LOCATIONAL PREFERENCES OF FDI FIRMS IN TURKEY

Prof. Dr. Lale BERKÖZ
Assist. Prof. Dr.S. SenceTÜRK

I.T.U. Faculty of Architecture
Istanbul/TURKEY
E-mail: lberkoz@itu.edu.tr

INTRODUCTION

Foreign direct investment (FDI) has many advantages, the most significant of which include the following:

- providing employment and job opportunities,
- application of skills and new technologies,
- transfer of capital,
- increase in productivity,
- enforcement of export,
- spread of domestic firms, and
- acceleration of economic growth in the developing countries.

- Foreign direct investment has been assumed to be the “development motor” of developing countries by United Nation Commission of Trade and Development (UNCTAD, 2004) since the 1990’s and thus it has been encouraged to create the conditions attracting investment.

At the beginning of the 1990's, less than 20% of the world's investment capacity flowed to developing countries.

However in the middle of the 1990's this share increased to 40 %.

- With policies implemented since the early 1980s, the Turkish government has aimed at developing a free market economy, and has replaced the country's **traditional inward-oriented import- subsition policies with an export- oriented development strategy.**

- As a result of these policies, which were made in order to increase the FDI inflows, the number of FDI firms increased 29 times
- However, the increase in FDIs, especially in Turkey after 1990 is less than expected compared to other developing countries.

According to the findings of 2003, with 0.10%, Turkey has a share of **575 million US$ of the total foreign investment of 560 billion US$** in the world . This appears indicates the necessity appears to examine and understand the characteristics and spatial distribution of FDI firms in Turkey, especially by focusing on the period after 1990.

Table. FDI Flows in the World and Turkey

TURKEY	01.01.1995	01.01.1999	01.01.2000	01.01.2001	01.01.2002	01.01.2003
INWARD	529	783	982	3.266	1.038	575
OUTWARD	24	645	870	497	175	499
WORLD	01.01.1995	01.01.1999	01.01.2000	01.01.2001	01.01.2002	01.01.2003
INWARD	181.704	1.086.750	1.387.953	817.574	678.751	559.576
OUTWARD	203.620	1.092.279	1.186.838	751.501	596.487	612.201

TURKEY/WORLD	01.01.1995	01.01.1999	01.01.2000	01.01.2001	01.01.2002	01.01.2003
INWARD	0,29%	0,07%	0,07%	0,40%	0,15%	0,10%
OUTWARD	0,01%	0,06%	0,07%	0,07%	0,03%	0,08%

Figure 1. Distribution of the dates of foreign capital establishments (Istanbul)

