despite the growing number of shopping malls, there are still areas in the city that are under supplied by the retail facilities. There are 33 shopping malls that are located in 16 districts out of 32 districts of Istanbul. The spatial distribution of shopping malls is analyzed according to concentric rings of the city. Although the first ring has only 37 per cent of the city population, it has 49 per cent of the number of shopping malls. The second ring which accommodates 60 per cent of the population of the city, however, has only 52 per cent of the number of shopping malls. It is a crucial task to estimate the retail potential of the districts that do not have any shopping mall in order to maximise the performance of the new malls. At the same time, it is important to preview the shopping malls location since they increase land values in their surrounding areas and they stimulate the transformation of urban structure. Thus, this study estimates the retail potential of these districts by the use of a gravity model, which takes into consideration GDP of the districts, surface areas of the existing and proposed shopping malls and distances between them. Gravity models have been applied to the retail context extensively. According to the results of the analysis, the districts are ranked with respect to their retail potential. As expected, centrally located areas in close distance to the high income districts have most potential and provide great opportunities for national and international real estate investors. Thus, as in the previous studies, higher income and accessibility are the most important factors affecting the retail potential of the districts. The results of the study can be useful for retailers, real estate developers, urban planners, transportation planners and policy makers.

Further research on emerging consumption and leisure patterns with respect to different socio-economic and cultural groups and their spatial implications is expected to contribute for the development of more comprehensive retail potential models.

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