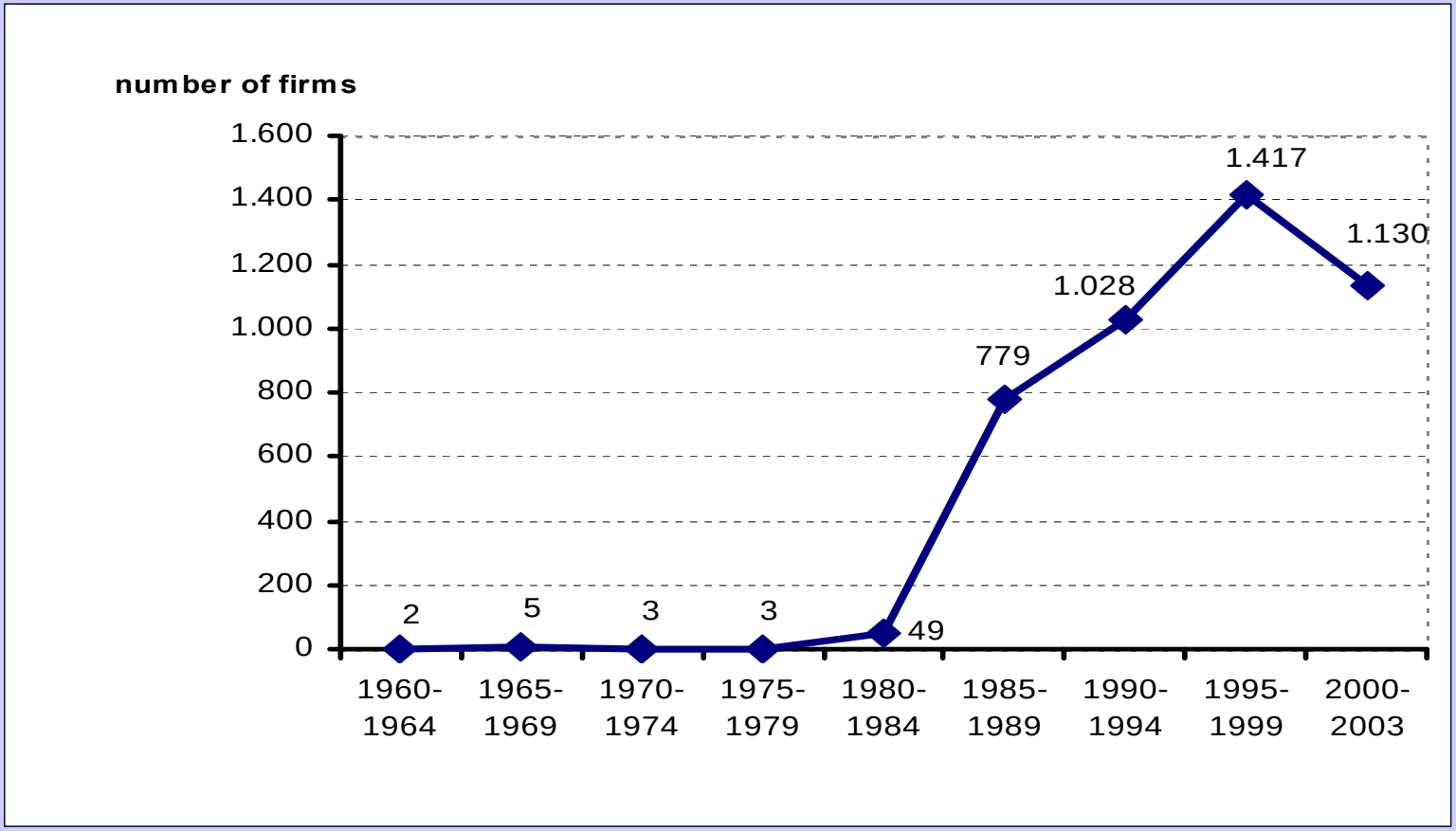
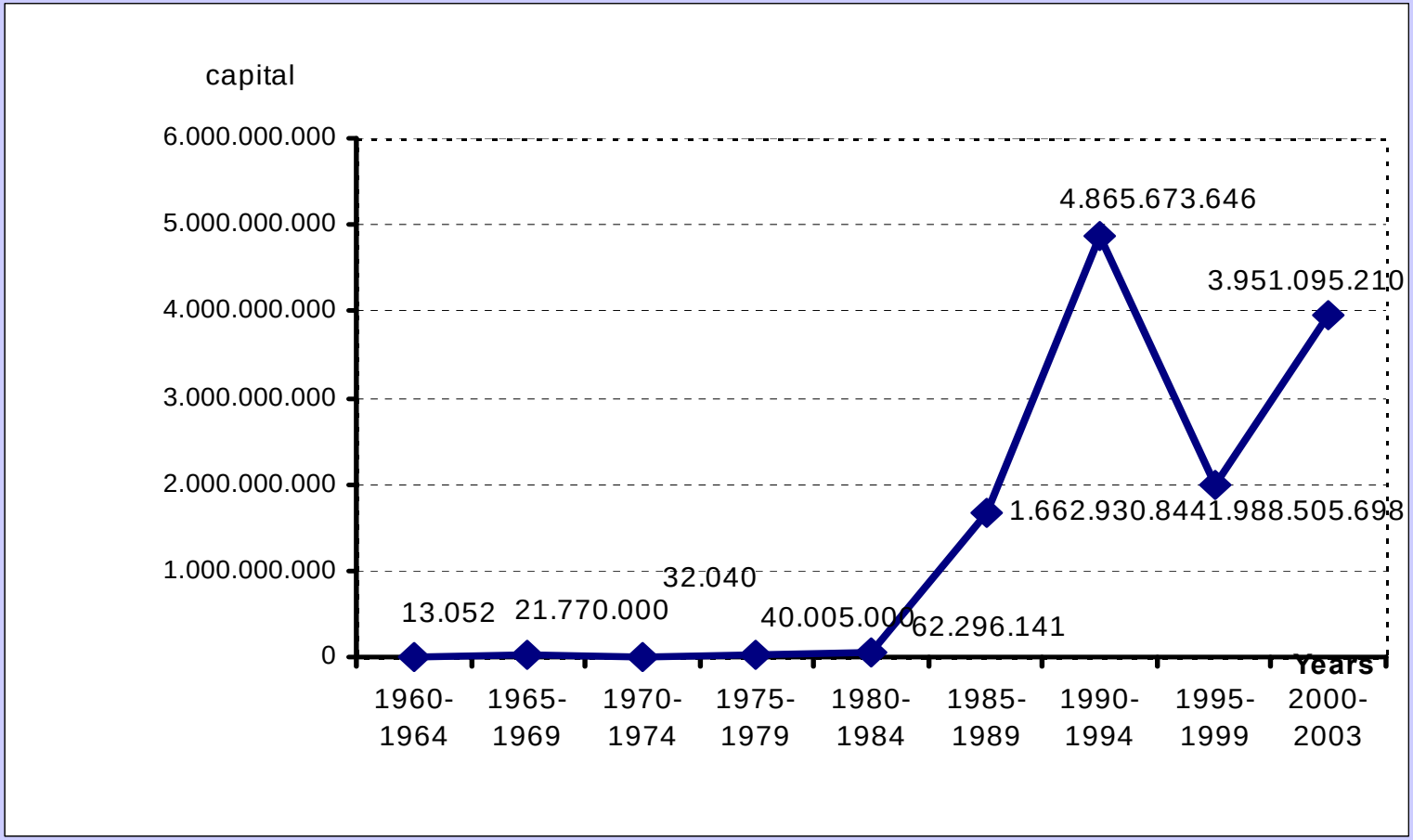


Figure 2. Distribution of the dates of foreign capital establishments (Istanbul)



- Istanbul is a metropolitan city in Turkey, which attracts the highest level of foreign investments. As Table shows, 75.39% of Turkey's total capital investment, and 63.29% of the total number of firms in Turkey are in Istanbul. Also, Istanbul has attracted 59.63% of the firms which have made investment in industry sector in Turkey with 55.22% of this capital, and 66.35% of the firms making investments in the service sector with 92.33% of the capital.

- According to the results published by YASED, Istanbul held 6174 foreign capital investments in 2004. 2.53% of these foreign investments were active in agriculture, 25.79% in industry, and 71.69% in the service sector.

Table. Distribution of FDI Firms and enterprises in Turkey and Istanbul

	TURKEY			ISTANBUL		
Sectors	**number of firms**	**%**	**Capital (TL)**	**number of firms**	**%**	**Capital (TL)**
Agriculture and mining	414	4,25	665.993.332	156	2,53	568.566.508
Manufaturing	2670	27,39	11.984.318.626	1592	25,80	6.617.977.382
Service	6665	68,37	13.717.103.864	4422	71,67	12.692.717.617
TOTAL	9749	100,00	26.367.415.822	6170	100,00	19.879.261.507

- FDI has become a leading force in the formation of the metropolitan structure, especially after 1990 in Istanbul.
- However, there is a lack of empirical studies on intra-metropolitan FDI locations. It is still not clear how FDI firms are distributed in the Istanbul metropolitan area and how location-specific factors or attributes affect decisions by foreign investors on their intra-metropolitan FDI location.

Literature review

Most of the FDI literature analyzes the determinants of the decision on where to locate in terms of the national and regional characteristics. The first studies on the spatial determinants of FDI focused on the North American situation.

Previous studies that have analyzed the choice of host countries by multinational companies (MNCs) have identified a number of factors as important determinants in the MNC selecting the host countries.

The main determinants of FDI location at the national level suggest the following categories: size of country, higher GNP growth rate, market access factors and market potential effects, manufacturing productivity, labor costs, unemployment rate, the extent of the unionization of the workforce, geographical proximity to the host countries, government policies towards foreign investment, and the locational advantages, infrastructure and technological capability of the host country .

- Country differences may be important determinants of where MNCs decide to locate their overseas activities. Regional distinctions within countries may influence the location of the FDIs.
- The regional determining factors influence in the choice of location within the host country by the investor. These factors include: clustering, market size and market demand, labor market characteristics, the quality and capacity of the infrastructure, information costs, the existence of a cluster of similar firms, and government incentives for foreign investment .

- Some empirical analyses have been conducted at both city and provincial level in China. At the city level, transportation and communication infrastructure, market size, and policy incentives have been identified as important determinants of the location of foreign investors.
- Infrastructure, market potential, and labor quality were determined to be the positive locational effects at provincial level.

- Studies of the intra-metropolitan patterns of FDIs – what types of FDIs are located where – are fundamental to an understanding of the social and spatial transformations of urban areas that result from economic globalization.
- The results of the studies at the intra-metropolitan level suggest that the location of FDIs can be explained in terms of the economic and policy factors which prevail at the locations. Wu (1999, 2000) has highlighted the fact that government regulation and policy are important locational advantages at the intra-metropolitan scale.

- Distance to the central business district (CBD), access to population and labor markets, and access to luxury hotels are the other important determinants of the intra-metropolitan location of FDI firms. FDIs prefer areas with better access to comprehensive services, including amenities at the worksite (Wu, 1999, 2000). Wu's empirical studies in Shanghai suggest that the areas that had better local infrastructure and had incentives from the central government attracted more FDIs.

- According to Wu's study (2000), the traditional location choice factors such as highway accessibility, access to major high-ranking hotels, the status of the Economic and Technological Development Zone, access to railway terminals, agglomeration economies, and labor markets are effective for the FDI location choice within the Guangzou metropolitan area.
- According to another study (Wu and Radbone, 2005), the intra-urban determinants of FDI investment in Shanghai city were set out as political investments (especially the presence of the regions established in order to attract FDI), the density of the economical output and the presence of the airport.

- Wu and Radbone (2005) have emphasized that the location of FDIs is sensitive to local factors. Service FDIs tend to aggregate in areas that already have a high density of service activities, while manufacturing FDIs prefer to locate in the central government-designated areas where incentives and preferential treatment are available.
- However, studies on the spatial models at the intra-urban level are limited. The priorities in the location choice preferences of the FDI firms working in both industrial and service sectors in the Istanbul metropolitan area have been set forth by a study conducted by Berkoz (2005).

- Berkoz (2005) has shown that the most important factor in site selection, for both industrial and service sector firms with foreign capital, in spite of their different structures, was their primary needs for government support and reliability. Despite this shared factor, industrial firms with foreign capital tend to prefer areas with first-rate infrastructure, a fine location and high accessibility, while service sector firms prefer areas with a fine location, high accessibility, and buildings in good physical condition.
- Berköz and Eyüboğlu (2005 and 2007) have assessed the data related to the characteristics of FDI firms that have invested in Istanbul in GIS, and they have also determined the spatial distribution of industry and service sectors that have invested in Istanbul at intra-metropolitan level.

- Berkoz and Turk (2007) has investigated how FDI firms are distributed at the intra-metropolitan level and how locational factors affect the decisions of foreign investors when locating industrial and service sector FDI firms, using Istanbul as a case study. The study was based on a sample of 100 companies that were surveyed in Istanbul at the end of 2002. Locational determinants of foreign investment firms in Istanbul were analyzed using factor analysis and logistic regression techniques.

AIM OF THE STUDY

The basic purpose of this article is to examine the relationship between the FDI firms in service sector and accessibility to various urban facilities For this reason, two different types of testing have been applied. The first one aims to determine whether there is a correlation between the process of decision making when FDI firms in service sector choose one particular area over another (central districts – suburban districts) and accessibility distance to different urban facilities. And the second one is to test the correlation between the size of service FDI firms and distance to different urban facilities.

DATA AND MODEL SPECİFİCATİON

DATA

The FDI service sector data in the Istanbul metropolitan area encompassing the period between 1954 and 2003 are used in the model. The data resource is the Undersecretariat of the Treasury. The Treasury Ministry has collected data related to multinational firm activity in Turkey since 1954. This resource is published every year, which gives information related to FDI firms, including the origin of the firm, the location of the firm, the sector of investment, the value of investment, the firm's initial year, and the share of foreign ownership. The other data used in the study are obtained from the State Office of Statistics in Turkey.

Table 1. The distribution of population, population growth and workforce between 1990-2000 within the districts of Istanbul.

	Population 1990	Labor force	Services	Industry	Percentage of higher educated people (%)	Population 2000	Growth rate ‰	Labor force	Services	Industry	Percentage of higher educated people (%)
Central districts											
Beyoğlu	229000	83426	45111	30585	3.1	231900	1.26	76941	46245	26063	5.9
Eminönü	83444	40400	24259	12674	5.3	55635	-40.53	25458	17895	6298	11.3
Fatih	462464	153671	93949	50380	5.4	403508	-13.63	127298	84963	36155	8.6
Şişli	250478	90566	49921	28372	7.9	270674	7.75	103351	71221	26415	13.4
Beşiktaş	192210	70961	49807	13364	16.8	190813	-0.73	78253	62958	12227	28.6
Kadıköy	648282	212179	145989	43112	14.6	663299	2.29	228469	172798	43061	22.3
Bakırköy	1328276	452992	226378	177778	5.0	208398	-36.98	77497	59387	15782	22.4
Üsküdar	395623	127613	81049	31101	6.7	495118	22.43	160129	114143	34645	12.0
Peripheral districts											
Zeytinburnu	165679	63411	27154	30877	2.2	267669	40.19	84278	41364	39251	4.3
Kağıthane	269042	90957	43388	36073	1.9	345239	24.93	116224	65438	41818	4.2
Bayrampaşa	212570	72459	30840	36338	2.0	246006	14.60	79592	39664	36535	3.5
Beykoz	142075	43421	22237	15825	2.8	172891	19.28	51071	32513	14288	5.9
K.Çekmece	469431	163698	71974	70998	0.3	593520	52.19	189344	89462	86105	4.6
Silivri	26049	9085	5032	1595	1.8	44530	53.60	14469	8547	3318	6.7
Pendik	289380	86127	39988	30028	3.4	384668	66.32	107703	54631	38872	4.1
Kartal	506477	160571	88302	50524	4.9	337390	29.09	104527	62986	32780	7.0
B.Çekmece	22394	9107	4800	1472	5.3	35860	47.07	11767	7503	3039	9.9
Sarıyer	160075	52693	32258	13066	5.2	219032	31.35	76558	55415	14766	10.4
Eyüp	200045	68168	31856	31043	2.0	235116	16.15	73926	40867	28861	4.3
Ümraniye	242091	72622	37152	22189	2.0	440859	59.92	128666	73765	39245	4.3
Gaziosmanpaşa	354186	117706	47851	56812	1.6	658756	64.76	200019	86870	99790	2.4
Çatalca	11550	3923	2099	996	1.8	15779	31.19	5203	3076	1427	6.1
Güngören	-	-	-	-	-	272950	24.74	87721	47625	35614	6.5
Avcılar	-	-	-	-	-	233749	61.39	77143	43403	27698	7.1
Bağcılar	-	-	-	-	-	556519	64.66	167428	70472	84188	2.5
Bahçelievler	-	-	-	-	-	478623	47.30	153293	89205	62793	7.3
Maltepe	-	-	-	-	-	355384	33.48	119262	83167	25963	11..0
Esenler						380709	53.10	115537	49322	59226	2.0
Tuzla	-	-	-	-		107883	16.76	33766	17904	12132	5.7

Table 2. Distribution of FDI firms according to three zones of Istanbul by sectors

	TOTAL	SERVICES	INDUSTRY	AGRICULTURE
Central districts				
Şişli	23,79	25,36	19,69	22,06
Beşiktaş	16,38	16,29	16,56	17,65
Beyoğlu	11,15	11,72	9,31	19,12
Kadıköy	8,81	8,66	9,19	8,82
Eminönü	6,34	7,94	2,19	4,41
Fatih	3,95	4,95	1,44	0
Bakırköy	3,69	4,41	1,56	8,82
Üsküdar	2,99	3,17	2,38	5,88
Peripheral districts				
Bahcelievler	2,56	2,61	2,44	2,94
K.Çekmece	2,18	1,53	3,94	1,47
Güngören	1,75	1,31	3	0
Bağcılar	1,64	1,15	3	0
B.Çekmece	1,55	1,03	3	0
Ümraniye	1,42	0,73	3,25	1,47
Tuzla	1,4	0,77	3,06	1,47
Maltepe	1,38	1,17	2	0
Kartal	1,37	0,75	3,06	0
Kağıthane	1,21	0,96	1,94	0
Zeytinburnu	1,1	0,96	1,5	0
Bayrampaşa	1	0,49	2,31	1,48
Beykoz	0,91	1,06	0,5	2,94
Avcılar	0,86	0,85	0,94	0
Pendik	0,84	0,52	1,69	1,47
Sarıyer	0,56	0,68	0,25	0
Eyüp	0,39	0,35	0,5	0
Gaziosmanpaşa	0,32	0,16	0,75	0
Çatalca	0,19	0,16	0,25	0
Silivri	0,15	0,21	0	0
Esenler	0,12	0,05	0,3	0

MODEL SPECIFICATION

Two different models have been developed within the scope of this study. The first model tests whether the following criteria of accessibility are influential in location preferences of service FDI firms at intra-metropolitan level:

- accessibility distance to the airport,
- accessibility distance to the major gathering areas of the city,
- accessibility distance to hotels region,
- accessibility distance to the congress center,
- accessibility distance to highways.

In the second model, on the other hand, the correlation between the size of service FDI firms and all these accessibility distances is tested.

- In the first model, the location choice of central districts over the suburban ones, which is the major location preference of a foreign investor in the Istanbul metropolitan area, is tested. To this end, binomial logistic regression has been applied.

- Here the dependent variable has either “1” or “0” value. The value of “1” for the dependent variable signifies that an FDI firm has chosen central districts, while the value of “0” for the dependent variable indicates that an FDI firm has chosen suburban districts.

In this model, the following independent variables have been determined respectively: accessibility to airports, accessibility to the biggest gathering areas of the city, accessibility to the congress center of the city, accessibility to the hotels region, and accessibility to highways.

In the second model, the size of assets belonging to FDI firms in service sector has been taken as the dependent variable. However, since the firms have high assets values, the “Ln” value of these values has been used in the model. The independent variables of the first model have been used as the independent variables of this model.

The following independent variables have been determined respectively for the second model: accessibility to airports, accessibility to the biggest gathering area of the city, accessibility to the congress center of the city, accessibility to hotels region, and accessibility to highways.

EMPIRICAL FINDINGS

Descriptive Statistics

- In the study, service sector firms that have made investments in Istanbul have been taken as samples. In Istanbul, there are 4,426 FDI firms that have operations in the city. 25.1% of these firms possess a capital rate less than 25%, and 31.7% bear 26%-50% of the capital rate. Finally, 41.88% of the sample firms have 51-100% of the capital rate. 32.5% of the sample firms have a capital size of 10,001-100,000 YTL, 20.3% have a capital size of 100,001-1,000,000 YTL, and 18.9% have a capital size of 1,001- 10,000 YTL. OECD and Middle East countries are the country groups that have the biggest share among the foreign investments in the service sector in Istanbul with 45.5% and 19.3% share rates respectively. When the sub-sectors of service firms with a capital size above 10,000 YTL are examined, it is seen that there are 27 investments in Banking and other Finance Services, 17 Insurance companies, 17 Trade companies, 16 Communication companies, 11 Hotel and Accommodation companies, and 10 Investment Finance companies.

Logistic regression results

As it can be seen in Table 3, there is no correlation coefficient multicollinearity problem between the independent variables. Table 4 demonstrates the logistic regression results. The model performs reasonably well based on fit statistics (e.g., χ^2 , Cox & Snell - R^2).

According to the results of logistic regression model, all the variables, except the one related to hotels region, are statistically meaningful. In other words, there is a correlation between the location preferences of service sector FDI firms in the Istanbul metropolitan area (central areas and suburban areas) and accessibility to urban facilities.

Table 3. Pearson correlation coefficient

	Airport 1	Airport 2	Abdiipek	Hotel-Region	Highway (E5)	Highway (E6)	Taksims
Airport 1	1,000						
Airport 2	-,574**	1,000					
Congress	,671**	-,136	1,000				
Hotel-Region	-,020	-,018	-,103**	1,000			
Highway (E5)	,071**	-,072**	,078**	-,146**	1,000		
Highway (E6)	-,018	,101**	,077**	-,027	-,061**	1,000	
Taksims	,266**	,190**	,661**	-,230**	,016	,123**	1,000

** Correlation is meaningful at 0.01 level (2-tailed).* Correlation is meaningful at 0.05 (2-tailed).

Table 4.a. Central districts versus suburban districts for service sector FDI firms

Dependent Variable is Choice
Central districts :1
Suburban districts:0
LR=1504,251

Variable	**Coefficient (Wald stat)**
Airport 1	-0.0009 (344.0346)***
Airport 2	-0.0005 (365.8910)***
Congress	0.0010 (310.8414)***
Hotel-Region	0.0050 (0.0622)
Highway(E5)	-0.0012 (33.1907)***
Highway(E6)	-0.0130 (19.9496)**
Taksims	-0.0010 (430.9297)***
Constant	28.5039 (460.9460)***

Notes: *** Significant at 0.1 level, ** Significant at the 0.5 level, * Significant at 0.10 level

Table 4.b. Model Summary

Step	-2 Log likelihood	Cox&Snell R Square	Nagelkerke R Square
1	1504,251	1,000	1,000

Table 4.c. Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	2539,386	7	0,000
Block	2539,386	7	0,000
Model	2539,386	7	0,000

Table 4.d. Classification Table

		Predicted	
Observed	0	1	Percentage Correct
0	579	197	74,61%
1	176	3307	94,95%
Overall Percentage			91,24%

The cut value is, 500

According to the results of logistic regression model, service sector FDI firms prefer suburban areas rather than central areas in terms of accessibility distance to the airports. The reason for this finding is that both airports in Istanbul are located in areas far away from the central areas of the city.

The same finding is valid for the accessibility distance to highways. In terms of accessibility distance to highways, service sector FDI firms prefer suburban areas rather than central areas since accessibility to highways is provided more easily from suburban areas. Whereas there are a lot of connection points to highways from suburban areas, the number of connections to highways from central districts is rather low.

In Istanbul, the most important gathering area is Taksim Square, which is a major focal point where underground and public transportation facilities intersect. Besides, Taksim Square is surrounded by culture buildings and five-star hotels. For this reason, accessibility to Taksim Square is important to service FDI firms because Istanbul represents a multi-centered structure. On the other hand, foreign investment firms in service sector do not attach importance to the accessibility to Taksim Square as the area is not a business center.

No statistically meaningful correlation has been found between accessibility distance to hotels region and the location choice of service sector FDI firms. However, when the direction of the indicator is examined, it could be stated that service sector FDI firms show a tendency to prefer central areas in terms of accessibility distance to hotels region.

- There is a statistically meaningful relationship between accessibility distance to the congress area and the location preference of service sector FDI firms in central areas.
- When the Wald values are examined in the logistic regression, it is seen that accessibility distance to Taksim Square bears the highest Wald value. Accessibility to the airports has the other highest values.

Linear Regression Results

- The correlation coefficient values between the independent variables are shown in Table 3. As it can be followed from Table 3, the correlation coefficients between the independent variables indicate that there is no multicollinearity problem. Table 5 indicates the linear regression results. The model performs reasonably well, based on fit statistics (e.g.,R2, F,t).
- According to linear regression results, the established models is statistically meaningful.
- All the independent variables in the model have been found statistically meaningful. According to the regression results, there is a statistically meaningful correlation between the capital assets of service sector firms and accessibility.

Table 5. Regression analysis results

	Model
Constant	24,859 (54,018)***
Airport 1	-1,450E-04 (-5,809)***
Airport 2	-2,883E-05 (-3,012)**
Congress	-8,630E-05 (7,959)***
Hotel-Region	2,848E-04 (-3,186)**
Highway(E5)	-8,318E-04 (2,226)**
Highway(E6)	3,557E-04 (2,837)**
Taksims	1,861E-03 (-4,710)***
Observations	4226
R^2	0.043
Adjusted R^2	0.041
F	27.160***

Note: * p < =.10; ** p< 0.05;*** p<0.01. T statistics are given in parentheses.

- There is an inverse proportion between service sector FDI firms and accessibility distance to the hotels region. In other words, the closer the firms are to hotels region, the bigger assets they posses. Service sector FDI firms with big capitals prefer to be close to hotels region. There is a direct proportion between the size of assets of service sector FDI firms and accessibility to highways. The more the accessibility distance is to highways, the bigger FDI firms have.

CONCLUSION

The Istanbul metropolitan area is an essential center of focus within the changing world balances in the region formed by the Balkans, the Middle East, and the Turkic Republics. There are also economical potentials in addition to the natural and geopolitical location of Istanbul. These are the advantages of being a large market, the presence of a qualified and cheap workforce, and a dynamic liberal economy.

Despite this advantageous situation, the political and economical instabilities within the country and failure to conduct long-term plans concerning the matter of foreign investment have caused investments to remain lower than expected and develop in the form of partnerships with domestic investments.

Such a situation arises from the inability of the foreign investors to take risks. However, the contribution of the foreign investment inflows into the developing countries to the development of the country shall be achieved via increases in the amount of production factors and the introduction of new technologies.

As is the case within other developing countries, the foreign capital instability has been distributed within the area and heaped on Istanbul, the biggest city throughout the country and in Şişli, the new central area.

Such instability has increased more, as the area in which the foreign capital would make investments was not identified on national, regional, and local scales because foreign capital settles in the cities with optimal infrastructure and even in the districts again with optimal infrastructure for itself. The foreign capital firms in Istanbul have chosen the new central area where the spatial quality, infrastructure, and access-communication standards are high for their operations. However, spatial transformation in Istanbul, which has been occurring since the 1990's, represent a tendency towards peripheral districts.

In this study, the correlation between accessibility distance to the airports, gathering areas, congress centers, hotels region, and highways and the location preference of service sector FDI firms has been tested using two methods. In the first method, the correlation between accessibility distance and the location preference of service sector FDI firms in central areas rather than suburban areas has been tested. In the second method, the correlation between capital assets of service sector FDI firms and accessibility distance has been tested.

According to the results of both models, the FDI firms in service sector show precision in terms of accessibility distance to urban facilities.

This finding supports the reasons why service sector FDI firms are concentrated especially in central areas.

Again, there is a connection between capital assets and proximity to urban facilities. This connection is statistically very strong meaningful.

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